

81-#395-#9201

GEOLOGICAL, GEOCHEMICAL  
AND  
GEOPHYSICAL REPORT

POLARIS 1-6 MINERAL CLAIMS  
LAT 56°28' North, LONG 125°45' West  
N.T.S. 94-C-5E and 5W  
OMINECA MINING DIVISION

FOR  
GOLDEN RULE RESOURCES LTED.  
Calgary, Alberta

BY  
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TAIGA CONSULTANTS LTD.  
Calgary, Alberta

MARCH 1981

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
9201

C E R T I F I C A T E

I, the undersigned, of the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Consulting Geologist with an office at #100, 1300 - 8th St. S.W., Calgary, Alberta;
2. I am a graduate of the University of British Columbia with a B.Sc. in Geology (1974),
3. I have worked in the field of mineral exploration since 1965;
4. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta; and
5. I personally worked on the claims and supervised exploration work carried out there and described in this report.

Respectfully submitted,



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Michael Fox, P.Geol.

1981

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## INTRODUCTION

### LOCATION AND ACCESS

The Polaris 1 - 6 mineral claims are a contiguous block of claims located in the Omineca Mountains approximately 350 km northwest of Prince George, British Columbia. (Figure 1). The claims are situated around the confluence of Lay Creek and Polaris Creek, some 4 km north of Aiken Lake. The approximate geographic coordinates of the centre of the claim block are 56°28' North latitude and 125°45' West longitude (Figure 2).

The claims lie approximately 250 km north of Ft. St. James on the Omineca Development Road. Thirty kilometres south of Manson Creek, this road connects with a network of good, gravel-surfaced logging roads which eventually link with the Prince George-McKenzie Highway some 160 km to the east at a point approximately 170 km north of Prince George.

### PROPERTY AND OWNERSHIP

The Polaris 1 - 6 mineral claims are all located in the Omineca Mining Division and are entirely owned by Golden Rule Resources Ltd. of Calgary, Alberta. The claims are described more specifically as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record Number</u>	<u>Date of Record</u>
Polaris 1	20	2679	April 3, 1980
Polaris 2	20	2689	April 3, 1980
Polaris 3	15	2690	April 3, 1980
Polaris 4	3	2691	April 3, 1980
Polaris 5	20	2692	April 3, 1980
Polaris 6	6	2693	April 3, 1980

For purposes of applying assessment work, the above claims are currently registered as a single group.

### PHYSIOGRAPHY AND GLACIATION

The claims lie within the Omineca Mountains physiographic subdivision of the Interior Plateau. The region is entirely glaciated and is charac-

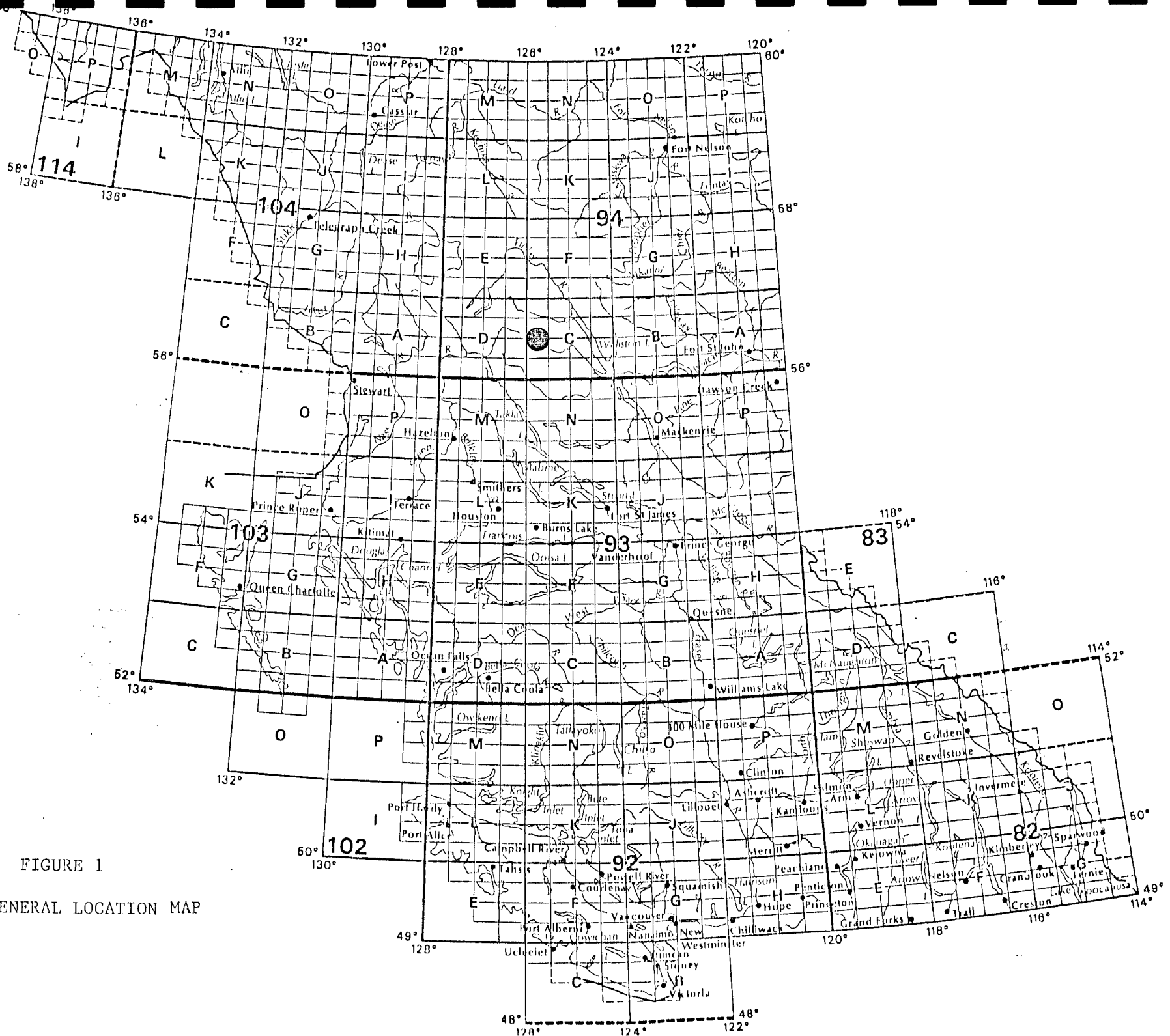


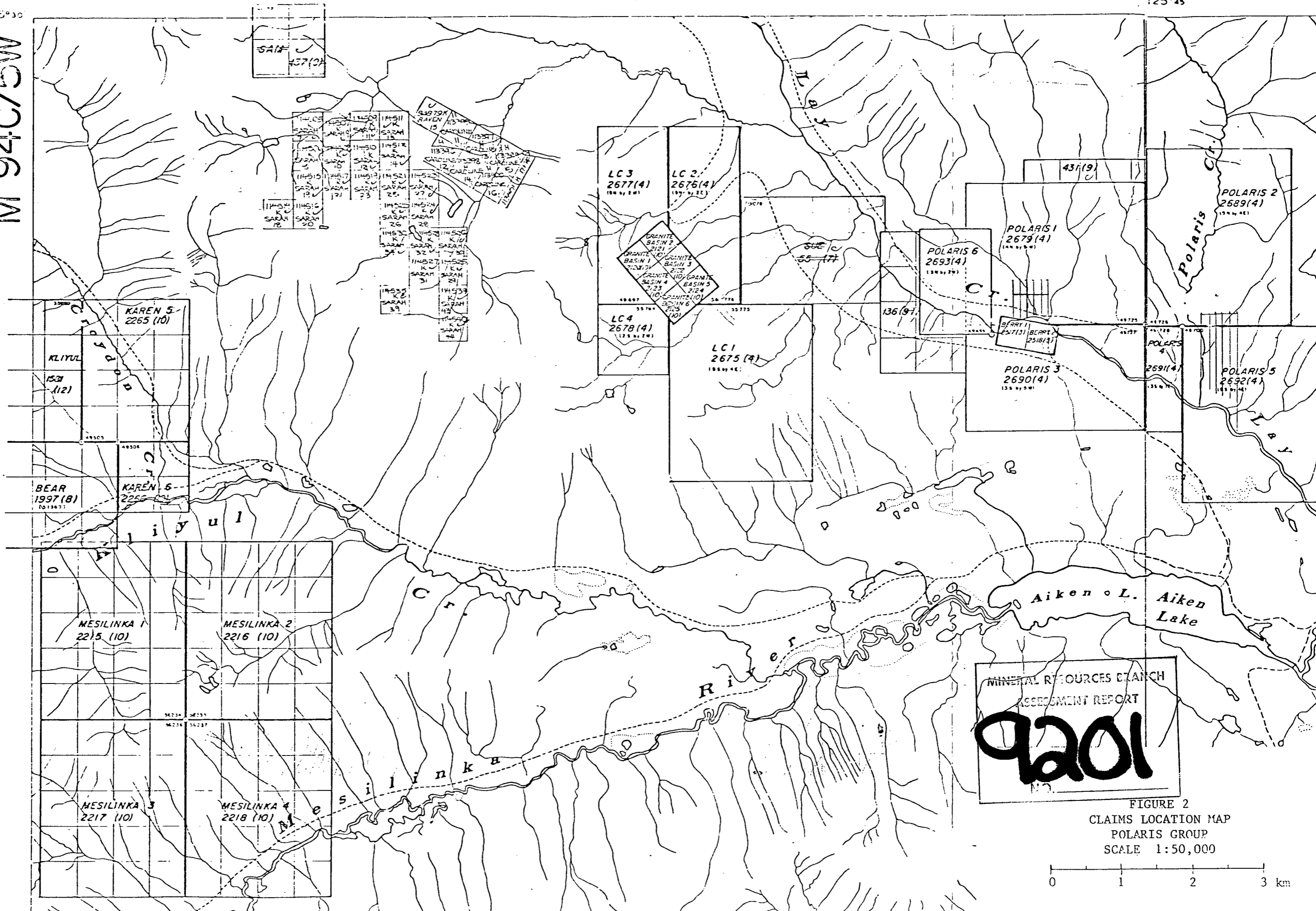
FIGURE 1  
GENERAL LOCATION MAP

M 94C/5W

6

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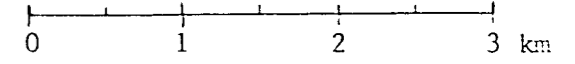
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FIGURE 2  
CLAIMS LOCATION MAP  
POLARIS GROUP  
SCALE 1:50,000



terized by wide U-shaped major valleys filled with glacial deposits and alluvium. Mountain peaks in the area average 1980 m (6500 ft.) ASL in elevation and rise fairly abruptly from the valleys to form smooth, conical, very steep peaks or rugged ridges and ranges. The lower slopes of the mountains are heavily wooded. Treeline is at approximately 1525 m (5000 ft.) ASL.

The Polaris claims are situated over a heavily wooded, drift-covered, flat-lying area astride Lay Creek, which at this point runs through a 3 km wide valley. Topographic relief on the claims is minimal, except along the valleys of Lay Creek and Polaris Creek, which have cut 100 m deep gorges which transect the property. Bedrock exposures on the claims are confined almost entirely to these canyons.

#### 1980 EXPLORATION

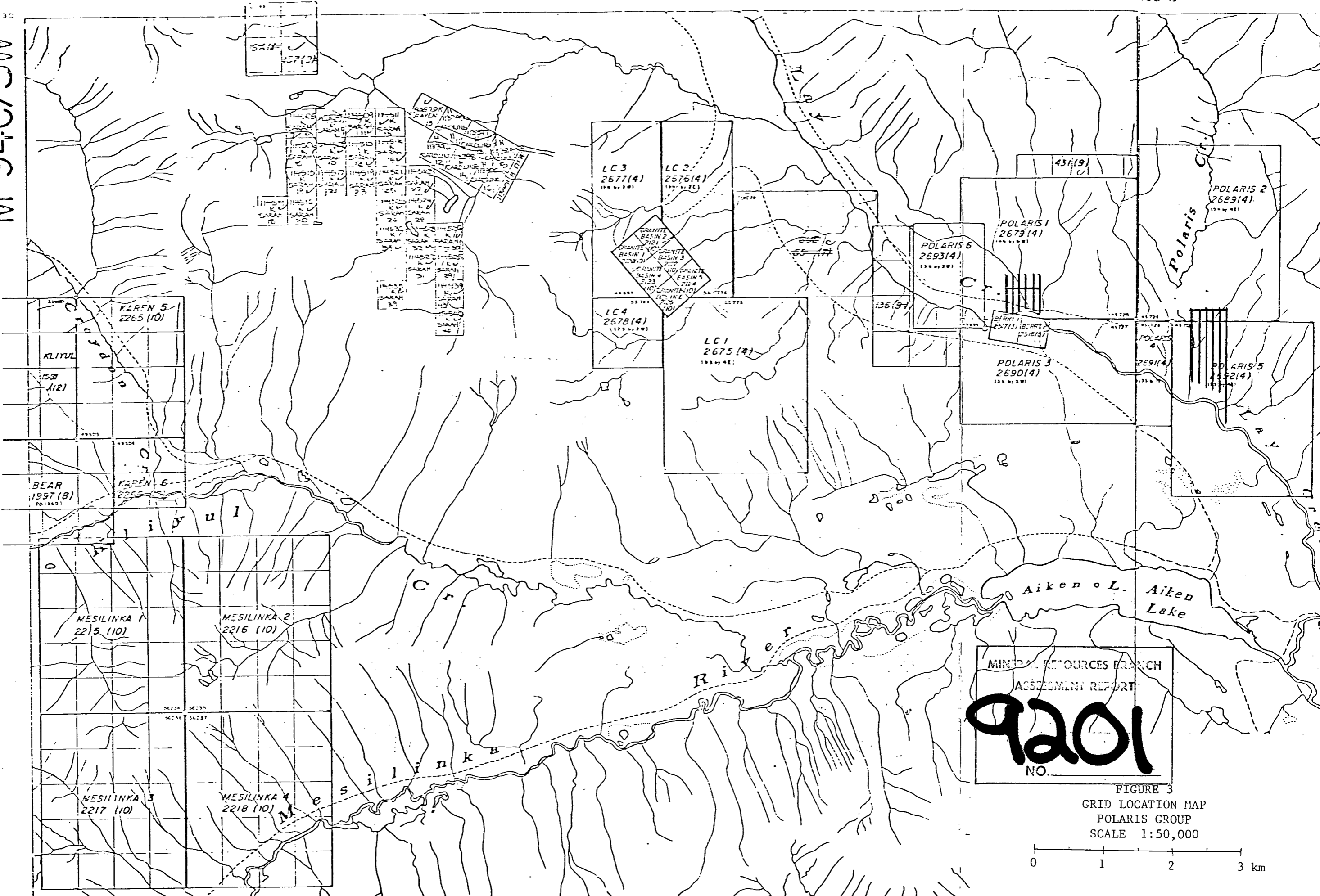
Work carried out on the claims in 1980 included grid-controlled geochemical sampling, ground VLF-EM and magnetic geophysical surveying, and geological mapping on two separate grid areas. The Jupiter grid is located around the old Jupiter adit worked by the Consolidated Mining and Smelting Co. Ltd. (now COMINCO) in the 1930's. The Polaris grid is located around the old Polaris adit, some 3 km to the east, also worked by Cominco in the 1930's. Work on the Jupiter grid is distributed over the Polaris 1 claim. Work on the Polaris grid is distributed over the Polaris 2, 4, and 5 claims.

A total of 127 soil samples were collected at 25 m intervals from approximately 3 line km of grid lines on the Jupiter grid. A total of 273 soil samples were collected at 25 m intervals from approximately 7 line km of grid lines on the Polaris grid. The grid areas are shown in Figure 3. Line spacings were nominally 100 m. Similar amounts of ground VLF-EM and magnetic geophysical surveying were also carried out over the two grid areas. Geological mapping consisted mainly of reconnaissance mapping along Polaris and Lay Creeks and rechecking mapping done during earlier exploration programs by unrelated companies.

The above work was entirely helicopter supported, as there is no road access to the grid areas.

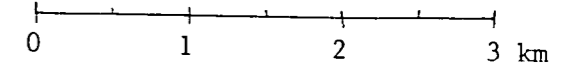
M 94C/5W

125°45'



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FIGURE 3  
GRID LOCATION MAP  
POLARIS GROUP  
SCALE 1:50,000



6

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4



GEOLOGY AND MINERAL OCCURRENCES

The claims area is underlain by Mississippian to Permian tuff, andesitic to basaltic flows, agglomerate, greywacke, sandstone, grit, conglomerate, limestone, chert, shale, argillite, and minor ultramafic rocks of the Nina Creek Group. Similar lithologies further to the south in the Wasi Lake area include a greater abundance of greenstones (Figure 4).

The claims cover the Polaris and Jupiter prospects and an unnamed Zn occurrence near the mouth of Polaris Creek.

