LIBERTY MINERAL EXPLORATIONS INC.

TOTAL MAGNETIC FIELD AND HLEM SURVEY OF THE AZ PROPERTY, YUKON TERRITORY

M.A. Power M.Sc. P. Geoph.

<u>Claims</u>

AZ 1-72	YB26305-312
	YB35932-995

Location: 61° 59' N 140° 52' W
NTS: 115 F /15
Mining District: Whitehorse, YT
Date: August 25, 1997

SUMMARY

Ground total magnetic field and horizontal loop electromagnetic (HLEM) surveys were conducted on the AZ Property near White River, Y.T. between August 10 and 16, 1997. The aim of the surveys was to locate chalcopyrite-pyrite-magnetite mineralization near the Main Showing. A total of 11 line-km was surveyed on a square grid centred on the Main Showing consisting of 5.5 line-km oriented at 145° and 5.5 line-km oriented at 55°. The HLEM surveys identified a single conductor at the boundary between two magnetic domains which appears to be a contact or bedding-parallel fault. The magnetic field surveys identied a sinuous, apparently folded, positive magnetic anomaly coincident with the Main Showing. Three very high amplitude (1000+ nT) anomalies occurring along this trend are recommended as drill targets.

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1.0 INTRODUCTION

This report describes horizontal loop electromagnetic (HLEM) and total magnetic field surveys conducted at the AZ Property, White River area, western Yukon Territory. The surveys were conducted to locate copper-gold skarn mineralization surrounding a showing on the property.

2.0 PROPERTY, LOCATION AND ACCESS

The AZ Property consists of 72 Quartz Claims registered to Ron Berdahl in the Whitehorse Mining District and under option to Liberty Mineral Explorations Inc. The property is located at 61° 59' N 140° 52' W, 20 km west of the White River Lodge on the Alaska Highway. The property can be reached by helicopter and is close to an existing winter road extending from Sanpete Creek to within 8 km north of the property.

3.0 PROPERTY GEOLOGY

The property geology has been recently summarized by Davidson (1997). The grid area is underlain by the following formations:

Formation	Age	Description
Station Creek Formation	Pennsylvanian - Permian	Black shale, siltstone, limestone and argillite overlying basalt and andesites
Hasen Creek Formation	Pennsylvanian - Permian	Siltstone, argillite, greywacke, conglomerate, limestone chert
Nikolai Group	Middle Triassic	Basalt flows, ultramafic sills and minor limestone

The entire package is intruded by the following formation:

Formation	Age	Description
Kluane Range Intrusion	Cretaceous	Granite, granodiorite, diorite and related porphyritic phases

The sedimentary and volcanic rocks strike from 135° to 110° and dip 30° to 50° NE on the property, but there is very little outcrop in the area of the grid. Intrusive rocks were intersected at a depth of 46 m in a drill hole in the centre of the grid. No significant regional structures were mapped in the area covered by the grid. The property geology in the area of the grid was compiled by Davidson (1997) from earlier work by Noranda. There is an obvious problem with the Noranda geology in that the area of the Main Showing is mapped as Hasen Creek but the showing is hosted by basalt. In addition, ground magnetic trends in a large grid covering the property are strongly discordant with respect to the mapped geology in the area of the grid. This could be attributed to massive and nearly uniform skarnification of all three volcano-sedimentary units surrounding an intrusive centre or perhaps may indicate that the Nikolai Group veers to the south in the area of the grid.

Economic mineralization on the property consists of chalcopyrite-pyrite-magnetite bearing boulders at L11000E 1200S (Main Showing). These returned significant values in gold, silver and copper and the mineralization resembles that found at the Kennecott Mine in similar stratigraphy. A drill hole beneath the showing encountered significant sulphide mineralization at the contact between basalt flows and diorite.

3.0 PERSONNEL AND EQUIPMENT

The surveys described in this report were conducted by D. Hall (Crew chief) and C. Purves (helper) between August 10 to 16, 1997. The crew was equipped with the following instruments and equipment:

Instruments:	Apex Parametrics MaxMin I-10 w/ MMC and 50, 100 and 150 m cables. 3 - Omni Plus proton precession magnetometers
Data processing:	486DX66 laptop computer, GEOPAK software
Other:	F150 2WD truck, camp and tools

4.0 GRID AND SURVEY SPECIFICATIONS

The surveys were conducted over a square cut grid, centred on the Main Showing and consisting of approximately 11 line-km. Survey lines were oriented in two directions. The E-W grid consisted of 5.5 line-km of survey line oriented at 145° and the N-S grid consisted of 5.5 line-km oriented at 55°. Lines were cut and station were slope-chained every 25 m.

The HLEM survey was conducted using the following survey parameters:

Coil spacing :	100 m (first pass); details with 50 and 150 m
Station spacing :	25 m
Frequencies:	220, 880, 3520 and 7040 Hz.
Terrain corrections:	Slope-chain method (slopes recorded, coils held coplanar, short coil corrections applied later with Apex MMCFIX1 software)

The total magnetic field survey was conducted using the following specifications:

Station spacing :	5 m
Base station :	Cycled at 15 s; geomagnetic activity was quiet with average change less than 0.5 nT / 15 s.
Levelling:	17 tie-ins on two lines surveyed by both operators. Average discrepancy between operators 1.3 nT ± 4 nT. No levelling correction applied.

5.0 DATA PRESENTATION AND FORMATS

Digital data is appended to this report as ASCII Geopak XYZ files in the following formats:

Magnetics

Line Station X Y Corr_mag

HLEM

Line Station X Y 220IP 220Q 880IP 880Q 3520IP 3520Q 7040IP 7040Q

where IP denotes in-phase and Q denote quadrature components of the various system frequencies. The README file describes the contents of individual files. The data is plotted in 8 figures in the attached pockets:

FIGURE	DESCRIPTION
AZ-1	North-South grid / MaxMin 220 Hz stacked profiles
AZ-2	North-South grid / MaxMin 880 Hz stacked profiles
AZ-3	North-South grid / MaxMin 7040 Hz stacked profiles
AZ-4	North-South grid / Total magnetic field contour map
AZ-5	East-West grid / MaxMin 220 Hz stacked profiles
AZ-6	East-West grid / MaxMin 880 Hz stacked profiles
AZ-7	East-West grid / MaxMin 7040 Hz stacked profiles
AZ-8	East-West grid / Total magnetic field contour map

The HLEM survey was conducted to the ends of the lines as found on the grid. Several lines were apparently short chained or the crew could not find the stations at the time of the survey and this accounts for missing stations at the ends of some of the lines. Some of the magnetic field data collected over the N-S grid was suspect because of an instrument memory problem and was deleted; this accounts for the gap in the N-S data in the NE corner.

The HLEM data is plotted in stacked profile format showing the location of the survey lines in idealized grid coordinates and plots of the HLEM in-phase and quadrature at 1 cm=10% H_z. In-phase is plotted as solid lines and quadrature as dashed lines. The location of the Main Showing and of significant conductors is also indicated together with conductance symbols for each anomaly intersection. The total magnetic field data is colour contoured using a 4 m grid node spacing (E-W lines) and a 2.5 m grid node spacing (N-S lines). The grid, location of the Main Showing and the location of significant HLEM anomalies is also shown on the contour maps.

5.1 HLEM Survey

A summary of basic HLEM system theory is included as Appendix D. The MaxMin survey detected a single, very weak anomaly (**AZ-1**) striking approximately 150° across the grid and apparent only in the 7040 Hz data (Figure AZ-3). Anomaly intersections and interpreted parameters are contained in Appendix C. The source conductor is very weak with an indicated conductance less than 0.31 S. The conductor follows the break between a southern magnetic domain of considerable relief and a magnetically subdued area north of the conductor. The dip of the conductor cannot be read from the data but the response is similar to those expected for a moderate to steeply dipping thin-sheet conductor. There is no excess width in the interpretable conductor responses suggesting that the target is less than 12.5 m wide. Taken together, this suggests that it is a fault or contact rather than a zone of conductive sulphides.

5.2 Total Magnetic Field Survey

The total magnetic field data was collected in two directions given the uncertainty in the strike of the known mineralization. Figure AZ-4 shows the magnetic data collected over the grid N-S lines and Figure AZ-8 shows the data collected over the grid E-W striking lines. The E-W grid magnetic data was contoured using a trend rotation angle of 0° while the N-S data was trend rotated 20° from perpendicular along a trend of 75° true azimuth. This was done to image magnetic features parallel to this direction, most notably a strong magnetic field anomaly centred at L1200S 11090E.

A sinuous high amplitude positive magnetic field anomaly coincident with the Main Showing is apparent in Figure AZ-8. The total field intensity is greatest in the peak and trough regions of the anomaly and while this may partially be due to mutual interference from limbs of the apparently folded source body, it also appears that the rocks have higher magnetic susceptibility in these areas. Peak amplitude is approximately 1600 nT above base level and the maximum trough amplitude on the grid W side of the anomaly is approximately 200 nT.

To determine the possible geometry of the source body, the anomaly was modelled with Geopak REVS software. Fixed parameters in the modelling included the earth's magnetic field specifications (total field intensity, inclination, declination), and the survey line orientation. The earth's field was determined from USGS software for calculating the International Geomagnetic Reference Field. The high amplitude response at L1200S 11090E was selected for modelling based on the simplicity of the response. The response of a rectangular prism of variable geometry was modelled and adjusted to examine the sensitivity of the response to different geometries. Strike length was fixed at 150 m but the dip, dip direction, dip extent and thickness were modified to examine the effect of these parameters on the response. The best fit response is shown in Figure 1. Peak positive amplitude is 1600 nT above background and peak negative amplitude is 200 nT below background. The positive amplitude peak is centred over the middle of the source body if it can be approximated by a thin sheet.

