



42A09SW0074 2.6553 BEATTY

010

GEOMAGNETIC  
and  
ELECTROMAGNETIC (VLF) SURVEYS  
on the  
LALONDE CLAIMS  
Beatty Township

Timmins, Ontario  
March 19, 1984

J. E. Mountjoy

**RECEIVED**

MAR 27 1984

MINING LANDS SECTION



42A09SW0074 2.6553 BEATTY

010C

TABLE OF CONTENTS

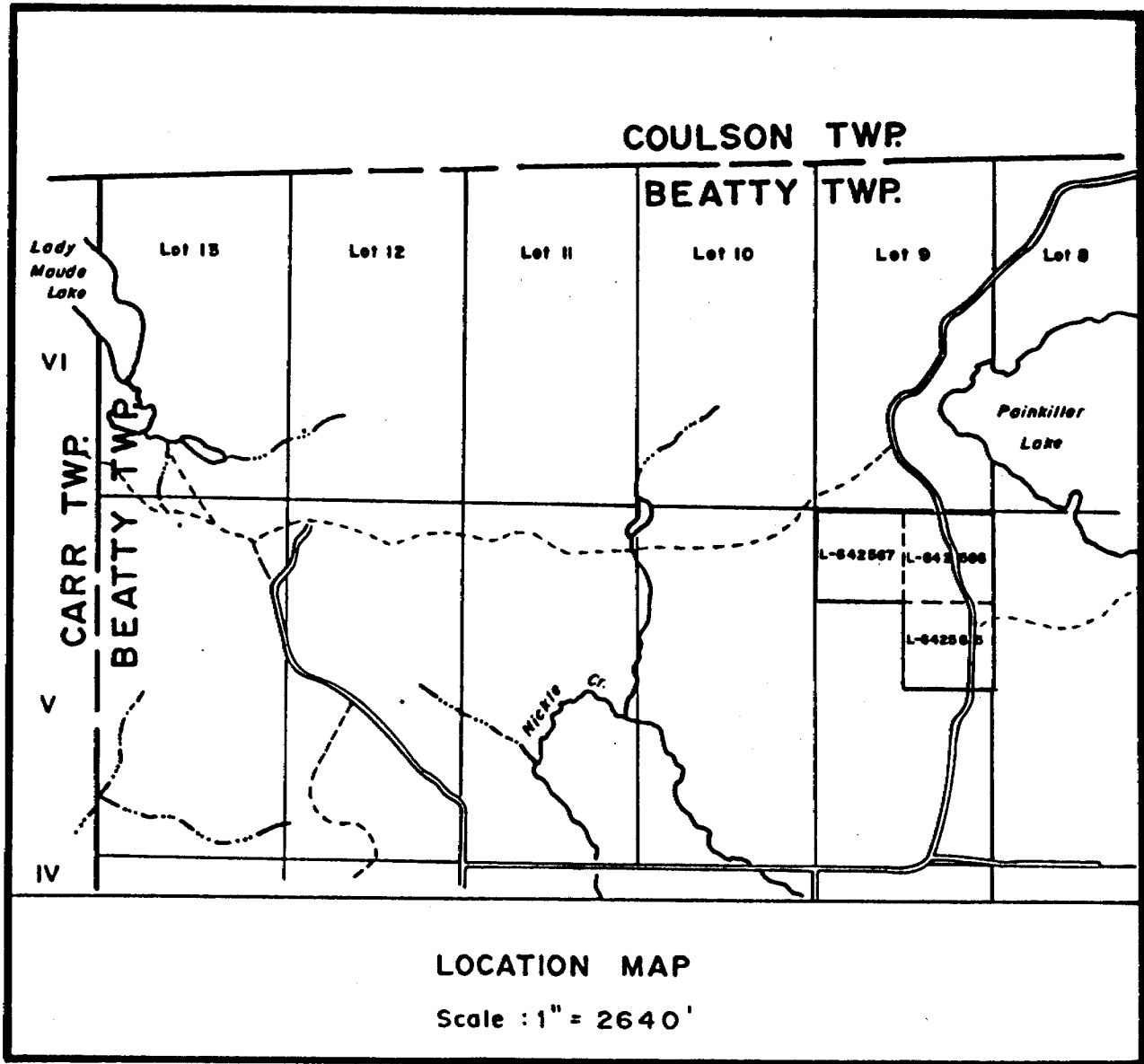
	Page
LOCATION MAP . . . . .	
INTRODUCTION . . . . .	1
PREVIOUS WORK. . . . .	1
GENERAL GEOLOGY. . . . .	3
SURVEY METHODS	
(a) Linecutting . . . . .	3
(b) V.L.F. Survey . . . . .	3
(c) Magnetic Survey . . . . .	5
MAGNETIC SURVEY RESULTS. . . . .	5
V.L.F. SURVEY RESULTS. . . . .	6
CONCLUSIONS/RECOMMENDATIONS. . . . .	8
SELECTED BIBLIOGRAPHY. . . . .	10

FIGURES

Figure 1 - Stratigraphy and Structural Geology of the Timmins-Kirkland Lake Area..	4
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MAPS

- Magnetic Survey - D.Lalonde Property,  
Beatty Twp., Scale 1:2400 or 1"=200'... (in pocket)
- V.L.F. Survey - D.Lalonde Property,  
Beatty Twp., Scale 1:2400 or 1"=200'... (in pocket)



## INTRODUCTION

During the period from November 15, 1983 to November 30, 1983, ground magnetic and electromagnetic surveys were carried out over the three claims which make up the Lalonde Property. The three claims, listed in the accompanying technical data statement, are located in the north half of concession V, lot 9, Beatty Township, District of Cochrane, Province of Ontario.

The claims are located roughly six miles northeast of Matheson, Ontario. Access to the property is provided by the Painkiller Lake gravel road which crosses claims L.642565 and L.642566 (see location map).

Topographic relief within the claim group is minimal ( $\leq 50'$ ) with the higher ground being resultant of outcrop exposure in the western portion of the claim group and an esker in the extreme eastern portion. Separating these high areas is an alder swamp. The vegetation within the claim group consists predominantly of spruce and jackpine with lesser poplar and alders.

During the fall of 1983 a small amount of jackpine was harvested from claim L.642566.

## PREVIOUS WORK

A fair amount of exploration, primarily for gold, has been undertaken in the area. Consequently, four claim groups in the vicinity have seen at least limited development work.

Roughly 1.1 miles north-northeast of the northeast corner of the Lalonde property is the ground formerly held by Devon Gold Mines Ltd. Between August 1, 1940 and October 19, 1940,

Devon Gold Mines Ltd. produced 42 ounces of gold and five ounces of silver from 2,333 tons of ore. Roughly half of the ore came from surface dumps while the other half came from the south or No. 2 shaft which is situated in lot 7 just south of the Beatty/Coulson township line. The ore was processed on site, utilizing the company's 100 tpd capacity mill.

