REPORT ON THE GEOLOGICAL,

GEOCHEMICAL AND GEOPHYSICAL SURVEYS

of the

ELLE CLAIMS

by

G.D. ULRICH, P. ENG.

Claims: Elle # 1 - 88 Record (Tag) No. Y79958 to Y80045

Location: 12 Miles ENE of the Town of Faro, Yukon Territory

Blind Creek Area, Whitehorse Mining District

Map Sheets 105K/6 & 105K/7

62°16'45" North Latitude, 133°01'30" West Longitude

Dates: July 20, 1974 - December 31, 1974.

December 31, 1974. Vancouver, B.C.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 19,700.00

D. R. Craig

Resident Geologist or
~~Resident Mining Engineer~~

Considered as representation work under Section 53 of the Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

for Commissioner of Yukon Territory

Office Of The Supervising Mining Recorder
JUN 02 1975
WHITEHORSE
Yukon Territory

TABLE OF CONTENTS

MAPS AND DIAGRAMS

TABLES

APPENDICES

INTRODUCTION

The following report is based on work carried out by Geophysical Engineering Limited on behalf of Teck Mining Group Limited during the 1974 field season. The work was completed on an 88 claim group in the Blind Creek area of the Whitehorse Mining District. The claims are owned jointly by Silver Standard Mines Limited and Teck Mining Group Limited.

The exploration program consisted of laying out a flagged line grid and conducting geological, geochemical, magnetometer and high-frequency electromagnetic (VLF-EM) surveys.

The program was directed by R.E. Hindson of Geophysical Engineering Limited. The writer carried out the geological mapping and supervised the other surveys. The geophysical and geochemical surveys were completed by G. Lovang, prospector, K. Davies, geophysical technician, and B. Hainsworth, geological student, all of Geophysical Engineering Limited.

LOCATION AND ACCESS

The claims are located in the southeastern Yukon and are centered at approximately $62^{o}16'45"N$, $133^{o}01'30"W$, some 12 miles east-northeast of the town of Faro. They lie northwest of Blind Creek on the southeast flank of the Anvil Range. Elevations on the property range from approximately 3,500 to 5,500 feet above M.S.L. Three major tributaries, which drain to the southeast into Blind Creek, cut across the property.

Access to the claim group is by helicopter from a heliport which is located on the Vangorda Creek road, some two miles to the southwest of the property. The trip from the heliport to Faro is 20 miles by road.

TECK MINING GROUP

MT. MYE PROJECT

ELLE GROUP ANVIL AREA

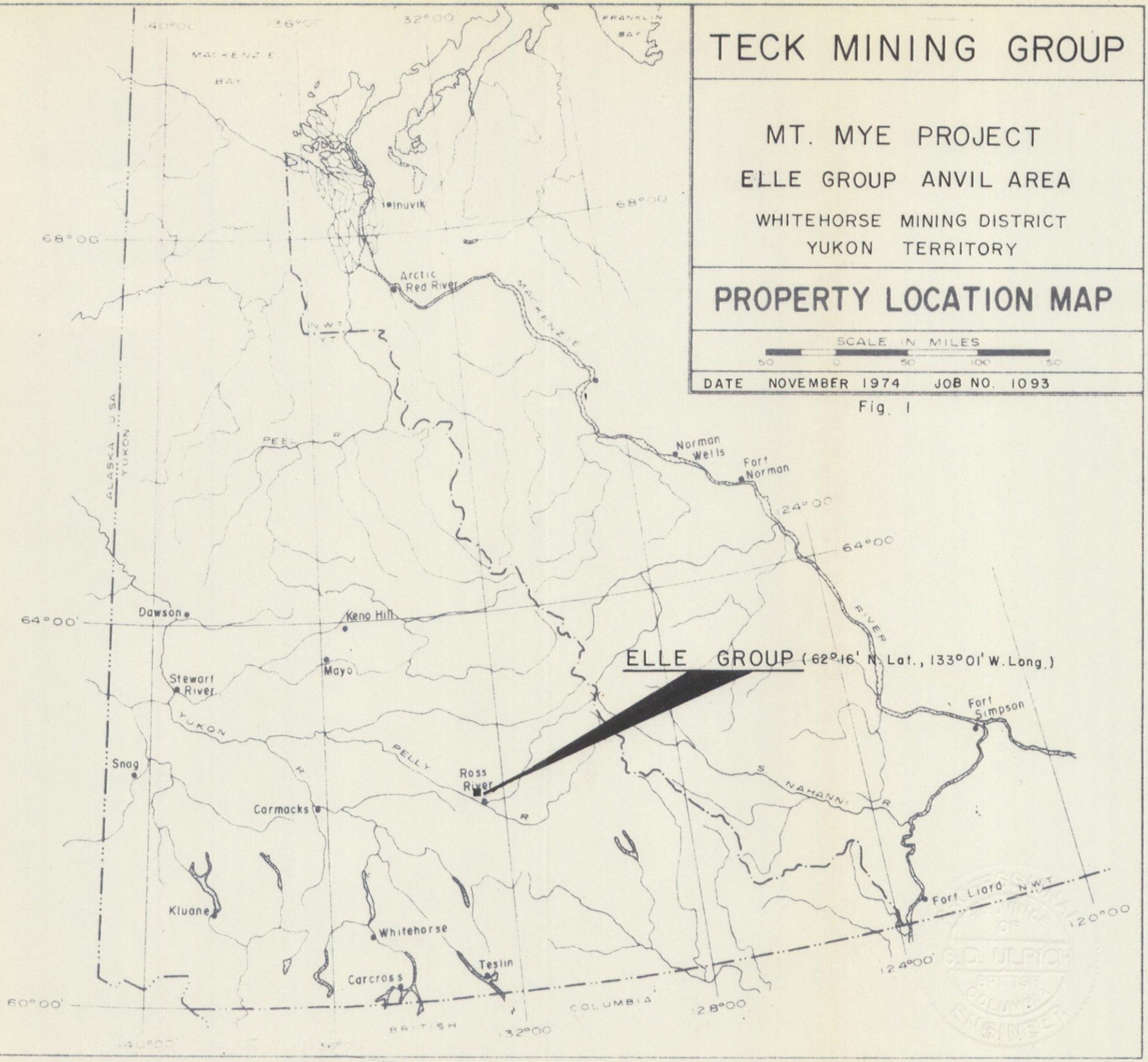
WHITEHORSE MINING DISTRICT
YUKON TERRITORY

PROPERTY LOCATION MAP

SCALE IN MILES
50 0 50 100 150

DATE NOVEMBER 1974 JOB NO. 1093

Fig. 1



CLAIMS

The 88 claims on which the work was done are plotted on Figure 2 at a scale of 1" = 800'. A complete list of claims is tabulated below:

Claim	Record (Claim Tag) No.	Expiry Date	Title
Elle 1 - 88 inclusive	Y79958 to Y80045 inclusive	July 24, 1975	J.D. Munroe in trust for Silver Standard Mines Limited and Teck Mining Group Limited

GEOLOGY

General

The property lies on the southeast flank of the Anvil Range. Cretaceous granodiorite and quartz monzonite which form the core of these mountains underlies the northeast portion of the property. On the claims the batholithic rocks are mainly foliated biotite-muscovite quartz monzonite with minor granodiorite. A sequence of early Paleozoic and/or Precambrian rocks, which is intruded by the Anvil batholith, underlies the remainder of the property. Roof pendents of this formation are common in the batholith. These metamorphosed sediments, interbedded with some volcanics are believed to be Cambrian and/or Hadrynian in age (1). They are composed of schist, phyllite, and greenstone. At least two stages of plastic deformation, accompanied by medium grade metamorphism, are evident. The metamorphic rocks on the property correspond to the same regional sequence in which the Faro, Vangorda, Swim, AEX, Champ and Firth mineralized zones are located. Just exactly where the property lies in the metamorphic stratigraphy is not known, but is discussed later in this report.

Geological maps and sections (Figures 3 and 4) are included in this report at a scale of 1" = 800'.

Lithology

Several rock units were distinguished in the mapping program. The relative ages of the metamorphic terrain are based on the assumption that the beds were not overturned. This may or may not be correct. However, a rough metamorphic stratigraphy has been worked out which helps relate the detailed mapping to the regional geology.

A brief description of the rock units used in the geological survey is given below:

Precambrian - Paleozoic

Hadrynian (?), Cambrian, and Ordovician (?)

Unit 1: Graphitic phyllite

This unit is composed of fine-grained, light gray, lustrous phyllite which weathers to a light brown colour. Some graphite has developed along the phyllitic partings. Only one small occurrence of this rock type exists on the property in a low, well exposed outcrop in the northwest. A planar phyllitic parting has developed in these rocks. An apparently sharp contact occurs between this unit and the overlying schist.

The main mineralogy of the graphitic phyllite appears to be quartz, biotite and muscovite with minor amounts of graphite. The quartz and biotite form layers approximately 1 mm. thick. The white mica forms the phyllitic partings between the layers, giving the rock its lustrous appearance.

Unit 2: Quartz-biotite - (muscovite-garnet) - schist

Underlying about 30% of the property, and exposed mostly in one long ridge of outcrop is a dark brown quartz-biotite schist which weathers to a light brown colour, containing significant amounts of

muscovite and garnet. A wavy, typically schistose parting has developed. These rocks are further characterized by a multiple direction of schistosity, which may be indicative of two phases of plastic deformation. The foliations are characterized by an earlier (?) compositional layering which is cut by a crenulation foliation formed in the micas. The schists are likely argillaceous rocks of sedimentary origin which have been subjected to medium to high grade regional metamorphism (1).

The main mineralogy of this unit is quartz and biotite. Muscovite and garnet are not always present, but may form up to 20% of the rock. The micas typically form the characteristic schistose foliation, while the quartz tends to segregate into very siliceous layers 1 to 5 mm. thick. Quartz lenses which parallel the schistosity are very common and pervasive throughout this unit. The garnets commonly are subhedral to euhedral, but look distorted, as though they were formed during one phase of folding and contorted during a second phase.

Unit 3: Lustrous gray and black phyllite

Underlying approximately 20% of the property is a light gray to black, very fine grained, lustrous phyllite which weathers to a light brown colour. The best outcrops are in the Cocoa Creek area near the southeast corner of the property. The phyllite appears to sit stratigraphically higher than Unit 2. A pervasive phyllitic parting, has developed in these rocks. A lineation formed by very small folds or crinkles in the rock has formed on the phyllitic planes. This lineation is pervasive and surprisingly uniform in strike. It must represent an intersection of the foliation with another planar structure.

The main mineralogy is muscovite, biotite and quartz. The muscovite: biotite ratio appears to increase from east to west.

Segregation of quartz along compositional layering planes parallel to the phyllitic partings occurs in this unit. In some places the rock is too fine-grained to notice any sort of fabric. Quartz lensing is common, as it is in the schist unit. The phyllites are likely derived from silty shales, possibly of volcanic origin (1).

Unit 4: Greenstone, amphibolite

Unit 4 is comprised of fine grained, green foliated amphibolite which weathers to a dark brown colour. It underlies about 5% of the property and outcrops near the extreme northwest corner. This unit occurs as a lens in the phyllite (Unit 3). The rock is foliated due to compositional layering of feldspars and the predominant green mafic minerals. This greenstone is probably derived from a laminated andesitic tuff or flow rock.

The mineralogy is predominantly green amphibole (actinolite ?), white feldspar (plagioclase ?), and minor chlorite. In general, the rock is fine grained to aphanitic, and very massive, with a hardness greater than 5.

Mesozoic

Cretaceous

Unit 5: Quartz monzonite, granodiorite

This unit is a white, coarse-grained, foliated granodiorite and/or quartz monzonite which weathers to a cream to light brown colour. It represents a major phase of the Anvil batholith. This intrusive underlies about 30% of the property and is well exposed in places, but is heavily masked with sub-outcrop and till in most locations. A fairly strong foliation has formed in this unit due to the preferred orientation of the micaceous minerals. Sharp contacts with the schist and phyllite were observed. The intrusive appears to have caused little or no contact metamorphism or hydrothermal alteration in this particular region.

