2.2189

NTS. #42-A-1



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REPORT ON THE

GEOPHYSICAL SURVEYS

PERFORMED ON

OTTO 1-76
(Latour-Montfort Option)

OTTO TOWNSHIP

LARDER LAKE MINING DIVISION

AUGUST 26, 1976
TIMMINS, ONTARIO

R.J. FRASER
NORANDA EXPLORATION CO., LTD.

This report on the magnetic and electromagnetic surveys is submitted under the Special Provision dated October 16, 1967 for credit of 60 assessment work days per claim.

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Otto 1-76

(Latour-Montfort Option)

LOCATION

The property which consists of 5 contiguous unpatented mining claims numbered L-442902 to L-442905 inclusive and L-451265 is situated in the N½ of Lot 5, Conc. VI and the SE¼ of the N½ of Lot 6, Conc. VI, Otto Township, Larder Lake Mining Division.

ACCESS

The property is reached via Highway 112 south from Highway 66, about 3 miles west of Kirkland Lake.

TOPOGRAPHY

The ground is characterized by sand and gravel ridged with numerous rock outcroppings. Overall the topography can be described as rugged. Vegetation is predominately spruce and poplar with alders common on the edges of a small creek which traverses through the property.

LINECUTTING

One Base Line was cut on an azimuth of 285° 2000' west and 1600' east from the #1 post claim L-442904. A second Base Line was cut parallel to the first but 100 feet to the south for a distance of 800 feet. This provided additional control in the vicinity of a creek which traverses the property. Traverse lines were cut perpendicular to the Base Lines at 400 foot intervals. The Base Lines and traverse lines were all chained and picketed at 100 foot intervals. In all approximately 5.5 miles of line was cut, chained and picketed.

MAGNETIC SURVEY

The instrument used was a McPhar Fluxgate M-700 magnetometer. Base readings were taken along the Base Line and all readings were calculated relative to the base readings. Readings were taken at

the base control stations at periodic intervals to discern day-to day and diurnal drift. Any changes noted in the magnetic intensity were then applied as factors and progressive adjustments were made to each reading taken during that specific period of time.

The results of the magnetic survey are shown on the prints accompanying this report.

Several magnetic anomalies were detected on the claim group. A very intense linear anomaly trending east - west through the southern part of the property is the principal feature. Readings up to 70,000 gammas in an area with a background of approximately 100 gammas were recorded. Magnetite is believed to be the cause of this feature.

A second anomaly was located in the central part of the property. It is very irregular in shape and of much less intensity then the more southerly anomaly. Sulphide facies iron formation is tentatively attributed to this feature.

ELECTROMAGNETIC SURVEY

The instrument used was a McPhar VLEM dual frequency unit capable of operation at 100 cycles per second, 5000 cysles per second, or both frequencies simultaneously.

The equipment consists of a transmitter and a receiver. The transmitter coil is energized by an alternating current produced by the motor generator. The receiver is composed of a search coil, amplifier, clinometer, and headphones.

The transmitter coil is energized by an alternating current produced by the motor generator, and resulting in the production of a primary magnetic field. This primary magnetic field links with any conductor in its vicinity, producing an induced current which gives rise to a secondary magneic field. At a given receiving station, the direction and magnitude of the primary field is altered by the secondary field. The direction of the resultant field is determined by menas of the search coil with its attached clinometer. Measurements are made in terms of dip angles and are recorded in degrees. The plotting of the dop angles at both frequencies gives profiles which are useful in estimating the depth of the conductor axis, the dip of the conductor and its relative conductivity.

The range of penetration is normally considered to be approximately one-half the separation distance between the transmitter and receiver, although other factors such as the conductivity of the overburden must also be taken into consideration.

The results of the electromagnetic survey are shown on the prints accompanying this report.

Three very strong conductors were detected by the vertical loop survey referred to as "A", "B" and "C".

Conductor "A" was detected from 7+50 North on Line 16+00 West to 10+00 North on Line 4+00 West. It appears to terminate to the east but remains open on strike to the west. Extremely high dip angles were recorded indicating that the zone is extremely strong. Graphitic slates with associated pyrite mineralization is believed to be the cause of the anomaly.