Roughly one-half mile east of the Lalonde property is the shaft of the Blue Quartz Mine. Between 1923 and 1934 inclusive, a total of 81 ounces of gold and 33 ounces of silver were produced (Satterly, 1947).

The third claim group to have been developed somewhat in the past was the Argyll Gold Mines Ltd. property. A 200' shaft was sunk roughly one mile west of the claims now held by D. Lalonde. Along with the shaft sinking, lateral development work totalling roughly 470' on the 100' and 200' levels was carried out. In 1918, 25 tons of ore were milled on site, yielding 30.23 ounces of gold (Satterly, 1947). Maude Lake Gold Mine Ltd. is presently developing the property (Trowell, 1983).

Immediately north of the Lalonde property is the former Lucky Ben Gold Mines Ltd. property which is said to contain two main gold-bearing veins (Satterly, 1947). The number one vein has been explored by means of a 32' deep shaft while the number two vein was opened up by a number of pits and trenches. While auriferous veins with tellurides and pyrrhotite were noted (Satterly, 1947), no known gold production resulted.

Only a limited amount of reported exploration has been carried out on the ground presently covered by the Lalonde claims. In the mid-1950s, Ornum Copper Mines Ltd. drilled three short ( $\approx 30'$  each) holes on what is now claim L.642565. The holes intersected dense andesitic lava cut by an unspecified amount of quartz veining containing epidote and some pyrite.

The only work previously filed for assessment credits by Mr. Lalonde has been a variety of manual labour which was carried out on claim L.642567. It is worthy of note, however, that numerous pits were mapped on the property (Satterly, 1947).

## GENERAL GEOLOGY

The Lalonde property is believed to be underlain by tholeiitic flows which may make up a portion of Jensen's Stoughton Roquemaure Group.

According to the mapping carried out by Satterly and Armstrong, the bulk of the claim group is underlain by pillowed to fragmental flows. The flows are cut by feldspar porphyry dykes and lamprophyre dykes. These dykes are subsequently cut by late stage quartz diabase dykes.

The youngest rock type believed to underlie the claim group is a northeast trending olivene diabase dyke.

Structurally the rocks strike east to east-southeast, with very steep to vertical dips and tops to the north.

## SURVEY METHODS

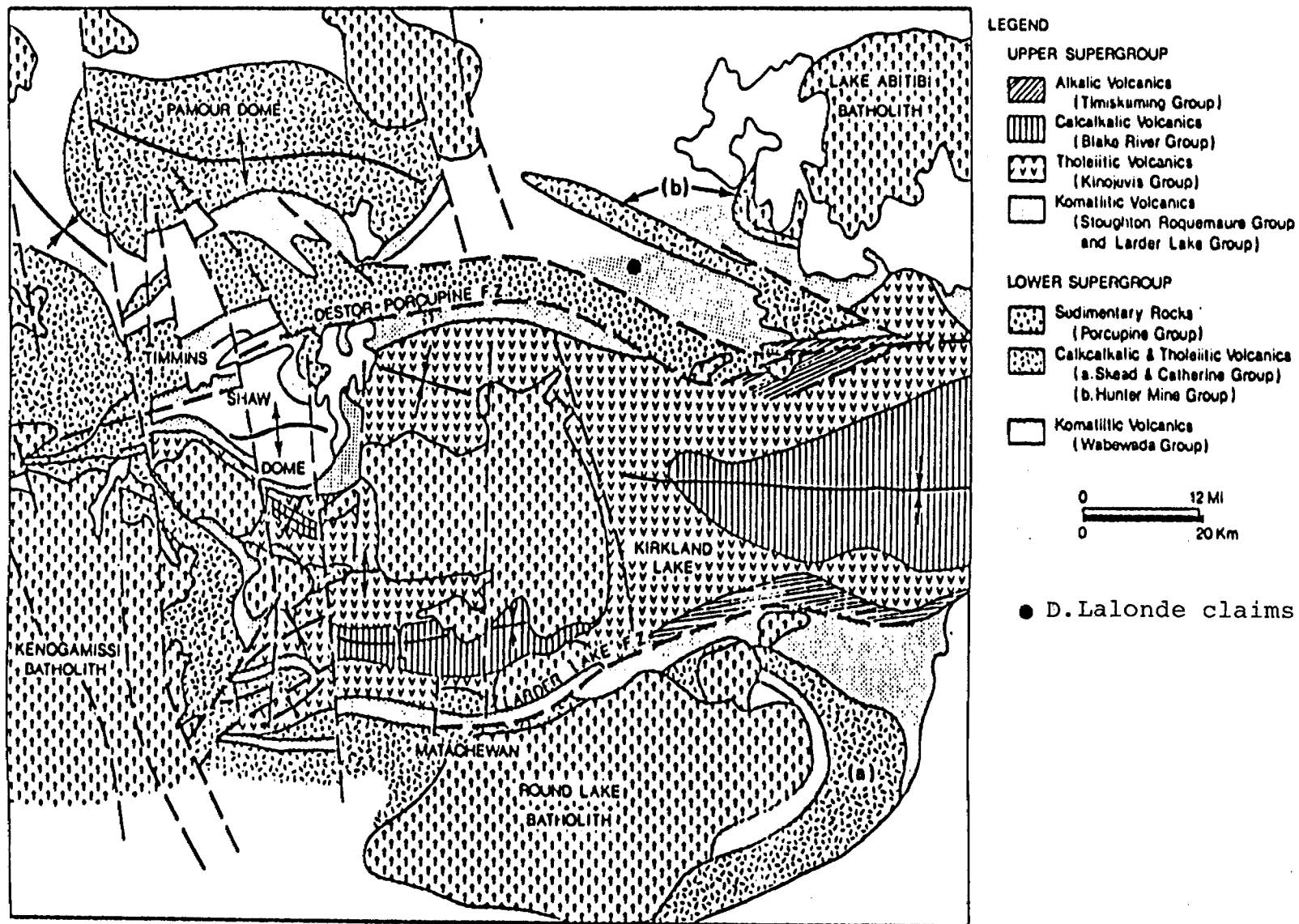
### (a) Linecutting

The 0+00 Base Line was established along the north claim line of claims L.642566 and L.642567, bearing 90° azimuth. Perpendicular cross lines were then established at 400' intervals in the extreme eastern portion of claims L.642565 and L.642566, then at 300' intervals across the remainder of the claim group. Beginning with cross line 00, which was established 120' east of the #1 post of claim L.642567, the lines are numbered 3E, 7E, 11E, 3W, 6W, 9W and 12W. Stations were subsequently established at 100' intervals along both the base line and cross lines.