The following features of the response are pertinent:

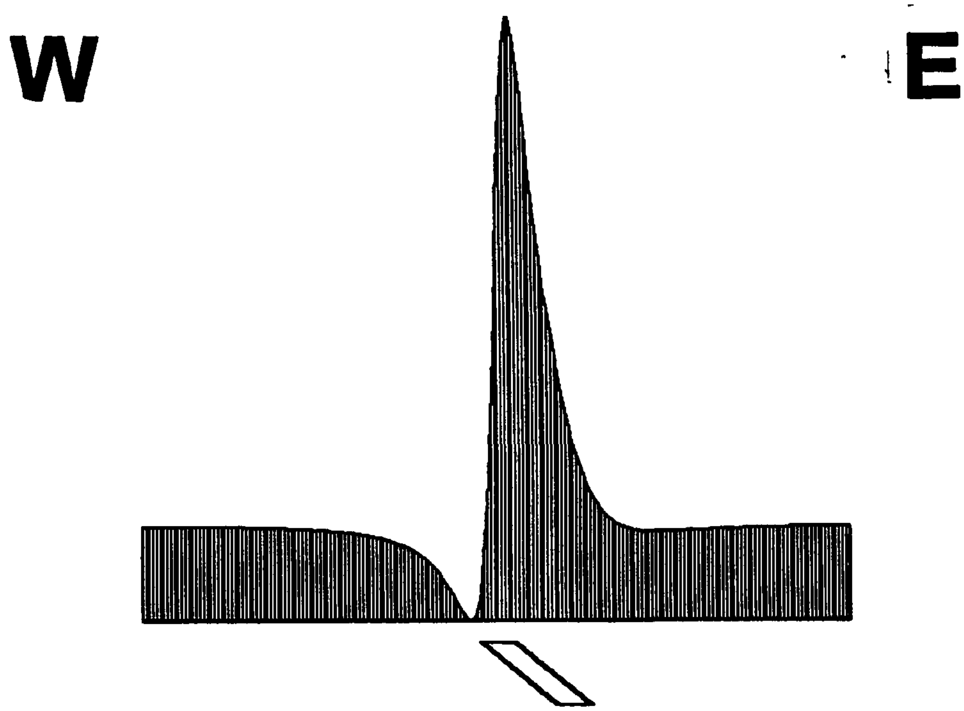
a. Varying the depth of the response dampens the relative size of the trough on the west side of the anomaly.

b. Flat to moderate dips to the east also suppress the trough on the western side of the peak.

c. The asymmetry in the response appears to arise from a moderate dip to the east. A dip of 40° E produced the best response.

d. The amplitude of the trough on the west side of the anomaly was suppressed by varying the depth to top. The results suggest that the bulk of the magnetic mineralization is not at surface.

The modelling results suggest that the magnetic source body at L1200S 11090E dips to grid E and may be up to 30 m below surface. An interesting feature of the magnetic response is that the response asymmetry changes on either side of a line extending from L10900E 1300S to L11050E 950S. To the west, the region of high gradient is on the east side of the anomaly suggesting a dip to the west while the situation is reversed on the east side of this line.



Source field strength: 57,040 nT
Inclination: 75°
Declination: 28°

System: Total magnetic field, scalar value

Traverse line: 145°

Body shape: Rectangular prism
Strike: 75°
Length: 150 m
Width: 5 m
Dip extent: 75 m
Depth-top: 25 m
Susceptility: $1300X10^{-3}$ SI units

Figure 1. Forward modelling of total magnetic field response. Total magnetic field profile over magnetic source body illustrates the main features of the high amplitude response at L1200S 11090E.

6.0 INTERPRETATION

HLEM anomaly **AZ-1** appears to originate from a moderate to steeply dipping conductor at the contact between rocks of different magnetic susceptibility. The conductor strike is conformable with surrounding stratigraphy and suggests that it is either a contact or a bedding-parallel fault. This target is of no economic interest.

Economic mineralization is associated with a sinuous positive magnetic field high south of **AZ-1**. The sinuous shape of the anomaly suggests that the source body is folded. Apparent dips reverse about a line extending from L10900E 1300S to L11050E 950S. To the west of this line, response asymmetry suggests a dip to the west while east of this axis, a dip to the east is suggested. The source body appears to be discordant with respect to the local geology as currently mapped. If the Nikolai is locally folded on the grid, the source may be a conformable magnetite-bearing horizon. Alternatively, the anomaly may be a secondary feature generated during thermal metamorphism accompanying emplacement of the Kluane Range Intrusion. Regardless of the source, the anomaly is of considerable interest given the high magnetite content of the copper-gold mineralization at the Main Showing. Response wavelengths are fairly short and consequently the amplitude of the response is primarily determined by magnetite content. The areas of highest amplitude would appear to be the most promising targets, particularly those in the apparent hinge zones of the magnetic horizon.

7.0 CONCLUSIONS

The results of the HLEM and total magnetic field surveys suggest the following conclusions:

a. One HLEM anomaly was detected in the survey. Anomaly **AZ-1** appears to be caused by a very weakly conductive contact or bedding parallel fault. It is of no economic interest.

b. The Main Showing containing the most significant economic mineralization on the property is coincident with a sinuous magnetic field high of varying amplitude. Modelling suggests that the source body can be modelled as a thin dyke-like horizon dipping to grid east in the region of the strongest magnetic field response at L1200S 11090E. Changes in response asymmetry across an apparent fold axis extending from L10900E 1300S to L11050E 950S suggests that dips may be reversed across this line. This magnetic field anomaly is the sole geophysical target of merit on the grid.

8.0 RECOMMENDATIONS

The geophysical surveys have identified a promising geophysical target on the AZ property. The magnetic field anomaly coincident with the Main Showing should be tested by drilling at the following locations:

a. L 1200S 11090E. Apparent strike of the target is 85° and it appears to dip to the south at a moderate angle.

b. L1100S 10975E. Attitude of the target appears to be nearly parallel to the grid line at this point and dipping to the SW.

c. L1300S 11110E. Apparent strike is 30° and response asymmetry suggests a possible dip to the west.

Respectfully submitted,
AMEROK GEOSCIENCES LTD.

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
LICENSEE
N.W.T.

M.A. Power M.Sc., P.Geoph. (NT)
Geophysicist

References cited

Davidson, G.S. (1997) Geological Evaluation Report on the AZ Mineral Claim Group. Liberty Mineral Explorations Inc. Unpublished Company Report.

Ketola, M. and M. Puranen (1967) Type curves for the interpretation of Slingram (horizontal loop) anomalies over tabular bodies. Geological Survey of Finland Report of Investigations No. 1.

Telford, W.M., L.P. Geldart and R.E. Sheriff (1990) Applied Geophysics (2nd Edition) New York: Cambridge University Press.

Varre, T. (1990) Apex Parametrics Maxmin I-9 manual. Uxbridge: Apex Parametrics.

Appendix A. Certificate

I, Michael Allan Power, M.Sc. P.Geoph., with business and residence addresses in Whitehorse, Yukon Territory do hereby certify that:

1. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (registration number 21131) and a Licensee of the Northwest Territories Association of Professional Engineers, Geologists and Geophysicists (license number L942).

2. I am a graduate of the University of Alberta with a B.Sc. (Honours) degree in Geology obtained in 1986 and a M.Sc. in Geophysics obtained in 1988.

3. I have been actively involved in mineral exploration in the Northern Cordillera since 1988 and conducted magnetic field and induced polarization surveys on the AZ Property in 1991.

4. I have no interest, direct or indirect, nor do I hope to receive any interest, direct or indirect, in Liberty Mineral Explorations Inc. or any of its properties.

Dated this 25th day of August, 1997 in Whitehorse, Yukon.

Respectfully Submitted,

REGISTERED PROFESSIONAL GEOPHYSICIST
M. A. POWER
LICENSEE
N.W.T.

Michael A. Power M.Sc., P.Geoph.

Appendix B. Survey Log

Sun 10 Aug 97	Mobilize to White River, fly in to property, set up camp, test equipment.
Mon 11 Aug 97	MaxMin survey on E-W grid. Trouble with lines (jogs, irregular chainage). Production: 2.5 line-km
Tue 12 Aug 97	MaxMin survey on E-W grid. Rain affecting transmitter. Production: 3.0 line-km
Wed 13 Aug 97	MaxMin survey on N-S grid. Heavy rain; trouble with instruments. Production : 2.7 line-km
Thur 14 Aug 97	MaxMin survey on N-S grid. Production: 2.8 line-km
Fri 15 Aug 97	Magnetometer survey (both grids). Production: 11.0 line-km
Sat 16 Aug 97	Demobe at 1100 hrs, return to Whitehorse by 2000 hrs.

Summary

Mobe/demobe:	2.0 days
Survey:	5.0 days

Personnel:

Dan Hall
Site 6 Comp 11
Whitehorse Y.T. Y1A 5V8

Christine Purves
18 Alsek Road
Whitehorse Y.T. Y1A 2D9

Appendix C. HLEM anomaly listing

Anomaly AZ-1

Apex Location	Depth to top (m)	Dip / Dip direction	Excess Width (m)	Conductance (S)
L11200E 1063S	16	N/I	0	<0.31
L11150E 1075S	N/I	N/I	N/I	N/I
L11100E 1063S	N/I	N/I	N/I	N/I
L11050E 1050S	28	N/I	0	<0.31
L11000E 1038S	N/I	N/I	N/I	N/I
L10950E 1038S	N/I	N/I	N/I	N/I
L10900E 1038S	N/I	N/I	N/I	N/I
L10850E 1025S	N/I	N/I	N/I	N/I
L10800E 1025S	N/I	N/I	N/I	N/I
L10750E 1025S	N/I	N/I	N/I	N/I
L10700E 1025S	N/I	N/I	N/I	N/I

N/I - not interpreted.

Appendix C. Notes on the HLEM Method

The horizontal loop EM method is well described in standard texts such as Telford *et. al.* (1990) and Ketola and Puranen (1967). This section summarizes the key features of the HLEM method and describes the interpretation algorithms used in this survey program.

The HLEM method involves the use of a pair of separated horizontal coils (Figure 1). Most commonly, the surveys are conducted in the frequency domain. In this method, a sine wave of variable frequency is sent through one of the coils to create a time-varying vertical magnetic dipole source. The second coil is a receiver which detects both the primary signal from the transmitting coil and a secondary signal created by magnetic induction in a conductive target in the earth. There are two variants of the method in the frequency domain are the Slingram or conventional HLEM method and the Genie method.

