

GEOLOGY, GEOCHEMISTRY AND GEOPHYSICS  
OF THE ZAP CLAIMS #1 TO 11  
LIARD MINING DIVISION  
NTS 104P/13E, 14W

July 4, 1980  
Vancouver, B. C.

P. J. Burns

GEOLOGY, GEOCHEMISTRY AND GEOPHYSICS

OF THE ZAP CLAIMS # 1 TO 11

LIARD MINING DIVISION

N.T.S. 104P/13E. 14W

Lat.  $59^{\circ} 54' N$

Long.  $129^{\circ} 33' W$

Owned and operated by Falconbridge Nickel Mines Limited.

P. J. Burns  
Project Geologist  
July 4, 1980

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SUMMARY

On June 8, 1979, results of a Federal-Provincial Uranium Reconnaissance survey covering the McDame, B. C. Map sheet were released.

A 10 ppm Ag anomaly in an area located approximately 50 km SW of Watson Lake, Yukon was staked over a 3 day period. Subsequent staking resulted in the acquisition of a total of 11 Zap claims or 207 units.

Geologically, the area is on the edge of the Selwyn basin, an environment favourable for the formation of shale-hosted geothermal brine Ag/Pb/Zn deposits, such as those in the Gataga River area to the SE.

The Zap property itself is underlain by Cambrian to Devonian limestones, argillites and shales folded into an antiform-synform structure apparently plunging southeast.

Numerous springs, anomalous in Ag/Pb/Zn were located upstream of the 10 ppm Ag value obtained in the government survey.

Attempts to locate the source of Ag in the springs include 1979 surveys involving mapping, soil sampling, EM-16, Magnetometer, blasting and trenching.

No mineralization was located, other than occasional disseminations of pyrite and sphalerite (assaying to 0.13 oz/ton Ag in argillites).

A road was built into the property in the fall months of 1979.

Work conducted in May and June, 1980, includes (1) the extension of portions of the soil sampling grid established in 1979 to attempt to trace the trend of soil



anomalies located on the grid periphery; (2) soil sampling on all remaining ground at 100 m intervals on 500 m line spacings to define argillite/shale bands; (3) completion of geological mapping. (4) EM-16 over newly discovered soil sample anomalies and (5) a small Horizontal Loop (EM-17) Survey.

#### LOCATION

The Albert Creek Property consisting of 207 'Zap' and 8 2-post 'Ace' units is located in B. C. 48 km WSW of Watson Lake, Yukon Territory. (Figure 079-79-1A).

The centre of the claim group lies at approximate latitude and longitude  $59^{\circ} 54' N$  and  $129^{\circ} 33' W$ , respectively.

#### ACCESS

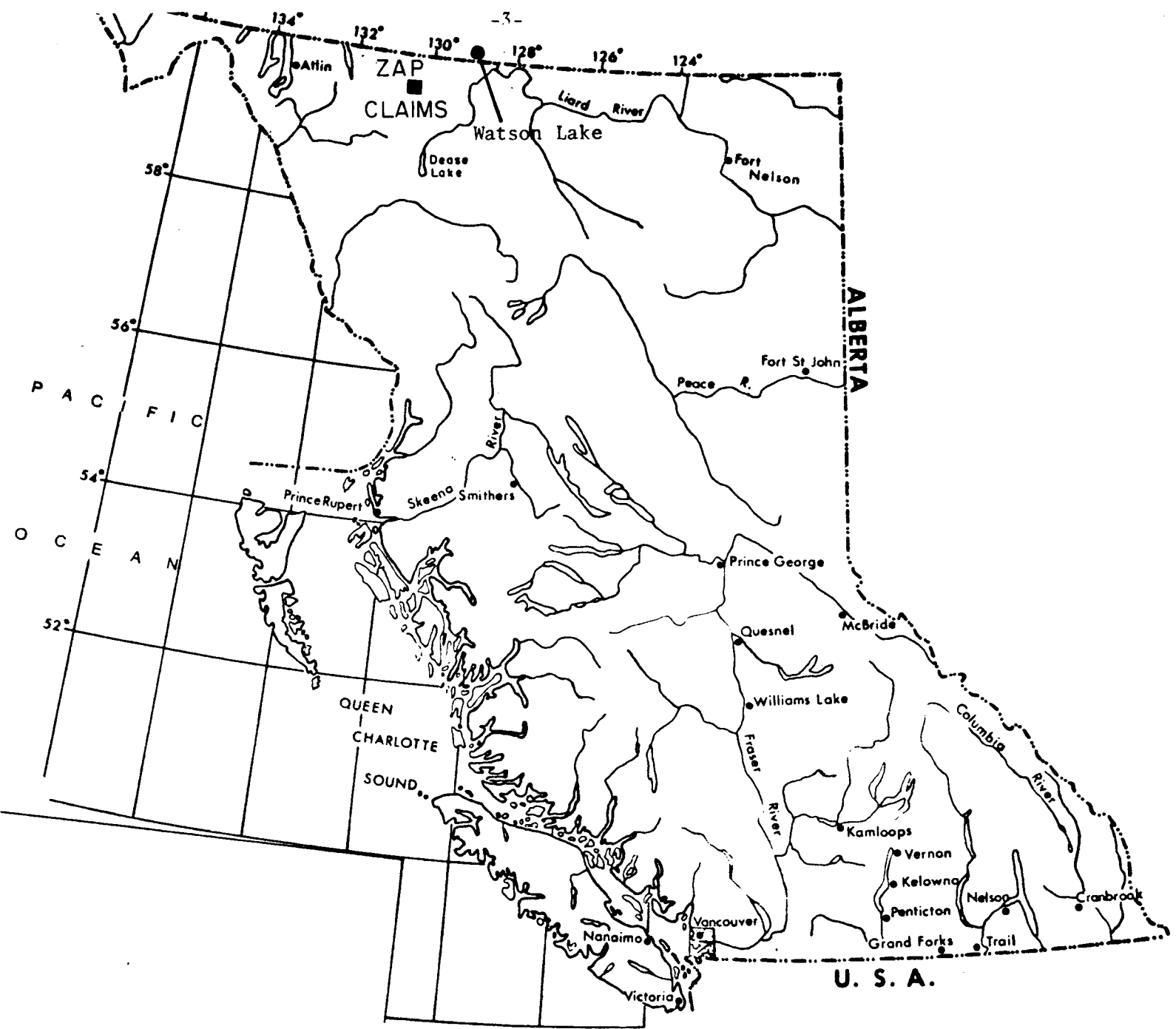
Access to the property throughout the 1979 field season was by helicopter from Watson Lake, supplemented on occasion by flights from Dease Lake.

A summer cat road was constructed to the centre of the claim group in the fall months of 1979 (Figure 079-79-1B). Work conducted in 1980 was serviced by Frontier Helicopters from Watson Lake.

#### TOPOGRAPHY

Glaciated low undulating hills and valleys characterize the property, with elevations ranging from 1100 m. to 1300 m. above sea level.

The tallest landmark in the vicinity is the 1720 m. high One Ace Mountain located 7 km SW of the silver-rich springs on the main creek.



**INDEX MAP**

**BRITISH COLUMBIA**



**SCALE 1: 7 500 000**

FIG. NO.: 079-79-1A

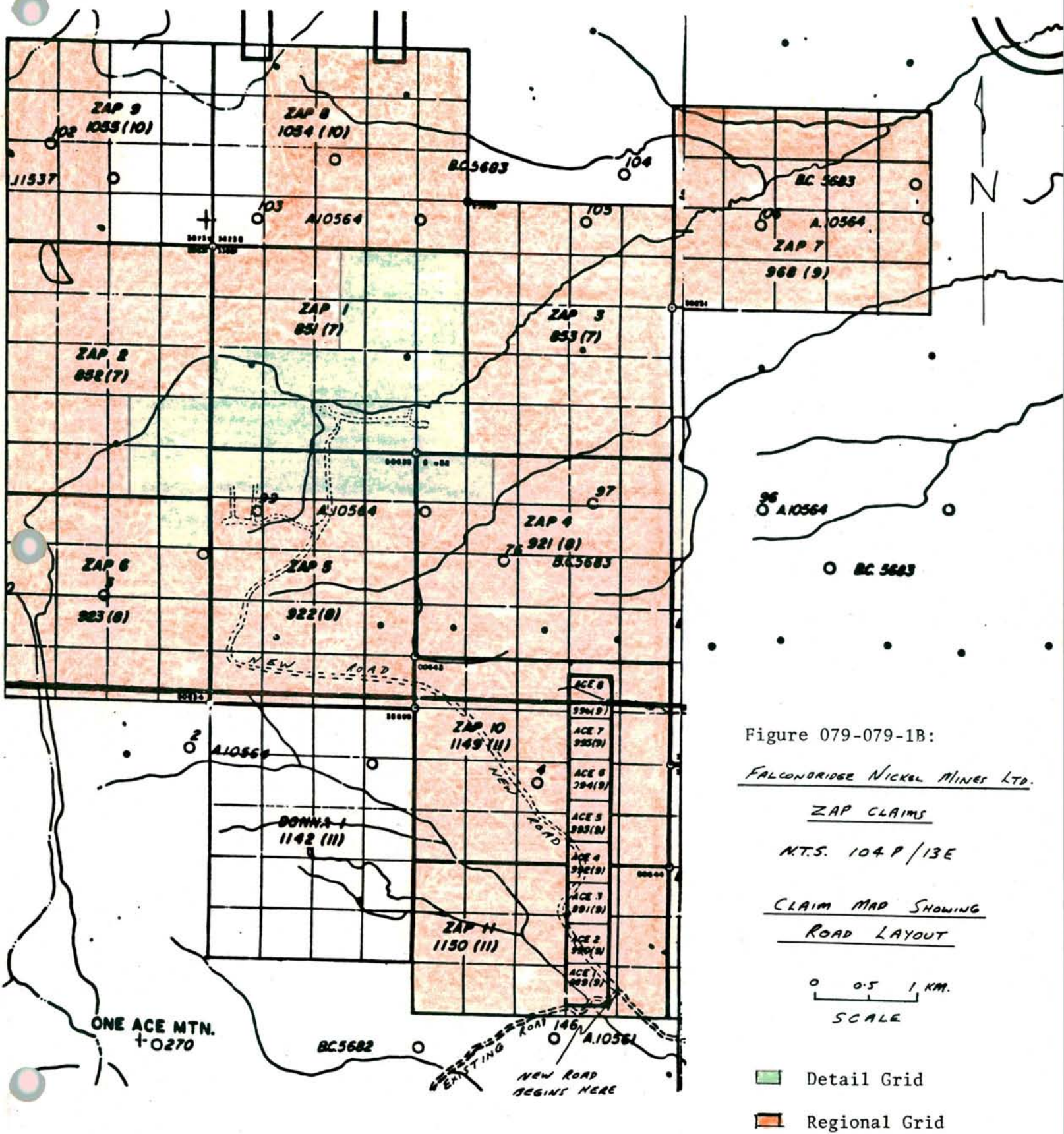


Figure 079-079-1B:  
 FALCONBRIDGE NICKEL MINES LTD.

ZAP CLAIMS  
 M.T.S. 104 P/13E  
 CLAIM MAP SHOWING  
 ROAD LAYOUT

0 0.5 1 KM.  
 SCALE

Detail Grid  
 Regional Grid

### VEGETATION

The area is moderately to densely covered by lodgepole pine, aspen, black spruce and larch. Willow abounds along stream courses and in swamps and bogs along with labrador tea and peat moss.

### DRAINAGE

Both glaciation and structure have had a major influence on the drainage pattern.

The majority of the area drains to the east, into the Albert Creek drainage system and eventually into the Liard River. The exception occurs on claim Zap #6, where drainage flows both east and west, the latter into Little Rancheria River.

Glaciation probably played the most significant role on drainage of the property, accounting for poor drainage and abundance of swamps and seeps.

Glacial striae trending 083° were measured on an impure limestone-wacke sedimentary sequence cropping out approximately 5 km N of the springs. They indicate ice movement from the west. This is also evidenced by the numerous E-W trending parallel ridges and depressions on the property. Many of the ridges have limestone exposed at their western extremities.

The numerous well-rounded boulders of granite and vesicular basalt evident in the main creek valley originate from the Cassiar Mountains and the eastern part of the Jennings River Map area, respectively.

Small amounts of placer gold discovered in the main creek are also believed to have been transported from the west by ice movement. (See section entitled 'Bulk Stream Sediment Samples').

## HISTORY

The property was acquired following the June 8, 1979 release date of results of a 1978 Federal-Provincial Uranium Reconnaissance Program of Stream-Lake Sediment and Water Sampling.

This data revealed the location of a 10 ppm Ag value, highly anomalous compared to the 0.1 ppm Ag background values for the map area (McDame Sheet). Staking of the anomaly was rapidly conducted over a 3 day period.

Subsequent 1979 development of the property includes:

- 1) Staking in 1979 of a total of 207 'Zap units, each 500 m<sup>2</sup>, and 8 2-post claims, each 1500 ft<sup>2</sup>;
- 2) Stream sediment sampling to verify the 10 ppm Ag value;
- 3) Regional geological mapping;
- 4) Rock geochemistry for Ag-Pb-Zn-Cd ± Ba;
- 5) Geochemical soil sampling on a 34 line N-S grid in the centre of the claim group, with lines 500 to 2500 m. in length and at a 100 m. line spacing and 50 m. sample interval;
- 6) Ronka EM-16 and Barringer Proton Magnetometer over most of the grid;
- 7) Blasting and trenching of several spring and soil anomalies;
- 8) Collection of 3-15 kg. sieve samples from the main creek, above, below and at one of the Ag anomalous springs. These have been analyzed by C. F. Fipke and our Thornhill Laboratory;
- 9) Regional stream sediment sampling of all accessible drainage within the claim group;
- 10) Collection of water samples;
- 11) Prospecting and stream sediment sampling on a regional basis;
- 12) Aerial photograph interpretation of structure on the claim group;
- 13) Road construction to the main creek (includes 11 km.

total new road and 24 km. of upgrading to existing road).

1980 development includes:

- 1) Extension of the geochemical baseline to the eastern and western extremities of the property.
- 2) Detailed soil sampling of areas immediately north and west of 1979 detailed sampling.
- 3) Regional soil sampling of the claims outside the detailed grid, on 500 m. spaced lines at 100 m. sample intervals.
- 4) EM-16 over geochemical soil anomalies.
- 5) EM-17 over several EM-16 conductors.
- 6) Completion of geological mapping on claims staked in late fall, 1979.

#### REGIONAL GEOLOGY

Geologically, the vast majority of the area is underlain by Cambrian to Devonian rocks comprising limestone, dolomite, quartzite, argillite and shale.

A conglomerate-greywacke unit, designated 12a on the McDame map-sheet accompanying GSC Memoir 329 by H. Gabrielse, crops out to the east of the claim group. It was not observed in contact with rocks described above and Gabrielse believes it to be Tertiary or older.

Regionally, rock units strike NE and are structurally folded into a SE plunging ( $\pm 40^{\circ}$ ) antiform-synform fold sequence. See Figure 079-79-1.

Numerous fossil assemblages were discovered and locations are noted on Figure 079-79-1 and 079-79-2. An assemblage collected in the area of the silver springs was sent to the Geological Survey for identification and their findings are included. See Report No. D-3-1980-BSN-AWN included herein.

PROPERTY GEOLOGY

Preliminary mapping and prospecting within the claim boundaries revealed numerous exposures of limestone and dolomite with occasional interbeds of argillite-shale and rare quartzite. White carbonate (calcite) veins and stringers locally brecciate rock units.

Limestone - Dolomite

The limestone is light grey to black in colour presumably a result of organic content, weathering buff-yellow to grey-white, and is massive to thin bedded. Reliable bedding attitudes are obtainable in thin bedded material.