### (b) V.L.F. Survey

The V.L.F. survey was carried out using a Geonics EM-16 electromagnetic receiver. Transmitting station NAA, situated near Cutler Maine, was used; therefore, the primary field direction was 98° ast.

Figure 1



—Stratigraphy and structural geology of the Timmins-Kirkland Lake area.

(c) Magnetic Survey

The magnetic survey was carried out utilizing a Scintrex, MF-1, fluxgate magnetometer. Readings were taken at no greater than 100' intervals across the entire property.

MAGNETIC SURVEY RESULTS

Results of the survey are plotted and contoured on the accompanying map entitled MAGNETIC SURVEY, D.Lalonde Property, Beatty Township. The scale used was 1:2400 (1 inch equals 200 feet). The magnetic relief varies from -2000 gammas to +1800 gammas.

As a result of the magnetic survey, fourteen magnetic anomalies have been outlined. For ease of description, the anomalies have been numbered "1" through "14" inclusive on the accompanying map.

Anomaly "1", which is located in the extreme southeast corner of the claim group, is interpreted to be caused by a large northeast trending olivine diabase dyke believed to be of Keweenawan Age.

Anomalies "2" through "6" inclusive are interpreted to be caused by quartz diabase dykes of Matachewan Age. It would appear that anomalies "2", "4", and "6" are representative of one dyke while anomalies "3" and "5" represent a second dyke or an arm of the aforementioned one. While the author is reasonably confident with this interpretation, anomaly "5" and in particular anomaly "6" should be checked as they appear to be situated on or very near outcrop exposures.

The cause of anomaly "7" is at this time unclear as two interpretations are possible. Anomaly "7" may be interpreted as being the result of a lamprophyre dyke mapped by Satterly and Armstrong, or anomalies "7" and "8" are representative of still another quartz diabase dyke trending subparallel to the afore-



mentioned ones.

As is the case with anomaly "7", anomaly "8" may be interpreted in more than one way. Based on the fact that pyrrhotite is associated with auriferous quartz veining on the Lucky Ben and Amalgamated Gold Fields (Blue Quartz Mine) properties (Satterly, 1947), anomalies "8", "9", "10" and possibly even "5" may represent local concentrations of pyrrhotite. Aside from anomaly "5", which is located in an area of overburden cover, anomalies "8" through "10" inclusive appear to plot very near old pits mapped by J. Satterly.

Anomaly "11" may also be indicative of pyrrhotite; however, this is purely speculative as the anomaly plots on outcrop essentially devoid of old pits. Anomaly "12", while it is located on the same outcrop, appears to directly correspond to a lamprophyre dyke mapped by Satterly and Armstrong. The fact that the anomaly is of very high susceptibility (+1800 gammas) would suggest that the instrument was probably close to the dyke when the reading was taken.

Anomaly "13", which exhibits a very low magnetic susceptibility (-2000 gammas), is felt to be too far away from anomaly "12" to be due to a dipole effect and may either be caused by contamination such as scrap metal or instrument error. Essentially, however, the cause of the anomaly is simply unknown at the present time.

Anomaly "14", while it may be caused by a quartz diabase dyke, is similarly of unknown origin.

#### V.L.F. SURVEY RESULTS

The results of the V.L.F. survey are plotted and profiled on the accompanying plan entitled V.L.F. SURVEY, D. Lalonde Property, Beatty Township. The ground scale used was 1:2400 or 1 inch to 200 feet, while the profile scale used was 1" = 20%.

As a result of the V.L.F. survey, a total of nine conductive zones were detected. The nine conductors are lettered "A" through "I" on the accompanying plan.

Anomaly "A" appears to have the best continuity as crossovers were encountered on four consecutive cross lines representing a distance of roughly 900'. At the east end of the conductor the in-phase component is very strong with a maximum reading of +40% and a minimum in-phase measurement of -31%; however, the separation between these maximums is quite large at 700'. Both the separation of the maximum readings and intensity of the in-phase component decrease to the west until on cross line 6W the in-phase component varies from +4% to -4% over a distance of 100'. This conductor, as is the case with most of the other anomalies encountered, is typified by the fact that the quadrature component effectively emulates the in-phase component. Based on the aforementioned features, anomaly "A" is interpreted to be a result topography rather than bedrock features.

Anomaly "B", which was encountered on cross line 9W at 1200' south, exhibits a relatively large in-phase shift over a short interval distance. The quadrature component, however, remains relatively constant, unlike anomaly "A". These factors, along with the direct correlation with magnetic anomaly "11", has led to the interpretation that this anomaly has a bedrock source, possibly related to a local concentration of pyrrhotite.

Anomaly "C" is a short 2-line anomaly with sharp in-phase crossovers which recover very quickly. The quadrature component is very low (circa -20%) and weakly mirrors the in-phase component. This anomaly is best interpreted as being due to a steep contact between outcrop and overburden which commonly results in anomalies.

Anomaly "D" is very similar to "C"; however, the crossover on XL 9W plots very close to a pit previously mapped by Satterly and Armstrong. This fact alone makes this anomaly somewhat more interesting. Regardless, it is the author's

interpretation at this time that the anomaly is caused by the overburden/outcrop interface effect as was the case for anomaly "C".

Anomaly "E" is a one-line response on XL 12W circa 800'S. As both the in-phase and quadrature profiles are geometrically similar to each other as was the case for anomalies "C" and "D", the interpreted cause of anomaly "E" is the same.

Anomaly "F" is situated in the extreme southeast corner of the claim group. This anomaly directly coincides with magnetic anomaly #1 which has been interpreted as an olivene diabase dyke. The exact cause of the electromagnetic anomaly, however, is not clear.

Anomalies "G", "H" and "I" are one-line responses in an area believed to be devoid of outcrop exposure. Once again, however, the fact that the quadrature responses closely mirror that of the in-phase responses suggests that the anomalies are due to topography rather than bedrock sources.

#### CONCLUSIONS/RECOMMENDATIONS

In conclusion, while by themselves the geophysical surveys have done little to enhance the geological knowledge of the claim group, they have served to provide a number of targets for further exploration.

The magnetic survey has defined a number of anomalies which require further evaluation. Given the large percentage of outcrop exposure, anomalies "4" through "13" inclusive may easily be checked by outcrop examination. While doing this, one should keep in mind the possible pyrrhotite/gold association found in the area. To this end, anomalies "5", "8" and "9" should be examined to see if they represent an east-southeast trending system. From the magnetic survey, anomalies "5" and

"8" appear to be separated. If it is learned that the separation is due to a northeast trending shear, this would be significant as much of the ore grade material in the area is structurally controlled by transverse shears (Satterly, 1947).

