

84-1316-13279

ASSESSMENT REPORT

GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL REPORT

on the

SUE 1 & 2 CLAIMS

Located in the Cariboo Mining Division

at coordinates

53 degrees 14' N

122 degrees 24' W

by: ROBERT J. BAERG and LYNDON BRADISH

NORANDA EXPLORATION COMPANY, LIMITED
(No Personal Liability)

Dec. 1984

N.T.S. 93 G/1, 8

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,279

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SUMMARY:

In October 1984, Noranda Exploration conducted ground followup work on an airborne EM anomaly located within the SUE 1 & 2 claims. These claims are located approximately 80 kilometers SSE of Prince George, British Columbia. The claims lie within the Quesnel Trough, a NNW trending belt of marine volcanics and sediments. Ground followup consisted of reconnaissance HLEM and Mag followed by grid HLEM, Mag, mapping and soil sampling.

The results of the ground surveys indicate several discontinuous EM conductors in excess of 4.0 km in length, trending NW-SE proximal to the contact between the volcanics and sediments. Coincident geochem values are mainly associated with the southern portion of the EM conductor. The rocks in the vicinity of the conductor are weakly to strongly hornfelsed and commonly contain minor amounts of pyrrhotite and pyrite as disseminated grains and grain aggregates with local trace amounts of chalcopyrite. The geology, alteration and mineralization associated with the conductor are therefore considered favorable for a massive sulphide type deposit, either metasomatic or volcanogenic in origin.

It should also be noted that only the work completed within the SUE claims boundaries has been applied for assessment credit! The value of any work outside of the immediate claim boundary has not been included in this report!

INTRODUCTION:

This report covers the work completed by Noranda Exploration Company, Ltd., during September and October, 1984, on the Sue 1 and 2 claims. The claims are located in the Cariboo Mining Division approximately 80 kilometers SSE of Prince George, B. C. The claims consist of thirty-two (32) modified grid units.

The property is located within the "Quesnel Trough", a NNW trending belt of marine volcanics and sediments which is locally intruded by Cretaceous-age stocks. Thus, there is potential for both exhalative-type and metasomatic-type massive sulphides.

Part of the property and areas immediately to the southeast have been worked on and off from 1968 to the present date. This work has been based on the occurrence of several stockwork and massive sulphide showings within the volcanic rocks. These showings consist of pyrite and/or pyrrhotite with chalcopyrite, sphalerite and galena with associated silver and gold values.

In January of 1984, Noranda Exploration contracted Questor Surveys Ltd. of Mississauga, Ontario, to fly a regional airborne EM-Mag survey in the area of the Sue property. The airborne survey detected an anomaly on the Sue property and as a result, during September-October 1984, Noranda conducted a geophysical, geological and geochemical evaluation program on the property. Field operations were supervised by R. Baerg, under the supervision of T. Lewis and R. MacArthur, geologists with Noranda Exploration Co. Ltd.

HISTORY:

Part of the Sue claims and areas immediately to the southeast have been worked by various exploration companies since 1968 for lode mineralization. The area has been actively worked for placer gold since the early 1900's. The most recently active property in the area was the Thunder property of Cariboo Minelands Ltd., later Equatorial Resources Ltd. Mineralization there consisted of massive and semi-massive pyrite-pyrrhotite-chalcopyrite with some sphalerite and galena, and considerable associated magnetite. Work on these showings included mapping, trenching, geochemical sampling, geophysics and diamond drilling.

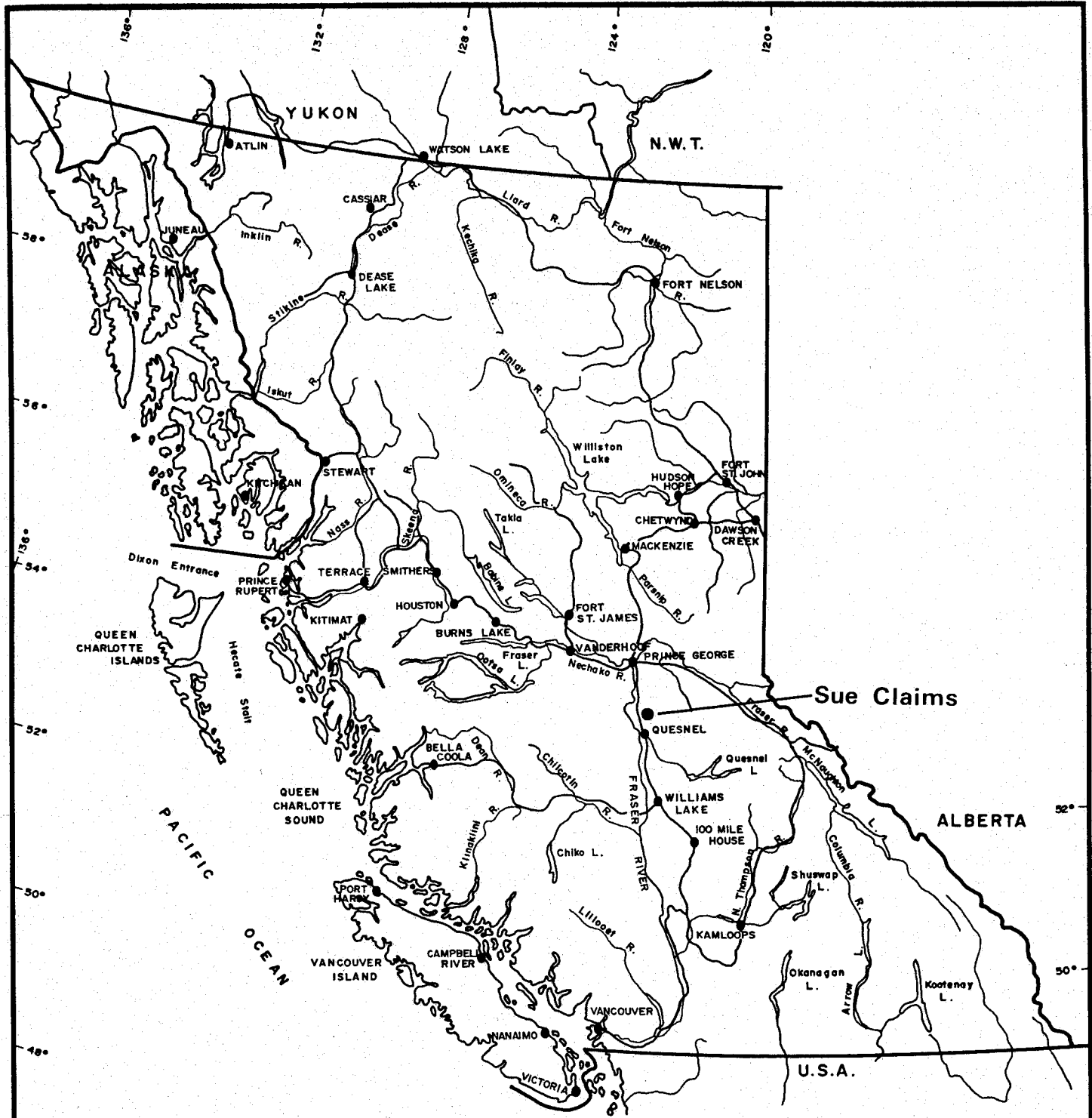
More recently, in 1980, prior to the staking of the Sue claims, Gabriel Resources Inc. staked a large area to the south and east of the present Sue claims and is currently evaluating that ground for mineral potential.

LOCATION AND ACCESS:

The Sue property is located approximately 80 km south-southeast of Prince George, British Columbia (Figure 1).

Access to the property is obtained by a good logging road which branches off Highway #97, 1.7 km southeast of Cinema. This road, called the Ahbau Creek Forest Road, is followed northeast for 1.6 km to where the western boundary of the Sue property is located. From there the road angles up through the central portion of the Sue 1 claim and then heads east and exits the property in the northeast corner.

Access to the southwest portion of the Sue 2 claim is obtained by following the Ahbau Creek Forest Road northeast from Highway #97 for 1.1 km and then taking the sharp right hand fork.



0 100 200 KILOMETRES
SCALE: 1:8,000,000

*Robert Baerg
Jan 4 1984*

REVISED	LOCATION MAP	
	SUE CLAIMS	
PROJ. No. <u>63</u>	SURVEY BY: <u>R. Baerg</u>	DATE: <u>Dec./84</u>
N.T.S. <u>93G/1</u>	DRAWN BY: <u>S.K.B.</u>	SCALE: <u>1:8,000,000</u>
DWG. No. <u>1</u>	NORANDA EXPLORATION	
	OFFICE: <u>PRINCE GEORGE, B.C.</u>	

VANGAL 11927

CLAIM DATA:

The Sue claims consist of two (2) claim blocks comprised of thirty-two (32) modified grid units (Figure 2).

Claim description follows:

<u>Claim Name</u>	<u># Units</u>	<u>Record No.</u>	<u>Expiry date</u>
Sue 1	20	5352	Nov. 11/86
Sue 2	12	5353	Nov. 11/86

FIELD WORK:

On the basis of positive results from an airborne EM survey flown in April and May 1984, four reconnaissance lines of HLEM and Mag were run on the property. Based on positive results from the reconnaissance survey, a 4.4 km X 1.0 km control grid was established. Crosslines were located at 200 m intervals and extended 500 m on either side of the baseline. HLEM and Mag was completed on all crosslines. Geological mapping covers L37,600N to L 40,800N and soil sampling covers all crosslines except L 41,400N and the western half of L 41,600N. A total of 225 samples were collected. Soil samples were collected (from the B horizon) at 50 m intervals where possible on the crosslines with the use of a grub hoe. The depth of the sample holes varied from 25 to 40 cm. The samples were placed in Kraft wet strength paper bags, dried and then shipped to Noranda Labs in Vancouver, B. C. for analysis. (for analytical procedure, see Appendix C).

The samples, upon receipt at the Lab are dried at 80 degrees C and sieved with an 80 mesh sieve. 0.20 grams of the greater than 80 mesh material is then digested with concentrated perchloric and nitric acid (3:1) for 5 hours at reflux temperature. The concentrations of Ag, Pb, Zn, Cu can be determined directly from the digest with a conventional atomic absorption spectrometric procedure. A varian-Techtron, Model AA-5 or AA-475 is used to measure elemental concentrations. For Au analyses a 10 g sample is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. Atomic absorption is then used to determine Au concentrations. For As analyses 0.2-0.3 grams is digested with 1.5 ml of perchloric 70% and 0.5 ml of concentrated nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Rock samples are pulverized to -120 mesh before digestion.