These granitic rocks are composed of approximately 20% quartz, 60% feldspar (white), 15% muscovite, and 5% biotite. A hypidiomorphic granular texture is common. Porphyritic varieties are known in the batholith, but were not encountered by the writer. The foliation is not pervasive and seems to be strongest in the outcrops near the centre of the property.

Unit 6: Quartz-feldspar porphyry

A dyke of altered quartz feldspar porphyry cuts the schist unit. It is a white porphyritic rock which weathers to a light brown colour. It intrudes the schist near a major lineation mapped by the writer as a regional fault. This porphyry is probably a late dyke phase of the Anvil batholith.

Unit 6 is comprised of medium-grained subhedral quartz and feldspar phenocrysts imbedded in a white quartzofeldspathic groundmass. The feldspar phenocrysts and groundmass are sporatically altered to white clay material. The alteration is not pervasive, but it is intense where it does occur.

Comparison to G.S.C. Units

The work of Tempelman-Kluit (1) has helped to unravel much of the mystery surrounding the geology and origin of the ore deposits in the Anvil area. A comparison of our results to his work should be interesting. He has mapped the metamorphic terrain underlying the main part of the property as undifferentiated "Unit 2" and "Unit 3", in terms of his nomenclature. The extreme southern end of the property he classifies as his "Unit 3". Table 1 is a summary of the rough stratigraphy he has worked out in these units, compared to our results.

The rough stratigraphy worked out by the writer corresponds closely to Templeman-Kluit's results.

Table 1

Comparative Stratigraphy of the Paleozoic-Precambrian Metamorphic Terrain in the Anvil Range

G.S.C. "Stratigraphy"			Corresponding Lithology Described Above		
Unit #	Thickness	Description	Unit #	Thickness	Description
"3"	3,000'	phyllite, greenstone lenses, tuffaceous beds, graphitic rocks absent or rare, silty limestone.	3,4	200'+	lustrous gray and black phyllite, greenstone, amphibolite lens.
"3"	1,000'	phyllite, graphitic tuff, interbedded with amphibolite lenses, some schist.	3	1,000'(?)	lustrous gray and black phyllite.
"2"	2,000'+	muscovite-biotite-quartz schist interbedded with amphibolite lenses, marble, and a characteristic skarn unit.	2	3,200'	quartz-biotite (muscovite-garnet) - schist
			1	?	graphitic phyllite.

Metamorphism

Templeman-Kluit (1) suggests that the schist and phyllite terrain corresponding to his units "2" and "3" have been regionally metamorphosed in Cambro-Ordovician time to metamorphic grades ranging from almandine-amphibolite facies to greenschist facies. On the property the metamorphic grade probably tends to be closer to the higher grade almandine-amphibolite facies because of the abundant garnet in the schist unit and the dominance of amphibolite over greenstone in Unit 4. The phyllite units (units 1 and 3) may reflect a lower grade of metamorphism. However, these phyllite units may reflect a difference in composition, that is, less alumina than the schist, rather than a difference in metamorphic grade.

Structure

Folding:

Evidence for three stages of deformation was found on the property. Two older phases of slip folding occurred during the Cambro-Ordovician regional metamorphism. The older phase (F_1) is evidenced by a schistosity (S_1) which is characterized by a compositional layering and preferred orientation of micas. This is not the most dominant schistosity in the rocks and can best be seen in the schist unit northeast of Bingo Creek. At that location the dominant schistosity (S_2) trends approximately 130/32S, while a second schistosity (S_1) trends about 150/44N. A later and final stage of slip folding (F_2) is evidenced by the dominant crenulation foliation (S_2) over the entire property. This foliation cross-cuts the original (S_1) schistosity to form a lineation (L_2), which was not really distinctive or easily measured.

On the map, several folds are indicated. These are young concentric folds (F_3) which are related to the doming around the Anvil batholith. A lineation (L_3) corresponds to minor wrinkles on

the phyllitic partings parallel to these (F_3). This lineation is very consistent and was easily measured in the Cocoa Creek area. This lineation probably coincides closely to the strike and plunge of the dome structure.

Faulting:

One major regional fault was discovered traversing the entire property. It trends approximately 060^0 and is parallel to Blind Creek. From distortions of the foliations near this structure it appears to be a normal fault with an upthrown block to the northwest and downthrown block to the southeast. This observation corresponds to the findings of Tempelman-Kluit (1) regarding the "Blind Creek Fault", further to the southwest. This faulting is clearly related to the doming of the Anvil batholith and probably relatively unimportant when considering the economic potential of the property.

Economic Geology

The Faro orebody occurs in a schist unit between two calc-silicate units and sits low in Tempelman-Kluit's stratigraphy. A graphitic schist unit and dioritic intrusive are spatially related to the deposit. The other sulphide deposits in the Anvil area occur in one unit, a phyllite, with associated graphitic schists. All the local deposits are surrounded by very thin bleached zones of muscovite and quartz.

The property is underlain by rocks which could clearly be in the same stratigraphic horizon as the Faro orebody. On the other hand, the property may lie below the sequence containing the Vangorda, AEX and Swim deposits. It is impossible to reach a conclusion at this time regarding the exact location of the stratigraphic sequences, because of the complexities arising from the two phases of deformation and metamorphism. Original bedding is completely destroyed. Nevertheless, the property is underlain by the same regional rock types, and may well have some economic

potential.

The only sulphide mineralization that was located on the property is in the form of minor pyrrhotite and chalcopyrite associated with the odd quartz lens in both the schist and phyllite units.

GEOCHEMICAL SURVEY

General

A geochemical soil sample survey was carried out over the majority of the claims, with the exception of the area underlain by the Anvil batholith. This survey was done on a flagged line grid with samples taken at 200-foot intervals along lines spaced 800 feet apart. The grid was surveyed by pace and compass, with crosslines run at the azimuth 047° and the baseline and two tie lines run at the azimuth 137°. The samples were collected below thick humus and volcanic ash layers using a heavy mattock. In general, these samples represent the "C" horizon. A total of 1058 samples were collected in $3\frac{1}{2}$" x 6" envelopes and marked with the coordinates of the sample location.

A geochemical stream sediment sample survey was also conducted on the claim group. The purpose of this survey is to detect any mineralization or anomalous areas that could not be detected by the soil sample survey. The three creeks draining across the property were sampled at approximately 500' intervals. A total of 69 samples were taken. They were collected in $3\frac{1}{2}$" x 6" envelopes and marked with a coded number, which was plotted next to the sample location on a base map.

The samples were shipped to Acme Analytical Laboratories Ltd. in Ross River, Yukon Territory for analysis. They were all analyzed for zinc, lead, and copper. The analytical procedure involved taking a one gram portion of minus 80 mesh material from each sample, and digesting this in nitric acid and perchloric acid for three hours. Zinc, lead and copper values were then obtained by atomic absorption spectroscopy, and

recorded in parts per million (ppm). The analyses have an accuracy of $\pm \frac{1}{2}$ ppm.

Figures 5, 6 and 7, drawn at a scale of 1" = 800', are plots of the results of the soil survey of the grid. Figure 8, drawn at the same scale, is a map showing the results of the silt sampling.

Statistical Analysis

The sample results were divided into 6 populations: 2 surveys, 3 metals each. For each population a mean and standard deviation were calculated. The results of this analysis are summarized in the following table:

Population	Population Size (N)	Mean Value (X)	Standard Deviation (S)	Threshold Value (X + 2S)	Anomalous Value (X + 3S)
Zinc - Soils	1,058	66.2	34.6	135.4	170.0
Zinc - Silts	69	86.4	21.3	129.0	150.3
Lead - Soils	1,058	21.1	12.1	45.1	57.2
Lead - Silts	69	21.4	3.4	28.2	31.6
Copper - Soils	1,058	22.1	12.8	47.6	60.4
Copper - Silts	69	18.9	6.3	31.5	37.9

These results are further illustrated with frequency distributions of each population, plotted on Figures 9 to 14, inclusive.

Results - Soil Sample Survey

1. Zinc

Only a few samples were found to be weakly anomalous. These "anomalies" are characterized by single samples with little in the way of interesting zinc values nearby. Two features on the map worth noting are mentioned below (see Fig. 5).

One anomalous value and one threshold value occur in an area located at the extreme west corner of the property (214+00W, 50+00N). This small area is underlain by the contact between amphibolitic and phyllitic rocks. The facts that the amphibolite is base metal rich compared to the metasedimentary rocks, and that the bedrock is close to surface in this area may well account for the high zinc values. However, a more interesting source may exist.

A single sample anomaly occurs in the southeastern central region of the property to the east of Bingo Creek (88+00W, 46+00S). This anomaly is open on the downhill side to the southeast.

2. Lead

A few small, isolated anomalies in lead occur on the property, but none of them, by themselves, are strong enough evidence to attract considerable attention (see Fig. 6).

One single anomalous lead value, which occurs near the western extremity of the property (214+00W, 50+00N), coincides with the first zinc anomaly mentioned above. At first glance this lead value looks erratic, but it may add some credibility to the zinc anomaly. Furthermore, this area is open to the southwest.

Just east of Bingo Creek, near the southern extremity of the property, two anomalous lead values occur 800 feet apart. They lie to the northwest of the second above mentioned zinc anomaly.

3. Copper

Few anomalous areas were found in copper. Two features that might be of interest are described below (see Fig. 7).

Several anomalous copper values occur near the extreme west corner of the property, close to the high lead and zinc values described above. These small anomalies are discontinuous, and they are open to the southwest, trending off the property.

Two isolated single point anomalies occur near the creek bed to

the east of Bingo Creek (line 104+00W). These features are directly downhill from a lead anomaly mentioned above.

Results - Silt Sample Survey

Most of the samples are below threshold for copper, lead and zinc. Only two definitely anomalous values occur, and both of these are open to the upstream side (see Fig. 8). These minor silt sample anomalies cannot be correlated with any of the soil survey results from this area.

A sample that was taken off the property to the northwest from a tributary draining into Alpo Creek is anomalous in zinc. This sample is from a drainage just below the contact between the batholith and the schist.

One sample taken from the headwaters of Bingo Creek was anomalous in copper. The sample drains from the south facing slope of the same hill from which the zinc anomaly described above was taken.

Summary

Two areas of interest have been delineated by the soil sample survey: the first area is in the southeastern central part of the property to the east of Bingo Creek; the other one is located near the extreme west corner of the property. Both these areas are characterized by moderate discontinuous geochemical response in soils for all three metals tested. If some basis for interest in these areas is evident from one of the geophysical surveys, these anomalies could be of interest despite their lack of size.

The chances of a good size orebody at surface on these claims have been narrowed down somewhat by the geochemical survey results. However, considering the geologic environment and the unexplained silt sample anomalies, a possibility of economic mineralization occuring at greater depths on the property still exists.