Conductor "B" was only detected for two lines due to its termination westward and bad ground conditions in the east. This zone has been drilled by foreign interests who encountered nodular pyrite within graphitic schist.

Conductor "C" was detected trending across the entire width of the claim group. Conductivity is excellent except on the three most westward lines west of the creek. Extremely high dip angles were also recorded on this zone and it has a zone of extremely intense magnetics flanking it to the south. Magnetite iron formation along with graphitic sediments are a possible cause.

CONCLUSIONS

Three very strong conductors were located on the claim group by the EM survey. They do not possess any direct magnetic correlations but rather are flanked by some anomalous zones. Magnetite and graphite are believed to be the principal geological features which will explain the anomalies.

The property should be geologically mapped with special emphasis placed on the anomalous areas.

R.J. Fraser

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NORANDA EXPLORATION CO., LTD.

Ontario

Ministry of N

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PROJECTS UNIT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Electromagnetic & Magnetic

Township or Area Otto Township

Claim Holder(s) Noranda Exploration Co., Ltd.

Box 45, Commerce Court West, Toronto, Ont.

Survey Company Noranda Exploration Co., Ltd.

Author of Report R.J. Fraser

Address of Author Box 1205, Timmins, Ontario

Covering Dates of Survey July 2/76 - July 25/76
(linecutting to office)

Total Miles of Line Cut 5.5

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

DAYS per claim

Geophysical

--Electromagnetic 40

–Magnetometer 20 ✓

–Radiometric

–Other

Geological

Geochemical

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Aug. 25/76 SIGNATURE: R.J. Fraser
Author of Report or Agent
R.J. FRASER

L.P 2. 1305 & 1306

Res. Geol. _____ Qualifications on this file

Previous Surveys

File No.	Type	Date	Claim Holder
ND prev. airborne survey			

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	442902 1/2
L	442903
L	442904
L	442905
L	451265

If space insufficient, attach list

TOTAL CLAIMS 5

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 293 Number of Readings Mag 338 EM 492

Station interval 100' Line spacing 400'

Profile scale 1" = 20°

Contour interval 200 gammas

MAGNETIC

Instrument McPhar M-700 Fluxgate Magnetometer

Accuracy – Scale constant 20 gammas per scale division

Diurnal correction method closed loops of less than 1 hour duration and progressive factoring.

Base Station check-in interval (hours) 6 hours or less

Base Station location and value Line 4+00 West/Base line 1000 gammas

ELECTROMAGNETIC

Instrument McPhar VLEM SS/15

Coil configuration Vertical Loop

Coil separation 400', 800', 1200'

Accuracy 2° per scale division

Method: ☒ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency 1000 Hz., 5000 Hz.
(specify V.L.F. station)

