

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**11,318**

GEOCHEMICAL REPORT

ON THE

SMITH-2 MINERAL CLAIM

LIARD MINING DIVISION

N.T.S. 94M/16E

Lat. 59 Degrees 56' Long. 126 Degrees 13'

Owner & Operator: Noranda Exploration Company, Limited

(No Personal Liability)

M. Savell

November 1983

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In Pocket

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In Pocket

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In Pocket

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In Pocket

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In Pocket

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In Pocket

## INTRODUCTION

This report describes the results of a geochemical survey carried out from October 8 to October 9, 1983 on the Smith-2 mineral claim (Smith River Property), Liard Mining Division, B.C.

The claim was staked in October 1983 to secure ground on which Cu-Ag mineralization in quartzites occurs. A total of 322 soil samples over 8.4 km of grid lines were collected. (Note that for the sake of convenience, the maps in this report also show data for work done outside the Smith-2 claim boundary, although the costs are not included in Appendix B).

## LOCATION AND ACCESS

The claims are located within N.T.S. map area 94M/16E, approximately 13 km east-northeast of the abandoned Smith River Military Reserve. This is about 38 km north of milepost 510 on the Alaska Highway.

Access to the property was made from Coal River Lodge on the Alaskan Highway and the Smith River airstrip via helicopter chartered from Dease Lake, B.C. At one time a "cat" road from the airstrip provided access to the area, however, the bridge crossing at Smith River has since washed out and the road become covered with fallen trees.

## CLAIMS AND OWNERSHIP

The property consists of the following claim:

| Name    | # Units | Record # | Record Date  | Owner                                |
|---------|---------|----------|--------------|--------------------------------------|
| Smith-2 | 9       | 2983     | Oct.14, 1983 | Noranda Exploration Company, Limited |

## TOPOGRAPHY AND VEGETATION

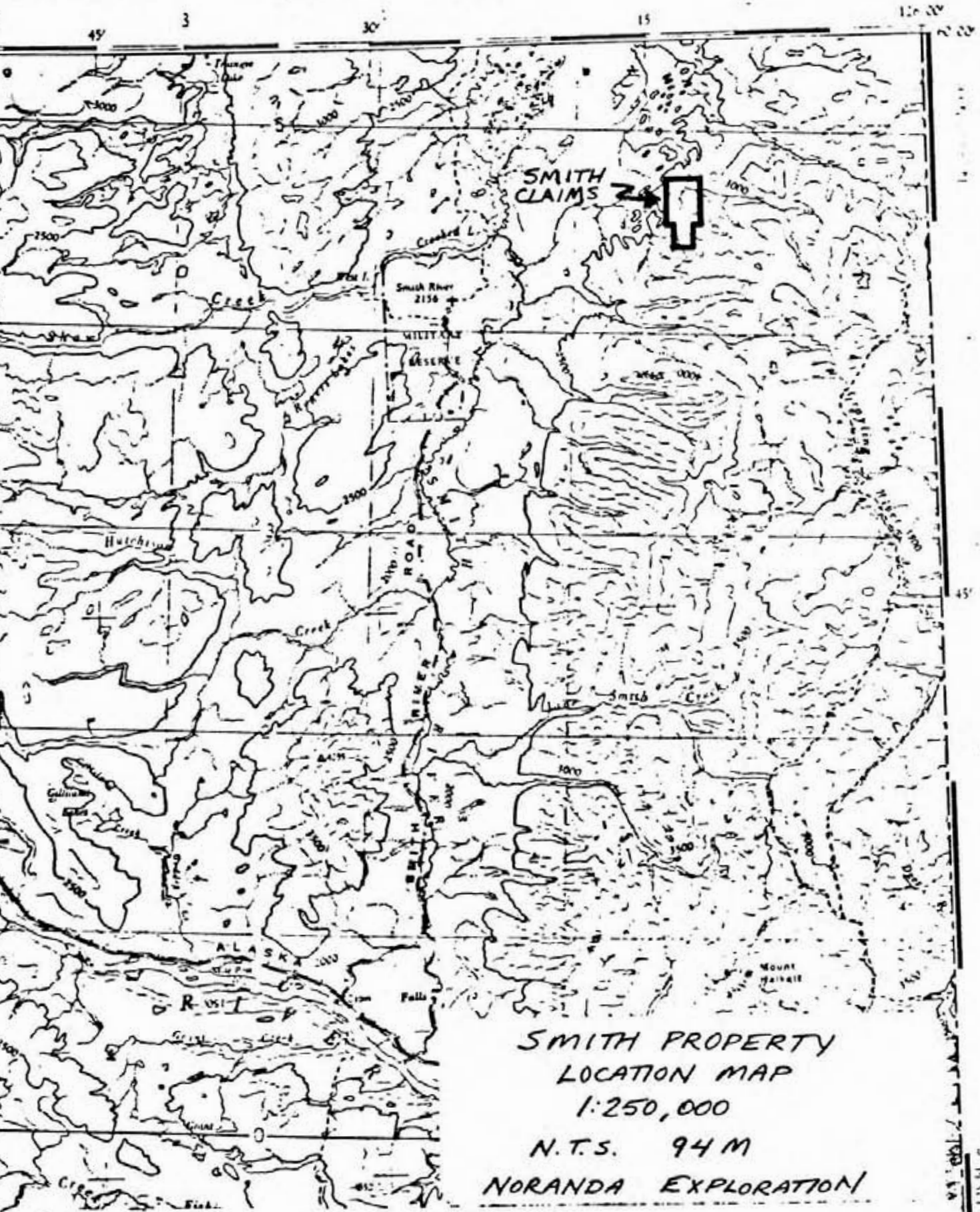
The property lies in the northern Rocky Mountain Belt, immediately east of the Liard Plain. Topography in this part of the belt is relatively subdued, with elevations ranging from about 850 to 1200 meters. The structural trend is roughly north-northeast.

At one time the property was covered with good stands of mature pine and spruce, however, recent forest fires have killed much of the vegetation.