REGIONAL GEOLOGY

TERTIARY

- MPvb** - olivine basalt, flows, breccia, tuff
- MPs** - sandstone, shale, conglomerate, diatomite, lignite

CRETACEOUS

- EKg** NAVER INTRUSIONS: quartz monzonite, syenite, monzonite, granodiorite, diorite

TRIASSIC-JURASSIC

LOWER-MIDDLE JURASSIC

- Js** - shale, greywacke, conglomerate

UPPER TRIASSIC-LOWER JURASSIC

- TJT** - Takla Group: andesite, basalt, tuff, breccia, conglomerate, greywacke shale, limestone
- uTp** - black phyllite, siltstone, limestone, quartzite
- LTg** - Takomkane Batholith: granodiorite, quartz diorite, quartz monzonite

PERMIAN AND/OR TRIASSIC

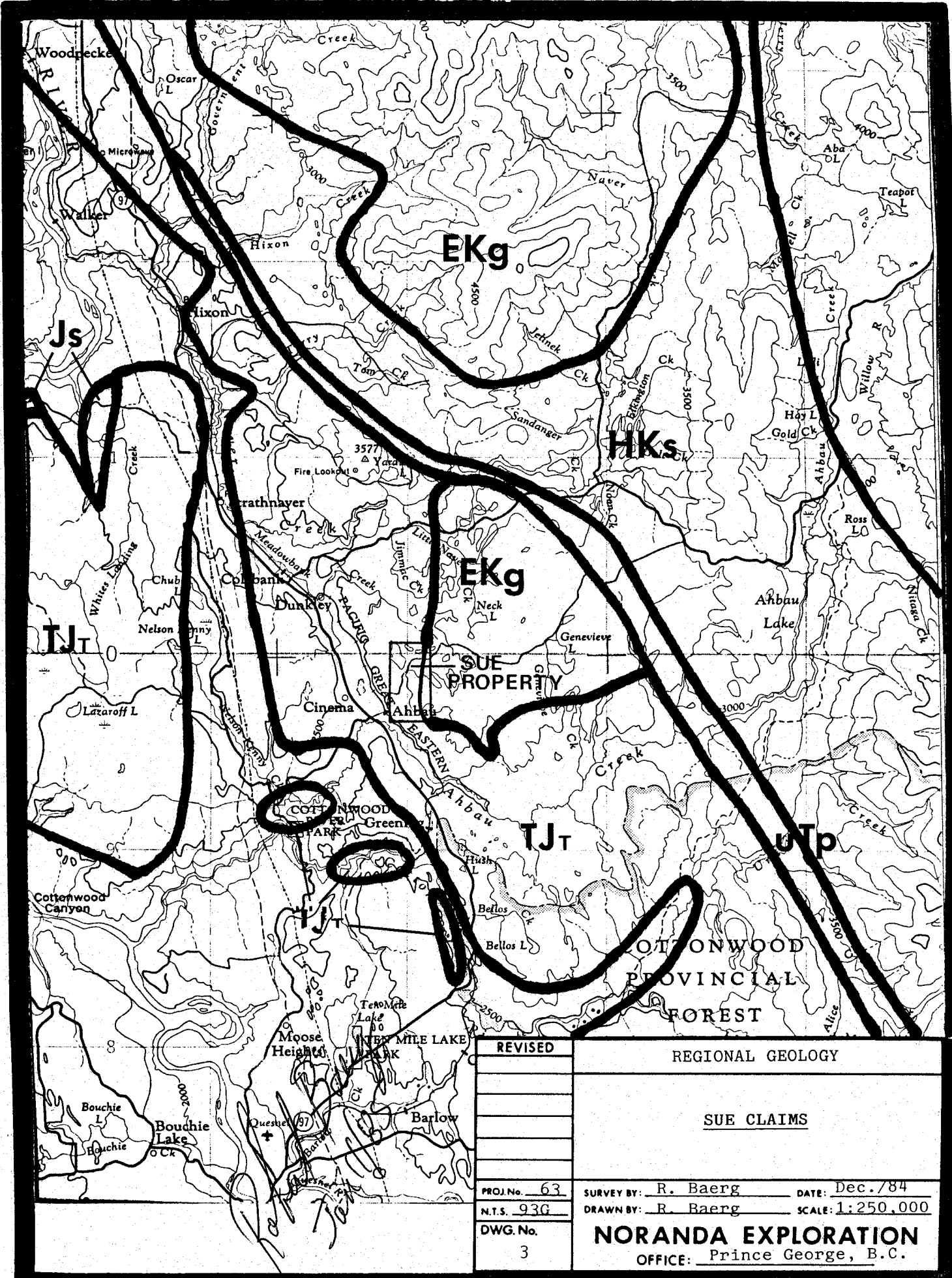
- PTub** TREMBLEUR INTRUSIONS: peridotite, dunite pyroxenite, serpentinite

MISSISSIPPIAN

- Msm** SLIDE MOUNTAIN GROUP: basalt, breccia, tuff, chert, argillite, sandstone, limestone, conglomerate

HADRYNIAN AND PALEOZOIC

- HKs** KAZA GROUP: sandstone, conglomerate, grit, phyllite, schist, amphibolite, marble, gneiss



REVISED	REGIONAL GEOLOGY	
	SUE CLAIMS	
PROJ. No. 63	SURVEY BY: R. Baerg	DATE: Dec./84
N.T.S. 93G	DRAWN BY: R. Baerg	SCALE: 1:250,000
DWG. No. 3	NORANDA EXPLORATION	
	OFFICE: Prince George, B.C.	

REGIONAL GEOLOGY:

Figure 3 shows the regional geology in the area of the Sue claims. The claims are located within the Quesnel Trough, a broad NNW trending belt of marine volcanics, volcanoclastics and sediments which are locally intruded by calc-alkaline intrusive stocks. The geology of this area has been described by Tipper (1960) and Tipper et al (1975), (1979).

The rocks vary in age from Hadrynian to Quaternary and are generally increasingly metamorphosed and deformed with increasing age. The area is characterized by a strong northwesterly trend of fold axes and faults. Also, the Kaza Group rocks have been domed by the large batholith north of Naver Creek.

The rocks within the area of the Sue claims are divided into two main units:

- TJT : Takla Group - andesite, basalt, tuff, breccia,
conglomerate, greywacke, shale,
limestone
- EKg : Naver Intrusions - quartz monzonite, syenite,
monzonite, granodiorite, diorite

LOCAL GEOLOGY:

Figure 4 illustrates the geology of a portion of the Sue claims. Three main rock units were identified:

1. Black Argillite
2. Andesite-Basalt
3. Grandodiorite

As well, there were minor amounts of feldspar porphyry volcanic, Hornblende Diorite dikes and Debris Flows.

The volcanic rocks mainly occur to the west of the baseline with the argillites and intrusive rocks mainly to the east of the baseline. The main contact, between the andesites and the argillites, has a consistent north northwesterly trend. Bedding attitudes within the argillites are generally parallel to subparallel to this contact with dips from 60 degrees west to 40 degrees east. It is possible that there is a north northwest trending fold centered roughly along the baseline but data at this point is inconclusive.

The volcanic rocks are predominantly andesitic in composition and locally porphyritic. They have been metamorphosed to a green schist facies with extensive chlorite and minor epidote commonly obliterating the primary mineral textures. Within the andesites, there are also minor grey-brown feldspar porphyry flows and minor rusty debris(?) flows.

The argillites and locally the volcanics are variably hornfelsed. The argillite hornfels are generally black and cherty with local zones of pale green to white mottling due to chlorite, epidote and silica alteration. Also, the argillite hornfels locally takes on a brown massive, fine-grained appearance (biotite alteration?). The volcanic hornfels have a massive dark green cherty appearance.

Both the argillites and the volcanics are locally intruded by small Hornblende diorite dikes.

A large granodiorite stock occurs in the southeastern portion of the survey area. It is fine to medium grained and is commonly strongly magnetic.

MINERALIZATION:

Mineralization consists of pyrite, pyrrhotite and trace chalcopyrite, Pyrrhotite +/- pyrite occurring as disseminated grains, small grain aggregates, replacements of mafic minerals and as fracture coatings, is common in the andesites and occurs locally in the argillites. They also occur in small stockwork zones, with associated chlorite-epidote-silica alteration, in both the andesites and the argillites. Chalcopyrite was most commonly observed within these alteration zones.

GEOPHYSICS:

INSTRUMENTATION

1) INPUT EM AND MAGNETOMETER AIRBORNE SURVEYS. "BARRINGER/QUESTOR MARK VI INPUT^(R) SYSTEM

The Induced Pulse Transient (INPUT) method is a system whereby measurements are made, in the time domain, of a secondary electromagnetic field while the primary field is between pulses. Currents are induced into the ground by means of a pulsed primary electromagnetic field which is generated from a transmitting loop around the aircraft. By using half-sine wave current pulses (Fig. A-1) and a transmitter loop of large turns-area, a high signal-to-noise ratio and the high output power needed for deep penetration, are achieved.

Induced current in a conductor produces a secondary electromagnetic field which is detected and measure after the termination of each primary pulse. Detection of the secondary

field is accomplished by means of a receiving coil, wound on a ferrite rod, mounted in a fibreglass shell called a "bird" and towed behind and below the aircraft on 120 metres (400 feet) of coaxial cable. The received signal is processed and recorded by equipment within the aircraft.

The axis of the receiving coil is horizontal and parallel to the flight direction. This optimizes the discrimination between flat lying surficial conductors and bedrock conductors. The secondary field is in the form of a decaying voltage transient, measured in time, at the termination of the primary transmitted pulse. The amplitude of the transient is proportional to the amount of current induced into the conductor, the conductor dimensions, conductivity and the depth beneath the aircraft.

The rate of decay of the transient is inversely proportional to conductance. By sampling the decay curve at six different time intervals and recording the amplitude of each sample, an estimate of the relative conductance can be obtained. Transients due to strong conductors such as sulphides and graphite, usually exhibit long decay curves and are therefore commonly recorded on all six channels. Sheet-like surface conductive materials, on the other hand, have short decay curves and will normally only show a response in the first two or three channels.

For homogeneous conditions, the transient decay will be exponential and the time constant of decay is equal to the time difference at two successive sampling points divided by the log ratio of the amplitudes at this point."