Parameters measured Dip angles

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

RESISTIVITY

Power

Electrode array

Electrode spacing

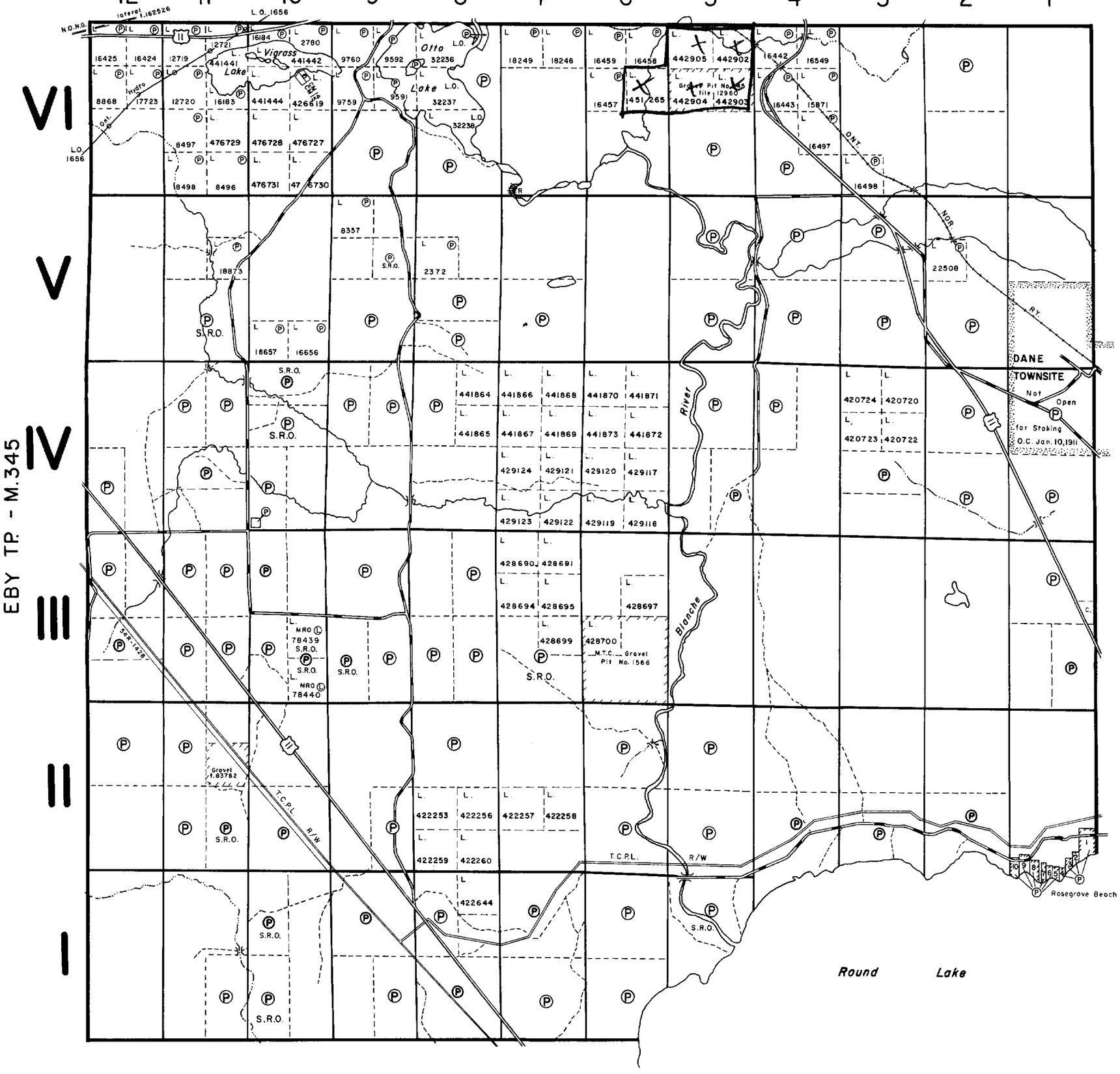
Type of electrode

TECK TP. - M.392

EBY TP. - M.345

BOSTON TP. - M.332

MARQUIS TP. - M.362



THE TOWNSHIP OF 2.2189 OTTO

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	● or Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.
PATENTED S.R.O.	◒