Near the Polaris prospect, the above-described rocks are cut by many small dykes and stocks of acidic to intermediate composition. Calcareous and cherty black slates and argillites are cut by a network of small quartz-calcite and quartz veinlets, approximately three feet in width, mineralized with disseminated, banded, or blebby pyrite, arsenopyrite, pyrrhotite, and minor chalcopyrite was investigated by the Polaris adit. Very high gold assays were reported from parts of this zone. When examined in 1980, the adit portal was caved and the adit could not be entered. Several small quartz-calcite-pyrite stringers outcropping near the portal were sampled however, and yielded high values in gold. The following description of the Polaris prospect is excerpted from GSC Memoir 274:

**POLARIS GROUP (13)**

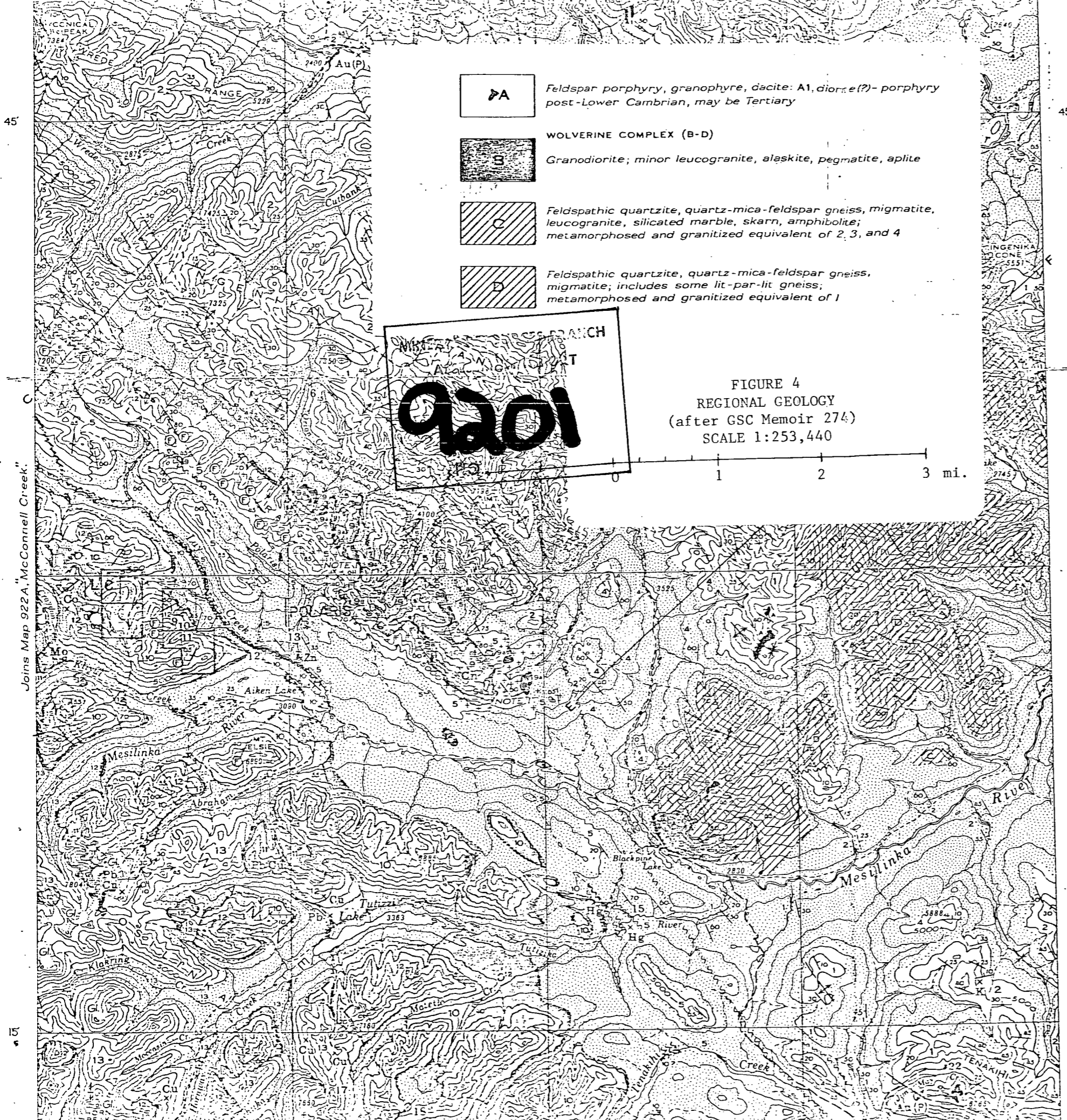
*Reference:* Lay, Douglas: Aiken Lake Area, North-central British Columbia; B.C. Department of Mines, Bull. No. 1, 1940, pp. 22-24.

The Polaris group, staked and explored by The Consolidated Mining and Smelting Company of Canada Limited, consists of eight claims on Polaris Creek, about a mile above its junction with Lay Creek. The property is reached by a trail, 2½ miles long, from the Jupiter workings.

A short distance upstream from the property, Polaris Creek enters a rocky gorge that increases in depth to about 300 feet at its junction with Lay Creek. The gorge exposes a complex assemblage of slaty argillite, impure limestone, tuffs, and andesitic flows cut by many small dykes and stocks of acidic to intermediate composition.

Near a small stock of quartz-biotite porphyry, calcareous and cherty, black, slaty argillites are cut by a network of small quartz and quartz-calcite veins. The veins in places are well mineralized with disseminated, banded or blebby pyrite, arsenopyrite, and pyrrhotite, with, very minor chalcopyrite. The network of veins has an observed width of as much as 3 feet; the individual veins, commonly symmetrically banded, reach a maximum width of 4 inches, but are mostly less than 2 inches wide. Remarkably high gold assays are reported to have been obtained from samples across narrow widths of some of these veins, but it is understood that the average gold content across mineable widths did not approach commercial grade.

Also exposed in the Polaris Creek gorge are several lens-like replacement bodies of pyrrhotite, with minor pyrite and chalcopyrite. The largest of these is about 30 feet wide, and is exposed on both sides of the canyon wall for a vertical distance of at least 100 feet. None of these bodies has shown a significant precious metal content.



- PA** Feldspar porphyry, granophyre, dacite: A1, diorite(?) - porphyry post-Lower Cambrian, may be Tertiary
- WOLVERINE COMPLEX (B-D)**
- B** Granodiorite; minor leucogranite, alaskite, pegmatite, aplite
- C** Feldspathic quartzite, quartz-mica-feldspar gneiss, migmatite, leucogranite, silicated marble, skarn, amphibolite; metamorphosed and granitized equivalent of 2, 3, and 4
- D** Feldspathic quartzite, quartz-mica-feldspar gneiss, migmatite; includes some lit-par-lit gneiss; metamorphosed and granitized equivalent of 1

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FIGURE 4  
REGIONAL GEOLOGY  
(after GSC Memoir 274)  
SCALE 1:253,440

0 1 2 3 mi.

MESOZOIC

PALÆOZOIC

PROTEROZOIC

- LOWER CRETACEOUS**
- 14** USLIKA FORMATION: conglomerate, minor argillite
- JURASSIC OR CRETACEOUS**
- UPPER JURASSIC OR LOWER CRETACEOUS**
- OMINECA INTRUSIONS (11-13)**
- 13** Granodiorite, adamellite-granite; quartz diorite; minor syenite, syenodiorite, diorite, alaskite, pegmatite, aplite, lamprophyres, and feldspar porphyry. Represents undivided Omineca intrusions in a few less known, and in small, highly complex, parts of the Hogem batholith
- 12** Quartz diorite, diorite; minor syenodiorite, meladiorite, appinite, hornblende, and uralite amphibolite
- 11** Hornblende, felspathic hornblende, appinite, meladiorite; minor hornblende diorite, biotite peridotite, and uralite amphibolite
- TRIASSIC AND JURASSIC**
- UPPER TRIASSIC AND LATER**
- TAKLA GROUP**
- 10** Andesitic flows and breccias; basalt; tuff, agglomerate, shale, conglomerate, limestone
- PERMIAN (?) OR LATER**
- POST-MIDDLE PERMIAN, PRE-UPPER TRIASSIC (?)**
- TREMBLEUR INTRUSIONS (?)**
- 9** Peridotite; dunite, pyroxenite, serpentinite; 9a. includes hornblende and related rocks
- PENNSYLVANIAN (?) AND PERMIAN**
- CACHE CREEK GROUP (6-8)**
- 8** Limestone; minor argillite, chert, and andesite; may be partly or entirely older than 6 or 7
- 7** Argillite, slate, ribbon chert; greenstone; minor tuff and limestone; may be in part of same age as 6
- 6** Andesitic and basaltic flows, tuffs, breccias; agglomerate; minor argillite, slate, chert, limestone; may be in part of same age as 5 and 7
- MISSISSIPPIAN TO PERMIAN (Mainly or entirely)**
- 5** Tuff; andesitic and basaltic flows, agglomerate, greywacke; sandstone, grit, conglomerate; limestone, chert, shale, argillite; may be in part of same age as 6 and 7
- CAMBRIAN AND (?) EARLIER**
- LOWER CAMBRIAN (Partly or entirely)**
- INGENIKA GROUP (2-4)**
- 4** Limestone, in part micaceous; interbedded with 2
- 3** White quartzite; interbedded with 2
- 2** Quartz-chlorite schist, sericite schist, quartzite, slate, phyllite, quartzitic conglomerate; minor limestone, chloritoid schist, and tourmaline-zoisite schist
- TENAKHI GROUP**
- 1** Quartz-mica schist, garnetiferous schist; micaceous, garnetiferous, and feldspathic quartzite; minor kyanite schist, staurolite schist, quartz-mica-feldspar augen-gneiss

The pyrrhotite-pyrite-chalcopyrite lenses mentioned above were also examined during the 1980 work. The main sulphide zone occurs as a sheared stratiform horizon at the contact of a thick sequence of graphitic schists and massive greenstones. It has been traced along strike to the northwest by previously done geophysical surveys (see B.C. Assessment Report 6607). Work carried out in 1980 traced the zone along strike to the southeast from the exposures in the canyon along Polaris Creek. Further investigation of its potential as a massive Cu-Pb-Zn-Ag sulphide horizon is strongly recommended.

Mapping in the vicinity of the Jupiter adit was confined to the available exposures along Lay Creek. Work done in 1980 confirmed earlier descriptions of the zone. The following report on the property is excerpted from GSC Memoir 274:

#### JUPITER GROUP (12)

*Reference:* Lay, Douglas: Aiken Lake, British Columbia; B. C. Department of Mines, Bull. No. 1, 1940, pp. 18-22.

The Jupiter property is on the northeast side of Lay Creek, 4 miles by trail from the east end of Aiken Lake. It was staked for, and explored by, The Consolidated Mining and Smelting Company of Canada Limited. No work has been done on the property since 1937.

The wide, flat-bottomed valley of Lay Creek is underlain by andesitic flows with intercalated tuffs, argillites, and impure limestones. In its upper reaches the valley follows a longitudinal fault that brings structurally discordant members into contact; but from the vicinity of the Jupiter property to the junction of Lay Creek with Mesilinka River, the rocks are structurally conformable across the entire width of the valley and the fault appears to become an irregular shear zone 300 or more feet wide. Along this fault and shear zone, Lay Creek has incised a narrow gorge 9 miles long and as much as 400 feet deep. The fault and shear zone are provisionally placed at the contact between known Takla group rocks on the west and underlying rocks of pre-Takla age on the east. The Jupiter mineral deposits are exposed near the bottom of the gorge at the junction of Lay Creek with a small tributary stream locally known as Berry Creek. The rocks in the gorge have been considerably altered: the andesites and tuffs to smooth, shiny, chloritic and serpentinized rocks, and much of the argillite to soft, flaky, graphitic material. A small body of blocky, less friable, porphyritic rock of andesitic or dioritic composition, exposed near the portal of the 'main adit' and encountered in some of the underground workings, may be intrusive.

Two distinct types of mineral deposits are recognized on the property. One is represented by a brecciated fault zone, striking north and dipping steeply west, cemented by white quartz and cream-coloured calcite, which contains much graphitic material and is sparingly mineralized with pyrite. This fault zone has been called 'vein No. 2' by the owners. The other type of mineral deposit is represented by well-defined fissure veins striking northeast and northwest, consisting of quartz and calcite heavily mineralized with sphalerite, tetrahedrite, galena, and minor chalcopyrite, covellite, and pyrrhotite. The two largest of these veins, which strike northeast and lie to the west and east of the 'vein No. 2' fault zone, have been named vein No. 1 and vein No. 3 respectively.

Exploratory work has consisted of hydraulic stripping the steep slopes of Berry Creek gulch, and of driving two adits, one on each side of the creek. The surface workings are now completely sloughed, but it is understood that the mineral deposits were well exposed within an area of 250 by 140 feet.

The 'main adit' is driven into the west bank of Berry Creek about 50 feet above the level of Lay Creek. It consists of a drift, 795 feet long, on the mineralized, brecciated fault zone (vein No. 2) and a total of 813 feet of branch workings that explored subsidiary fault zones and the fissure veins (See Figure 5). Vein matter in the fault zone followed by the drift

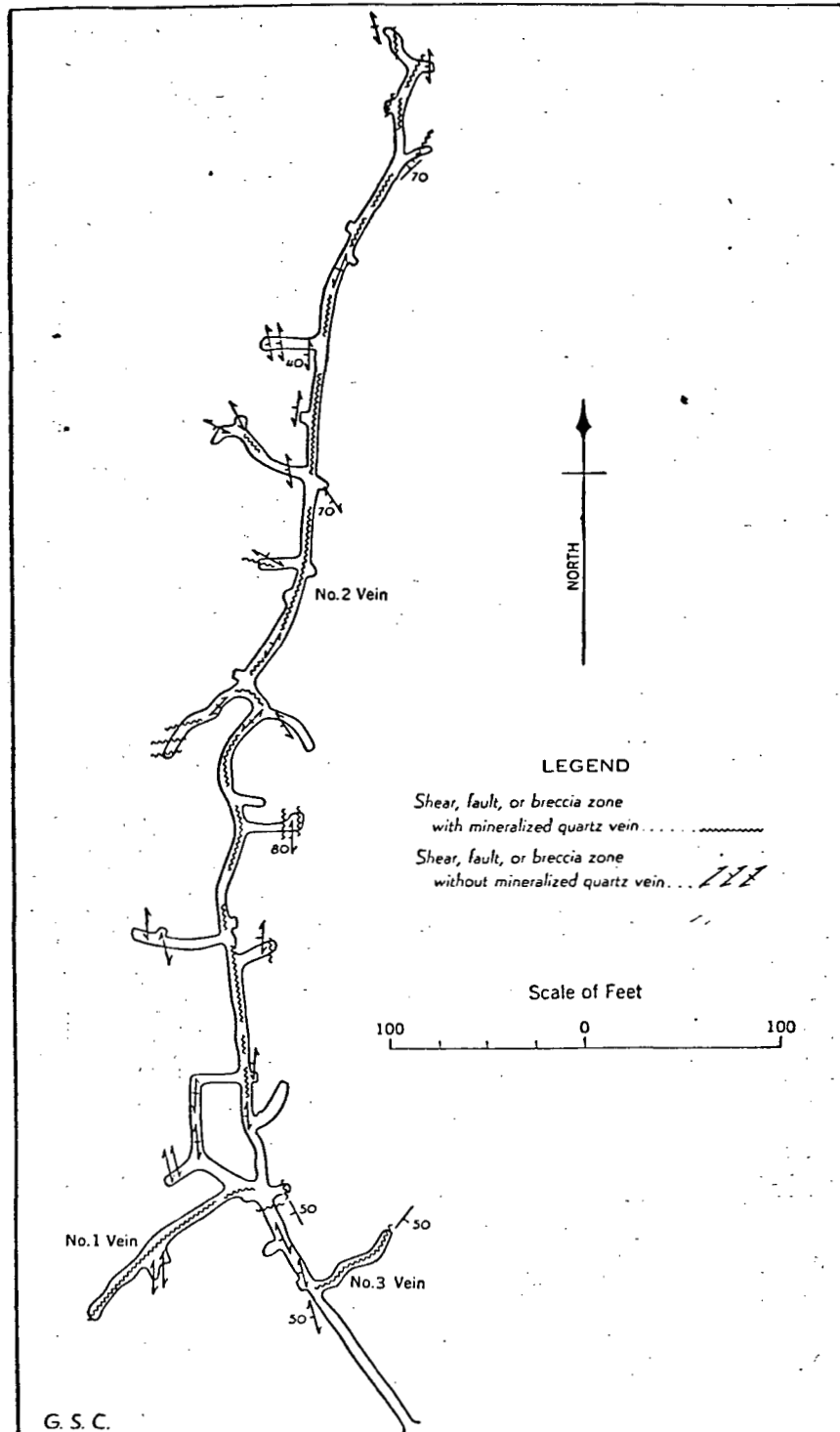


Figure 5 Plan of main adit, Jupiter mineral claims, showing veins and faults.

is very lency. Pyrite is the sole metallic mineral noted, and occurs in part very sparingly disseminated through quartz, in part somewhat more abundantly disseminated through the brecciated altered wall-rocks, but for the most part as thin stringers and seams with calcite forming a matrix to the fault-zone breccia. The fault zone contains much graphitic material; lens-like bodies up to 4 feet wide, consisting almost entirely of soft, impalpable, carbonaceous matter, were noted. The best mineralized section observed was about 100 feet long and in most places less than 2 feet wide. Samples from this fault zone, taken by the owners, are reported (Lay, p. 21) to have yielded 0.31 ounce to 7.18 ounces of gold a ton across widths of 2 to 12 inches. A grab sample taken by the writer in 1946 assayed: gold, 0.135 ounce a ton; silver, 4.75 ounces a ton; copper, 0.08 per cent; and zinc, 0.60 per cent. Microscopic examination of specimens from this deposit has shown no gold; it may be that the pyrite itself is auriferous.