"GEOMETRICS MODEL G-803 PROTON MAGNETOMETER

The airborne magnetometer is a proton free precession sensor which operates on the principle of nuclear magnetic resonance to produce a measurement of the total magnetic intensity. It has a sensitivity of 1 gamma and an operating range of 20,000 gammas to 100,000 gammas. The sensor is a solenoid type, oriented to optimize results in a low ambient magnetic field. The sensor housing is mounted on the tip of the nose boom supporting the INPUT transmitter cable loop. A 3 term compensating coil and perma-alloy strips are adjusted to counteract the effects of permanent and induced magnetic fields in the aircraft.

Because of the high intensity electromagnetic field produced by the INPUT transmitter, the magnetometer and INPUT results are sampled on a time share basis. The magnetometer head is energized while the transmitter is on, but the read-out is obtained during a short period when the transmitter is off. Using this technique the sensor head is energized for 0.80 seconds and subsequently the precession frequency is recorded and converted to gammas during the following 0.20 second when no current pulses are

induced into the transmitter coil."¹

2) HORIZONTAL LOOP EM SURVEY

The SE-88 unit differs from the normal HLEM systems such as the MaxMin 11 above in that it measures without regard to phase, the ratio of signal amplitude between two frequencies which are transmitted and received simultaneously. A low frequency of 112 Hz is used as a reference frequency. The signal difference is integrated or averaged over a period of time in order to improve the signal to noise ratio thus giving a sensitivity that rivals the normal HLEM methods.

The survey parameters employed on the follow-up programme are as follows:

Coil separation	:	100 meters
Frequencies	:	3037, 2012, 337 Hz
Reference frequency	:	112 Hz.
Integration period	:	16 or 8 seconds
Reading interval	:	25 meters
Measurement	:	ratio of amplitude between reference and signal frequencies (%)

3) GROUND MAGNETOMETER SURVEY

Magnetometers manufactured by Scintrex Ltd. of Concord, Ontario were employed for this survey. The MP-3 Total Field Magnetometer System consists of one or more field units and a base station. Diurnal and day to day variations are automatically corrected by the built in microprocessor giving the data a useable accuracy of 0.1 gammas.

The datum for the Sue grid was selected at 57,800 gammas. The data is contoured at 100 gamma intervals.

4) DISCUSSION OF RESULTS

The Airborne INPUT and Magnetic survey was flown and interpreted by Questor Surveys Ltd. of Toronto, Ontario. The following is quoted from the report to Noranda concerning the two main conductor axis, 33K and 27N over which the grid was constructed.

¹Konings, M., 1984, Airborne Electromagnetic and Magnetic Survey, Noranda Exploration Co. Ltd., Ahbau Area, British Columbia; Questor Surveys Limited, pp A1, A2, A5

<u>"CONDUCTOR 27N</u>	Priority 1
Conductance	32S
Dip	90?
Strike Length	3000 m.
Altimeter	145 m.
Depth	50 m.
Magnetic Correlation	-
Related Responses	60300BF, 60290J, 60280BH, 60270N, 60261BC, 60251H

The leading peak positions of all responses of 27N and 33K is suggestive of a conductor with at least 200 metres in width. This zone has no direct magnetic correlation. The transient fits the vertical half plane only on the three later time channels. The peak shifts also confirm a conductor of extreme width, however, a massive source would have had much higher amplitudes.

<u>CONDUCTOR 33K</u>	Priority 1
Conductance	31S
Dip	90?
Strike Length	3000 m.
Altimeter	140 m.
Depth	0m
Magnetic Correlation	30 nT
Related Responses	60320BD, 60310S

Same as 27N, except the direct magnetic correlation is an additional favourable parameter." ²

²Konings, M., 1984, Airborne Electromagnetic and Magnetic Survey, Noranda Exploration Co. Ltd., Ahbau Area, British Columbia; Questor Surveys Limited, page 13.

The ground geophysics (HLEM) defined a discontinuous conductor extending over a linear distance exceeding four kilometers. Several satellitic zones were also identified particularly in the area bounded by L.40600N and L.41200N.

For the most part the conductivity of the conductors is less than 20 Siemens with the depth to the current axis typically between 10 and 30 meters. The conductor axis shown on the two geophysical maps represent interpreted bedrock conductors all with a steeply dipping attitude. Several conductor intercepts have associated magnetic responses that appear to be sourced by the E.M. conductor. They are as follows:

TABLE 1

LOCATION	DEPTH	CONDUCTIVITY	MAGNETIC RESPONSE
41200N/4004SE	10 m	20 Siemens	100nT (wide)
41000N/4012SE	10 m	12 "	100nT (narrow)
40000N/39980E	10 m	15 "	150nT (pole)
39800N/4004SE	25 m	10 "	100nT (wide)
38800N/40140E	25 m	7 "	290nT (offset?)

The HLEM survey has also defined an area to be underlain by a broad conductive unit particularly grid north of line 39,400N. This is seen as a large positive offset of the HLEM profiles. It is not possible to determine whether the source of this conductivity is due to a thin surficial veneer or is sourced by a more substantial unit (bedrock). It is interesting to note that within the confines of this conductive unit the magnetic susceptibility is quite uniform and low whereas outside of this unit the magnetic susceptibility is higher and more variable thus suggesting a definite change in the bedrock.

SOIL GEOCHEMISTRY:

Soil samples were collected on most of the crosslines at 50 m intervals. The overburden is generally somewhat sandy and appears to be mainly glacial in origin. Overburden coverage and depth varies from moderate thin cover in the southern and eastern portions to heavy thick cover in the northern and some of the western portions of the survey area.

Soil samples were analyzed for Cu, Zn, Pb, Ag, As and Au. One problem noted during sample analysis was the occasional deficiency of fine material in some of the samples and the apparent correlation of higher Cu values with small sample weights.

Cu: Copper values are generally low with local spot high values. The Cu value mean was 31 ppm with a standard deviation of 82 ppm. Thus samples greater than 113 ppm can be considered weakly anomalous and samples greater than 195 ppm are distinctly anomalous. A small weak Cu anomaly is located at L 39550N/40,050E to L39,200N/40,050E and at L 40,200N/40,050E to 40,100E.

Zn: Zinc values are locally highly anomalous. Values range from just above threshold to 2400 ppm. The mean Zn value is 137 ppm with a standard deviation of 71 ppm. Therefore values of 208 to 279 ppm are considered weakly anomalous and sample values greater than 279 ppm are considered definitely anomalous

Zn values have defined a weak to strongly anomalous area from 50 to 350 m wide extending from L 37,600N to L 39,800N, which is locally coincident with the copper anomaly. As well, there are numerous smaller anomalies scattered around the larger anomaly.

Pb: Pb values are generally very low with local spot highs up to 220 ppm. The mean Pb value is 4.8 ppm with a standard deviation of 3.4 ppm. Therefore, samples between 8.2 and 11.6 ppm are weakly anomalous and samples greater than 11.6 ppm are definitely anomalous. The anomalous values occur mainly in the south-central portion of the grid, locally coincident with the Zn geochem anomaly.

Ag: Ag values are low with local spot highs up to 3.0 ppm. The mean Ag value is .36 ppm with a standard deviation of .37. Therefore samples between .73 and 1.1 ppm is weakly anomalous and samples greater than 1.1 ppm are definitely anomalous. Anomalous Ag values are scattered throughout the grid and only locally are they coincident with Zn and Pb anomalies.

As: As values are also generally low with local spot high values. The mean As value is 2.3 ppm with a standard deviation of 4.6 ppm. Therefore samples between 6.9 and

11.5 ppm are weakly anomalous and samples greater than 11.5 ppm are definitely anomalous. The As values are scattered throughout the southern half of the grid and are locally coincident with the main Zn anomaly and some of the Pb and Ag anomalies.

Au: Au values are also generally low with local spot highs to 200 ppb. Values greater than 10 ppb have been arbitrarily considered anomalous. There are 3 distinct Au anomalies, (1) on the eastern portions of lines 39,550N and L 39,400N, (2) on the eastern portions of lines 39,000N and 38,800N from 40,200E to 40,500E and (3) on the western portions of lines 39,550N and 39,400N from 39,800E to 39,500E. These anomalies do not appear to show any clear relationship to the other geochem anomalies. In fact, these anomalies occur in areas of generally more abundant glacial overburden, leading to the conclusion that they may be placer concentrations.

ROCK GEOCHEM:

A total of 17 rock samples were collected and analyzed for Cu, Zn, Pb, Ag, As and Au. Values were all low, Cu up to 200 ppm, An to 430 ppm, Pb to 200 ppm, Ag to 1.4 ppm, As to 44 ppm and Au to 20 ppb.

CONCLUSIONS:

The ground EM survey has defined several interesting bedrock conductors within the gridded area. Those zones listed in Table 1 deserve additional work in order to determine the source of the conductivity. These zones are a first priority for massive sulphide targets, however the remaining conductor axes should be investigated on a second priority basis.

Geological mapping has indicated that the conductors lies along or proximal to a volcanic-sedimentary contact. The observed pyrite-pyrrhotite mineralization as well as the hornfelsing and alteration are not clearly related to the conductors but neither can it be said that they are not related. More work is required.

The geochemical survey was generally inconclusive. The only element which produced any significant anomalies was zinc and these anomalies are only locally coincident with the EM conductors in the southern portion of the grid. The conductors however should not be overly downgraded due to the poor geochem results as the area has been extensively

glaciated and little if any of the overburden is residual.

RECOMMENDATIONS:

The following are recommendations for further work on the Sue claims:

Trenching of the zones listed in Table 1, followed by diamond drilling. Also, the completion of mapping and sampling in the northern portion of the grid.

BIBLIOGRAPHY

B.C.D.M.; MMAR	1968 - 151
B.C.D.M.; GEM	1969 - 161
B.C.D.M.; GEM	1971 - 161
B.C.D.M.; GEM	1972 - 349
B.C.D.M.; Ass. Rpt.	627
B.C.D.M.; Ass. Rpt.	2212
B.C.D.M.; Ass. Rpt.	3385

Questor Surveys Ltd.: Report on the Ahbau Area INPUT MK VI
Airborne Electromagnetic and Magnetic
Survey. A company report.

Tipper, H.W.: Geology, Prince George, British Columbia, Map 49-
1960, 1961.

