3431

Combined Geochemical
and
Geophysical Report

on the

REM 10, 12, 14, 15, 17, 18,

EBL 13, 21-31, 37, 38, 50, 55A, 56A, 57-61,

B & B 1-2, N Lake S Shore 1 & 2

51°20'N 119°47'W 82 M / 5E, W

B.O. Brynelsen, P.Eng.
J.D. Knauer
L.C. Reinertson

Noranda Exploration Company, Limited
Kamloops Mining Division

July 1, 1971 to August 15, 1971

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J.D. Knauer
L.C. Reinertson

Maps in Pockets

No. 1	Soil: Cu, Zn
No. 2	Soil: Mo
No. 3	Magnetometer Survey
No. 4	C.E.M. Survey

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on the
REM 10, 12, 14, 15, 17, 18,
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Noranda Exploration Company, Limited

INTRODUCTION:

The claims referred to in this report are registered in the name of Royal Canadian Ventures Limited. The names and record numbers of the mineral claims are:

Claim Name	Record Number
Rem 10	69153
Rem 14	74615
Rem 15	80291
Rem 17	80293
Rem 18	80294
EBL 13	82420
EBL 21-31 inclusive	82428-82438 inclusive
EBL 37	82613
EBL 38	82614
EBL 50	82626
EBL 55A	83465
EBL 56A	83466
EBL 57-61 inclusive	83467-83471 inclusive
B & B 1-6 inclusive	80510-80515 inclusive
B & B 7	83464
B & B 8-20 inclusive	52623-52635 inclusive
N Lake S Shore 1 & 2	80506 & 80507

The surveys described in this report were conducted within the boundaries of the above listed mineral claims. Their boundaries are shown on Drawing No. 1.

The claims are located approximately 18 miles east of Barriere, B.C. The claims lie between the north-east ends of North Barriere Lake and East Barriere Lake. Elevation ranges from 2500 feet to 4000 feet and relief is gentle to very steep.

NORANDA EXPLORATION COMPANY, LIMITED

LOCATION MAP

REM 10,12,14,15,17,18; EBL 13, 21-31,37,38,50,55A,56A,57-61; B & B 1&2; and M Lake & Shore 1&2.

Kamloops Mining Division 1"=4 Miles

82 M/5 W FIG. A

Between July 1, 1971 and August 15, 1971 geochemical and geophysical surveys were conducted after the necessary lines were prepared. The surveys were carried out by a Noranda Exploration Company, Limited crew of 4 men under the direction of B.O. Brynelsen,P.Eng. with field supervision by J.D. Knauer (geochemical) and J.T. Walker (geophysical).

GENERAL GEOLOGY:

Most of the property is underlain by Permian or earlier chlorite schist, muscovite quartz schist, biotite quartz schist, graphite schist, quartzite, quartz feldspar muscovite gneiss and minor marble and skarn. The foliation of the schistose rocks generally strikes northwest and dips 30°-40° to the southwest. These rocks have been intruded by granodiorite and diorite with associated quartz porphyry and biotite feldspar porphyry dykes and sills of Jurassic and/or Cretaceous age and by small basalt dykes of unknown age. Outcrop is scarce due to the extensive mantle of glacial deposits.

GRID PREPARATION:

Prior to acquisition of the property by Noranda, two separate grids had been established in order to carry out geochemical soil surveys, an Induced Polarization and Resistivity Survey and a Magnetometer Survey. Grid preparation by Noranda consisted of fill-in lines over the north grid, and extensions of some existing lines of the south grid in order to cover an unworked area. All work was done by an Amex Exploration Services crew between July 5, 1971 and July 15, 1971. The lines were cut, blazed, flagged and picketed every 100 feet for a total of 15.2 miles.

GEOCHEMICAL SOIL SURVEY:

All soil samples were analysed for copper, zinc and molybdenum in the Noranda Exploration Company, Limited laboratory located at 1050 Davie Street, Vancouver 5, B.C., analyst Evert vanLeeuwen.

Sampling Method:

Samples were obtained by digging holes with a shovel and steel bar, to a depth at which the visible grey C horizon or sub-outcrop was encountered. The C horizon was sampled and, where visible, the lower part of the B horizon. On two

test lines, three samples were taken to include the A, B, and C horizons. Profile locations include the sampling of all visible horizons. The samples were placed in "Hi Wet Strength Kraft 3 1/2" x 6 1/8" Open End" envelopes and the grid station was marked on the envelopes with indelible felt pens. Soil samples were taken at 200-foot intervals along the grid lines.