Aside from fossil assemblages, no apparent variations, compositional, textural or otherwise, are distinguishable between Cambrian and Devonian limestones.

Partial dolomitization of limestone has occurred, resulting from regional metamorphism.

Argillite and Shale

Development work on the property (blasting, trenching and road building) exposed several bands of thin-bedded, fine grained, siliceous black argillite. Individual units average 1 to 2 cm in thickness with graphite coatings between units. The argillite is commonly fractured.

Geochemical soil sampling has been successful in delineating areas underlain by argillite and a reason for this is suggested in the conclusions section of this report.

Samples of the argillite have been analyzed by our Thornhill Laboratory (Muir, 1979)

Fine-grained fissile black shale was observed under a fallen spruce tree in the easternmost portion of the claims (Figure 079-79-1) during regional mapping.

Report for Dr. H. Gabrielse on one lot of fossils from the McDame map-area, British Columbia, collected by Falconbridge Nickel Mines, Limited (NTS 104-P).

The relevant parts of any manuscript prepared for publication that paraphrase or quote from this report should be referred to the Paleontology Subdivision, Calgary, for possible revision.

| <u>Field No. and Stratigraphy</u> | <u>Locality, Fauna and Age</u>  | <u>GSC Loc. No.</u> |
|-----------------------------------|---|---------------------|
| No field No. number               | 59°54'N, 129°33'W, Falconbridge's Silver prospect northeast of One Ace Mountain<br>echinoderm columnals<br>straight cephalopod<br>gastropods, ostracode<br>pelecypod fragment<br>cf. <i>Carinatrypa</i> sp.<br><i>Emanuelia?</i> sp.<br>brachiopods<br><i>Dechenella</i> ( <i>Dechenella</i> ) sp.<br>undescribed genus of warburgelline trilobites<br>age: Middle Devonian from trilobite evidence.<br>late Early to early Middle Devonian from brachiopod evidence. | C-79400             |

#### Comments

Of the brachiopods, the most diagnostic is a young form suggestive of *Carinatrypa* sp. In Canada, species of this genus have been recorded from beds of late Early Devonian to early Middle Devonian age.

According to Ormiston (1967, GSC Bulletin 153) *Dechenella* (*Dechenella*) is restricted to the Middle Devonian. The undescribed genus is only represented by pygidia and these have the flat-topped pleural ribs characteristic of the Warburgellinae; however the pygidia are significantly different from those of *Koneprusites*, the only known Middle Devonian genus of the subfamily.

A sample of matrix has been forwarded to Dr. Uyeno for conodont analysis.

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Paleontology Subdivision  
Institute of Sedimentary and  
Petroleum Geology  
Calgary, April 28, 1980



### Quartzite

Occasional interbeds of massive to thin bedded buff-coloured quartzite were observed in one locality on the property, approximately 1000 m. west of camp 1980. It is felt that these rocks are from or near the Lower Division of the Atan Group because of textural and stratigraphic similarities to the One Ace Mountain-type section. Thus, these rocks are considered to be Cambrian in age.

### STRUCTURE

Rock units on the property are folded into an antiform-synform sequence with NW-SE trending axial traces and a SE plunge of approximately 40°.

Numerous lineaments visible on aerial photographs traverse the property, as indicated in Figure 079-79-1.

One, of major proportions, trends E-W through the main creek valley and the area of the springs. However, geophysical evidence does not indicate a conductive fault or fracture (see section on Geophysics).

Another linear fracture occurs approximately 1 km southwest of Camp 1980 and trends NE for a length of 600 m. Here, a fracture zone in thin-bedded black limestones strikes and dips 080° and 65°N, respectively. The 50 to 200 m. wide zone contains an average of 18 to 30 fractures per metre. Black limestone from this zone is exposed in the creek 400 m. east of the trenches where it is highly brecciated, although bedding attitudes are still attainable.

Both geochemical and geophysical surveys delineated this zone.

GEOCHEMICAL SURVEY

Verification of the Federal-Provincial 10 ppm Ag anomaly led to the discovery, by Bruce Downing and the author, of 2 springs located on the south side of the main creek at the base of the north-facing slope. Here, silt sediment returned values in ppm of 55 Ag / 161 Pb / 215 Zn. Flow rates for the springs averaged 36 to 45 l/min (8 - 10 gals.).

Pebbles and boulders in the creek draining the springs are free of any mineral coatings downstream for a distance of 15 to 20 m. Then, heavy coatings of calcium carbonate appear. This is most likely due to changing Eh-Ph conditions in the waters when they reach surface converting from a reducing to oxidizing environment and losing CO<sub>2</sub>. No rusty-coloured iron precipitates, suggestive of sulphide mineralization, were noted.

A total of 11 water samples were collected and analyzed for Cu/Pb/Zn/Cd/Ag. Locations are shown on Figure 079-79-2 and results are indicated in ppb in Table 1.

TABLE 1: Water Sample Analyses, Albert Creek Area

| <u>Sample No</u> | <u>Cu</u>                 | <u>Pb</u>  | <u>Zn</u>  | <u>Cd</u>  | <u>Ag</u>  | <u>Comments</u>          |
|------------------|---------------------------|------------|------------|------------|------------|--------------------------|
|                  | <u>ppb</u>                | <u>ppb</u> | <u>ppb</u> | <u>ppb</u> | <u>ppb</u> |                          |
| 1                | 44                        | 6          | 10         | 65         | <1         | E end claims, main creek |
| 2                | 20                        | 6          | 16         | 210        | <1         | Main Ck below springs    |
| 3                | 14                        | 4          | 12         | 165        | <1         | Upstream from springs    |
| 4                | Bottle Broken in Shipment |            |            |            |            |                          |
| 5                | 38                        | 6          | 12         | 55         | <1         | Small Creek              |
| 6                | 22                        | 8          | 8          | 30         | <1         | Small Creek              |
| 7                | 26                        | 8          | 8          | 40         | <1         | South of Main Creek      |
| 8                | 68                        | 6          | 6          | 50         | <1         | South of Main Creek      |
| 9                | 24                        | 6          | 8          | 40         | <1         | Ck N. of One Ace         |
| 13               | 36                        | 8          | 30         | 70         | <1         | Spring S side Main Ck    |
| 14               | 48                        | 6          | 32         | 55         | <1         | Spring N side Main Ck    |

Low values were obtained from the majority of the samples. However, the main creek in the vicinity of the springs proved anomalous in Cd with respect to the other samples, with levels 3 or 4 times the average. Similarly, spring waters contain slightly elevated Zn and Cd.

All silver values, including those from the springs, were <1 ppb. Interestingly, spring sediments assay as high as 5.41 oz/T Ag. This indicates that Ag in spring waters precipitates instantaneously and completely, upon emergence at the surface.

A soil sample grid was placed over the spring area, and approximately 1500 soil samples were collected and analyzed for Ag/Pb/Zn/Cd. Results of the 1979 survey are included as a separate report by S. Zastavnikovich. His report outlines 3 large multielement anomalies located at (1) The main creek in the area surrounding the springs, (2) The NE trending fracture zone 1 km. SW of Camp 1980, and (3) A zone trending from 18N on Line 0 northwest to 20N on Line 3W ( Figure 079-80-3)

In addition, numerous single sample multielement analyses were obtained, one on the south-facing slope at 12+50N on Line 3W.

Anomaly (3) mentioned above most probably outlines an argillite unit striking NW, surrounded by limestone-dolomite. Here, values to 215 ppm Cd and 10,000 ppm (1%) Zn were obtained.

A reconnaissance soil sampling survey on portions of claims Zap 8 and 9 resulted in the collection of 106 samples. Results of the survey are shown in Figure 079-79-3 accompanying this report. Slightly elevated Ag/Zn/Cd values on portions of the easternmost line suggest an underlying argillite/shale unit. Indeed, black shale is exposed 1400 m N of the claim line here.

The 1980 extension to the northern portion of the detailed grid failed to locate any highly anomalous values.

Similarly, the western extension of the detailed sampling in the SW did not indicate underlying sediments with high metal contents in the elements analyzed.

The regional soil sampling at 100 m. intervals on 500 m. spaced lines resulted in the collection of over 1000 samples. All were analyzed for Ag/Cd ± Pb/Zn in ppm. Figure 079-80-4 shows sample results for the claim area surrounding the more detailed grid.

Observations made following an examination of these results are as follows:

1. Cadmium values range as high as 71 ppm (at L5E, 27S) and silver as high as 4.0 ppm (at L10E, 27S);
2. Several anomalous bands are apparent south of the baseline between L0+00 to L25E. These are in an area known to be underlain by thin bedded argillite and shale.
3. A NE trending zone anomalous in both Ag and Cd trends through portions of claims Zap # 3 and # 7. The majority of the high values may be due to the concentrating effect of organic material on metal ions in the stream valley in this area.
4. The western portion of the grid contains rather low metal values in soils and suggests that this area is void of argillite/shale with elevated metal ions and/or is overlain in part by a thick sequence of overburden.

Prior to blasting and trenching all but one sample collected in 1979 represented limestones. Values in limestones for the various elements are listed below.

| Pb            | Zn | Ag  | Cd  | Ba  |
|---------------|----|-----|-----|-----|
| <u>In ppm</u> |    |     |     |     |
| <10           | 15 | 0.2 | 0.2 | <30 |

\* note: values are approximate averages.

As is evidenced from the above chart, the limestones contain extremely low background values in the tested elements. This suggests that the limestones themselves could not have accounted for the highly anomalous Ag content of spring sediments.

In comparison, blasting and trenching exposed areas (Plate V) underlain by black siliceous argillite, particularly on lines 18W and 19W. Here, assay values to 0.13 oz/T Ag were obtained (Table II).

Permafrost proved widespread on top of the argillites, in particular on lines 18W and 19W, hampering progress of the trenching.

TABLE II Assay Values from the Trenches on L18W and L19W

| <u>Sample No.</u> | <u>Ag</u><br><u>oz/T</u> | <u>Pb%</u> | <u>Zn%</u> | <u>Cd%</u> | <u>Comments</u>      |
|-------------------|--------------------------|------------|------------|------------|----------------------|
| 9828              | 0.02                     | <0.01      | <0.01      | <0.01      | L19W, 2+50N          |
| 9985              | 0.04                     | <0.01      | <0.01      | <0.01      | L19W, 2+25N          |
| 9986              | 0.13                     | <0.01      | <0.01      | <0.01      | L19W, 2+00N          |
| 9987              | 0.04                     | <0.01      | 0.03       | <0.01      | L19W, 0+50N to 0+53N |
| 9988              | 0.07                     | <0.01      | 0.03       | <0.01      | L19W, 0+25N to 0+31N |
| 9989              | 0.04                     | <0.01      | 0.02       | <0.01      | L18W, 0+80N to 0+89N |
| 9990              | 0.04                     | <0.01      | <0.01      | <0.01      | L18W, 0+65N to 0+69N |
| 9991              | 0.04                     | <0.01      | <0.01      | <0.01      | L18W, 0+55N to 0+60N |
| 9992              | 0.04                     | <0.01      | 0.02       | <0.01      | L18W, 0+77N to 0+80N |
| 9993              | 0.04                     | <0.01      | <0.01      | <0.01      | L18W, 0+30N to 0+32N |
| 9994              | 0.02                     | <0.01      | 0.03       | <0.01      | L19W, 0+53N to 0+60N |
| 9995              | 0.04                     | <0.01      | <0.01      | <0.01      | L19W, 0+60N to 0+66N |

Muir's analyses of an argillite sample from L19W, 1+75N indicate "traces of fine grained partly to completely oxidized pyrite and sphalerite..... disseminated throughout (the) highly siliceous specimen". Cadmium was not detected.

Groundwaters draining areas underlain by argillaceous sediments could conceivably scavenge metal ions in the process, depositing them when the springs reach the surface. Thus, a significant point made here is that this process can account for the very high silver assay values obtained in the spring sediments. However, one cannot at this time completely rule out the alternate possibility of underlying mineralization as a source for the highs.

#### BULK STREAM SEDIMENT SAMPLES

Three - 15 kg. sieved stream sediment samples were collected for separation of heavy metal concentrates by C. F. Mineral Research Ltd., in Kelowna, B. C. Mr. Fipke processed 3 orientation samples from (1) Bruce's Spring, (2) L15W @ 13N, (3) L0+00 @ creek through a 4 stage sizing semi-gravity concentration. 3000 ml. was passed through a 2 stage heavy liquid separation of heavies to intermediate S.G. fractions through a total of 72 electromagnetic separations and a binocular microscope examination of HN (heavy, non magnetic) fractions.

Results are listed (in Appendix) in Fipke's Report entitled 'Falconbridge Nickel Mines Heavy Non-Magnetic (HN) Concentrate Binocular Microscope Scan Results.' Fipke's analyses suggest the presence of barite (confirmed by assays) and unidentified black metallic minerals.

Upon receipt of the sieved samples, the HN portions (-80 mesh) of all 3 were split, one half sent to Bondar Clegg for Au/Ag/Zn/Ba assays (Table III) and one half forwarded to our Thornhill Laboratory for a Mineralogical Examination. Results from Thornhill (Muir, 1980) failed to verify the occurrence of any Ag/Zn/Pb bearing grains. "However, of special note (was) the presence of 7 irregular - shaped (placer?) grains of native gold -80/+100 mesh size in concentrate 3A (L15W, 13N).

An X-ray Diffractometer Analysis of the -100 mesh portion of the concentrates identified clinopyroxene as a major constituent, with lesser quartz, apatite, ± feldspar and possibly sphene, epidote and barite.

Glaciation probably accounts for the presence of gold in the specimens, the source lying distant in the west.

Barium is an abundant constituent in the argillites, and barite is a favourable indicator associated with some shale - hosted Pb/Zn deposits in the Selwyn Basin, particularly the Gataga Camp (Carne et al, 1980).

TABLE III: Bondar Clegg Assays for Fipke -80 HN Concentrates

| <u>Sample No.</u> | <u>Location</u> | <u>Au oz/ton</u> | <u>Ag oz/ton</u> | <u>Zn%</u> | <u>Ba%</u> |
|-------------------|-----------------|------------------|------------------|------------|------------|
| 10329             | Bruce's Spring  | 0.012            | <0.10            | 0.01       | 0.14       |
| 10330             | L0+00 @ Creek   | 0.029            | <0.10            | 0.01       | 0.98       |
| 10331             | L15W, 13N       | 0.091            | <0.10            | <0.01      | 0.97       |

GEOPHYSICS:

EM-16 ; Magnetometer and EM-17 surveys were conducted over a major portion of the soil sample grid by Steve and Paul Presunka.

EM-16 (43.4 km)

The EM-16 survey utilized 2 channels, 18.6 (Seattle, Washington) and 21.4 (Annapolis, Maryland). The appendix to this report contains Figures showing results of this survey. (Figures 079-79-4 to 079-79-8, inclusive and 079-80-1)

In order to simplify interpretation, the author filtered and contoured station 21.4 VLF-EM data (1979) using the Fraser Filter Technique (Fraser, 1969). The resultant map (Figure 079-79-5) outlines several anomalous trends which may be due to one or a combination of the following:

- 1) conductive solutions in fractured argillite or limestone;
- 2) graphitic coatings between argillite beds;
- 3) disseminated mineralization is evident in the argillites from the trenches (Muir, 1979) although quantities far below the VLF-EM detection limit for disseminated mineralization.

The range of EM values is -63 to +52 degrees, with the contour pattern broadly conforming to the NW trending argillite sequence to the NE.

The linear anomaly trending SE from L13W, 14+50N to L4E, 5+00N may reflect bedding or structure. It is interesting to note that Pb is anomalous along a portion of this zone from L6W, 12+00N. to L1E, 7+00N.

Anomalous trends in an E-W to NE direction are perpendicular to bedding and may reflect structure.