The Slingram method (normally referred to as HLEM) requires that a sample of the transmitted signal be sent along a wire to the receiver where it is used to synchronize the phase of the receiver with the transmitter. This permits the receiver to remove the effect of the transmitter signal (primary field) and to split the remaining secondary field into two components. One component represents the portion of the secondary field which is synchronized or in-phase with the primary field (in-phase component). The second component is the portion of the secondary field which lags the primary field by one quarter cycle (90°) (quadrature component). The ratio of the in-phase to quadrature components is used to determine the electrical conductance of a target.

HLEM instruments remove the primary field from the signal to leave only the secondary field. By convention, a secondary field in the same direction as the primary field is recorded as positive while a secondary field in the opposite direction to the primary field is recorded as negative. HLEM data is commonly plotted as profiles with the reading plotted at the midpoint between the transmitter and receiver. The reason for this is that the response from a steeply dipping conductor, the most common target of this method, is strongest when the two coils straddle the conductor. Normally, the in-phase response is plotted as a solid line and the quadrature response as a dashed line.

The HLEM response of a flat lying body is shown in Figure 2(a). Magnetic field lines (flux) are directed primarily into the region beneath the transmitter loop. Lenz's Law dictates that the induced secondary field will oppose the primary field. Consequently, at the receiver, both the primary and secondary field will be in the same direction. As a result, the response from a flat lying conductor consists of a positive response over the target. At the edge of the conductor, there is a negative response which occurs when both coils are straddling the edge of the conductor. When either the transmitter or receiver coil is over the edge of the conductor, there is no secondary field and the response is zero. As the depth to the flat lying conductor increases, the strength of the response is attenuated. The effective depth of investigation of the HLEM method for flat lying conductors is approximately 1.5 times the coil spacing.

The HLEM response of a steeply dipping conductor is shown in Figure 2(b). Field lines from the transmitter are horizontal at a point midway between the two coils and in this orientation, cut the conductor at right angles creating the best coupling. Lenz's Law dictates that the secondary field will oppose the primary field and at the receiver coil, the secondary field is in the opposite direction to the primary field. As a result, the response when profiling over a steeply dipping conductor consists of a trough with peak negative value occurring when the coils straddle the conductor. The flanking positive peaks result from induction effects as the pair of coils are close to but not straddling the conductor. When either of the coils is directly over the target, the response is zero because the primary field is not well coupled with the target (ie it is perpendicular to the edge of the conductor) and little secondary field is created.

A dipping tabular conductor can be specified by the dip and dip direction, depth to top, target width and electrical conductance (conductivity thickness product or σt). The effect of varying these parameters is shown in Figure 3 for the case of a response from a single isolated HLEM conductor. Asymmetry in the positive shoulders indicates the dip direction and the ratio of the positive shoulder responses can be used to estimate the dip (Figure 3(a)). The strength of the response is largely determined by the depth to the top of the conductor. Increasing the depth to the top of the conductor decreases the amplitude of the response but does not otherwise change the shape of the response (Figure 3(b)). The effective depth of investigation of the HLEM method for steeply dipping targets is approximately one half the coil spacing. If the conductor is wide, the location of the zero crossovers, normally equal to the coil spacing, will increase. If the width reaches approximately one half the coil spacing, the trough of the response for shallow targets will start to deflect slightly to the positive. If the width of the target approaches that of the coil spacing, the positive return in the trough will be apparent at any depth to target (Figure 3(c)). As noted above, the electrical conductance controls the ratio of the in-phase to quadrature response. Weak targets show only a quadrature response. As the target conductance increases the strength of the in-phase component will increase. Very high conductance targets are characterized by strong in-phase responses and weak to very weak quadrature responses (Figure 3(d)).

Interpretation procedures for HLEM data are dependent upon the model to which the data is to be fitted. In most cases, the characteristic shape of the response will dictate the likely overall geometry of the source and thus the model to which the response should be fitted. Flat lying targets can be directly modelled with computerized calculations of target responses. Dipping tabular body responses on the other hand cannot be numerically modelled and must either be approximated through finite-element models or interpreted using characteristic curves. Characteristic curves for tabular dipping conductors incorporate several key features of the responses described in Figure 3 into simple charts. These responses are derived from model experiments. The ratio of positive shoulders responses and the ratio of in-phase to quadrature peak negative values are the commonly used features of the response. An example of these charts is shown in Figure 4.

The data contained in this report was interpreted using characteristic curves developed by Ketola and Puranen (1967). The procedure, normally done by hand, has been automated in proprietary software (MMPLOT) developed by Amerok Geosciences Ltd. The characteristics of each response are entered into a computer program which creates a batch plotting file. The data is plotted directly on a CADD diagram with each of the characteristic curves on a different layer. The operator is able to quickly match the data to the curve which best fits the data by selecting different characteristic curves (ie. by changing layers). Where the data falls between two curves, the conductance and depth to top parameters can be interpolated but the dip cannot be reliably interpolated.

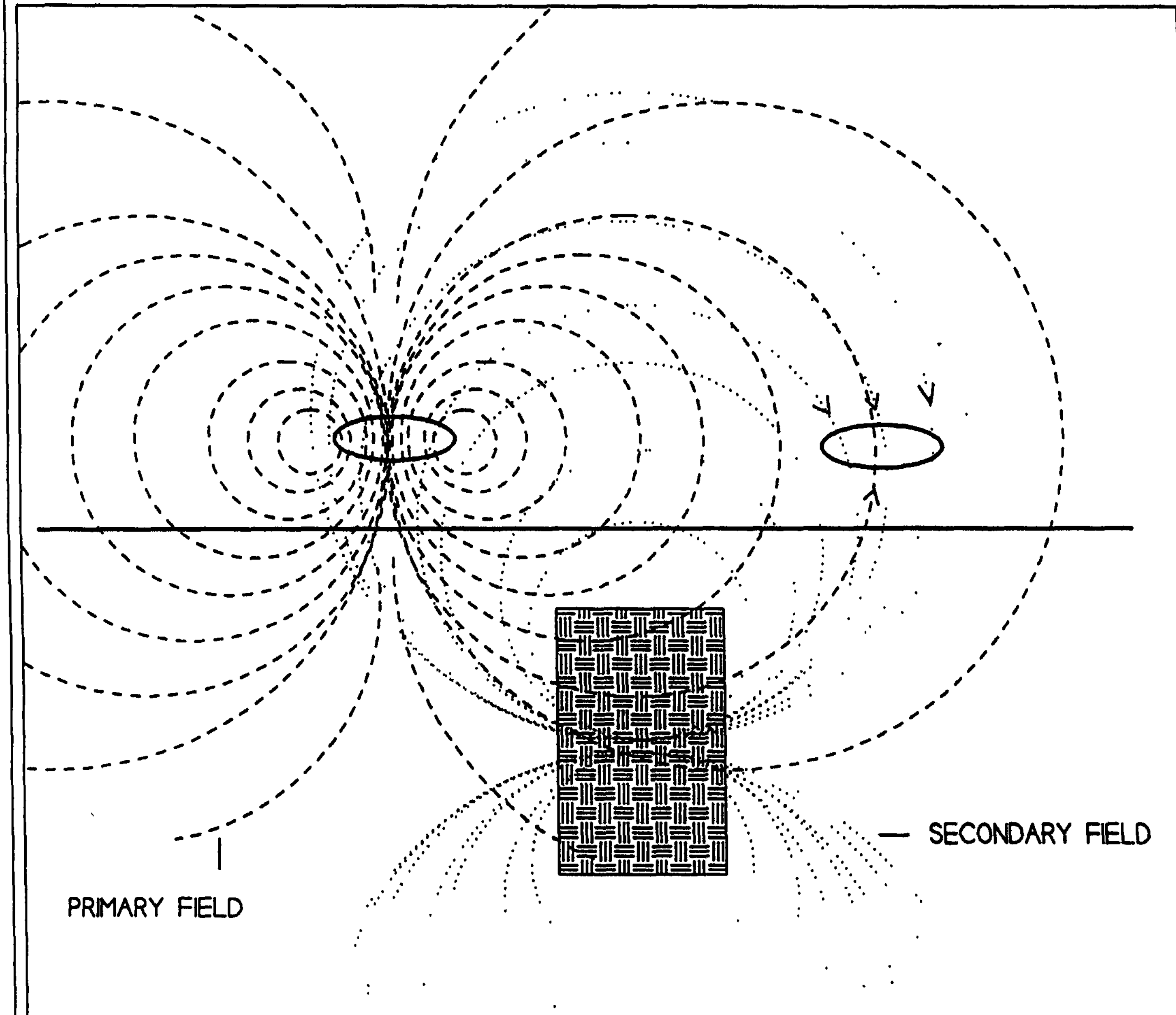


Figure MM1. HLEM source field. The field from the transmitter loop produces an oscillating vertical magnetic dipole. This induces a secondary field in a conductive body in the earth. At the receiver coil, both the primary field and secondary field are received.