Laboratory Determination Method:

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

The determination procedure for total copper, zinc and molybdenum is as follows: 0.200 grams of the -80 mesh material is digested in 2 ml. of $HClO_4$ and 0.5 ml. of HNO_3 for approximately four hours. Following digestion each sample is diluted to 5 ml. with demineralized H_2O. A Varian Techtron Model AA-5 Atomic Absorption Spectrophotometer was used to determine the parts per million copper, zinc and molybdenum content in each sample.

The theory of Atomic Absorption Spectrophotometry is fully described in the literature and will not be described in this report.

Presentation of Results:

Results of this survey are presented in Drawing No. 1 and No. 2 of this report; plan maps (scale: 1 inch equals 400 feet) showing copper, zinc and molybdenum determinations in parts per million. Copper values greater than 340 p.p.m. are outlined by solid lines and zinc values greater than 240 p.p.m. are outlined by dotted lines. Molybdenum values were plotted but none were outlined.

Discussion of Results:

Copper determination values range from a background of less than 200 p.p.m. to anomalous values 350 p.p.m. and greater. Zinc values show a background of less than 150 p.p.m. to anomalous values greater than 250 p.p.m. Molybdenum determination values, for those samples analysed, gave a background of less than 2 p.p.m. The few values greater than 2 p.p.m. were not considered significant and will not be discussed in this report.

Results for copper on the northern grid, covering the B & B claims, indicate anomalous values on lines 12S to 36S to the east and west of the 00 baseline. The largest copper anomaly is outlined in Drawing No. 1 in the central portion of this grid. Smaller areas are outlined both to the east and west of this larger central anomaly. High zinc values tend to be more scattered and with only a few being coincident with the high copper values. Along the southern portion of this grid the topography steepens to the north towards North Barriere Lake. Deep transported overburden and excessive ground water were observed in a number of trenches near the center of this grid. These above mentioned factors must be considered in the interpretation of the copper and zinc results. Many of the higher values may not be directly associated with mineralized sub-outcrop at particular sample locations.

Lines 48N to 100N west of the 36W baseline are extensions of the previously sampled southern grid lines. Scattered high zinc values were encountered on lines 48N - 64N with no associated high copper values. On Lines 88N - 100N a few copper and zinc values are outlined and may be associated with anomalous values to the north. No definite pattern was developed on these extended lines.

Lines 56N and 80N plus a number of profiles east of the 36W baseline were sampled in an effort to correlate results from previous sampling with the present survey. This sampling verified previous anomalous samples with the addition of high values not encountered in the original sampling.

MAGNETOMETER SURVEY:

The Magnetometer Survey was carried out using a Fluxgate Magnetometer (Model MF-2, Serial No. 002193). The instrument is manufactured by Scintrex Limited of Concord, Ontario. The instrument is designed to read the vertical component of the earth's magnetic field.

Method:

In order to obtain readings in the most sensitive range on the instrument, (1 division equals 20 gammas) it is necessary to zero the instrument by means of the latitude switch and the latitude fine control. This adjustment was carried out at the base control station before the survey was begun. During the course of the survey, base control station readings were recorded a minimum of four times per day to enable to compensate for diurnal change.

For this survey readings were taken at 100-foot intervals along the grid lines for a total of 89,400 feet.

Presentation of Results:

Results of the survey are presented in Drawing No. 3 of this report, a magnetic contour map at a scale of 1 inch equals 400 feet. The isomagnetic contour lines are drawn at 200 gamma intervals.

Discussion of Results:

Magnetic relief varies from -1200 to +5600 gammas with a background ranging between 300 and 600 gammas. A few lines from a previous magnetometer survey were re-run so that the new survey could be correlated to the old. Magnetic relief is generally slight throughout most of the surveyed area. Exceptions to this are five magnetic anomalies, two of which are correlations to the previous survey. The other three magnetic highs show no general trend. One area in particular, line 100N between 44W and 51W is quite strong. This is on the north grid.

ELECTROMAGNETIC SURVEY:

Method:

The electromagnetic survey carried out on this property utilized C.E.M. transceivers owned by Noranda Exploration Company, Limited and manufactured by Crone Geophysics Limited, Mississauga, Ontario. The horizontal shoot-back method was employed throughout the survey. Except for the coils being held in a horizontal position for transmitting, the theory of the method and operation of the C.E.M. is identical to that of the J.E.M. equipment described by Duncan Crone in Mining Geophysics, Volume 1, Society of Exploration Geophysicists, Pp. 151-155. The method is patented. A brief description of the equipment is given here.

Each of the two identical units consists of a tuned coil with an attached inclinometer and field strength meter. The amplifier is contained within the coil housing and earphones are eliminated by employing the field strength meter to obtain a visual null (minimum field strength). Each unit is powered by 18 volts supplied by three 6 volt batteries mounted in an aluminum case on a lightweight packboard. The coil and battery pack are connected by a cable. When not in use the coil is easily fastened onto the pack board for ease of travelling and packing.