## REGIONAL GEOLOGY

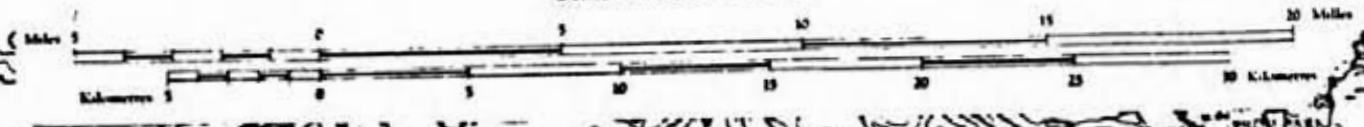
The area has been mapped at a scale of 1 inch to 4 miles by the G.S.C., and their results are available as Map 46-1962. Some re-interpretation of the ages on this map was done on the Tectonic Assemblage Map of the Canadian Cordillera (G.S.C. Map 1505A).

In general the area is underlain by north-northeast trending clastic and carbonate sediments of Pre-Cambrian to Silurian ages. The succession is

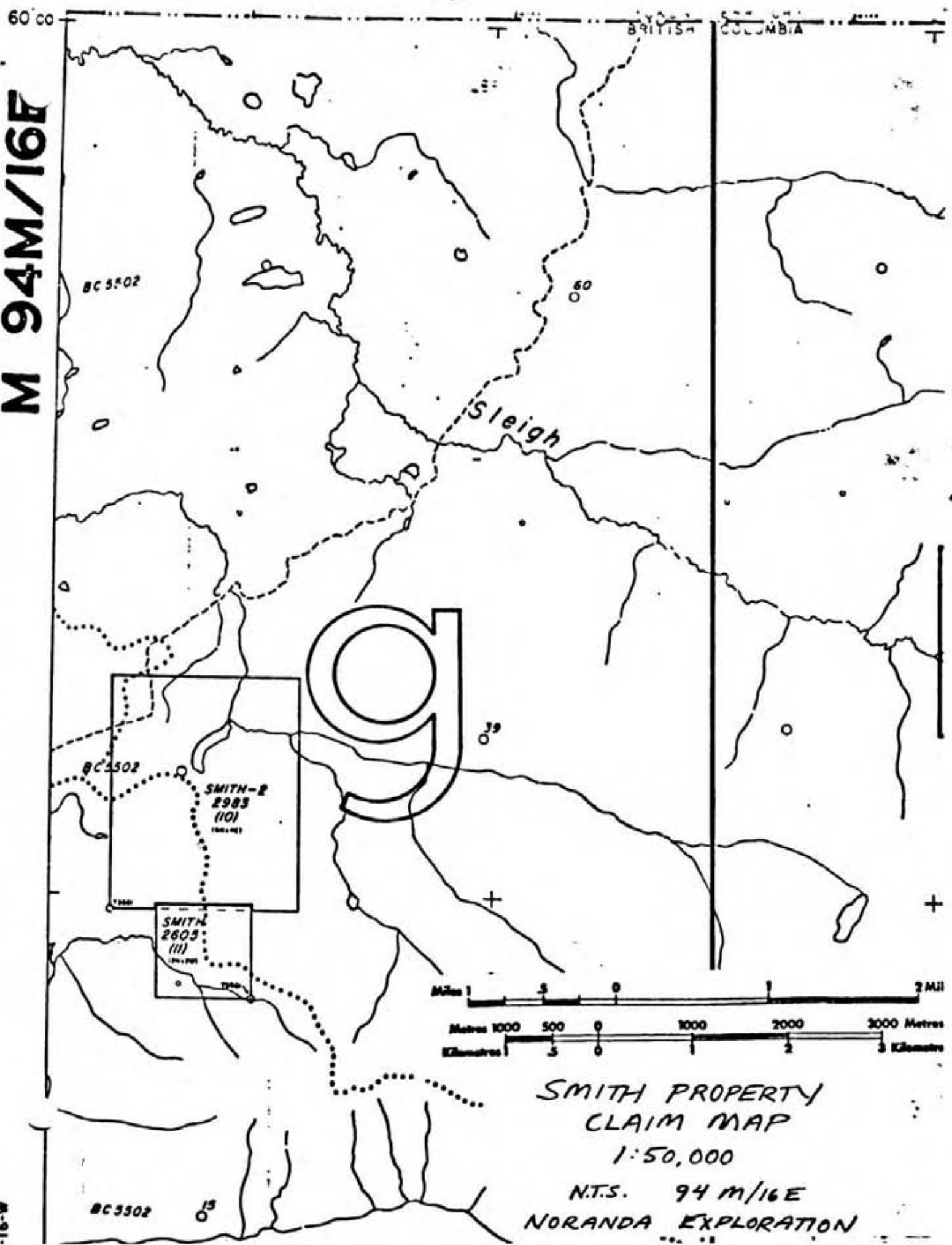


SMITH PROPERTY  
LOCATION MAP  
1:250,000  
N.T.S. 94 M  
NORANDA EXPLORATION

Scale 1:250,000 Echelle



UNITED STATES GEOLOGICAL SURVEY



M 94M/16E

BRITISH COLUMBIA

60° 00'

BC 5502

60

Sleigh

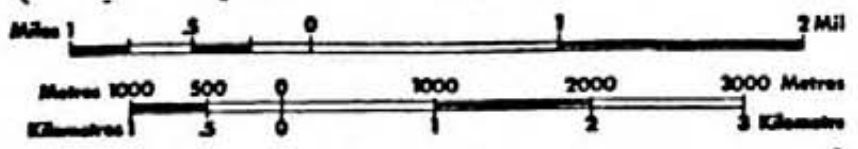
9

39

BC 5502

SMITH-2  
2983  
(10)  
(1941)

SMITH  
2603  
(11)  
(1941)



SMITH PROPERTY  
CLAIM MAP  
1:50,000

N.T.S. 94 M/16E  
NORANDA EXPLORATION

BC 5502

15

interrupted by a number of unconformities. Thrust faulting has placed older strata on top of younger strata.

### PREVIOUS EXPLORATION

There is no public record of any exploration having been done in the area, although the property has been staked several times in the past. Private records of Zapata Granby Corporation transferred to Noranda Exploration contained information on a property examination by P.R. Matthew on ground held by Louis Ledman. From this report it was decided the showing warranted a re-examination.

