

LOG NO: 1023	RD.
ACTION:	
FILE NO: 87-658-16304	

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

NL 1-84 CLAIM

Omineca Mining Division

N.T.S. 093 N/15E, 15W

Located at Co-ordinates: 125° 45' W 49' 42"
55° 57' N 58' 18"

16,304

GEOLOGICAL BRANCH
ASSESSMENT REPORT

Owner(s): NORANDA EXPLORATION COMPANY, LIMITED, K. Haden, S.K. Buziak,
(NO PERSONAL LIABILITY) R.G. MacArthur

Operator: Noranda Exploration Company, Limited

FILMED

By: Mike Savell

September, 1987

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SUMMARY:

The NL claims are located in north central British Columbia within a belt of Middle-Cambrian limestones. The property was staked to cover a high Pb-Zn-Ag silt anomaly which was part of the government geochem release of the 93N map sheet in 1984.

Prospecting and reconnaissance silt-soil sampling during July, 1985 located an area on NL 6 and 8 which is strongly anomalous in Pb-Zn, +/- Ag, +/- As. A grid was surveyed and soil samples collected over the anomalous area in September, 1985, in order to define the source, however, the proposed grid was not fully completed due to early snowfalls.

This work partially outlined a strong coincident Pb and Zn soil anomaly approximately 200 meters wide, 300 meters long and open to both the north and south. Values of up to 1100 ppm Pb and 1300 ppm Zn were obtained. Nearby exposures consist of grey crystalline limestone. No mineralization was observed.

In 1986, the grid was extended north and south and further sampling completed. A geological and lithogeochemical survey were also undertaken. This work defined a strong, coincident Pb-Zn-Ag soil geochem anomaly approximately 1000 meters long and 25 to 200 meters wide with values up to 2400 ppm Pb, 2300 ppm Zn, and 1.6 ppm Ag. However, no mineralization was observed and lithogeochemical results do not explain the anomaly. The source of the anomaly is presumed to be at depth.

The anomaly should be tested by diamond drilling.

INTRODUCTION:

The NL 1-24 claims were staked in June 1984 to cover a high Pb-Zn-Ag silt anomaly. The silt sample had been collected for the B. C. Government as part of a regional sampling program, the results of which were released on June 27, 1984. No mineral showings are known to occur in the immediate vicinity of the silt anomaly although there are several Pb-Zn occurrences several kilometers to the west and south.

All work reported here has been performed by employees of Noranda Exploration Company, Limited.

LOCATION AND ACCESS:

The property is located approximately 20 kilometers north of Germansen Landing (Figure 1). Access to the property is via the Omineca Mining Road from Germansen Landing. From Germansen Landing, travel 9 km west to where a narrow road heads north. Follow this road for approximately 20 km and from there it is a 1 km hike east to the property.

PHYSIOGRAPHY & VEGETATION:

Elevations on the property range from 1350 m to 1700 m. The property is dominated by two NW-SE trending ridges.

Vegetation on the property consists of equal amounts of spruce and fir with only minor undergrowth. Treeline is at approximately 1650 meters.

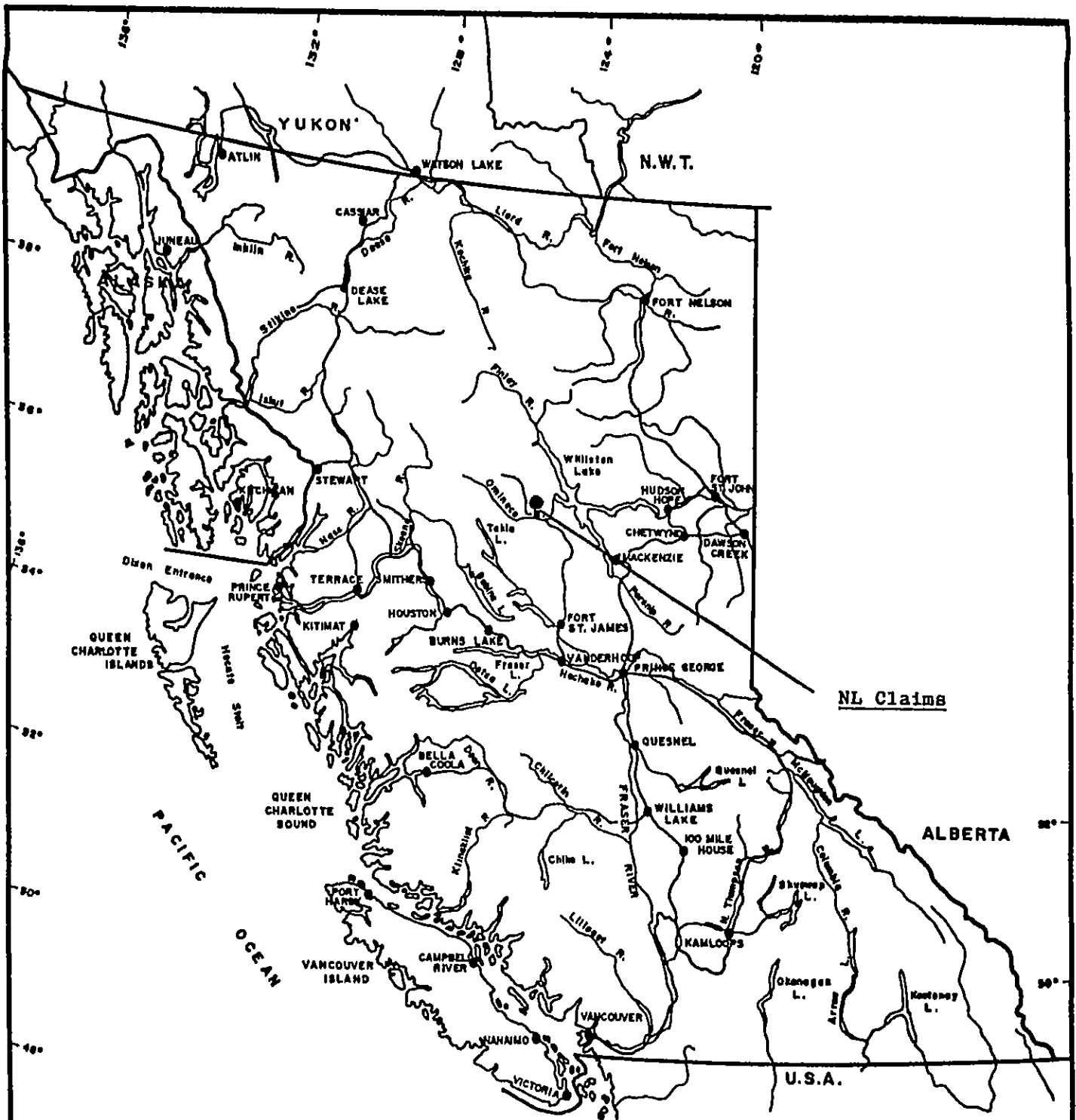
CLAIM STATISTICS:

The property is comprised of twenty-four (24) 2-post claims as listed below (Figure 2). Upon acceptance of this report, the claims will be in good standing until the expiry date below.

<u>Name</u>	<u>Record #'s</u>	<u>Record Date</u>	<u>Units</u>	<u>Expiry Date</u>
NL 1-24	6507-6530	July 26/85	24	July 26/88

PREVIOUS WORK:

There is no previous recorded work on the property prior to staking, although there are signs of previous activity. The results of the July, 1985 stream sediment and soil sampling program have been reported in "Geochemical Report on the NL 1-24 claims", by Robert J. Baerg, submitted for assessment credit. The results of the September 1985 soil sampling program have been reported in "Geochemical Report on the NL 1-24 Claims" by M. Savell and R. Baerg, submitted for assessment credit.

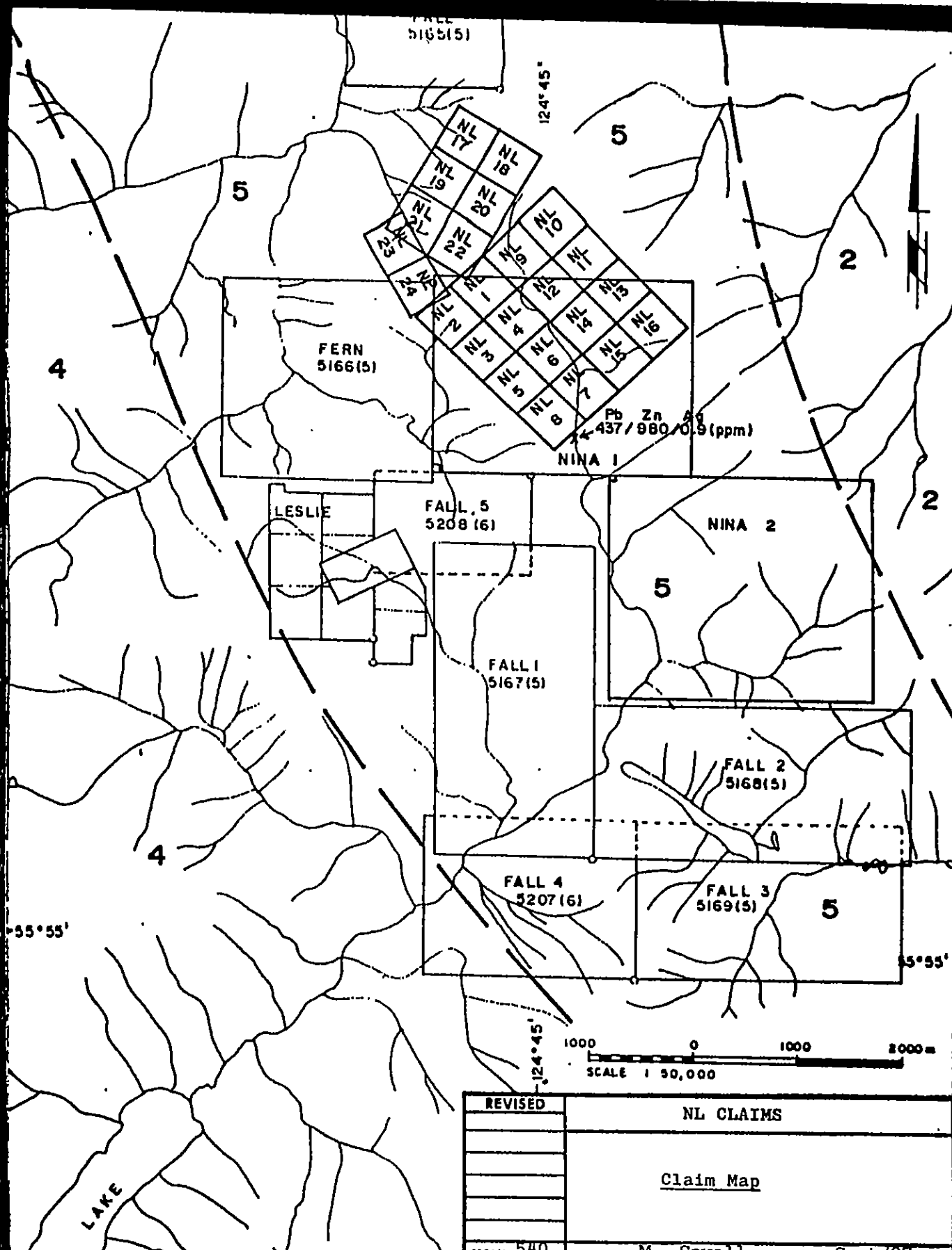


NL Claims

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

REVISED	NL Claims	
	Location Map	
PROJ. No. 540	SURVEY BY: M. Savell	DATE: Sept/87
N.T.S. 93N/15	DRAWN BY: S.K.B.	SCALE: 1:1,000,000
DWG. No. 1	NORANDA EXPLORATION	
	OFFICE: PRINCE GEORGE, B.C.	