APPENDIX A

NORANDA EXPLORATION COMPANY, LIMITED

Cost Statement

Date: December, 1984

Project: Sue claims

Date of Work: Oct. 3 to Oct. 11, 1984

Personnel: R. Baerg, R. Kaatz, B. Zaporozan,
V. Seel, B. Kerby, T. Lippert, J. Edmeston

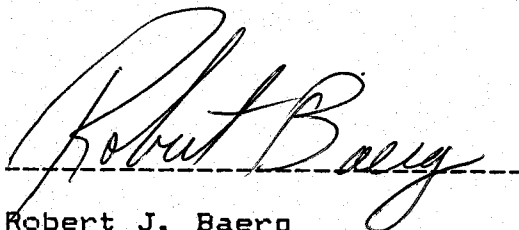
a) Geology:		
8 man days at \$119.24/man day		\$ 953.93
b) Soil Sampling:		
8 man days at \$101.37/man day		\$ 810.96
c) Line Cutting		
7 man days at \$101.37/man day		\$ 709.59
d) Geophysics:		
15 man days at \$86.54/man day		\$1,298.10
e) Accommodation/Transportation:		
38 man days at \$67.06/man day		\$2,548.27
f) Geochemical Analysis:		
<u>Soil Samples</u>		
225 x Cu,Zn,Pb, Ag, As, Au		
225 x \$ 8.40/sample		\$1,890.00
<u>ROCK SAMPLES</u>		
13 x Cu, Zn, Pb, Ag, As, Au		
13 x \$10.40/sample		\$ 135.20
g) Report Preparation		\$1,050.00
		<hr/>
Grand Total		\$ 9,396.04
		<hr/> <hr/>

APPENDIX B

STATEMENT OF QUALIFICATIONS

I, Robert J. Baerg of the City of Prince George, Province of British Columbia, do certify that:

1. I have been employed as a geologist by Noranda Exploration Company, Limited since May, 1984.
2. I am a graduate of the University of British Columbia with a Bachelor of Science (Honors) in Geology (1984).
3. I supervised and assisted with the work described in this report.

A handwritten signature in cursive script, reading "Robert Baerg", is written over a horizontal dashed line.

Robert J. Baerg
Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

MAR 27 1984

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

Preparation of Samples

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples * from constant volume), are analysed in its entirety, when it is to be determined for gold without further sample preparation.

Analysis of Samples

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method:

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the

range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

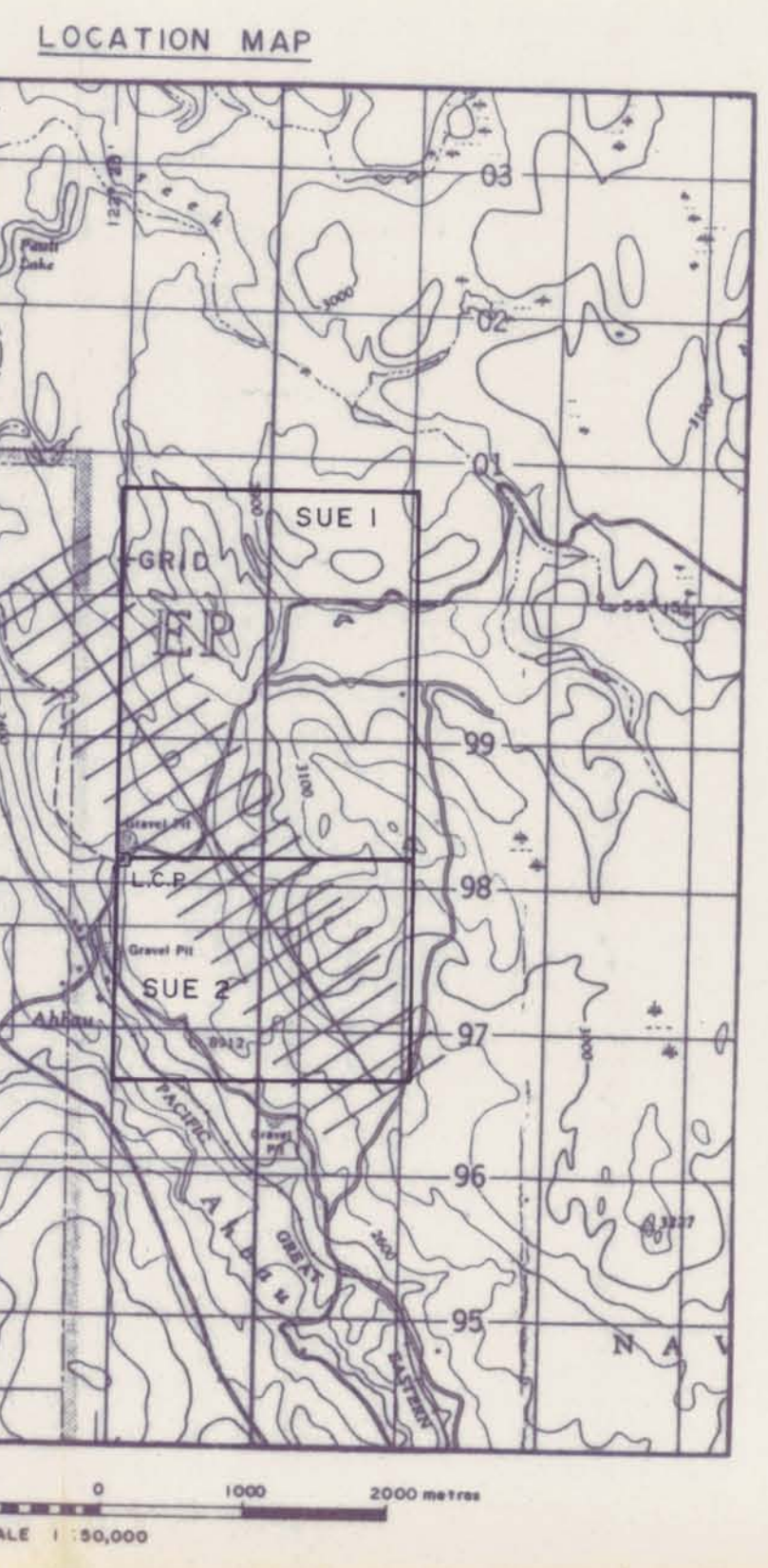
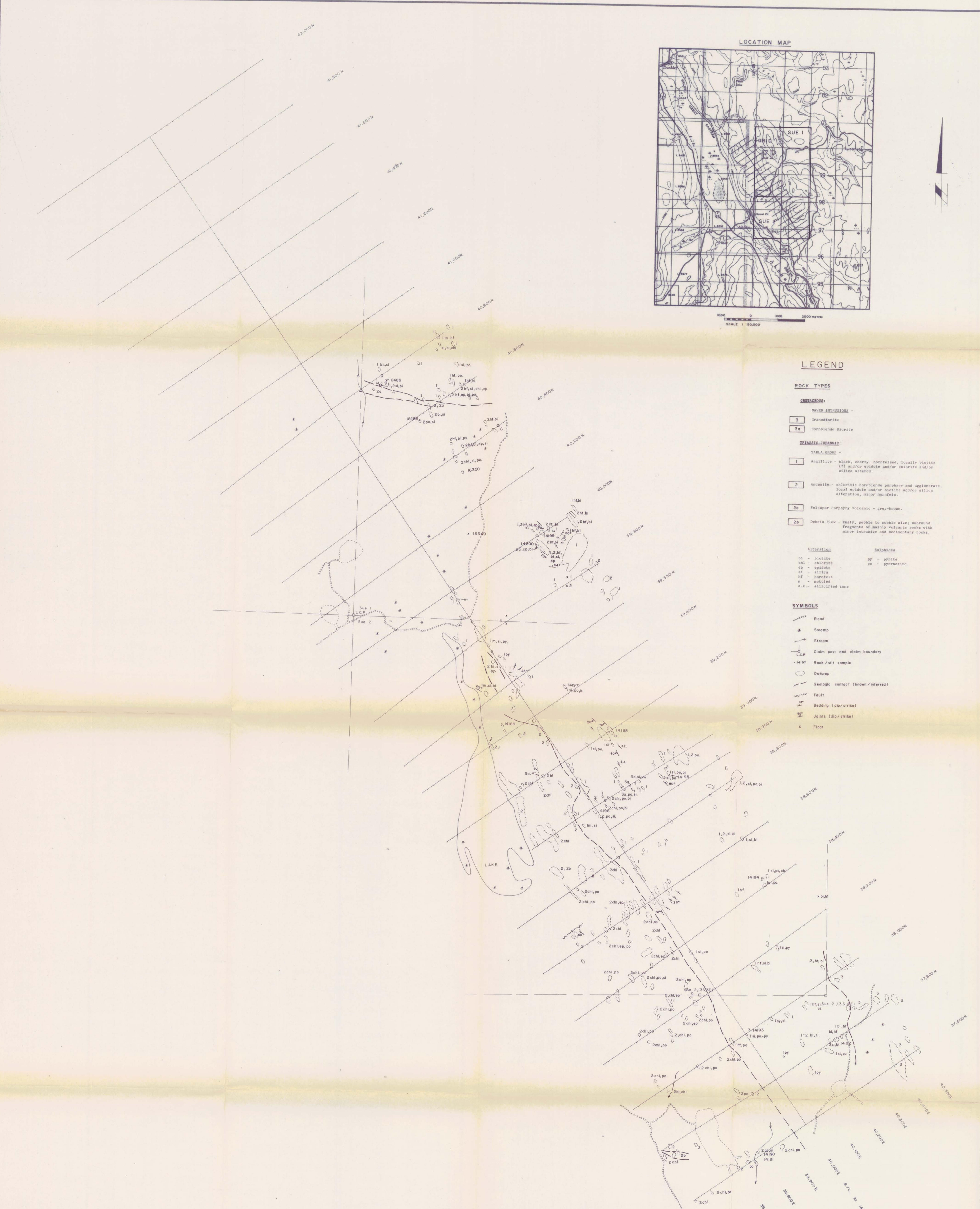
Uranium - U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

* N.B. If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	

EJvL/ie
March 14, 1984



LEGEND

ROCK TYPES

CRETACEOUS:

- 3 Granodiorite
- 3a Hornblende Diorite

TRIASSIC-JURASSIC:

TALIA GROUP:

- 1 Argillite - black, cherty, hornfelsed, locally biotite (1) and/or epidote and/or chlorite and/or silica altered.
- 2 Andesite - chloritic hornblende porphyry and agglomerate, local epidote and/or biotite and/or silica alteration, minor hornfels.
- 2a Pelospar Porphyry volcanic - grey-brown.
- 2b Debris Flow - rusty, pebbles to cobble size, subrounded fragments of mainly volcanic rocks with minor intrusive and sedimentary rocks.

