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REPORT

on the

MAGNETOMETER, ELECTROMAGNETIC and RADIOMETRIC SURVEYS

on the property of

DEAUVILLE EXPLORATIONS LIMITED

Nairn Township, Sudbury Mining Division, Ontario

Geophysical Report

Timmins, Ontario. August 31, 1967.

63 2200

INTRODUCTION

A combined magnetometer, electromagnetic and radiometric survey has been carried out on the property of Deauville Explorations Limited in Nairn Township.

The linecutting commenced on about July 1, 1967, and the instrument work was completed on August 18, 1967.

In the general area, copper-nickel mineralization is associated with the basic intrusive rocks and zinc-copper with subgreywacke. The dominant exposure on the property is quartzite, known to be a host for uranium.

PROPERTY, LOCATION AND ACCESS

The property is a contiguous block of approximately 720 acres, in eighteen unpatented mining claims, numbered S 135158 to S 135166 inclusive and S 135185 to S 135193 inclusive.

The Nairn Township claim map indicates that these claims are confined to the northwest quarter of Lot 4, and Lots 5 and 6, Concession I, although no Lot lines or Township boundary could be located by the survey crew. The position of the claims, with respect to the lakes in the area, however, indicates that the property is substantially within the above described subdivision.

The community of Nairn Centre, on Highway 17, three miles north of the property, is approximately 35 miles west of Sudbury, Ontario. The property can be reached by boat at R. Jantti's camp, from the extreme northeast shore of Wabagishik Lake, a distance of about six miles. A three mile gravel road from Highway 17 provides access to R. Jantti's camp.

HISTORY OF THE PROPERTY

The writer is not aware of any previous exploration work which has been completed on the property.

GEOLOGY

Map No. 2062 and Report No. 35, prepared in 1965 for the O.D.M., by R. M. Ginn, describe the geology of the area.

There is considerable outcrop in the survey area which is responsible for a relief of about 300 feet and rather sparse tree growth.

The southern three-quarters of the property is almost entirely underlain by feldspathic quartzite, a medium grained, well-bedded, grey-white rock. Light weathering, hard subgreywacke is exposed in the northern portion of the property, along a contact between Kusti and Lacelle Lakes. These rocks strike east-northeast and dip 40 to 60 degrees south. Intruding the quartzite and subgreywacke are minor small lenticular masses of metagabbro.

Three strike faults cross the property. The most northerly fault follows the subgreywacke-quartzite contact west of Kusti Lake and then continues through quartzite, to the east, with no change in direction. Striking east-northeast through the centre of the property is a second fault marked mainly by a topographic depression. Along the south boundary of the property corresponding to the Nairn-Foster Township boundary is present the strongest structure termed the Espanola fault. An obvious lineament, the fault is marked by a zone 175 to 300 feet wide consisting of angular fragments of quartzite in a matrix of gouge and large white quartz veins.

The above described geological features are depicted on the map of the Radiometric Survey, at a scale of one inch to two hundred feet.

MAGNETOMETER SURVEY RESULTS AND INTERPRETATIONS

The survey was conducted along north-south picket lines, at 200 foot intervals.

The magnetic relief of the property is rather exceptionally high ranging from 12 to 3700 gammas and the average background reading is 2000 gammas.

The magnetic anomalies consist of small oval or lenticular shaped negative or positive closures. Their maximum dimension is generally east-west, corresponding to the strike of the rocks, and averages about 400 feet. There is no regular disposition of the anomalies or readily apparent explanation for the negative-positive dipole effect. Along the south boundary of the property, however, over [illegible] of about 1000 feet, the magnetic high and lows become less intense.

A lenticular anomaly, along the southeast shore of Lacelle Lake, 1600 feet long, attains a peak value of about 3000 gammas, to the east, and a low value of about 1000 gammas, to the west. This anomaly appears to correspond to a body of metagabbro shown on Map No. 2062, by the O.D.M.

It is suggested that most of the remaining oval or lenticular shaped magnetic highs and lows are caused by small concentrations of the accessory mineral magnetite. The comparative lack of anomalous conditions along the south boundary of the property may be due to overburden cover and/or mobility or alteration of the magnetite by hydrothermal activity along the Espanola fault.

ELECTROMAGNETIC SURVEY RESULTS AND INTERPRETATIONS

This survey was carried out using a Ronka EM 16, along lines spaced at 200 foot intervals, in a north-south direction.