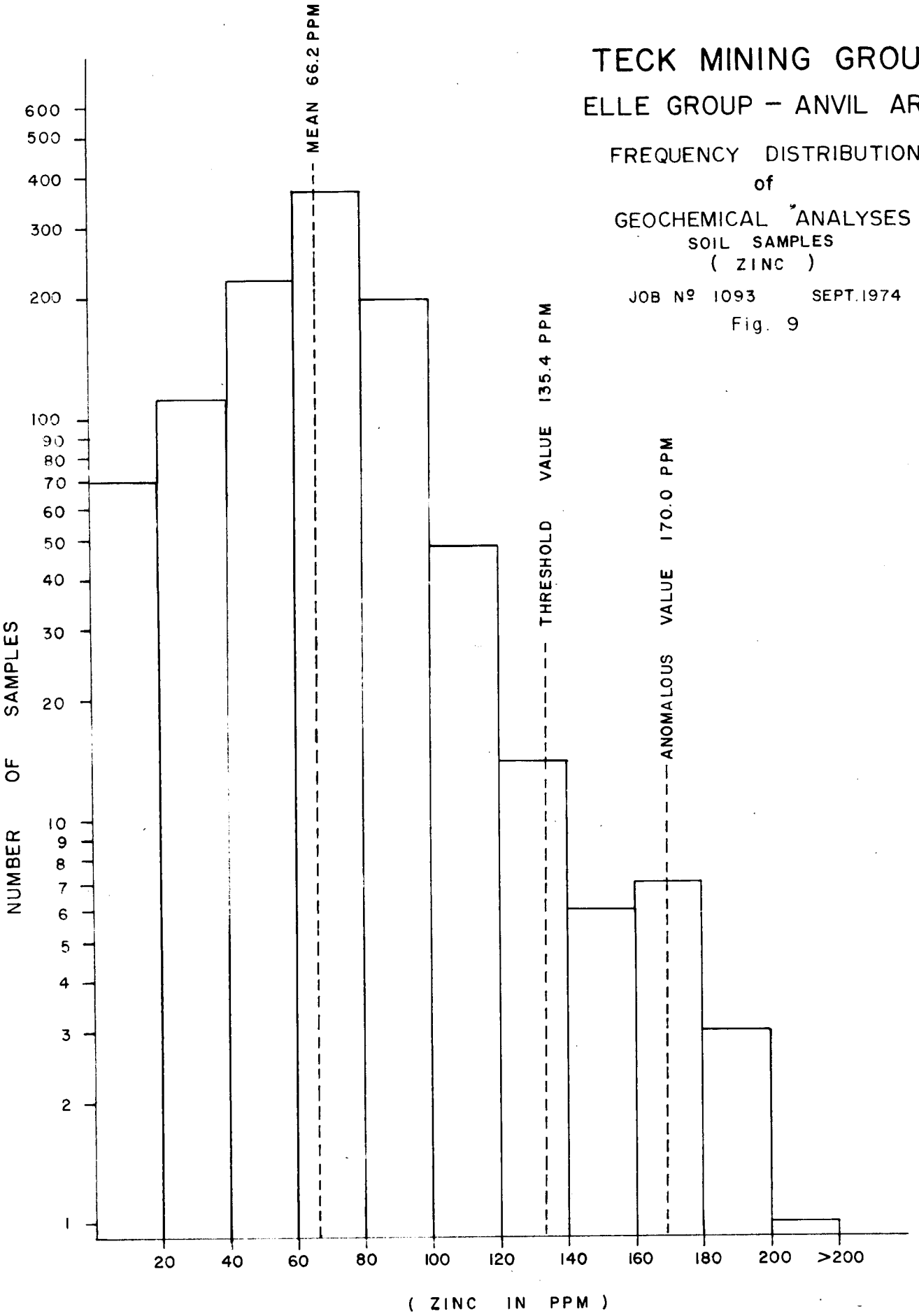
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
SOIL SAMPLES
(ZINC)

JOB Nº 1093 SEPT. 1974

Fig. 9



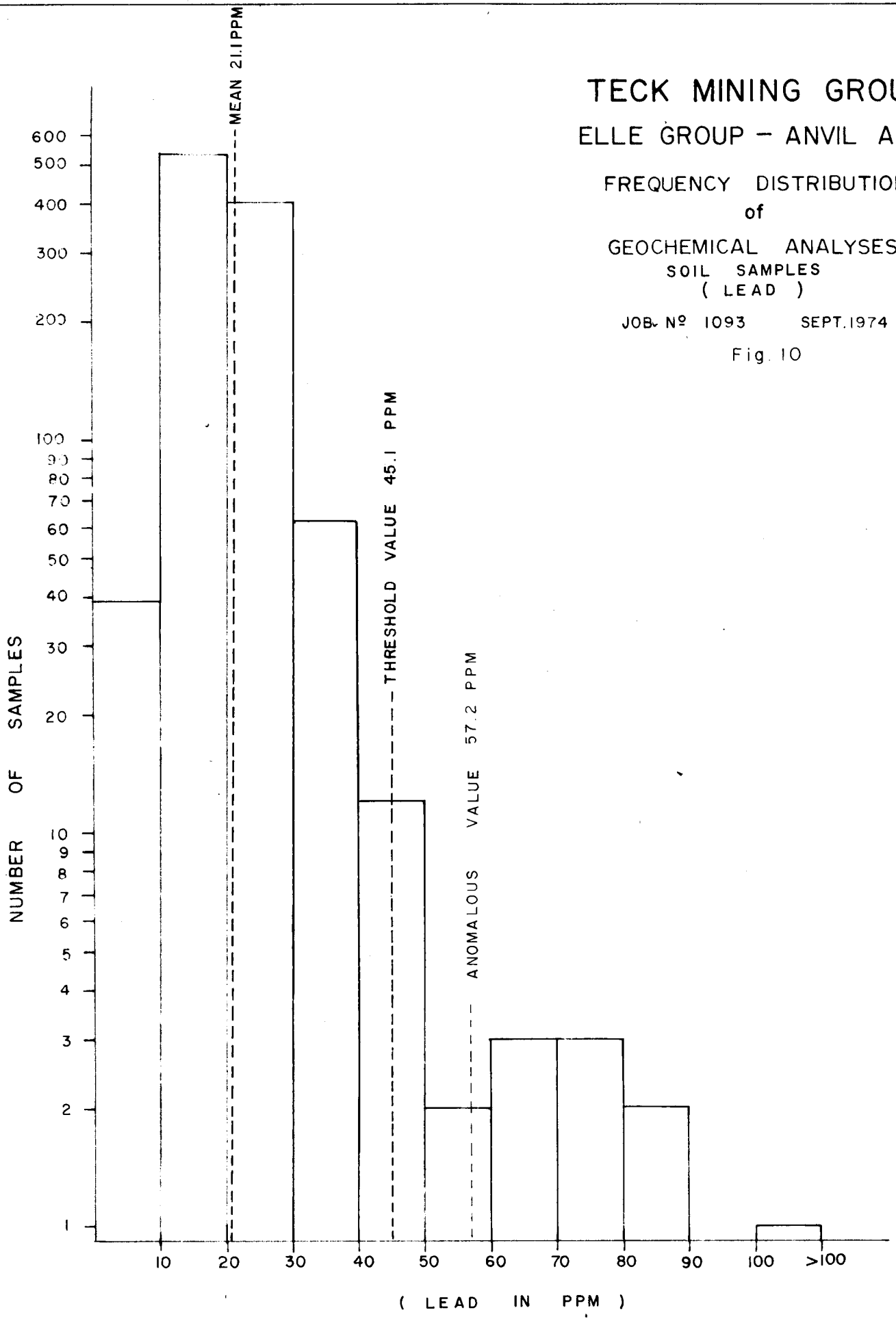
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
SOIL SAMPLES
(LEAD)

JOB. Nº 1093 SEPT. 1974

Fig. 10



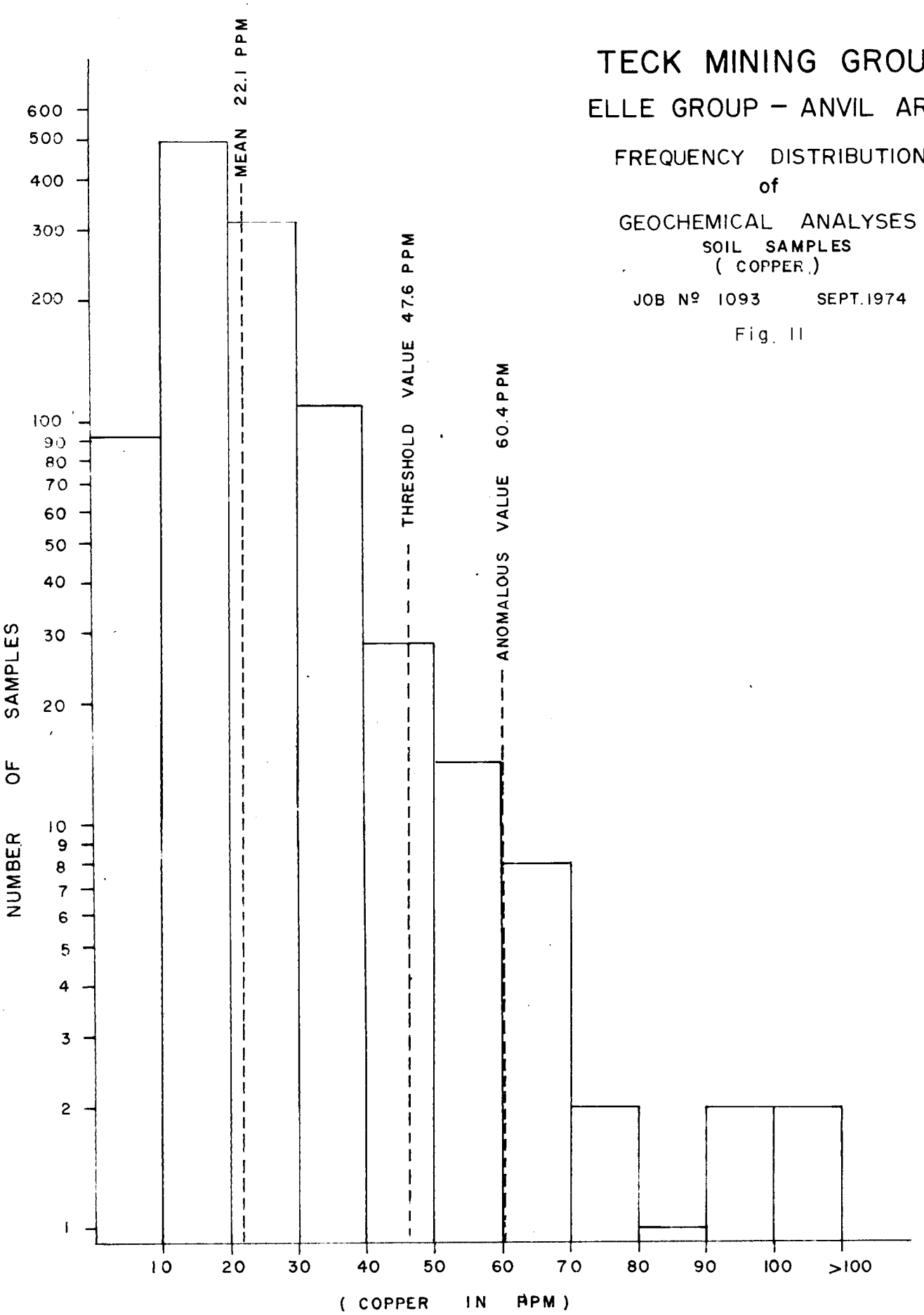
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
SOIL SAMPLES
(COPPER)