Preliminary work by Noranda outlined a mineralized zone in a quartzite which graded up to 1.86% Cu and 0.42 oz/T Ag. This responded well in soil geochemistry, thus it was decided to test the zone along strike with a soil geochemistry survey.

### GEOCHEMICAL SURVEY

#### 1. Grid Preparation

For control purposes, a grid was laid out. A compass controlled, hip-chained baseline was run on a bearing of 000 degrees for a length of 2.2 km and designated 100+00E. One meter high pickets on which the grid designation was marked were placed every 25 meters. Hip-chained grid lines totalling 12 km were run at 200 meter spacings at 090 degrees east and west of the base line, and stations marked with fluorescent surveyors ribbon. On the Smith-2 claim 8.4 km of grid lines and 322 soil samples were collected.

The 1:5,000 scale topographic base map used in this report was prepared from a published 1:50,000 scale topographic map.

#### 2. Sampling Method

A total of 548 soil samples were collected on the grid described above. The "B" soil horizon was sampled by digging a small hole with a grub hoe. Samples were placed in "Hi Wet Strength Kraft 3 1/2" x 6 1/8" Open End" paper envelopes on which the grid designation was marked.

The samples were later analyzed for Cu, Zn, Pb, Mo, Ag and Co in the geochem lab. of Noranda Exploration Company, Limited at 1050 Davie Street, Vancouver, B.C.

#### 3. Analytical Method

The samples are first dried in a drying cabinet for a period of 24-48 hours. They are then screened and sifted to obtain a -80 mesh fraction.

To determine the amount of total extractable Cu, Zn, Pb, Mo, Ag and Co in each sample the following procedure is employed:



A small amount of the -80 mesh material, 0.200 grams is digested in 2 ml of HClO<sub>5</sub> and 0.5 ml of HNO<sub>3</sub> for approximately 4 hours. Following digestion, each sample is diluted to 5 ml with demineralized H<sub>2</sub>O. A Varian Techtron Model AA-5 atomic absorption spectrophotometer is used to ascertain the content, in parts per million of each element.

#### 4. Results and Discussion

The results of the above analyses are shown on Figures 3 to 8 (in pocket). The table below gives a summary of the statistical parameters:

TABLE 1. Geochem Data - Summary Statistics

|                   | Cu   | Zn   | Pb   | Mo   | Ag   | Co   |
|-------------------|------|------|------|------|------|------|
| # of Analyses     | 548  | 548  | 548  | 548  | 548  | 548  |
| Lowest Value      | 2    | 4    | 2    | 1    | .2   | 4    |
| Highest Value     | 700  | 300  | 140  | 2    | .8   | 40   |
| Mean (log)        | 12.5 | 47.7 | 9.5  | 1.0  | .21  | 12.6 |
| Stand dev (log)   | .341 | .245 | .328 | .071 | .063 | .153 |
| Mean (arith)      | 20.8 | 57.6 | 12.6 | 1.1  | .21  | 13.4 |
| Stand dev (arith) | 50.3 | 61.7 | 12.1 | .23  | .045 | 4.56 |

(all values in ppm)

NOTE: The letters "NS" on the geochem map indicate that no sample was collected, due to swampy or rocky ground.

Cu The only significant anomalous zone occurs in the immediate vicinity of the exposed showing, along and just west of the baseline between 10200N and 10400N. Values range from 84 to 700 ppm Cu. The limited range of this anomaly would indicate that the mineralization is of limited extent. A number of other isolated anomalies, with values ranging from 98 to 260 ppm Cu, were also located. These results may reflect mineralization in underlying bedrock, however, their isolated nature rates them as low priority. A few narrow, north-trending linear zones with threshold values (25-80 ppm) are thought to reflect higher background levels in certain strata of the underlying sediments.

Zn Results are generally low and not significant. A few small, scattered zones on the north end and southwest area of the grid with values from 110 to 300 ppm probably are due to build up of Zn in flat lying, poorly drained, swampy soils in these areas.



Pb Also generally low and not significant. The zone in the southwest of the grid high in Zn also contains Pb values from 40 to 84 ppm. A number of other scattered and isolated values ranging from 40 to 140 ppm Pb are thought to be caused by variations in background levels and/or sample site conditions.

Mo Results negative.

Ag Results negative.

Co A few weak, isolated values (to 40 ppm), generally insignificant.

#### CONCLUSIONS AND RECOMMENDATIONS

The geochemical anomaly associated with Cu mineralization exposed on the Smith claim suggests that it is of limited extent. Due to depressed Cu prices and relative difficulty of access no further work is recommended at this time.

APPENDIX A

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Michael Savell of the City of Vancouver, Province of  
British Columbia, do certify that:

1. I have been an employee of Noranda Exploration Company,  
Limited since May 1980.
2. I am a graduate of Dalhousie University with a Bachelor  
of Science degree in geology.



Michael Savell

Project Geologist

Noranda Exploration Company, Limited  
(No Personal Liability)

APPENDIX B

STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITEDSTATEMENT OF COST

PROJECT - SMITH 2  
 TYPE OF REPORT - Geochem

DATE: NOVEMBER 21, 1983

a) Wages:

|                |              |           |
|----------------|--------------|-----------|
| No. of Days -  | 8 mandays    |           |
| Rate per Day - | \$99.36      |           |
| Dates From -   | October 1983 |           |
| Total Wages -  | 8 X \$99.36  | \$ 794.88 |

b) Food and Accommodation:

|                |              |           |
|----------------|--------------|-----------|
| No. of Days -  | 8            |           |
| Rate per Day - | \$45.00      |           |
| Dates From -   | October 1983 |           |
| Total Cost -   | 8 X \$45.00  | \$ 360.00 |

c) Transportation:

|                |              |            |
|----------------|--------------|------------|
| No. of Days -  | 8            |            |
| Rate per Day - | \$203.63     |            |
| Dates From -   | October 1983 |            |
| Total cost -   | 8 X \$203.63 | \$1,629.00 |

d) Analysis \$1,485.80

e) Cost of Preparation of Report:

|          |           |
|----------|-----------|
| Author   | \$ 198.72 |
| Drafting | \$ 198.72 |
| Typing   | \$ 198.72 |

e) Other:

Total Cost \$4,865.84

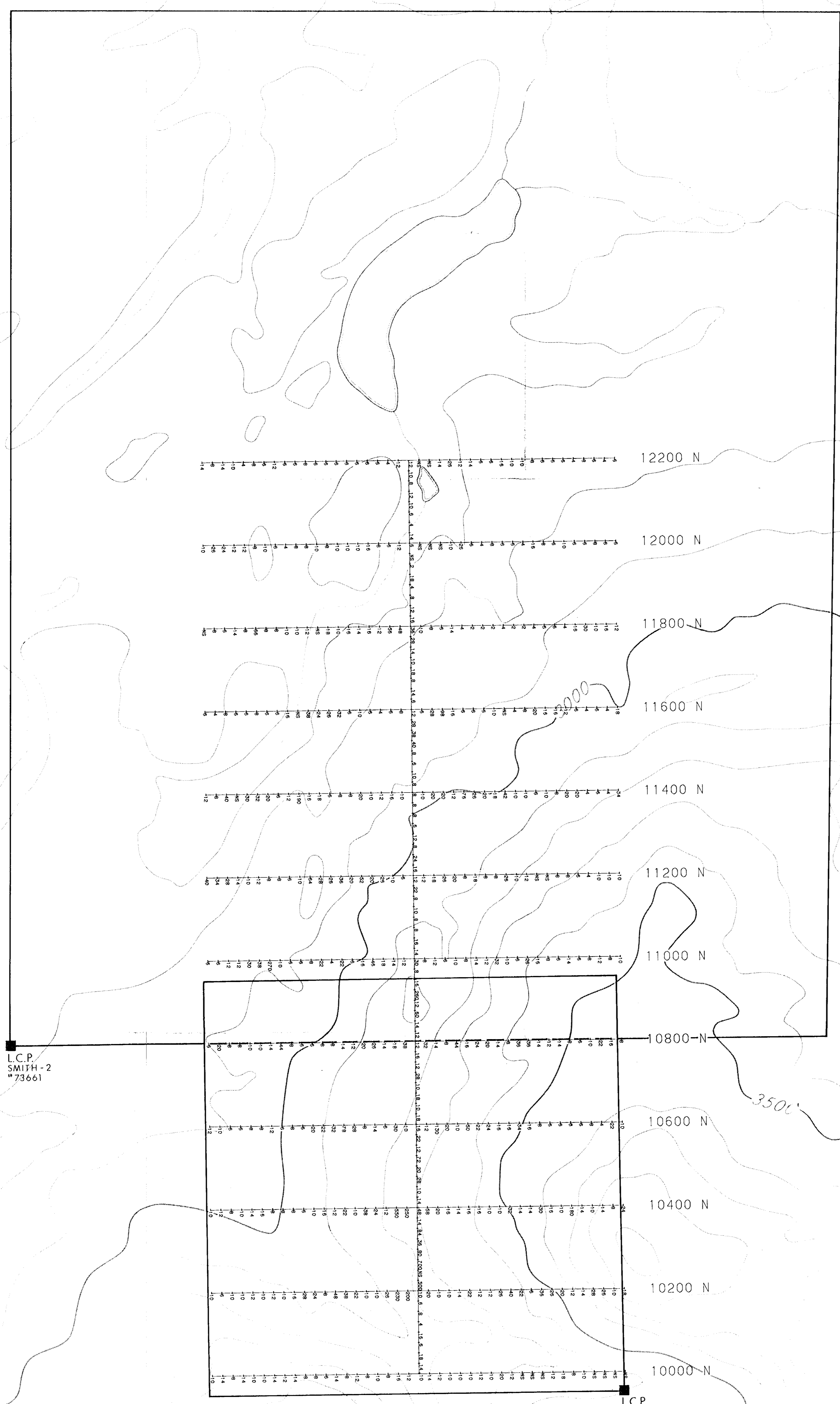
UNIT COSTS**Unit Costs for Geochem**

|                |                |   |         |                   |
|----------------|----------------|---|---------|-------------------|
| No. of Days -  | 8              |   |         |                   |
| No. of Units - | 323 Samples    |   |         |                   |
| Unit Costs -   | 15.06 / Sample |   |         |                   |
| Total cost     | 323            | X | \$15.06 | <u>\$4,865.84</u> |



NORANDA EXPLORATION COMPANY, LIMITEDDETAILS OF ANALYSES COSTSProject: Smith 2

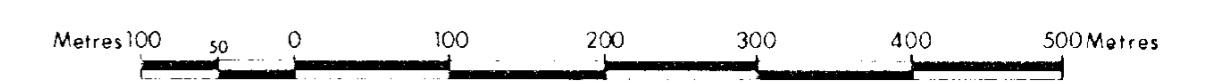
| <u>Element</u> | <u>No. of Determinations</u> | <u>Cost per Determination</u> | <u>Total</u>      |
|----------------|------------------------------|-------------------------------|-------------------|
| Cu             | 323                          | 1.60                          | 516.80            |
| Zn             | 323                          | .60                           | 193.80            |
| Pb             | 323                          | .60                           | 193.80            |
| Ag             | 323                          | .60                           | 193.80            |
| Mo             | 323                          | .60                           | 193.80            |
| Co             | 323                          | .60                           | 193.80            |
| Total          |                              |                               | <u>\$1,485.80</u> |