Four main areas of conductivity have been outlined by the survey; these are designated Zones A, B, C and D.

Zone A includes those conductors west of Lacelle Lake, through Kusti Lake to the west boundary of the property. The most southerly conductor extends discontinuously from the southwest shore of Lacelle Lake, west to the southwest shore of Kusti Lake and beyond, a distance of almost a mile. The discontinuous portion of the conductor, which is quite weak, between Kusti and Lacelle Lakes, corresponds to a strike fault shown on the Radiometric Survey map. The extension of this conductor, west from the southwest corner of Kusti Lake, is quite strong and corresponds to the faulted subgreywacke-quartzite contact. No magnetic anomalies correspond with any portion of this conductor. East and west of Kusti Lake, striking about east-west, are a series of discontinuous moderate to weak conductors. These, for the most part, would correspond to minor strike faults in subgreywacke, shown on Map No. 2062. That conductor, crossing Lines 6 West to 12 West inclusive, from the northwest shore of Kusti Lake, corresponds to an east-west striking magnetic anomaly roughly 200 gammas above or below background.

Zone B is situated at a small pond in the west-centre of the property. The conductors, of moderate to weak intensity, are up to 800 feet long and strike generally east-west. In this area, Map No. 2062 indicates the presence of a lenticular mass of metagabbro, about 2400 feet long, striking near east-west. Shearing, along the metagabbro contact, may account for the conductivity but the presenece of sulphides, with the magnetic mineral pyrrhotite, should not be overlooked. That conductor, extending west from the southwest shore of the pond, corresponds to a lenticular magnetic anomaly almost 500 gammas above background.

Zone C is located along the south boundary of the property. Had the electromagnetic survey been carried out to the south of the boundary of the claim S 135160, and slightly beyond, it is probable that the conductive zone would have a continuous length of almost 4000 feet, in a general east-west direction. Conductivity, at the east and west ends of this zone, is moderate to strong. Although conductivity in the central portion of this zone could be caused by the Espanola fault or conductive overburden, the ends of the zone, particularly that portion next to Wabagishik Lake, could be caused by sulphides. Map 2062 indicates the presence of sulphides on the shore of Wabagishik Lake, next to the conductor.

Zone D is located in the centre-east section of the property. A series of east-northeast striking, moderate to weak, conductive zones cross Lines 26 to 36 East. There is no apparent magnetic coincidence to the conductors. Shearing, associated with a strike fault which passes through Zone D, is the probable cause of conductivity.

RADIOMETRIC SURVEY RESULTS AND INTERPRETATION

Using a Sharpe GIS-2 Spectrometer, the survey was carried out along north-south picket lines, at 200 foot intervals.

Two counts per second is the average background. On Line 14 East, Station 23+75 South, a radiometric anomaly of 20 counts per second was obtained. Of detail readings to the east and west, 20 counts per second uranium was the highest and 3.2 counts per second uranium the lowest. Using the appropriate conversion factors, it was determined that 0.052 per cent uranium and 0.016 per cent thorium is present, at Station 23+75 South, with 20 CPSu and 4 CPSth.

The radioactivity occurs in a zone 150 feet long and 15 feet wide. The rock, a pyritized, dark grey, rusty quartzite, strikes east-west and dips near vertically.

CONCLUSIONS

The magnetometer survey shows an array of discontinuous small, oval or lensoidal magnetic anomalies striking generally east-west. For the most part, these anomalies are thought to represent small concentrations of magnetite in the quartzite or subgreywacke. A few of the magnetic anomalies notably along the southeast shore of Lacelle Lake or next to the pond in the centre-west section of the property appear to coincide with bodies of metagabbro.

Most of the conductive zone appears to be caused by shearing, along or adjacent to the strike faults crossing the property. A few of the conductors, however, because of their strength or coincidence with magnetic anomalies, may be caused by sulphides. In Zone A, the conductor extending from the southwest corner of Kusti Lake is strong and coincides the faulted subgreywacke-quartzite contact, a favourable environment for sulphide deposition. Extending west from the west shore of Kusti Lake, a second conductor, coinciding to a magnetic anomaly, is possibly caused by sulphides. At least one of the conductors, in Zone B, is possibly sulphide-bearing, notably that extending from the southwest shore of the pond and coinciding with a magnetic anomaly. Sulphides are indicated on Map 2062 to be present adjacent to the conductor of Zone C, next to Wabegishik Lake. Moreover, this part of the conductor and the west extremity of the conductor crossing Line 0 displays moderate to strong intensity.