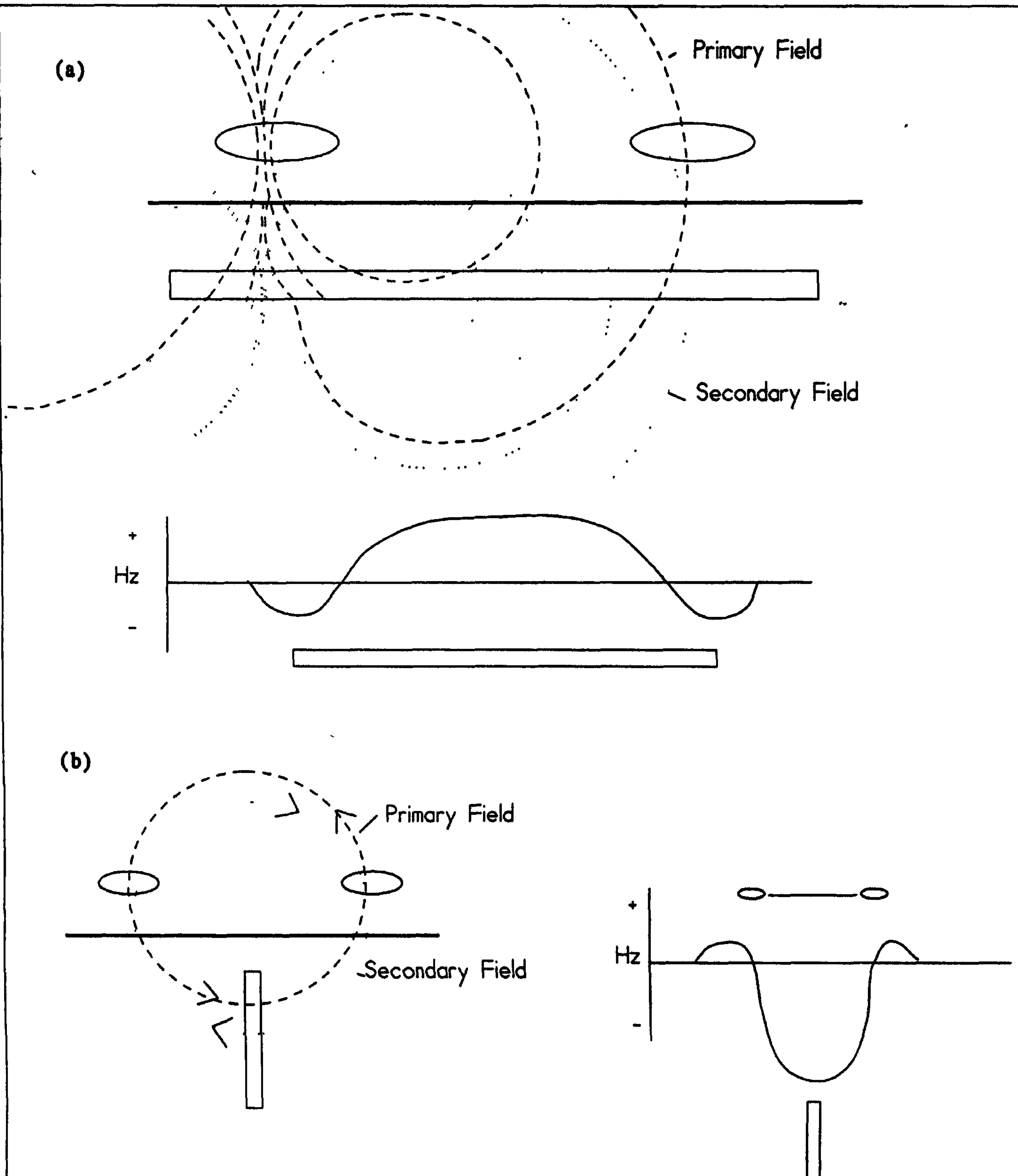


Figure MM2. HLEM responses. (a) Response over a flat-lying conductor consists of a positive response. (b) Response over a dipping conductor consists of a negative response.

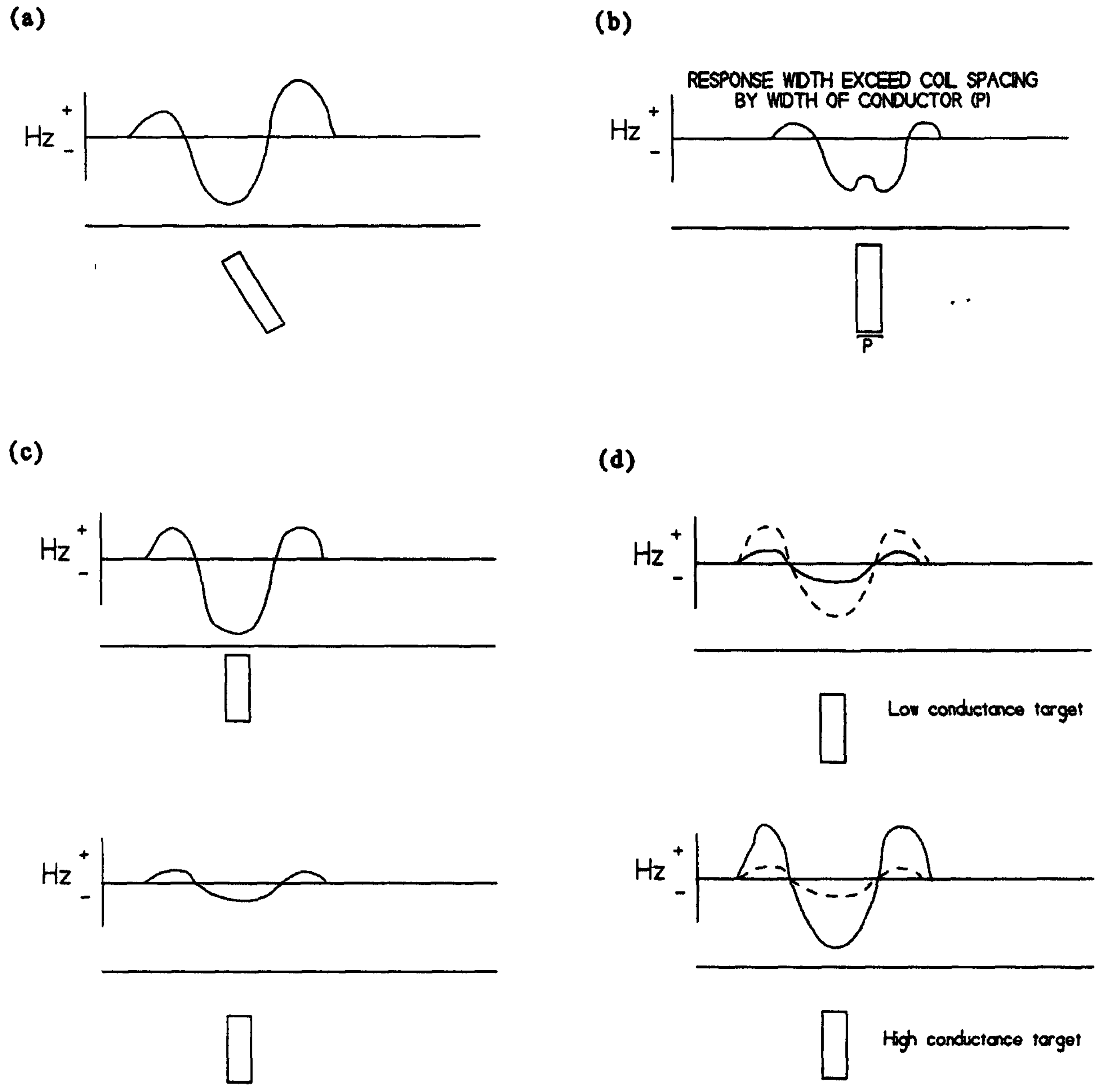
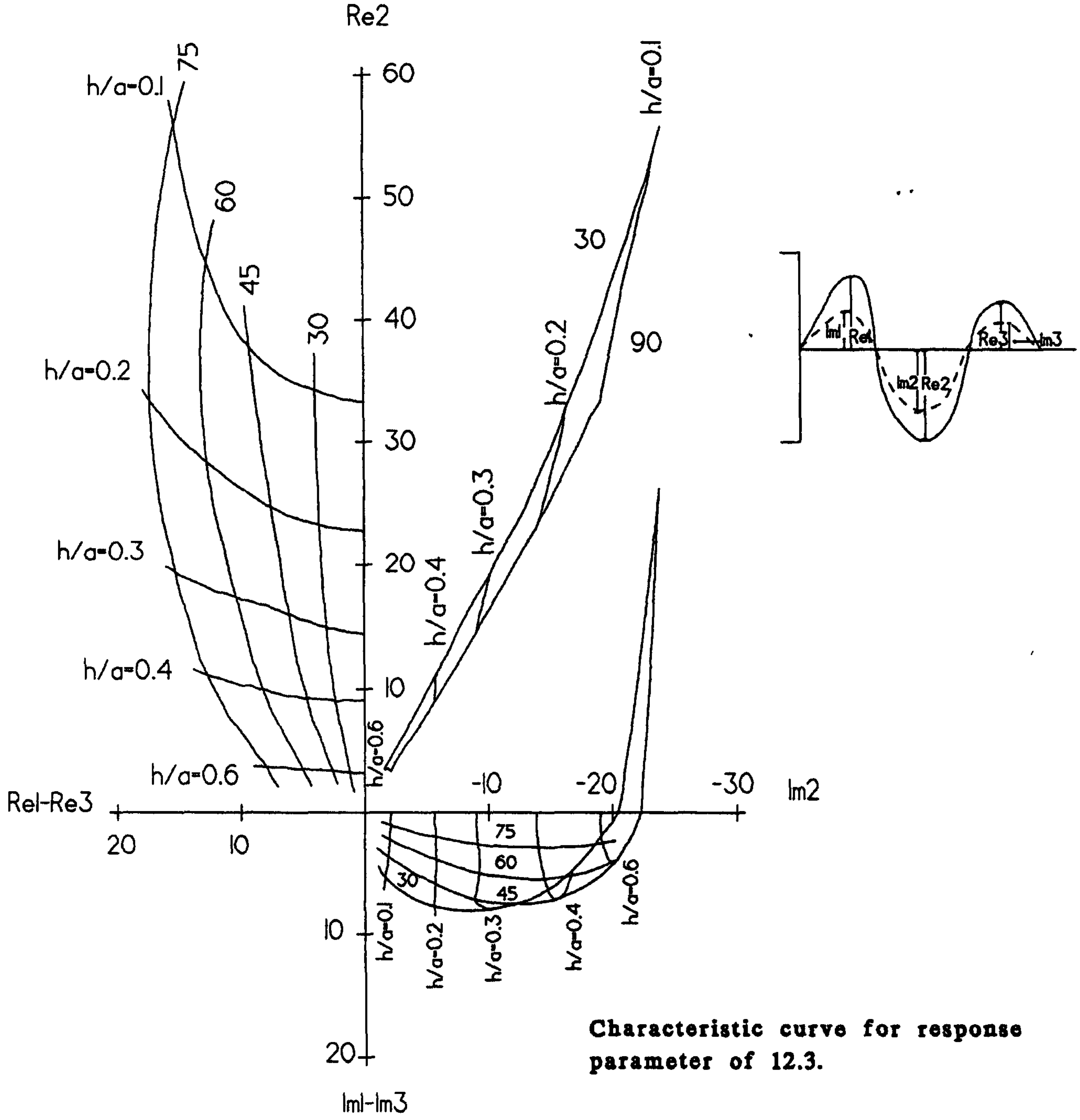
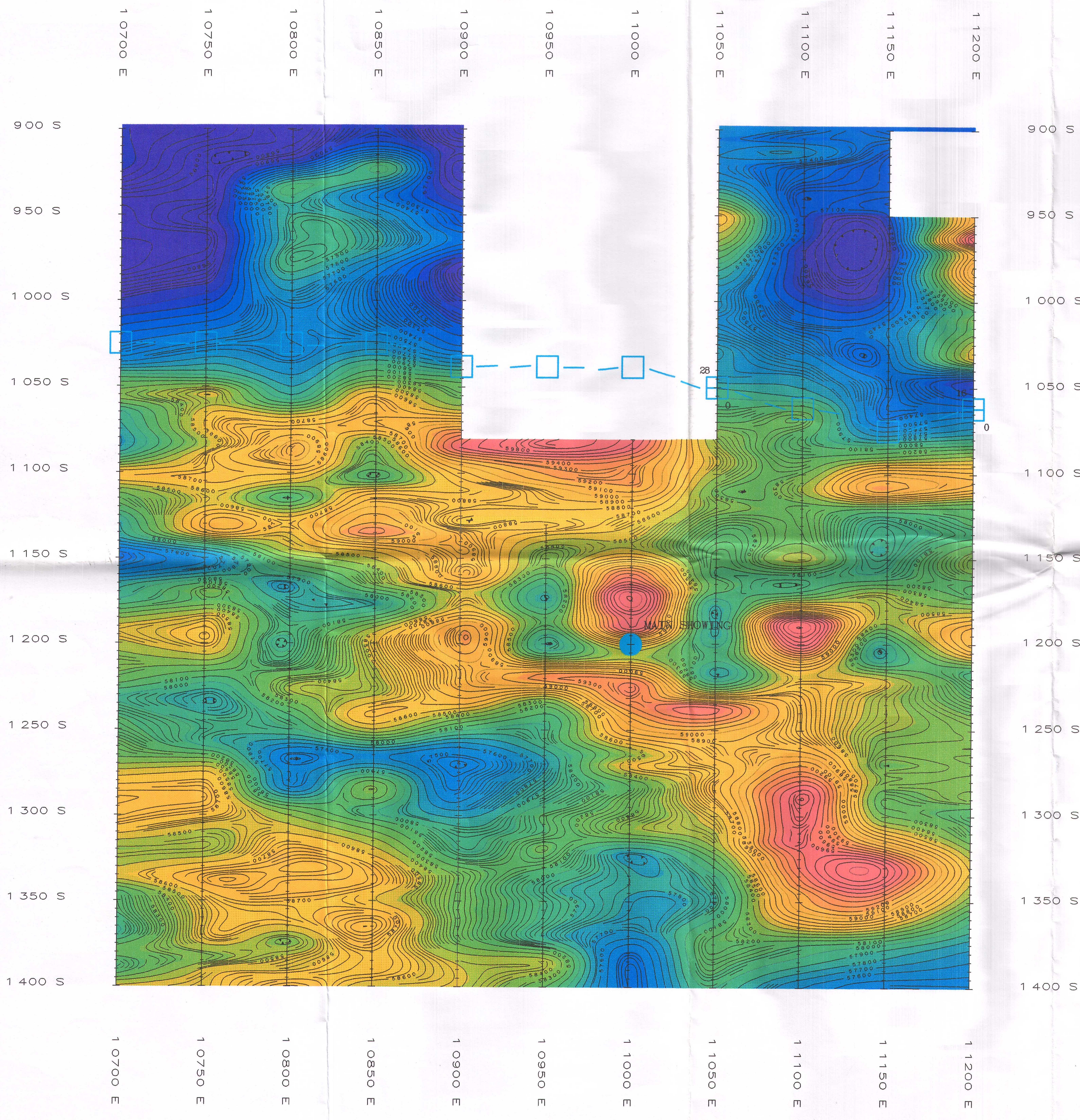