The sphalerite-tetrahedrite-galena deposits, represented by vein No. 1, vein No. 3, and several smaller veins, have a maximum observed width of 1 foot. Vein No. 1 has been followed by a drift for 105 feet, and vein No. 3, on the opposite side of the 'vein No. 2' fault zone, for 60 feet. The very close similarity in width, attitude, and mineralogy of veins No. 1 and No. 3 suggest that they were originally parts of the same vein, dislocated by movement along the 'vein No. 2' fault zone. The walls of the fissure veins are free, indicating some post-mineral movement.

Typically, veins No. 1 and No. 3 consist of interbanded light brown sphalerite, dark brown sphalerite, and quartz. Cream-coloured calcite and white to dull grey massive quartz fill abundant fractures in the sphalerite, and contain minute grains of chalcopyrite. Tetrahedrite and galena occur as irregular patches in the sphalerite, mainly in the darker variety, and as layers up to 1 inch wide in the sphalerite and along contacts of quartz and sphalerite bands. Some covellite was also observed along these contacts.

Microscopic examination of specimens from veins No. 1 and No. 3 shows the sphalerite to have been fractured, healed by quartz and calcite, and then irregularly replaced by argentiferous tetrahedrite. Later, both the sphalerite and the tetrahedrite, but principally the latter, were replaced by galena. A still later period of fracturing was followed by deposition of a second generation of calcite and a little chalcopyrite. Pyrrhotite was identified as irregular masses in the quartz and in the tetrahedrite near quartz. Its age relative to the other sulphides is unknown.

Microchemical analysis of the galena showed no evidence of silver. The tetrahedrite, however, is the strongly argentiferous variety, freibergite.

Grab samples of veins No. 1 and No. 3 were taken by Douglas Lay in 1939 and by the writer in 1946. They assayed as follows:

Vein	Gold, oz./ton	Silver, oz./ton	Copper, per cent	Lead, per cent	Zinc, per cent
<i>No. 1—</i>					
1939 sample.....	0.02	76.3	0.6	0.4	8.8
1946 sample.....	0.01	91.3	1.01	8.70	30.15
<i>No. 3—</i>					
1939 sample.....	0.02	152.0	1.2	7.5	11.7
1946 sample.....	0.025	153.78	1.76	3.15	22.16

On the east bank of Berry Creek, an adit 160 feet long has been driven in badly fractured, sheared ground along a brecciated quartz-calcite vein with a maximum width, at the portal, of about 2 feet. The vein is sparingly mineralized with sphalerite, pyrite, galena, and tetrahedrite. As seen in the back of the adit, the vein is lency and discontinuous, and within 100 feet pinches into small, pod-like bodies of crushed quartz. Except near the portal, little evidence of mineralization was noted.

When examined in 1980, the portals of both adits were found to be completely caved, preventing any resampling of the zones encountered in the underground workings. Geochemical sampling over the area has identified multi-element anomalous zones which appear to be derived from the tetrahedrite-sphalerite mineralization described above. Despite their narrow widths, the tetrahedrite-sphalerite veins are of interest due to their very high grades. Future work should include reopening the adit and systematic mapping and sampling of the several mineralized zones.

GEOPHYSICS

GROUND MAGNETIC SURVEY

Regional aeromagnetic features are shown in Figure 6. A total of 7.5 line km of ground magnetic surveying was carried out over the Jupiter and Polaris grids, with readings being taken at 25 m intervals along grid lines nominally spaced 100 m apart. The instrument used was a Scintrex MP-2 proton precession magnetometer. Magnetic control was provided by a Scintrex MBS-2 base station. Corrected and contoured magnetic data are shown on Map 3.

The survey results have clearly defined an anomalous zone, several hundred nanoTeslas above background in magnetic intensity, that correlates well with surface exposures of the massive sulphide zones along Polaris Creek. Offsets in the magnetic trends suggest a strong north-northeasterly striking fault transects the Polaris grid area.

In the Jupiter grid area, magnetic readings greater than 58,400 nanoTeslas correlate with surface exposures of greenstones. Values less than 58,300 nanoTeslas apparently delineate areas underlain by graphitic shales and argillite. The survey results indicate a northerly trending contact between greenstones and sedimentary rocks in the area between Line 14E and Line 15E. A northwesterly trending fault zone is interpreted as being present along Berry Creek, accounting for the apparent offsets of bodies of greenstones on opposite sides of the creek.

GROUND ELECTROMAGNETIC SURVEY

Approximately 10 line km of ground VLF-EM surveying were carried out over the Jupiter and Polaris grids, with readings being taken at 25 m intervals on cross lines nominally spaced 100 m apart. The instrument used was a Crone Radem VLF-EM. The transmitter used was Seattle (18.6 KHz); direction to the transmitter was determined to be  $102^{\circ}$  Az.

Dip angle readings only were taken. The survey results are presented on Map 2, unfiltered and uncorrected for possible topographic effects.

50'

9075G "94 C/12"

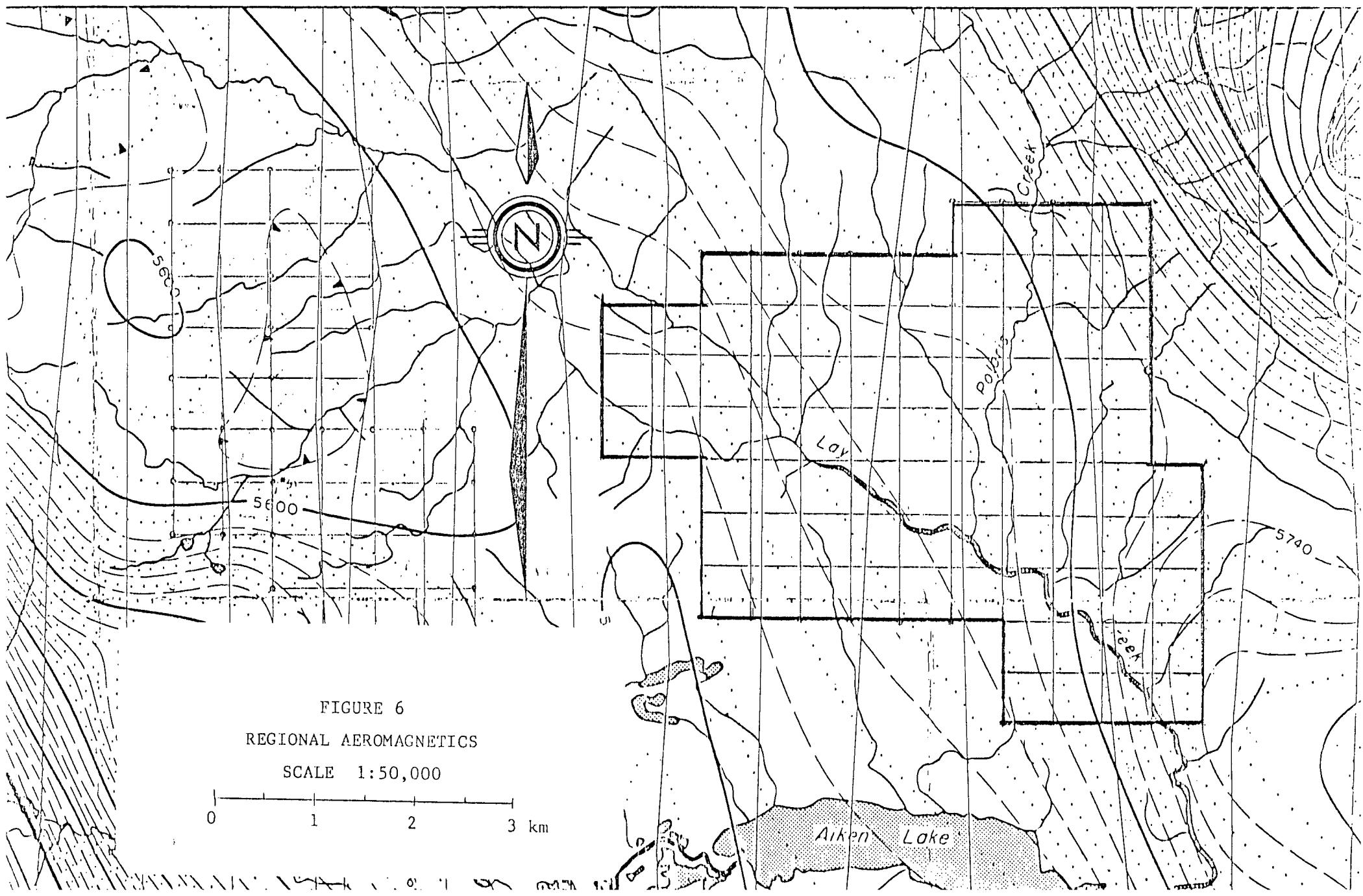


FIGURE 6  
REGIONAL AEROMAGNETICS  
SCALE 1:50,000

0 1 2 3 km



Moderately conductive zones were identified in the vicinity of the Jupiter adit and appear to delineate the tetrahedrite-sphalerite vein systems. However, the northerly striking graphitic shear zone was not detected by the survey, probably due to the acute angle of coupling between grid lines and the strike direction of the shear. Additional VLF-EM surveying is warranted, along east-west oriented grid lines to delineate this zone.

The main conductive zones identified in the Polaris grid area correlate well with surface exposures of the northwesterly striking massive sulphide zones described earlier in this report. Several weak easterly trending conductive zones of short strike length have also been identified, but their relationships to geologic features is not known.

GEOCHEMISTRY

Geochemical sampling consisted of the collection of 273 soil samples from the Polaris grid area and 127 soil samples from the Jupiter grid area. Samples were collected at 25 m intervals along grid lines nominally spaced 100 m apart. The soil samples were collected using mattocks and were placed in bellows-type heavy Kraft paper soil sample envelopes. The samples were dried, sieved, and analyzed for 26 elements by Acme Analytical Labs Ltd. of Vancouver, using an ICP (induction coupled plasma) analytical technique. The elements for which the samples were analyzed included: Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Th, Cd, Sb, Bi, V, Ca, P, La, In, Mg, Ba, Ti, B, Al, and W. An aqua regia digestion was used. The leach is only partial for Ca, Pb, Mg, Al, Ti, La, and W; very little Ba is taken into solution. A separate analytical technique was used for Au, consisting of an aqua regia leach, followed by extraction using an organic solvent (MIBK - methyl isobutyl ketone) and semi-quantitative determination by Atomic Absorption. More detailed descriptions of analytical techniques are appended to this report.

The analytical results for Cu, Pb, Zn, Ag, Ni, Fe %, As, Sb, and Au-in-soils have been tabulated and are included as an appendix to this report. Corresponding plots of the analytical results for these elements (except Fe%) have been prepared and are included in the map pocket.

A total of 23 rock samples were also collected from the property. Of these, 14 samples were geochemically analyzed by the same procedures used for the soil samples. Nine rock samples were submitted for assay. The analyses are included as an appendix to this report.

The contoured values of Au, Ag, Sb, As, Cu, Pb, Zn, and Ni-in-soils are shown in Table IV:

TABLE IV	
Element	Contoured Values
Au	20, 40, 80 ppb
Ag	0.7, 1.0, 1.4, 2.8 ppm
Sb	3, 4, 5 ppm
As	25, 40, 80 ppb
Cu	70, 100, 200 ppm
Pb	15, 30, 60 ppm
Zn	100, 200, 400 ppm
Ni	50, 100, 200 ppm

Significant geochemical anomalies are described as follows:

Jupiter Grid Area. A 100 m wide zone, open at both ends, extends across the entire southern end of the grid on the slopes overlooking Lay Creek. The zone is best defined by anomalous As and Cu-in-soils values. Anomalous Au, Ag, Sb, Pb, Zn, and Ni-in-soils values are more restricted and occur primarily within two smaller zones contained in the As-Cu anomaly. The strike direction, location, and anomalous elements in this zone all correlate with the northeasterly striking tetrahedrite veins cut in the Jupiter underground workings.

Only anomalous Cu-in-soils appear to indicate the presence of the main northerly trending graphitic shear zone which was followed by the main Jupiter workings.

Polaris Grid Area. A broad, composite Cu-Pb-Zn-Ag anomaly has been defined by soil sampling along the southern part of the Polaris grid area and shows a good correlation with the previously described massive sulphide zones. Due to the location of the anomalous zone at the extreme end of the grid lines, additional geochemical coverage would be required to resolve certain ambiguities in the present interpretation of the geochemical trends.

Anomalous Cu and Ag-in-soils trends exhibit a good correlation in four several-hundred-metre long narrow, northwesterly trending zones elsewhere on the grid (see Mpas 5 and 8 in back pocket). Above-threshold Zn-in-soils values correlate with two of these zones, suggesting they may be due to sulphide lenses similar to those exposed in Polaris Creek.

Two small zones of above-threshold Ni-in-soils values have been defined along the axis of the strong EM conductor that trends northwesterly along the southern edge of the grid area. These values are attributed to low concentrations of Ni in pyrrhotite in the massive sulphide lenses.

CONCLUSIONS AND RECOMMENDATIONS

JUPITER GRID AREA

Geochemical sampling and ground VLF-EM surveying have delineated anomalous zones that correlate with the high-grade tetrahedrite veins described in GSC Memoir 274. Although the veins are narrow, averaging less than 0.3 m in width, the high grades (76.3 to 153 oz/ton Ag) reported from earlier underground sampling indicate that the veins may be economically viable. Geochemistry and geophysics have, to date, defined a zone 500 m in length, still open along strike, indicating a potential for establishing substantial tonnages. Geochemical sampling carried out in 1976 by an unrelated exploration company (see B.C. Assessment Report 6037) defined a zone containing anomalous Cu and Ag-in-soils values that extends approximately 500 m further to the east of the limits of the present grid area.

The Jupiter prospect warrants additional exploration, recommended as follows:

1. Extend geochemical coverage to the east and west of the present grid area to close the anomalous zone on the west and recheck previous work on the east (samples collected in 1976 were not analyzed for Au, Pb, Sb, or Ni; 1980 work has established that these elements are all associated with the tetrahedrite vein systems).
2. Extend ground magnetic and VLF-EM geophysical coverage to the east and west of the present grid area.
3. Rehabilitate the underground workings and carry out systematic underground mapping and sampling of the tetrahedrite veins and the gold-bearing graphitic shear zone.
4. Provide road access to the area of the Jupiter adit to facilitate carrying out the above program. This would require approximately 1 km of road building from the existing Omineca Development Road. Lay Creek could be forded at a number of locations close to the adit.

POLARIS GRID AREA

Gold-Bearing Veins near Polaris Adit. The results of 1980 exploration provide little encouragement for further work on the narrow, auriferous veinlets exposed along Polaris Creek near the old Polaris adit. No further work is recommended.

Massive Sulphide Lenses. The massive sulphide lenses exposed along Polaris Creek south of the adit warrant further exploration. Work carried out in 1980 indicates a strike length of more than 1200 m, extending from station 12N on Line 38E to station 2N on Line 43E. Geophysical and geochemical data collected by an unrelated company in 1976 and 1978 (see B.C. Assessment Files 6037 and 6607) indicate that the zone extends another 2000 m to the northwest of the Polaris grid area. The earlier work indicates that the extension of this zone is also characterized by anomalous conductive and magnetic trends and anomalous Cu, Mo, Zn, and Ag-in-soils trends. The occurrence of the massive sulphide lenses at the contact of sedimentary rocks and a volcanic sequence containing abundant fragmental horizons suggests that the sulphide zones may be metamorphosed "Besshi-type" bedded auriferous pyrite zones. The large (3000m+) strike length of the zone, the strong conductivity and magnetic effects, and the associated anomalous Cu, Zn, Ag, and Pb-in-soils zones provide considerable encouragement for further work, recommended as follows:

1. Extend geochemical and geophysical coverage to close off the anomalous zones along strike.
2. Alter the grid orientation for the above work so that grid lines run east-west to provide a more favorable angle of intersection to the massive sulphide zones.
3. Provide road access to the grid area along the north side of Lay Creek.
4. Excavate a series of trenches along the zone to further assess its economic potential, particularly in areas of more intense geochemical response.