A total of 50,100 feet of C.E.M. was run.

Presentation of Results:

Results of the survey are plotted on Drawing No. 4 of this report, a plan map at a scale of 1 inch equals 400 feet. The resultant dip angle of null in degrees is plotted at each station. The readings are profiled using a vertical scale of 1 inch equals 40 degrees.

Discussion of Results:

As with the magnetometer survey, several lines of the old grid were run with the C.E.M. These were done over areas which had been drilled so that the electromagnetic effect of known mineralization could be ascertained. The C.E.M. survey showed two anomalous zones of considerable strength. One of these coincided with a strong magnetic high and the other with a slight magnetic high.

CONCLUSIONS AND RECOMMENDATIONS:

The results of the surveys conducted have indicated several areas of interest.

The first area is on the steep north facing slope overlooking North Barriere Lake. It consists of a copper anomaly in soils on the sidehill, with coincident magnetometer and electromagnetic anomalies to the south, up hill.

The second area is a smaller, more definite zone, centered at 28S - 24W of the north grid. It shows anomalous values of copper and zinc in soils as well as coincidental magnetometer and electromagnetic anomalies. This area is also on the steep sidehill. Because of the absence of outcrop in both these areas, trenching and diamond drilling should be incorporated to investigate them further.

Results of the work done on the south grid extension indicate no significant areas of interest, except on the extreme north of the grid where it overlapped the other grid. These results were included in the discussion of that area.

Test lines over the previously surveyed area of the south grid have shown that the results of these surveys can be correlated to the results of the new surveys conducted by Noranda.

No further geochemical or geophysical work is warranted over the existing grids. Any additional work should consist of detailed geology and trenching, where possible, and diamond drilling of the interest areas.

Respectfully submitted,

B.O. Brynelsen

J.D. Knauer
Geochemist

L.C. Reinertson
Geophysical Coordinator

October 22, 1971

Statement of Qualifications

I, James D. Knauer of the City of Vancouver, Province of British Columbia do certify that:

1. I have been an employee of Noranda Exploration Company, Limited since August 1964.

2. I am a graduate of the University of New Mexico with a Bachelor of Science Degree in Geology.

3. I am a member of the Geochemical Society.

4. I am a member of the Canadian Institute of Mining and Metallurgy.

5. I have held the position of Geochemist for Noranda Exploration Company, Limited, British Columbia since June 1965.

Dated at Vancouver
this 22nd day of October 1971

James D. Knauer
Geochemist
Noranda Exploration Company, Limited
(No Personal Liability)

Statement of Qualifications

I, Lawrence C. Reinertson of the City of Vancouver, Province of British Columbia, do certify that:

1. I have been an employee of Noranda Exploration Company, Limited, continuously since May 1970, and intermittently since January 1966.

2. I am a graduate of the British Columbia Institute of Technology with a Diploma of Technology in Mining.

3. I am a member of the Canadian Institute of Mining and Metallurgy.

4. I have held the position of Geophysical Coordinator for Noranda Exploration Company, Limited, British Columbia since August 1971.

Dated at Vancouver
this 22nd day of October 1971

L. C. Reinertson

Lawrence C. Reinertson
Geophysical Coordinator
Noranda Exploration Company, Limited
(No Personal Liability)

3431 M-2

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3431 MAP #2

To accompany Geochemical Report by B.O. Brynelsen, P.Eng. and J.D. Knauer, Geochemist, on the REM 10, 12, 14, 15, 17, 18, EBL 13, 21-31 inclusive, 37, 38, 50, 55A, 56A, 57-61 inclusive, B&B 1-20 inclusive, N Lake S Shore 1 and 2.

Kamloops Mining Division — Dated: October 22, 1971.

James D. Knauer

B. Brynelsen

REVISED	BARRIERE
	SOIL SURVEY
	Ppm Total Cu / Ppm Total Zn
	PROJECT:
PROJ. Nº	SURVEYED BY: D. Turner — DATE: JULY, 1971
N.T.S. 82 M/5 W.	DRAWN BY: — SCALE: 1" = 400'
DWG. Nº 1	NORANDA EXPLORATION CO. LTD.
	OFFICE: VANCOUVER

North Barriere Lake

B&B 1
B&B 2
B&B 3
B&B 4
B&B 5
B&B 6
B&B 7
B&B 8
B&B 9
B&B 10
B&B 11
B&B 12
B&B 13
B&B 14
B&B 15
B&B 16
B&B 17
B&B 18
B&B 19
B&B 20