Figure MM3. HLEM response of dipping tabular conductors. (a) Effect of dip on HLEM response. (b) Effect of depth. (c) Effect of conductor width. (d) Effect of conductance.

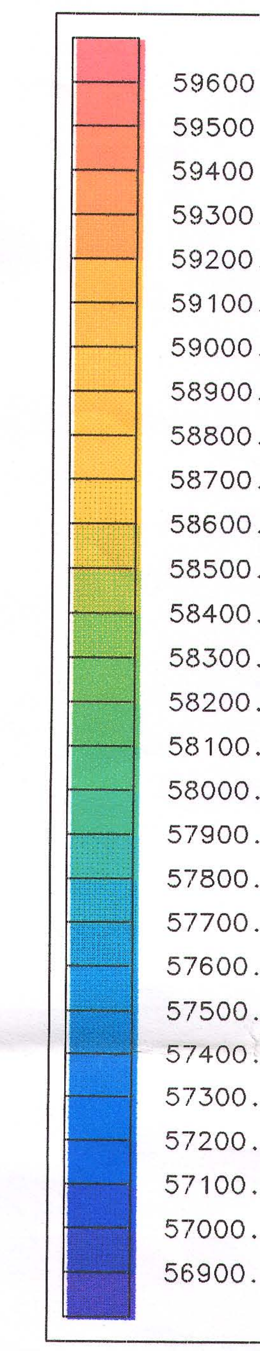


Characteristic curve for response parameter of 12.3.

Figure MM4. Characteristic curve for a dipping tabular conductor from Ketola and Puranen (1967). Critical measurements of the response shown in the upper right are extracted and plotted to determine the geometry and conductance of the target.



Base line – 145



Total field in nanoTeslas.

Contour intervals: 20, 100, 1000 nT

0 100

metres

Scale: 1:1,500

LIBERTY MINERAL EXPLORATIONS INC.

AZ PROPERTY (NTS 115 F/15)

NORTH–SOUTH GRID

Figure AZ–4.

TOTAL MAGNETIC FIELD CONTOUR MAP

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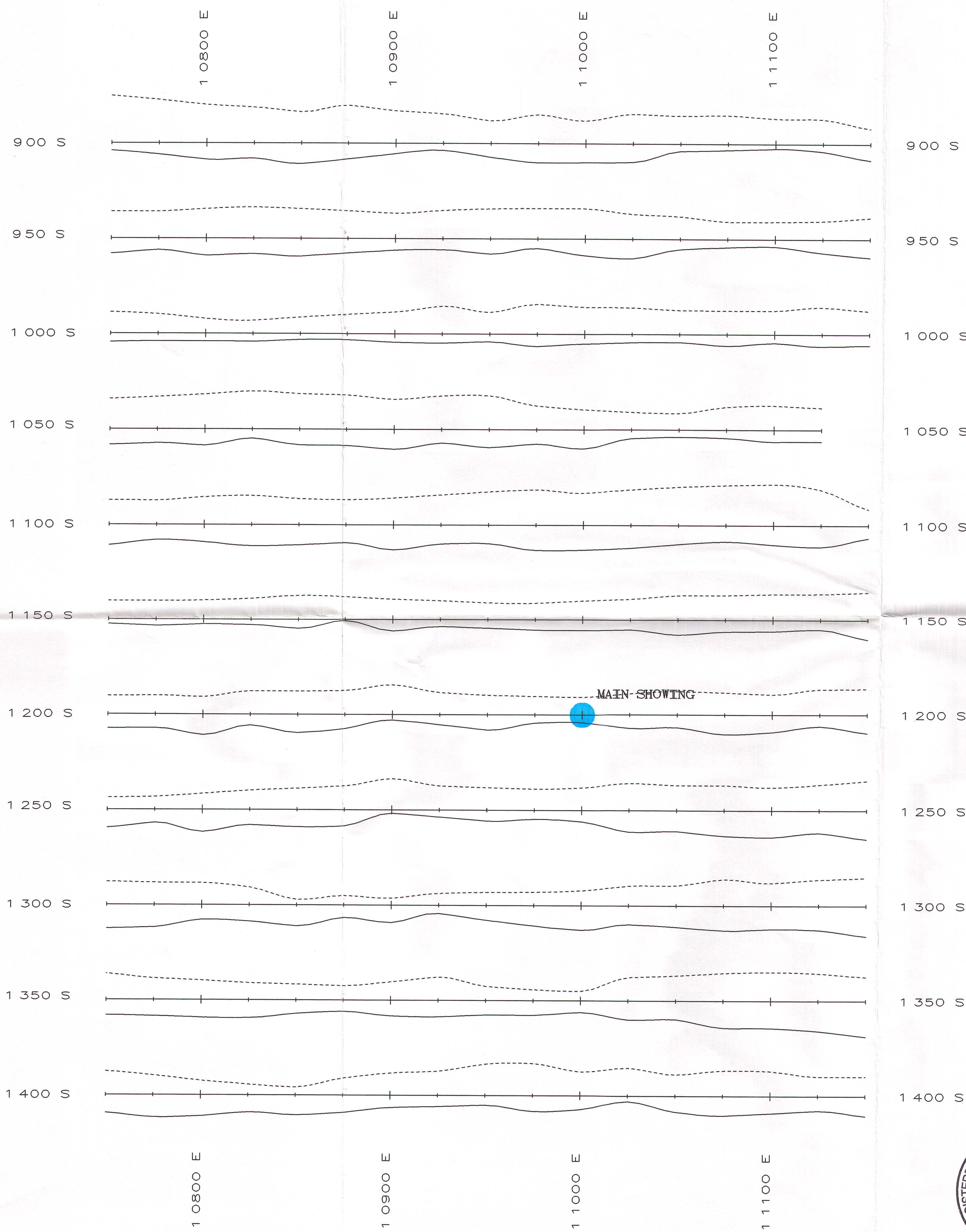

Survey lines – 145

CONDUCTANCE
(7040 Hz)

- >50 S
- 20 – 50 S
- 5 – 20 S
- 1 – 5 S
- <1 S
- CONDUCTANCE UNKNOWN

Depth (m) 10
Width (m) 4

--- CONDUCTOR AXIS

In-phase / solid
Quadrature / dashed
Data scale: 1cm = 10% Hz
Above line – positive

0 100
metres
Scale: 1:1,500

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
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N.W.T.