## POLARIS PROJECT

GR-BC-7

COSTS September-October 1980PERSONNEL

Project Supervisor--J. R. Allan			
Sep.30, Oct. 1	2 days @ \$275	550.00	
Project Geologist--M. Fox			
Sep.22,25,28	3 days @ \$240	720.00	
Senior Prospector--T. Nelson			
Sep.22-25, Oct.1	6 days @ \$175	1,050.00	
Prospector--E. Mercredi			
Oct.1-2	2 days @ \$150	300.00	
Prospector--B. Charles			
Sep.30, Oct.1,2	3 days @ \$145	435.00	
Prospector--R. Davies			
Sep.22-25,30, Oct.1,2	7 days @ \$145	<u>1,015.00</u>	4,070.00

CAMP & ACCOMMODATION

Camp Equipment	23 man days @ \$17	391.00	
Camp Food	23 man days @ \$10	<u>230.00</u>	621.00

EQUIPMENT RENTALS

1 3/4-ton 4x4 truck	Sep.23,24	2 days @ \$35	70.00	
2 4x4 trucks	Sep.22-25,30	5 days @ \$35 (x2)	350.00	
3 trucks (1 van, 2 4x4)	Oct.1,2	2 days @ \$35 (x3)	210.00	
1 Crone Radem VLF-EM unit		7 days @ \$10	70.00	
1 Scintrex MP-2 magnetometer and MBS-2 base station		7 days @ \$45	315.00	
1 Scintrex MP-2 magnetometer		7 days @ \$20	140.00	
2 Transceiver radios		7 days @ \$ 7 (x2)	<u>98.00</u>	1,253.00

DISPOSABLE SUPPLIES

425 soil sample bags @ \$60/M	25.50	
25 rock sample bags @ \$15/C	3.75	
17 rolls flagging @ \$1.20	20.40	
7 rolls topo meter string @ \$3.50	24.50	
3 notebooks @ \$4.50	13.50	
1 roll mag chart paper @ \$7.00	<u>7.00</u>	94.65

TRANSPORTATION Helicopter

Sept. 23	0.5 hours @ \$350/hr + oil and fuel (46 + 2.0 x 0.5 x 3.00 = 34.50)	209.50	
Sept. 24	0.3 hours @ \$350/hr + oil and fuel (53 + 2.3 x 0.3 x 3.00 = 20.74)	125.74	
Sept. 25	1.2 hours @ \$350/hr + oil and fuel ( = 84.00)	504.00	
Sept. 30	1.5 hours @ \$350/hr + oil and fuel (80.5 + 3.5 x 1.5 x 2.20 = 75.90)	600.90	
Oct. 1	2.7 hours @ \$350/hr + oil and fuel ( = 202.00)	1,147.00	
Oct. 2	2.0 hours @ \$350/hr + oil and fuel ( = 120.00)	<u>820.00</u>	3,407.14

FUEL

Invoice 80-189	\$273.26 (63.9%)	174.61	
Invoice 80-221	\$151.13 (63.9%)	<u>96.57</u>	271.18

GEOCHEMICAL ANALYSES

396 soils @ \$ 7.10		2,811.60	
23 rocks @ \$ 8.85		203.55	
2 assays @ \$25.00		50.00	
2 soils pulverized @ \$1.00		<u>2.00</u>	3,067.15

MISCELLANEOUS

Telephone	Invoice 80-253	\$119.34 (63.9%)	76.26	
	Invoice 80-221	53.58 (63.9%)	34.24	
	Invoice 80-189	60.10 (63.9%)	38.40	
Freight	Invoice 80-189	44.75 (63.9%)	28.60	
Courier	Invoice 80-189	10.00 (63.9%)	6.39	
Service Charges on all third-party invoices:	Invoice 80-189	774.78 (63.9%)	495.08	
	Invoice 80-221	45.32 (63.9%)	28.96	
	Invoice 80-253	24.83 (63.9%)	<u>15.87</u>	723.80

TRAVEL EXPENSES

Invoice 80-189	\$288.65 (63.9%)	184.45	
Invoice 80-221	187.61 (63.9%)	119.88	
Invoice 80-253	49.55 (63.9%)	<u>31.66</u>	335.99

OFFICE

Report preparation, data plotting		1,160.00	
Drafting		453.00	
Photocopying, reproductions		211.25	
Secretarial		<u>50.00</u>	1,874.25

GRAND TOTAL			<u>\$ 15,718.16</u>
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REFERENCES

Roots, E.F. (1954): Geology and Mineral Deposits of Aiken Lake Map-Area,  
British Columbia; G.S.C. Memoir 274.



APPENDIX I

Analytical Techniques



ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

GEOCHEMICAL LABORATORY METHODOLOGY - 1981

SAMPLE PREPARATION

1. Soil samples are dried at 60°C and sieved to -80 mesh.
2. Rock samples are pulverized to -100 mesh.

Geochemical Analysis for Ag\*, Bi\*, Cd\*, Co, Cu, Fe, Mn, Mo, Ni, Pb, Sb\*, V, Zn

0.5 gram samples are digested hot dilute aqua regia in a boiling water bath and diluted to 10 ml with demineralized water.

All the above elements are determined in the acid solution by Atomic Absorption.

\* demotes background correction.

Geochemical Analysis for Au

10.0 gram samples that have been ignited overnight at 600°C are digested with hot dilute aqua regia, and the clear solution obtained is extracted with Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction ( Detection Limit = 5 ppb direct AA and 1 ppb graphite AA. )

Geochemical Analysis for Au, Pd, Pt, Rh

10.0 - 30.0 gram samples are subjected to Fire assay preconcentration techniques to produce silver beads.

The silver beads are dissolved and Au, Pd, Pt, and Rh are determined in the solution by Atomic Absorption.

Geochemical Analysis for As

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml.

As is determined in the solution by Graphite Furnace Atomic Absorption.



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Geochemical Analysis of Hg

Digestion

A .50 gram sample is digested with aqua regia and diluted with 20% HCl.

Determination

Hg in the solution is determined by cold vapour AA using F & J Scientific Hg assembly. An aliquot is added to stannous chloride-hydrochloric acid solution. The reduced Hg is swept out of the solution and passed into the Hg cell where it determined by AA.

Oxalic Acid Leach of Rock, Soil & Silt Samples

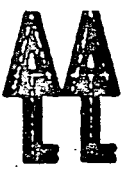
A .50 gram sample is digested hot with 10 mls 5% oxalic acid solution. The oxalic acid will dissolve Fe and Mn from their oxidized M - 1 fraction (but not from magnetite & ilmenite) limonites and clays. The following metals are analysed by atomic absorption : Cu, Zn, Pb, Ni, Mo, Fe & Mn.

Cold HCl Acid Extraction

A .50 gram sample is leached with 10 ml 5% HCl solution at room temperature for 2 hours with occasional shaking. Copper is dissolved from the organic and surface layers of clay fractions.

EDTA Extraction

A .50 gram sample is leached at room temperature for 4 hours with 10 mls of 2.5% EDTA solution.



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Geochemical Analysis for Barium

0.1 gram samples are digested with hot NaOH and EDTA solution.

Ba is determined in the solution by Atomic Absorption.

Geochemical Analysis for Uranium

0.5 gram samples are digested with hot aqua regia and diluted to 10 ml.

Aliquots of the acid extract are solvent extracted using a salting agent and aliquots of the solvent extract are fused with NaF,  $K_2CO_3$  and  $Na_2CO_3$  flux in a platinum dish.

The fluorescence of the pellet is determined on the Jarrel Ash Fluorometer.

Geochemical Analysis for Tungsten

1.0 gram samples are fused with KCl,  $KNO_3$  and  $Na_2CO_3$  flux in a test tube, and the fusions are leached with 10 ml water. W is in the solution determined by ICP with a detection of 1 ppm.

Geochemical Analysis for Fluorine

0.25 gram samples are fused with sodium hydroxide and leached with 10 ml water.

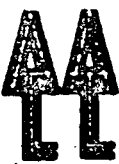
The solution is neutralized, buffered, adjusted to pH 7.8 and diluted to 100 ml.

Fluorine is determined by Specific Ion Electrode using an Orion Model 404 meter.

Geochemical Analysis for Tin

1.0 gram samples are fused with ammonium iodide in a test tube. The sublimed iodine is leached with dilute hydrochloric acid.

The solution is extracted with MIBK and tin is determined in the extract by Atomic Absorption.



**ACME ANALYTICAL LABORATORIES LTD.**

**Assaying & Trace Analysis**

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

Large increases in demands from our clients in the mineral exploration industry for our analytical services in 1980 have prompted us to expand these services again in 1981. The acquisition of more space, equipment, personnel and technology will result in the expediting of sample results.

Our prices continue to be highly competitive despite inflationary pressures and our turnaround time is unmatched. Expansion in our laboratory since 1980 includes.

SPACE

Total laboratory, sample preparation and sample storage has been expanded to 12,000 square feet.

EQUIPMENT

1. ICP system has been upgraded.
2. AA spectrophotometers have been increased to 5.
3. Sample preparation, weighing and dissolution facilities have been increased.

TECHNOLOGY

1. Fire assay laboratory for Ag, Au, Pt, Pd has been installed.
2. ICP multi element packages for water, geochem and assay programs have been developed.
3. Lower detection limits for some elements have been achieved by graphite furnace AA.



**ACME ANALYTICAL LABORATORIES LTD.**

**Assaying & Trace Analysis**

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

Technical Achievements

1. Background corrected atomic absorption analysis of Ag and Au since 1971.
2. Best proven precision, accuracy and price for MoS<sub>2</sub> assays in North America.
3. Pioneered geochemical analysis by ICP at or to better detection limits than AA, including Ag, As, U, Th and W.

Proven Performance

Our logistical and technical performance for our clients has been demonstrated on the Gambier, Capoose Lake, Trout Lake, Cirque, Minago River and other major projects.



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Multi Element Analysis by ICP

Digestion of Sample

0.5 gram samples are digested with hot aqua regia for one hour and the sample is diluted to 10 ml. The diluted sample is aspirated by ICP and the analytical results are printed by Telex, either in percent or ppm as shown.

Please Note : This digestion is partial for Al, Ca, La, Mg, P  
Ti, W and very little Ba is dissolved.

Report Format

HO/22N 3850W  
EGC

BURN # 1 GE16 15:46 3FEB1981

IS  
1357

MO	CU	PB	ZN	AG	NI	CO	MN	FE%	AS
3.92	41.5	9.00	136	.332	15.3	5.70	312	3.167	5.73
U	IS	TH	IS	CD	SB	BI	V	CA%	P%
4.11	.371	.424	1073	.960	1.94	4.51	52.7	1.107	.206
LA	IN	MG%	BA%	TI%	B	AL%	IS	IS	W
22.1	3.50	.2589	.0184	.0014	-.05	1.720	0	3.06	.276

\*O/M1  
EGC

BURN # 1 GE16 15:48 3FEB1981

1358

.563	29.3	34.6	171	.154	33.4	11.5	794	2.536	8.77
3.57	.044	2.79	765	1.08	.635	4.25	54.8	.6452	.109
6.42	2.88	.6008	.0252	.0753	-.37	1.944	0	2.32	-.61

Code :

HO, \*O, EGC  
/22N 3850 W  
/M1  
15:46 3FEB1981  
BURN # 1 GE16  
IS

Computer Intructions.  
Sample Number.  
ACME Geochem standard for quality control.  
Time and Date of Analysis.  
Geochem Computer Program.  
Internal Standard.



# ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B.C. V6A 1R6

Telephone : 253 - 3158

## Interpretation of Results

Standard M-1 is a certified geochem standard used to monitor the results. M-1 has the following analysis.

1.	Mo	:	in ppm	M1	2.	ppm
2.	Cu	:	in ppm	M1	28.	ppm
3.	Pb	:	in ppm	M1	38.	ppm
4.	Zn	:	in ppm	M1	180.	ppm
5.	Ag	:	in ppm	M1	0.3	ppm
6.	Ni	:	in ppm	M1	32.	ppm
7.	Co	:	in ppm	M1	12.	ppm
8.	Mn	:	in ppm	M1	800.	ppm
9.	Fe	:	in %	M1	2.5	%
10.	As	:	in ppm	M1	8.	ppm
11.	U	:	in ppm	M1	3.	ppm
12.	IS	:	Internal Standard.			
13.	Th	:	in ppm	M1	3.	ppm
14.	IS	:	Internal Standard.			
15.	Cd	:	in ppm	M1	2.	ppm
16.	Sb	:	in ppm	M1	3.	ppm
17.	Bi	:	in ppm	M1	2.	ppm
18.	V	:	in ppm	M1	54.	ppm
19.	Ca	:	in %	M1	0.62	%
20.	P	:	in %	M1	0.11	%
21.	La	:	in ppm	M1	8.	ppm
22.	In	:	in ppm	M1	2.	ppm
23.	Mg	:	in %	M1	0.67	%
24.	Ba	:	in %	M1	0.023	%
25.	Ti	:	in %	M1	0.07	%
26.	B	:	in ppm	M1	12.	ppm
27.	Al	:	in %	M1	1.9	%
28.	IS	:	Internal Standard.			
29.	IS	:	Internal Standard.			
30.	W	:	in ppm	M1	1.	ppm

## Notes:

1. Zinc over 5000 ppm interferes on W channel.
2. Iron over 1. % interferes on In and Sb channel.

## Monitoring of Results:

If analysis of standard M-1 is different than the certification, then compensate (add or subtract) samples appropriately.

## Standardization:

Complete set of USGS standards, Canadian Certified Reference Materials and 72 specpure metals from Johnson Matthey.



ACME ANALYTICAL LABORATORIES LTD.

852 E HASTINGS ST. VANCOUVER, B.C. V6A 9R6  
(604 ) 253-3158 TELEX 04-53124

ICP GEOCHEMICAL ANALYSES  
=====

A .500 GRAM OF SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 NITRIC ACID TO HYDROCHLORIC ACID TO WATER AT 90 DEG. C FOR 1 HOUR. THE SAMPLE IS DILUTED WITH WATER TO 10.0 ML. THE RESULTS ARE REPORTED IN PPM EXCEPT FOR : FE, CA, P, MG, BA, AND AL WHICH IS IN PERCENT. THIS LEACH IS PARTIAL FOR: CA, P, MG, AL, TI, LA, AND W. VERY LITTLE BA IS DISSOLVED. IS = INTERNAL STANDARD.

\*  
\*HO  
\* 0/GRX - 1 USGS (10X DILUTED)  
EGC

BURN #	1	GE16	57:24							
	IS									
	1361									
	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
	2.13	121	63.5	76.9	3.27	3.36	.622	76.9	2.640	46.8
	U	IS	TH	IS	CD	SB	BI	V	CA	P
	4.17	1.47	.517	262	.199	10.2	146	8.19	.0967	.010
	LA	IN	MG	BA	TI	B	AL	IS	IS	W
	-2.1	-1.3	.0149	.0104	.0008	75.7	.0538	0	.915	22.0

\*0/GRX - 2 USGS  
EGC

BURN #	1	GE16	57:25							
	IS									
	1361									
	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
	.520	76.8	514	449	17.5	12.6	5.75	635	1.582	22.0
	U	IS	TH	IS	CD	SB	BI	V	CA	P
	.685	1.41	6.45	424	3.07	27.7	1.84	33.1	.6112	.059
	LA	IN	MG	BA	TI	B	AL	IS	IS	W
	16.4	.373	.3785	.1068	.0769	60.3	2.819	0	3.59	.973

ACME ANALYTICAL LABORATORIES LTD.  
 253 E. HASTINGS ST. VANCOUVER BC V6A-1R6  
 (604) 253-3158 TELEX 04-53124

ICP ASSAY ANALYSIS

=====

DIGESTION: 1 GRAM AQUA REGIA  
 FINAL VOLUME: 100 ML  
 DETERMINATION: DIRECT READING ICP EMISSION SPECTROMETER  
 RESULTS: IN PERCENT  
 W IS SUBJECT TO ZN INTERFERENCES

\*

\*

\*HO/CANADIAN CERTIFIED REFERENCE MATERIALS PROJECT /RADIOMETRIC DH-1  
 EGC

BURN # 1 AY16 15:16 6MARCH81

IS	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
1365	.0008	.0108	.0692	.0075	.0004	.0055	.0092	.0022	6.155	.0044
	U	IS	TH	IS	CD	SB	BI	V	CA	P
	.1773	.0033	.1013	-.112	.0001	.0005	.0028	.0031	.0466	.0909
	LA	IN	MG	BA	TI	B	AL	IS	IS	W
	.0738	-.006	.0208	.0017	.0363	-.002	.2936	.0000	.0040	.0002

\*

\*

\*O/CANADIAN CERTIFIED REFERENCE MATERIALS PROJECT / NI, CU, CO. SU-1  
 EGC

BURN # 1 AY16 15:07 6MARCH81

IS	MO	CU	PB	ZN	AG	NI	CO	MN	FE	AS
1365	.0001	.8737	.0213	.0304	.0003	1.512	.0658	.0584	21.11	.0563
	U	IS	TH	IS	CD	SB	BI	V	CA	P
	-.000	.0050	.0004	.1622	.0002	-.000	.0022	.0127	1.586	.0679
	LA	IN	MG	BA	TI	B	AL	IS	IS	W
	.0005	.0099	1.837	.0046	.0975	-.011	3.113	.0000	.0011	-.001