The V.L.F. survey has also produced a number of exploration targets. While almost all of the conductors appear to be due to topographic features, coincidences such as conductors plotting close to pits previously mapped by Satterly indicate that the conductors require further examination.

In conclusion, the author recommends that a geological survey be carried out with particular attention being paid to the anomalies outlined by these surveys. In addition, three east/west crosslines should be checked with follow-up ground magnetic traverses in order to better define the quartz diabase dykes. The cross lines should be established at 300'S, 900'S and 1320'S.

Respectfully submitted,



J. E. Mountjoy.

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Ferguson, S.A., Croen, H.A. and Haynes, R.

- 1971: Gold Deposits of Ontario, Part 1, Districts of Algoma, Cochrane, Kenora, Rainy River, and Thunder Bay; Mineral Resources Circular No. 13, pp 45-48 incl.

Jensen, L.S.

- 1979: Larder Lake Synoptic Mapping Project, Districts of Cochrane and Timiskaming; p.64-69 in Summary of Field Work, 1980, by the Ontario Geological Survey, Edited by V.G. Milne, O.L. White, R.B. Barlow and C.R. Kustra, Ontario Geological Survey, Miscellaneous Paper 90, 245 p.

- 1980: Archean Gold Mineralization in the Kirkland Lake-Larder Lake Area; p. 280-302 in Genesis of Archean Volcanic-Hosted Gold Deposits, Eleven Papers Submitted to a Symposium Held at the University of Waterloo, March 7, 1980, Edited by R.G. Roberts, Ontario Geological Survey, Open File Report 5293, 387 p. Accompanied by 123 Diagrams, 58 Photos (xerox copies), and 45 maps.

Lovell, H.L., Frey, E.D. and de Grijs, Jan

- 1973: Beatty Township, District of Cochrane; Ontario Div. Mines, Prelim. Map P.864 Kirkland Lake Data Series, scale 1 inch to  $\frac{1}{4}$  mile. Data compiled 1972, 1973.

Satterly, J., Armstrong, H.S.

- 1947: Geology of Beatty Township; Annual Report, Ontario Dept. of Mines, Volume 56, pt. 7, 34 p. Accompanied by Map No. 1947-2, scale 1 inch to 1000 feet.

Trowell, N.F., Johnstone, R.

- 1983: Black River-Matheson Area, District of Cochrane, p. 59-62 in Summary of Field Work, 1983, by the Ontario Geological Survey, Edited by John Wood, Owen L. White, R.B. Barlow, and A.C. Colvine, Ontario Geological Survey, Miscellaneous Paper 116, 313p.

.....Assessment files, Resident Geologist's Office, Kirkland Lake.





Ministry of Natural Resources

File \_\_\_\_\_

GEOPHYSICAL - GEOLOGICAL - GEOCHEMICAL  
TECHNICAL DATA STATEMENT

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) Geophysical - Magnetic and V.L.F.  
Township or Area Beatty Township  
Claim Holder(s) Douglas Lalonde  
Box 283, Matheson, Ontario  
Survey Company Douglas Lalonde  
Author of Report J. E. Mountjoy  
Address of Author Box 320, Timmins, Ont. P4N 7E2  
Covering Dates of Survey Nov. 15 - Nov. 30, 1983  
(linecutting to office)  
Total Miles of Line Cut 5.63 kms (3.5 miles)

MINING CLAIMS TRAVERSED  
List numerically

(prefix)	(number)
L	- 642565
L	- 642566
L	- 642567

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: Mar. 19, 1984 SIGNATURE: J. E. Mountjoy  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications 2.3975

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 3

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 226 (Mag.) 186 (VLF) Number of Readings 234 (Mag.) 186 (VLF)
Station interval less than or equal to 100' Line spacing 300' and 400'
Profile scale 1" = 20%
Contour interval 100 gammas

MAGNETIC

Instrument Scintrex MF-1 Fluxgate Magnetometer
Accuracy - Scale constant +/- 20 gammas
Diurnal correction method Base Line with Base Stations vs Time.
Base Station check-in interval (hours) 1-3 hours
Base Station location and value 0+00BL/00 380 gammas

ELECTROMAGNETIC

Instrument Geonics EM-16
Coil configuration vertical and horizontal receiving coils
Coil separation Infinity - fixed transmitter
Accuracy +/- 1%
Method: [X] Fixed transmitter [ ] Shoot back [ ] In line [ ] Parallel line
Frequency 17.8 KHz Station NAA Cutler, Maine.
Parameters measured In-phase, Quadrature.

GRAVITY

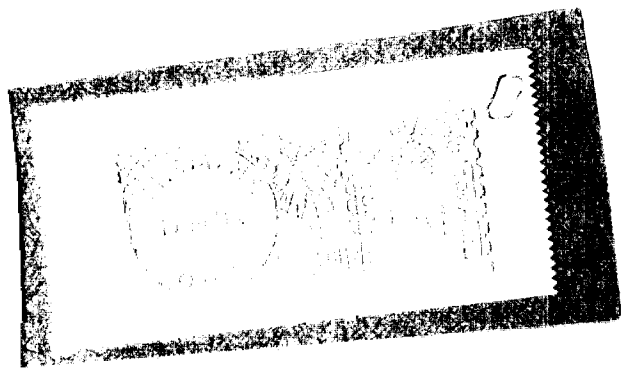
Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [ ] Time Domain [ ] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode







1984 03 30

Our File: 2.6553

Mr. George J. Koleszar  
Mining Recorder  
Ministry of Natural Resources  
4 Government Road East  
P.O. Box 984  
Kirkland Lake, Ontario  
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims L 642565 et al in the Township of Beatty.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

W.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-6918

A. Barr:mc

cc: Douglas Lalonde cc  
Box 283  
Matheson, Ontario  
P0K 1N0

cc: John E. Mountjoy  
Box 320  
Timmins, Ontario  
P4N 7E2

<b>RECEIVED</b>	
Land Management Branch	
CIRCULATE	<input type="checkbox"/>
COMMENTS PLEASE	<input type="checkbox"/>
BY	
MAR 27 1984	
S. E. YUNDT	
J. R. MORTON	
J. C. SMITH	
W. L. GOOD	
RETURN TO R. 6643	

P. O. Box 320,  
 Timmins, Ontario.  
 P4N 7E2  
 March 21, 1984.

Mr. E.F. Anderson,  
 Director, Lands Administration Branch,  
 Ministry of Natural Resources,  
 Whitney Block, Room 6450,  
 Queen's Park,  
 TORONTO, Ontario.  
 M7A 1W3

Dear Mr. Anderson:

Re: 3 Claims - Beatty Township,  
L.642565, L.642566, L.642567

Enclosed you will find duplicate copies of a report of a Geomagnetic and Electromagnetic (V.L.F.) Survey, together with a copy of the Report of Work which was filed with the Mining Recorder in Kirkland Lake for the Larder Lake Mining Division. This report covers the Lalonde Claims in Beatty Township.