JOB Nº 1093 SEPT. 1974

Fig. II



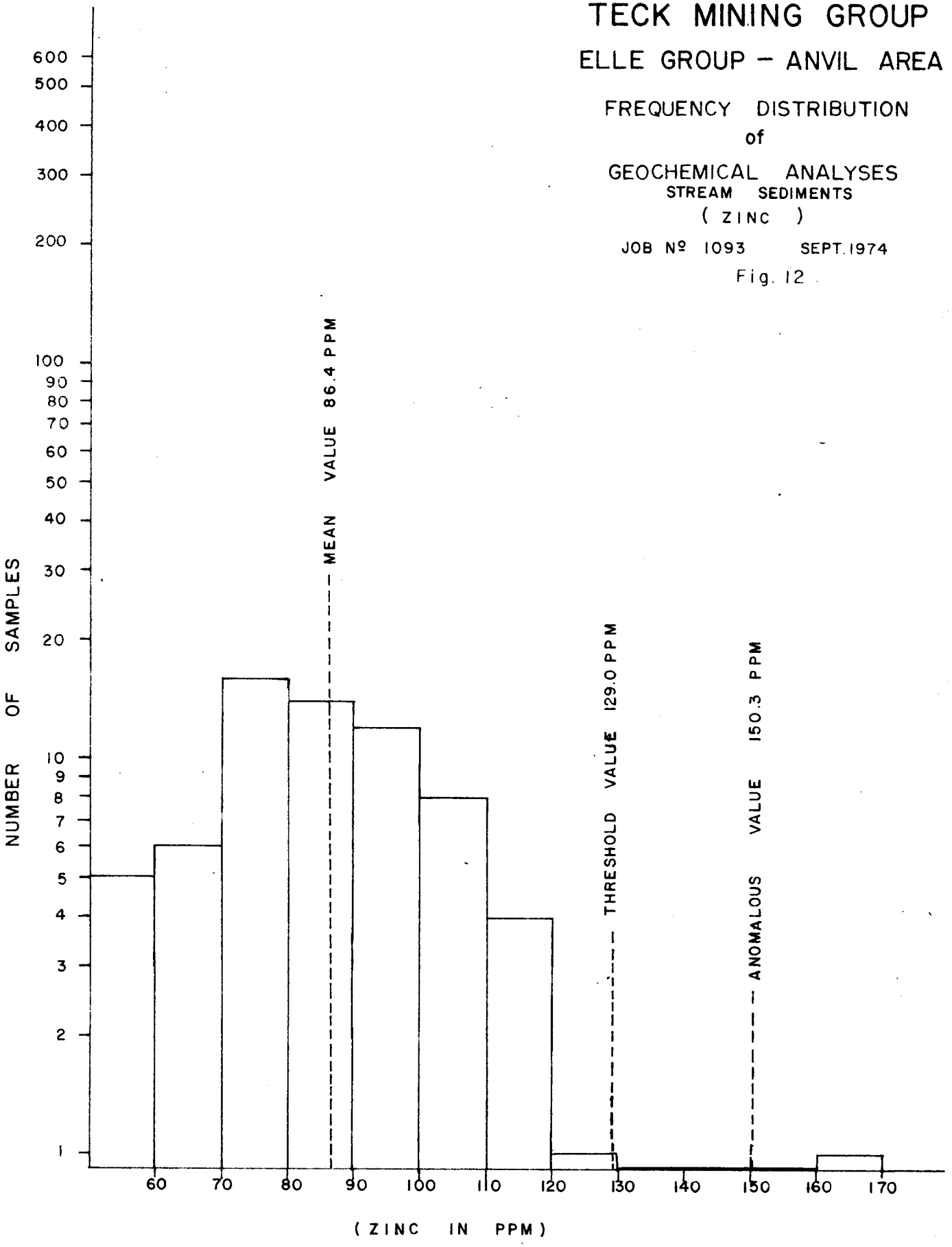
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
STREAM SEDIMENTS
(ZINC)

JOB Nº 1093 SEPT. 1974

Fig. 12



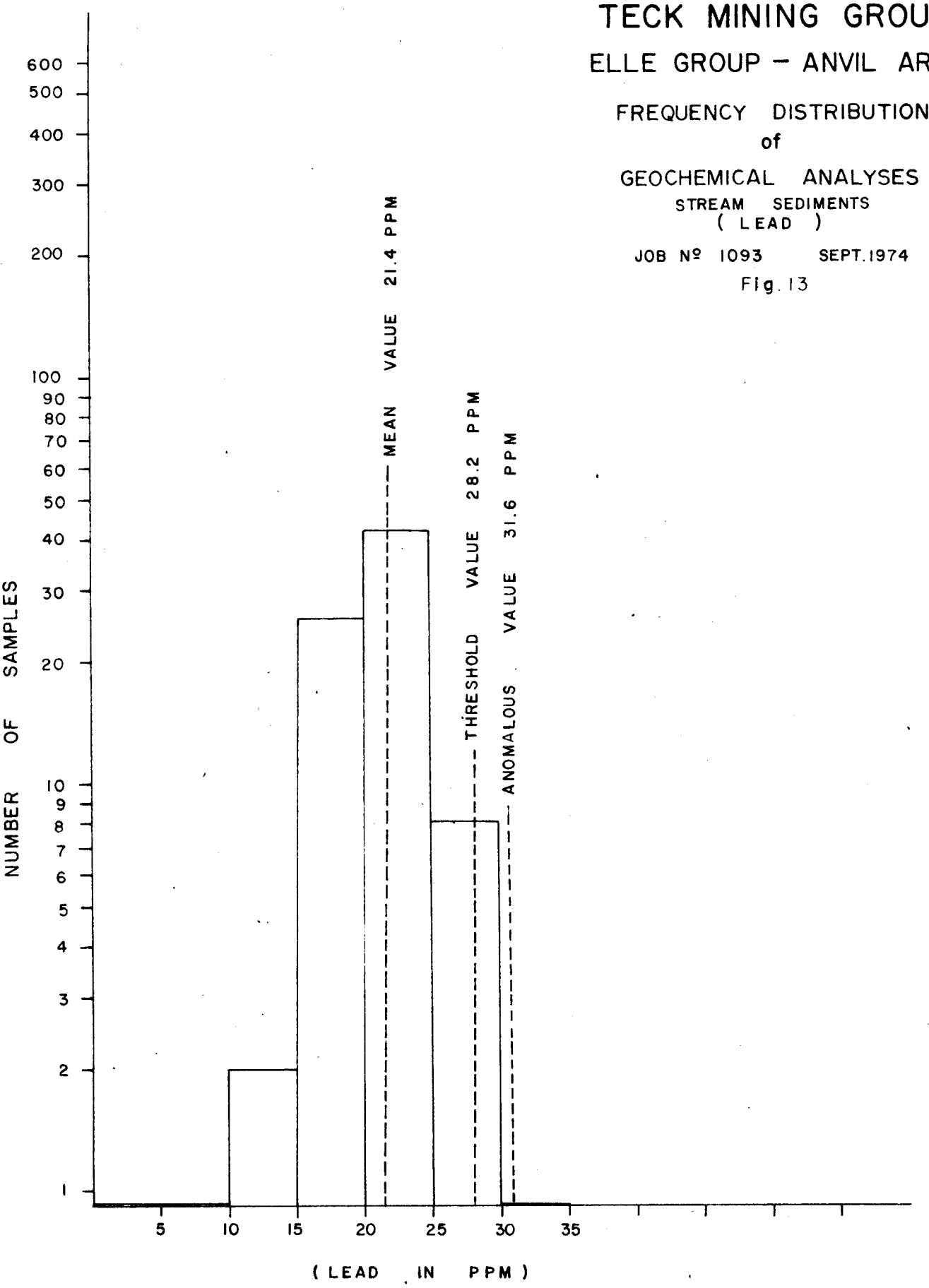
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
STREAM SEDIMENTS
(LEAD)

JOB Nº 1093 SEPT. 1974

Fig. 13



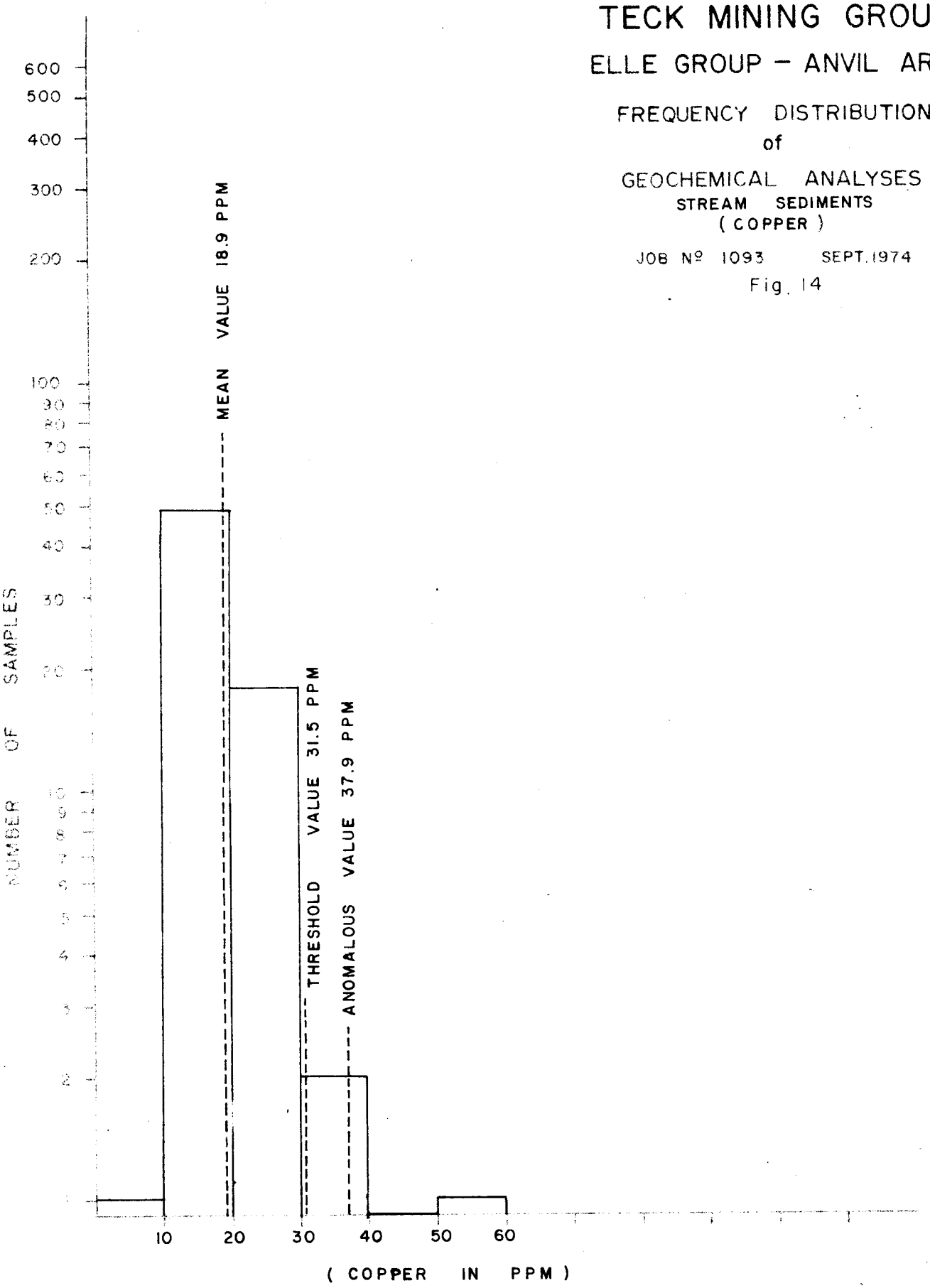
TECK MINING GROUP

ELLE GROUP – ANVIL AREA

FREQUENCY DISTRIBUTION
of
GEOCHEMICAL ANALYSES
STREAM SEDIMENTS
(COPPER)

JOB Nº 1093 SEPT. 1974

Fig. 14



MAGNETOMETER SURVEY

General

The purpose of the magnetometer survey is to help define rock types in covered areas, and detect any concentrations of magnetite or pyrrhotite, common magnetic minerals that are associated with some of the local massive sulphide deposits. Figure 15 is a plot of the corrected field data, contoured at 100 gamma intervals at a scale of 1" = 800'.

The instrument used was a Scintrex MF-2, fluxgate magnetometer. Measurements of the vertical field were taken at 200-foot intervals along the lines spaced 800 feet apart. Control stations were located along the baseline and all surveys were looped within 2 hours. A total of 41.6 line miles were covered, including the baseline.

Results

The results of the survey were extremely difficult to contour because of the flat gradients encountered, the extreme variability of overburden cover, and the apparent closeness of the magnetic susceptibilities of the different rock types encountered. The lowest corrected reading was +150 gammas, the highest, +1230 gammas. Very few of the values are below 300 or above 700 gammas. On the accompanying map (Fig. 15) the 500 gamma contour is most interesting, as it appears to outline the major magnetic features that might have some bearing on the interpretation of the other surveys.

Five major features are worthy of note. They are the following:

1. A gradient across the contact between the intrusive and the metasediments is approximately 100 gammas, with values inside the intrusive averaging some 50 to 100 gammas below 500, and values adjacent to the batholith averaging some 30 to 70 gammas above this. The position of this 500 gamma contour corresponds in part to the writer's interpretation of the geologic contact. The

magnetic susceptibility of the granitic rock appears to be slightly less than the phyllite and schist.