As mentioned previously, it is important to note that no strong E-W trend is evident through the main creek in proximity to the lineament traced on Figure 079-79-1 Magnetometer Survey (20 km)

A Barringer Proton Magnetometer, Model No. GM 1222 was utilized for the magnetic survey, Unfortunately, response proved very weak and the survey was therefore discontinued following the completion of 14 lines. (Figure 079-79-9)

EM-17 (1.8 km)

Results of a small EM-17 survey undertaken in June, 1980 proved disappointing although several deep conductors were located (Figure 079-80-2).



### Rock Analyses

Rock specimens were collected from numerous exposures both within and surrounding the claim group, and analyzed for Ag/Pb/Zn/Cd ± Ba in ppm. Locations with analytical results are shown in Figure 079-79-2.

### CONCLUSIONS

An indirect source has been located for the anomalous 10 ppm Ag value reported in the June 8, 1979 release date for the Federal - Provincial Uranium Reconnaissance Survey data on the McDame Map sheet.

A total of 3 relatively large springs and up to one dozen smaller seeps issue at the base of the slope in the main creek valley on the property, immediately upstream from the 10 ppm Ag sample location. All are significantly anomalous with respect to Ag/Pb/Zn values. A high of 5.41 oz/T Ag was found in spring sediment on the north side of the main creek.

Additionally, several soil anomalies have been delineated on the claims. Argillite with elevated background metal values relative to surrounding limestone - dolomite readily accounts for the anomalous nature of overlying soils.

Groundwaters draining areas underlain by argillite, scavenging metal ions there, and precipitating them where springs emerge at surface under different Eh-Ph conditions can result in Ag values in the oz/T range.

However, one cannot completely rule out a mineralized source rock of economic potential accounting for the anomalies, although several factors tend to negate this possibility.

These are:

- 1) a relatively thin (less than 100 m.) sequence of argillite;
- 2) no apparent barite zones;

- 3) low zinc values, except for two checked in 1980 field work, and particularly low Pb values;
- 4) a lack of iron oxide precipitates in spring waters.

Geological evidence suggests that the Albert Creek property is on the edge of a carbonate platform with interbedded argillites representing possible (Selwyn) basin edge or lagoonal environments formed in late Early to early Middle Devonian time. Thus the property is distal to a deep water basin, a somewhat negative factor for the formation of shale-hosted Pb-Zn deposits from geothermal brine movement.

Similarly, geophysical evidence in the main creek and vicinity failed to indicate the presence of a graben-type structure favourable as a conduit for the movement of brines or localization of vein-type mineralization.

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APPENDIX I

Falconbridge Nickel Mines Heavy Non-Magnetic (HN) Concentrate  
Binocular Microscope Scan Results

by C. Fipke

Bruce's Spring -80 HN (Sample No. 10329)

- ±50% non-ferron epidote group minerals - grey-green clinozoisite
- 20 - 30% sphene
- 20 - 30% apatite & orange fluorescent (±10%) zircon
- 0.3 - 0.7% black metallic minerals - commonly relatively soft  
H ~ 4, 2 or more cleavages, a clamantine luster-streak metallic  
to (limonite) brown. These appear to be sphalerite but  
hand picked grains should be scanned with X-ray Energy  
Analyses for positive confirmation.

traces of limonite coated sulphides  
one grain chalcopryrite  
trace anatose & ilmenite  
trace muscovite  
trace zircon  
trace possible barite.

L00 @ CK -80 HN (Sample No. 10330)

- 10 - 20% commonly bladed, transparent - white, probably barite
- ±40% grey-green non ferron epidote group - clinozoisite
- ± 30% sphene
- 5 - 10% zircon & apatite
- 0.2 - 0.4 black metallic minerals probable ilmenite. These  
appear slightly harder than Zn sulphide.
- trace highly limonitic sulphide
- a few grains scheelite

L15W @ CK - 80 HN (Sample No. 10331)

- 60-70% greyish non-ferron epidote group - clinozoisite
- 20 - 30% sphene
- 5% commonly platey transparent probable barite
- 5% apatite
- 5 - 10% zircon (orange fluorescent)
- trace hematitic & jarositic limonite
- trace ilmenite
- ± 0.2% soft grey-black possible silver sulphide?
- ± 0.2% black metallic (brown streak) possible sphalerite?

|                  | Probable Scheelite<br>Bl-White S.W. & "Deed"<br>L.W. Fluorescence | Possible<br>Monasite | Remarks                          |
|------------------|---|----------------------|----------------------------------|
| L00 @ CK - 020HN | nil   | nil                  | +10 grain orange fluor<br>zircon |
| - 035HN          | nil   | nil                  | 4% orange fluor zircon           |
| - 80HN           | nil   | nil                  | 5% orange fluor zircon           |
| L15 @ CK - 020HN | nil   | nil                  | a few orange fluor<br>zircon     |
| - 035HN          | 2 grains  | nil                  | 6% orange fluor zircon           |
| - 80HN           | 2   | nil                  | 5 - 10% orange fluor<br>zircon   |
| Bruce's Spring   |   |                      |                                  |
| - 018HN          | nil   | nil                  | a few orange fluor<br>zircon     |
| - 035HN          | nil   | nil                  | 5% orange fluor zircon           |
| - 080HN          | nil   | nil                  | 10% orange fluor zircon          |

APPENDIX II  
(Plates I to V)



Plate I: View of One Ace Mountain, looking SW across the Zap Claims.



Plate II: Thin bedded black argillite exposed on road 4 km. SE of trench area, Albert Creek.



Plate III: Lineament traversing Main Creek in area of anomalous silver springs. Looking WNW.



Plate IV: Spring at base of hill in Main Creek.





Plate V: Argillite from Trench on line  
18 west.

APPENDIX III

ITEMIZED COST STATEMENT

applicable towards 3 year assessment.

|   |           |
|---|-----------|
| 1. Road Building and Repairing costs:   |           |
| See attached Grant Stewart Invoices   | 54,359.25 |
| 2. Reconnaissance Flights to check condition of old<br>One Ace Mountain road and to locate favourable route<br>for new road construction. |           |
| Sept. 29,1979 1.5 hrs Bell 206  | 562.50    |
| 3. P. Burns expenses regarding supervision of road<br>construction.   |           |
| Vancouver - Watson Lake - Vancouver (gas )  | 200.00    |
| Accomodation in Watson Lake   |           |
| Sept. 28th to Nov 8th @ 35.00/nite 42 days  | 1,470.00  |
| Truck rental @ 500.00/month   |           |
| Oct 5th to Nov 10th   | 605.00    |
| Meals 42 days @ 25.00/day   | 1,050.00  |
| Salary 42 days @ 125.00/day   | 5,250.00  |
| Report Preparation  |           |
| Drafting 8 days @ 75.00/day   | 600.00    |
| Report writing, map reproduction  | 500.00    |
|   | <hr/>     |
| Total   | 64,596.75 |

ADDITIONAL 1979 - 1980 EXPENSES  
for deposit into P.A.C. account.

Salaries:

|   |                  |                                    |          |
|---|------------------|------------------------------------|----------|
| 1. P. Burns                             | 8/6/79 - 10/6/79 | 3days @ \$140.00/day               | 420.00   |
| S. Zastavnikovich                       | " " " "          | " "                                | 420.00   |
| 2. Geology, Geochemical grid            |                  |                                    |          |
| 15/7/79 to 24/7/79 ( 10 days )          |                  |                                    |          |
| P. Burns                                | 10 x             | 140/day geologist                  | 1,400.00 |
| S. Zastavnikovich                       | "                | geochemist                         | 1,400.00 |
| V. Snucins                              | 10 x             | 45.60/day sampler                  | 456.00   |
| P. Walker                               | 10 x             | 48.45/day sampler                  | 484.00   |
| 3. Geology, geochemistry, geophysics    |                  |                                    |          |
| 11/8/79 to 30/8/79 ( 20 days )          |                  |                                    |          |
| P. Burns                                | 20 x             | 140.00/day                         | 2,800.00 |
| K. Chistensen                           | 20 x             | 100.00/day prospector              | 2,000.00 |
| K. Dennis                               | 20 x             | 48.45/day cook                     | 969.00   |
| V. Snucins                              | 20 x             | 45.60/day sampler                  | 912.00   |
| P. Walker                               | 20 x             | 48.45/day sampler                  | 969.00   |
| J. Hugi                                 | 2 X              | 93.80/day camp construction        | 187.60   |
| 4. Geochemistry on Zap 8 and 9          |                  |                                    |          |
| 29/9/79 to 30/9/79 ( 2 days )           |                  |                                    |          |
| P. Burns                                | 2 x              | 140.00/day                         | 280.00   |
| G. Tomasson                             | 2 x              | 100.00/day                         | 200.00   |
| 5. Geochemistry, geology, mobilization. |                  |                                    |          |
| Mobilization 21/5/80 to 24/5/80 4 days  |                  |                                    |          |
| Fieldwork 25/5/80 to 21/6/80 28 days    |                  |                                    |          |
| P. Burns                                | 32 x             | 150.00/day Geologist               | 4,800.00 |
| K. Christensen                          | 30 x             | 100.00/day Prospector              | 3,000.00 |
| G. Tomasson                             | 30 x             | 100.00/day Surveyor,<br>Prospector | 3,000.00 |

|                   |                |            |                 |
|-------------------|----------------|------------|-----------------|
| S. Zastavnikovich | 5 x 118/day    | Geochemist | 590.00          |
| M. Stockholder    | 32 x 57.00/day | Cook       | 1,824.00        |
| D. Travers-Smith  | 32 x 48.45/day | Sampler    | 1,550.00        |
| A. McArthur       | 32 x 53.00/day | Sampler    | <u>1,696.00</u> |
|                   |                | Total      | 16,460.00       |

Meals

During Mobilization, Watson Lake 8,625.00  
345 man days @ 25.00.day

Accommodation

Includes Town and Country, Delta, B. C., Watson Lake  
and Belvedere Hotels, Watson Lake, Yukon and hotels  
stayed at on trips to and from Vancouver - Yukon  
13 men 3,056.00

Transportation

1. Truck Rentals

Bowmac truck rental July 5 - Aug.22/79 626.60  
Gas costs 1,276.18

2. Helicopter Costs

Frontier Helicopters Watson Lake 19,570.98  
Yukon Air, Dease Lake 9,329.14

3. Airfares.

Vancouver - Watson Lake - Vancouver  
Equivalent to 10½ fares 2,625.00

Field Equipment

Airphotos , Pacific Survey

Pencil Manuscript @ 1:2000 with 3 m contour  
mosaic 1,200.00

Film positive, print enlargement 61.20

Geophysical Survey

EM-16, magnetometer, EM-17

Steve and Paul Presunka

|                              |                      |          |
|------------------------------|----------------------|----------|
| August 12 to 24/79           | 13 days @ 250.00/day | 3,250.00 |
| Mapping: 5 days @ 200.00/day | Aug 25-29/79         | 1,000.00 |
| June 11-21/80                | 11days               | 2,750.00 |
| Mapping 3 days @ 200.00/day  |                      | 600.00   |

Geochemical Analyses

|                 |     |                 |        |              |
|-----------------|-----|-----------------|--------|--------------|
| June 13th 1980. | 379 | Zn/Cd           | @ 2.40 | 909.60       |
|                 | 379 | Preps           | @ 0.56 | 189.50       |
|                 | 379 | Cataloguing etc | @ 0.20 | 75.80        |
|                 | 1   | Shipping        |        | <u>79.53</u> |
|                 |     |                 | Total  | 1,254.43     |

|    |       |        |              |
|----|-------|--------|--------------|
| 12 | Cd/Zn | @ 3.50 | 42.00        |
| 9  | Cd/Zn | @ 2.05 | <u>18.45</u> |
|    |       | Total  | 60.45        |

|            |     |             |        |              |
|------------|-----|-------------|--------|--------------|
| June 5 /80 | 215 | Pb/Zn/Ag/Cd | @ 3.90 | 838.50       |
|            | 215 | Preps       | @ 0.50 | 107.50       |
|            | 1   | Shipping    |        | <u>63.90</u> |
|            |     |             | Total  | 1,009.90     |

|           |   |           |        |              |
|-----------|---|-----------|--------|--------------|
| Dec 10/79 | 3 | Zn assays | @ 5.00 | 15.00        |
|           | 3 | Ba "      | @ 9.00 | 27.00        |
|           | 1 | Shipping  |        | <u>44.10</u> |
|           |   |           | Total  | 86.10        |

|           |    |           |        |       |
|-----------|----|-----------|--------|-------|
| Nov 20/79 | 12 | Ag Assays | @ 6.00 | 72.00 |
|           | 12 | Pb "      | " 5.50 | 66.00 |
|           | 12 | Zn "      | " 5.50 | 66.00 |

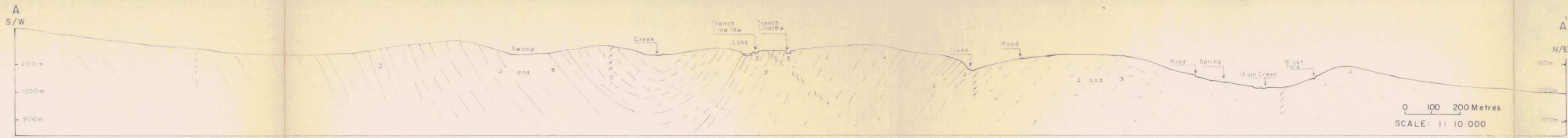
|                |                   |      |              |
|----------------|-------------------|------|--------------|
|                | 12 Cd Assays @    | 8.00 | 96.00        |
|                | 15 Pb/Zn/Ag/Cd @  | 3.90 | 58.50        |
|                | 15 Ba "           | 3.25 | 48.75        |
|                | 4 Preps "         | 0.45 | 1.80         |
|                | 11 " "            | 1.75 | 19.25        |
|                | 1 Shipping        |      | <u>20.25</u> |
|                | Total             |      | 448.55       |
| Nov 19/79.     |                   |      |              |
|                | 20 Ag @           | 1.65 | 33.00        |
|                | 17 Pb/Zn "        | 1.45 | 24.65        |
|                | 16 Cd "           | 0.80 | 12.80        |
|                | 4 Preps "         | 0.45 | 1.80         |
|                | 16 " "            | 1.75 | 28.00        |
|                | 1 Shipping        |      | <u>4.25</u>  |
|                | Total             |      | 104.50       |
| Nov 12 / 1979  | 10 Pb/Zn/Cd/Ag @  | 5.35 | 53.50        |
| Sept 26 / 1979 | 8 Pb/Zn/Cu "      | 3.10 | 24.80        |
|                | 8 Au "            | 3.75 | 30.00        |
|                | 8 Preps "         | 1.75 | <u>14.00</u> |
|                | Total             |      | 122.30       |
| Sept 12 / 1979 | 109 Pb/Zn/Ag/Cd @ | 3.90 | 425.10       |
|                | 109 Preps @       | 0.45 | <u>49.05</u> |
|                | Total             |      | 474.15       |
| Sept 14 / 1979 | 66 Pb/Zn/Ag/Cd @  | 3.90 | 257.90       |
|                | 66 Ba "           | 3.25 | 214.50       |
|                | 34 Preps "        | 0.45 | 15.30        |
|                | 32 Preps "        | 1.75 | 56.00        |
|                | 1 Shipping        |      | <u>30.50</u> |
|                | Total             |      | 574.20       |

|             |                 |        |               |
|-------------|-----------------|--------|---------------|
| Aug 31/79   | 270 Pb/Zn/Cd    | @ 3.10 | 837.00        |
|             | 269 Ag          | " 0.80 | 215.20        |
|             | 270 Preps       | " 0.45 | 121.50        |
|             | 1 Shipping      |        | <u>35.75</u>  |
|             |                 | Total  | 1209.45       |
| Aug 31 /79  | 82 Pb/Zn/Ag/Cd  | @ 3.90 | 319.80        |
|             | 82 Preps        | " 0.45 | 36.90         |
|             | 1 Shipping      |        | <u>20.25</u>  |
|             |                 | Total  | 376.95        |
| Aug/79      | 19 Pb/Zn/Ag/Cd  | @ 3.90 | 74.10         |
|             | 19 Preps        | " 0.45 | 8.55          |
| Aug 17 /79  | 12 Pb/Zn/Ag     | @ 3.10 | 37.20         |
|             | 10 Preps        | " 0.45 | 4.50          |
|             | 2 Preps         | " 1.75 | <u>3.50</u>   |
|             |                 | Total  | 127.85        |
| Agg 6/79    | 36 Pb/Zn/Ag     | @ 3.10 | 111.60        |
|             | 10 Preps        | " 0.45 | 4.50          |
|             | 26 Preps        | " 1.75 | <u>45.50</u>  |
|             |                 | Total  | 161.60        |
| Aug 13/79   | 800 Pb/Zn/Ag/Cd | @ 3.90 | 3120.00       |
|             | 800 Preps       |        | 360.00        |
|             | 1 Shipping      |        | <u>157.65</u> |
|             |                 | Total  | 3637.65       |
| June 25 /79 | 8 Pb/Zn/Ag/     | @ 3.10 | 24.80         |
|             | 7 Preps         | " 0.45 | 3.15          |
|             | 1 Prep          | " 1.75 | <u>1.75</u>   |
|             |                 | Total  | 29.70         |