Sincerely,



John E. Mountjoy.

**RECEIVED**

MAR 27 1984

MINING LANDS SECTION

2.3975

Encls.

Mining Lands Section

File No 2.6553

Control Sheet

TYPE OF SURVEY     GEOPHYSICAL  
                           GEOLOGICAL  
                           GEOCHEMICAL  
                           EXPENDITURE

MINING LANDS COMMENTS:

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LD

*Doug*

Signature of Assessor

26/06/84

Date



Mining Lands Comments


To: Geophysics

Comments			
<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature

To: Geology - Expenditures

Comments			
<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature

To: Geochemistry

Comments			
<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature

To: Mining Lands Section, Room 6462, Whitney Block. (Tel: 5-1380)

033333:

Approved Reports of Work  
sent out

Notice of Intent filed

Approval after Notice of Intent  
sent out

Duplicate sent to Resident  
Geologist

Duplicate sent to A.F.R.O.

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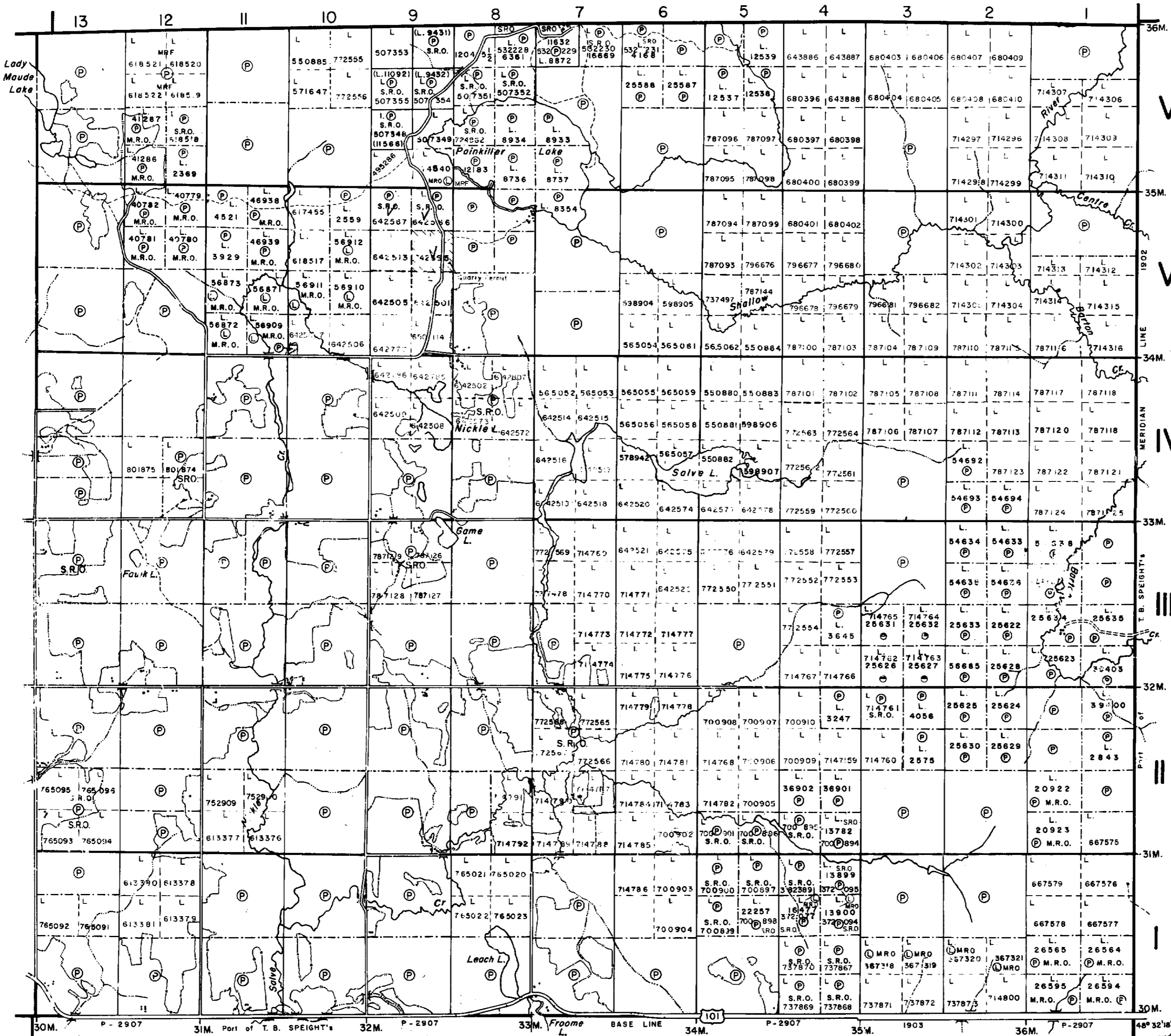
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Coulson Twp. (M.340)

Carr Twp. (M.335)

Munro Twp. (M.376)



Hislop Twp. (M.355)

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

LEGEND

- PATENTED LAND
- PATENTED FOR SURFACE RIGHTS ONLY
- LEASE
- COVENANT OF OCCUPATION
- CROWN LAND SALE
- LOCATED LAND
- CANCELLED
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- HIGHWAY & ROUTE No.
- ROADS
- TRAILS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKEG
- MINES

\*used only with summer resort locations or when space is limited

TOWNSHIP OF  
**BEATTY**  
 DISTRICT OF  
 COCHRANE  
 LARDER LAKE  
 MINING DIVISION

SCALE: 1 INCH = 40 CHAINS (1/2 MILE)