LIBERTY MINERAL EXPLORATIONS INC.

AZ PROPERTY
(NTS 115 F/15)

EAST–WEST GRID

Figure AZ-7.

MAXMIN I-10 SURVEY
7040 Hz

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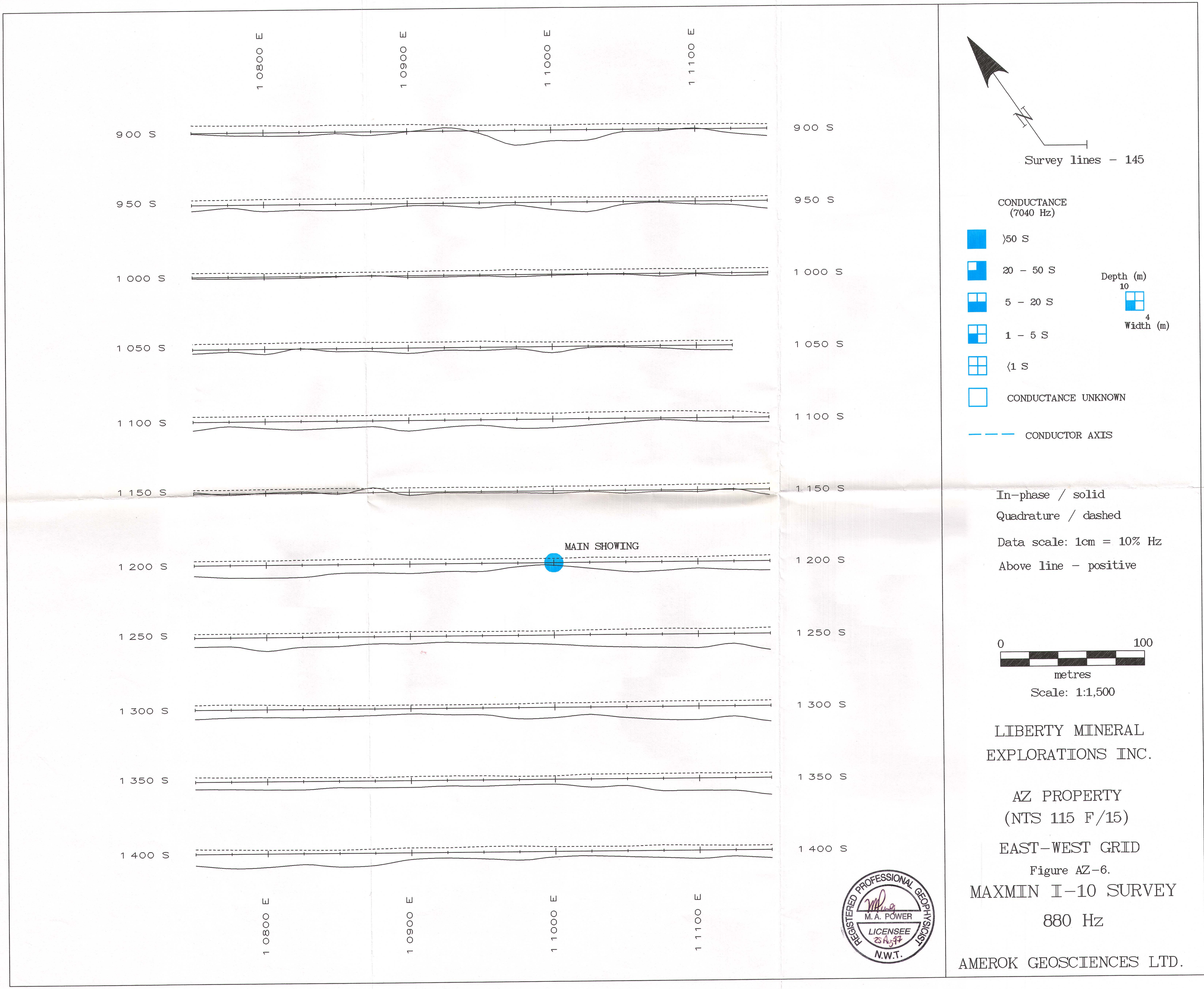
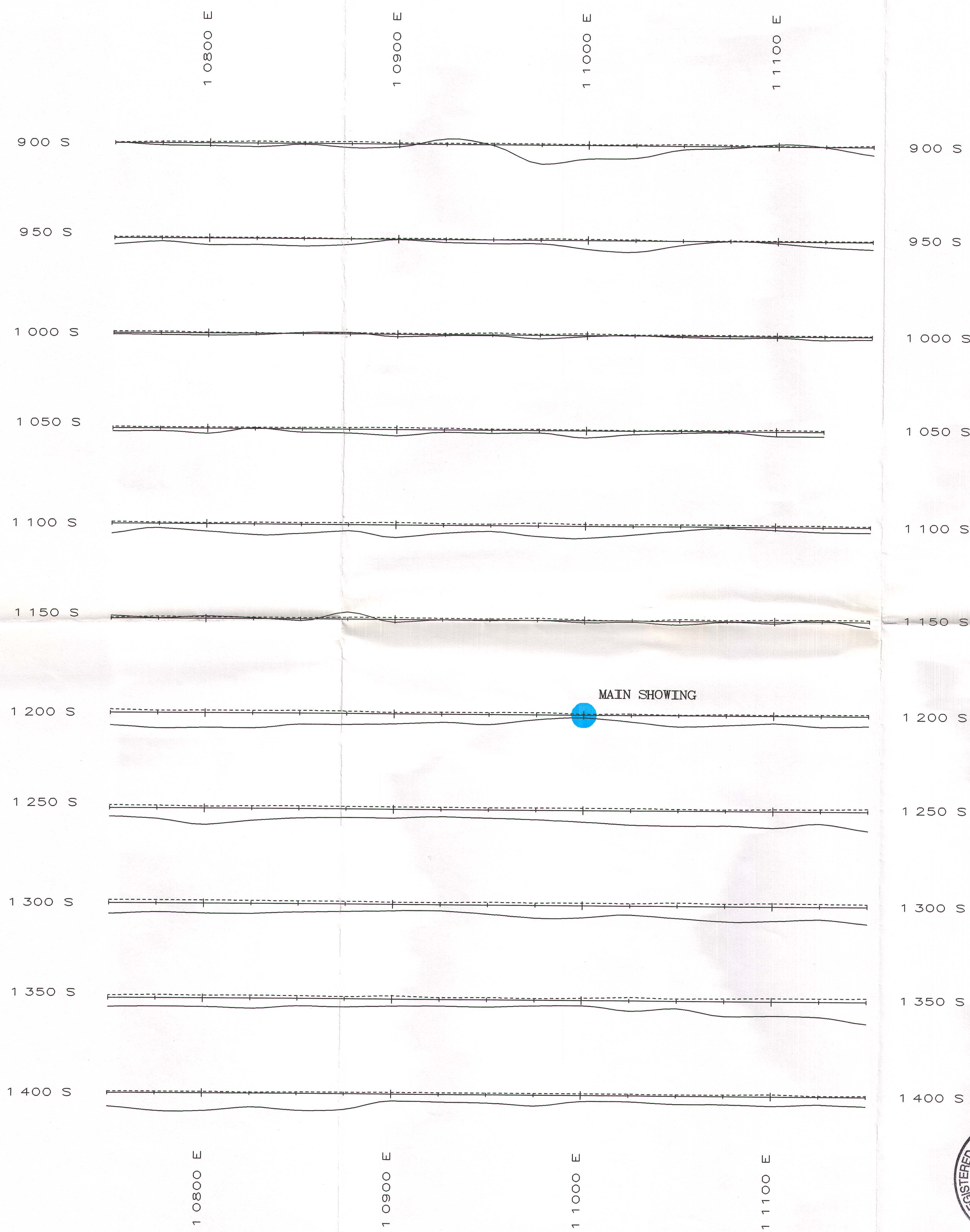


1 0800 E
1 0900 E
1 1000 E
1 1100 E
900 S
950 S
1 000 S
1 050 S
1 100 S
1 150 S
1 200 S
1 250 S
1 300 S
1 350 S
1 400 S
MAIN SHOWING
N
Survey lines – 145
CONDUCTANCE
(7040 Hz)
⟩50 S
20 – 50 S
5 – 20 S
1 – 5 S
⟨1 S
CONDUCTANCE UNKNOWN
Depth (m)
10
4
Width (m)
CONDUCTOR AXIS
In–phase / solid
Quadrature / dashed
Data scale: 1cm = 10% Hz
Above line – positive
0
100
metres
Scale: 1:1,500
LIBERTY MINERAL
EXPLORATIONS INC.
AZ PROPERTY
(NTS 115 F/15)
EAST–WEST GRID
Figure AZ–6.
MAXMIN II–10 SURVEY
880 Hz
AMEROK GEOSCIENCES LTD.
REGISTERED PROFESSIONAL GEOPHYSICIST
M. A. POWER
LICENSEE
N.W.T.



REGISTERED PROFESSIONAL GEOPHYSICIST
M. A. POWER
LICENSEE
N.W.T.

N

Survey lines – 145

CONDUCTANCE
(7040 Hz)

〉50 S

20 – 50 S

5 – 20 S

1 – 5 S

〈1 S

CONDUCTANCE UNKNOWN

CONDUCTOR AXIS

Depth (m) 10

4 Width (m)

In-phase / solid

Quadrature / dashed

Data scale: 1cm = 10% Hz

Above line – positive

0 100

metres

Scale: 1:1,500

LIBERTY MINERAL
EXPLORATIONS INC.