These above described zones of conductivity require further investigation.

The radiometric anomaly, near the south end of Line 14 East, within 200 feet of the Espanola fault, is of sufficient intensity to merit further investigation. Up to 0.052 per cent uranium, or approximately one lb. per ton, is indicated to be present in the rusty pyritized quartzite. On surface, the radioactive zone is 150 feet long and 15 feet wide. A genetic relation between the Espanola fault and the radioactive zone should not be overlooked.

RECOMMENDATIONS

To more fully evaluate the zone of radioactivity, on Line 14 East, Station 23+75 South, it is recommended that four trenches be established across the mineralization to provide fresh rock samples for assaying. An average grade of one pound uranium per ton, or better, would indicate the need for a drill investigation. An amount of $6000 should be allocated for the trenching-sampling programme.

To determine the need for a drill investigation of the stronger conductive zones on the property, it is recommended that a geologist or experienced prospector examine particularly those zones described under "Conclusions" for the presence of base metal sulphides. At the same time, the Espanola fault zone should be further examined with the aid of a gamma ray spectrometer, in the search for radioactive zones similar to that outlined. Cost of this work is estimated at $2500.

Respectfully submitted,

ADVANCE GEOLOGY & GEOPHYSICS LIMITED,

R. J. Bradshaw, F.G.A.C.,
Consulting Geologist.

Timmins, Ontario
August 31, 1967.

C E R T I F I C A T E

I, Ronald J. Bradshaw, residing at 480 Howard Street, Timmins, Ontario, do hereby certify that:

I attended Queen's University, Kingston, Ontario, and graduated with an Honour's B.A. degree in Geological Sciences in 1958.

I am a Fellow of the Geological Association of Canada, a Member of the Canadian Institute of Mining and Metallurgy, and qualified for membership in the Association of Professional Engineers of the Province of Manitoba in 1959.

I have no interest either directly or indirectly in the property or securities of Deauville Explorations Limited.

Timmins, Ontario,
August 31, 1967.

R. J. Bradshaw, F.G.A.C.,
Consulting Geologist.

APPENDIX

SURVEY METHOD AND INSTRUMENT DATA

MAGNETOMETER

Specifications

Maximum Sensitivity:	20 gammas (per scale division) on 1000 gamma range.
Readability:	5 gammas (¼ scale division) on 1000 gamma range.
Maximum Range:	± 100,000 gammas.
Dimensions: (Including Battery Case)	7" x 4" x 16"
Weight: (Including Battery Case)	9 lbs.
Batteries:	12 Flashlight Batteries ("C" cell).

A Sharpe M.F.-1 fluxgate magnetometer, Serial No. 408105, was used in the magnetic survey. This instrument measures the vertical component of the earth's magnetic field in gammas. Base stations for determining the magnetic diurnal variations were established along the main base line at 400 foot intervals. Magnetic readings were taken at 50 foot intervals, along the cross lines.

ELECTROMAGNETIC UNIT

Specifications

Primary field:	Horizontal from any selected VLF-transmitting stations.
Frequency range:	Approximately 15 - 25 kc.
Station selection:	By plug-in units. Two stations selected by a switch on front panel.
Measured field:	Vertical field, in-phase and quadrature components.

Accuracy of readings:	±1% resolution.
Range of measurements:	In-phase ±150% or ±90°, quadrature ±40%.
Output readout:	Null-detection by an earphone, real and quadrature components from mechanical dials.
Batteries:	6, size AA penlight cells. Life about 200 hours.
Size:	16 x 5.5 x 3.5 in. (42 x 14 x 12 cm).
Weight:	2.4 lbs. (1.1 kg).

The Ronka EM 16 instrument used in this survey, Serial No. 36, is simply a sensitive receiver covering the frequency of the new VLF-transmitting stations with means of measuring the vertical field components. The VLF - transmitting stations operate for communications with submarines at frequencies between 17.8 and 24.0 khz. The vertical antenna current of these transmitting stations creates a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. This equipment measures the vertical components of these secondary fields.

The receiver has two inputs, with two receiving coils built into the instrument. One coil has a normally vertical axis and the other is horizontal.

The signal from the coil with vertical axis is first minimized by tilting the instrument. The tilt angle is calibrated in percentages. The remaining signal in this coil is finally balanced out by a measured percentage of signal from the other coil.