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

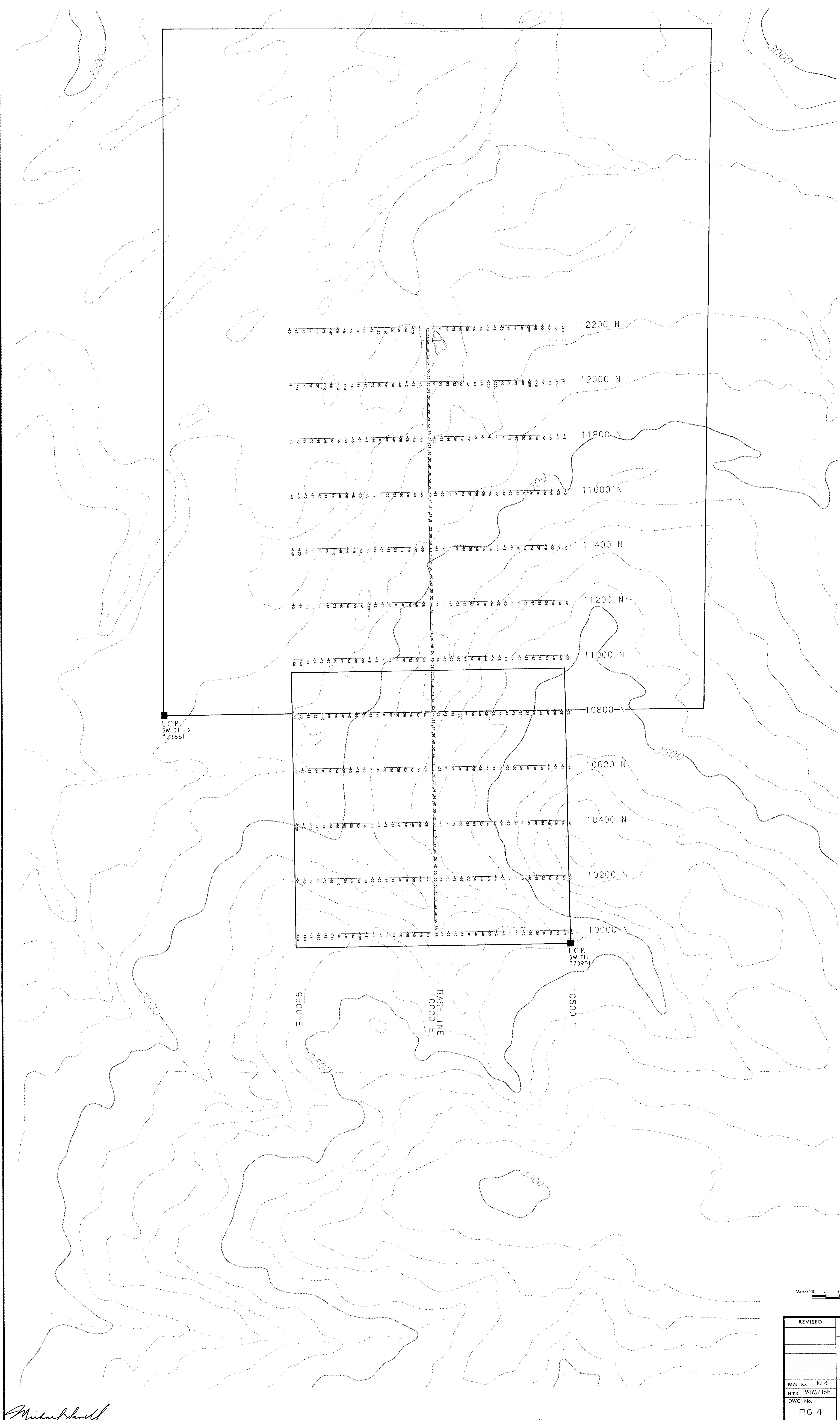
# 11,318

SCALE  
1:5000



|                |                                  |               |
|----------------|----------------------------------|---------------|
| REVISED        | <b>SMITH RIVER</b>               |               |
|                | SOIL GEOCHEMISTRY<br>(Cu in ppm) |               |
| PROJ. No. 1018 | SURVEY BY: J. H. B. J. B.        | DATE: Nov/83  |
| N.T.S. 94M/16E | DRAWN BY: J. H. B. J. B.         | SCALE: 1:5000 |
| DWG. No.       | <b>NORANDA EXPLORATION</b>       |               |
| FIG 3          | OFFICE: Vancouver                |               |