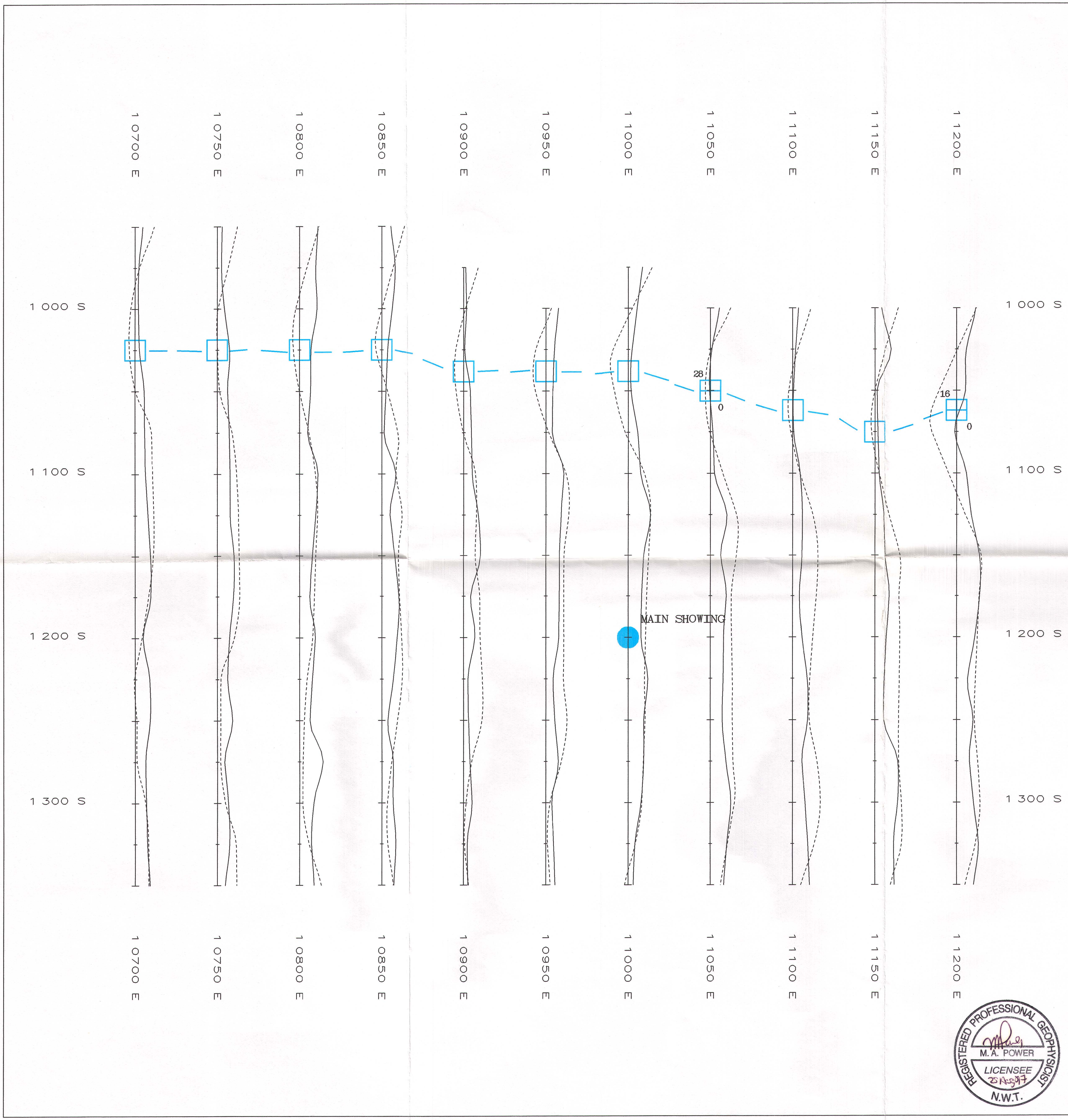
AZ PROPERTY
(NTS 115 F/15)

EAST-WEST GRID

Figure AZ-5.

MAXMIN II-10 SURVEY
220 Hz

AMEROK GEOSCIENCES LTD.



N

Base line – 145

CONDUCTANCE
(7040 Hz)

)50 S

20 – 50 S

5 – 20 S

1 – 5 S

(1 S

CONDUCTANCE UNKNOWN

Depth (m)
10
4
Width (m)

CONDUCTOR AXIS

In-phase / solid

Quadrature – dashed

Data scale: 1cm = 10% Hz

Right of line – positive

COIL SPACING: 100 m

0 100
metres
Scale: 1:1,500

LIBERTY MINERAL EXPLORATIONS INC.

AZ PROPERTY
(NTS 115 F/15)

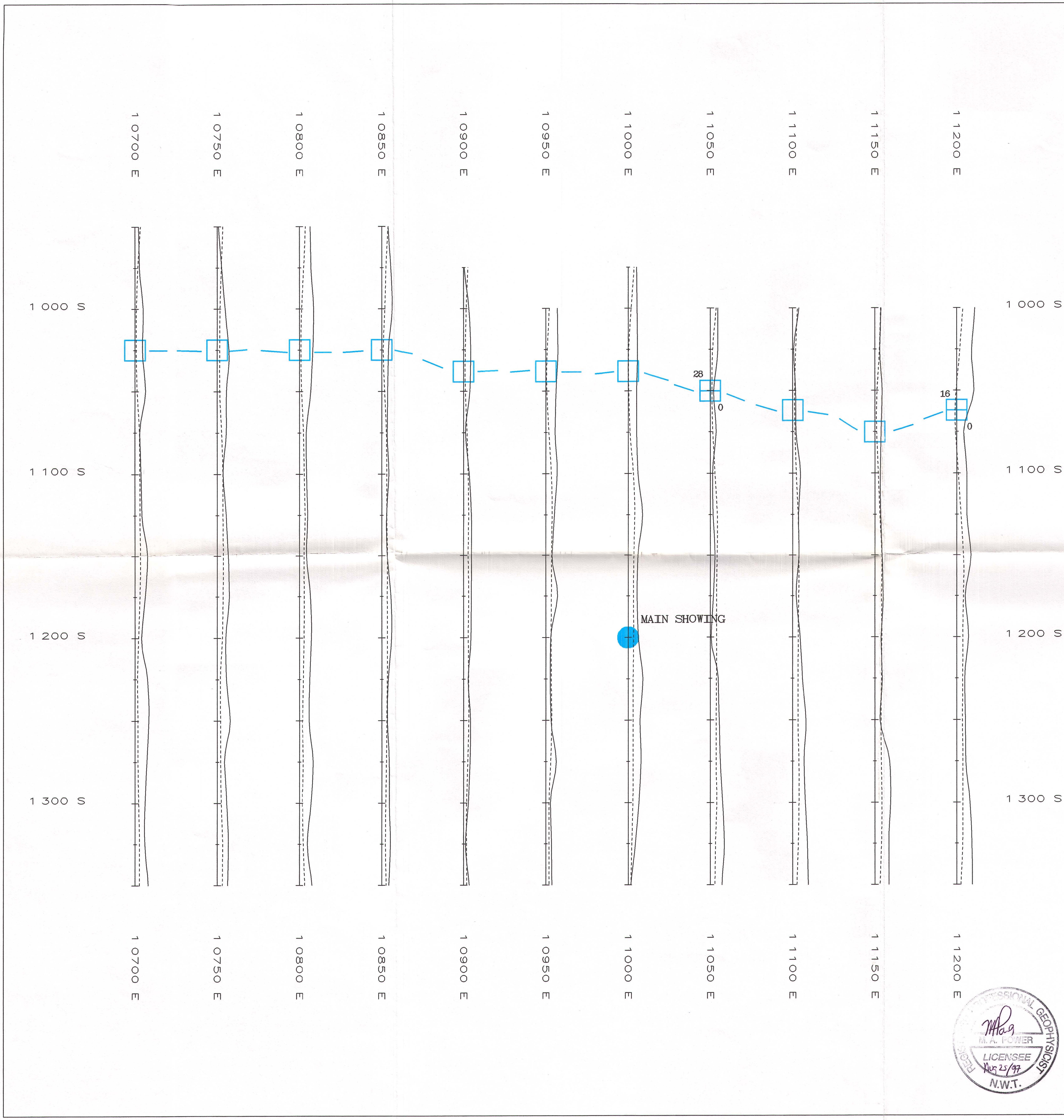
NORTH–SOUTH GRID

Figure AZ–3

MAXMIN I–10 SURVEY
7040 Hz

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
LICENSEE
N.W.T.

AMEROK GEOSCIENCES LTD.



N

Base line – 145

CONDUCTANCE
(7040 Hz)

>50 S

20 – 50 S

5 – 20 S

1 – 5 S

<1 S

CONDUCTANCE UNKNOWN

Depth (m) 10

Width (m) 4

CONDUCTOR AXIS

In-phase / solid

Quadrature – dashed

Data scale: 1cm = 10% Hz

Right of line – positive

COIL SPACING: 100 m

0 100

metres

Scale: 1:1,500

LIBERTY MINERAL EXPLORATIONS INC.