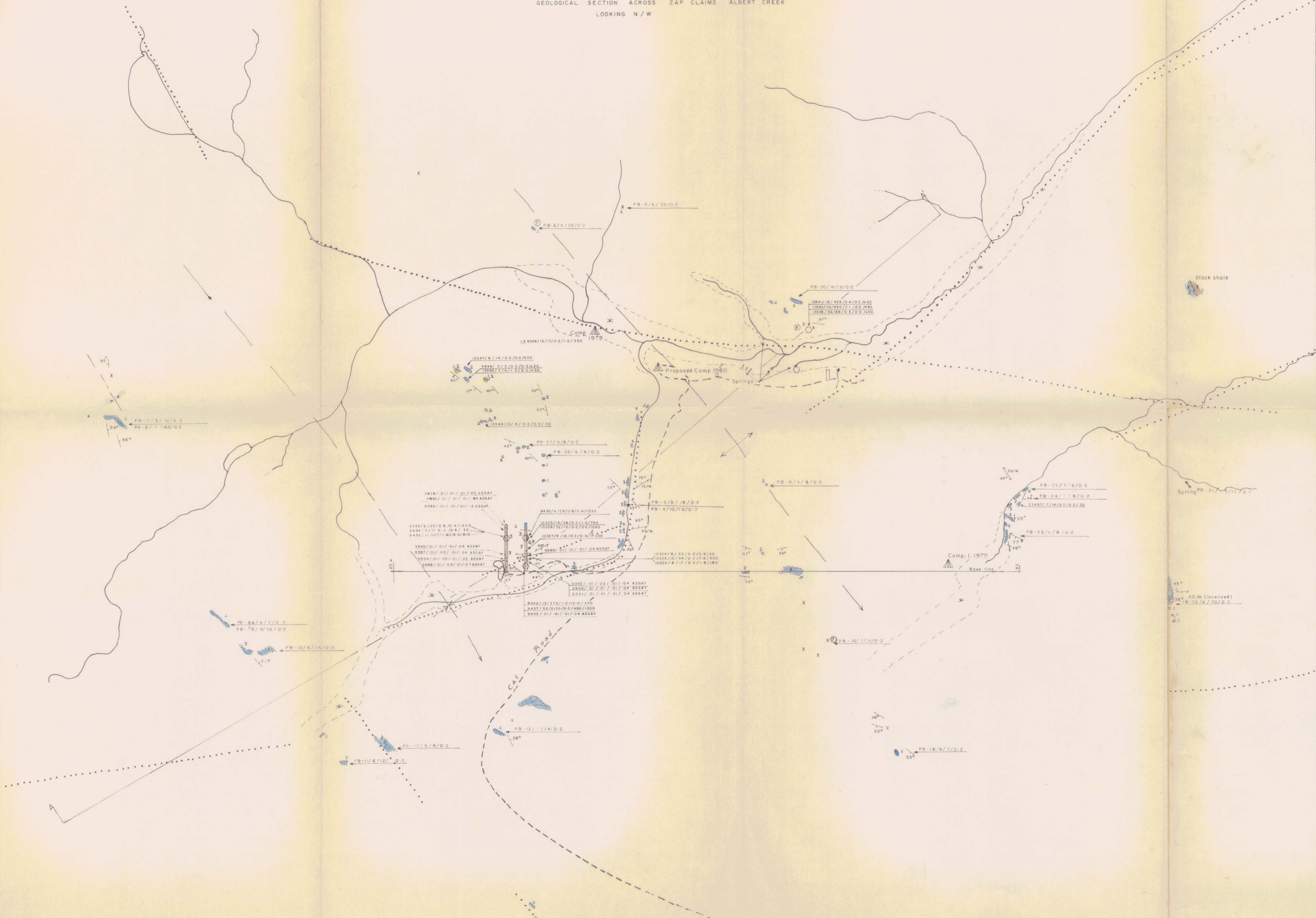
Total Additional Expenses for  
1979 and 1980 Field Work

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\$93,005.48

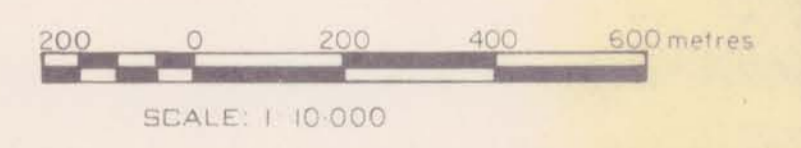


GEOLOGICAL SECTION ACROSS ZAP CLAIMS ALBERT CREEK  
LOOKING N/W



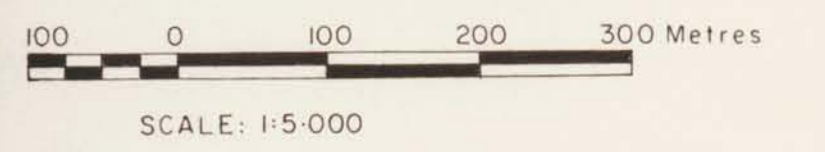
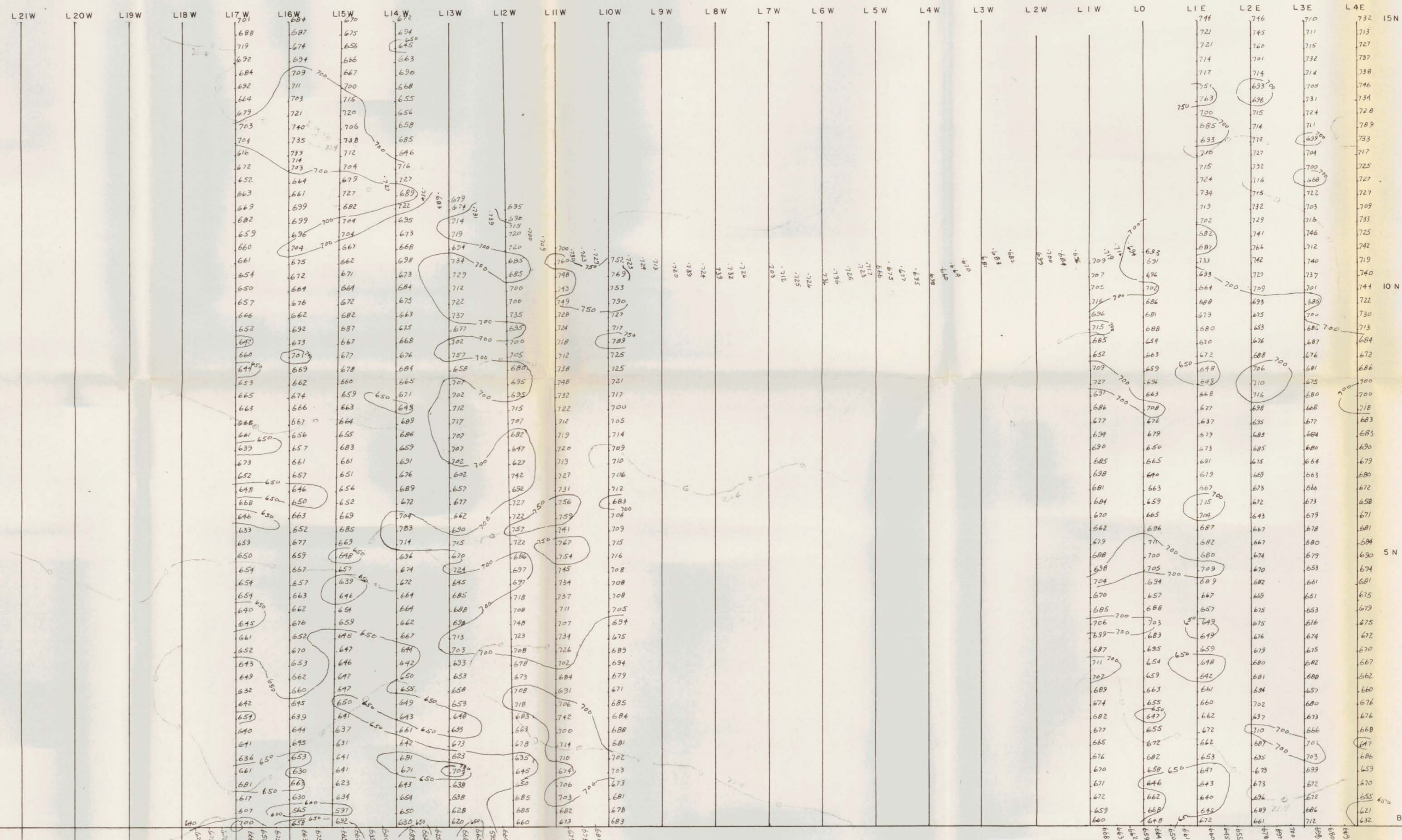
LEGEND

- Quartzite
- Limestone, Dolomite
- Argillite, shale
- Limit of outcrop
- No / Pb / Zn / Ag / Cd / Ba in ppm. Rock Geochem
- No / Pb / Zn / Cd / Ag Assays
- Percent Ounce
- Blasted Trench
- Trench
- Strike & dip of bedding
- Strike & dip of fractures, Number per metre
- Synform: Axial trace (approximate)
- Antiform
- Direction of plunge
- Lineament



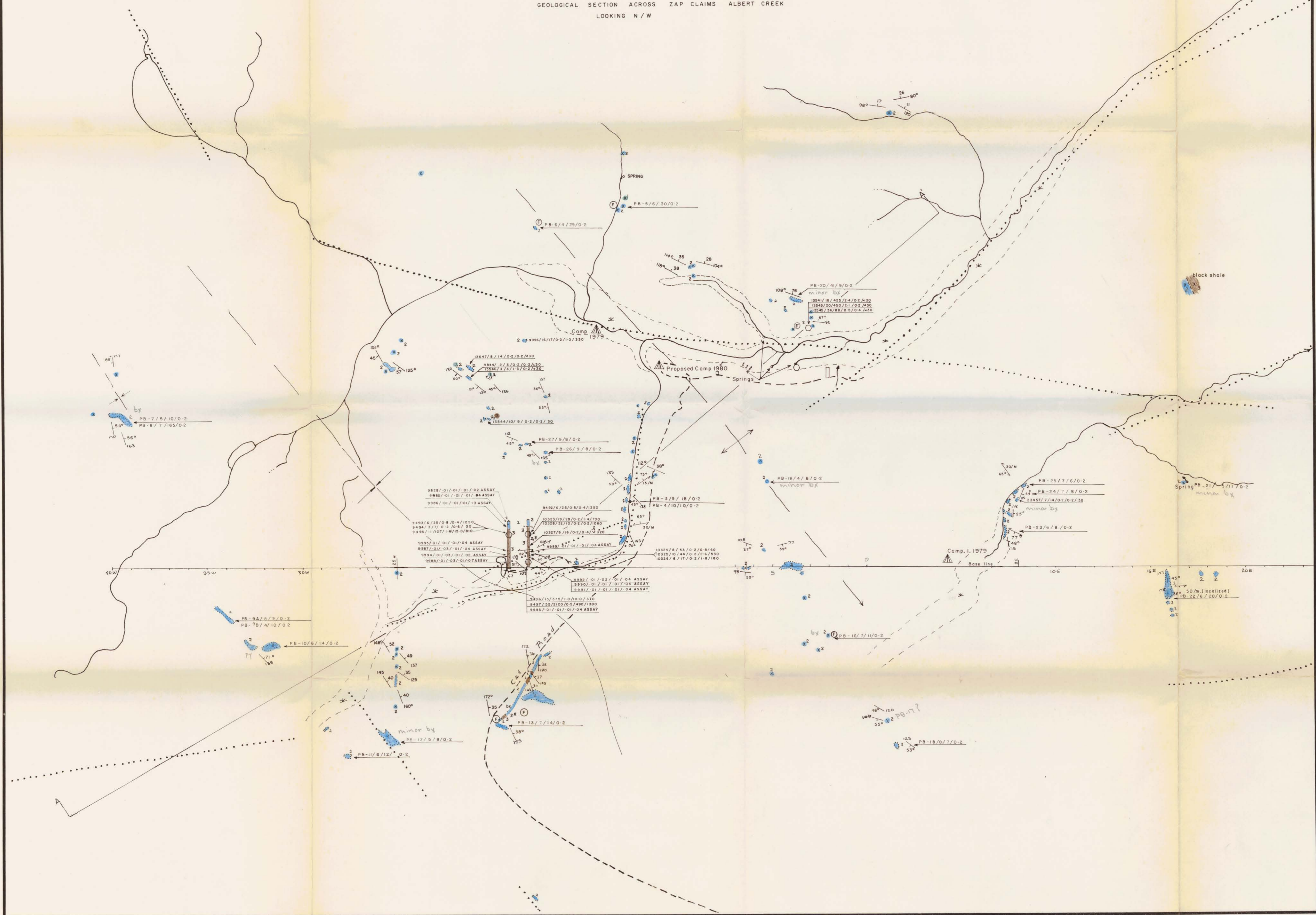
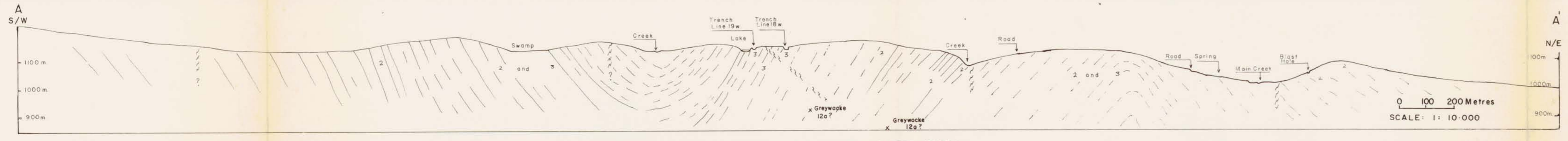
|  |                               |                     |
|--|-------------------------------|---------------------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b> |                               |                     |
| PROPERTY:                                | ZAP Claims                    | <b>RECEIVED</b>     |
| LOCATION:                                | Albert Creek McDame Area B.C. | <b>JUN - 6 1980</b> |
| TYPE OF MAP:                             | GEOLOGY DEPT.                 |                     |
| Geology and Rock analyses                |                               |                     |
| WORKING PLACE:                           |                               |                     |
| BASED ON: Fieldwork by P.B.              |                               |                     |
| DATE OF WORK: Summer 1979                | MAP REF. NO.:                 | FIG. NO.            |
| DRAWN BY: G.T.                           |                               |                     |
| DATE: April 1980                         | N.T.S. NO.: 104-P-13          | 079-7               |