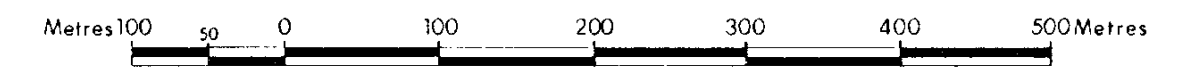
*Michael Small*



GEOLOGICAL BRANCH  
ASSESSMENT REPORT

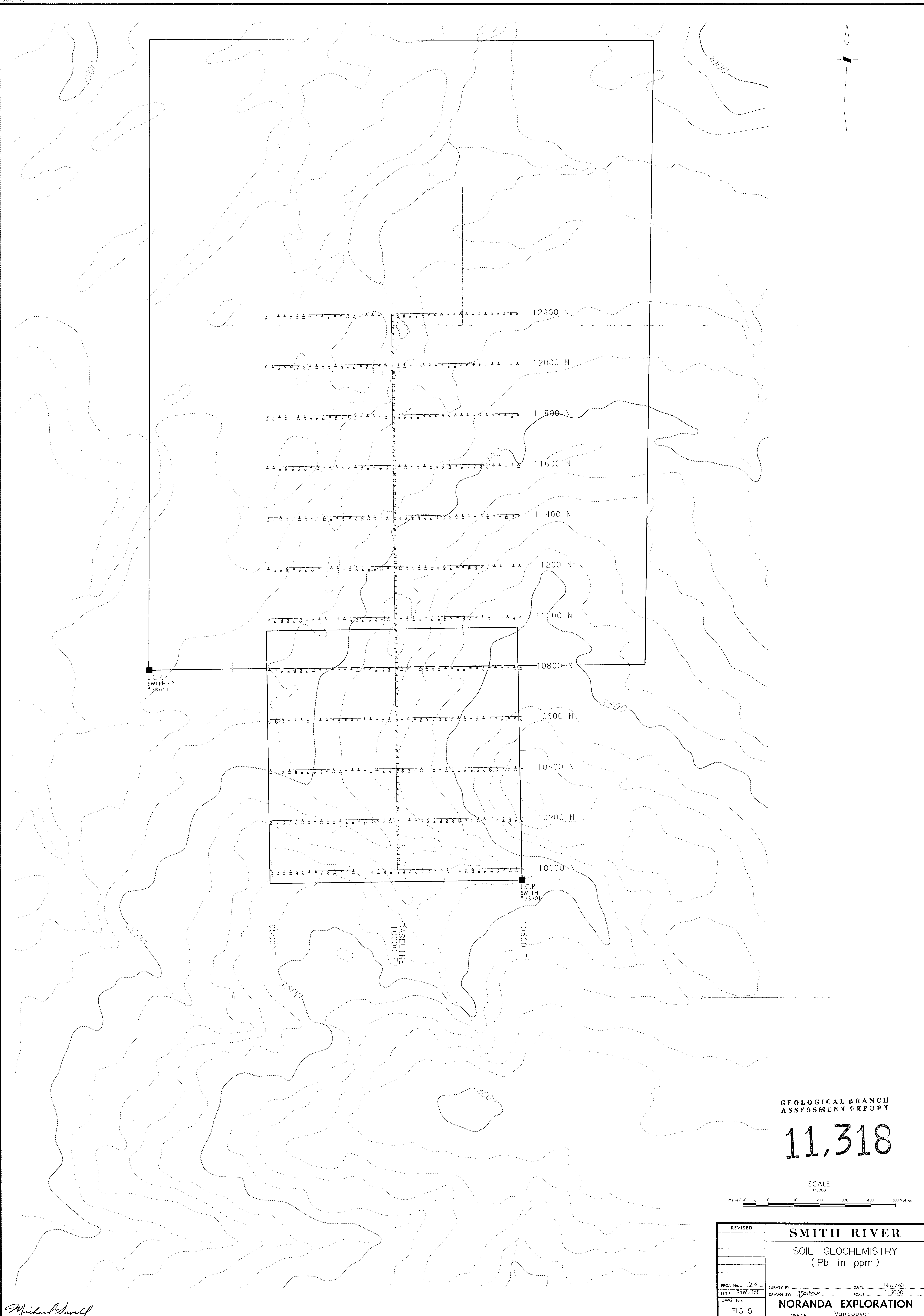
# 11,318

SCALE  
1:5000



|                |                                  |               |
|----------------|----------------------------------|---------------|
| REVISED        | <b>SMITH RIVER</b>               |               |
|                | SOIL GEOCHEMISTRY<br>(Zn in ppm) |               |
| PROJ. No. 1018 | SURVEY BY: J. Overby             | DATE: Nov./83 |
| N.T.S. 94M/16E | DRAWN BY: J. Overby              | SCALE: 1:5000 |
| DWG. No. FIG 4 | <b>NORANDA EXPLORATION</b>       |               |
|                | OFFICE: Vancouver                |               |

*Michael Shell*



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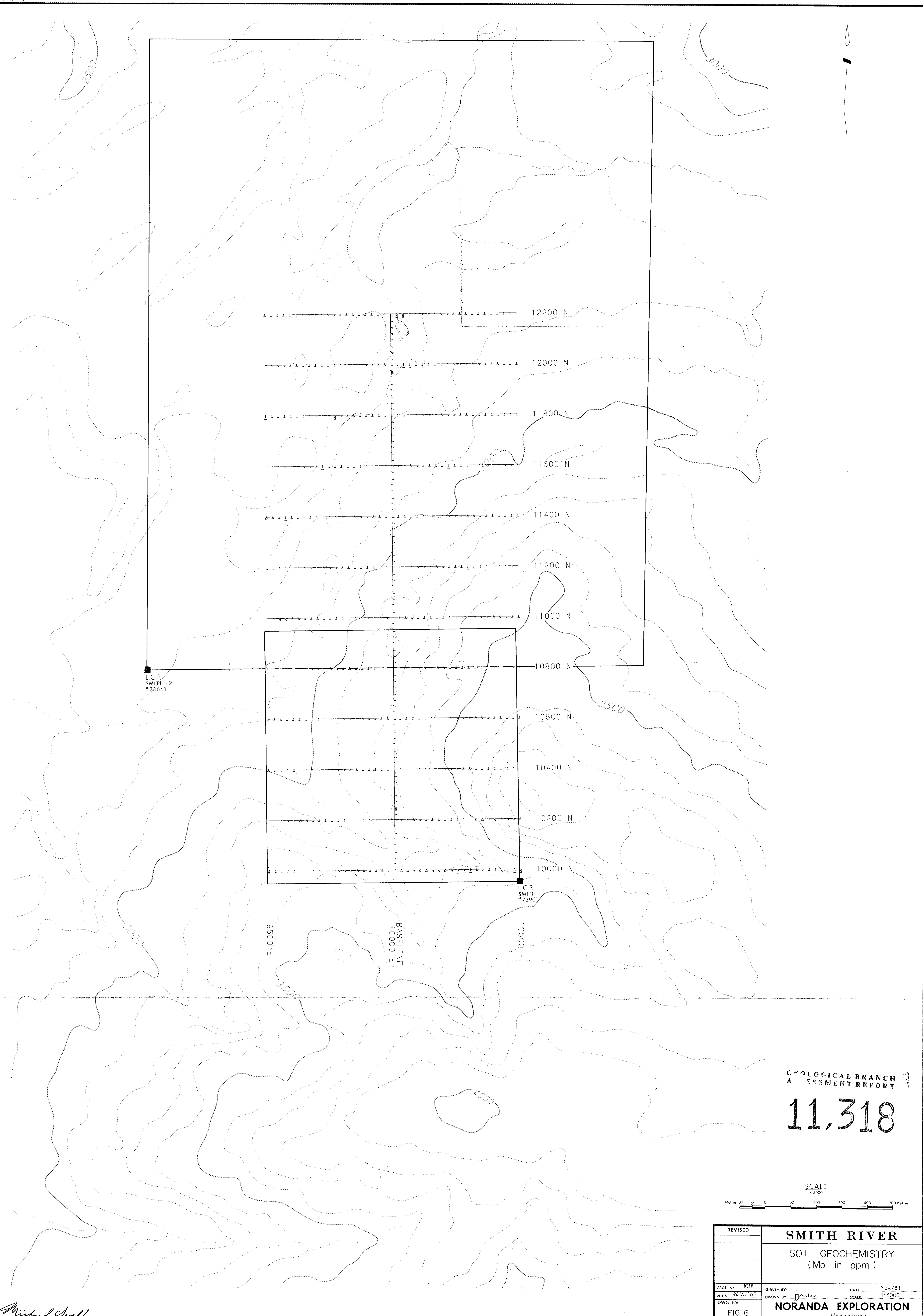
SCALE  
1:5000