DR. K.K.  
 DATE Oct./71  
 PLAN No. **M.324**

ONTARIO  
 MINISTRY OF NATURAL RESOURCES  
 SURVEYS AND MAPPING BRANCH

DATE OF ISSUE  
 JUN 20 1991  
 Ministry of Natural Resources  
 TORONTO



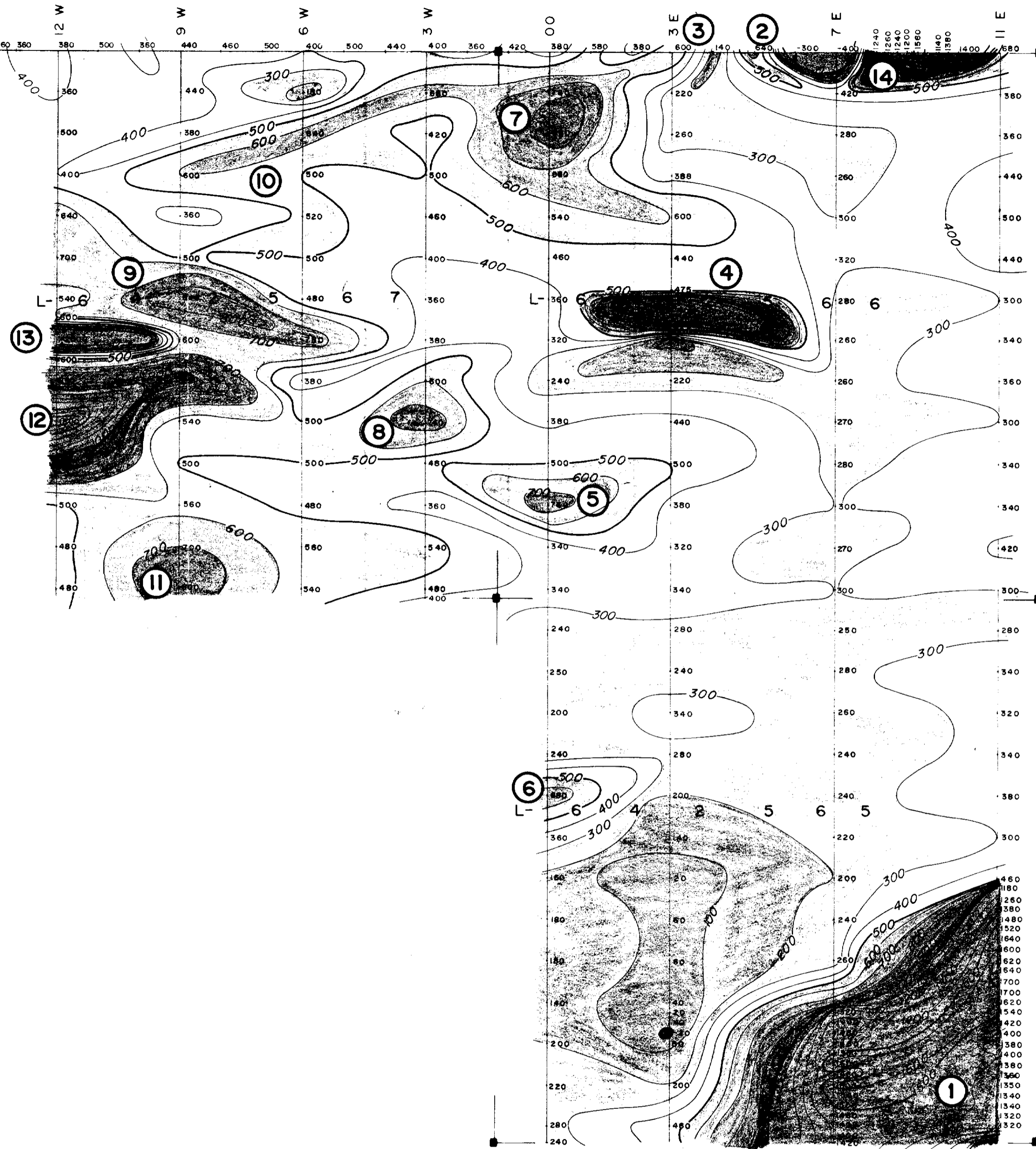


Lot 10 Lot 9

Lot 9 Lot 8

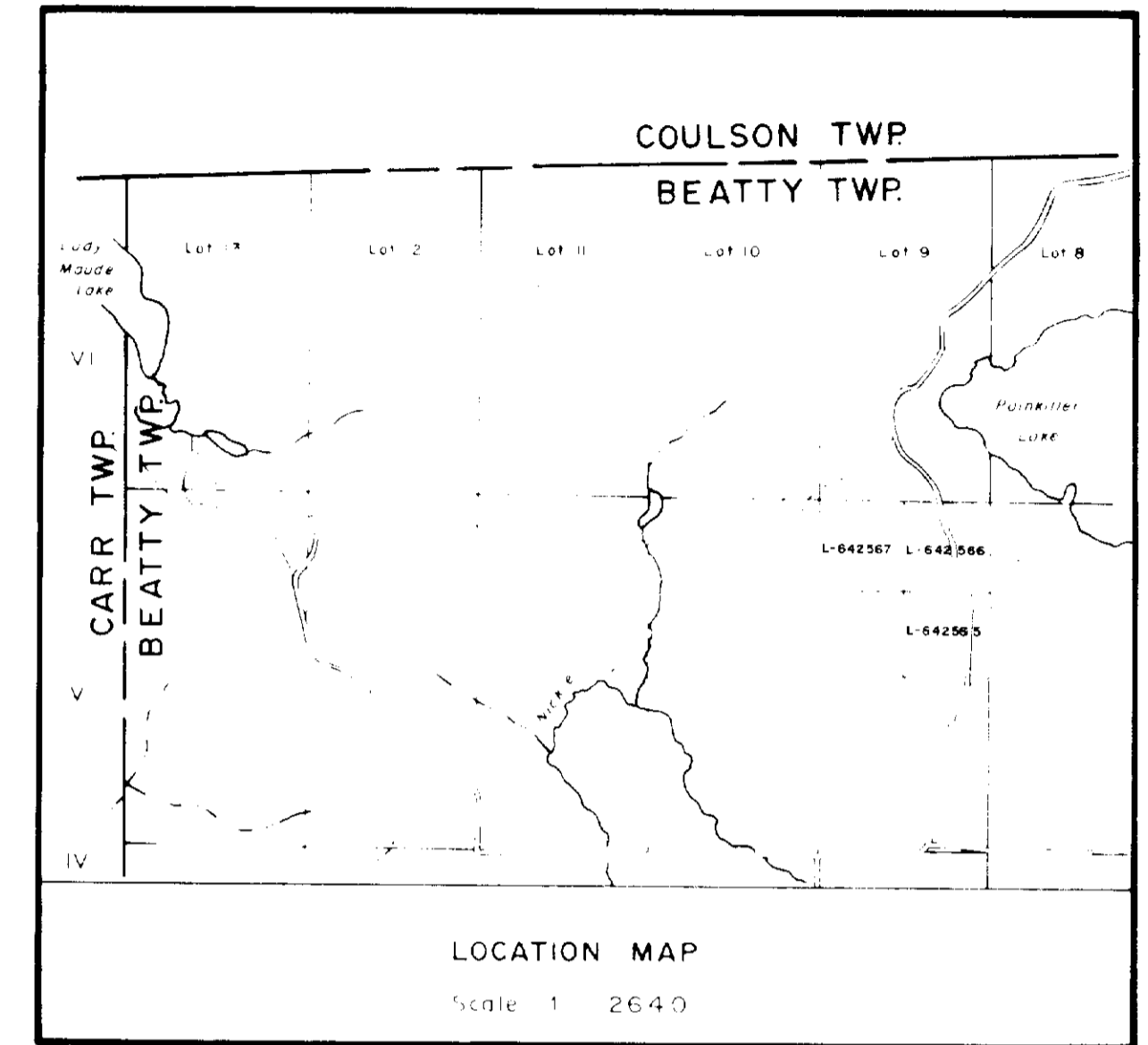
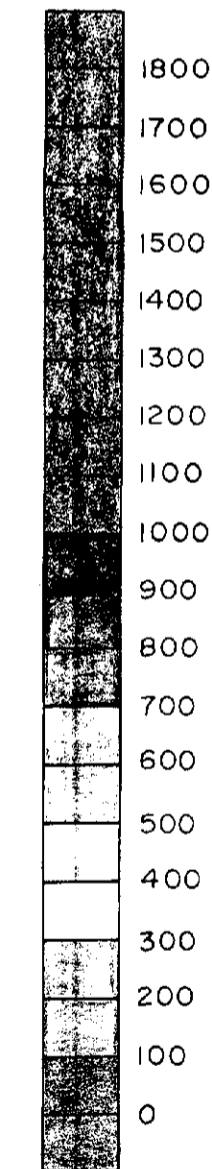
0+00 Base Line

