

PARK

Exploration Geophysicists

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42A07NE0160 2.3938 BOND

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JUN - 9 1981

MINING LANDS SECTION

Mining Claims: P.553489 - P.553502 incl.,
P.553579 - P.553589 incl.,
P.553596
P.555191 - P.555205 incl.,
P.555427
P.555487 - P.555496 incl.

Lat. 48°28'N, Long. 80°43'W

N.T.S. 42-A-7

WESTERN MINES LIMITED

Horizontal Loop and Magnetic Surveys

Bond Township, Ontario

- by -

Ian G. Park, B.Sc., M.Sc., F.G.A.C.

Consulting Geophysicist

May 24, 1981

INTRODUCTION

The following report pertains to an examination and analysis of dual frequency ground horizontal loop electromagnetic and magnetic data, collected by Western Mines Ltd. on the Bond Project, Northeastern Ontario. The data was collected during the month of February, 1981. A single definite bedrock conductor was indicated by the electromagnetic survey, in addition to a number of probable overburden type conductors. Discrimination of the former and latter conductor types was made on the comparison of calculated In-phase/Out-of-phase ratios and conductivity thickness estimates at both 444 hz and 1777 hz. The conductivity-thickness estimates were based on the comparison of observed data with data from free air models. An apparent dip to the south was estimated for the single bedrock conductor. A few comments are also made in the text regarding the results of the ground magnetic survey.

PROPERTY, LOCATION AND ACCESS

The Bond Township property of Western Mines consists of 52 contiguous mining claims which constitute 2080 acres (see Table I and Claim Location Map). The property is located approximately 28 miles east of Timmins, Ontario. Access was accomplished using a 4-wheel drive vehicle and skidoos, on both the Bond-Currie Boundary Road which reaches the northeast section of the property or the Gibson Lake Road which reaches the southwest corner of the claim group. Both roads extend southwestds from Highway 101.

TABLE I

BOND PROPERTY

Owner: Western Mines Limited 100%

Location: Bond Township (Porcupine M.D.)
Lat. 48°28'N
Long. 80°43'W

Property: 52 mining claims, 2,080 acres

<u>CLAIMS</u>	<u>DATE RECORDED</u>	<u>DUE DATE</u>	<u>LEASE DATE</u>	<u>EXTENSION TO</u>
P.555427	March 5,1980	March 5,1981	March 5,1986	August 31,1981
P.555487-P.555496	March 5,1980	March 5,1981	March 5,1986	August 31,1981
P.555191-P.555205	Feb. 27,1980	Feb. 27,1981	Feb. 27,1986	August 31,1981
P.553579-P.553589	March 5,1980	March 5,1981	March 5,1986	August 31,1981
P.553596	March 5,1980	March 5,1981	March 5,1986	August 31,1981
P.553489-P.553502	March 5,1980	March 5,1981	March 5,1986	August 31,1981

GRID DETAILS AND INSTRUMENT AND SURVEY SPECIFICATIONS

In order to facilitate the acquisition of the geophysical data, an extensive grid was cut with lines spaced at 400 feet apart. The total number of miles of grid lines cut and surveyed was 43.04 miles while the number of miles of reference base lines cut and surveyed was 3.96 miles.

The instrument used for the ground horizontal loop survey was a MaxMin II which is manufactured by Apex Parametrics, Markham, Ontario. The nominal coil separation was 600 feet due to the possibility of deep overburden on the property. Lack of significant topographic relief negated the necessity for secant corrections to be made to the data. The station spacing was 100 feet and the two frequencies used were 1777 hz and 444 hz. The total mileage covered was 43.04 miles and the number of stations occupied was 2271.

A Scintrex MP-2 total field proton magnetometer was used for the magnetic surveys which covered the same limits as the horizontal loop survey. The station spacing was also 100 feet. A Scintrex MBS-2 base station magnetometer was installed at a convenient location 6 miles north of the grid and was used to remove diurnal variation and to monitor for magnetic storm activity. Accuracy of the survey data is thought to be about ± 10 gammas. The data indicated on the magnetometer survey map are residual values above an arbitrary level of 60000 gammas.