After a suitable station is selected, at right angles to the direction of the survey lines, in this case Cutler, Maine, readings are made of the in-phase and quadrature components where the signal has been minimized to its greatest degree.

The lower end of the handle, will as a rule, point towards the conductor and the instrument is so calibrated that when approaching a conductor, the angles are positive in the in-phase component.

As with any electromagnetic unit, the largest and best conductors give the highest ratio of the in-phase to quadrature components.

GAMMA RAY SPECTROMETER

Specifications

Detector:	2" x 2" sodium iodide crystal and photomultiplier.
High Voltage Supply:	Regulated electronic supply, nominally 1000 volts. Regulation: 0.25%
Amplifier:	Gain continuously adjustable from 1 to 20.
Threshold:	Single discriminator, adjustable over the gamma ray energy range of 0.3 to 3 MeV.
Ratemeter:	Ranges: 10-30-100-300-1000-3000-10,000 CPS. Accuracy: 5% of F.S. Battery Test Function.
Meter Time Constant:	2, 8 and 16 seconds.
Calibration:	- a calibration source is supplied (ThO_2).
Temperature Range:	-40°C to 55°C.
Audio Output:	to single integral speaker. On/off switch.
Recorder Output:	Provides 1 ma. output to 1400 Ω recorder. Time nominally 0.2 sec. Longer time constants can be obtained by adding capacitors across recdrder.
Power Supply:	12 size C flashlight type batteries, plus 2 pen cells. Regulated to 2%.

Dimensions and Weight:	Probe: 10" x 5" x 3½", 4 lbs. Measuring Unit: 6" x 6¼" x 3 5/8" x 2", 3 lbs. Battery Packs: C Size - 6¼" x 3½" x 2", 2 lbs. D Size - 8" x 5" x 2½", 3.8 lbs.

The GIS-2 Gamma Ray Integrating Spectrometer, Serial No. 706110, used in this survey is a fully transistorized sensitive scintillation counter. The circuitry includes gamma ray energy discrimination to distinguish between uranium, thorium and potassium anomalies.

The principle of operation is based on a scintillation or flash of light produced when a gamma ray is absorbed by the sodium iodide crystal in the probe. This scintillation is converted to an electrical impulse and amplified by a factor of about 10^6. On entering the main electronic unit, this pulse is further amplified. The purpose of the spectrometer is to determine the amplitude of the pulses, corresponding to gamma ray energy, and to count them only if their amplitudes lie above a limit set by the operator. A ratemeter measures the number of pulses detected per unit time.

During the survey, the instrument was set by use of an energy threshold discriminator, to measure only those gammas due to uranium and thorium. This is accomplished by setting the threshold discriminator at 5.00 (5.00 turns) and the time constant switch at 2 seconds.

For the most part, individual readings were taken on rock exposure. However, some readings were taken over areas of overburden which gave the same average background radioactivity count.

On the one anomalous zone located, the percentage uranium and thorium was determined. Briefly, the threshold control is set successively to say two positions, giving U plus Th, then Th alone. The percentage of uranium and thorium is obtained by subtracting the readings and applying appropriate conversion factors.

i.e. (1) calibrate energy scale, if required.

(2) set time constant to 8 seconds.