CON. VI  
CON. V



**LEGEND**

CONTOUR INTERVALS :  
(in gammas)



**D. Lalonde Property  
MAGNETIC SURVEY  
BEATTY TWP.**

SCALE: 1 inch to 200 feet  
(1:2400)

*J. E. [Signature]* 2/20/13

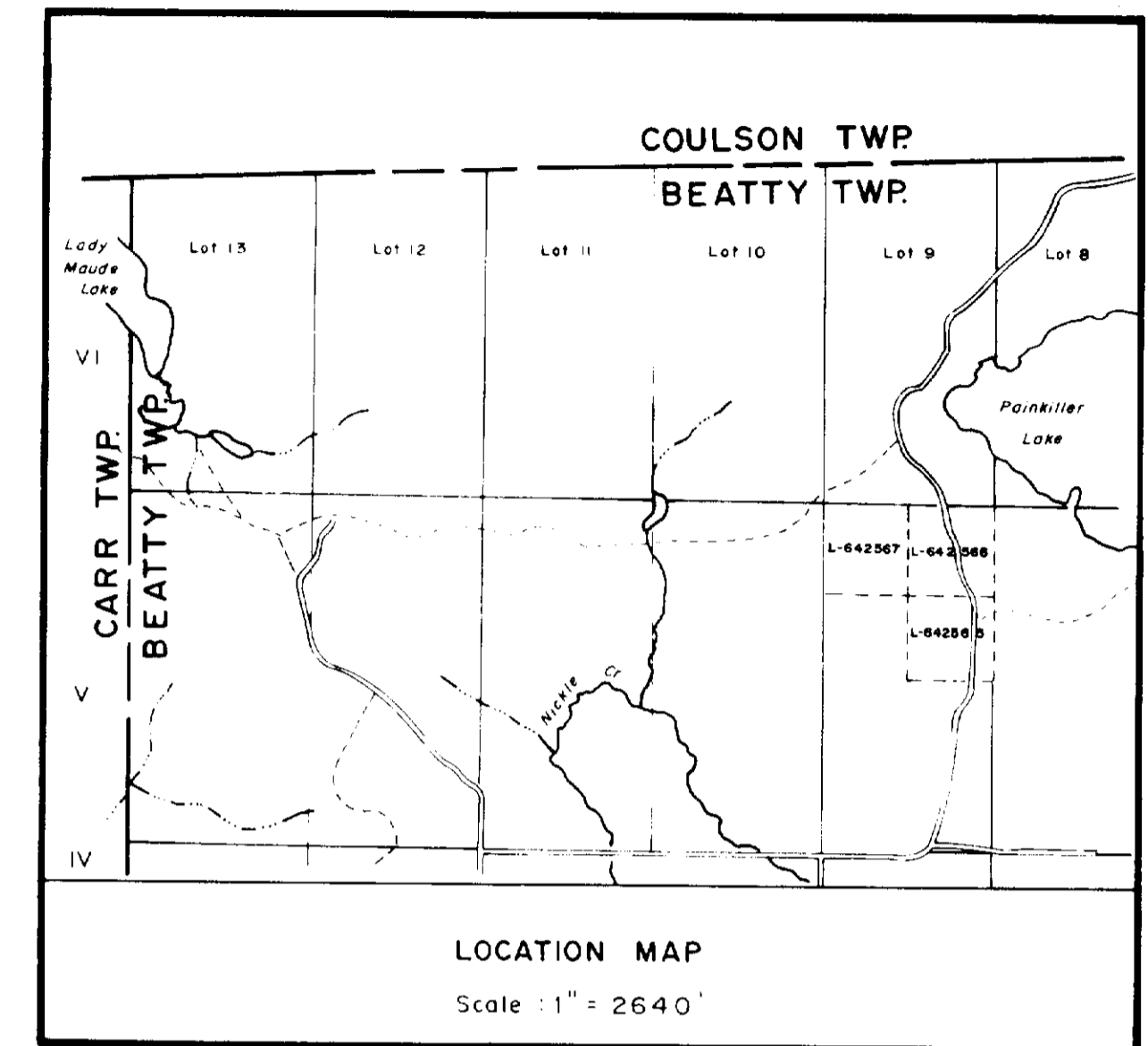
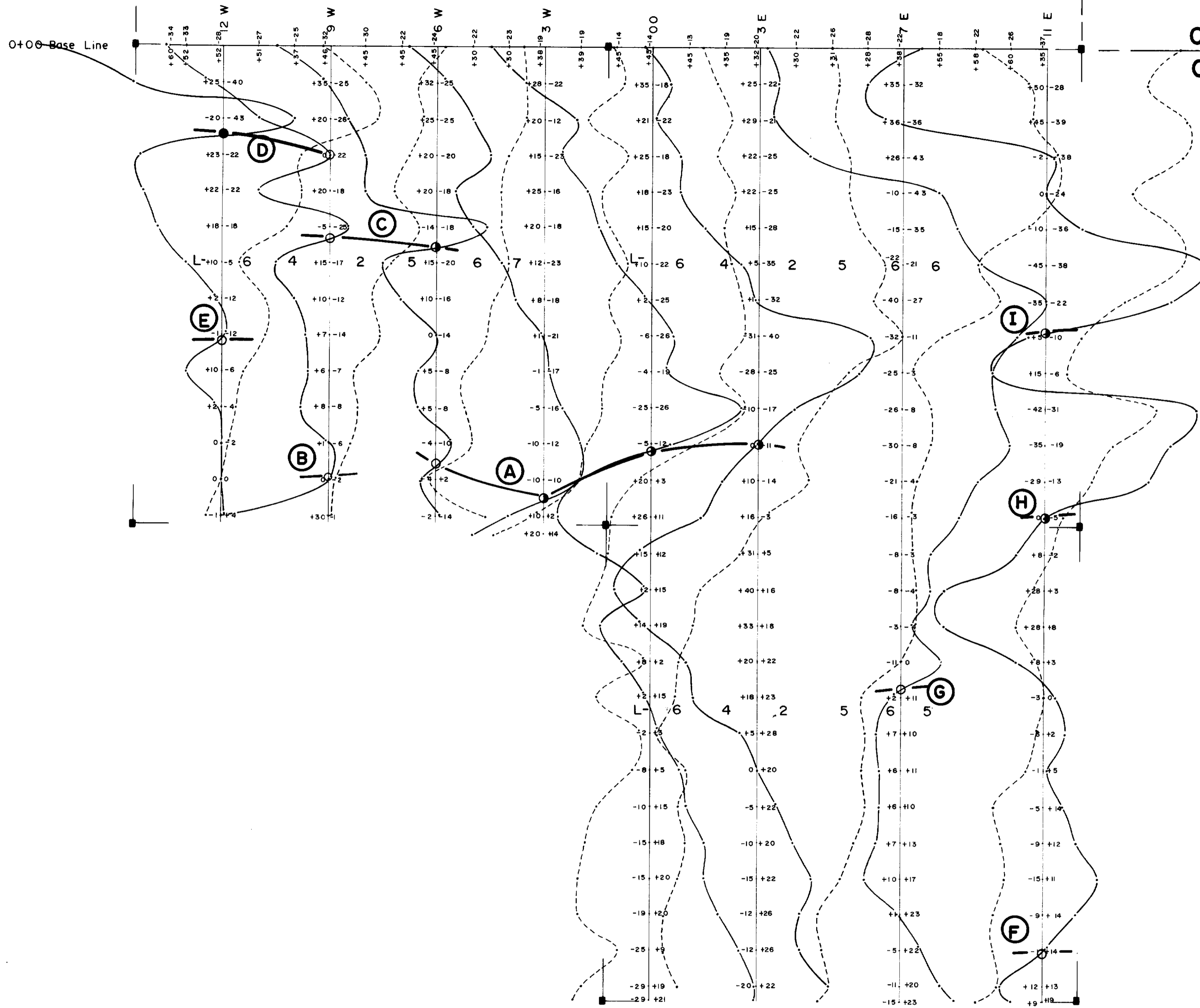
DRAWN BY: W.B. CAUGHILL