2. At the southwest edge of the property, two interesting features occur. A moderate magnetic high with a moderate density of contours occurs in the northwest corner. This feature reflects the fact that the underlying amphibolite rocks contain a greater amount of magnetite than the other rocks in this area. A relatively extreme low, with a moderate density of contours occurs to the southeast of this high. This feature may represent a dipole effect of the neighbouring anomalous high. To find the extent and to learn the exact meaning of these two features, more information is needed to the southwest.
3. In the Bingo Creek area, a huge magnetic low with a moderate intensity and a low density of contours trends straight up the creek to the northwest. The feature appears to widen and trend more northerly, near the headwaters of the creek. Two interpretations of this feature are possible. The most likely one is that this anomalous low corresponds to very deep overburden cover in this steep-walled valley. Secondly, a major fault or structural weakness may run up the valley and cause the feature. The possibility of a fault is not supported by any evidence on the ground.
4. A magnetic high of relatively high intensity and a moderate to high density of contours occurs on the ridge to the northeast of Bingo Creek. This is the most interesting magnetic feature on the property. It is open to the southeast and there is no obvious geologic reason for the existence of this magnetic high. It is associated with geochemical soil anomalies in lead and zinc mentioned above. Therefore, the possibility that this feature might be associated with a concentration of magnetite, along with

sulphides, cannot be ruled out.

5. The entire northeast end of the property is characterized by a moderate magnetic low with a relatively low density of contours. The average intensity of the vertical field in this large overburden covered area is approximately 100 to 200 gammas less than the average field over the rest of the property, where much thinner overburden cover was evidenced. The gradient observed may be an overburden effect, a regional gradient effect, or a change in rock type. This writer strongly suspects an overburden effect as the cause, for the following reasons: 1) Observations of limited outcrop indicate a change in rock type well to the northeast of the major change in field strength; 2) The direction of the gradient is opposite to the expected regional gradient.

VLF-EM SURVEY

General

The purpose of the VLF-EM survey is to pick out any subsurface conductors that might be related to, or correspond to massive sulphides. Graphitic horizons are associated with the local ore deposits and are readily detected by VLF-EM.

The survey of the grid was carried out over the majority of the claims. A Crone type of receiver was used to receive broadcasts at frequencies close to 20,000 Hertz from two different transmitters situated at Seattle, Washington and Cutler, Maine. Readings of the dip angle for each transmitter were taken every 100 feet over the entire grid. A total of 37.5 line miles were covered. The results were treated as two separate surveys because the fields produced at Seattle, Washington and Cutler, Maine are close to right angles to one another at the property.

The raw data from these two surveys cannot be contoured, but can only be shown in cross-sections, which are hard to interpret on a gross

scale. Fraser's technique of filtering the raw data was adopted (2). First, positive signs were assigned to east and north dip angles of the Seattle and Cutler readings, respectively. Similarly, negative signs were given to west and south dip angles. Then the data was filtered algebraically to give contourable values at 50' intervals (2).

The filtered data for the Seattle, Washington and Cutler, Maine surveys are plotted on figures 16 and 17, respectively, at a scale of 1" = 400'. Positive values are the only data plotted because the negative values only reflect the flanks of anomalies. Filtered data greater than +10 are considered to be anomalous. Between +5 and +10 the numbers represent weak anomalies which may or may not reflect noise that was not filtered out.

Results - Seattle, Washington

The survey results are quite flat and no outstanding areas of interest were found. Several small anomalies were detected, but only a few of these might be traced between survey lines. These small, and mostly weak responses are attributable to unfiltered noise, conductive overburden, small shear zones, or possibly small amounts of mineralization, such as graphite or sulphides.

Only one positive response corresponds with any of the favourable results from the other surveys. At the extreme west corner of the property, a number of filtered values between +5 and +10 correspond with some interesting geochemical and magnetometer results, mentioned above. This low, broad crossover is about 500 feet wide, and may or may not carry through to the next grid line. It occurs near some outcrop, right on the contact between the amphibolite and phyllite units. This anomaly may well indicate the actual contact, shearing along the contact, or some other conductor. Given that the magnetometer response is anomalously high, and that the geochemical results are encouraging, this area may have some promise.

The rest of the property is characterized by low responses and some sharp, narrow crossovers in the 10+ range. In only two cases can these crossovers or anomalies be interpolated between lines with much confidence. These small areas do not warrant much attention, because they do not correspond to any positive results of either the magnetometer or the geochemical survey. These anomalies probably represent conductive zones in bedrock such as shears, or zones in overburden such as creeks and gulleys.

Results - Cutler, Maine

The survey produced quite different, and almost totally unrelated results from the Seattle, Washington survey. The filtered data show much more variation, and indicate more in the way of conductive zones.

The field set up by the transmitter in Cutler, Maine is best suited to exploration to the northeast of Cocoa Creek. Southwest of this stream, the field from Seattle, Washington intersects the predominant geological features at a better angle.

The most interesting result of this survey is that the entire northeast end of the property is underlain by a swarm of moderately intense, but narrow anomalous zones. One of these zones, from looking at limited outcrop (40+00W, 20+00N), is due most certainly to graphitic phyllite. Few outcrops occur in this large area. One possible interpretation of the results is that map units 1 and 2 are one and the same formation, and that this area of anomalies represents a lower unit in the formation. The schist could be interbedded with graphitic phyllite over a considerable thickness of section, namely some 2,000 feet or more. Unfortunately, few outcrops occur in the area. The interpretation is substantiated, however, by the magnetometer survey, which indicates a change in field over the same area. The entire region is characterized by a fairly homogeneous magnetic field, and a trend of contours which parallels the trends inferred by the electromagnetic field.

The remainder of the claims covered by the survey is characterized by low responses and some sharp crossovers, none of which can be interpolated between two lines. At the extreme west corner of the property, three narrow anomalies occur. This area is worthy of note because of the coinciding positive results established by all the other surveys over this zone. An encouraging interpretation is possible for this area. However, these crossovers are very narrow and trend off the property.

SUMMARY AND CONCLUSIONS

During the 1974 field season, detailed geological, geochemical and geophysical surveys were carried out on the Elle claim group in the Blind Creek area. The property was geologically mapped at a scale of 1" = 800'. A total of 1,058 soil samples, and 69 silt samples were taken. A total of 41.6 line miles of ground magnetometer and 37.5 line miles of VLF-EM, using two transmitters, were completed. No follow-up work was undertaken during this period.

The following conclusions are based on the results of the surveys:

1. The property is underlain by two major geologic formations, or tectonic units. These are an older formation of Cambrian and/or Precambrian metasediments and metavolcanics that are intruded by the Mesozoic Anvil batholith.
2. Geochemistry appears to work in this area, despite the permafrost. The results obtained indicate anomalous areas that seem to have some geologic meaning.
3. The magnetometer provided a useful mapping tool and helped give some creedence to the geochemical and electromagnetic surveys in depicting areas of interest.
4. The VLF-EM survey proved to be useful in that it provided some data in areas that have virtually no outcrop, and that it helped to

determine the validity of some of the results obtained from the other surveys.

5. On the basis of the results discussed in this report, three areas can be outlined that have some possible economic significance. These areas are described below:

A. The Extreme West Corner (near 214+00W, 50+00N)

This small zone appears to be closed to the east and open to the west. It is characterized by anomalous zinc, lead and copper in soils, a magnetometer high, and a conductive zone that was detected by both VLF-EM surveys. The anomalous area occurs at the top of a large greenstone lens that sits below most of the local phyllite unit.

B. South Central Region Northeast of Bingo Creek (near 80+00W, 46 +00S)

This area is characterized by the most impressive magnetic high on the property. The anomaly trends off the claims to the South. Coincident with it are soil anomalies in zinc and lead. This part of the property is underlain by the schist unit. VLF-EM response in the area is relatively low.

C. The Entire East End of the Property (East of line 56+00W)

This area is about 9 square miles, over 1/3 of the entire area of the property. Attention is drawn to this region by the VLF-EM results for Cutler, Maine, which could be interpreted as a series of graphitic lenses. The only geochemical responses that appear in this area that are encouraging are single point geochemical silt sample anomalies in copper and zinc at the edges of the hillside. Soil sample response is low, and a surface deposit is unlikely. Considering that silt samples from lower in the section are encouraging and that the electromagnetic response is interesting, the possibility that an orebody might occur at some greater depth cannot be ruled out.

RECOMMENDATIONS

Further work is recommended in Areas A and B in the way of magnetometer and geochemical surveys on lines spaced 400 feet apart with stations at 100-foot spacings. In addition to this work, another EM survey should be conducted over these areas, using a larger, lower frequency unit. If results of these surveys prove to be encouraging, a gravity survey and eventually a drill program would follow.

In Area C the type of work that should follow the results to date is a regional gravity survey that has good, regional topographic control. Two profiles should be completed, two thousand feet apart, at an azimuth of approximately 137^{o}. If a proper survey is conducted, any sizeable orebody in this area, near these profiles, that is at a reasonable depth, should be detected. A more detailed gravity survey and an exploration drill program in this area would be contingent on the results of this initial regional gravity survey.

Respectfully submitted,

G.D. Ulrich, P. Eng.
December 31, 1974.

CERTIFICATE

I, Gordon Donald Ulrich, do hereby certify that:

1. I am a geologist with residence at 5167 Irmin Street, Burnaby, B.C.
2. I am a graduate of the University of British Columbia (B.A.Sc., 1970, Geological Engineering).
3. I am a Professional Engineer registered in the province of British Columbia.
4. Since graduating I have been employed with Western Geological Services Ltd. ($1\frac{1}{2}$ years), W. Meyer and Associates Ltd. (1 year), Home Oil Company Ltd. (3 months) and Geophysical Engineering Limited (4 months).
5. Between July 20, 1974 and December 31, 1974 I conducted the geological survey and supervised the geochemical and geophysical surveys on the Elle claims on behalf of Geophysical Engineering Limited.

G.D. Ulrich

December 31, 1974.

PERSONNEL AND DATES

Name and Address	Occupation	Dates	# of Days
R.E. Hindson, 1199 West Hastings Street, Vancouver, B.C. V6E 2K5	Geologist	July 20, 1974 to December 31, 1974	10
G.D. Ulrich, 5167 Irmin Street, Burnaby, B.C.	Geologist	July 20, 1974 to December 31, 1974	44
K.W. Davies, 159 Riverside Drive, North Vancouver, B.C.	Geophysical Technician	August 1, 1974 to September 6, 1974	29
G. Lovang, 159 Riverside Drive, North Vancouver, B.C.	Prospector	July 20, 1974 to August 20, 1974	25
B. Hainsworth, The University of B.C., Vancouver, B.C.	Geological Assistant	July 20, 1974 to September 6, 1974	38

COST OF SURVEYS

Field Supervision, Geological, Geochemical and Geophysical Surveys		$ 9,549.01
Transportation		
Helicopter	2,811.56	
Truck Rental	960.17	
Total		3,771.73
Camp and Cookery		2,920.28
Geochemical Analyses		2,043.73
Expediting		606.27
Maps, Prints, Reports and Drafting		1,789.68
TOTAL COST OF SURVEYS		$20,680.70

Note:

The above costs are property related costs only and do not include transportation between Faro and Vancouver.

AFFIDAVIT RE: COST OF SURVEYS

I, Gordon Donald Ulrich, P. Eng., of 5167 Irmin Street in the Municipality of Burnaby in the Province of British Columbia, DO SOLEMNLY DECLARE that the geological and geophysical surveys of 89 located mineral claims held by J.D. Munroe in trust for Silver Standard Mines Limited and Teck Mining Group Limited were conducted during the field season of 1974, are described by this report and the field data was obtained at a total property-related cost of at least $20,680.70.

AND I make this solemn declaration conscientiously believing it to be true, and knowing it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act".

DECLARED before me at the City of Vancouver in the Province of British Columbia, this 10th day of January, A.D. 1975.