\*

APPENDIX II

Geochemical Analyses



To: Golden Rule Resources,

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6

phone: 253 - 3158

*Potaris Claims  
Chappelle Proj.*

File No. 81-0028

Type of Samples Soil

### GEOCHEMICAL ASSAY CERTIFICATE

Disposition

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au	
11E 16+25 N	142	17	104	1.7	37	5.5	80	2	.005	1
16+50	130	15	110	.9	41	5.9	23	3	.005	2
16+75	238	16	81	1.4	50	8.1	32	3	.005	3
17+00	77	14	57	.3	38	5.8	35	1	.005	4
17+25	114	11	69	.1	47	9.8	13	6	.005	5
17+50	91	10	62	.4	23	7.0	22	2	.005	6
17+75	76	17	57	.4	172	5.3	26	1	.005	7
18+00	50	17	91	.4	22	4.0	16	1	.005	8
18+25	17	12	76	.2	12	3.2	10	1	.005	9
18+50	21	13	76	.2	14	4.3	13	1	.045	10
18+75	20	11	62	.4	13	3.5	11	1	.005	11
19+00	12	11	50	.4	8	2.9	11	1	.005	12
19+25	34	9	73	.2	17	4.4	13	1	.005	13
19+50	52	14	107	.2	24	5.3	17	1	.005	14
19+75	23	14	63	.2	9	4.2	13	1	.005	15
20+00	40	12	111	.3	24	4.4	15	1	.005	16
20+25	49	13	67	.3	25	3.8	15	1	.015	17
20+50	27	11	77	.1	25	3.9	12	1	.005	18
20+75	19	13	60	.1	27	4.0	14	1	.005	19
21+00	49	12	51	.1	35	4.1	17	1	.005	20
21+25	41	13	63	.1	25	5.3	15	1	.005	21
21+50	35	15	94	.1	23	5.7	22	1	.005	22
21+75	66	13	57	.2	30	4.5	19	1	.005	23
11E 22+00 N	15	12	81	.3	16	4.2	10	1	.005	24
										25
12E 16+50 N	150	14	62	.2	37	5.5	13	1	.005	26
16+75	133	13	77	.4	51	7.5	34	3	.005	27
17+00	122	13	135	.1	59	8.9	23	3	.005	28
17+25	77	11	77	.2	53	6.3	26	2	.005	29
17+50	30	11	68	.4	32	3.7	16	1	.005	30
18+00	20	11	86	.3	21	4.3	15	1	.450	31
18+25	26	12	86	.1	17	4.7	17	1	.005	32
18+50	46	13	93	.2	28	4.2	16	2	.005	33
18+75	23	12	79	.4	15	3.7	10	1	.005	34
19+00	47	10	64	.1	34	3.8	10	1	.005	35
19+25	62	14	76	.1	24	4.3	13	1	.005	36
19+50	41	14	80	.3	22	4.6	17	1	.065	37
12E 19+75 N	32	12	64	.1	19	5.1	17	1	.020	38
										39
										40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

*DKO*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6

phone: 253 - 3158

File No. 81-0028

Type of Samples Soil

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
12E 20+00 N	28	9	49	.2	25	2.5	22	1	.035		1
20+25	71	12	56	.1	32	4.4	18	2	.005		2
20+50	38	10	78	.1	22	4.9	19	1	.005		3
20+75	50	13	79	.1	37	5.8	20	1	.005		4
21+00	30	14	62	.1	22	5.6	19	1	.005		5
21+25	46	10	65	.2	23	4.2	14	1	.005		6
21+50	24	12	97	.4	21	4.7	15	1	.005		7
21+75	41	10	53	.1	34	3.6	17	1	.005		8
12E 22+00 N	34	12	55	.1	20	5.3	18	1	.005		9
											10
13E 16+75 N	129	12	77	.1	58	5.4	35	1	.005		11
17+00	137	17	114	.4	54	6.0	43	2	.005		12
17+25	108	12	75	.2	55	6.3	31	1	.005		13
17+50	172	13	54	.1	33	4.3	23	1	.005		14
17+75	34	11	62	.1	19	4.5	20	1	.005		15
18+00	60	13	83	.2	33	4.6	21	1	.005		16
18+25	145	11	60	.1	27	4.3	22	1	.005		17
18+50	15	11	49	.2	9	3.0	13	1	.005		18
18+75	74	15	136	.1	51	5.7	22	1	.005		19
19+00	59	14	128	.1	31	6.0	25	2	.005		20
19+25	36	12	112	.5	20	4.4	17	1	.005		21
19+50	14	10	42	.2	12	3.4	13	1	.005		22
19+75	28	11	75	.1	16	4.9	16	1	.005		23
20+50	34	8	69	.1	20	3.5	12	1	.005		24
20+75	72	9	53	.1	20	4.1	15	1	.005		25
21+00	25	10	61	.2	14	3.9	12	1	.005		26
21+25	44	11	62	.2	22	3.8	11	1	.005		27
21+50	52	13	112	.1	31	4.8	18	1	.005		28
21+75	55	11	70	.3	31	4.2	18	3	.005		29
13E 22+00 N	80	13	108	.1	41	5.9	24	1	.005		30
											31
14E 16+50 N	122	12	86	.5	45	4.4	41	2	.005		32
16+75	79	8	74	.2	39	3.9	27	1	.005		33
17+00	129	15	70	1.2	32	5.3	80	1	.005		34
17+25	176	21	99	14.7	30	8.8	3267	7	.270		35
17+50	86	14	71	1.4	34	5.1	290	2	.005		36
17+75	114	15	81	.9	27	4.9	42	2	.005		37
14E 18+00 N	67	12	63	.2	36	4.5	22	1	.005		38
											39
											40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6

phone: 253 - 3158

File No. 81-0028

Type of Samples Soil

Disposition

# GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
14E 18+25 N	14	12	69	.2	14	3.9	17	1	.005		1
18+50	39	15	111	.1	30	5.1	24	3	.005		2
18+75	66	11	62	.5	19	3.9	22	2	.005		3
19+00	44	13	88	.2	24	4.3	20	2	.005		4
19+25	52	14	96	.4	18	4.0	17	1	.005		5
19+50	48	14	78	.3	17	4.3	19	1	.005		6
19+75	33	12	102	.2	15	4.2	15	1	.005		7
20+00	10	12	47	.3	9	3.6	16	1	.005		8
20+25	36	10	85	.5	18	4.5	18	1	.005		9
20+50	153	12	75	.1	31	3.9	34	2	.005		10
20+75	22	11	78	.2	19	3.3	13	1	.005		11
21+00	27	12	83	.3	21	4.2	16	1	.005		12
21+25	61	12	71	.6	23	3.9	17	1	.005		13
21+50	32	15	101	.2	16	4.9	19	1	.005		14
21+75	19	12	62	.2	14	4.4	18	1	.020		15
14E 22+00 N	44	13	71	.5	17	4.0	18	1	.005		16
											17
15E 17+00 N	73	11	76	.3	32	3.8	23	1	.005		18
17+25	154	42	177	28.6	70	8.4	7346	6	.750		19
17+50	133	13	75	.4	215	4.8	171	1	.005		20
17+75	155	71	266	10.9	70	6.3	552	3	.170		21
18+00	193	21	93	5.2	24	6.1	267	2	.105		22
18+25	89	14	88	.8	32	4.3	37	1	.005		23
18+50	104	11	80	.2	30	4.2	22	1	.005		24
18+75	74	11	68	.4	29	3.5	23	1	.005		25
19+00	66	11	85	.3	31	4.0	20	2	.005		26
19+25	97	9	47	.3	30	3.4	17	1	.005		27
19+50	87	12	51	.2	34	3.8	16	1	.005		28
19+75	135	9	49	.2	29	3.3	15	1	.005		29
20+00	79	10	47	.2	26	3.6	17	1	.005		30
20+25	56	10	67	.1	33	3.9	20	1	.005		31
20+50	79	10	67	.3	31	3.8	21	1	.020		32
20+75	102	10	55	.3	31	3.3	23	1	.005		33
21+00	57	10	47	.5	18	3.9	18	1	.015		34
21+25	43	9	75	.3	17	4.4	15	1	.005		35
21+50	50	10	42	.8	16	3.4	13	1	.005		36
21+75	72	11	92	.1	35	4.0	20	1	.005		37
15E 22+00 N	70	11	94	.2	35	4.3	23	1	.005		38
											39
											40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

*DKG*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6  
phone:253 - 3158

File No. 81-0028

Type of Samples Soil

### GEOCHEMICAL ASSAY CERTIFICATE

Disposition

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
16E 17+25 N	67	12	84	.2	29	3.7	25	1	.005		1
17+50	127	14	86	.5	24	5.6	37	2	.005		2
17+75	142	17	81	1.5	31	7.2	73	4	.030		3
18+00	91	11	53	.3	29	3.5	26	1	.005		4
18+25	108	13	84	.6	32	4.1	57	1	.020		5
18+50	90	10	67	.3	29	3.8	21	1	.005		6
18+75	151	11	61	.2	29	3.8	23	1	.025		7
19+00	157	12	50	.3	29	3.6	19	1	.005		8
19+25	133	10	54	.3	26	3.8	19	1	.005		9
19+50	190	12	55	.2	29	4.0	21	1	.005		10
19+75	54	17	218	.3	37	5.1	26	3	.005		11
20+00	39	12	93	.1	22	4.7	23	1	.005		12
20+25	14	11	74	.3	12	3.4	17	1	.005		13
20+50	63	11	76	.1	26	4.2	18	1	.005		14
20+75	N.S.										15
21+00	70	10	76	.5	26	3.6	18	1	.005		16
21+25	149	11	54	.5	22	3.0	18	1	.005		17
21+50	25	12	76	.2	20	4.2	19	1	.005		18
21+75	25	11	85	.1	19	4.4	21	1	.010		19
16E 22+00 N	51	11	72	.1	31	3.9	18	1	.005		20
38E 7+50 N	105	12	115	.2	42	4.5	44	1	.005		22
7+75	72	17	270	.9	39	5.0	28	1	.005		23
8+00	65	19	401	.8	39	6.0	38	1	.005		24
8+25	78	17	173	.5	38	6.7	49	2	.005		25
8+50	91	17	200	1.1	34	5.7	36	2	.005		26
8+75	112	14	281	.6	41	5.6	37	1	.005		27
9+00	72	16	109	.4	33	5.4	41	2	.005		28
9+25	90	14	184	.4	41	5.0	38	1	.005		29
9+50	131	18	154	.4	46	5.5	41	1	.005		30
9+75	92	18	152	.5	44	5.6	35	1	.005		31
10+00	90	15	110	1.4	40	4.6	43	1	.005		32
10+25	67	15	188	.6	47	5.1	28	1	.005		33
10+50	62	16	173	1.1	36	5.3	28	1	.005		34
10+75	70	14	164	.7	40	4.9	29	1	.005		35
11+00	65	17	185	.4	47	4.9	47	2	.005		36
11+25	64	13	142	.3	32	5.0	42	1	.010		37
38E 11+50 N	53	12	132	.3	31	5.1	48	1	.005		38
											39
											40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER *SLD*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



File No. 81-0028  
Type of Samples Soil  
Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
38E 11+75 N	59	14	144	.3	28	4.9	41	1	.005		1
12+00	57	14	153	.5	31	4.8	43	2	.005		2
12+25	53	14	132	.2	27	5.0	45	1	.005		3
12+50	67	14	126	.5	42	4.8	105	2	.005		4
12+75	44	12	99	.4	26	4.3	37	1	.005		5
13+00	73	18	151	.3	36	6.9	42	3	.005		6
13+25	130	23	273	.7	68	6.9	59	2	.005		7
13+50	66	12	117	.5	39	4.3	56	2	.005		8
13+75	57	13	113	.4	30	5.3	74	1	.005		9
14+00	49	12	112	.3	30	5.0	49	2	.005		10
14+25	165	16	300	.5	31	5.4	14	1	.005		11
14+50	68	21	114	.3	28	4.8	39	3	.005		12
14+75	83	16	79	.1	37	5.1	36	1	.005		13
15+00	102	13	114	.6	41	4.4	65	5	.005		14
15+25	124	14	80	.1	30	5.9	17	1	.005		15
15+50	99	15	92	.4	37	4.2	41	2	.005		16
15+75	130	11	79	.3	19	4.3	24	1	.005		17
16+00	180	13	107	.2	26	5.4	18	1	.005		18
16+25	194	21	155	.9	60	7.3	62	7	.005		19
16+50	57	12	161	.1	37	5.4	91	1	.005		20
16+75	50	13	101	.3	27	5.3	73	2	.005		21
38E 17+00 N	57	14	125	.3	34	4.8	72	3	.005		22
											23
39E 7+25 N	50	15	208	.8	32	5.5	30	3	.005		24
7+50	74	12	168	.4	32	4.6	28	1	.005		25
7+75	68	16	242	.6	56	5.9	32	1	.075		26
8+00	72	15	226	.8	67	5.5	29	2	.005		27
8+25	64	17	353	.8	57	5.8	42	2	.005		28
8+50	61	17	163	1.3	40	5.4	28	2	.005		29
8+75	77	16	273	1.1	50	5.2	32	1	.005		30
9+00	47	11	133	.4	27	3.5	19	1	.005		31
9+25	41	20	190	.3	21	5.1	31	1	.005		32
9+50	108	13	120	.5	47	4.5	27	1	.005		33
9+75	71	17	147	.5	31	4.8	32	1	.005		34
10+00	115	9	50	.2	27	3.2	23	2	.005		35
10+25	56	14	98	.3	25	4.9	33	1	.005		36
10+50	47	10	119	.7	28	4.0	22	1	.005		37
39E 10+75 N	52	10	96	.5	30	3.7	22	1	.005		38
											39
											40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

*OKO*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER





To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6  
phone: 253 - 3158

File No. 81-0028  
Type of Samples Soil  
Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
39E 11+00 N	44	13	95	.3	21	4.2	23	1	.005		1
11+25	31	9	124	.2	18	4.0	23	1	.005		2
11+50	58	13	111	.3	25	4.6	30	2	.005		3
11+75	124	11	81	.3	33	4.0	24	2	.005		4
12+00	38	13	118	.4	21	4.4	28	1	.005		5
12+25	40	15	101	.3	22	4.0	23	1	.005		6
12+50	29	12	66	.2	17	4.4	35	1	.005		7
12+75	25	12	99	.4	15	4.2	23	1	.005		8
13+00	36	12	86	.3	19	4.7	28	1	.005		9
13+25	40	10	71	.5	19	3.9	22	1	.005		10
13+50	85	9	57	.6	24	2.7	17	1	.005		11
13+75	55	10	59	.3	40	4.4	27	1	.005		12
14+00	39	13	98	.4	27	4.5	59	2	.005		13
14+25	62	10	91	.4	35	3.3	55	1	.005		14
14+50	45	9	85	.6	32	2.9	40	1	.005		15
14+75	43	9	39	.4	21	2.7	16	1	.005		16
15+00	60	9	47	.3	29	3.3	19	1	.005		17
15+25	31	8	38	.2	17	3.1	15	1	.005		18
15+50	45	11	55	.3	27	3.5	27	1	.005		19
15+75	23	10	47	.4	18	3.9	21	1	.005		20
16+00	64	11	60	.2	29	3.8	23	1	.005		21
16+25	66	11	60	.2	30	4.4	31	2	.005		22
16+50	34	12	55	.2	22	4.3	27	1	.005		23
16+75	69	4	9	.4	8	.4	3	3	.005		24
17+00	N.S.										25
17+25	151	4	7	1.2	10	.4	4	2	.005		26
39E 17+50 N	46	8	56	.4	29	3.9	31	1	.005		27
											28
40E 6+50 N	43	12	209	.6	26	5.1	28	3	.005		29
6+75	79	11	120	.7	27	4.1	20	1	.005		30
7+00	88	12	158	.5	49	5.9	26	1	.005		31
7+25	64	14	177	.7	60	5.8	21	2	.005		32
7+50	75	14	210	1.6	53	5.4	28	1	.005		33
7+75	43	13	648	1.4	43	4.4	45	4	.005		34
8+00	54	9	214	3.8	21	2.1	10	1	.005		35
8+25	33	15	166	.3	17	5.6	27	2	.005		36
8+50	42	13	270	.4	29	4.8	31	1	.005		37
40E 8+75 N	50	10	129	.5	28	3.7	20	1	.005		38
											39
											40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

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ASSAYER DKO

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B.C. V6A 1R6  
phone: 253 - 3158