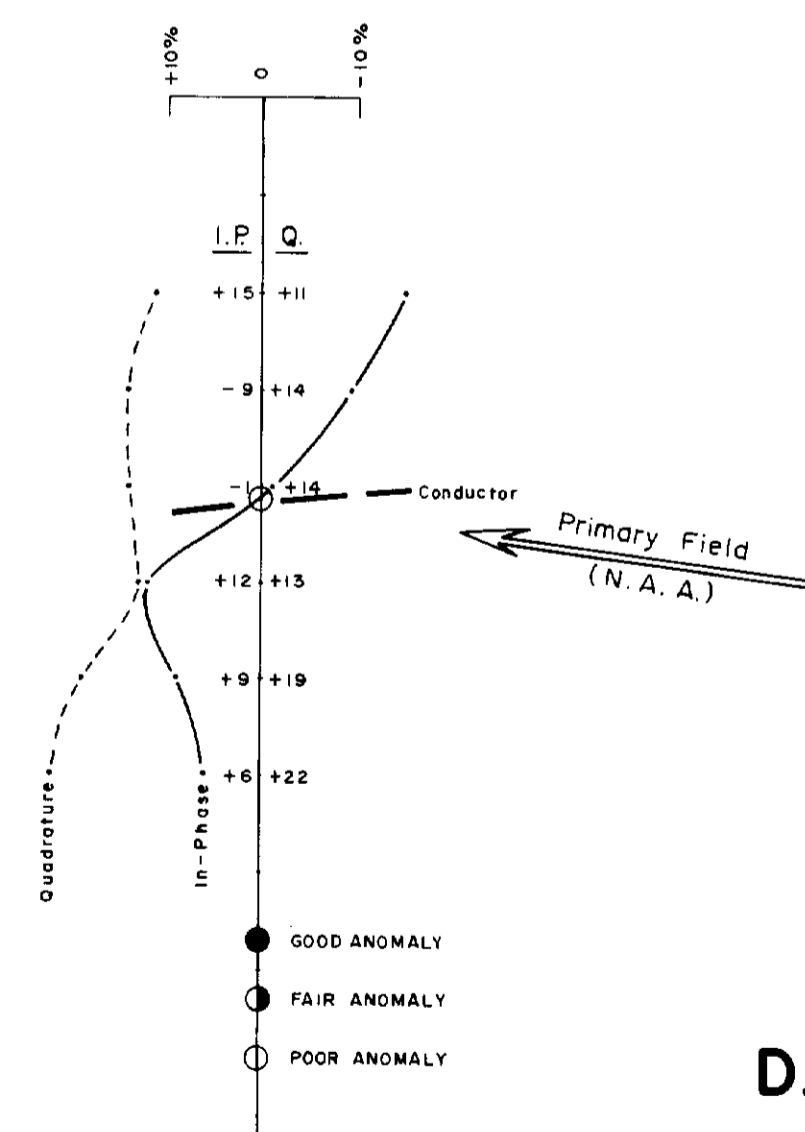
Lot 10 Lot 9

Lot 9 Lot 8

CON. VI  
CON. V



LEGEND



**D. Lalonde Property**  
**V. L. F. SURVEY**  
 (17.8 KHz.)  
**BEATTY TWP.**

SCALE: 1 inch to 200 feet  
 (1:2400)

*John E. Phillips*

2.6553

DRAWN BY W B CAUGHELL



42A895#0074 2.6553 BEATTY