LOCAL GEOLOGY (from ODM Preliminary Geol. Map, P161)

The geology of the property and of Bond Township is poorly known, primarily due to the paucity of outcrops and due to a pervasive ground cover of clay and sand. All known outcrops are restricted to the eastern half of the township. Keewatin lavas ranging in composition from basic to acid are the oldest rocks in the area. Outcrops of these lavas occur on the property in the northeast corner of Lot II, Concession II. The strike of the foliation is roughly east-west, with a steep dip of 80° to the south. The lavas are intruded by several north-south trending dykes belonging to the Matachewan dyke swarm. Regional aeromagnetic data (EMR Map 7085G and ODM Map P161) has outlined a northeast trending dyke on the property which belongs to the Keweenawan diabase dyke swarm. This dyke extends across the property from Lot 7, Concession II to Lot 4, Concession II.

RESULTS AND INTERPRETATION

The results of the ground electromagnetic survey are illustrated on the accompanying plan maps which are plotted at a scale of 1" to 400 feet. There is a separate plan map for each survey frequency (1777 hz and 444 hz).

Only one zone of legitimate bedrock conduction was outlined. Zone A was found to extend from Line 0 to Line 28W with a strike direction of approximately N45°E. Conductivity-thickness products based on the 444 hz data range from a low of 4 mhos on Line 28W to a high of 26 mhos on Lines 8W and 16W. All values are within the range of known graphite/sulfide conductors. There is some evidence for the presence of conductive overburden overlying at least a portion of the conductor. This is based on the sign reversal and phase rotation of the quadrature component at 1777 hz, particularly on Lines 0 and 4W.

The remainder of the property appears to be generally resistive except for the indicated presence of areas of clay filled troughs. This is true for the areas from 52W to 96W, 132W to 156W and from 4W to 52W on the west grid. All of the anomalous responses associated with these interpreted conductive overburden features exhibit low In-phase to Out-of-phase ratios and consistent to decreasing conductivity-thickness products with decreasing frequency.

The magnetic contour map is dominated by an east-north-east trending anomaly which crosses almost the entire property. Residual anomaly amplitudes range from 1000 to 2500 gammas above local background and the response is thought to represent the expression of a Keweenaw diabase dyke. The latter is segmented

in the vicinity of L32W to L40W. Areas to the northwest of the dyke are relatively featureless in terms of magnetic signature and this could be an indication of underlying sedimentary or acid volcanic terrain. Slightly higher backgrounds to the southeast of the dyke could conceivably reflect the presence of more basic volcanic material. The strong anomaly on the southeast corner of the property could reflect the underlying presence of ultrabasic material, but is not indicated as a diabase dyke by the regional aeromagnetic map.

CONCLUSIONS

One zone of legitimate bedrock conduction was outlined on the Bond Project property and drilling could be warranted provided the conductor has not been previously drilled. The remainder of the property is not underlain by conventional massive sulfide or graphite targets which respond to classical electromagnetic survey methods.

Respectfully submitted,

Ian G Park

Ian G. Park,

Consulting Geophysicist

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 2798 Number of Readings 13990+ Mag, EM.
Station interval 100 ft. Line spacing 400 ft.
Profile scale 1777 hz ; 1"=40% , 444 hz; 1"=20%
Contour interval Magnetometer 250 gammas

MAGNETIC

Instrument Scintrex MP-2, MBS-2 (Base Station)
Accuracy - Scale constant 10 Gammas
Diurnal correction method Base station 6 miles north of grid.
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument Apex Parametrics Max-Min II
Coil configuration Horizontal Loop
Coil separation 600 ft.
Accuracy +/- 0.5 %
Method: [] Fixed transmitter [] Shoot back [x] In line [] Parallel line
Frequency 1777 hz. 444 hz. (specify V.L.F. station)
Parameters measured In-Phase & Out-of-Phase

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

heet

MONTH... 2 3938 19...