(3) set threshold to 5.00 and record reading as CPS_U

(4) set threshold to 7.65 and record reading as CPS_{Th}

Then, $\% \, Th = CPS_{Th}/250$

$$\% \, U = \frac{CPS_U - CPS_{Th} \times 2.7}{830}$$

ADVANCE GEOLOGY & GEOPHYSICS LIMITED

SEE ACCOMPANYING

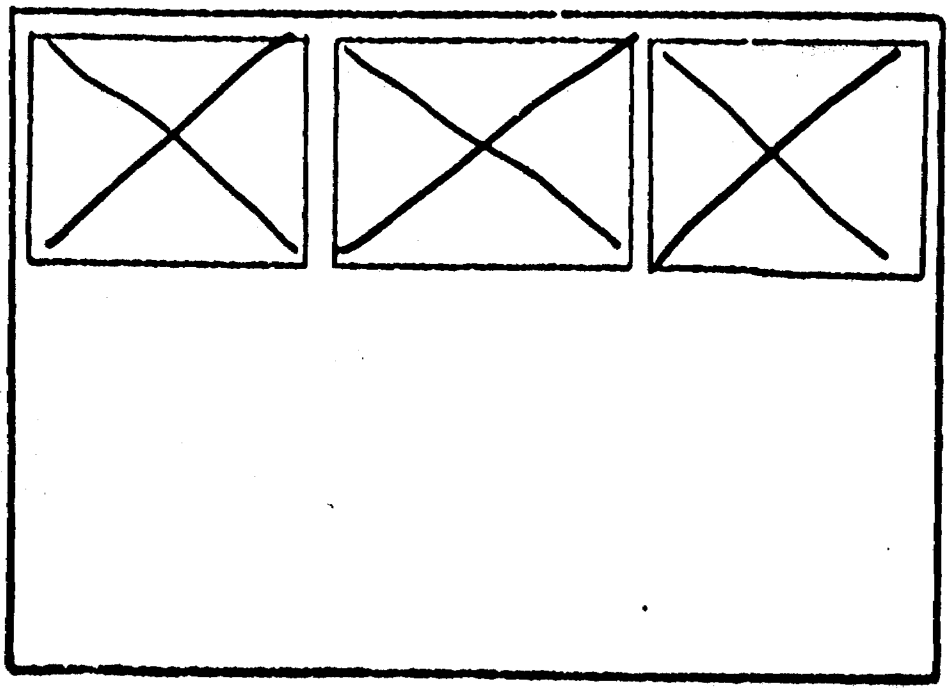
MAP(S) IDENTIFIED AS

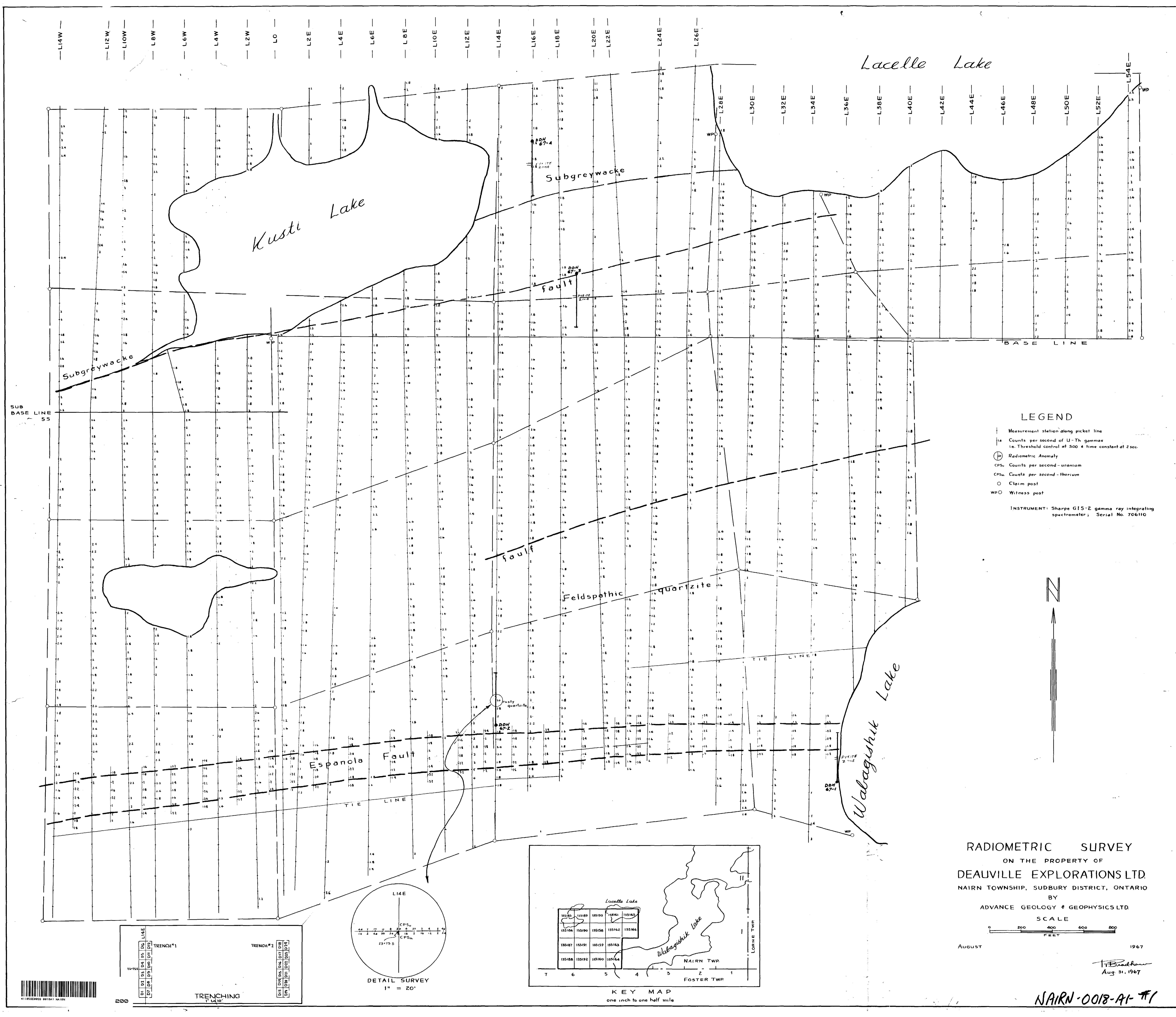