VANCAL 11827



FALL 5165(5)

124°45'

FERN 5166(5)

Pb Zn Ag
437 / 980 / 0.9 (ppm)

NINA 1

LESLIE

FALL 5
5208 (6)

NINA 2

FALL 1
5167(5)

FALL 2
5168(5)

FALL 4
5207 (6)

FALL 3
5169(5)

55°55'

55°55'

124°45'

1000 0 1000 2000 m
SCALE 1:50,000

LAKE

REVISED	NL CLAIMS	
	Claim Map	
PROJ. No. 540	SURVEY BY: M. Savell	DATE: Sept/87
N.T.S. 93N/15	DRAWN BY:	SCALE: 1:50,000
DWG. No. 2	NORANDA EXPLORATION	
	OFFICE: Prince George, B.C.	

REGIONAL GEOLOGY:

The area is underlain by carbonate and clastic sedimentary rocks which have been assigned to various ages and groups in the past, including Cache Creek (Permian-Pennsylvanian), Ingenika (Hadrynian) and McDame /Cambrian-Mississippian). The most recent G.S.C. geology map (open file #1565) assigns these rocks to the Middle Cambrian Gog tectonic assemblage which is contained within the Cassiar Terrane. These consist of rifted and passive continental margin sediments. A few kilometers east of the property, these sediments are in contact with sedimentary rocks of the Windermere tectonic assemblage of Upper Proterozoic age which consist of clastic continental margin sediments. West of the property, the Cassiar Terrane is in contact with oceanic and marginal basin volcanics and sediments of the Devonian to Triassic Slide Mountain Terrane.

PROPERTY GEOLOGY:

The geological plan is presented on Figure #3. The most abundant rock type exposed on the property consists of medium to pale grey, massive to thickly bedded, finely crystalline limestone. It is usually laced with a network of thin, fracture filling calcite veinlets of variable intensity. Lesser quantities of grey to black, laminated micrite and grey-brown crystalline dolomite are also observed. In the northeast corner of the grid a distinct, grey-brown, fissile silty dolomite unit was mapped.

Strike directions are fairly consistent, ranging from about 155° to 175°, except on the northernmost grid area where the strike is about 180°. Dips are generally steep and westward, except for some reversals observed on the easternmost grid area which suggest local tight folding. Fractures are generally steep to vertical and tend to strike in one of three directions, roughly at 020°, 050° and 145° azimuths. These same trends also define the major air photo lineaments which are defined by drainage directions, gullies, and scarps.

LITHOGEOCHEMICAL SURVEY:

A total of 28 rock samples were collected and analyzed for Pb, Zn, and Ag. These consist of approximately 1 kg chip samples taken from outcrops and float boulders. The samples were shipped to Ross Bacher Laboratory Ltd. of 2225 S. Springer Ave., Burnaby, B.C., where they are pulverized and analyzed using the method described in Appendix III. Sample descriptions, analytical values and locations have been plotted on Figure #3.

The most significant result was obtained from #98602 which is from a boulder of limestone containing siderite veinlets. Only one such boulder was observed. This is located near the center of the soil geochemical anomaly. This sample contained 292 ppm Pb and 356 ppm Zn, values well above the remaining samples which ranged from 4-58 ppm Pb (average 22 ppm) and 12-146 ppm Zn (average 46 ppm). Ag values ranged from 0.2 to 0.6 ppm.

SOIL GEOCHEMISTRY:

The pre-existing soil grid was extended in both the grid north and south directions and a line spacing of 100 meters and sample interval of 25 meters utilized. Some detailed sampling was also conducted in the area of the main anomaly near grid center.

A total of 330 soil samples were collected from the B-horizon, by digging a 20-50 cm deep hole with a grub hoe. The sample was placed in Kraft wet-strength paper envelopes, dried and shipped to Noranda Exploration Laboratory at 1050 Davie St., Vancouver, B.C., for analysis. The analytical procedure is described in Appendix III. The results of the survey are presented on Figures #4 and #5. These figures also include the 1985 survey results.

The soil sampling survey has defined a strong coincident Pb, Zn and Ag geochemical anomaly. When contoured, the 200 ppm Pb contour outlines an area roughly 1100 meters long ranging in width from 25 to 200 meters. Within the center of this is a 300 meter long zone ranging from 25 to 100 meters wide with values over 500 ppm Pb and up to 2400 ppm Pb. Background Pb values fall within the 15 to 50 ppm range. Zn results are slightly more erratic and show wider dispersion especially downslope. The greater than 1000 ppm contour defines an area approximately 800 meters long by 50 to 250 meters wide. Values up to 2300 ppm Zn were obtained. Background Zn levels generally lie between 100 and 400 ppm. Ag results are somewhat more scattered than Pb and Zn, however, the highest values are generally coincident with the Pb-Zn anomalies. The highest value detected was 1.6 ppm, whereas background levels are in the 0.2 - 0.4 ppm range.

CONCLUSIONS:

The soil geochemistry survey has defined a coincident Pb-Zn-Ag anomaly of significant size and strength. However, no mineralization has been observed to date. An isolated boulder of limestone with siderite veinlets contained elevated Pb and Zn values, however, this is not sufficient to explain the extent and strength of the soil anomaly. It is more likely that a buried source exists. The anomaly results from groundwaters emanating from fractures and shears as observed at surface which may cut a mineralized zone at depth. The network of fracture-filling calcite veinlets, brecciation and dolomitization observed in some surface exposures may reflect peripheral, unmineralized zones of a possible economic ore body at depth.

RECOMMENDATIONS:


The anomaly should be tested by diamond drilling. Access could be provided by construction of a 2 km tote road across relatively gentle terrain.

APPENDIX I

STATEMENT OF QUALIFICATIONS

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

1. I am a geologist residing at 3507 Rosia Road, Prince George, British Columbia.
2. I am a graduate of Dalhousie University with a Bachelor of Science (Honors) in Geology.
3. I am a member in good standing of the Geological Association of Canada, Canadian Institute of Mining, Prospector's and Developer's Association and the B.C.-Yukon Chamber of Mines.
4. I presently hold the position of Project Geologist with Noranda Exploration Company, Limited and have been in their employ since 1980.