RECORDED HOLDER	TOWNSHIP O	CLAIM NUMBER	GROUND						AIR			SEC.
			MAG.	E.M.	RAD.	GEOL.	GEOCH.	OTHER	MAG.	E.M.	RAD.	84(14)
West...		553489	✓	✓								
		90	✓	✓								
		91	✓	✓								
		92	✓	1/4								
		93	1/4	1/4								
		94	✓	✓								
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BOND TOWNSHIP

ONTARIO
 MINISTRY OF NATURAL RESOURCES
 SURVEYS AND MAPPING BRANCH

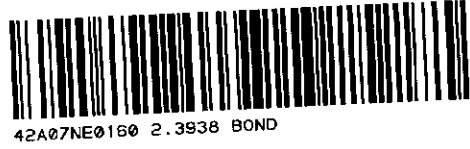
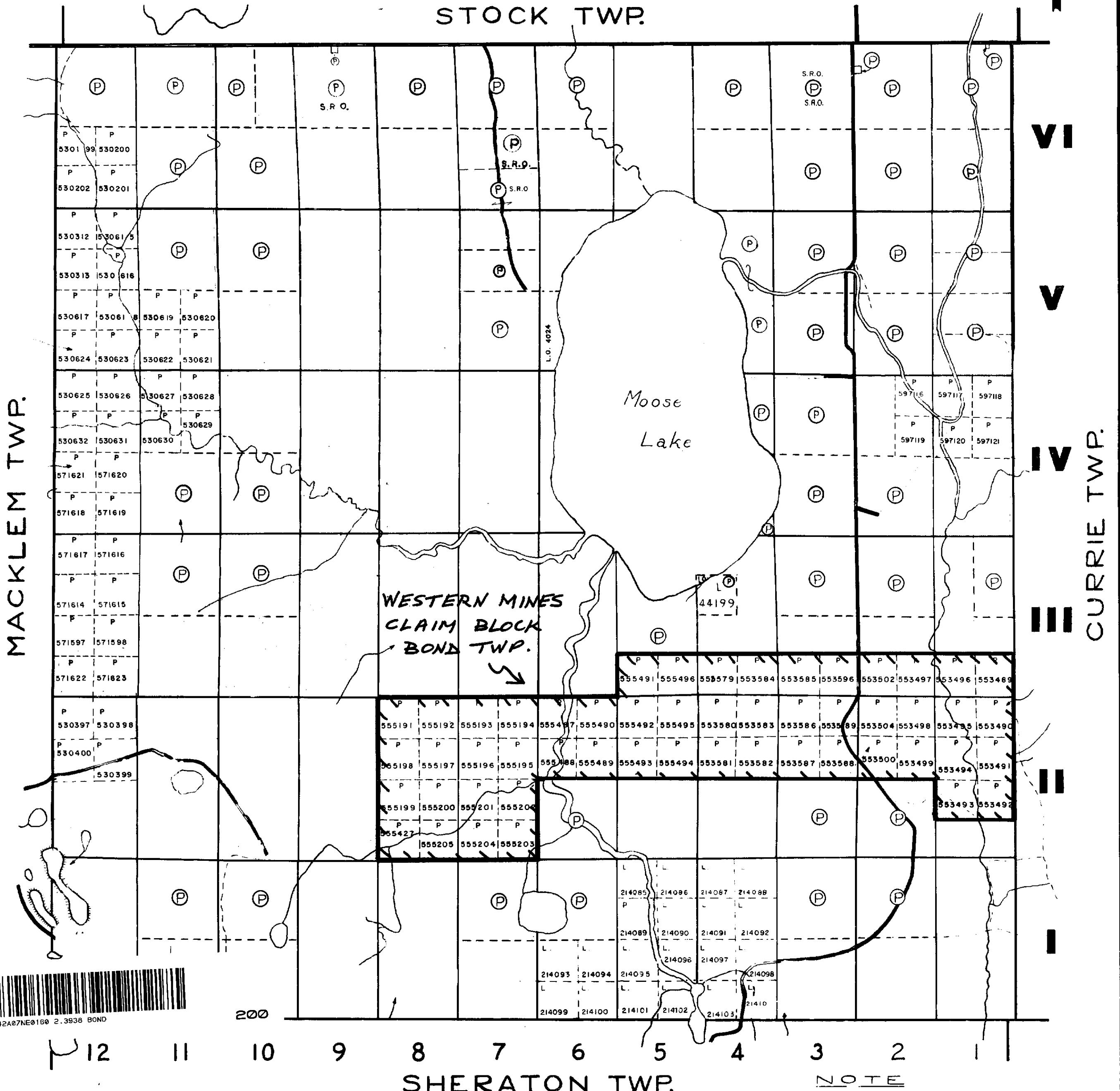
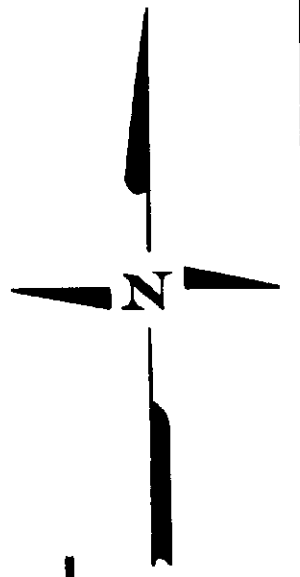
PORCUPINE MINING DIVISION