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

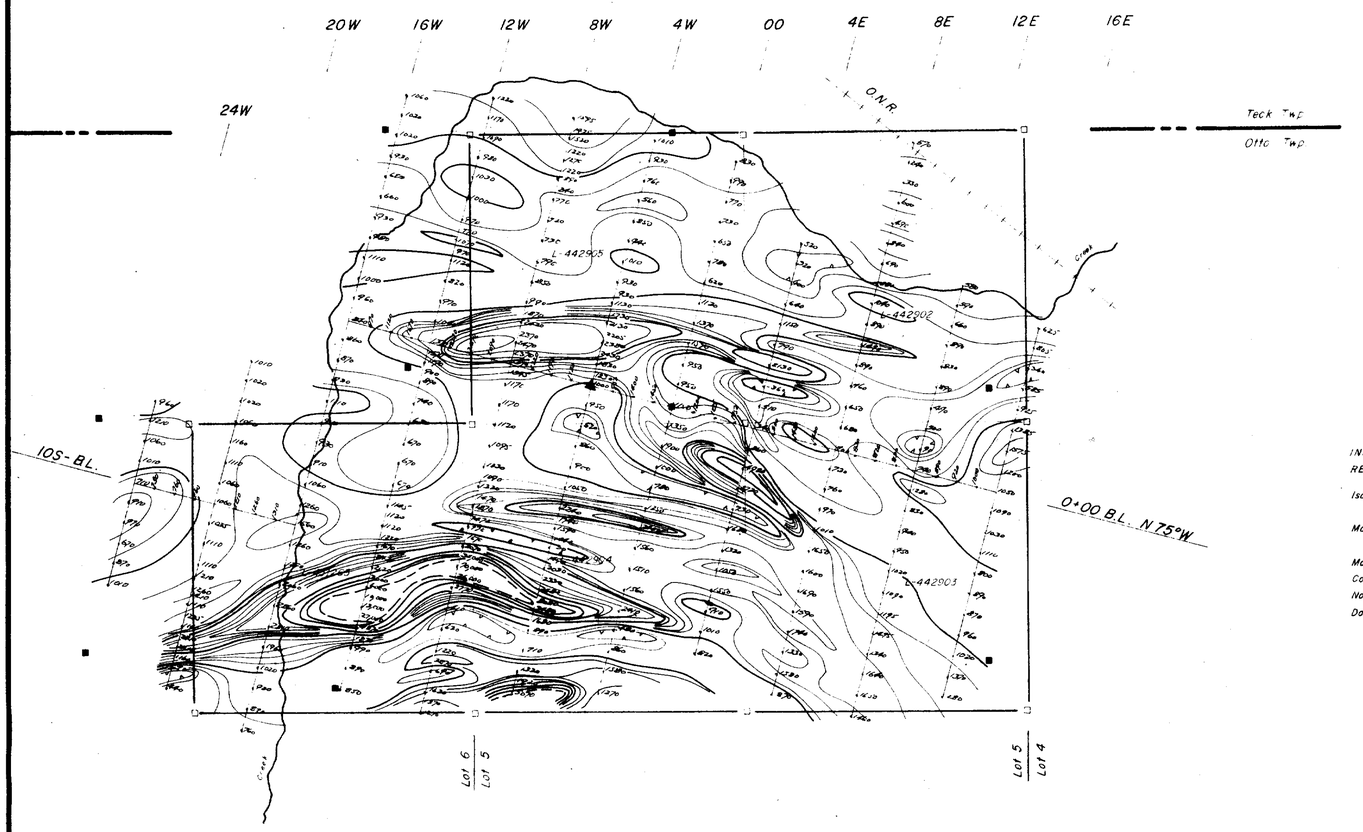
DATE OF ISSUE
AUG 31 1976
SURVEYS AND MAPPING BRANCH