MAGNETOMETER SURVEY  
Inst. Proton (Barringer Research)  
Model No. G.M.1222 Ser. No. 6282  
Readings plotted above 58,000 gammas

|  |                    |           |
|--|--------------------|-----------|
| FALCONBRIDGE NICKEL MINES LIMITED                                |                    |           |
| PROPERTY: ZAP Claims   |                    |           |
| LOCATION: Albert Creek McDame Area B.C.                          |                    |           |
| TYPE OF MAP: Geophysical (Magnetometer Survey)<br>Contoured Data |                    |           |
| BASED ON: Fieldwork by S.P.                                      |                    |           |
| DATE OF WORK: Summer 1979  | MAP REF. NO.:      | FIG. NO.: |
| DRAWN BY: S.P.   |                    |           |
| DATE:  | N.T.S. NO.: 104-13 | 079-79-9  |



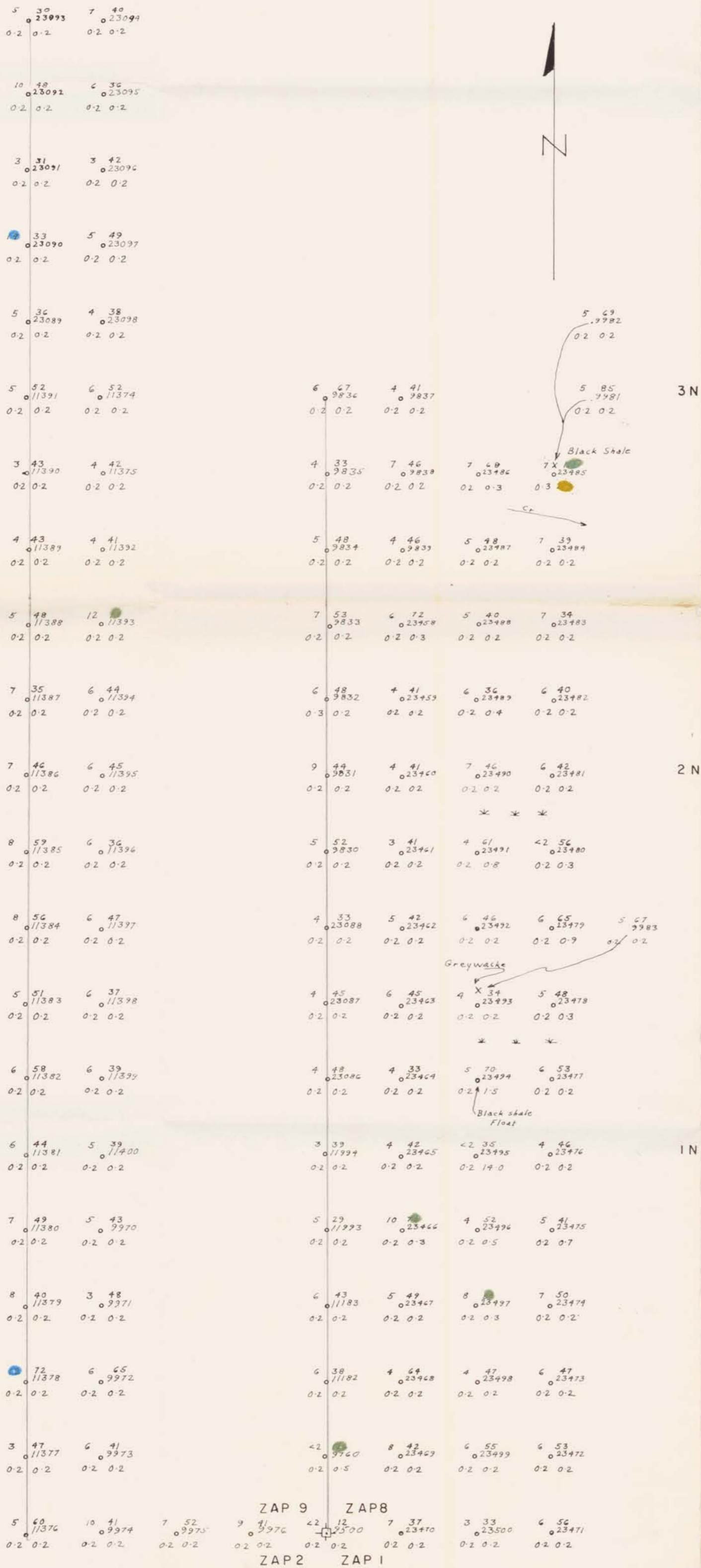
**LEGEND - MIDDLE DEVONIAN**

- Quartzite
- Limestone, Dolomite
- Argillite, shale
- Limit of outcrop
- No. / Pb. / Zn. / Ag. / Cd. / Ba. in ppm. Rock Geochem
- No. / Pb. / Zn. / Cd. / Ag. Assays
- Blasted Trench
- Trench
- Strike & dip of bedding
- Strike & dip of fractures, Number per metre
- Synform Axial trace (approximate)
- Antiform
- Direction of plunge
- Lineament

bx-Breccia

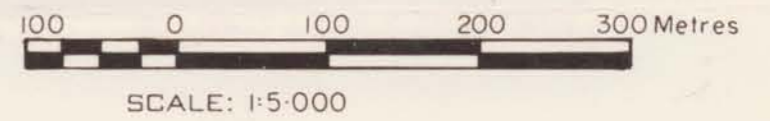
Scale: 0 200 400 600 metres  
SCALE: 1:10,000

|  |                      |           |
|--|----------------------|-----------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b> |                      |           |
| PROPERTY:                                |                      |           |
| ZAP Claims                               |                      |           |
| LOCATION:                                |                      |           |
| Albert Creek McDame Area B.C.            |                      |           |
| TYPE OF MAP:                             |                      |           |
| Geology and Rock analyses                |                      |           |
| WORKING PLACE:                           |                      |           |
| BASED ON: Fieldwork by P.B.              |                      |           |
| DATE OF WORK: Summer 1979                | MAP REF. NO.:        | FIG. NO.: |
| DRAWN BY: G.T.                           |                      |           |
| DATE: April 1980                         | N.T.S. NO.: 104-P-13 | 079-79-1  |



LEGEND

- 15 >134
- 11-14 75-133
- Soil
- Ag. Cd. > 2.2
- 1.0-2.2
- Pb. Zn. x No. Rock
- Ag. Cd.



FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY:

ZAP CLAIMS

LOCATION:

Albert Creek McDome Area B.C.

TYPE OF MAP:

Geochem (Soil) on ZAP CLAIMS 8 and 9

*Rock Sample - geochem*

WORKING PLACE:

BASED ON: Fieldwork by P.B. K.H.C.

DATE OF WORK: Sept 1979

MAP REF. NO.:

FIG. NO.:

DRAWN BY: G.T.

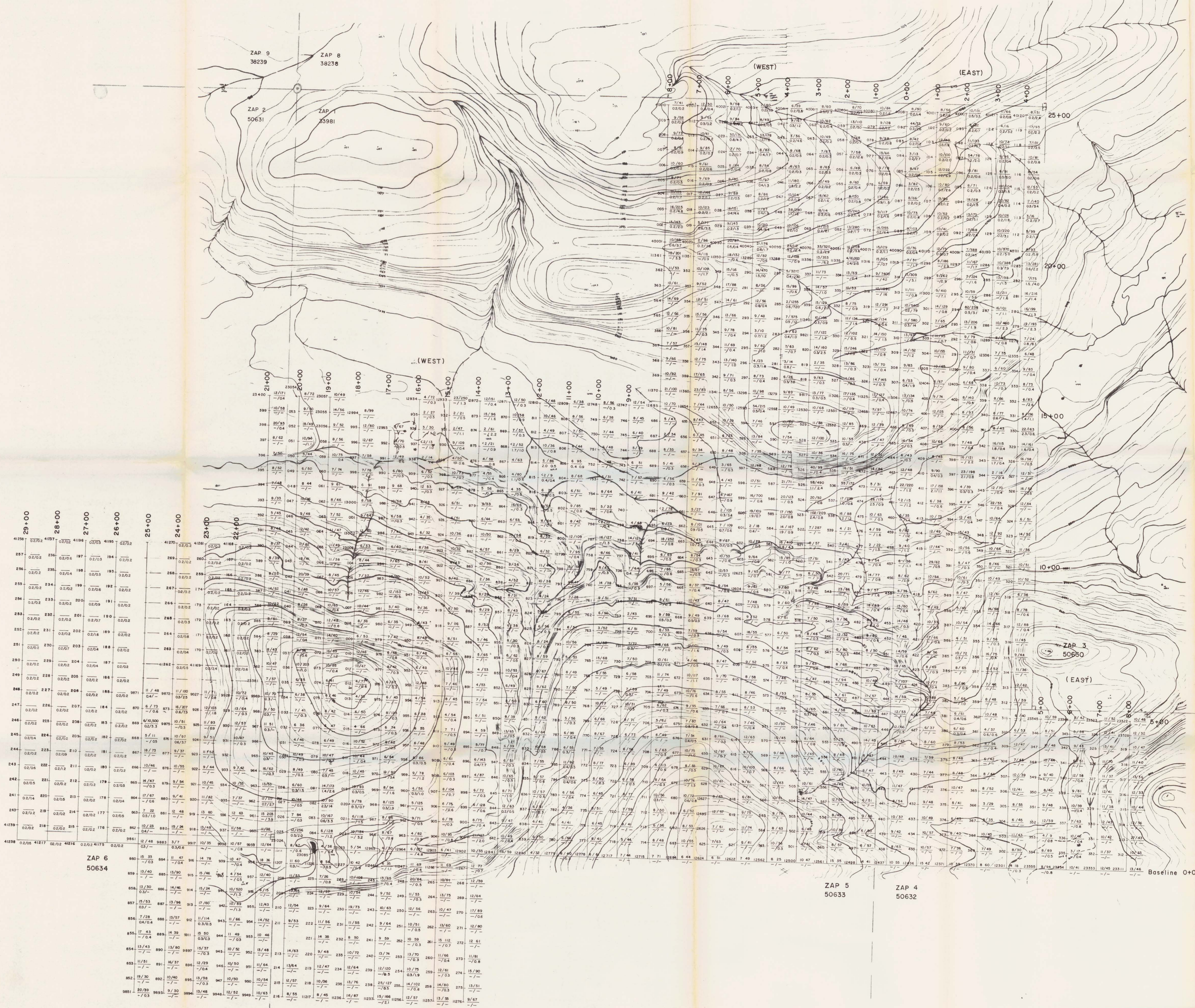
DATE: March 1980

N.T.S. NO.: 104-P-13

079-79-3

ZAP 9 ZAP 8  
ZAP 2 ZAP 1

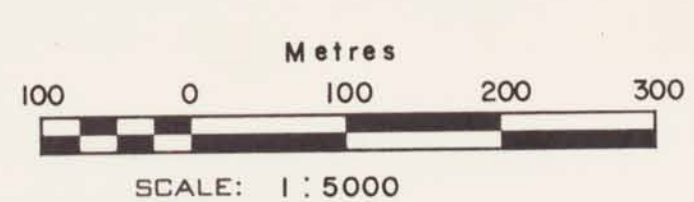
L 20W



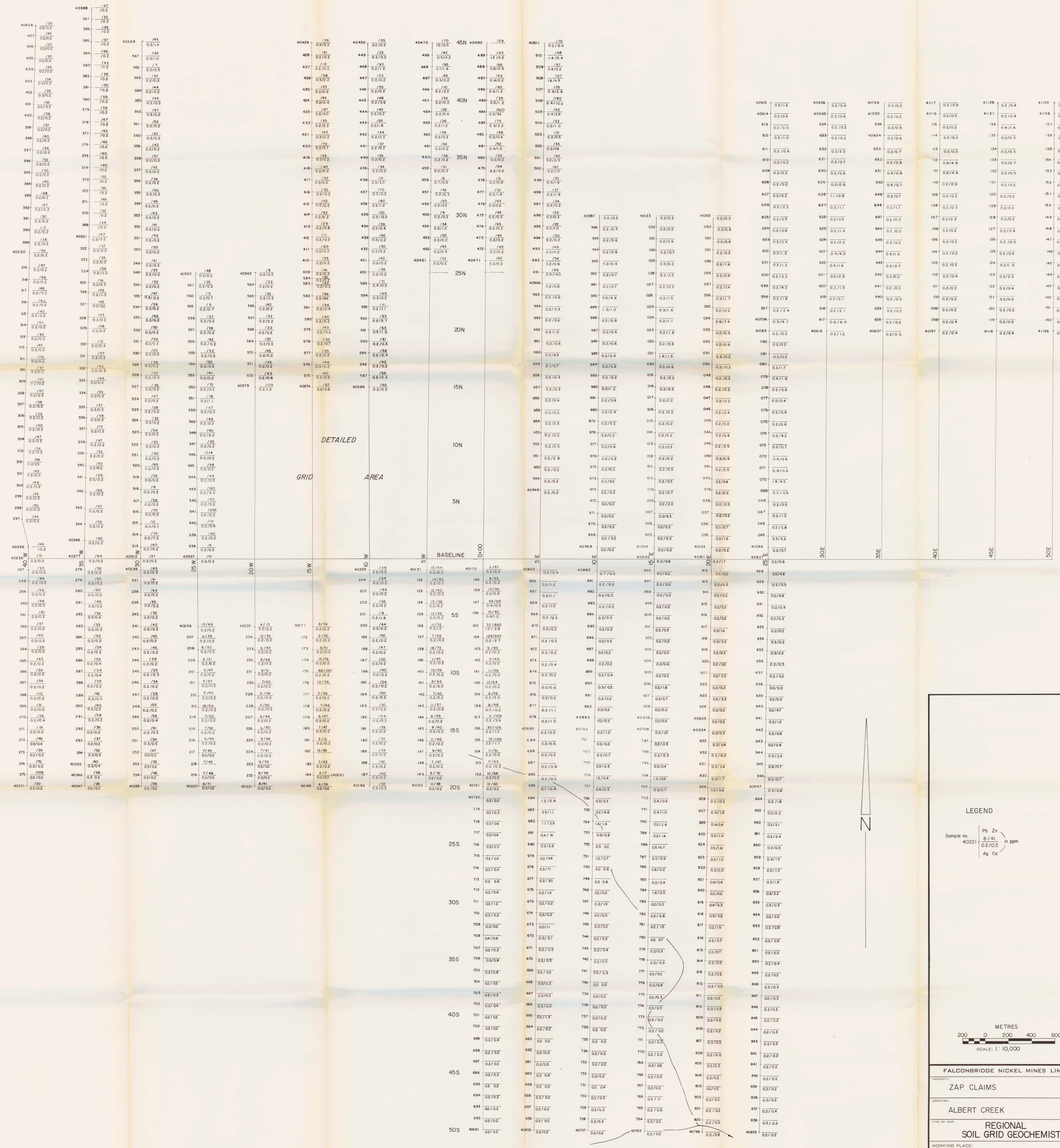
**LEGEND**

(in ppm)  
 Sample no. Pb / Zn  
 Ag / Cd  
 (in ppm)  
 IO

(-) Dash - below detection limit  
 I.S. - insufficient sample



|   |                      |             |
|---|----------------------|-------------|
| FALCONBRIDGE NICKEL MINES LIMITED               |                      | PROJECT NO. |
| ZAP CLAIMS & GRID                               |                      | 079         |
| LOCATION:<br>ALBERT CREEK                       |                      |             |
| TYPE OF MAP:<br>DETAILED SOIL GRID GEOCHEMISTRY |                      |             |
| WORKING PLACE:<br>BASED ON: Fieldwork by S.Z.   |                      |             |
| DATE OF WORK: July/79, June/80                  | MAP REF. NO.:        | FIG. NO.:   |
| DRAWN BY: R.E.                                  |                      | 079         |
| DATE: May/80, Revised July/80                   | N.T.S. NO.: I04 P/13 | 80-3        |