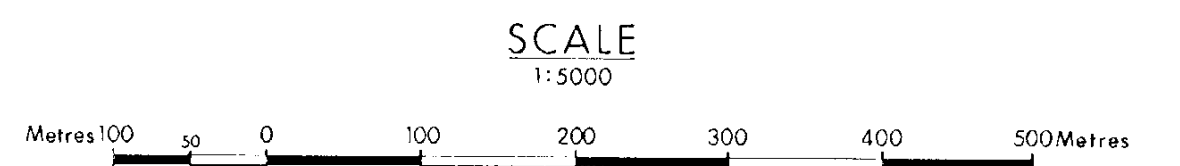
|                |                                  |               |
|----------------|----------------------------------|---------------|
| REVISED        | <b>SMITH RIVER</b>               |               |
|                | SOIL GEOCHEMISTRY<br>(Pb in ppm) |               |
| PROJ. No. 1018 | SURVEY BY: <i>Heather</i>        | DATE: Nov/83  |
| N.F.S. 94M/16E | DRAWN BY: <i>Heather</i>         | SCALE: 1:5000 |
| DWG. No.       | <b>NORANDA EXPLORATION</b>       |               |
| FIG 5          | OFFICE: Vancouver                |               |

*Michael Samell*



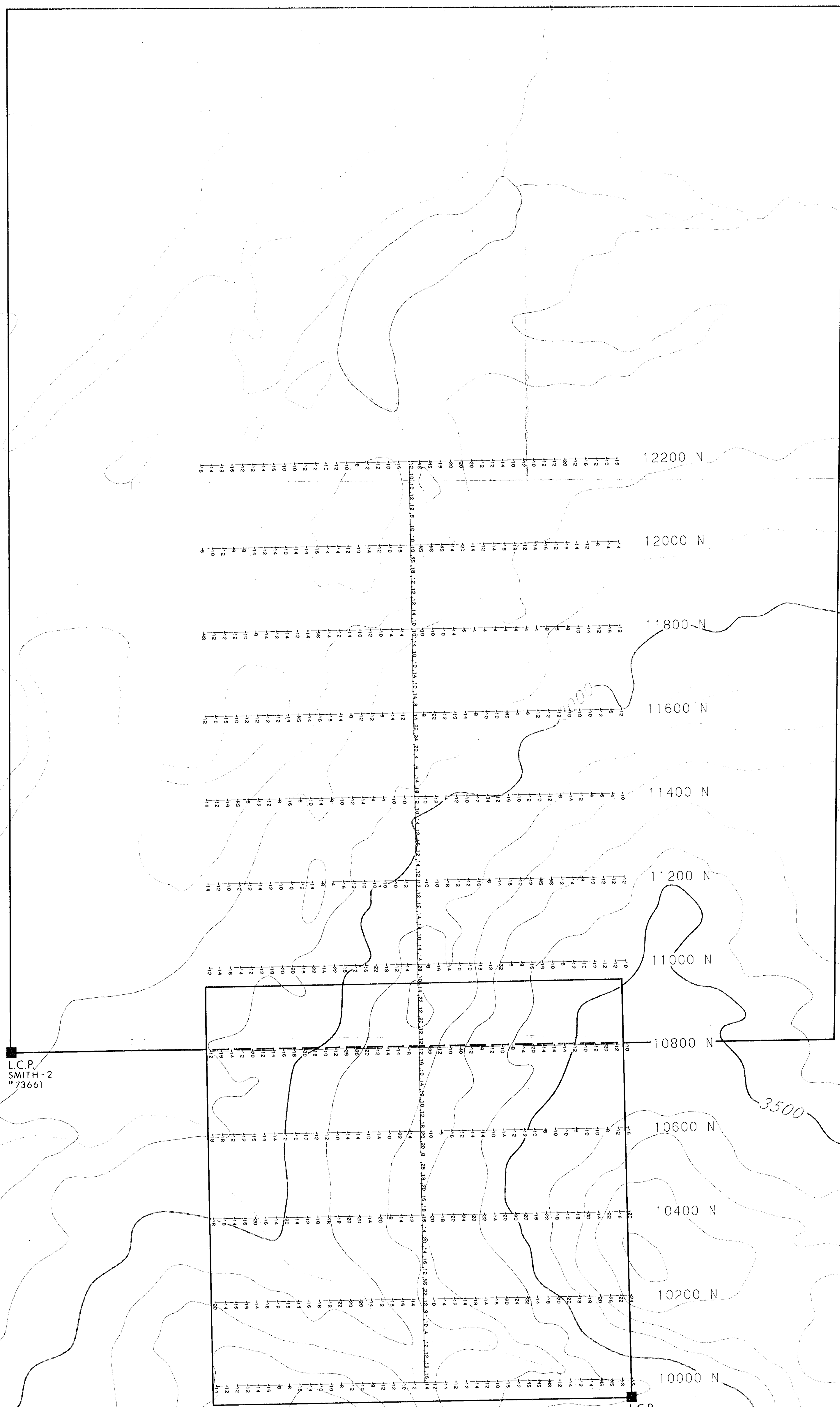


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ASSESSMENT REPORT  
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|                 |                                  |               |
|-----------------|----------------------------------|---------------|
| REVISED         | <b>SMITH RIVER</b>               |               |
|                 | SOIL GEOCHEMISTRY<br>(Mo in ppm) |               |
| PROJ. No. 1018  | SURVEY BY: [Signature]           | DATE: Nov./83 |
| N.T.S. 9/11/78E | DRAWN BY: [Signature]            | SCALE: 1:5000 |
| DWG. No. FIG 6  | <b>NORANDA EXPLORATION</b>       |               |
|                 | OFFICE: Vancouver                |               |