DATE OF ISSUE
APR 22 1981
 Ministry of Natural Resources
 TORONTO

DISTRICT OF COCHRANE

M.331

SCALE 40 CHAINS TO ONE INCH
 STOCK TWP.

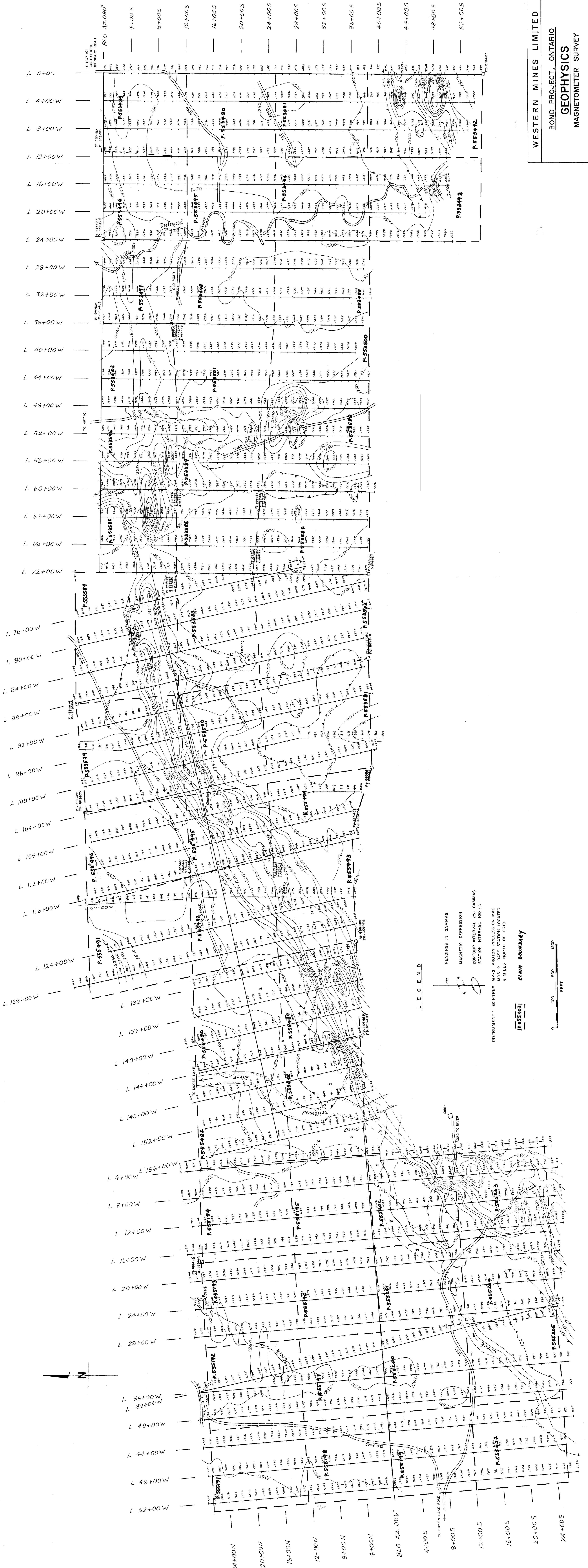


200

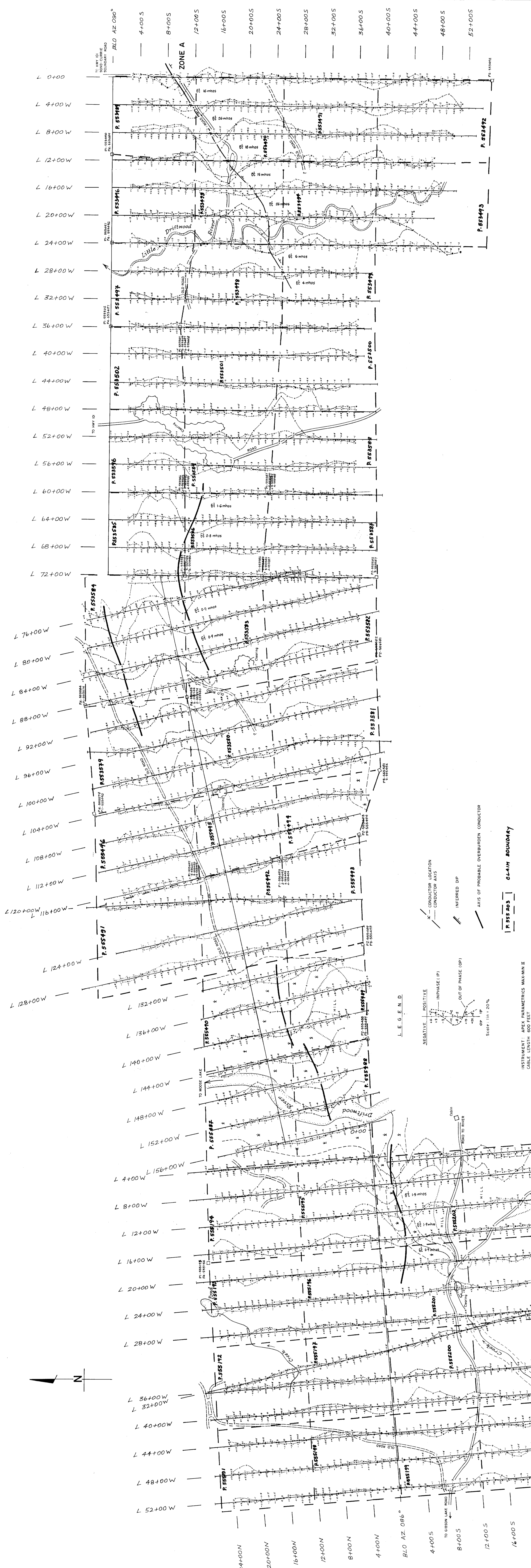
12 11 10 9 8 7 6 5 4 3 2 1
 SHERATON TWP. NOTE

LEGEND

- IMPROVED ROADS ———
- TRAILS - - - - -
- KETTLE LAKE
- 400' Surface rights reservation around all lakes & rivers.
- PATENTED LANDS (P)
- CROWN LAND SALES (S) or C.S.
- LOCATED LANDS L.O.
- LICENSE OF OCCUPATION... L.O.
- LEASES (L)



2. 3736 019
 1981/02/11



LEGEND

NEGATIVE POSITIVE
 INPHASE (IP) OUT OF PHASE (OP)
 OP - IP

Scale: 1 in = 20'