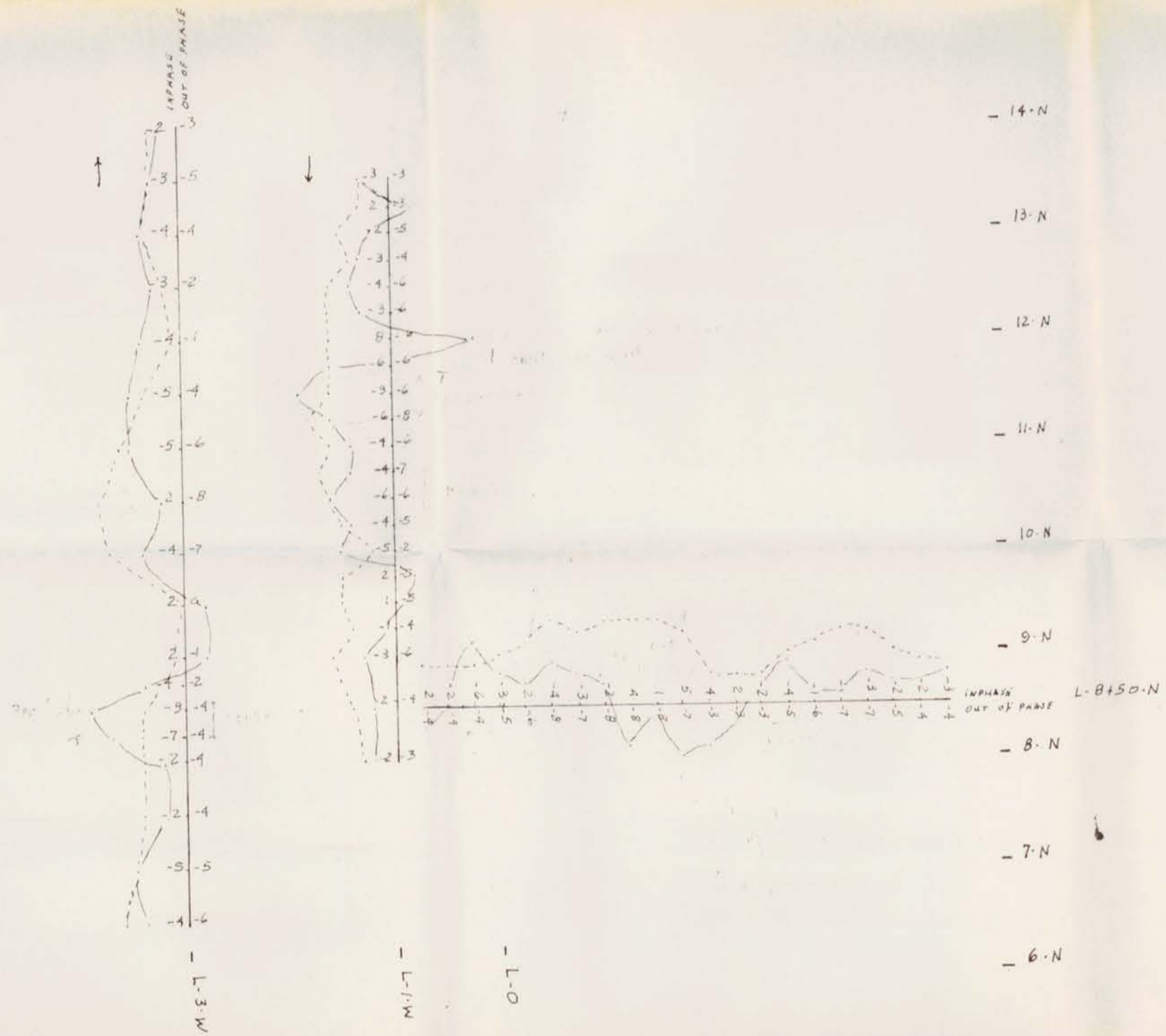


**LEGEND**

Sample no. 40221  $\left\{ \begin{array}{l} \text{Pb} \\ \text{Zn} \\ \text{8/41} \\ \text{02/02} \end{array} \right\}$  in ppm  
 $\left\{ \begin{array}{l} \text{Ag} \\ \text{Cd} \end{array} \right\}$

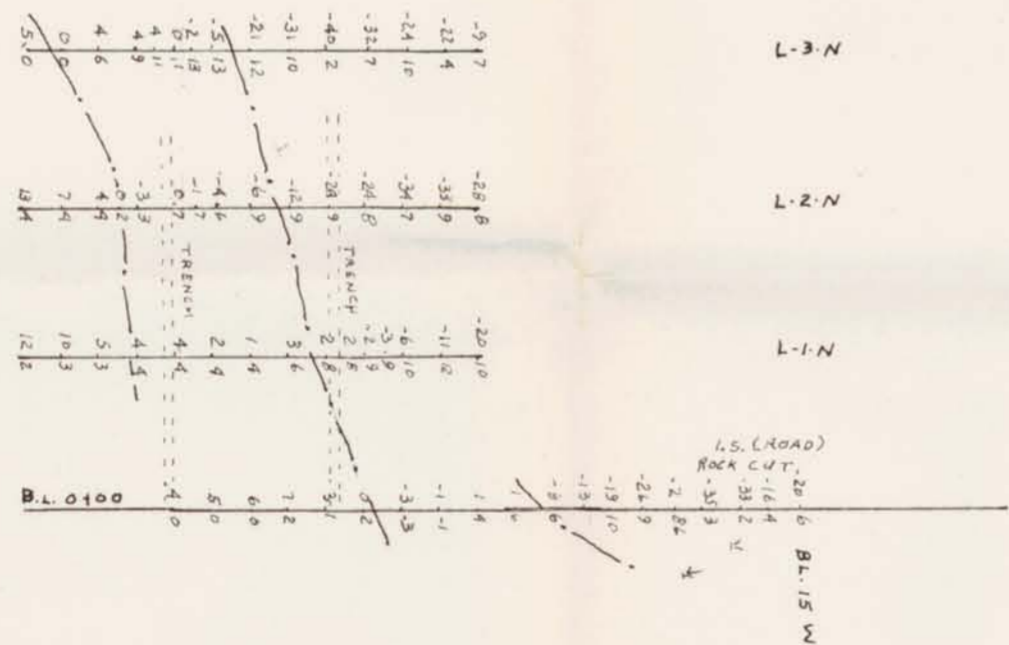
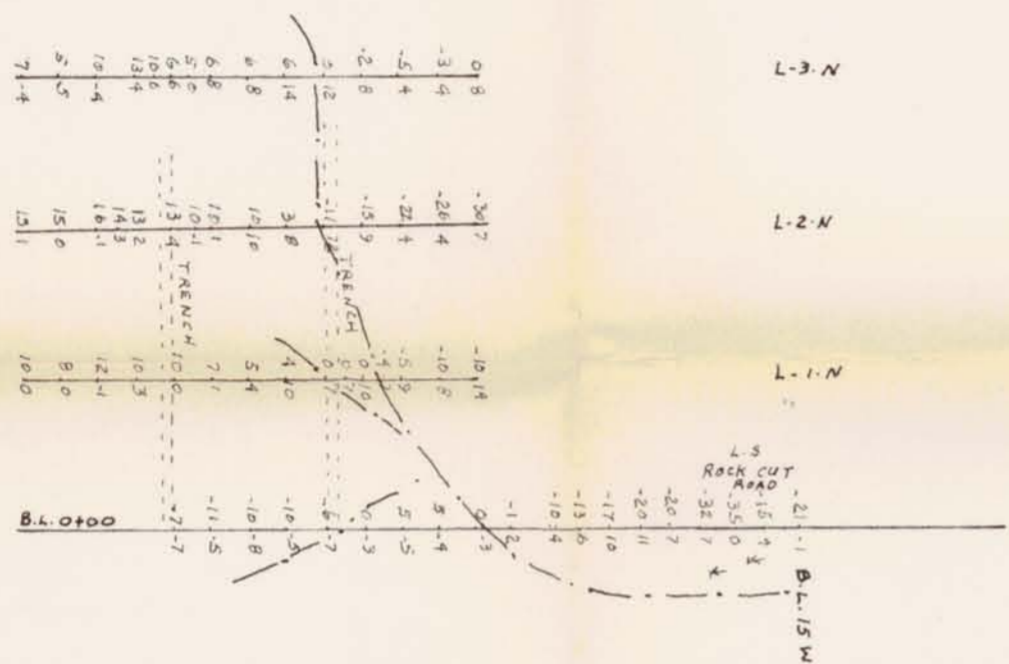
METRES  
 0 200 400 600  
 SCALE: 1 : 10,000

|  |                           |
|--|---------------------------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b>     |                           |
| PROJECT: ZAP CLAIMS                          | PROJECT NO.: 079          |
| LOCATION: ALBERT CREEK                       |                           |
| TYPE OF MAP: REGIONAL SOIL GRID GEOCHEMISTRY |                           |
| WORKING PLACE:                               |                           |
| DATE OF WORK: 07/80                          | MAP REF. NO.: N.T.S. NO.: |
| DRAWN BY: RJE/DW                             | FIG. NO.: 079             |
| DATE: July/80                                | N.T.S. NO.: 080-4         |

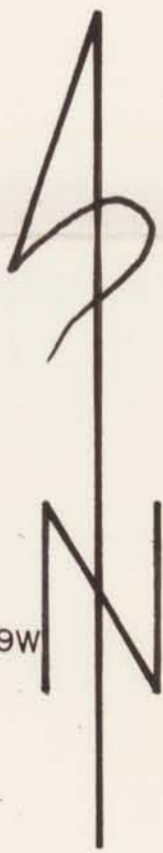


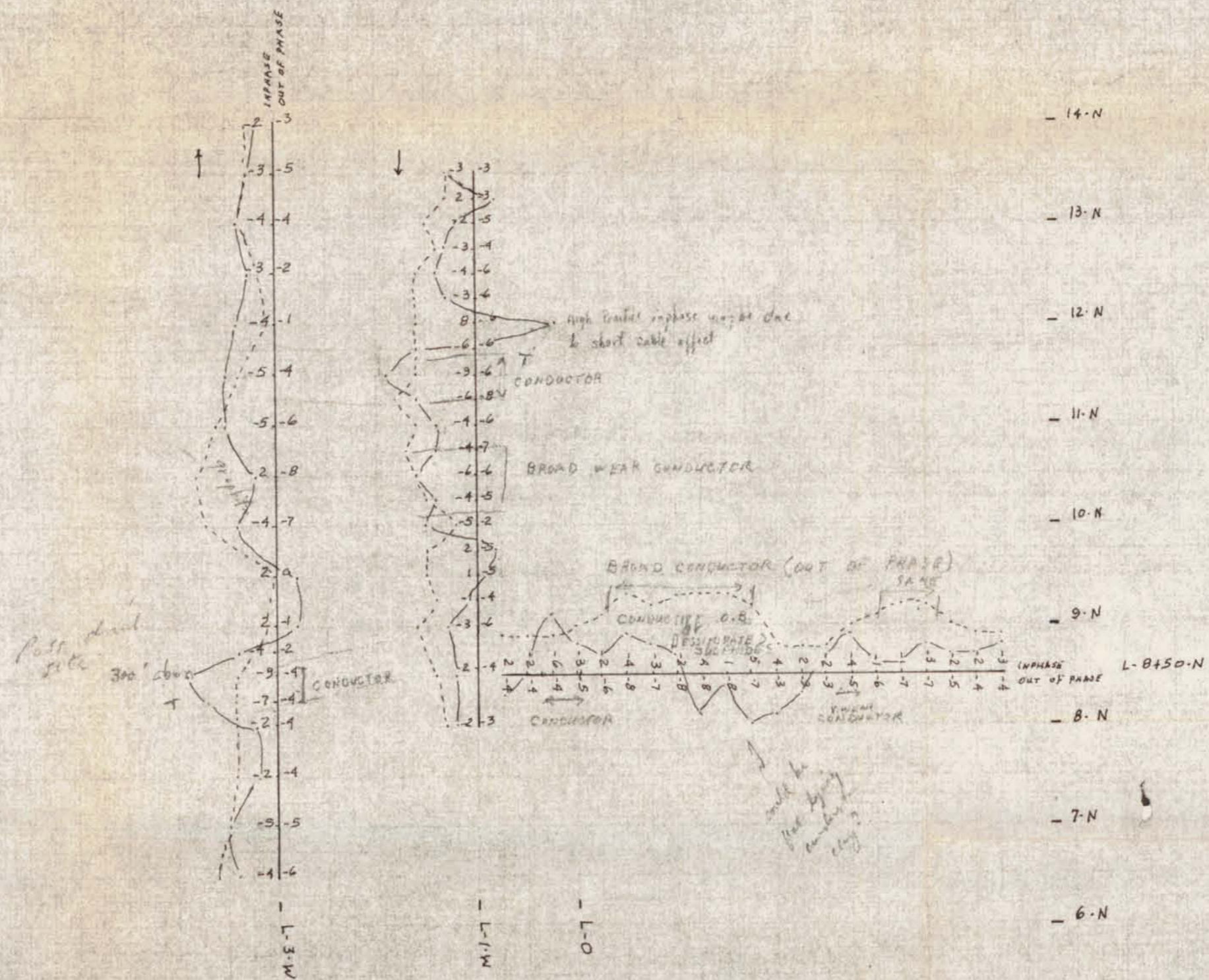
ALBERT CREEK - B.C.  
 SPRING ZONE  
 ELECTROMAGNETIC  
 SURVEY

INST. RONKA E.M.-17 SER. NO. 0117  
 HORIZONTAL LOOP  
 400 FOOT CABLE SEPARATION  
 INPHASE PROFILE —————  
 OUT OF PHASE PROFILE - - - - -  
 SCALE: 1-5000  
 JUNE 1980



ALBERT CREEK- B.C.  
 TRENCH AREA on lines 18W & 19W  
 ELECTROMAGNETIC SURVEY  
 INST. RONKA E.M. 16 SER. NO. 2  
 V.L.F. STN. 17.8 & 18.6  
 CONDUCTORS -----  
 SCALE 1: 5000  
 JUNE 1980 S. PRESUNKA