File No. 81-0028  
Type of Samples Soil  
Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au	
40E 9+00 N	36	13	120	.1	23	4.4	14	1	.005	1
9+25	60	12	47	.1	18	4.5	13	1	.005	2
9+50	58	11	51	.1	23	3.9	15	1	.005	3
9+75	63	10	55	.3	24	3.6	16	1	.005	4
10+00	64	9	56	.5	32	3.9	21	1	.005	5
10+25	80	11	52	1.2	21	2.9	12	1	.010	6
10+50	36	10	48	.5	22	3.0	14	1	.005	7
10+75	23	9	66	.3	20	3.4	18	1	.005	8
11+00	128	10	40	.7	25	3.2	28	1	.005	9
11+25	44	3	7	.2	8	.3	1	3	.005	10
11+50	89	9	41	.6	21	2.4	18	2	.005	11
11+75	60	2	17	.2	10	.4	3	4	.005	12
12+00	21	2	17	.1	5	.3	1	1	.005	13
12+25	19	2	27	.1	4	.1	1	2	.005	14
12+50	55	2	26	.1	8	.2	1	4	.005	15
12+75	56	9	47	.1	30	3.7	21	1	.005	16
13+00	154	3	9	.6	13	.6	3	6	.005	17
13+25	44	2	22	.1	7	.3	2	4	.005	18
13+50	63	7	16	.9	13	1.5	7	1	.005	19
13+75	43	9	39	.2	26	2.8	15	1	.015	20
14+00	20	8	51	.3	15	2.8	13	1	.005	21
14+25	43	13	68	.2	26	4.9	38	2	.005	22
14+50	32	5	61	.2	21	2.6	12	1	.005	23
14+75	37	8	33	.5	13	2.4	14	1	.005	24
15+00	33	8	58	.3	16	2.9	11	1	.005	25
15+25	44	5	16	.3	10	.7	4	4	.005	26
15+50	60	8	63	.4	24	2.9	17	1	.005	27
15+75	37	10	62	.2	24	4.1	31	1	.005	28
16+00	62	8	43	.2	30	2.7	13	1	.005	29
16+25	250	7	18	2.0	21	1.5	9	1	.005	30
16+50	77	7	17	.8	9	1.1	7	1	.005	31
16+75	235	4	9	1.1	20	.6	3	1	.005	32
17+00	25	9	49	.3	17	3.4	16	1	.005	33
17+25	58	4	5	.3	9	.4	3	2	.005	34
40E 17+50 N	130	4	7	.8	16	1.1	12	1	.005	35
41E 6+25 N	91	13	83	.2	29	5.3	27	1	.005	37
41E 6+50 N	37	12	100	.3	30	5.0	18	1	.005	38
										39
										40

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DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER SKO

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6

phone: 253 - 3158

File No. 81-0028

Type of Samples Soil

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
41E 6+75 N	17	11	159	.2	20	4.7	19	1	.005		1
7+00	20	10	102	.3	23	4.1	17	1	.005		2
7+25	28	11	95	.2	38	4.2	16	1	.005		3
7+50	72	9	43	.2	32	3.1	15	1	.005		4
7+75	26	10	86	.4	18	3.4	15	1	.005		5
8+00	52	11	102	.9	31	4.4	22	1	.005		6
8+25	67	9	92	.3	32	4.2	24	2	.005		7
8+50	22	8	43	.2	16	2.2	10	1	.005		8
8+75	31	11	93	.6	19	4.2	20	1	.045		9
9+00	57	11	67	.3	30	4.7	24	1	.005		10
9+25	196	8	44	3.3	25	2.6	11	1	.005		11
9+50	52	9	68	.2	27	4.4	23	1	.005		12
9+75	16	8	45	.2	11	2.6	10	1	.005		13
10+00	42	8	53	.3	20	2.4	11	1	.005		14
10+25	48	6	44	.2	27	2.7	13	1	.005		15
10+50	72	10	56	.6	26	2.9	19	1	.005		16
10+75	79	3	52	.3	20	1.6	8	3	.005		17
11+00	57	3	10	.2	10	.5	5	3	.005		18
11+25	97	6	12	.7	16	2.4	19	1	.005		19
11+50	88	7	62	.5	22	1.4	7	1	.005		20
11+75	37	8	66	.1	25	3.5	19	1	.005		21
12+00	53	5	44	.2	13	.7	6	2	.005		22
12+25	43	4	12	.8	8	.6	2	2	.005		23
12+50	28	9	98	.2	23	3.9	19	1	.005		24
12+75	110	9	78	.5	39	3.4	24	2	.005		25
13+00	40	7	40	.2	19	2.7	18	1	.005		26
13+25	43	9	40	.3	22	3.0	14	1	.005		27
13+50	48	7	38	.1	27	2.7	14	1	.005		28
13+75	93	10	83	.4	30	3.5	20	1	.005		29
14+00	110	5	22	.3	17	1.1	7	3	.005		30
14+25	51	7	40	.3	28	2.9	18	1	.005		31
14+50	45	9	79	.5	35	3.7	26	1	.005		32
14+75	390	11	92	1.4	25	3.7	38	1	.005		33
41E 15+00 N	108	12	118	.9	34	3.6	19	1	.005		34
											35
41E 15+25 N	38	17	89	.3	31	4.1	28	1	.005		36
15+50	42	13	71	.4	27	4.4	28	7	.005		37
41E 15+75 N	62	5	26	.3	17	1.4	8	1	.005		38
											39
											40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

*JKO*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



File No. 81-0028

Type of Samples Soil

Disposition

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
41E 16+00 N	34	8	40	.3	20	2.5	15	1	.005		1
16+25	43	10	40	.4	20	2.8	15	1	.005		2
16+50	44	8	44	.3	25	3.1	16	1	.005		3
16+75	63	8	39	.5	23	2.5	16	1	.005		4
17+00	54	7	46	.4	23	2.8	15	1	.005		5
17+25	41	11	46	.6	22	2.9	16	1	.005		6
41E 17+50 N	121	7	30	1.6	19	1.8	13	1	.005		7
											8
42E 6+00 N	123	10	94	.2	20	5.9	15	1	.005		9
6+25	45	12	100	.2	31	4.1	19	1	.005		10
6+50	73	11	72	.2	31	3.9	17	1	.005		11
6+75	48	10	131	.4	27	4.2	19	1	.005		12
7+00	53	11	59	.2	34	3.6	19	1	.005		13
7+25	52	10	68	.3	32	3.6	18	1	.005		14
7+50	39	11	97	.4	26	3.7	17	1	.005		15
7+75	41	10	76	.4	24	3.9	19	1	.005		16
8+00	57	8	61	.2	30	3.6	25	1	.005		17
8+25	32	10	66	.3	21	3.7	18	1	.005		18
8+50	50	8	47	.3	25	3.0	18	1	.005		19
8+75	51	9	50	.2	28	3.4	21	1	.005		20
9+00	56	9	67	.3	29	4.5	35	6	.005		21
9+25	39	10	68	.3	20	3.9	36	5	.005		22
9+50	60	9	58	.4	25	2.9	24	4	.005		23
42E 9+75 N	61	7	44	.3	28	2.8	15	1	.010		24
											25
42E 10+75 N	36	10	51	.4	22	3.0	16	1	.005		26
11+75	123	10	79	.4	41	3.6	24	1	.005		27
12+00	76	9	45	.3	37	2.9	15	1	.005		28
12+25	66	11	78	.4	25	3.0	27	1	.005		29
12+50	49	9	89	.4	24	2.8	20	1	.005		30
12+75	54	8	62	.2	23	3.0	23	1	.005		31
13+00	66	11	77	.3	28	3.7	34	1	.010		32
13+25	68	9	65	.6	23	2.7	18	1	.005		33
13+50	27	10	137	.2	24	4.1	22	1	.005		34
13+75	62	7	55	.2	28	2.9	17	1	.005		35
14+00	22	8	62	.2	17	3.3	16	1	.005		36
14+25	72	9	85	.4	19	2.5	14	1	.005		37
42E 14+50 N	25	8	51	.2	19	3.1	16	1	.005		38
											39
											40

All reports are the confidential property of clients  
All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER *DL*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6  
phone: 253 - 3158

File No. 81-0028

Type of Samples Soil

### GEOCHEMICAL ASSAY CERTIFICATE

Disposition

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
42E 16+25 N	35	8	57	.5	21	2.7	15	1	.005		1
16+50	101	8	47	.8	24	2.6	16	1	.005		2
16+75	48	9	82	.3	24	3.2	23	1	.005		3
17+00	40	9	53	.2	28	3.5	22	1	.005		4
42E 17+18 N	61	8	48	.7	23	2.8	14	1	.005		5
											6
43E 1+75 N	108	14	188	.7	54	5.9	40	2	.005		7
2+00	117	13	204	.8	65	5.8	28	1	.005		8
2+25	43	18	217	.8	33	7.0	42	2	.005		9
2+50	45	19	303	.6	36	7.4	24	2	.005		10
2+75	35	15	153	.2	27	7.3	36	3	.005		11
3+00	100	16	114	.1	47	8.4	27	3	.005		12
3+25	46	14	138	.2	29	6.2	20	1	.005		13
3+50	87	13	226	.6	38	4.3	19	1	.005		14
3+75	55	9	58	.2	25	3.0	15	1	.010		15
4+00	40	8	71	.2	21	2.8	11	1	.005		16
4+25	61	12	93	.2	41	4.2	24	1	.005		17
4+50	75	10	249	.5	26	3.0	13	1	.005		18
4+75	41	14	325	.7	30	5.4	25	1	.005		19
5+00	28	12	380	.2	24	5.1	20	1	.005		20
5+25	N.S.										21
5+50	88	14	156	.5	35	5.6	16	1	.005		22
5+75	57	11	61	.2	33	3.7	18	1	.005		23
6+00	68	8	52	.4	22	2.3	9	1	.005		24
6+25	29	13	106	.2	19	4.7	17	1	.005		25
6+50	28	11	76	.2	19	4.1	13	1	.005		26
6+75	35	10	111	.2	23	3.8	17	1	.005		27
7+00	36	11	119	.3	29	4.1	19	1	.005		28
7+25	21	8	113	.3	19	2.9	16	1	.005		29
7+50	41	9	82	.3	27	3.6	16	1	.005		30
7+75	42	11	54	.2	22	3.9	19	1	.005		31
8+00	64	11	101	.3	24	6.0	35	1	.005		32
8+25	40	8	44	.3	26	3.0	18	1	.005		33
8+50	42	11	116	.4	26	4.1	14	1	.005		34
8+75	29	5	10	.1	5	2.7	8	1	.005		35
9+00	57	6	14	.3	12	2.8	14	1	.005		36
9+25	31	3	35	.1	6	.2	3	4	.005	P	37
43E 9+50 N	7	3	6	.1	2	.1	2	1	.005	P	38
											39
											40

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All results are in PPM.

DIGESTION:.....

DETERMINATION:.....

\* P = -20 mesh and pulverized.

DATE SAMPLES RECEIVED Jan. 15, 1981

DATE REPORTS MAILED Feb. 6, 1981

ASSAYER

*JKO*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B. C. V6A 1R6  
phone: 253 - 3158

81-0028

File No. \_\_\_\_\_  
Type of Samples Soil  
Disposition \_\_\_\_\_

### GEOCHEMICAL ASSAY CERTIFICATE

(P)

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au		
43E 9+75 N	76	12	68	.5	28	3.2	22	1	.005		1
10+25	115	10	10	.6	29	4.1	30	1	.005		2
10+50	42	7	46	.2	26	3.0	16	1	.005		3
10+75	9	7	68	.1	12	2.0	10	1	.005		4
11+00	39	8	58	.3	29	3.1	20	1	.005		5
11+25	39	8	51	.1	28	3.0	17	1	.005		6
11+50	49	9	57	.3	26	3.2	16	1	.005		7
11+75	22	9	114	.3	19	4.6	22	1	.005		8
12+00	34	8	61	.2	23	3.3	15	1	.005		9
12+25	616	5	19	1.9	40	1.0	7	2	.005		10
12+50	141	8	57	.7	26	2.9	21	1	.005		11
12+75	131	8	103	1.0	26	3.0	24	1	.005		12
13+00	130	7	51	.7	26	2.1	17	1	.005		13
13+25	35	7	46	.4	22	2.8	14	1	.005		14
13+50	37	8	56	.3	21	2.8	14	1	.005		15
13+75	27	10	72	.3	19	3.6	19	1	.005		16
14+00	44	11	85	.5	23	3.5	23	1	.005		17
14+25	63	11	115	.5	27	4.3	45	1	.005		18
14+50	66	11	93	.6	27	2.3	17	1	.005		19
14+75	74	10	68	.7	30	3.8	45	1	.005		20
15+00	36	8	65	.3	21	3.2	24	1	.005		21
15+25	39	9	63	.3	25	3.0	22	1	.005		22
15+50	69	13	139	.4	29	3.5	51	1	.005		23
15+75	49	10	112	.4	28	3.5	32	1	.005		24
16+00	40	10	90	.4	25	3.6	32	1	.005		25
16+25	30	9	70	.3	23	3.7	21	1	.005		26
16+50	33	10	60	.5	26	3.4	21	1	.005		27
16+75	31	10	55	.3	27	3.5	19	1	.005		28
17+00	49	8	56	.4	25	3.4	24	1	.005		29
17+25	59	6	12	.7	16	4.1	24	1	.005		30
43E 17+50 N	37	8	61	.6	25	3.3	17	1	.005		31
											32
											33
											34
											35
											36
											37
											38
											39
											40

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All results are in PPM.  
DIGESTION:.....  
DETERMINATION:.....

DATE SAMPLES RECEIVED Jan. 15, 1981  
DATE REPORTS MAILED Feb. 6, 1981  
ASSAYER JKO

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



To: Golden Rule Resources Ltd.,  
 150 - 1300, 8th S.W.  
 Calgary, Alberta,  
 T2R 1P2

Assaying & Trace Analysis  
 852 E. Hastings St., Vancouver, B. C. V6A 1R6  
 phone: 253 - 3158

File No. 81-0092  
 Type of Samples Rock  
 Disposition \_\_\_\_\_

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE No.	Cu	Pb	Zn	Ag	Ni	Fe%	As	Sb	Au	Mo	W	
P 3	111	185	718	2.0	19	6.0	178	7	.035	1.75	-2.7	1
4	54	71	191	.9	14	1.9	32	3	.005	.938	-.70	2
5	63	45	140	.9	16	6.6	99	5	.075	2.19	-.44	3
6	230	22	73	1.5	1	3.5	30	6	.095	1.36	-.39	4
7	201	25	48	1.6	2	4.0	18	7	.020	2.15	-.30	5
8	475	23	37	.7	9	8.1	22	6	.005	3.35	2.99	6
9	1489	17	30	.6	25	23.6	61	43	.005	15.1	13.9	7
10	1353	15	19	.4	24	19.0	44	31	.005	10.5	7.29	8
11	950	15	27	.7	49	13.9	36	15	.005	11.9	19.28	9
12	712	17	25	.2	71	14.0	36	12	.005	11.0	1.32	10
13	191	12	25	.4	15	4.5	15	3	.005	4.89	.575	11
14	28	13	75	.3	11	3.3	12	1	.005	1.755	1.343	12
15	78	14	64	.8	16	3.9	14	1	.005	.117	.104	13
P 16	674	30	93	1.5	13	20.9	50	36	+5.500	13.2	.623	14
												15
LC 1	133	15	76	.3	15	4.7	22	1	.150	.768	-.57	16
2	89	13	85	.2	7	5.4	19	1	.250	.815	-.41	17
3	93	16	286	.6	17	6.2	26	2	.005	1.169	-1.2	18
4	64	14	285	1.1	40	5.0	31	1	.005	.887	-2.4	19
5	76	16	79	.3	12	4.3	15	1	.005	.195	-.75	20
6	98	12	81	.4	11	4.5	18	1	.005	.465	-.14	21
7	25	11	65	.2	6	2.3	10	1	.005	.181	-.16	22
8	73	10	68	.4	11	4.6	26	1	.005	.888	-.10	23
9	115	8	41	.2	51	2.8	11	1	.005	.296	-.86	24
10	75	9	47	.3	45	2.7	16	1	.005	.089	-.33	25
11	94	9	47	.2	29	3.6	9	1	.005	.503	-.18	26
12	19	11	42	.2	96	3.2	7	1	.005	.424	-.14	27
13	38	4	23	.1	10	1.4	5	1	.005	-.03	-.37	28
14	112	12	327	.6	14	4.3	17	1	.005	.943	-2.4	29
15	79	14	73	.3	15	5.1	24	1	.005	1.57	.318	30
16	89	11	73	.3	18	4.3	15	1	.005	.857	-.30	31
17	92	9	61	.2	11	3.6	14	1	.005	.648	-.33	32
18	92	10	58	.2	12	4.1	16	1	.005	.552	-.53	33
19	83	9	56	.2	37	4.1	16	1	.005	.462	-.26	34
20	102	11	70	.3	22	4.3	18	1	.005	.928	-.26	35
21	101	11	78	.2	27	4.1	11	2	.005	.735	-.31	36
22	72	11	59	.2	9	3.7	13	1	.005	.752	.302	37
LC 23	24	11	65	.3	5	2.2	9	1	.005	1.56	-.29	38
												39
												40

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 All results are in PPM.  
 DIGESTION:.....  
 DETERMINATION:.....