Michael J. Savell
Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

APPENDIX II

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

DATE: July 17, 1987

PROJECT: NL CLAIM

REPORT TYPE: GEOLOGICAL AND GEOCHEMICAL

a) **WAGES:**

No. of Days - 24
Rate per day - \$100.00
Dates from - August 1 - November 1, 1986 \$ 2400.00

b) **FOOD & ACCOMMODATION & TRANSPORTATION:**

No. of Days - 24
Rate per day - \$40.00
Dates from - August 1 - November 1, 1986 \$ 960.00

c) **Transportation:**

No. of Days - 24
Rate per day - \$50.00
Dates from - August 1 - November 1, 1986 \$ 1200.00

d) **Analysis:**

330 soil samples for Pb, Zn, Ag
at \$ 2.80/sample \$ 924.00
28 rock samples for Pb, Zn, Ag
at \$ 2.80/sample \$ 78.40

e) **COST OF PREPARATION OF REPORT:**

Author \$ 200.00
Drafting \$ 150.00
Typing \$ 150.00

\$ 500.00

TOTAL COST: \$ 6062.40

APPENDIX III

ANALYTICAL PROCEDURES

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver. (March, 1984).

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 analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples) 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 weighted out at 0.2 g or less depending on the matrix of the rock, and twice as much acid is used for decomposition that that is used for silt or soil.