NAIRN-0018-A1-#1

#2

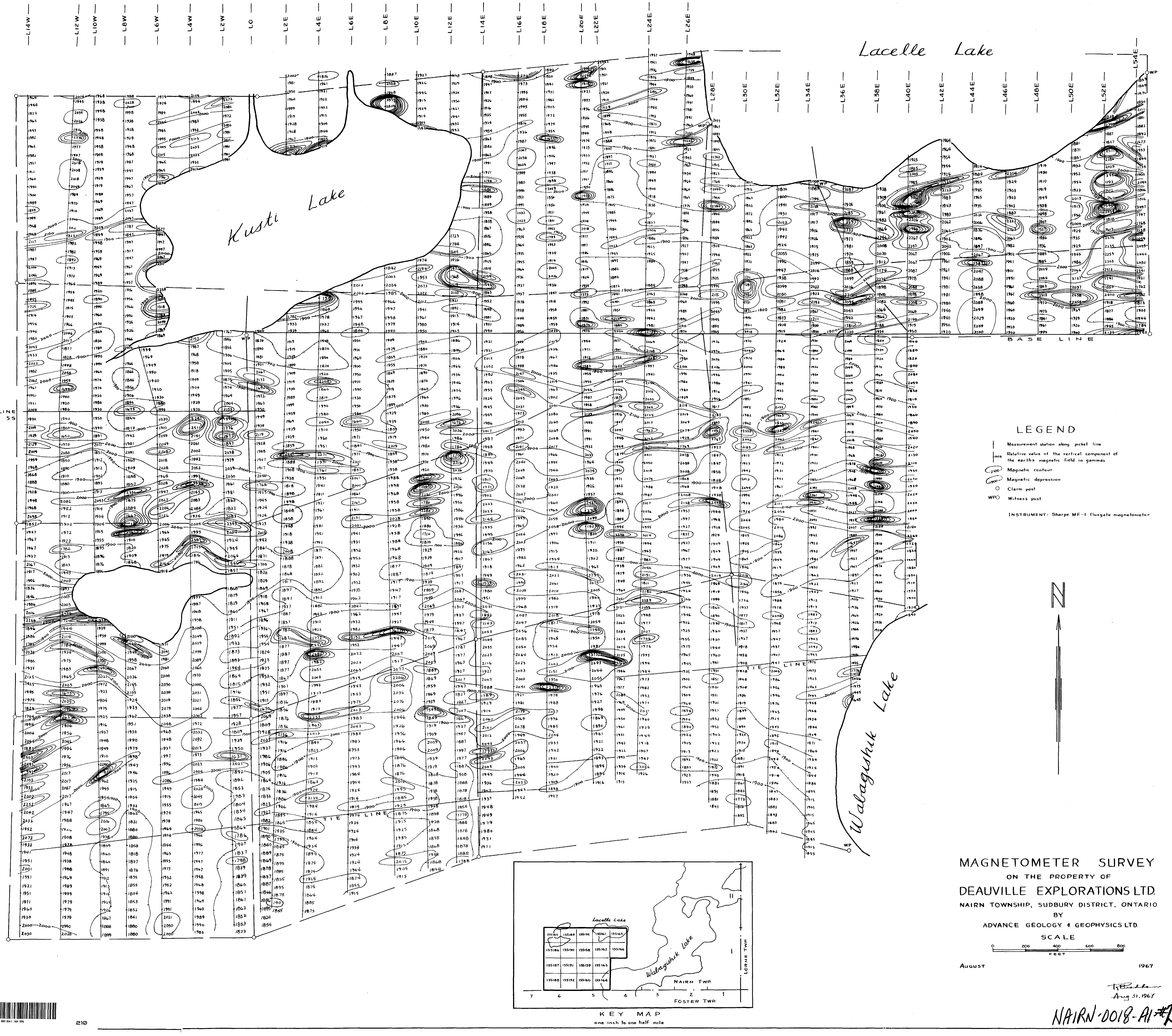
#3

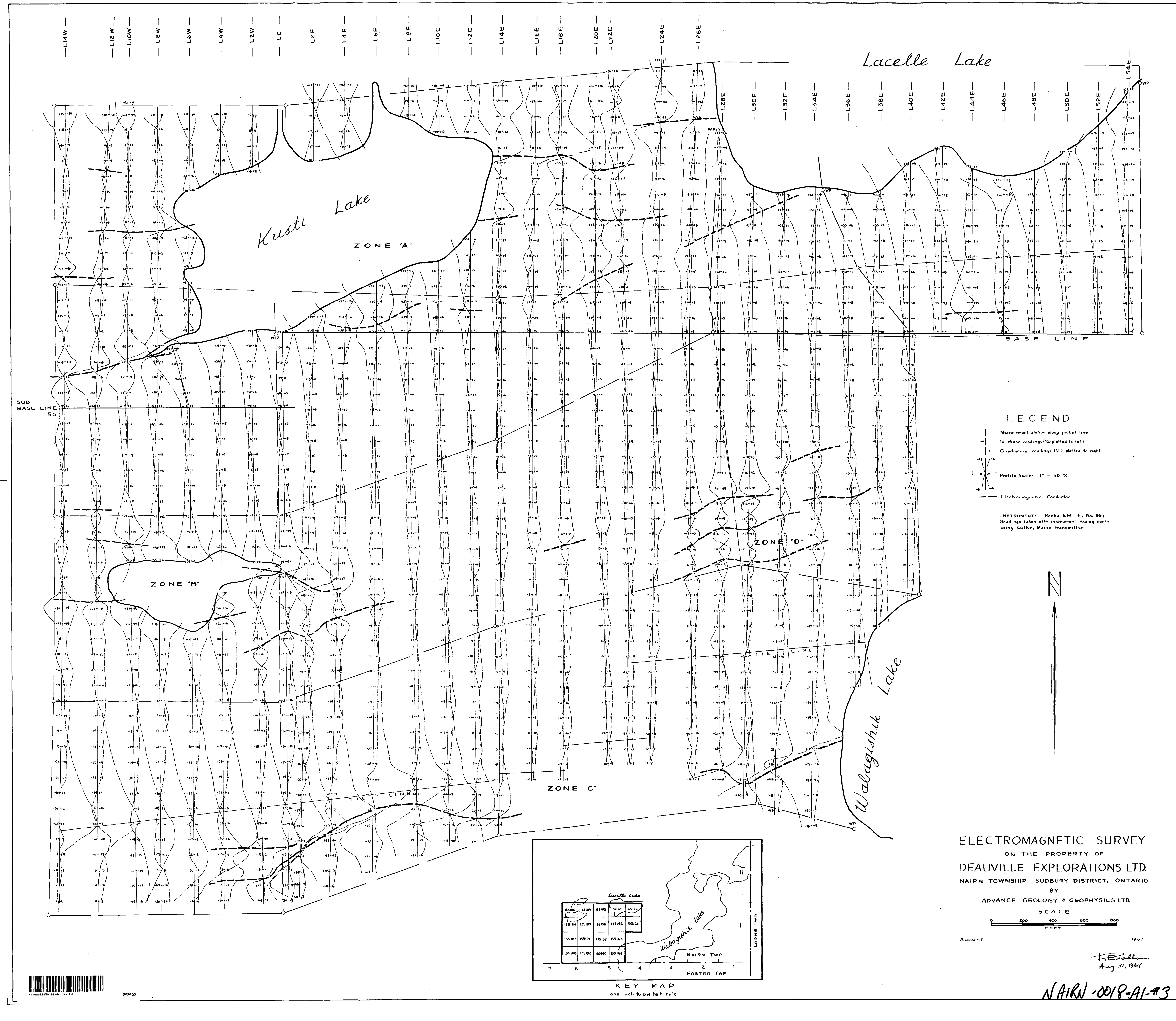
LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)