- Alteration**
- bl - biotite
 - chl - chlorite
 - ep - epidote
 - sl - silica
 - mf - hornfels
 - n - notched
 - s.e. - silicified zone

- Sulphides**
- py - pyrite
 - po - pyrrhotite

SYMBOLS

- Road
- Swamp
- Stream
- Claim post and claim boundary
- Rock / silt sample
- Outcrop
- Geologic contact (known / inferred)
- Fault
- Bedding (dip / strike)
- Joints (dip / strike)
- x Floor

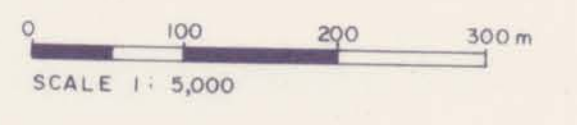
ROCK AND SILT SAMPLE GEOCHEM RESULTS

Sample No.	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppm)	As (ppm)
14191	42	230	4	0.6	32	10
16348off map area	82	430	200	1.4	-4	10
16349	180	56	10	1.0	-4	10
16350	90	38	6	0.6	-4	10
14189	98	76	2	0.4	28	10
14190	120	44	2	0.4	-4	10
14192	48	32	2	0.2	24	10
14193	30	38	2	0.2	32	10
14194	64	42	2	0.2	12	10
14195	28	44	8	0.4	36	10
14196	78	34	2	0.4	12	10
14197	60	46	2	0.2	16	10
14198	32	300	2	0.6	44	10
14199	150	70	6	0.4	-2	10
14200	90	110	20	0.4	-2	10
16489	200	96	50	1.2	-2	20
16488	68	60	24	1.2	-2	10

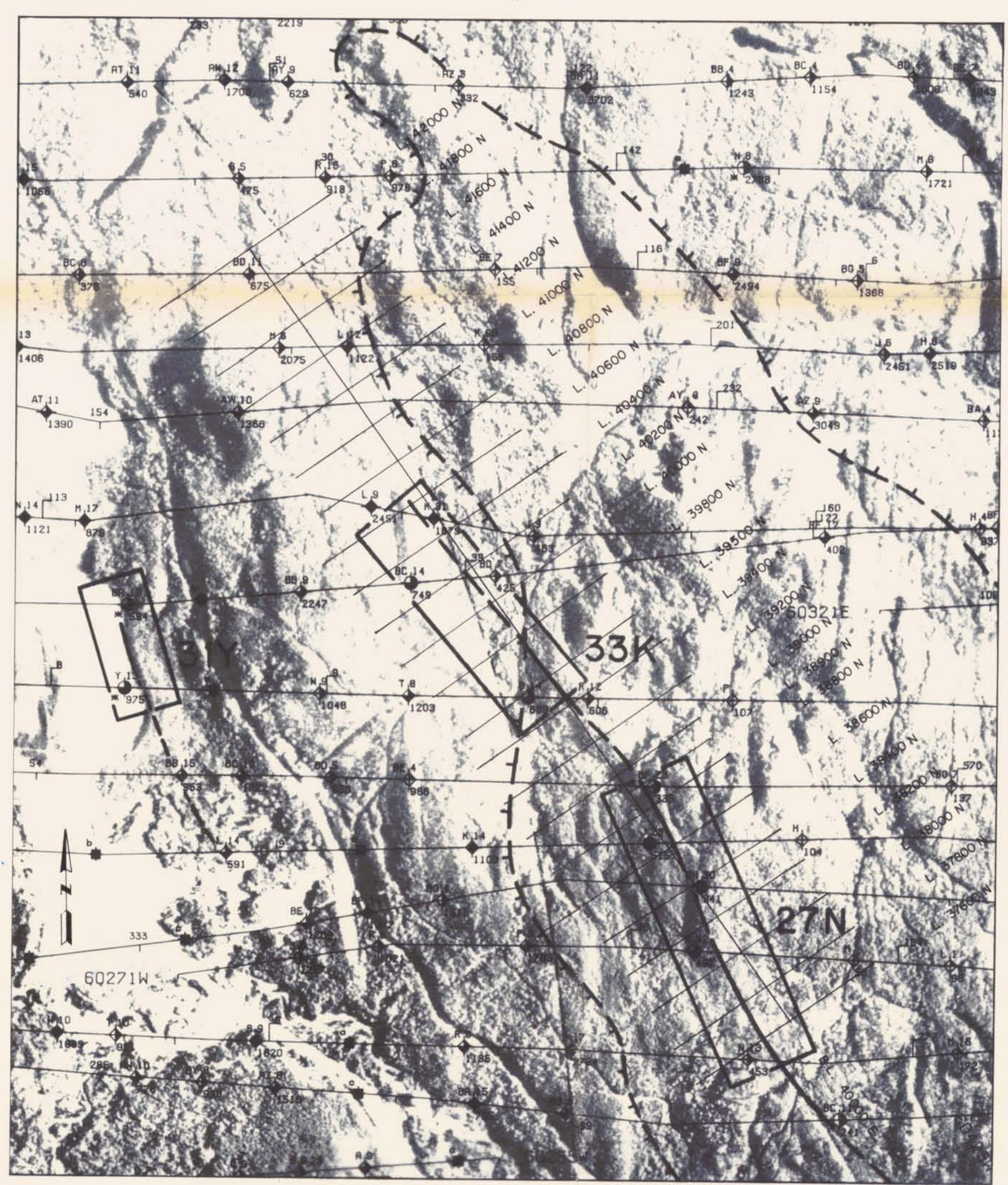
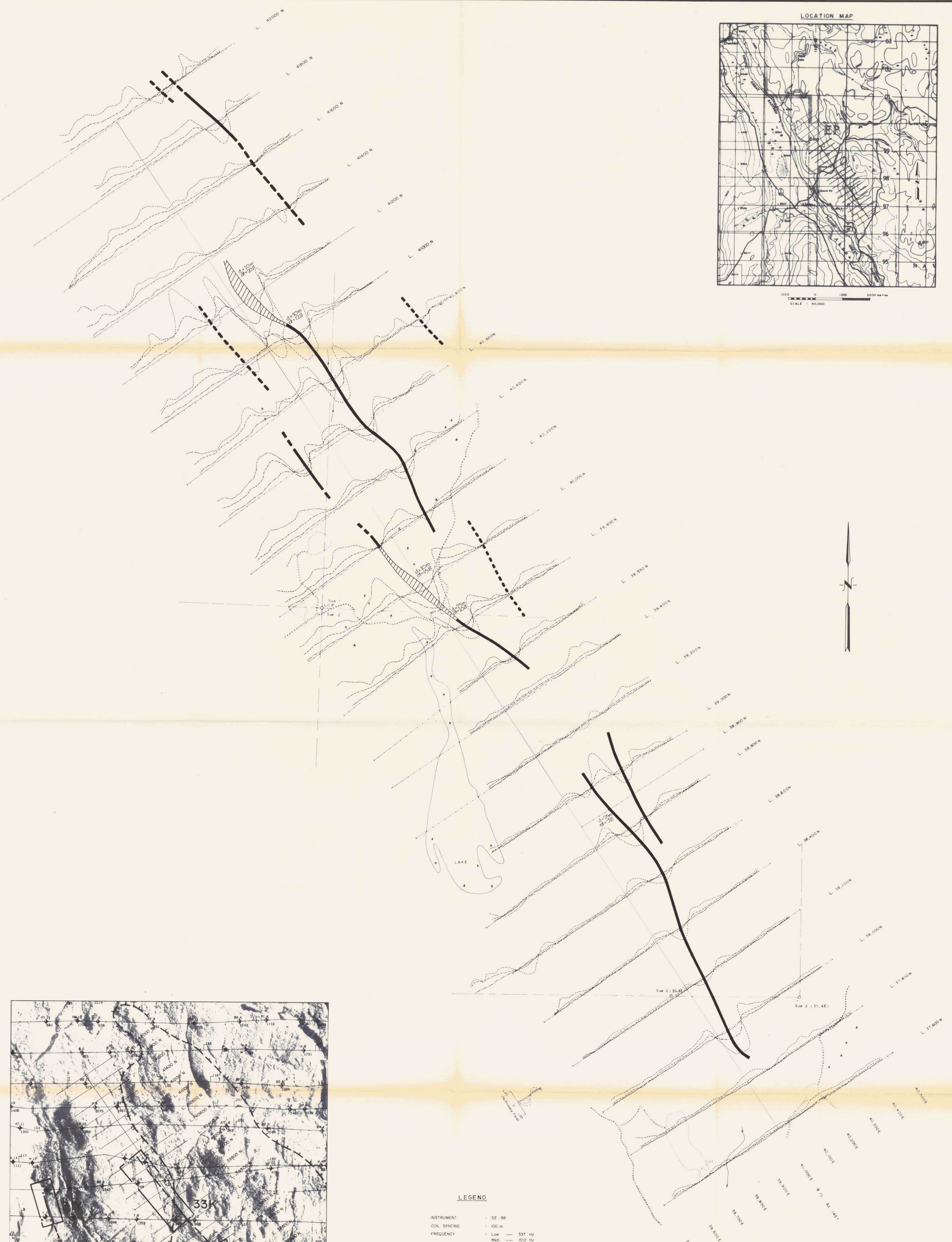
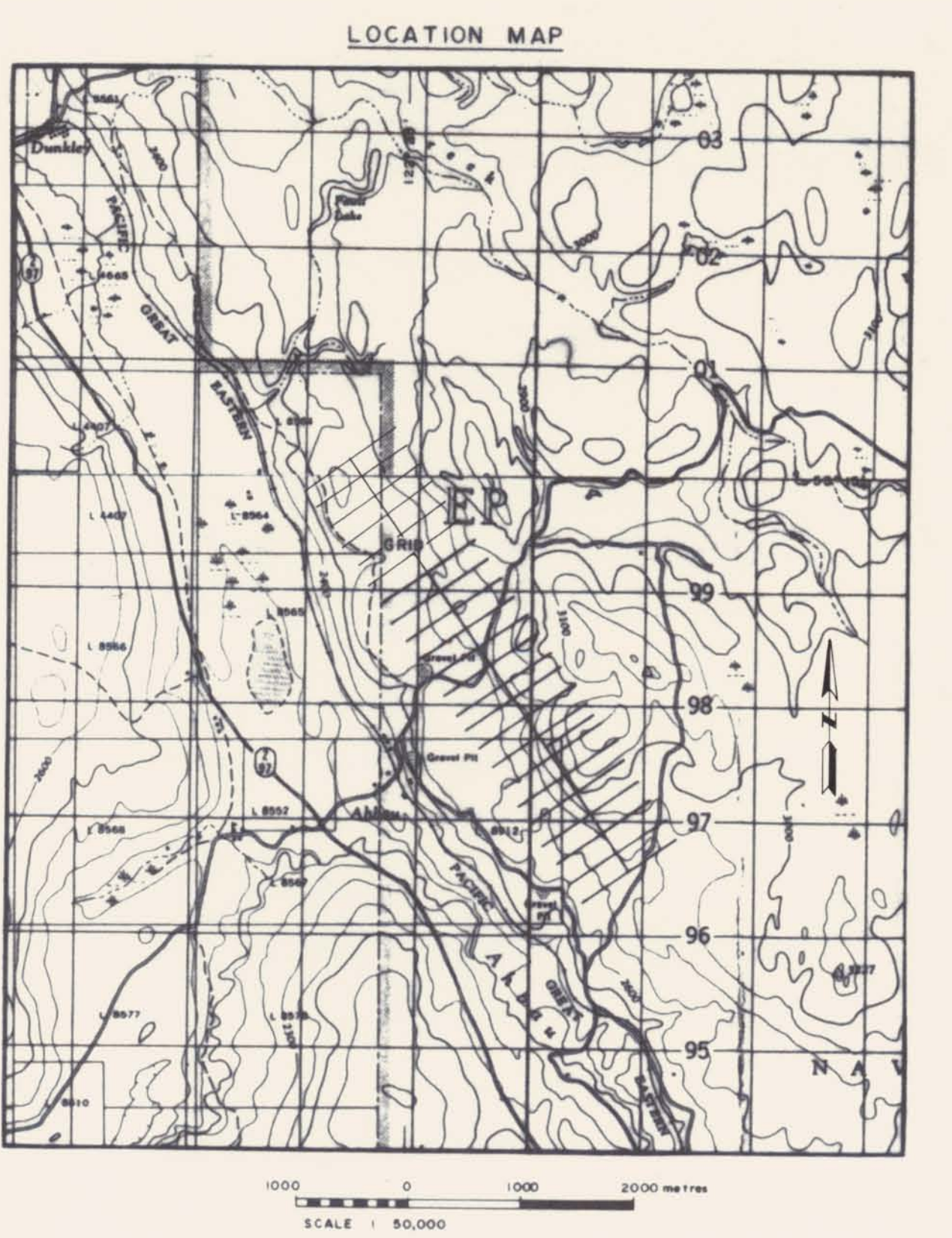
GEOLOGICAL BRANCH ASSESSMENT REPORT