N Lake S Shore 1
N Lake S Shore 2

EBL 23
EBL 24
EBL 25
EBL 26
EBL 27
EBL 28
EBL 29
EBL 30
EBL 31
EBL 32
EBL 37
EBL 38
EBL 39
EBL 40
EBL 43
EBL 44
EBL 47
EBL 48
EBL 50
EBL 55A
EBL 56A
EBL 57
EBL 58
EBL 59
EBL 60
EBL 61

REM 5
REM 6
REM 9
REM 10
REM 11
REM 12
REM 13
REM 14
REM 15
REM 16
REM 17
REM 18

EBL 21
EBL 22

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3431 MAP #3

To accompany Geochemical Report by B.O. Brynelsen, P.Eng. and J.D. Knauer, Geochemist, on the REM 10, 12, 14, 15, 17, 18, EBL 13, 21-31 inclusive, 37, 38, 50, 55A, 56A, 57-61 inclusive, B&B 1-20 inclusive, N Lake S Shore 1 and 2.

Kamloops Mining Division Dated: October 22, 1971

J.D. Knauer B. Brynelsen

REVISED	BARRIERE
	SOIL SURVEY
	Ppm Total Mo
	PROJECT:
PROJ. Nº	SURVEYED BY: DATE:
N.T.S. 82 M/5 W	DRAWN BY: SCALE: 1" = 400'
DWG. Nº 2	NORANDA EXPLORATION CO. LTD.
	OFFICE: VANCOUVER

North Barriere Lake

N Lake S Shore 1
N Lake S Shore 2
B&B 1
B&B 2
B&B 3
B&B 4
B&B 5
B&B 6
B&B 7
B&B 8
B&B 9
B&B 10
B&B 11
B&B 12
B&B 13
B&B 14
B&B 15
B&B 16
B&B 17
B&B 18
B&B 19
B&B 20
EBL 50
EBL 43
EBL 44
EBL 31
EBL 55A
EBL 39
EBL 29
EBL 32
EBL 56A
EBL 58
EBL 40
EBL 30
EBL 37
EBL 60
EBL 57
EBL 27
EBL 59
EBL 25
EBL 28
REM 18
EBL 38
EBL 47
REM 17
EBL 13
EBL 48
REM 16
EBL 61
EBL 23
EBL 26
REM 15
REM 14
EBL 14
EBL 21
EBL 24
REM 12
REM 6
REM 13
EBL 22
REM 10
REM 11
REM 5
REM 9
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
40.5
100 N
96 N
88 N
80 N
72 N
64 N
56 N
48 N
40 N
30 W
38 W
76 W
66 W B.L.
36 W
00 B.L.
BEARING = 355°

To accompany Geophysical Report by B.O. Brynelsen, P.Eng. and L.C. Reinertson, Geophysical Co-ordinator, on the REM 10, 12, 14, 15, 17, 18; EBL 13, 21-31 inclusive, 37, 38, 50, 55A, 56A, 57-61 inclusive; B&B 1-20 inclusive, N Lake S Shore 1 & 2.

Kamloops Mining Division Dated: October 22, 1971.

L.C. Reinertson

B. Brynelsen

REVISED	BARRIERE
	MAGNETOMETER SURVEY
	INSTRUMENT - MF-2
	PROJECT:
PROJ. Nº	SURVEYED BY: R. MEADE DATE: AUGUST, 1971
N.T.S. 82 M/5 W.	DRAWN BY: [illegible] SCALE: 1" = 400'
DWG. Nº 3	NORANDA EXPLORATION CO. LTD.
	OFFICE: VANCOUVER

North Barriere Lake

30 W TL

18 00

8 S
12 S
16 S
20 S
24 S
28 S
32 S
36 S
40 S

100 N
96 N
88 N
80 N
72 N
64 N
56 N
48 N
40 N

60 W
86 W
76 W
66 W B.L.
36 W
00 B.L.

BEARING = 355°

To accompany Geophysical Report by B.O. Brynelsen, P.Eng. and L.C. Reinertsen, Geophysical Co-ordinator, on the REM 10, 12, 14, 15, 17, 18, EBL 13, 21-31 inclusive, 37, 38, 50, 55A, 56A, 57-61 inclusive; BBB 1-20 inclusive; N Lake S Shore 1 & 2.

Kamloops Mining Division — Dated October 22, 1971

L.C. Reinertsen — B. Brynelsen

REVISED	BARRIERE
	C.E.M. SURVEY
	FREQ. - 5000 Hz. ~ FREQ. - 2000 Hz.
	COIL SPACE - 200'
	PROJECT:
PROJ. Nº	SURVEYED BY: Benson and Rogers — DATE: AUG., 1971
N.T.S. 82 M/5 W	DRAWN BY: — SCALE: 1" = 400'
DWG. Nº 4	NORANDA EXPLORATION CO. LTD.
	OFFICE: VANCOUVER