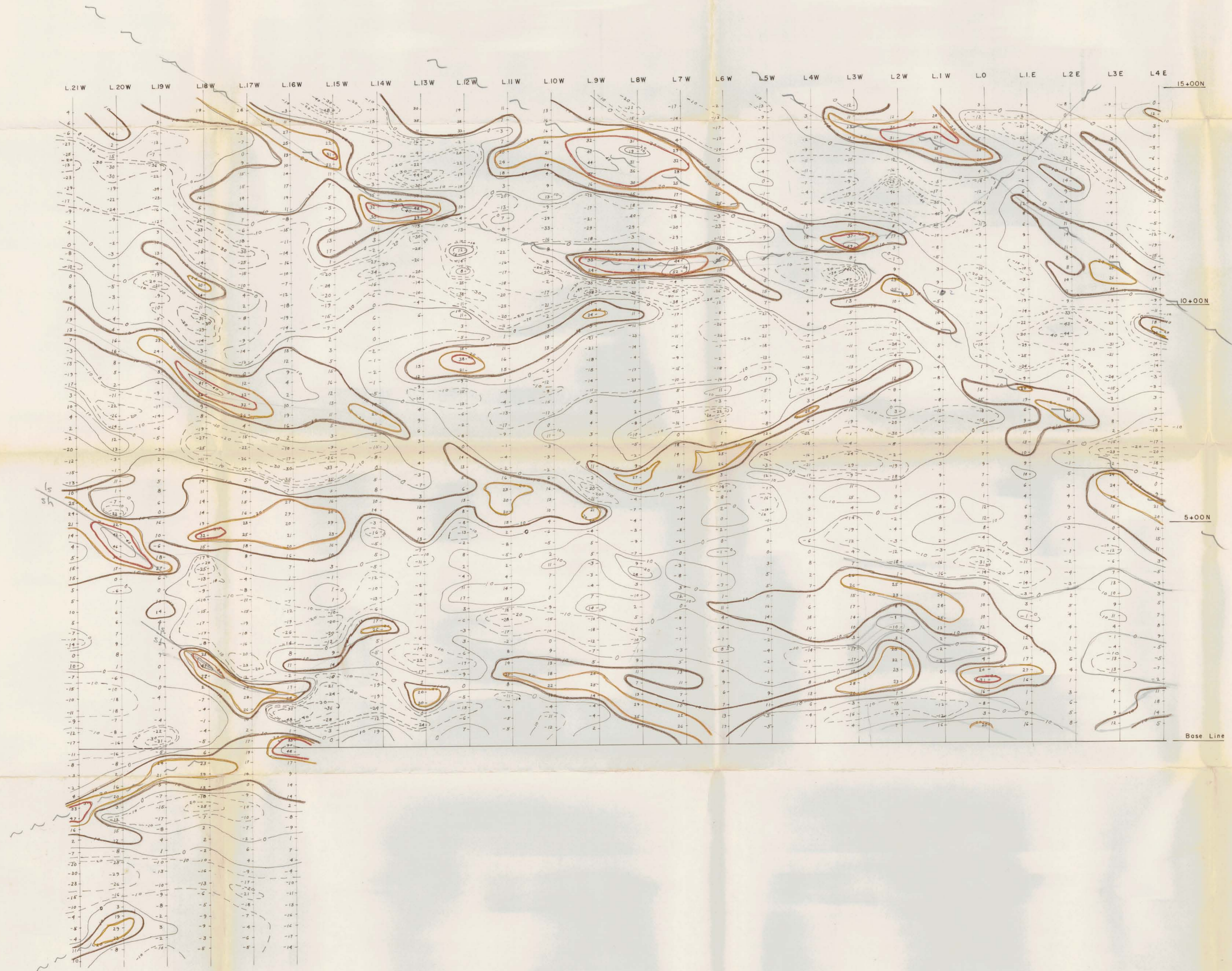




ALBERT CREEK - B.C.  
SPRING ZONE  
ELECTROMAGNETIC  
SURVEY

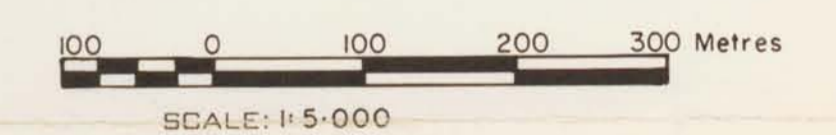
INST. RONKA E.M.-17 SER. NO. 0117  
HORIZONTAL LOOP  
400 FOOT CABLE SEPARATION  
INPHASE PROFILE ———  
OUT OF PHASE PROFILE - - - -  
SCALE: 1-5000  
JUNE 1980



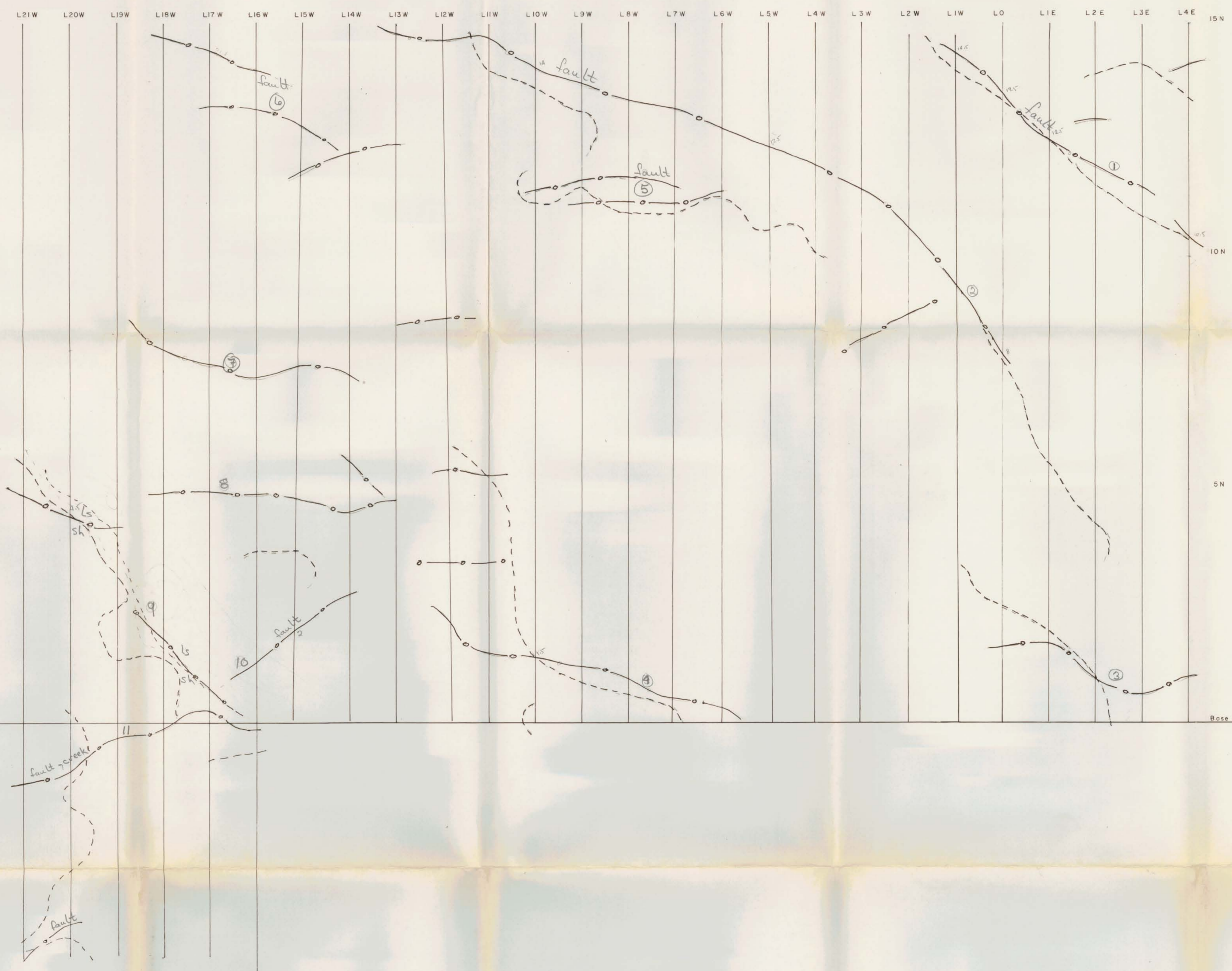


LEGEND (CONTOUR INTERVALS)

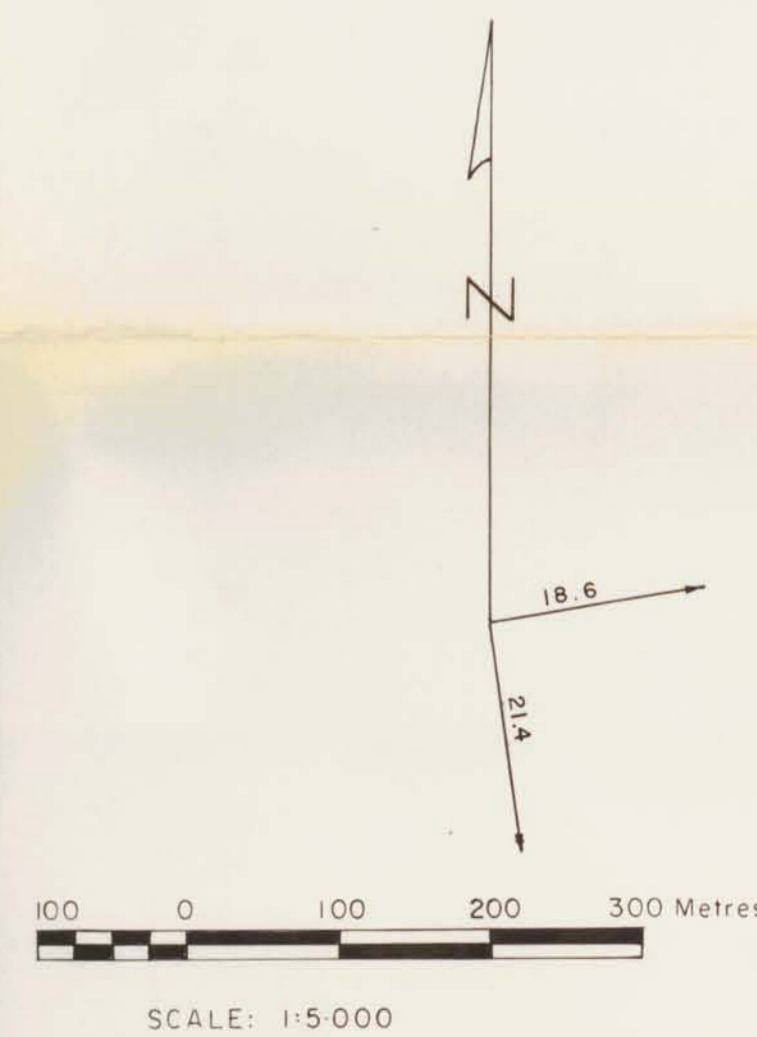
- 10 - 19
- 20 - 29
- 30 - 39
- 40 - 49
- > 50



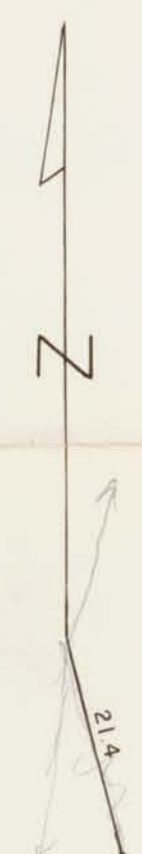
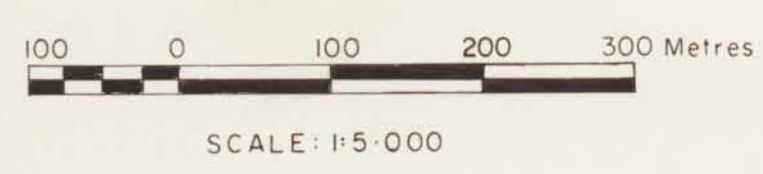
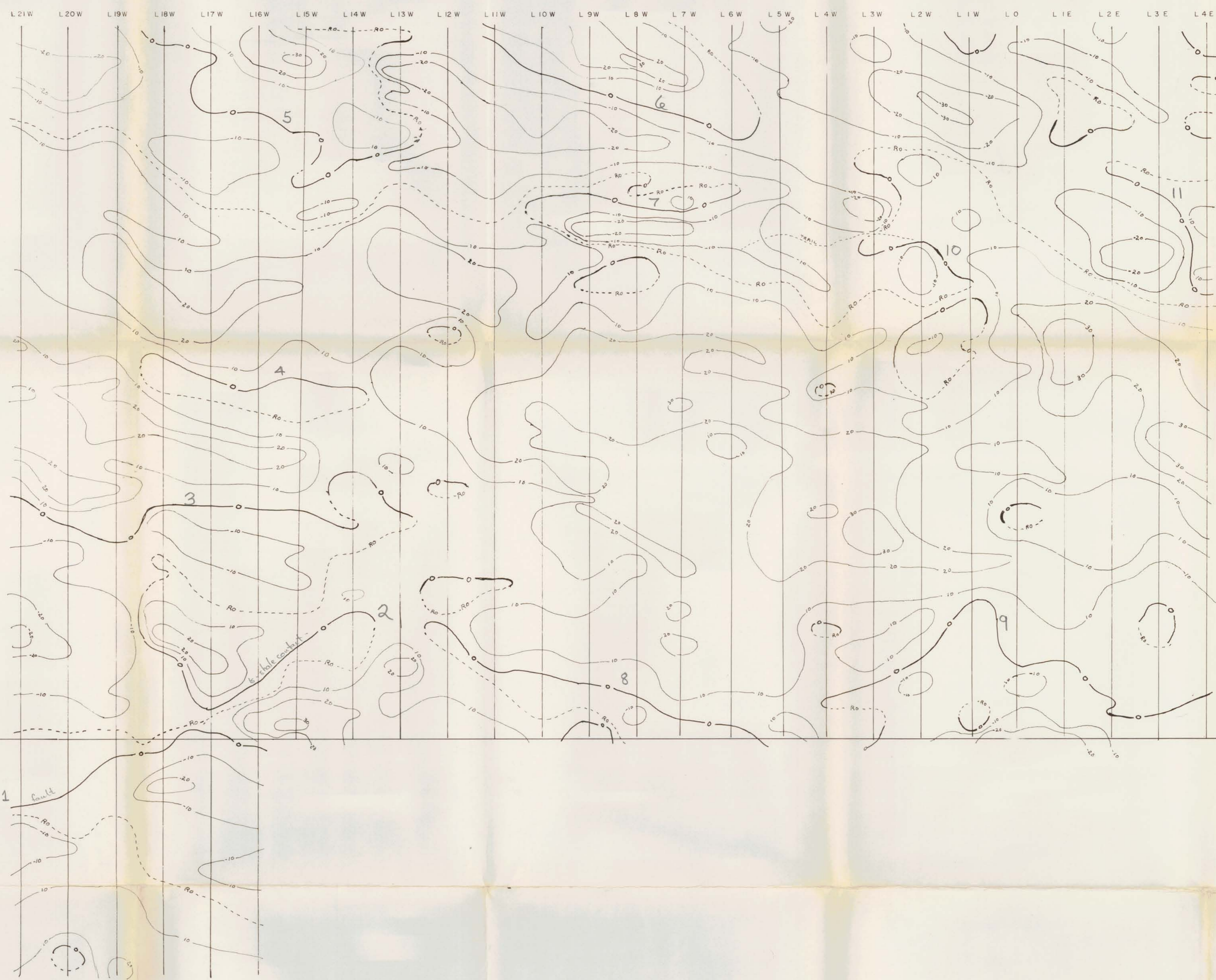
|  |  |                      |
|--|--|----------------------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b> |  |                      |
| PROPERTY:                                | ZAP Claims   |                      |
| LOCATION:                                | Albert Creek McName Area B.C.  |                      |
| TYPE OF MAP:                             | Geophysical E.M.16 (V.L.F. STN. 21:4 Md.)<br>Filtered Data Computed From Figure 079-79-4 |                      |
| WORKING PLACE:                           |  |                      |
| BASED ON:                                | Fieldwork by S.P.  |                      |
| DATE OF WORK:                            | Summer 1979  | MAP REF. NO.:        |
| DRAWN BY:                                | G.T.   | FIG. NO.:            |
| DATE:                                    | April 1980   | N.T.S. NO.: 104-P-13 |
|  |  | 079-79-5             |



COMPOSITE GEOPHYSICAL  
 VLF Stations 214 and 18.6  
 — 0 — 0 — 21.4  
 - - - - - 18.6



|  |                      |           |
|--|----------------------|-----------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b>   |                      |           |
| PROPERTY: ZAP Claims   |                      |           |
| LOCATION: Albert Creek McDome Area B.C.  |                      |           |
| TYPE OF MAP: Geophysical E.M.16 Showing Conductor axes for VLF stations 214 and 18.6 |                      |           |
| BASED ON: Fieldwork by S.P.  |                      |           |
| DATE OF WORK: Summer 1979  | MAP REF. NO.:        | FIG. NO.: |
| DRAWN BY: S.P.   |                      |           |
| DATE:  | N.T.S. NO.: 104-P-13 | 079-79-8  |