13,279

Robert Baerg
Jan 11/85



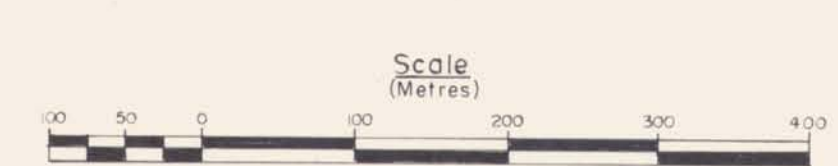
REVISED	SUE 1 & 2 CLAIMS	
	GEOLOGY MAP	
PROJ. No. 63	SURVEY BY: R. BAERG	DATE: SEPT., 1984
N.T.S. 336/118	DRAWN BY: S.K.B.	SCALE: 1:5000
DWG. No.	NORANDA EXPLORATION	
Fig. 4	OFFICE: PRINCE GEORGE, B.C.	



AIRBORNE MK VI INPUT SURVEY
AUBAU AREA
Scale 1:20,000

LEGEND

- INSTRUMENT: SE-86
- COIL SPACING: 100 m
- FREQUENCY:
 - Low: 337 Hz
 - Med: 1012 Hz
 - High: 3037 Hz
- INTEGRATION TIME: 16 sec.
- REF. FREQ.
- PROFILE SCALE: 1 cm = 20%
- CONDUCTOR AXIS:
- SURVEY DATE: Oct /84
- OPERATOR: B.K., T.L., J.E.

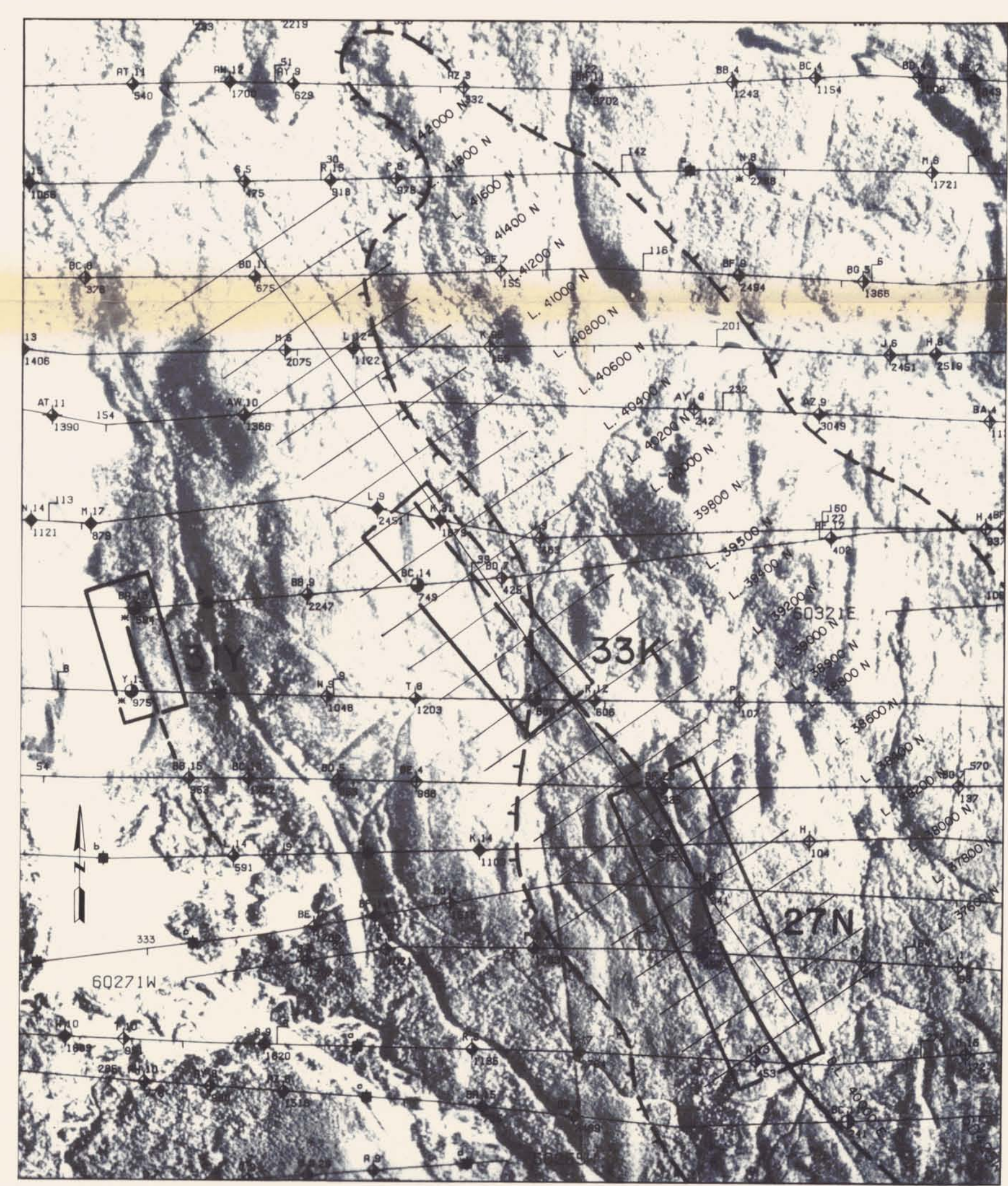
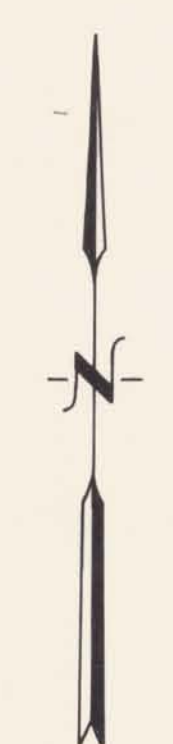
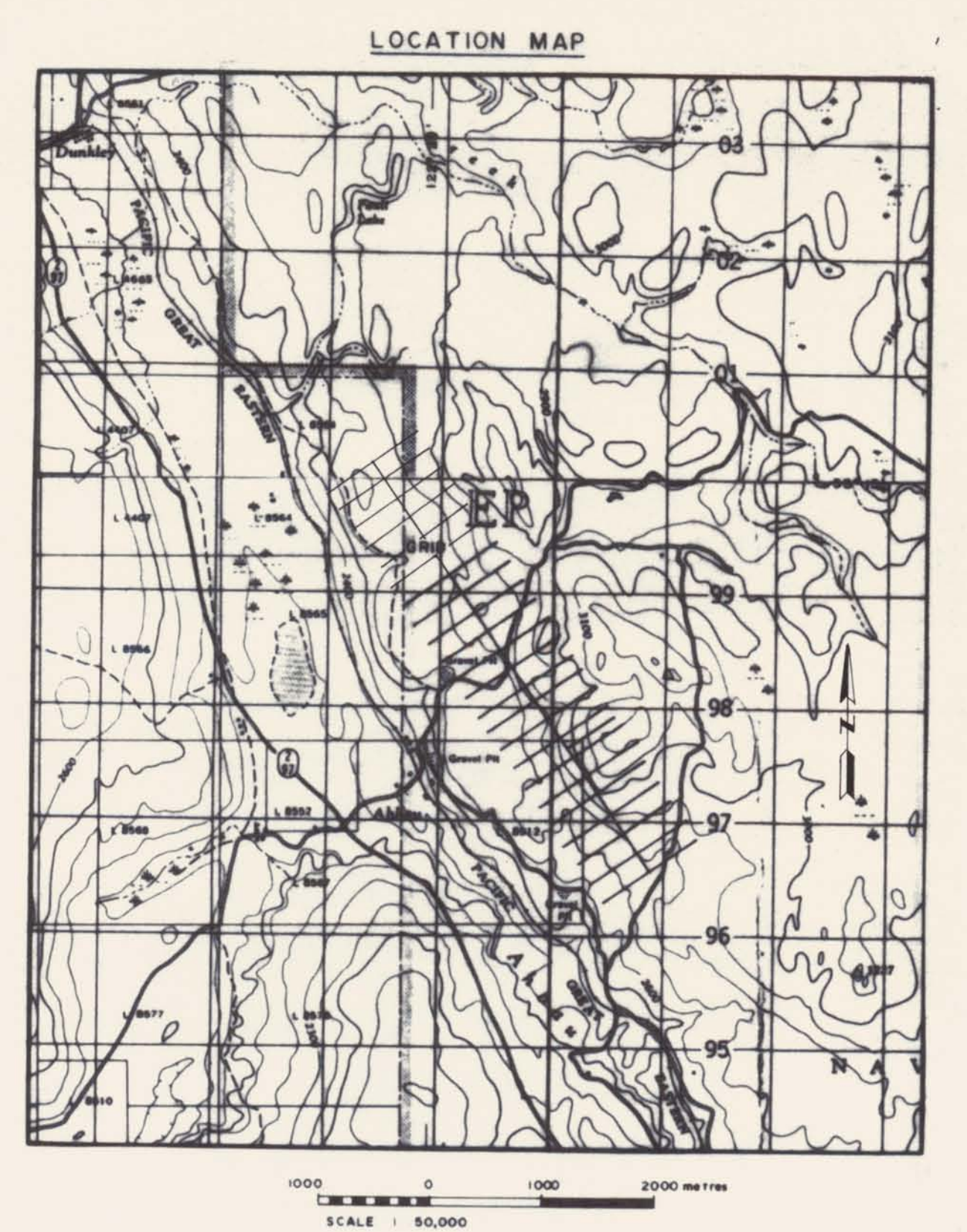