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn (all the group A elements of the fee schedule) can be determined directly from the digest (dissolution) with an atomic absorption spectrometer (AA). 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 acid solution with an AA-475, equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.4 g sample is digested with 1.5 ml of 70% perchloric acid and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL measures the arsenic concentration of the digest.

Barium - Ba: 0.1 g sample is decomposed with conc. perchloric, nitric and hydrofluoric acid. 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 into the flame of the AA instrument c/w EDL.

Gold - Au: 10.0 g sample sample (Pan-concentrates see below) is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with Methyl iso-Butyl ketone (MIBK) from the aqueous solution. Gold is determined from the MIBK solution with flame AA.

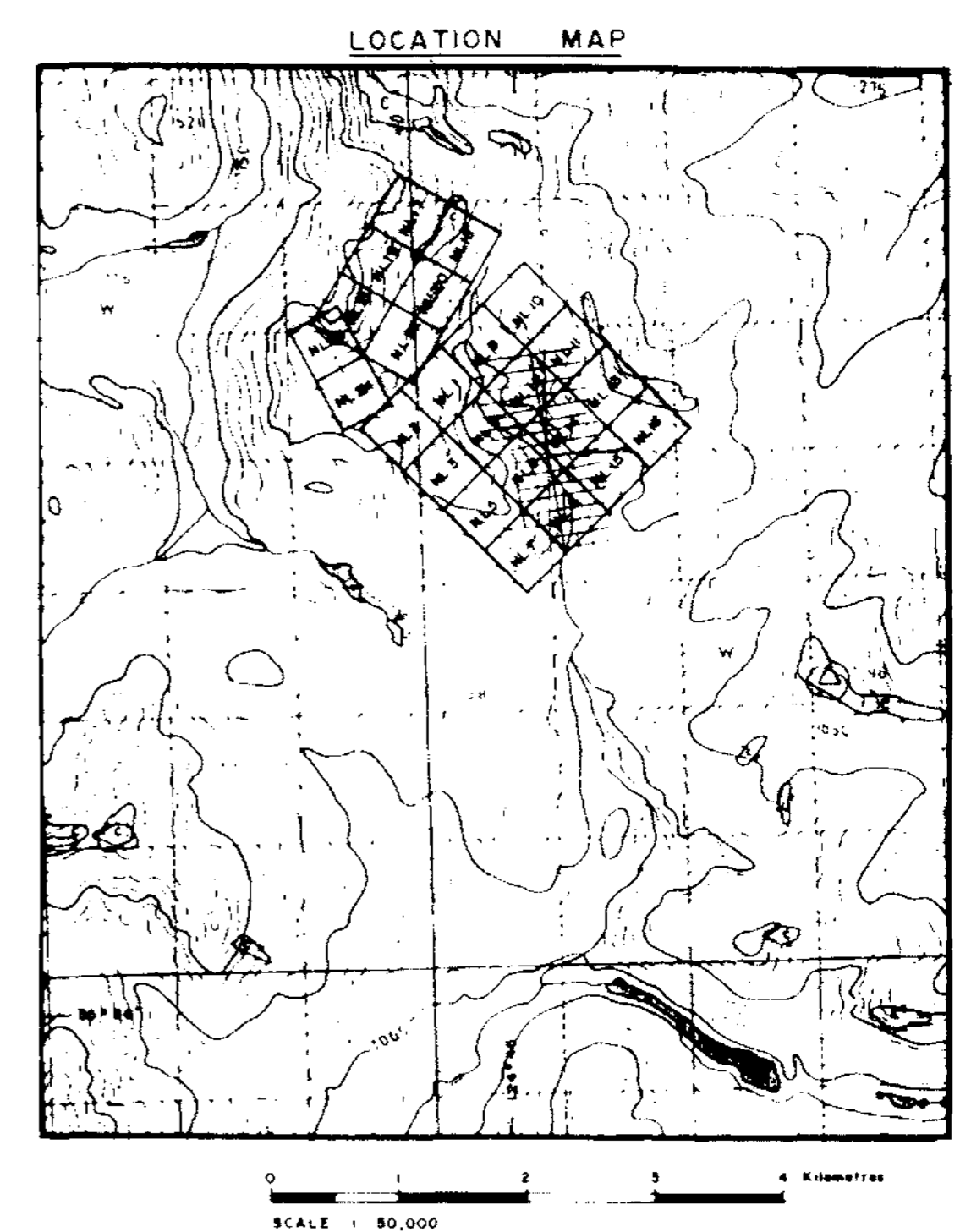
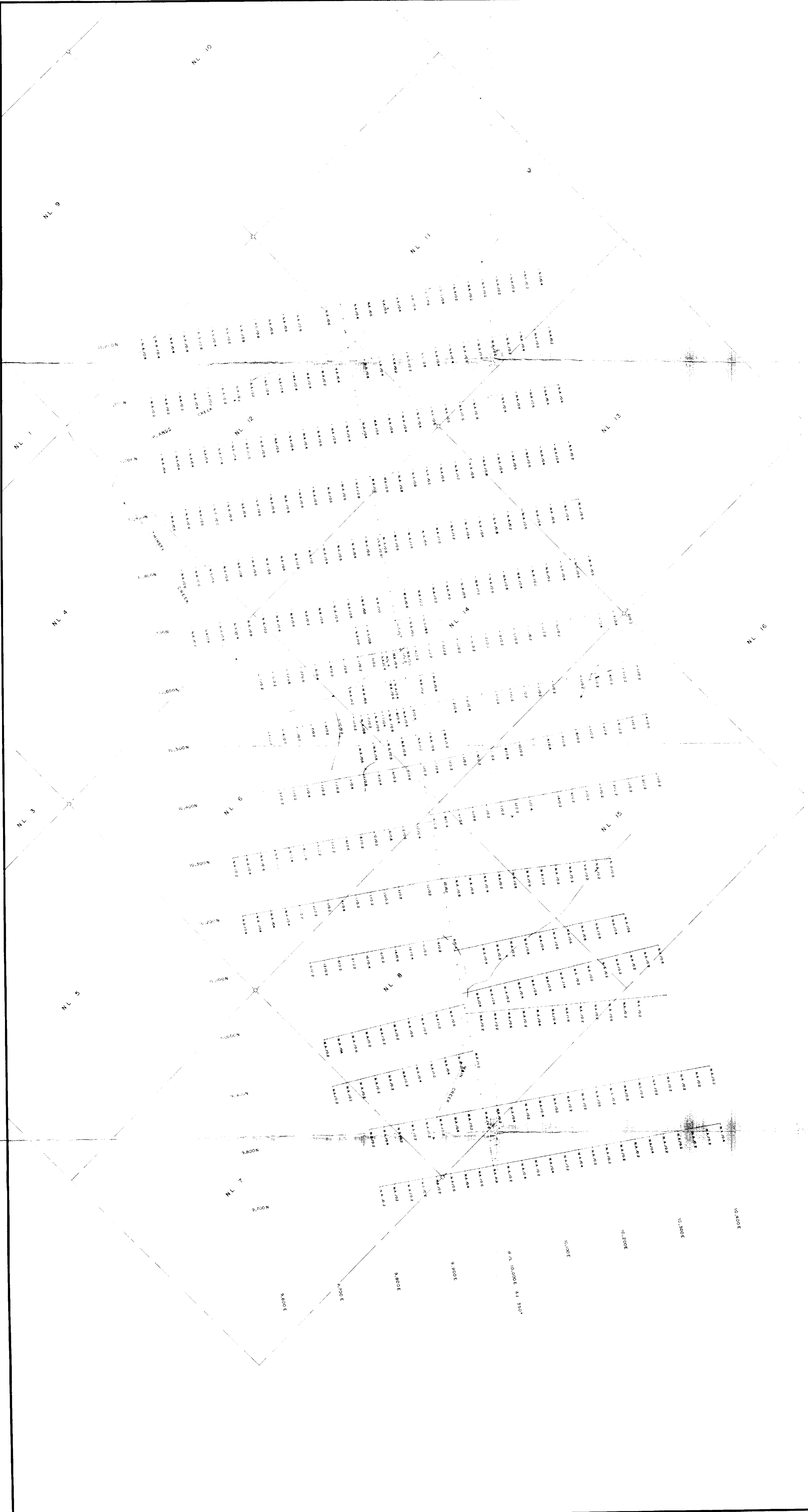
Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the range of atomic absorption. The AA-475 with a nitrous oxide flame determines Mg from the aqueous solution.