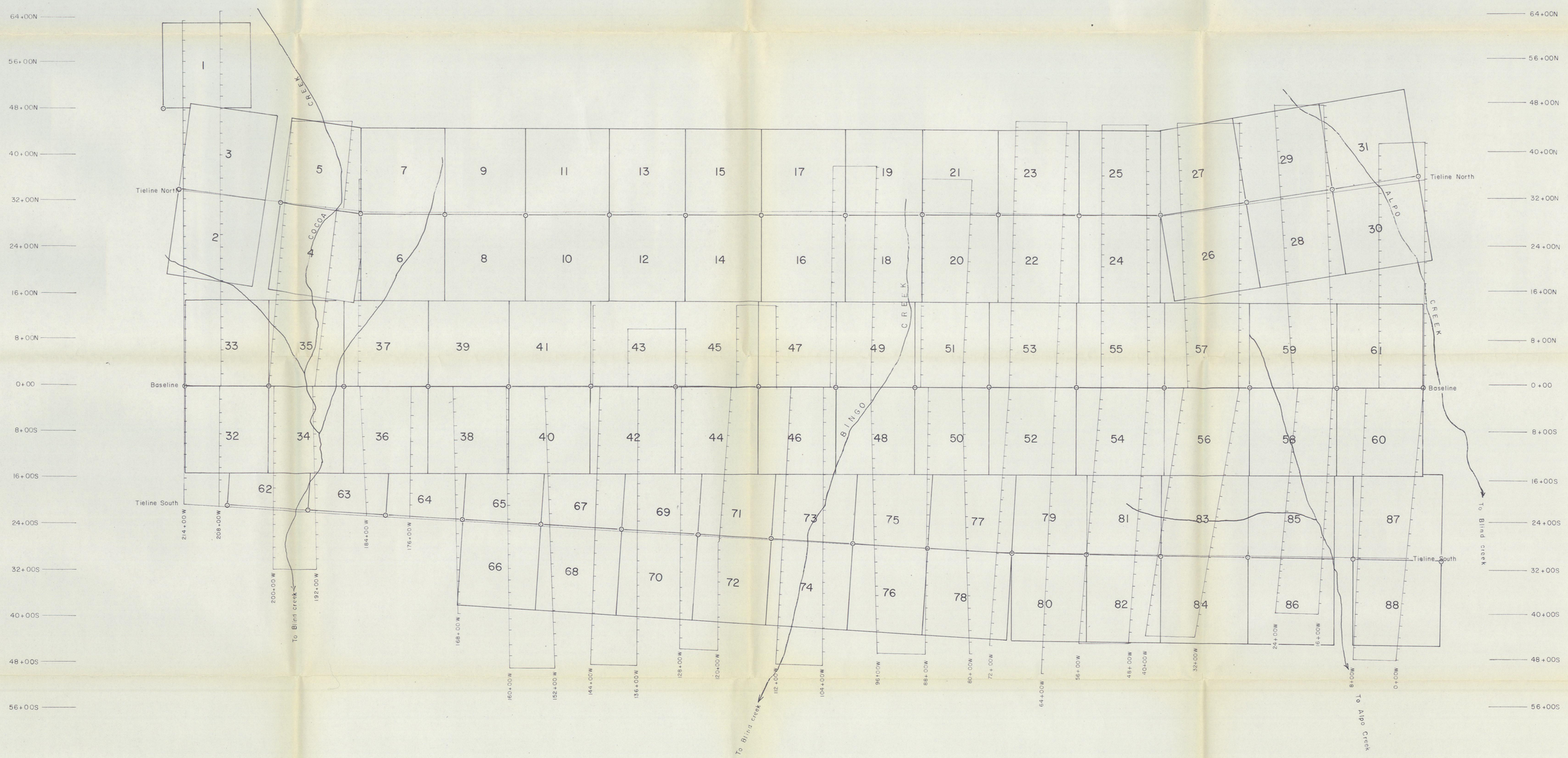
FRANK JOSEF WANK
A Commissioner for taking Affidavits for British Columbia.

G.D. Ulrich

REFERENCES

1. Tempelman-Kluit, D.J.: "Geology and Origin of the Faro, Vangorda, and Swim Concordant Zinc-Lead Deposits, Central Yukon Territory", G.S.C. Bulletin 208, 1972.

2. Fraser, D.C.: "Contouring of VLF-EM Data"; Geophysics, Volume XXXIV, Number 6, December, 1969.



TO ACCOMPANY "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P.ENG., dated December 31, 1974

G. D. Ulrich

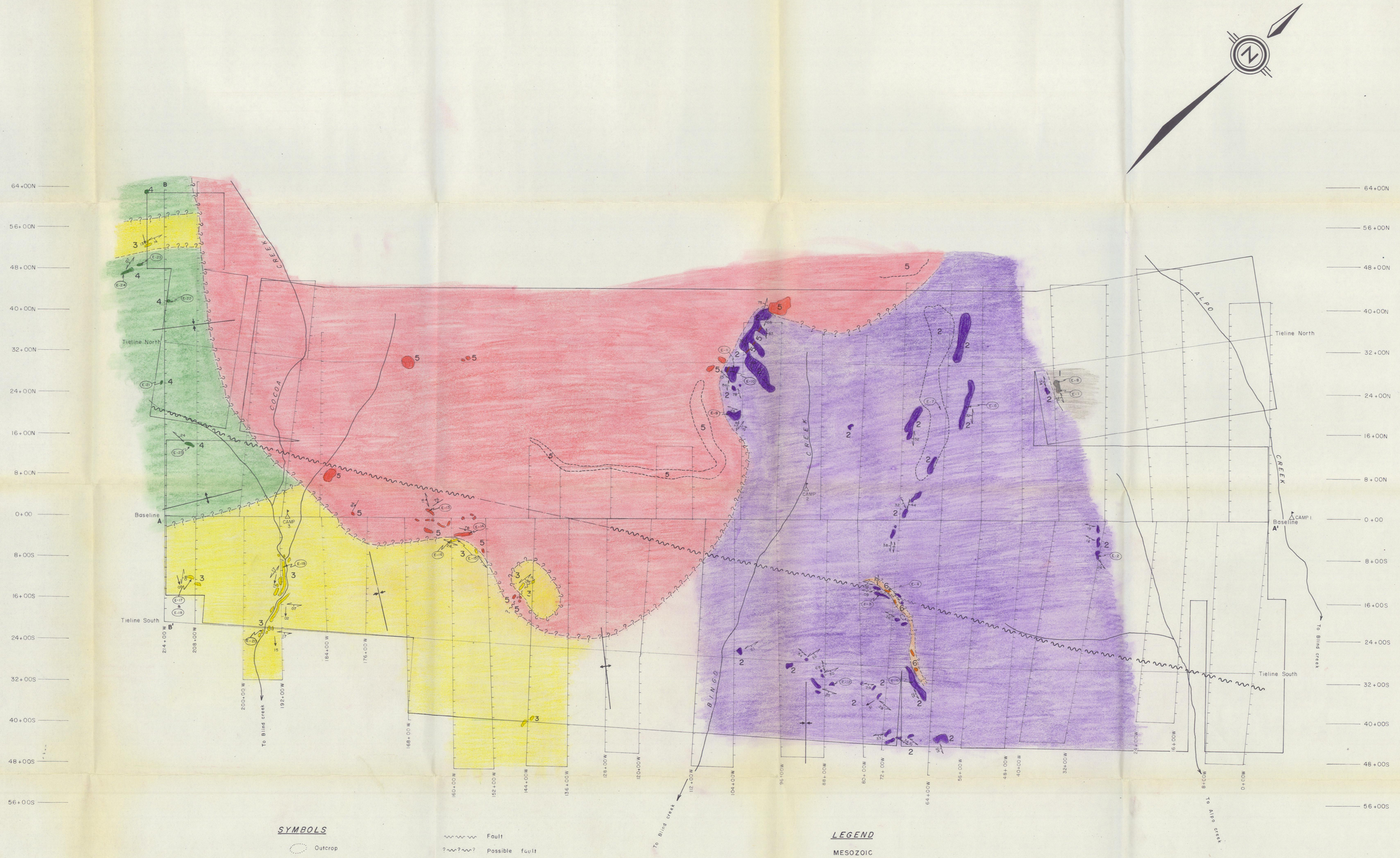
TECK MINING GROUP

ELLE GROUP
ANVIL AREA

CLAIM MAP

SCALE — FEET 0 800 1600

DATE: SEPT. 1974	JOB Nº 1093
N.T.S. 105K-6, 105K-7	DWG Nº 2



SYMBOLS

- Outcrop
- Area of Outcrop and/or Sub-Outcrop
- Observed contact
- Probable contact
- Possible contact
- Joint showing dip
- Shistosity showing dip
- Vertical shistosity
- Strike and plunge of lineation
- Foliation showing dip
- Anticline
- Syncline
- Fault
- Possible fault
- Regional fault
- Lineation (Topographical)
- Rock specimen location
- Flag line showing stations
- Creek
- Approximate claim boundary
- Campsite

LEGEND

MESOZOIC

Cretaceous

6 Quartz - feldspar porphyry

5 Quartz monzonite and/or granodiorite

PALEOZOIC — PRECAMBRIAN (?)

Hadrynian (?) Cambrian (?) and Ordovician (?)

4 Greenstone, amphibolite

3 Lustrous gray and black phyllite

2 Quartz - biotite (muscovite - garnet) schist

1 Graphitic phyllite

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G.D. ULRICH, P.ENG., dated Dec. 31, 1974

TECK MINING GROUP

ELLE GROUP
ANVIL AREA

GEOLOGY MAP

0 800 1600
SCALE — FEET

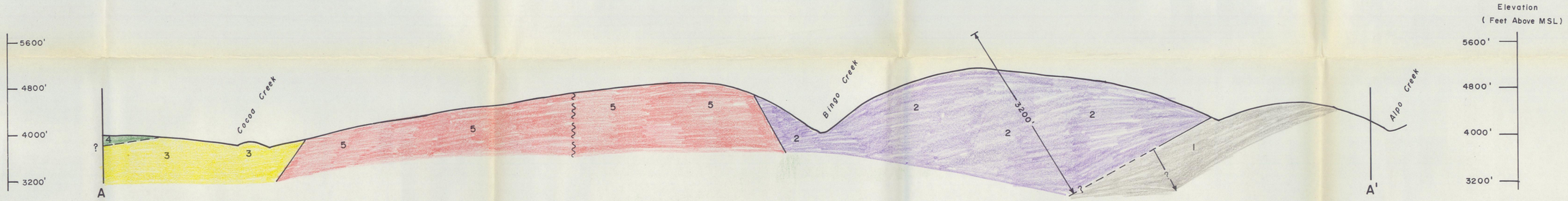
DATE: SEPT. 1974	JOB No. 1093
N.T.S. 105K-6, 105K-7	DWG. No. 3

G.D. ULRICH
PROFESSIONAL ENGINEER
YUKON TERRITORY

G.D. Ulrich

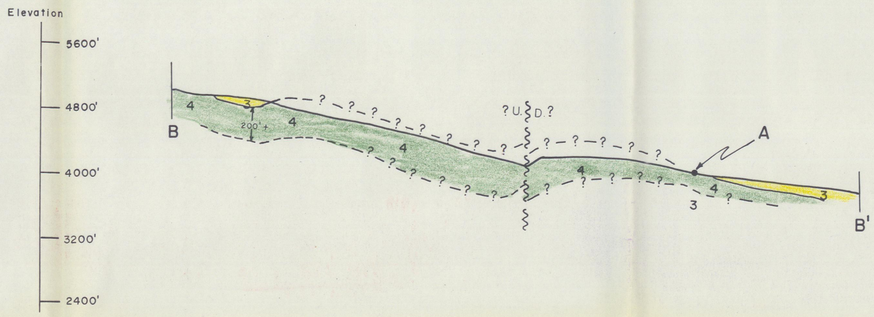
SECTION AA'

(LOOKING NORTHWEST)



SECTION BB'

(LOOKING NORTHEAST)



LEGEND

MESOZOIC
Cretaceous

6 Quartz — feldspar porphyry

5 Quartz — monzonite and / or granodiorite

PALEOZOIC — PRECAMBRIAN (?)
Hadrynian (?) Cambrian (?) and Ordovician (?)