GEOLOGICAL BRANCH
ASSESSMENT REPORT

13,279

*Robert Bay
Jan 11/85*

REVISED	PG AIRBORNE SOUTH	
	Sue Claims AUBAU AREA	
	ANOMALY 33 K, 27 N	
	H.L.E.M. SURVEY	
PROJ. No. 63	SURVEY BY: B.K., T.L., J.E.	DATE: Nov /84
N.T.S. 93.5/84	(Traced) - W.M.R.	SCALE: 1:5000
DWG. No. 6	NORANDA EXPLORATION	
	OFFICE: Vancouver	



AIRBORNE MK VI INPUT SURVEY
AHBAU AREA
Scale 1:20,000

LEGEND

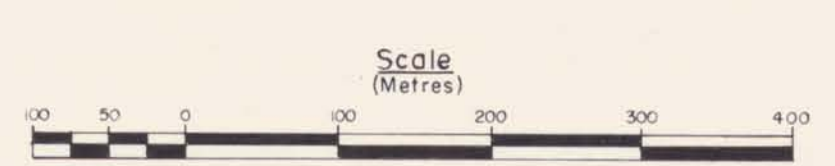
- INSTRUMENT : Scintrex MP-3
- FIELD MEASUREMENT : Total
- DATUM : 57,800 nt
- CONTOURS : 100 nt
- CONDUCTOR AXIS :
- SURVEY DATE : Oct. / 84
- OPERATOR : J.E., T.L.

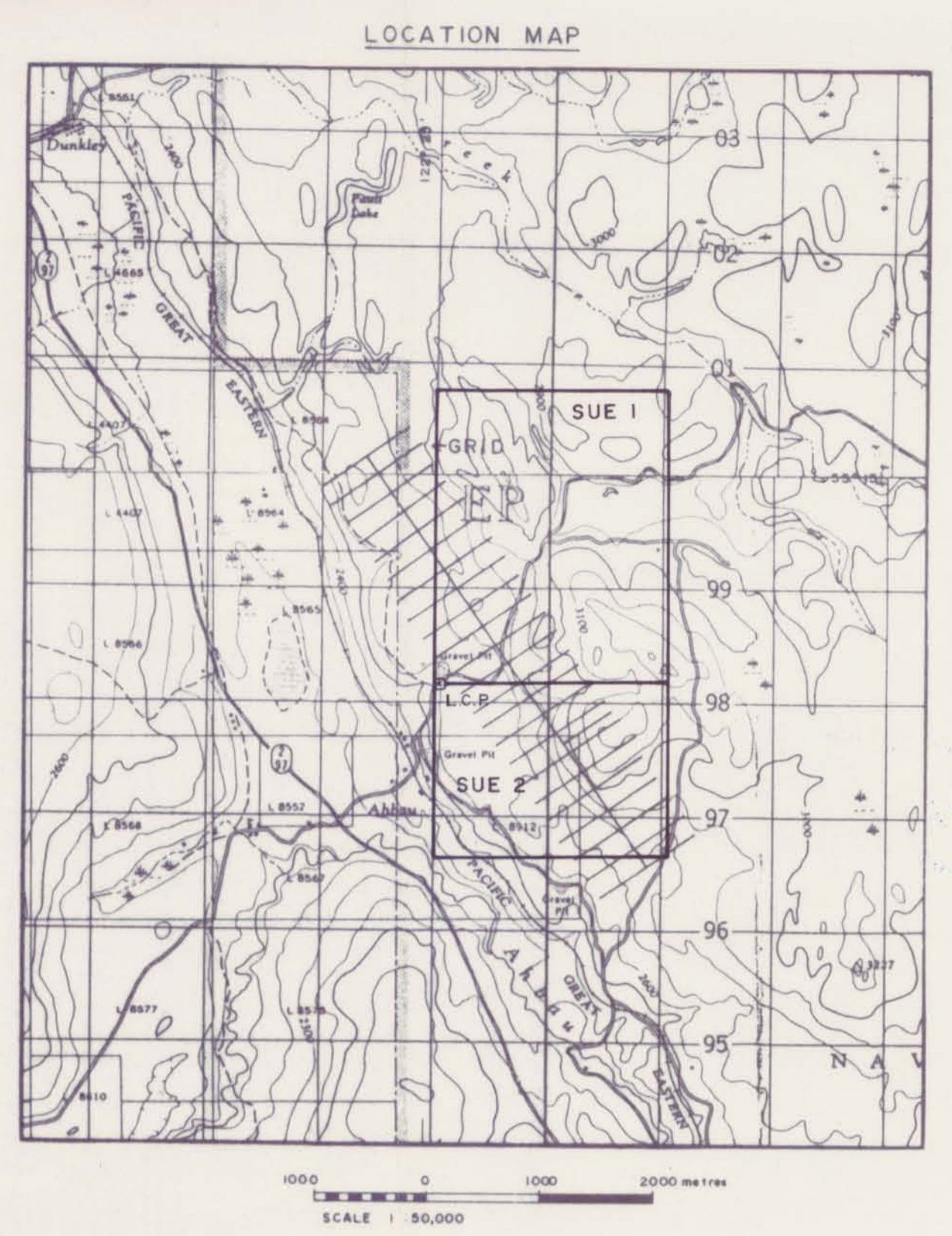
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,279

*Robert Brown
June 1985*

REVISED	PG AIRBORNE SOUTH	
	Sue	AHBAU AREA
	Claims	ANOMALY 33K, 27N
		MAGNETOMETER SURVEY
PROJ. No. 63	SURVEY BY: J.E., T.L.	DATE: Nov. / 84
N.T.S. 93.0 / 5E	(Traced) - W.M.R.	SCALE: 1:5000
DWG. No.	NORANDA EXPLORATION	OFFICE: Vancouver
	7	





LEGEND

- CLAIM POST AND CLAIM BOUNDARY
- ROAD
- * GEOCHEM SAMPLE LOCATION
Cu, Zn (ppm)
- 115 CONTOURED Cu ≥ 115 ppm
- 210 CONTOURED Zn ≥ 210ppm
- 280 CONTOURED Zn ≥ 280 ppm