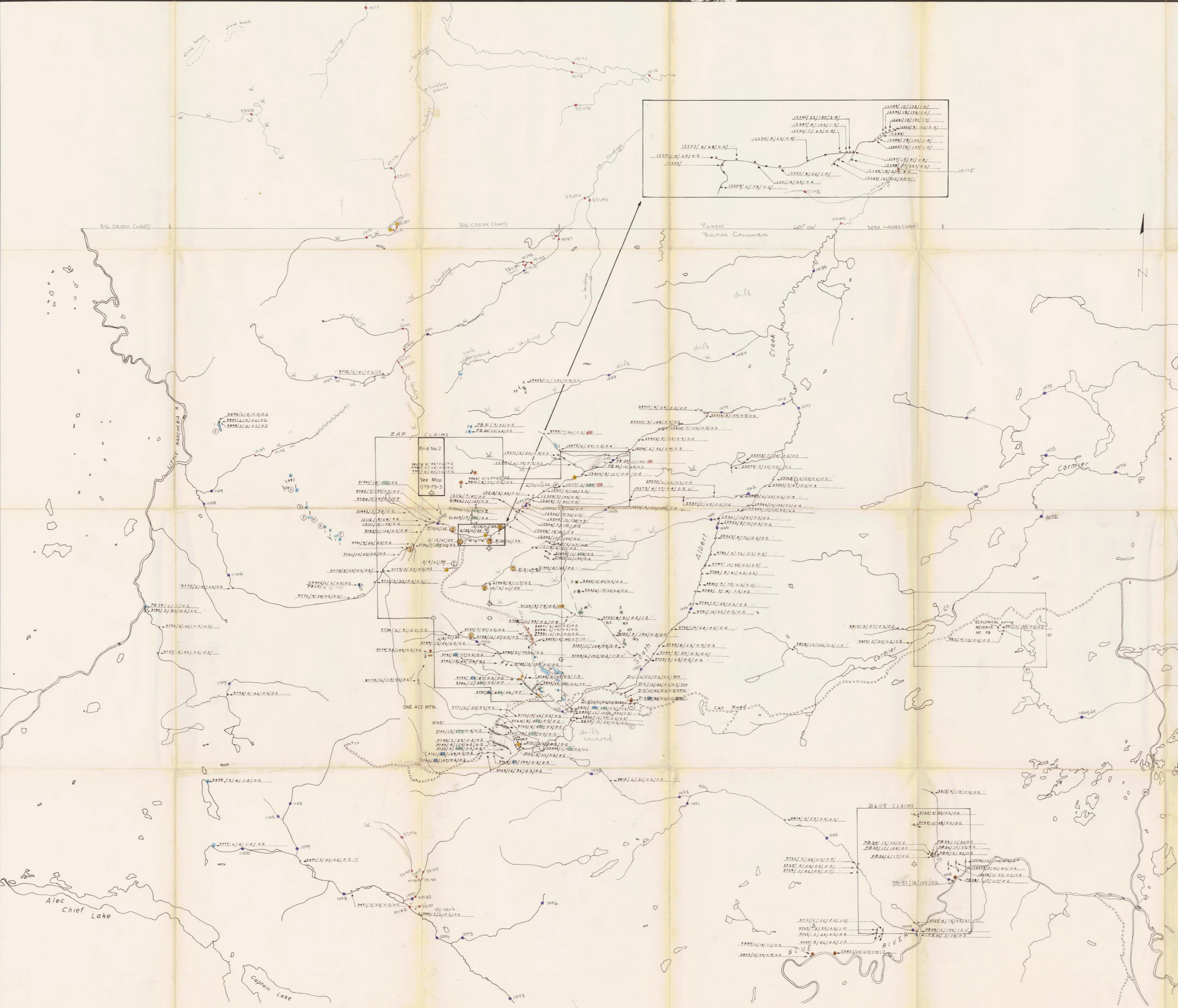


—○— Inphase Contours  
 —○— Conductors  
 - - - - RO - - - - Reverse Cross-over

|  |                    |           |
|--|--------------------|-----------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b>                             |                    |           |
| PROPERTY: ZAP Claims   |                    |           |
| LOCATION: Albert Creek McDome Area B.C.                              |                    |           |
| TYPE OF MAP: Geophysical (E.M. 16 VLF ST. 21.4 Md)<br>Contoured Data |                    |           |
| BASED ON: Fieldwork by S.P.  |                    |           |
| DATE OF WORK: Summer 1979  | MAP REF. NO.:      | FIG. NO.: |
| DRAWN BY: S. P.  |                    |           |
| DATE:  | NTS. NO.: 104-P-13 | 079-79-6  |

Geochemical Sampling (soil, silt)

- organics
- glacial drift - vesicular volcanic
  - quartzite
  - porphyritic quartz monzonite
  - calc. gneiss
  - dolomite
  - limestone
  - sand silt / gravel / clay



**LEGEND**

- CAMBRIAN
  - Limestone
  - Argillite, shale
- TERTIARY OR OLDER
  - Arkose, greywacke, conglomerate siltstone
  - ⊙ Fossil
  - △ Biogeochemical site (Fortescue, 1961)
  - ⊕ Helicopter Landing
  - ⊙ Legal Corner Post
- No./Pb/Zn/Ag/Cd/Ba in ppm Silt
- No./Pb/Zn/Ag/Cd/Ba in ppm Rock
- Pb/Zn/Ag/Cd in ppb Water
- GSC Silt 1979

SCALE: 1:50,000

| FALCONBRIDGE NICKEL MINES LIMITED |  |                      |
|-----------------------------------|--|----------------------|
| PROPERTY:                         | ZAP & BLUE CLAIMS                          | PROJECT NO.: 079     |
| LOCATION:                         | Albert Creek - Blue River McDome Area B.C. |                      |
| TYPE OF MAP:                      | Regional Geochemistry & Geology            |                      |
| WORKING PLACE:                    | BASED ON: Fieldwork by P.B. S.Z. B.W.D.    |                      |
| DATE OF WORK:                     | Summer 1979                                | MAP REF. NO.:        |
| DRAWN BY:                         | G.T.                                       | FIG. NO.:            |
| DATE:                             | March 1980                                 | N.T.S. NO.: 104-P-13 |
|                                   |  | 2                    |

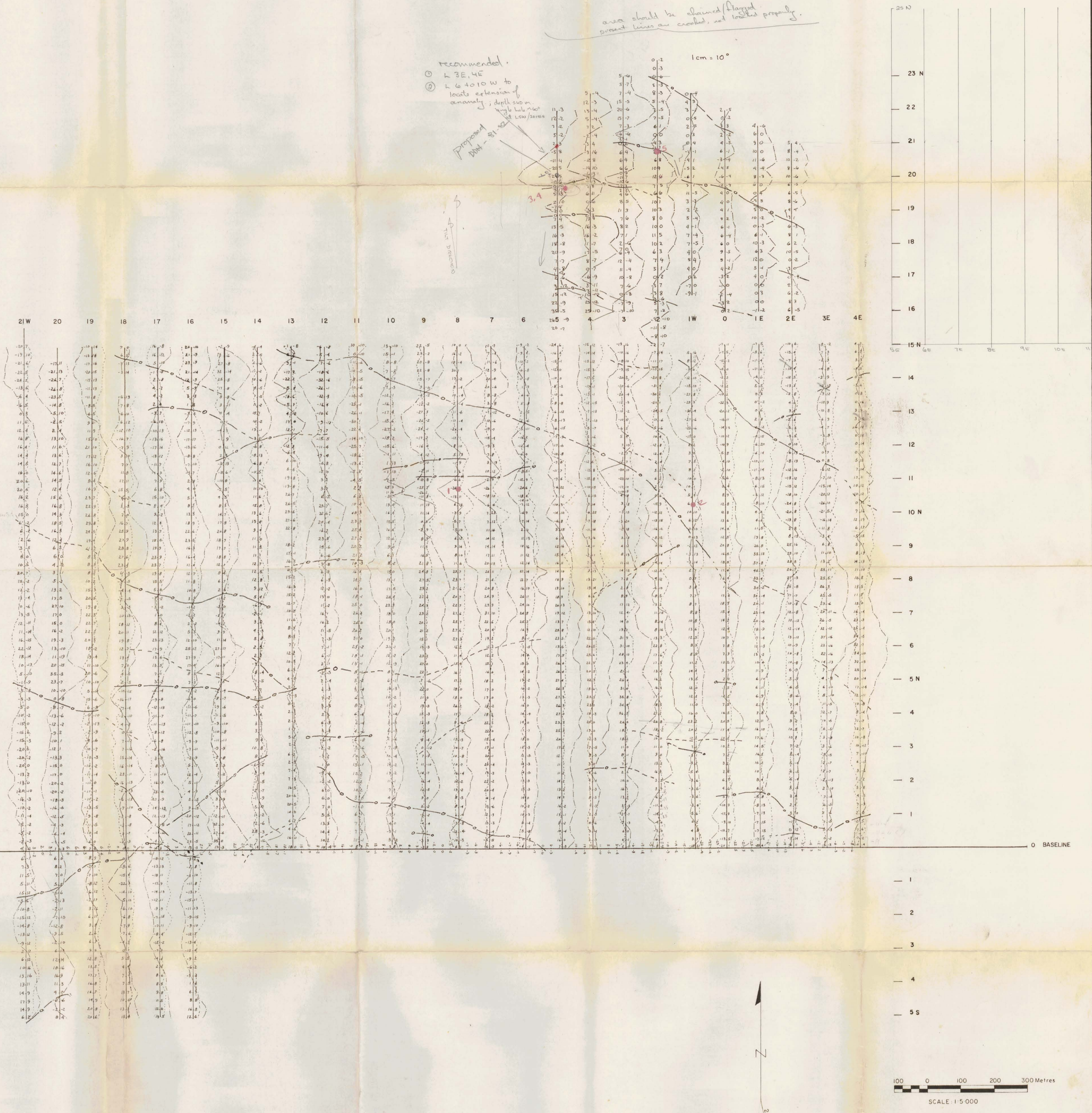
area should be obtained flagged  
current lines are crossed, not installed properly.

recommended:  
 ① L 3E, 4E  
 ② L 6 to 10 W to  
 locate extension of  
 anomaly; depth 50m  
 to 100m  
 L 10/100m

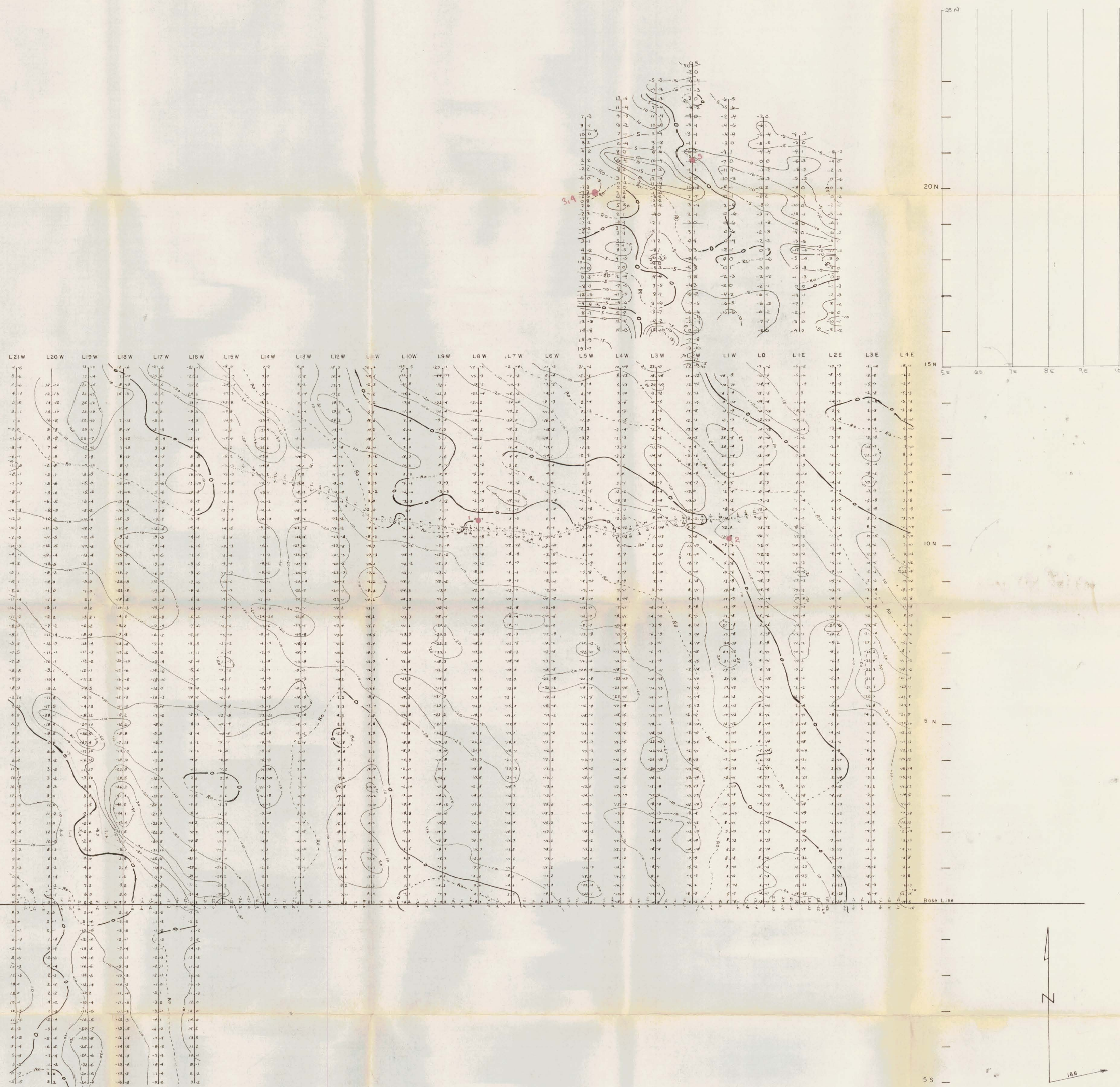
1cm = 10"

Proposed  
 Mt - 21

↑  
 direction of  
 secondary conductor



|  |                   |           |
|--|-------------------|-----------|
| FALCONBRIDGE NICKEL MINES LIMITED                                      |                   |           |
| PROPERTY: ZAP Claims   |                   |           |
| LOCATION: Albert Creek McName Area B.C.                                |                   |           |
| TYPE OF MAP: Geophysical (E.M. 16 VLF ST. 21-4 Md.)<br>Inphase Profile |                   |           |
| BASED ON: Fieldwork by S.P.  |                   |           |
| DATE OF WORK: Summer 1979  | MAP REF. NO.:     | FIG. NO.: |
| DRAWN BY: G.T.   |                   |           |
| DATE: April 1980   | N.T.S. NO: 104-13 | 079-79-4  |



—○— Inphase Contours  
 —○— Conductors  
 - - - - - RO - - - - - Reverse Cross-over

|   |                    |           |
|---|--------------------|-----------|
| <b>FALCONBRIDGE NICKEL MINES LIMITED</b>                                |                    |           |
| PROPERTY: ZAP Claims  |                    |           |
| LOCATION: Albert Creek McName Area R.C.                                 |                    |           |
| TYPE OF MAP: Geophysical (E.M.16 VLF ST.18.6 Seattle)<br>Contoured Data |                    |           |
| BASED ON: Fieldwork by S.P.   |                    |           |
| DATE OF WORK: Summer 1979   | MAP REF NO.:       | FIG. NO.: |
| DRAWN BY: S.P.  |                    |           |
| DATE:   | NTS. NO.: 104-P-13 | 079-79-7  |