4 Greenstone, amphibolite

3 Lustrous gray and black phyllite

2 Quartz — biotite (muscovite — garnet) schist

1 Graphitic phyllite

TO ACCOMPANY: " Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS " by G. D. ULRICH, P. ENG., dated December 31, 1974

G. D. ULRICH
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA

G. D. Ulrich

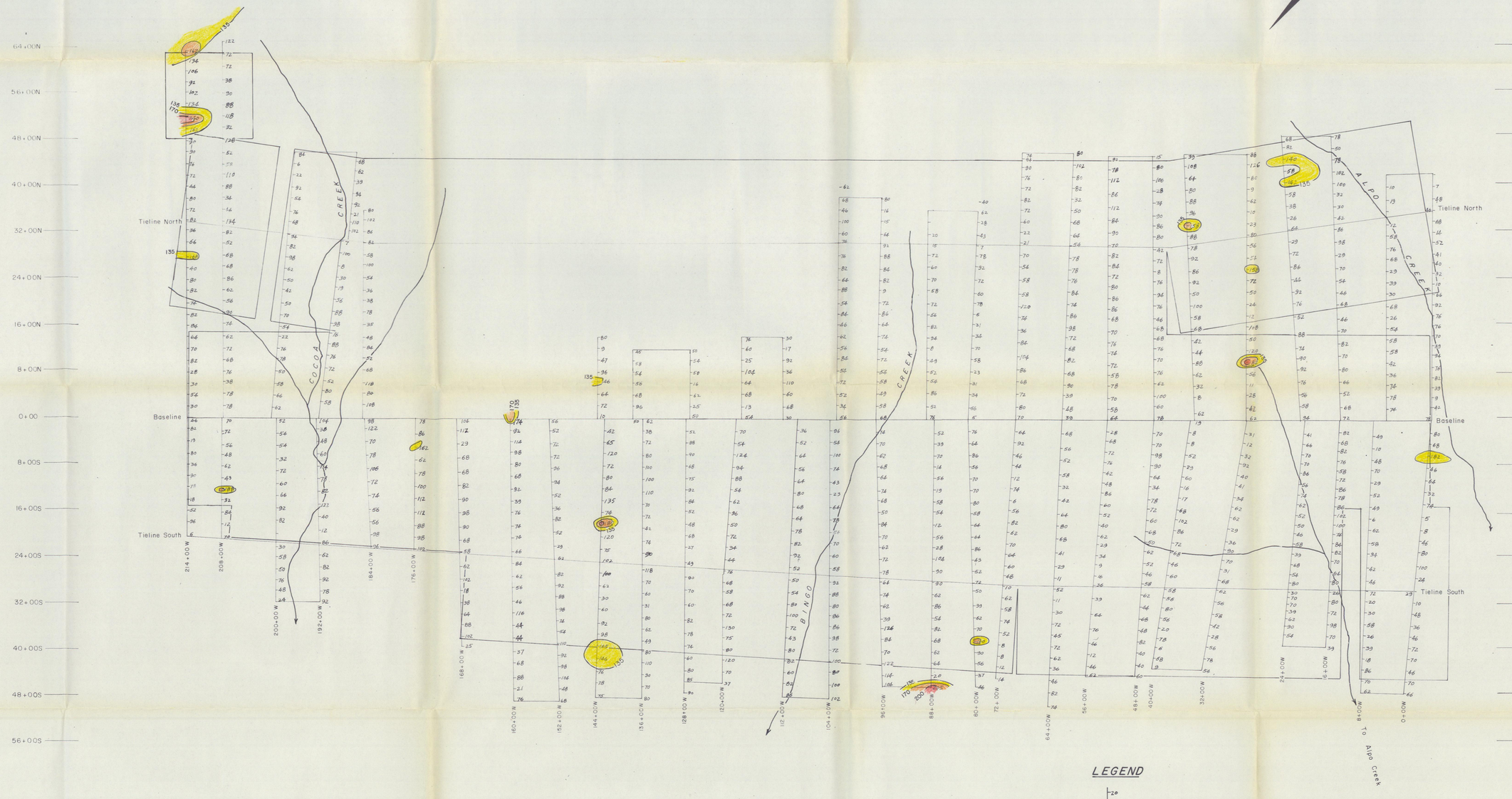
TECK MINING GROUP

ELLE GROUP
ANVIL AREA

Geologic Sections
AA' & BB'

0 800 1600 2400
SCALE — FEET

DATE: OCTOBER 1974	JOB NO. 1093
N.T.S. 105K-6, 105K-7	DWG. NO. 4



LEGEND

Zn in PPM

Creek

Claim boundary

Contour Interval

	135 — 170	Threshold
	170 — 200	Anomalous
	200 +	

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P. ENG., dated December 31, 1974

G. D. ULRICH

TECK MINING GROUP

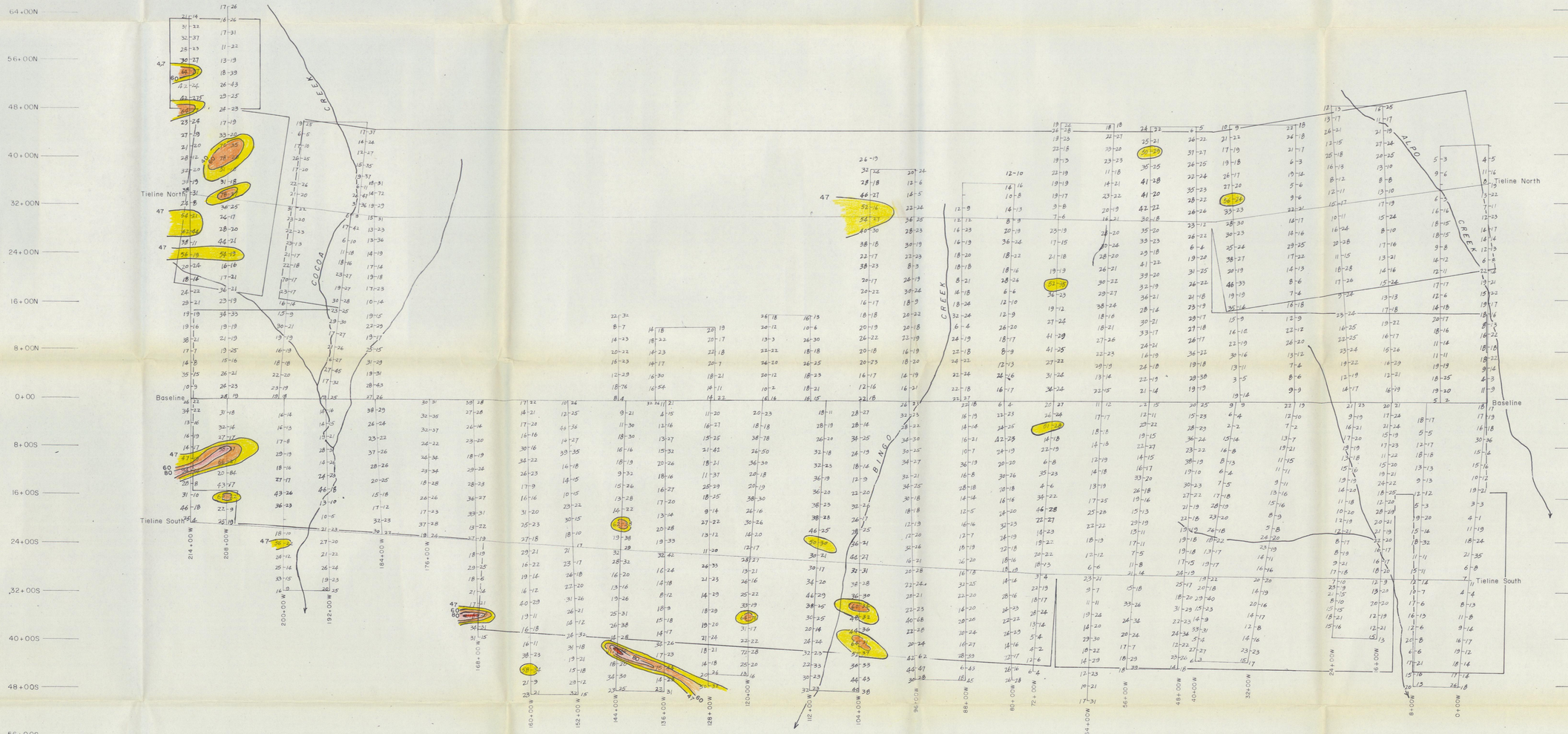
ELLE GROUP
ANVIL AREA

GEOCHEMICAL SURVEY
(ZINC)

0 800 1600
SCALE — FEET

DATE: SEPT. 1974	JOB No. 1093
N.T.S. 105K-6, 105K-7	DWG. No. 5


COCOA CREEK
BINGO CREEK
ALPO CREEK
Baseline
Tieline North
Tieline South
45
57
80
100
LEGEND
Cu PPM | Pb PPM
Claim boundary
Creek
Contour Intervals
45 — 57 (PPM) Threshold
57 — 80
81 — 100
101 +
Anomalous
TO ACCOMPANY: " Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P. ENG., dated December 31, 1974
TECK MINING GROUP
ELLE GROUP
ANVIL AREA
GEOCHEMICAL SURVEY
(LEAD)
SCALE FEET
DATE SEPT. 1974
JOB No. 1093
N.T.S. 105K-6, 105K-7
DWG No. 6



LEGEND

Cu / Pb

10 – 19 / 25 – 25 / 45 – 45 PPM

10 – 25 PPM

Claim boundary

Creek

Contour Intervals

47 — 60 PPM	Threshold
60 — 80	Anomalous
80 — 100	
100 +	

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P. ENG., dated December 31, 1974

TECK MINING GROUP

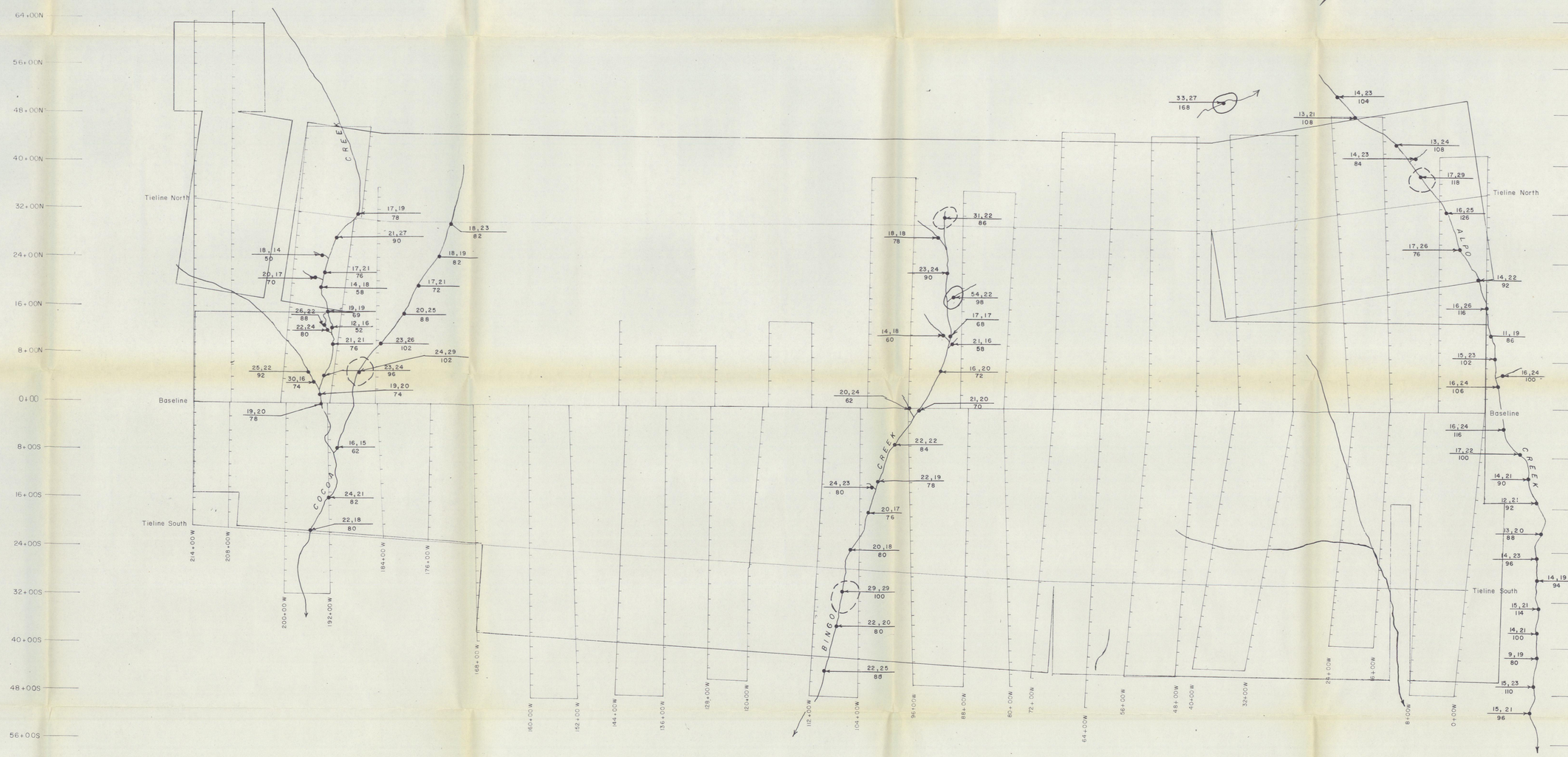
ELLE GROUP
ANVIL AREA

GEOCHEMICAL SURVEY
(COPPER)