RADIOMETRIC SURVEY
ON THE PROPERTY OF
DEAUVILLE EXPLORATIONS LTD.
NAIRN TOWNSHIP, SUDBURY DISTRICT, ONTARIO
BY
ADVANCE GEOLOGY & GEOPHYSICS LTD.
SCALE
0 200 400 600 800
FEET
AUGUST 1967
Aug. 31, 1967
NAIRN-0018-A1-#1
LEGEND
Measurement station along picket line
Counts per second of U-Th gammas i.e. Threshold control at 300 & time constant at 2 sec.
Radiometric Anomaly
CPSu Counts per second - uranium
CPSth Counts per second - thorium
Claim post
WP Witness post
INSTRUMENT: Sharpe GIS-2 gamma ray integrating spectrometer; Serial No. 706110
N
Lacelle Lake
Kusti Lake
Wabagishik Lake
Subgreywacke
fault
Feldspathic quartzite
Espanola Fault
BASE LINE
TIE LINE
SUB BASE LINE 55
rusty quartzite
PYRITE ZONE
DDH 67-1
DDH 67-2
DDH 67-3
DDH 67-4
L14W
L12W
L10W
L8W
L6W
L4W
L2W
L0
L2E
L4E
L6E
L8E
L10E
L12E
L14E
L16E
L18E
L20E
L22E
L24E
L26E
L28E
L30E
L32E
L34E
L36E
L38E
L40E
L42E
L44E
L46E
L48E
L50E
L52E
L54E
DETAIL SURVEY
1" = 20'
TRENCHING
1" to 10'
TRENCH #1
TRENCH #2
KEY MAP
one inch to one half mile
Lacelle Lake
Wabagishik Lake
NAIRN TWP.
FOSTER TWP.
LORNE TWP.


MAGNETOMETER SURVEY
ON THE PROPERTY OF
DEAUVILLE EXPLORATIONS LTD.
NAIRN TOWNSHIP, SUDBURY DISTRICT, ONTARIO
BY
ADVANCE GEOLOGY & GEOPHYSICS LTD.
SCALE
0 200 400 600 800
FEET
AUGUST 1967
Aug 31, 1967
NAIRN-0018-A1 #2
LEGEND
Measurement station along picket line
Relative value of the vertical component of the earth's magnetic field in gammas
Magnetic contour
Magnetic depression
Claim post
Witness post
INSTRUMENT: Sharpe MF-1 fluxgate magnetometer
KEY MAP
one inch to one half mile
Lacelle Lake
Wabagishik Lake
NAIRN TWP.
FOSTER TWP.
LORNE TWP.
Lacelle Lake
Kusti Lake
Wabagishik Lake
BASE LINE
SUB BASE LINE 5S
TIE LINE
210


ELECTROMAGNETIC SURVEY
ON THE PROPERTY OF
DEAUVILLE EXPLORATIONS LTD.
NAIRN TOWNSHIP, SUDBURY DISTRICT, ONTARIO
BY
ADVANCE GEOLOGY & GEOPHYSICS LTD.
SCALE
0 200 400 600 800
FEET
AUGUST 1967
Aug 31, 1967
NAIRN-0018-A1-#3
LEGEND
Measurement station along picket line
In phase readings (%) plotted to left
Quadrature readings (%) plotted to right
Profile Scale: 1" = 50 %
Electromagnetic Conductor
INSTRUMENT: Ronka EM 16, No. 36; Readings taken with instrument facing north using Cutler, Maine transmitter
N
Lacelle Lake
Kusti Lake
Walagishik Lake
ZONE "A"
ZONE "B"
ZONE "C"
ZONE "D"
BASE LINE
SUB BASE LINE 55
TIE LINE
WP
L14W
L12W
L10W
L8W
L6W
L4W
L2W
L0
L2E
L4E
L6E
L8E
L10E
L12E
L14E
L16E
L18E
L20E
L22E
L24E
L26E
L28E
L30E
L32E
L34E
L36E
L38E
L40E
L42E
L44E
L46E
L48E
L50E
L52E
L54E
KEY MAP
one inch to one half mile
Lacelle Lake
Walagishik Lake
NAIRN TWP.
FOSTER TWP.
LORNE TWP.
135183 135189 135193 135161 135165
135186 135190 135158 135162 135166
135187 135191 135159 135163
135188 135192 135160 135164
7 6 5 4 3 2 1
II I
220