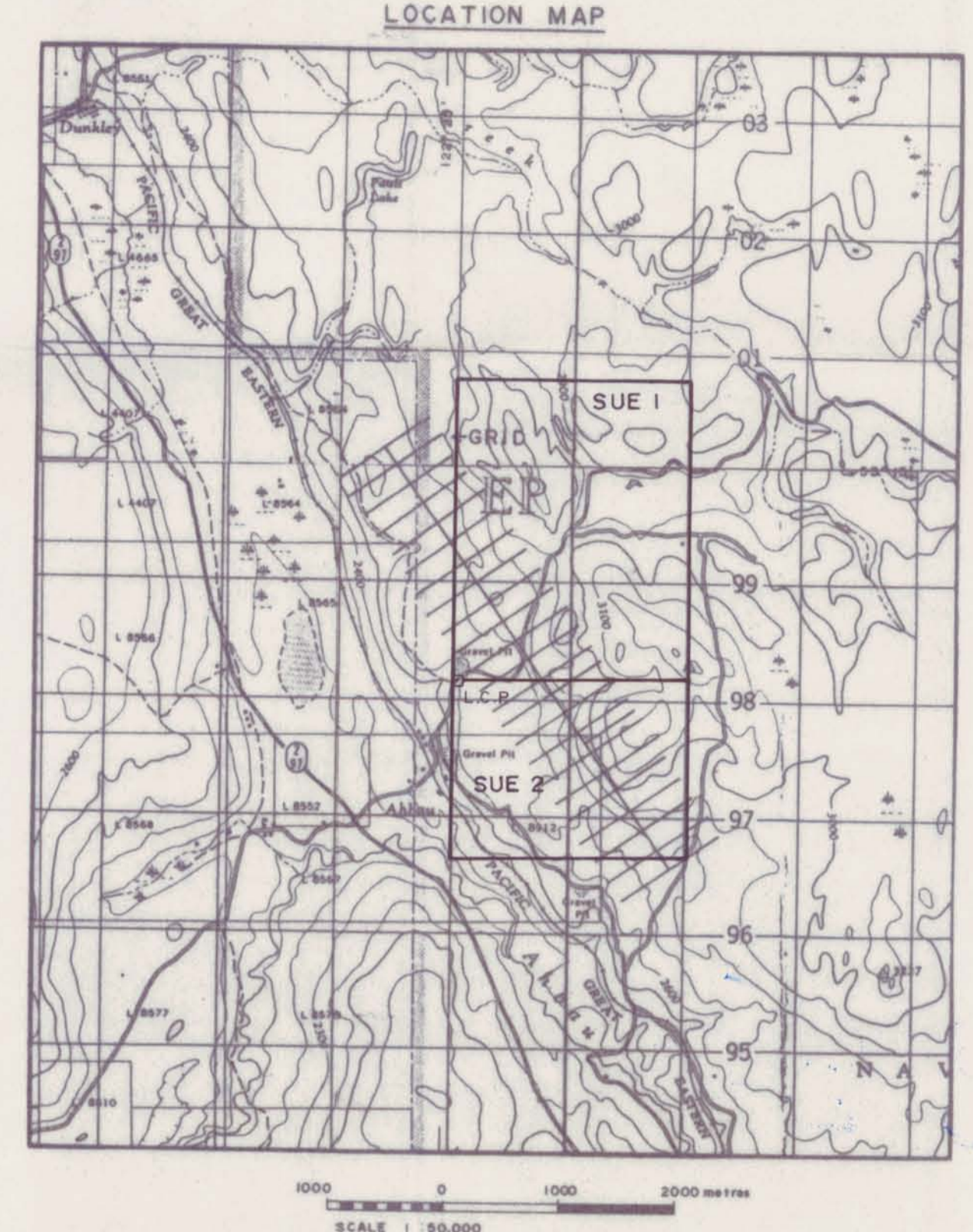
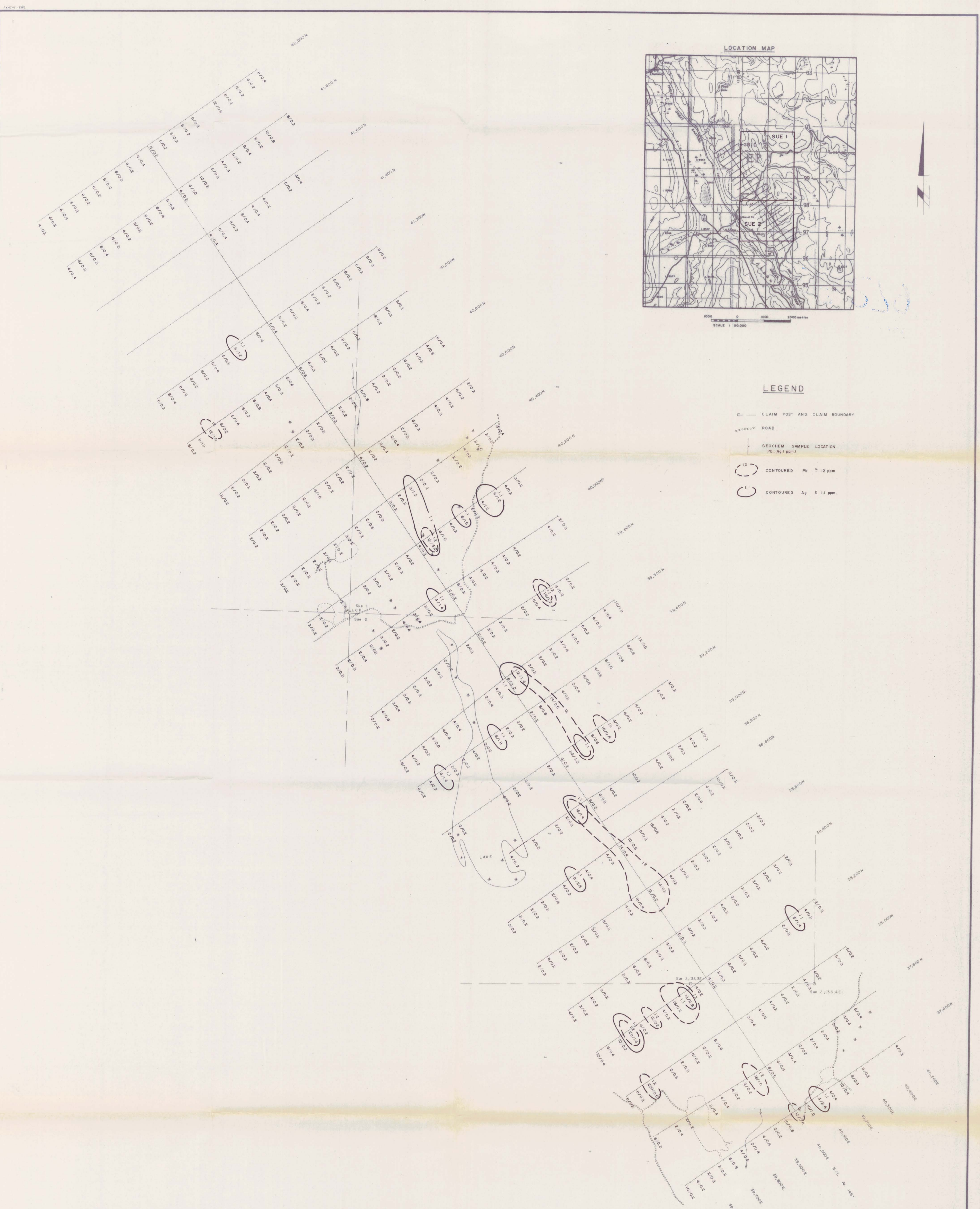
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

Robert Bacon
Jan 11/85

13,279

SCALE: 1:5000

REVISED	SUE 1 & 2 CLAIMS	
	ANOMALY 33K	
	GEOCHEM SURVEY	
	Cu, Zn (ppm)	
PROJ No	SURVEY BY R.K. B.Z.	DATE SEPT. 1984
NTS 33G/1,8	DRAWN BY S.K.B.	SCALE 1:5000
DWG No	NORANDA EXPLORATION	
Fig. 8	OFFICE PRINCE GEORGE, B.C.	



LEGEND

- CLAIM POST AND CLAIM BOUNDARY
- ROAD
- GEOCHEM SAMPLE LOCATION
Pb, Ag (ppm)
- 12
○ 11

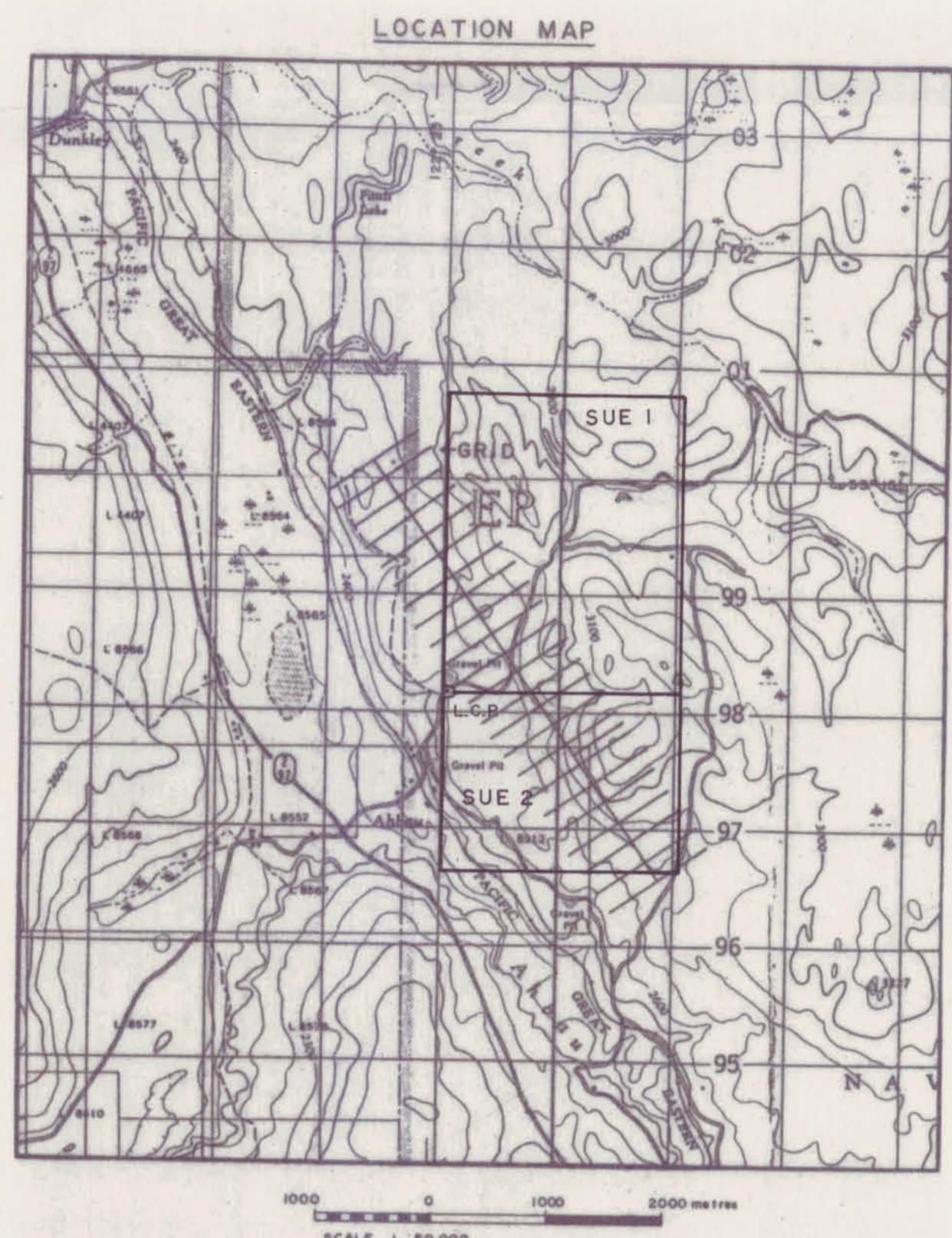
**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

*Robert Davis
Jan 11/85*

13,279

SCALE 1:5,000

REVISED	SUE 1 & 2 CLAIMS	
	ANOMALY 33K	
	GEOCHEM SURVEY	
	Pb, Ag (ppm)	
PROJ. No.	SURVEY BY: R.K., B.Z.	DATE: SEPT. 1984
N.T.S. 335/1/B	DRAWN BY: S.K.B.	SCALE: 1:5,000
DWG. No.	NORANDA EXPLORATION	
Fig. 9	OFFICE: PRINCE GEORGE, B.C.	



LEGEND

- CLAIM POST AND CLAIM BOUNDARY
- ROAD
- ★ GEOCHEM SAMPLE LOCATION
As (ppm), Au (ppb)
- 12 CONTOURED As ≥ 12 ppm
- 20 CONTOURED Au ≥ 20 ppb

GEOLOGICAL BRANCH
ASSESSMENT REPORT

*Robert Bailey
Jan 11 1985*

13,279

SCALE 1:5,000

REVISED	SUE 1 & 2 CLAIMS	
	ANOMALY 33K	
	GEOCHEM SURVEY	
	As (ppm), Au (ppb)	
PROJ. No.	SURVEY BY: R.K. B.Z.	DATE SEPT. 1984
N.T.S. 935/1,8	DRAWN BY: S.K.B.	SCALE 1:5,000
DWG. No.	NORANDA EXPLORATION	
Fig 10	OFFICE: PRINCE GEORGE, B.C.	