DATE SAMPLES RECEIVED Feb. 5, 1981  
 DATE REPORTS MAILED Feb. 13, 1981  
 ASSAYER DL

DEAN TOYE, B.Sc.  
 CHIEF CHEMIST  
 CERTIFIED B.C. ASSAYER



To: Golden Rule Resources,

ACME ANALYTICAL LABORATORIES LTD.

Assaying & Trace Analysis

852 E. Hastings St., Vancouver, B. C. V6A 1R6

Telephone: 253 - 3158

File No. 81-0092

Type of Samples Rock

Disposition

# ASSAY CERTIFICATE

No.	Sample	Cu%	Pb%	Zn%	Ag oz/ton	Au oz/ton	Sb%	No.
1	Th - 1	.41	.01	.01	.07	.008	.001	1
2	2	.33	.01	.01	.02	.342	.001	2
3	3	.65	.01	.01	.10	.124	.001	3
4	4	.07	.01	.01	.01	.004	.001	4
5	Th - 5	.16	.01	.01	.01	.034	.001	5
6								6
7	P - 1	.01	.01	.01	.09	.001	.001	7
8	P - 2	.01	.01	.01	.01	.001	.001	8
9								9
10	J - 1	.01	.01	.02	.05	.005	.001	10
11	2	.01	.01	.01	.01	.024	.001	11
12	3	.01	.01	.01	.02	.022	.001	12
13	4	.01	.01	.01	.07	.001	.001	13
14	J - 5	.01	.01	.01	.01	.013	.001	14
15								15
16	JPP- 1	.01	.01	.01	.01	.001	.001	16
17	2	.01	.01	.01	.01	.001	.001	17
18	3	.01	.01	.01	.01	.001	.001	18
19	4	.02	.01	.01	.01	.001	.001	19
20	JPP- 5	.01	.01	.01	.01	.001	.001	20

All reports are the confidential property of clients.

DATE SAMPLES RECEIVED Feb. 5, 1981

DATE REPORTS MAILED Feb. 13, 1981

ASSAYER *[Signature]*

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER





To: Golden Rule Resources,

PACIFIC ANALYTICAL LABORATORIES LTD.  
Assaying & Trace Analysis  
852 E. Hastings St., Vancouver, B.C. V6A 1R6  
Telephone: 253-3158

81-0092

File No. \_\_\_\_\_

Type of Samples Rock

Disposition \_\_\_\_\_

# ASSAY CERTIFICATE

No.	Sample	Cu%	Pb%	Zn%	Ag oz/ton	Au oz/ton	Sb%	No.
1	JRP - 6	.01	.01	.01	.01	.001	.001	1
2	JRP - 7	.12	.01	.01	.01	.001	.001	2
3	SUNDOG JR-1	.01	.01	.01	.01	.001	.001	3
4	SUNDOG JR-2	.01	.01	.01	.01	.001	.001	4
5								5
6	F 43	.01	.01	.01	.01	.001	.001	6
7	LCF 1	.10	.01	.01	.57	.065	.001	7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20

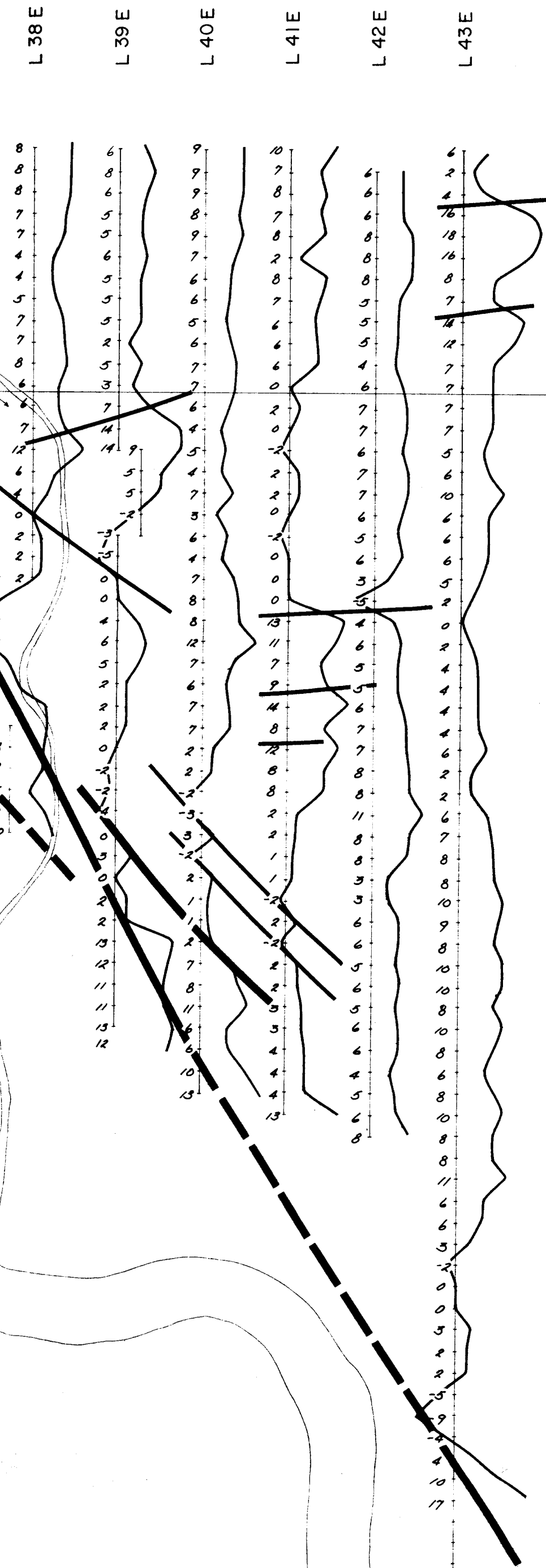
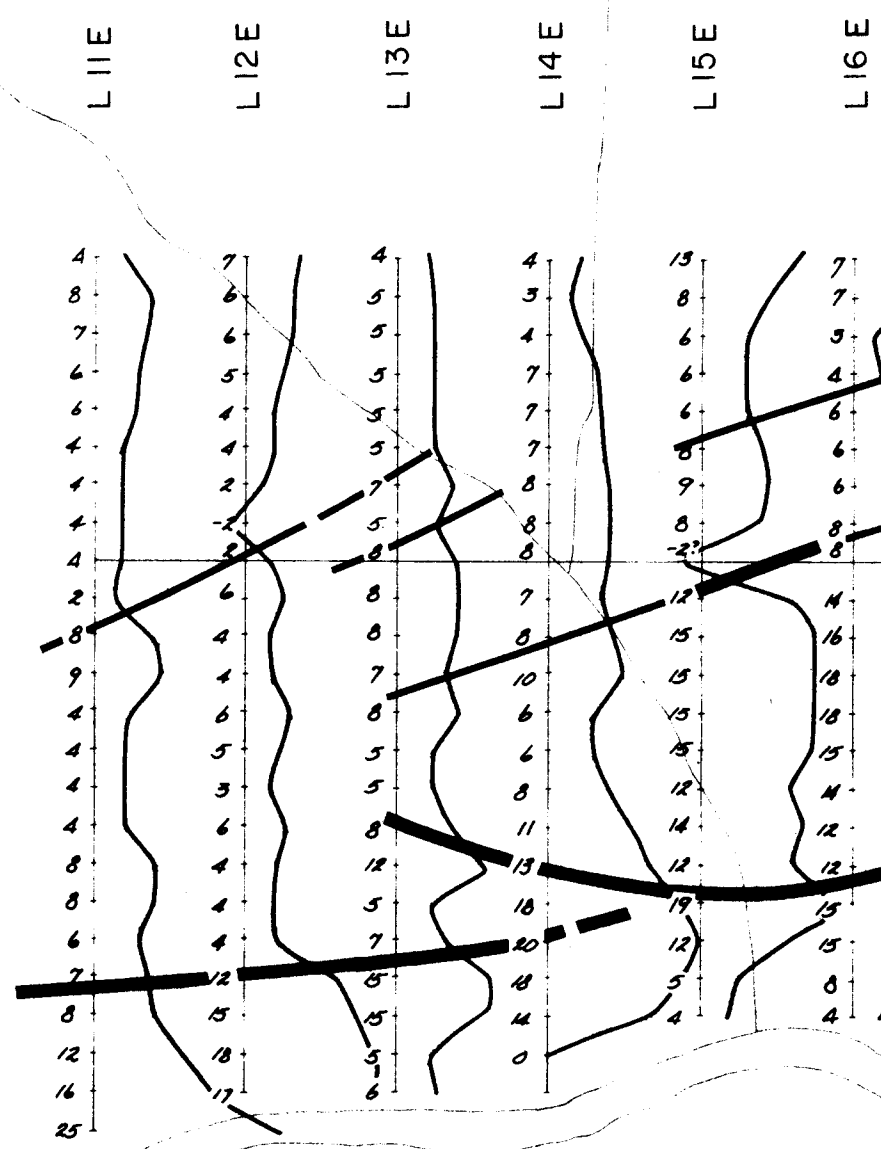
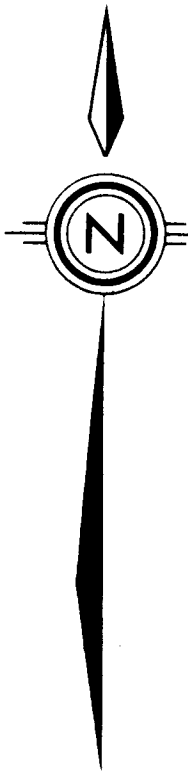
All reports are the confidential property of clients.

DATE SAMPLES RECEIVED Feb. 5, 1981

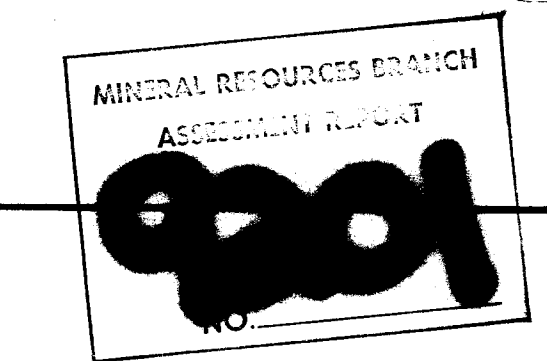
DATE REPORTS MAILED Feb. 13, 1981

ASSAYER DKC.

DEAN TOYE, B.Sc.  
CHIEF CHEMIST  
CERTIFIED B.C. ASSAYER



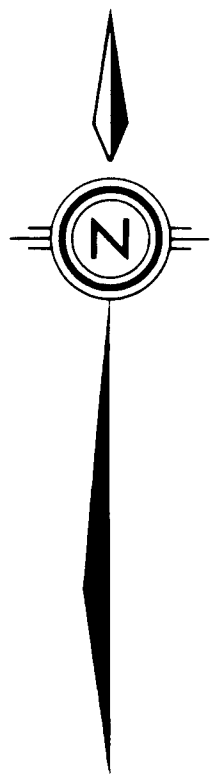
Instrument: Crone Radem VLF-EM  
Transmitter: Cutler, Maine (17.8 KHz)  
Direction to transmitter: 102°  
Profile scale: 1mm = 1° Dip  
" + " denotes dip to North  
" - " denotes dip to South  
— Moderate to strong conductor  
(defined, inferred)  
- - - Weak conductor  
(defined, inferred)



GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 2- GROUND VLF-EM SURVEY	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

February, 1981



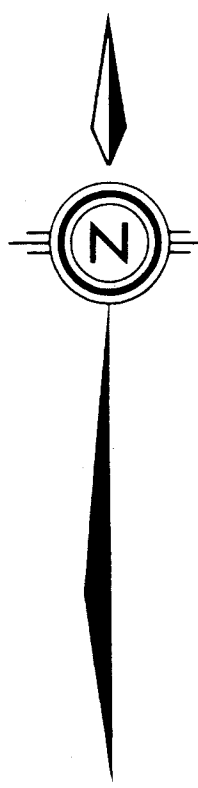


MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**1026**

Values in ppb  
Contour values 20, 40, 80 ppb

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 4 - Au in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

February, 1981



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Values in ppm  
Contour values 70, 100, 200 ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 8 - Cu in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR - BC - 7
SCALE 1:5000	
TAIGA CONSULTANTS LTD.	

February, 1981



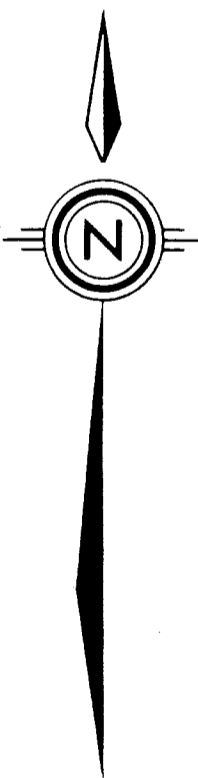
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**109**  
NO.

Values in ppb  
Contour values 100,200,400ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 10 - Zn in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

February, 1991

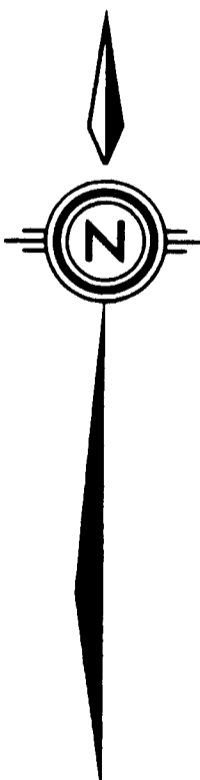
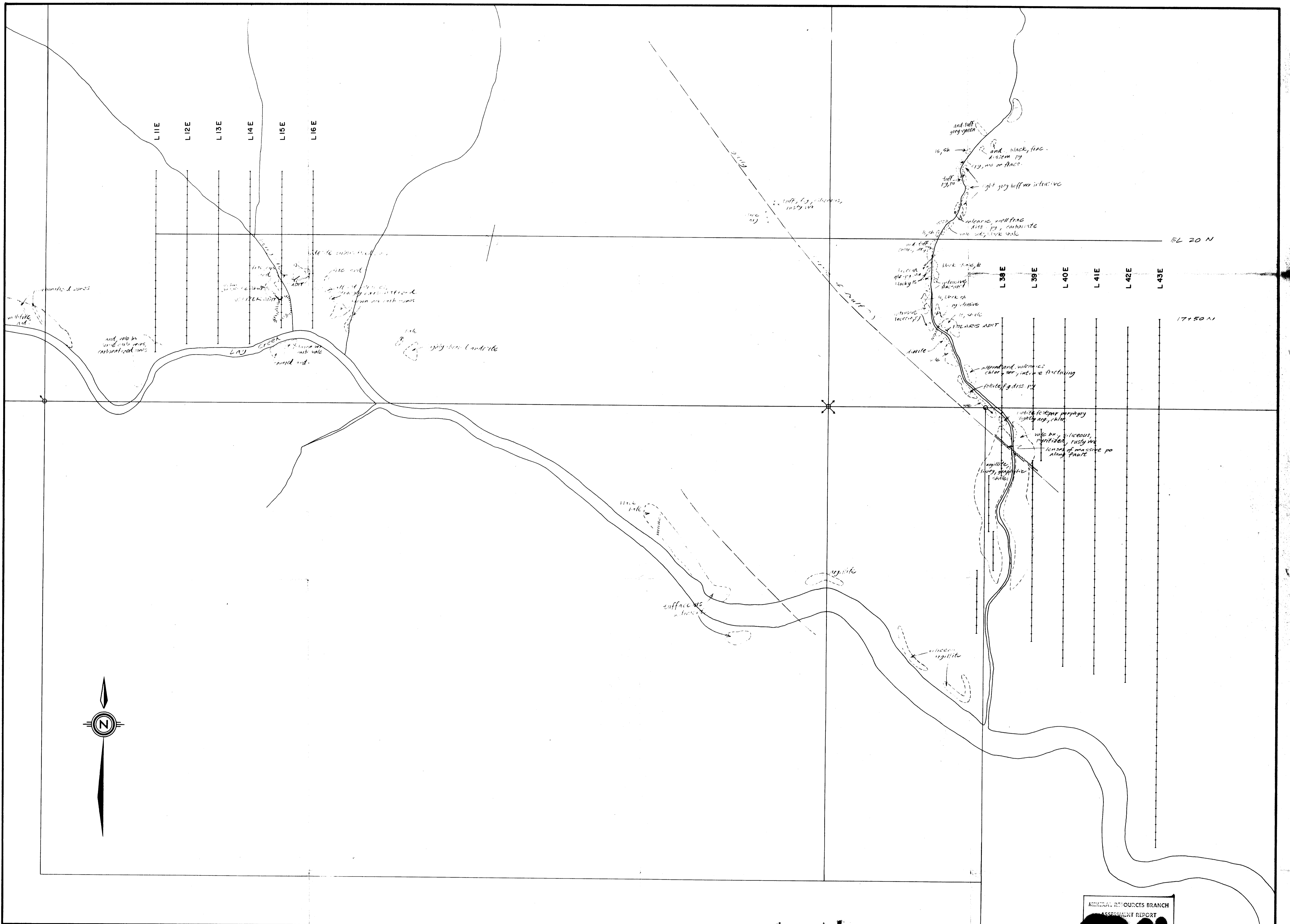




MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
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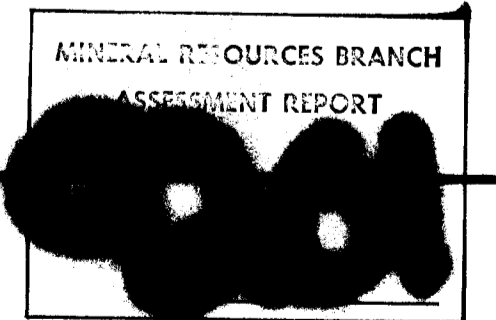
Values in ppm  
Contour values  
50, 100, 200 ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP II - Ni in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	
February, 1981	



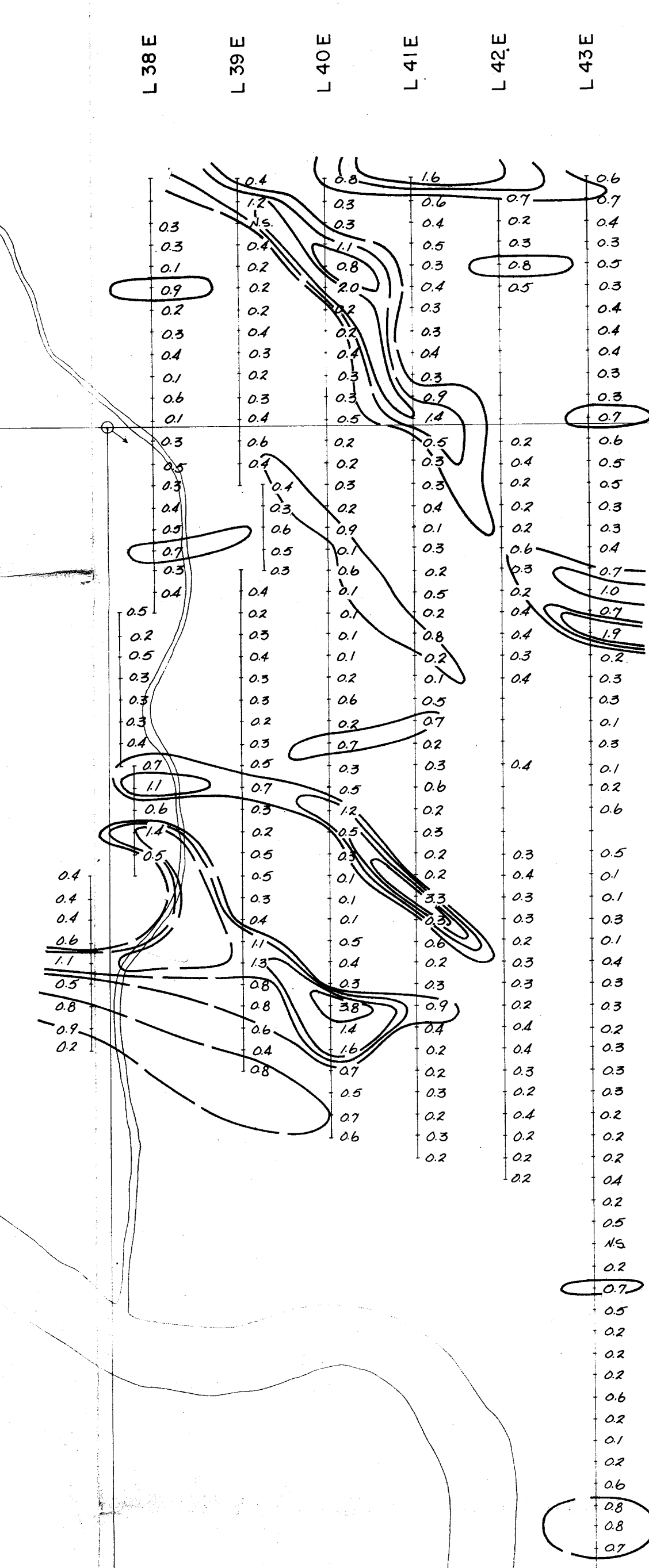
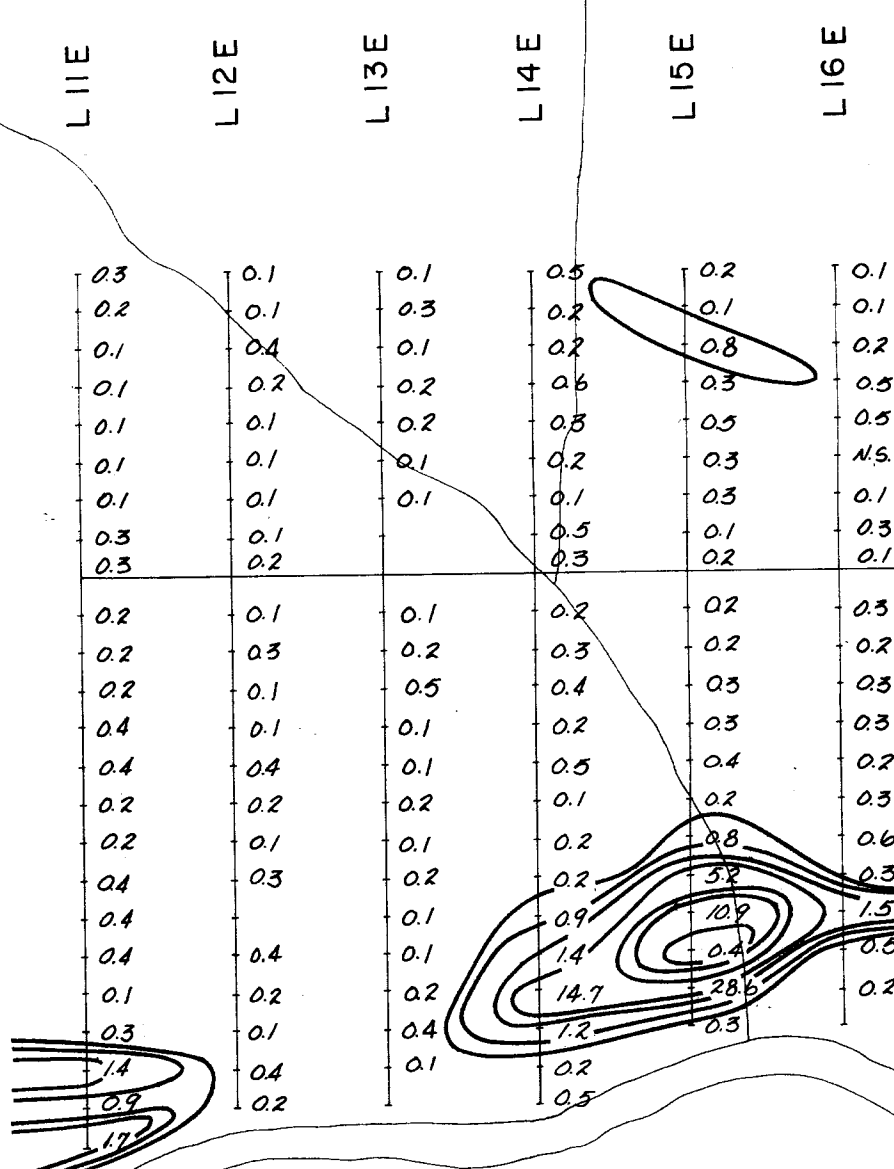
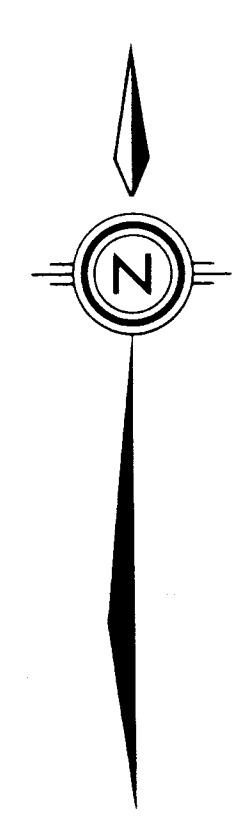
- LEGEND
- green tuff, andesitic breccias, tuffs, minor acidic tuffs
  - limestone and shale, fatid, black
  - Argillite, gray to black, siliceous
  - intrusives: quartz monzonite (?) porphyry, biotite, feldspar, perphyry, diorite

NOTES  
 Geology compiled from  
 B.C. Assessment Report 6057  
 and checked in the field.



GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 1 - GEOLOGY	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	
TAIGA CONSULTANTS LTD.	





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Values in ppm  
Contour values 0.7, 1.0, 1.4, 2.8 ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 5 - Ag in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

February, 1981

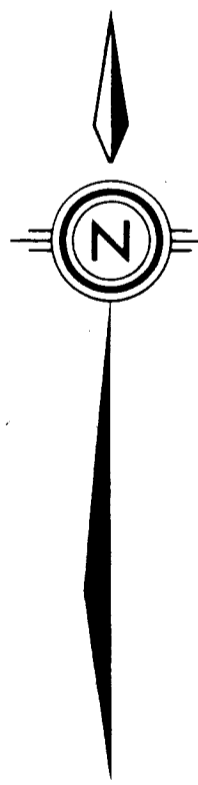


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Values in ppm  
Contour values 3,4,5 ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 6 - Sb in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR - BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

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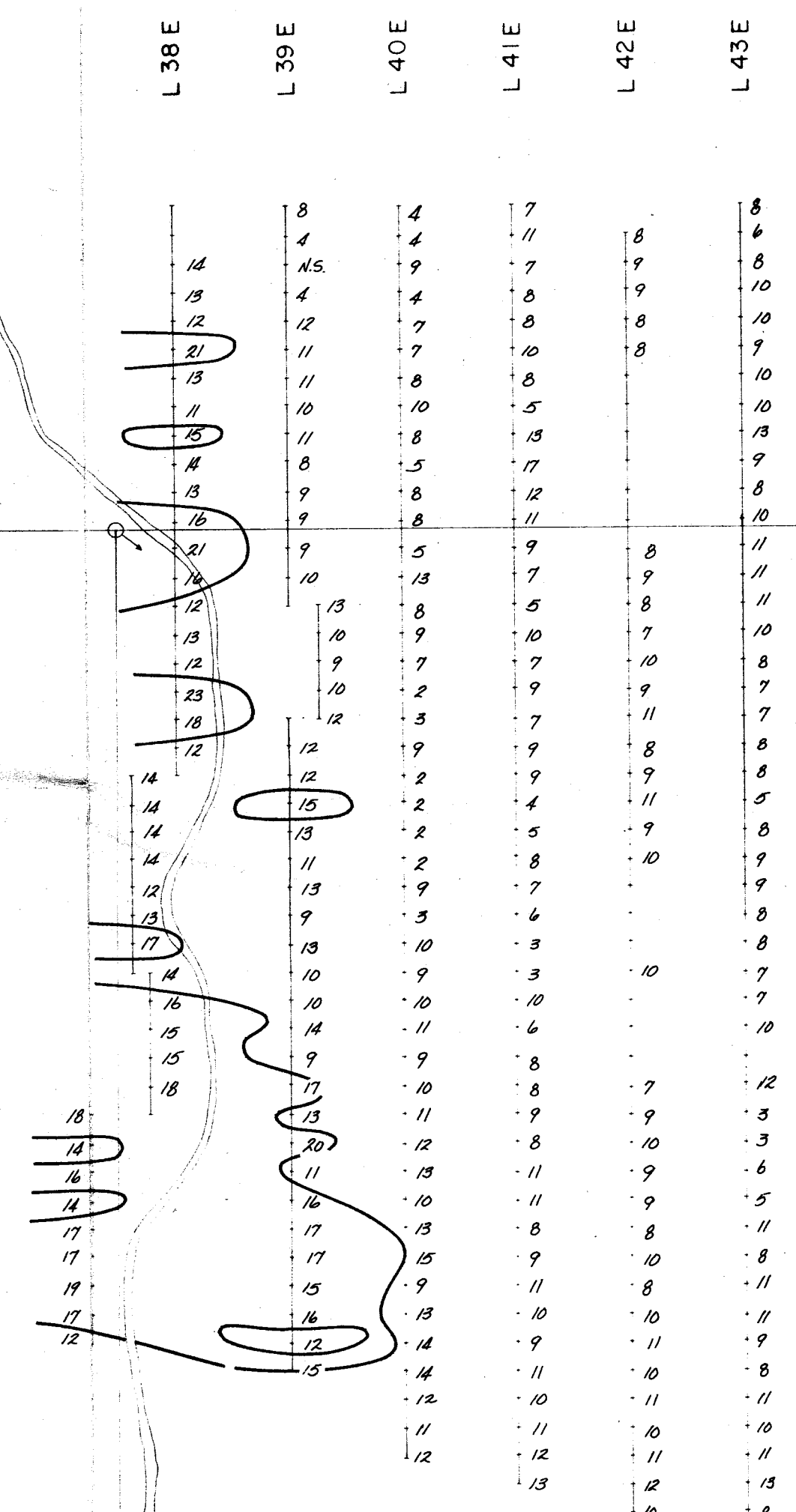
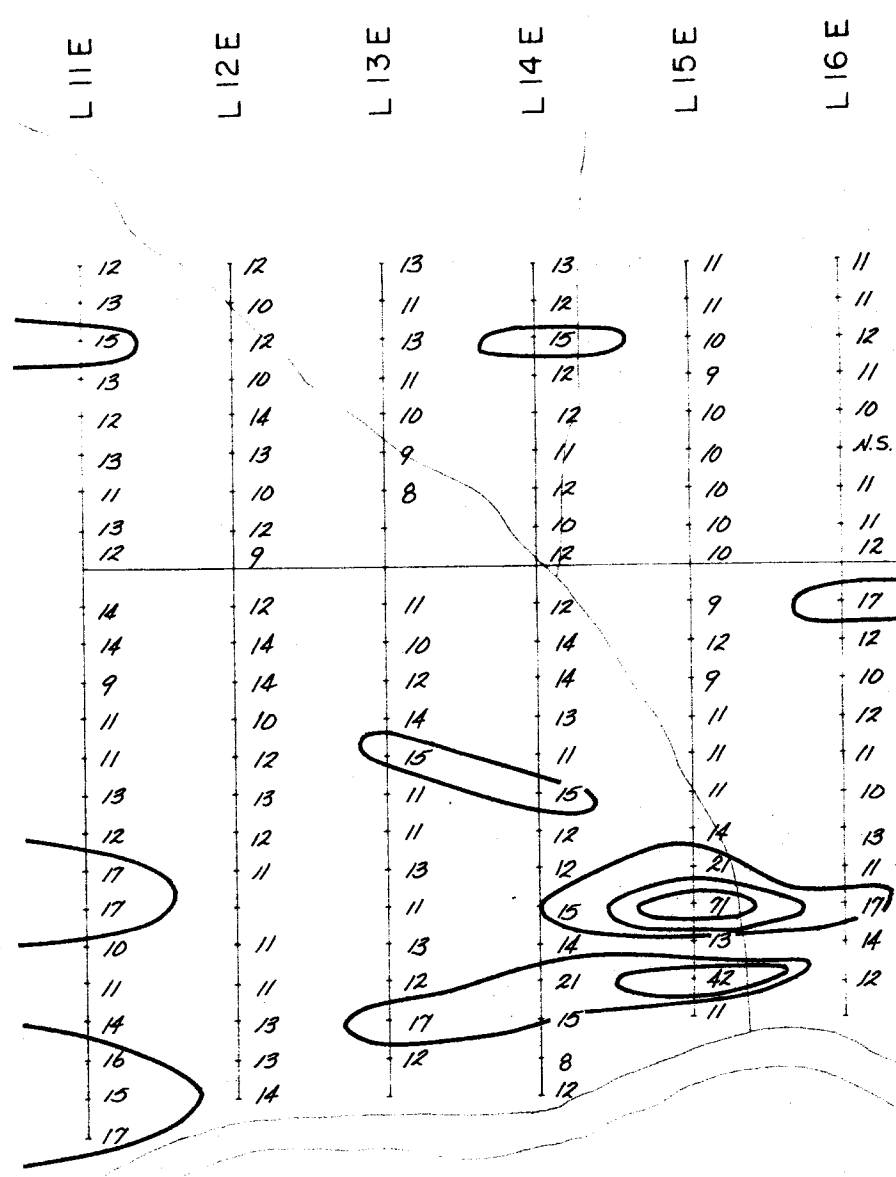


Values in ppm  
 Contour values 25, 40, 80 ppm

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GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 7 - As in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

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MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
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Values in ppm  
Contour values 15,30,60 ppm

GOLDEN RULE RESOURCES LTD.	
CHAPPELLE PROJECT	
MAP 9 - Pb in Soils	POLARIS CLAIMS
NTS 94 C/3	PROJECT GR-BC-7
SCALE 1:5000	0 50 100 150 200 250 METERS
TAIGA CONSULTANTS LTD.	

February, 1981