0 800 1600
SCALE – FEET

DATE: SEPT 1974	JOB No. 1093
N.T.S. 105K-6, 105K-7	DWG No. 7

G. D. Ulrich



LEGEND

14,25 / 96 — Cu, Pb / Zn PPM

STREAM or CREEK

FLAG LINE SHOWING STATIONS

APPROXIMATE CLAIM BOUNDARY

Zinc	Lead	Copper	
129 - 150	28 - 31	31 - 38	Threshold
150 +	31 +	38 +	Anomalous

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P.ENG., dated December 31, 1974

TECK MINING GROUP

ELLE GROUP
ANVIL AREA

GEOCHEMICAL SURVEY

STREAM SEDIMENTS

0 800 1600
SCALE — FEET

DATE: SEPT. 1974	JOB Nº 1093
N.T.S. 105K-6, 105K-7	DWG Nº 8

LEGEND

- Creek
- Claim boundary

Contour intervals in 100 Gammas

- 700 + Gammas
- 500 - 700 Gammas
- 500 - Gammas

TO ACCOMPANY: "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G.D. ULRICH, P.ENG., dated December 31, 1974

G D Ulrich

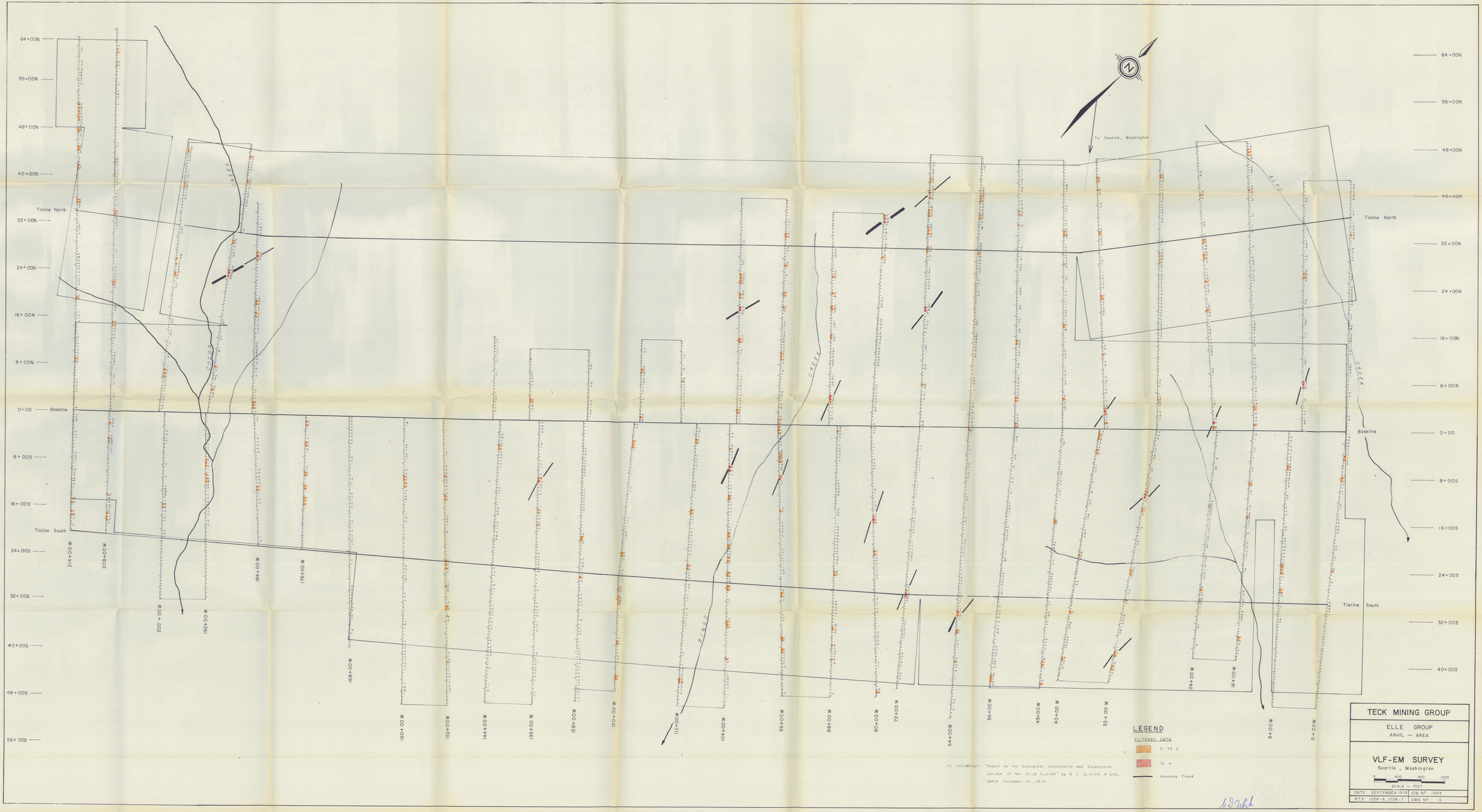
TECK MINING GROUP

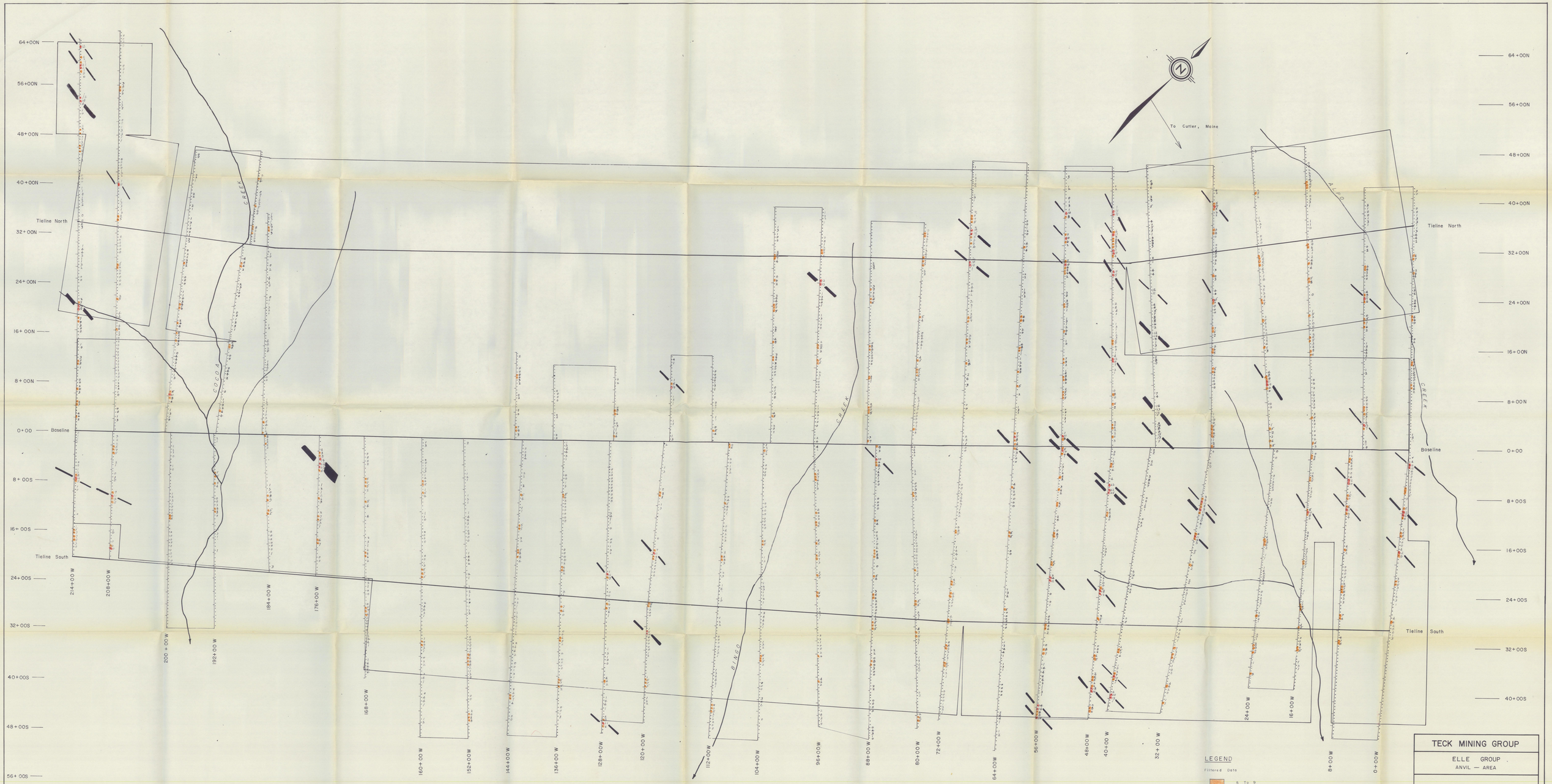
ELLE GROUP
ANVIL AREA

MAGNETOMETER SURVEY

0 800 1600
SCALE — FEET

DATE: SEPT. 1974	JOB No. 1093
N.T.S. 105K-6, 105K-7	DWG No. 15


64+00N
56+00N
48+00N
40+00N
Tieline North
32+00N
24+00N
16+00N
8+00N
0+00 Baseline
8+00S
16+00S
Tieline South
24+00S
32+00S
40+00S
48+00S
56+00S
214+00W
208+00W
200+00W
192+00W
184+00W
176+00W
168+00W
160+00W
152+00W
144+00W
136+00W
128+00W
120+00W
112+00W
104+00W
96+00W
88+00W
80+00W
72+00W
64+00W
56+00W
48+00W
40+00W
32+00W
24+00W
16+00W
8+00W
0+00W
COPPER CREEK
CREEK
BINEO
ALEO
To Seattle, Washington
LEGEND
FILTERED DATA
5 TO 9
10 +
Anomaly Trend
TECK MINING GROUP
ELLE GROUP
ANVIL — AREA
VLF-EM SURVEY
Seattle , Washington
0 400 800 1200
SCALE — FEET
DATE SEPTEMBER 1974 JOB Nº 1093
N.T.S. 105K-6, 105K-7 DWG. Nº 16
TO ACCOMPANY "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. D. ULRICH, P.ENG., dated December 31, 1974



TO ACCOMPANY "Report on the Geological, Geochemical and Geophysical Surveys of the ELLE CLAIMS" by G. C. ULNICH, P.ENG., dated December 21, 1974

TECK MINING GROUP	
ELLE GROUP ANVIL — AREA	
VLF-EM SURVEY Cutler Maine 0 400 800 1200 SCALE — FEET	
DATE: SEPTEMBER 1974	JOB Nº 1093
N.T.S. 105K-6, 105K-7	DWG. Nº 17