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, taken from a perchloric-nitric (3:1) decomposition, usually from the multi-element digestion, is diluted with water and a phosphate buffer. This solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

LOWEST VALUES REPORTED IN PPM

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01 (10 ppb)
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	



LEGEND

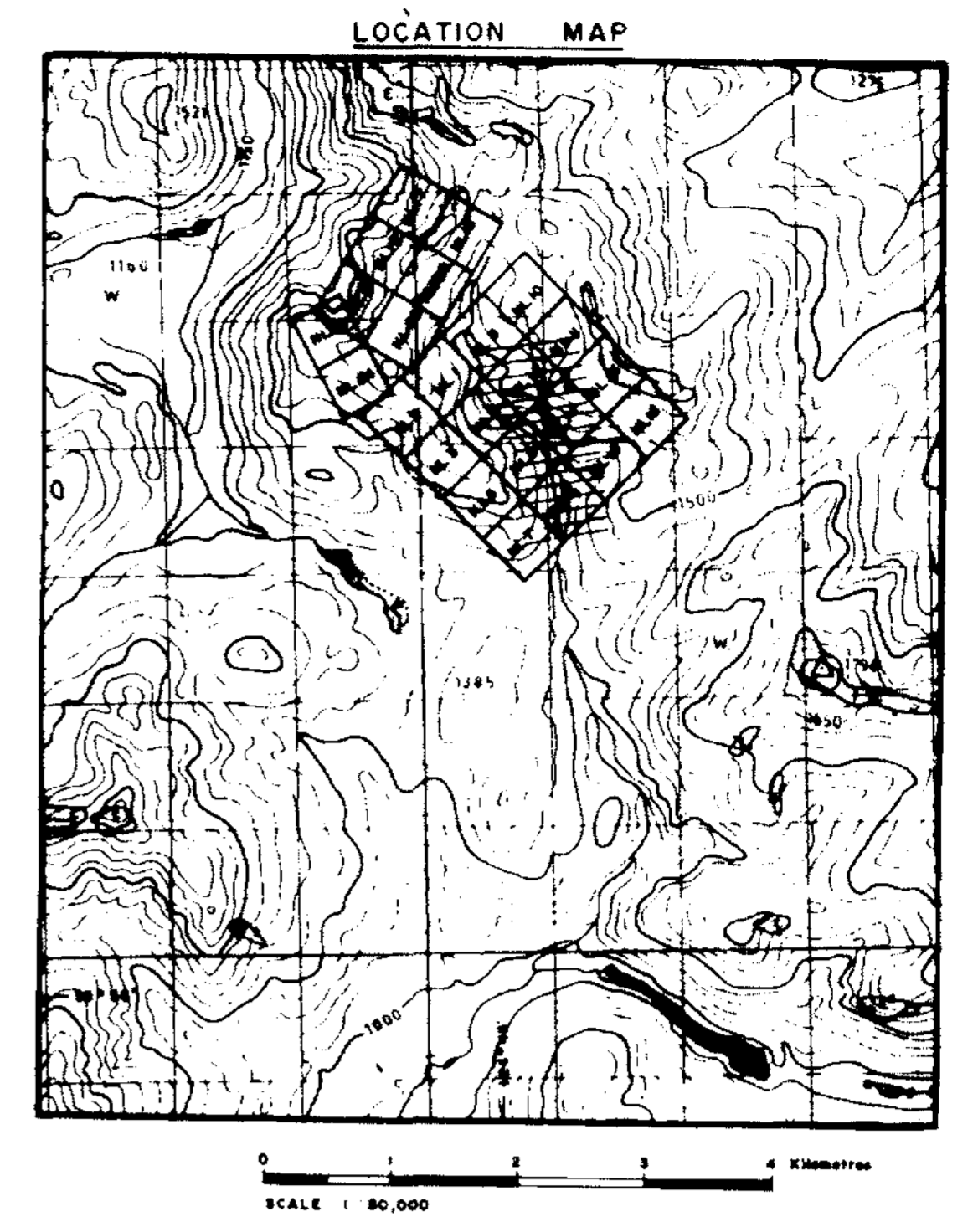
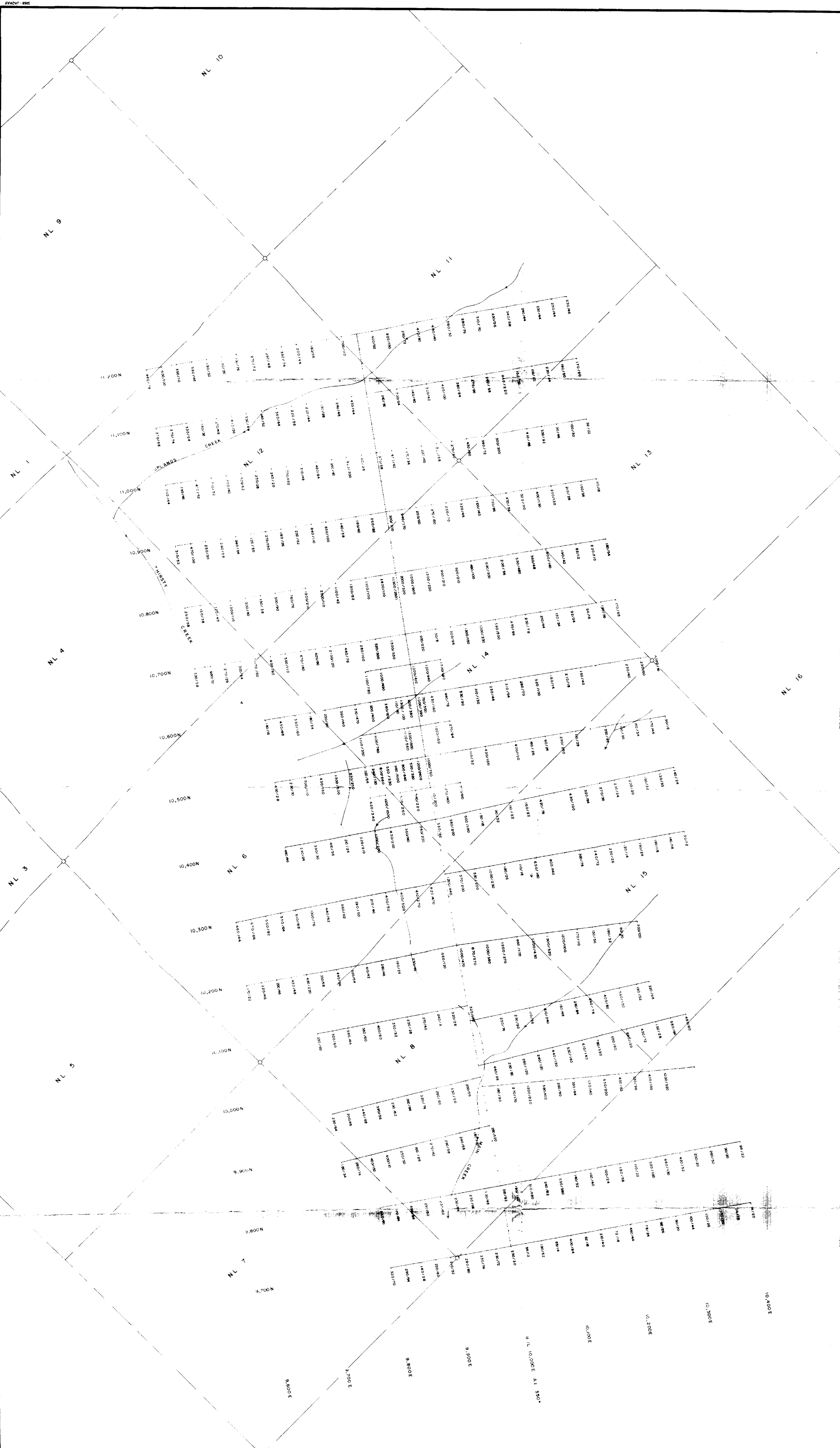
2/02 Soil Geochem Survey As/Ag(ppm)

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

16,304

0 50 100 150 200 metres
SCALE: 1:2,500

REVISED	NL CLAIMS	
	SOIL GEOCHEM SURVEY	
	As(ppm) / Ag(ppm)	
PROJ. No. 240	SURVEY BY M.S.R.B., T.C.	DATE SEPT. 1987
N.T.S. 35N/16	DRAWN BY S.K.B.	SCALE 1:2,500
DWG. No.	NORANDA EXPLORATION	
FIG. 5	OFFICE PRINCE GEORGE, B.C.	