PLAN NO.- M-379

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

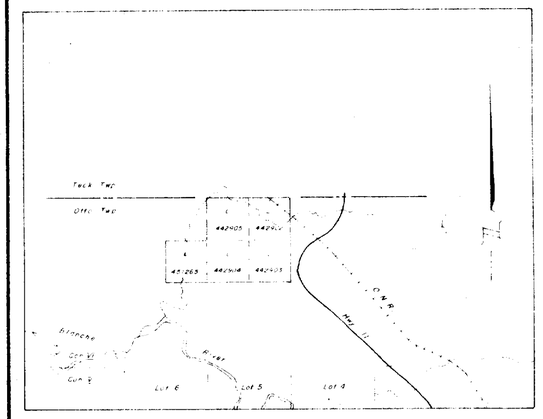
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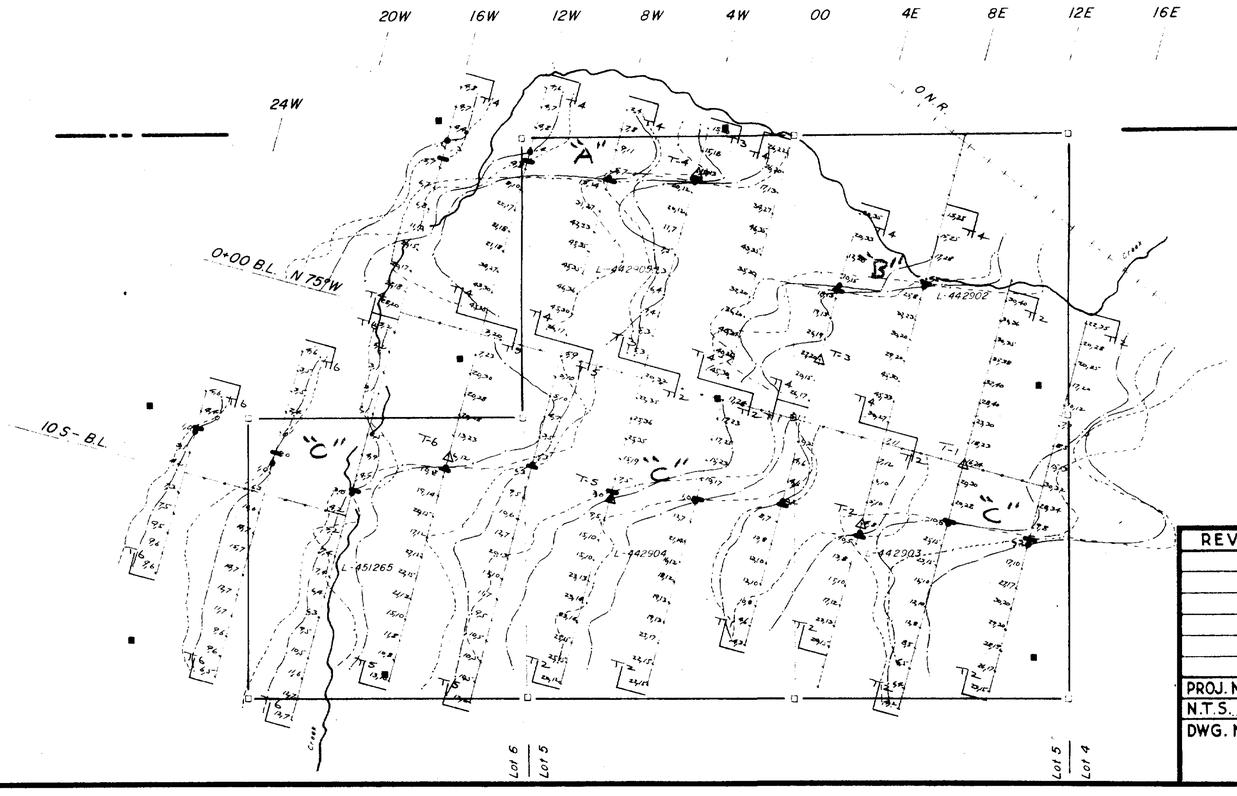


LEGEND

INSTRUMENT: McPhar Fluxgate M-700
READINGS: Directly in gammas
Isomagnetic Contours — 500
Magnetic Depression
Magnetic Base Station ▲
Contoured at: 200 gammas
No. of readings: 338
Dates of Survey:



LOCATION PLAN
OTTO 1-76
Scale 1":2640'



LEGEND

INSTRUMENT: McPhar Vertical Loop (V.L.E.M.) SS-15
READINGS: Resultant E.M.F. in degrees of dip
North (or West) readings plotted to the right of line
South (or East) readings plotted to the left of line
L.F. (1000 Hz) plotted close to the line
H.F. (5000 Hz) plotted remote from line
Profile Scale: 1"=20°, (L.F. - solid, H.F. - dotted)
Transmitter Location △ T-2
E.M. X-Overs (L.F., H.F.) ●, —
Defined Conductor Axis
Suggested Conductor Axis
No. of readings: 246 L.F., 246 H.F.
Dates of Survey:

R. J. Fraser
August 25, 1976

REVISED	V.L.E.M. and Magnetic Surveys
	OTTO 1-76
	Latour – Montfort – Option
	Otto Twp — Ontario
	PROJECT:
PROJ. Nº 933	SURVEYED BY: A. Mathias DATE:
N.T.S. 42-A-1	DRAWN BY: L.A. Waddell SCALE: 1"=400'
DWG. Nº	NORANDA EXPLORATION CO. LTD.
	OFFICE: Timmins, Ont.

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