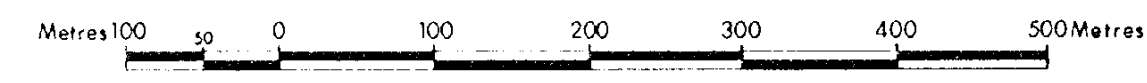
*Michael Swell*



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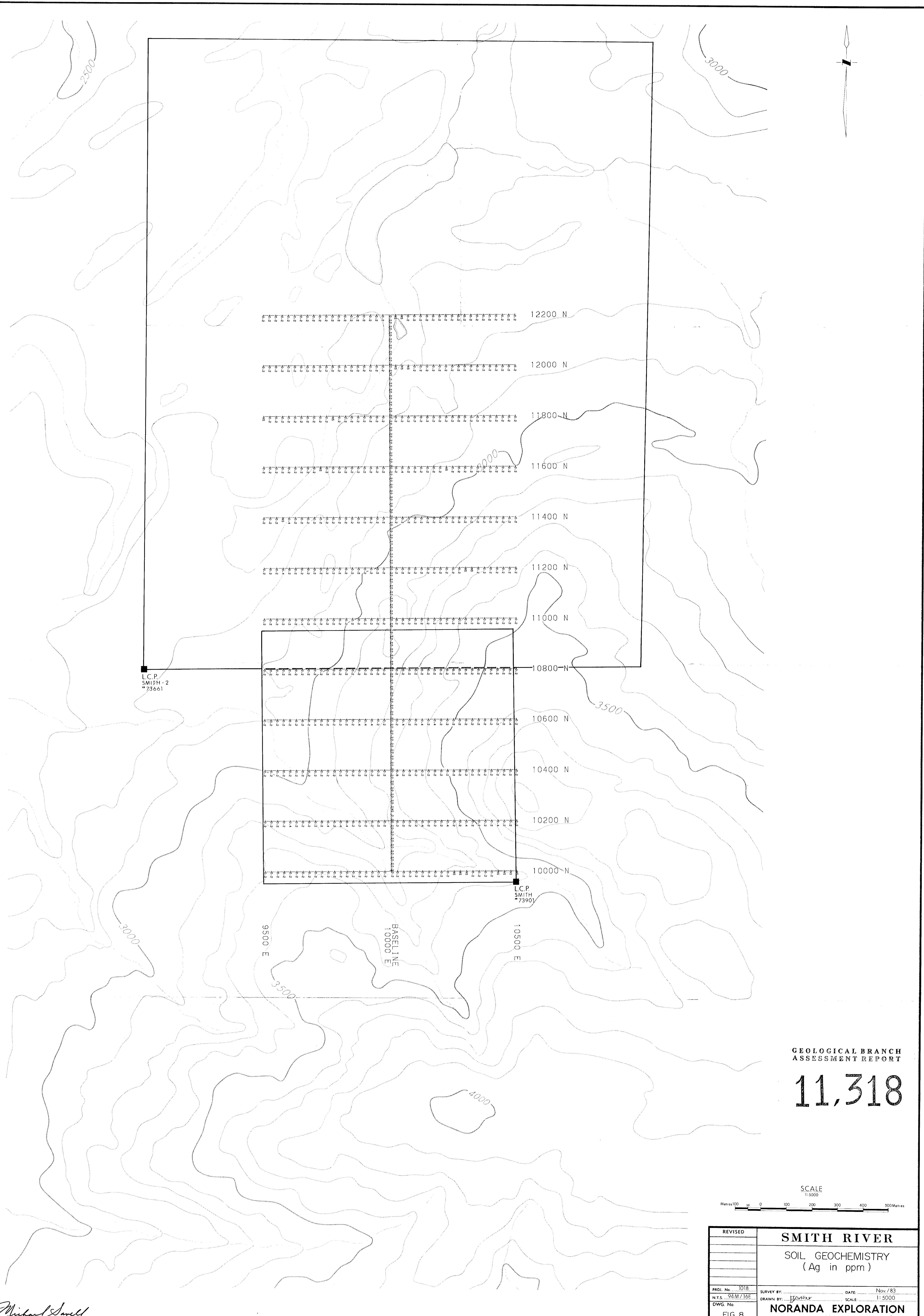
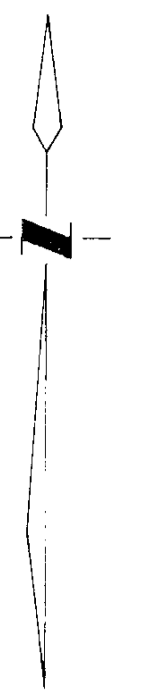
SCALE



|                |                                  |               |
|----------------|----------------------------------|---------------|
| REVISED        | <b>SMITH RIVER</b>               |               |
|                | SOIL GEOCHEMISTRY<br>(Co in ppm) |               |
| PROJ. No. 1018 | SURVEY BY: <i>Boothby</i>        | DATE: Nov/83  |
| N.T.S. 94M/16E | DRAWN BY: <i>Boothby</i>         | SCALE: 1:5000 |
| DWG No.        | <b>NORANDA EXPLORATION</b>       |               |
| FIG 7          | OFFICE: Vancouver                |               |

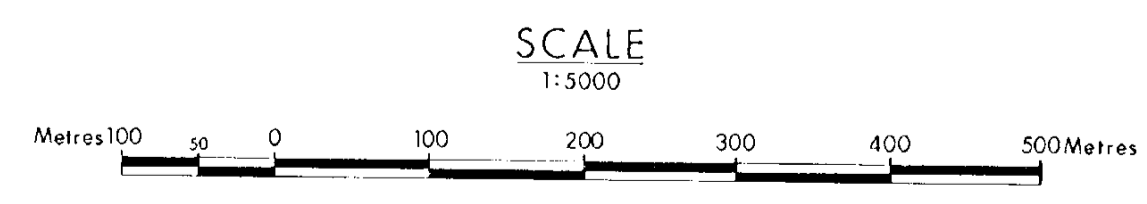
*Michael Savell*





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

**11,318**



|                |  |               |
|----------------|--|---------------|
| REVISED        | <b>SMITH RIVER</b>                               |               |
|                | SOIL GEOCHEMISTRY<br>(Ag in ppm)                 |               |
| PROJ. No. 1018 | SURVEY BY: <i>Porter</i>                         | DATE: Nov/83  |
| N.T.S. 94M/16E | DRAWN BY: <i>Porter</i>                          | SCALE: 1:5000 |
| DWG. No. FIG 8 | <b>NORANDA EXPLORATION</b><br>OFFICE: Vancouver. |               |

*Michael Small*