LEGEND

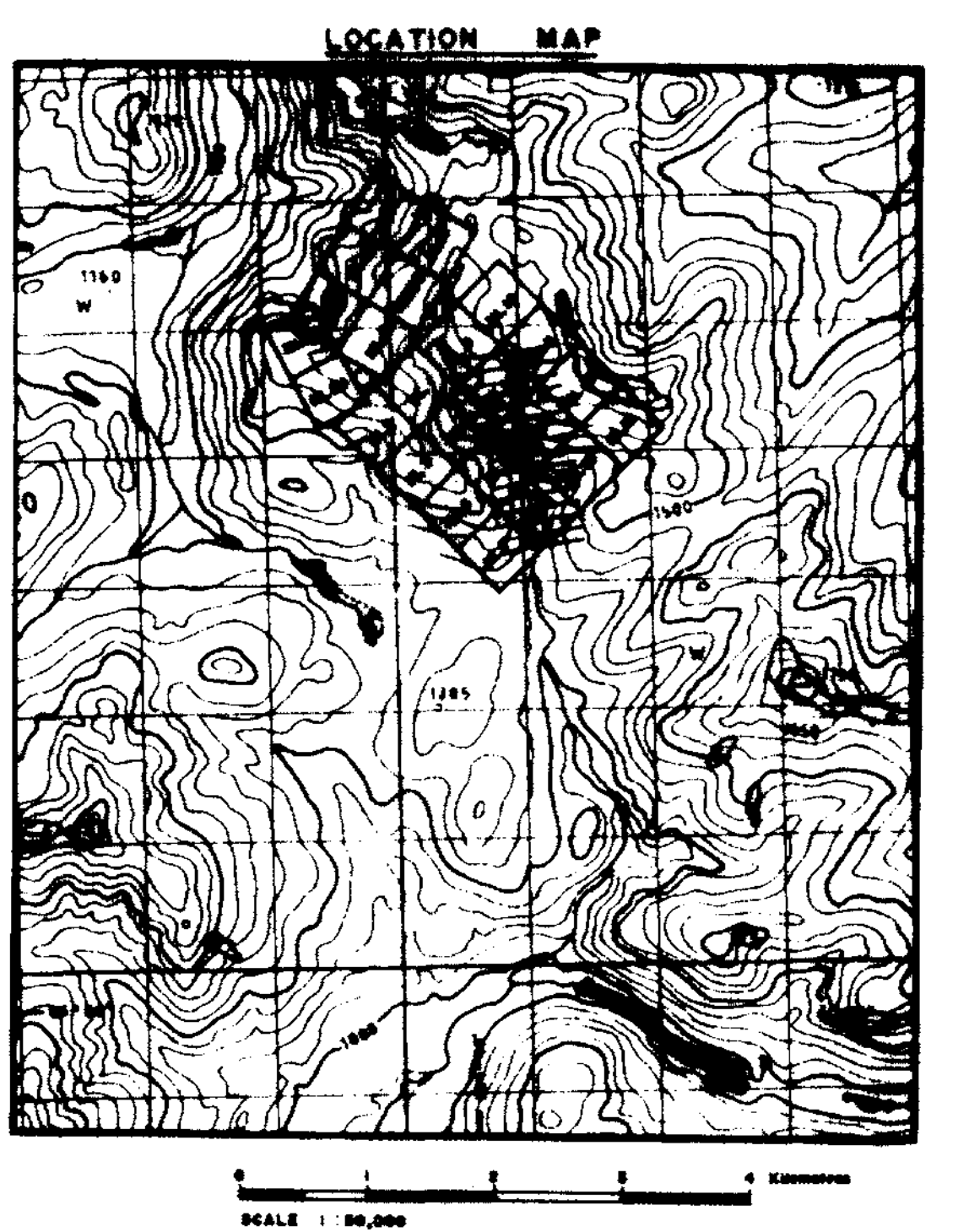
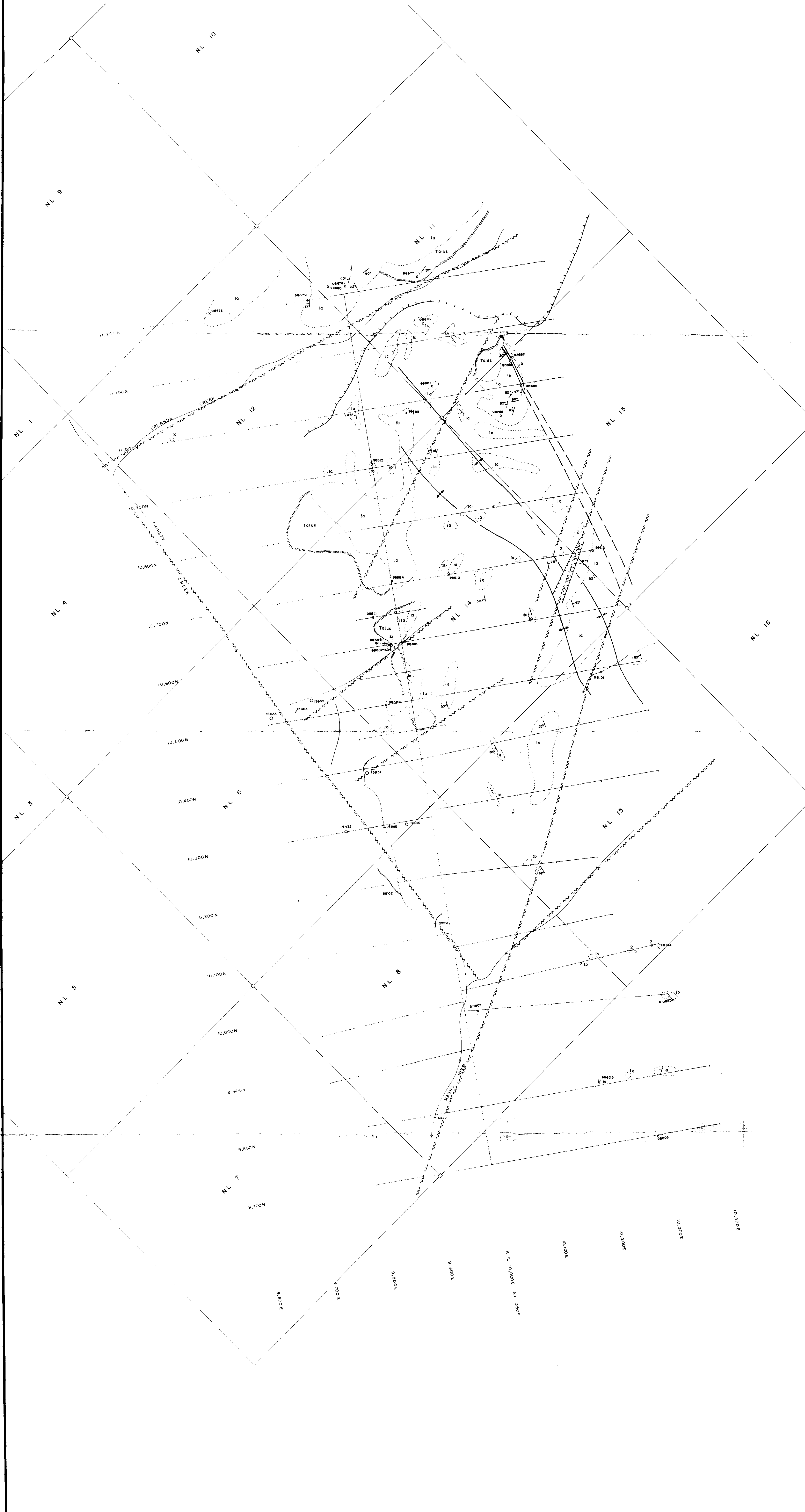
180/96 Soil Geochem Survey Zn/Pb(ppm)