INSTRUMENT: APEX PARAMETRICS MAX-MIN II
 CABLE LENGTH: 600 FEET
 CONDUCTIVITY THICKNESS IN Mhos

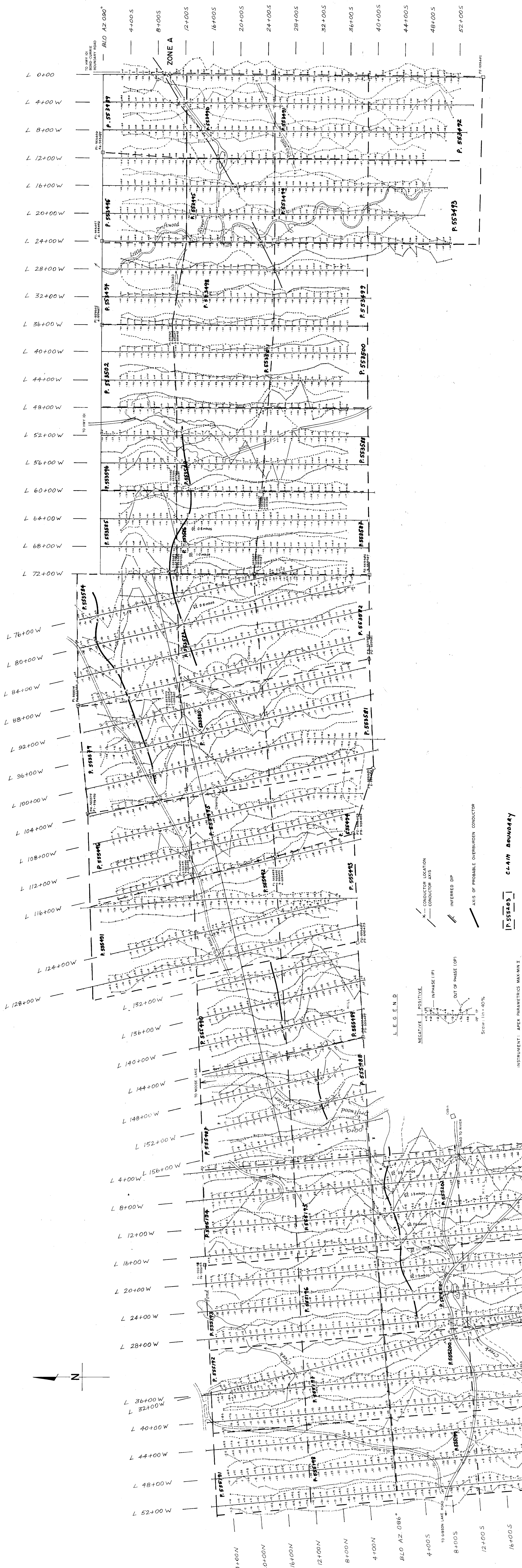
0 400 800 1200
 FEET

P. 552 203 CLAIM BOUNDARY

0.2538 only

WESTERN MINES LIMITED
 BOND PROJECT, ONTARIO
GEOPHYSICS
 MAX-MIN II (1777 Hz)

Drawn by D. Giddon Date February 1981
 Surveyed by D. Giddon Scale 1 in = 400 ft
 Supervised by I. Park



LEGEND

NEGATIVE POSITIVE
 * * * * * INPHASE (IP)
 * * * * * OUT OF PHASE (OP)
 SCALING: 1 in = 40%

X CONDUCTOR LOCATION
 — CONDUCTOR AXIS
 / INFERRED DIP
 — AXIS OF PROBABLE OVERBURDEN CONDUCTOR

P. 555203 CLAIM BOUNDARY

INSTRUMENT: ARK'S PARAMETRICS MAX-MIN II
 CABLE LENGTH: 600 FEET
 CONDUCTIVITY THICKNESS IN: MINS

0 500 1000
 FEET