GEOLOGICAL BRANCH ASSESSMENT REPORT

16,304

SCALE 1:2,500

REVISED	N L CLAIMS	
	SOIL GEOCHEM SURVEY Zn(ppm)/ Pb(ppm)	
PROJ. No. 240	SURVEY BY: M.S. J.R.B., T.C.	DATE: SEPT. 1987
N.T.S. 35N/16	DRAWN BY: S.K.B.	SCALE: 1:2,500
DWG. No.	NORANDA EXPLORATION	
FIG. 4	OFFICE	PRINCE GEORGE, B.C.



LEGEND

ROCK TYPES

MIDDLE CAMBRIAN (CASSIAR TERRANE)

2 Grey-brown, brown weathering, fissile silty dolomite

1 Grey limestone, commonly with weblike network of calcite veinlets

1a Pale to medium gray, massively bedded, finely crystalline

1b Dark gray to black, laminated, micritic

1c Dolomitic

SYMBOLS

Stream, continuous flow

Scarp

Talus fan

Outcrop large, small

Rock sample

Soil sample

Silt sample

Strike and dip of bedding

Strike and dip joints

Syncline

Anticline

Prominent or photo lineament

Geological contact (defined, inferred, assumed)

TABLE OF ANALYSES

SAMPLE #	DESCRIPTION	All values in ppm			
		TYPE	Ag	Pb	Zn
98602	Limestone with veinlets of siderite	float	0.4	292	356
98603	Calcite vein with limonite	float	0.2	46	58
98604	Limestone with minor pyrite, limonite	float	0.2	34	96
98605	Crystalline limestone	grab	0.2	16	20
98606	Black micritic limestone	grab	0.2	10	18
98607	As in 98606 with calcite veinlets	grab	0.4	22	100
98608	Limestone with limonite on fractures	float	0.4	16	36
98609	As in 98606	grab	0.4	10	19
98610	As in 98607	grab	0.2	28	74
98611	As in 98606	grab	0.4	20	12
98612	Medium grey limestone	grab	0.4	20	114
98613	As in 98612 with limonite	grab	0.4	18	44
98614	Dolomite, limonite on fractures	grab	0.6	4	78
98615	Limestone breccia, with coarse calcite-dolomitic cement	float	0.4	48	146
98616	Dolomitic limestone, with calcite	grab	0.4	10	24
98617	Grey crystalline limestone	grab	0.4	58	46
98618	Dark grey, ferrid, dolomitic limestone	grab	0.2	8	16
98619	As in 98617	grab	0.4	28	22
98620	Grey limestone	grab	0.6	10	22
98621	As in 98618 with calcite veins	grab	0.4	12	16
98622	Brown silty dolomite	grab	0.6	18	18
98623	As in 98617	grab	0.4	22	22
98624	As in 98617	grab	0.4	10	20
98625	Black micritic limestone	grab	0.6	18	46
98626	As in 98625 with calcite veinlets	grab	0.4	42	46
98627	As in 98625	grab	0.4	30	56
98628	As in 98625	grab	0.4	10	22
98629	Soil		0.6	1300	1200
98630	Soil		0.4	560	630
98631	Soil		0.4	350	440

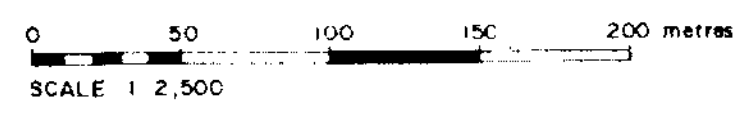
TABLE OF SILT AND SOIL ANALYSES

(all values in ppm)

SAMPLE NO.	TYPE	Zn	Pb	As	Ba	
13931	silt	900	450	0.6	20	820
13932	silt	650	220	0.6	10	740
13930	silt	420	680	0.8	18	720
13929	silt	670	460	0.4	18	320
15364	silt	310	36	0.2	18	380
15365	silt	660	280	0.4	24	460
56101	silt	120	40	0.4	8	400
56102	silt	110	18	0.2	2	400
16427	silt	240	64	0.2	10	480
16432	silt	540	60	0.4	12	760
16433	silt	380	64	0.2	14	620

GEOLOGICAL BRANCH ASSESSMENT REPORT

16,304



REVISED	NL CLAIMS		
	GEOLOGY MAP		
PROJ. No. 240	SURVY BY: M.S.	DATE: SEPT. 1986	
N.T.S. 1:50,000	DRAWN BY: S.K.B.	SCALE: 1:2,500	
DWG. No.	NORANDA EXPLORATION		
FIG. 3	OFFICE: PRINCE GEORGE, B.C.		