AZ PROPERTY
(NTS 115 F/15)

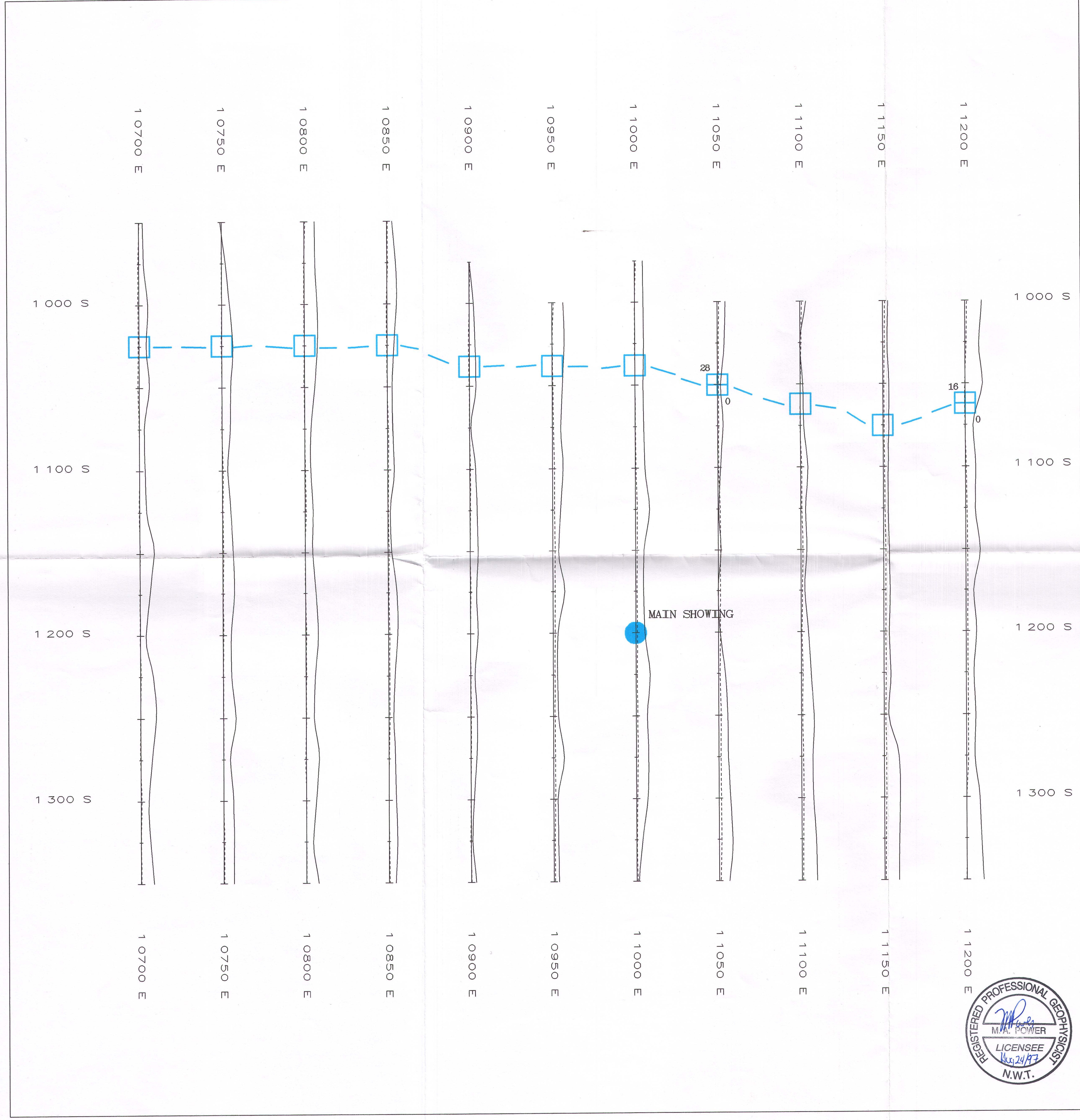
NORTH–SOUTH GRID

Figure AZ-2.

MAXMIN II-10 SURVEY

880 Hz

AMEROK GEOSCIENCES LTD.



Base line – 145

CONDUCTANCE
(7040 Hz)

⟩50 S

20 – 50 S

5 – 20 S

1 – 5 S

⟨1 S

CONDUCTANCE UNKNOWN

CONDUCTOR AXIS

Depth (m)
10
4
Width (m)

In-phase / solid

Quadrature – dashed

Data scale: 1cm = 10% Hz

Right of line – positive

COIL SPACING: 100 m

0 100
metres

Scale: 1:1,500

LIBERTY MINERAL
EXPLORATIONS INC.

AZ PROPERTY
(NTS 115 F/15)

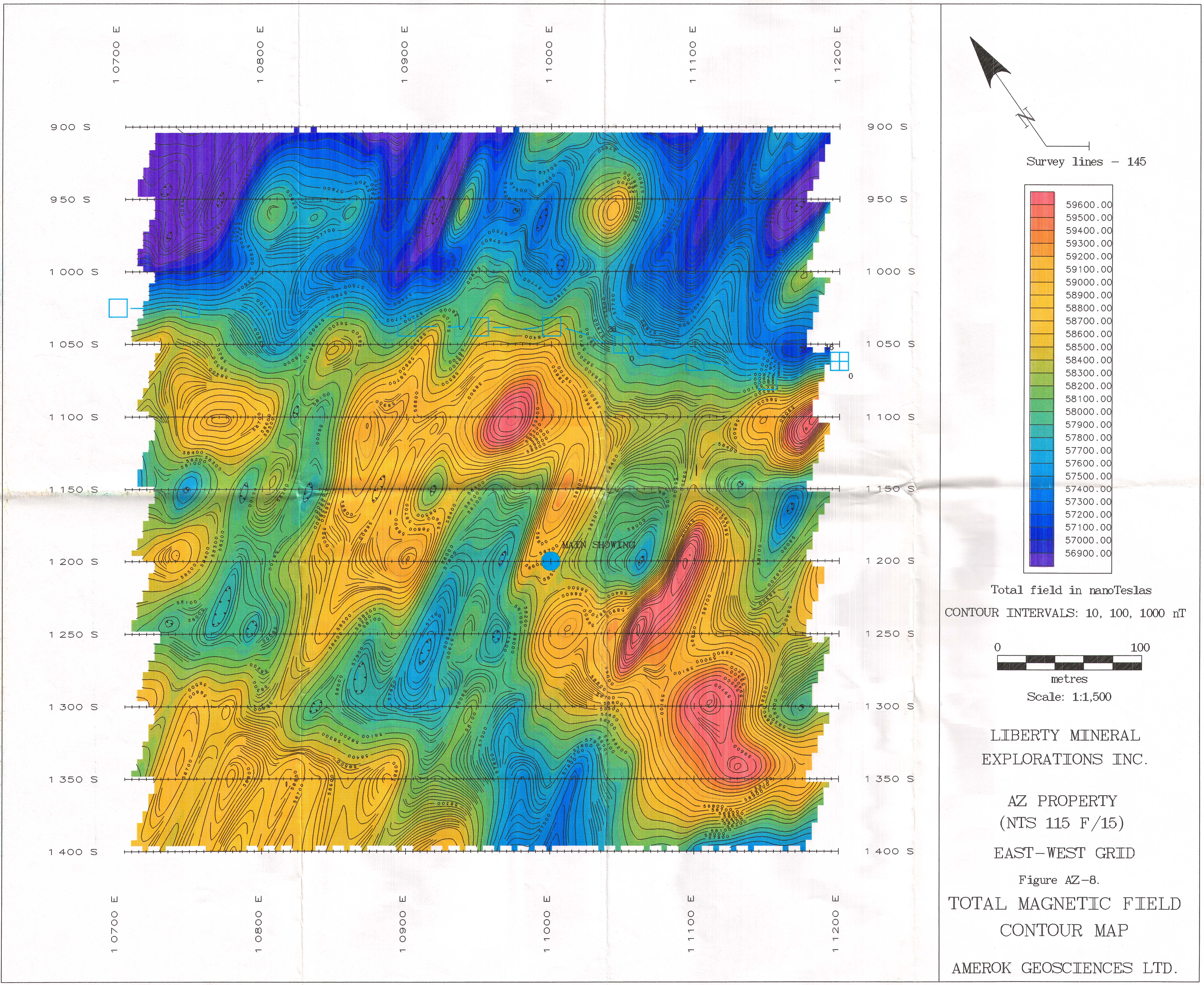
NORTH–SOUTH GRID

Figure AZ-1.

MAXMIN II-10 SURVEY

220 Hz

AMEROK GEOSCIENCES LTD.



LIBERTY MINERAL EXPLORATIONS INC.

AZ PROPERTY
(NTS 115 F/15)

EAST-WEST GRID

Figure AZ-8.

TOTAL MAGNETIC FIELD CONTOUR MAP

AMEROK GEOSCIENCES LTD.

AGCI **AURUM GEOLOGICAL CONSULTANTS INC.**

June 06, 1997

Mr. Bruce MacLean, President
Liberty Exploration Inc.
1413 Holly Street
Whitehorse, Yukon
Y1A 4V2

Dear Bruce,

Re: AZ Property Proposed Work Program.

After our site visit to the AZ claims I have the following comments and recommendations

The best area to concentrate your exploration is near hole 93-1, as recommended in the Davidson report. The outcrop down-slope of this set up appear to be in place although it may have slumped downslope.

I would recommend that a 500 by 500 m grid be located that is centred on the 93-1 drill hole. The existing grid will suffice for one direction but a second set of lines should be cut at right angles to the existing grid. Lines should be at 50 m intervals in both directions (145° and 55°). Amerok Geoscience can then complete Max-Min EM surveys and magnetometer surveys over this grid to better define drill targets This would entail some 11 line km of grid geophysical surveying and could be completed in two to three days The total cost for this including the line cutting would be approximtely $12,000.00 which was included in the budget of April 2

The magnetometer survey should be done again because the wide line spacings on the Noranda grid allow too much bias when contouring the magnetic data Since the mineralization is associated with magnetite it would be very useful to refine the magnetic high surrounding drill hole 93-1.

I would also recommend that a couple of the soil lines be resampled using soil augers and that the samples be run at two sieve sizes to determine which sieve size produces the best results for both copper and gold. The Noranda soil samples were sieved to -35 mesh

Yours truly,
Aurum Geological Consultants Inc.

R. Allan Doherty, P. Geo.

PROFESSIONAL PROVINCE OF R. A. DOHERTY GEOSCIENTIST

Northern Analytical Laboratories Ltd.

20/08/97 Assay Certificate

Liberty Mineral Exploration
Bruce McLean

WO# 07884

Certified by

Sample #			Au ppb	Au ppb	Au ppb
			-200mesh	-100mesh	-40mesh
1100E	900S		14	<15	<10
1100E	925S		I.S.	<10	<10
1100E	950S		I.S.	<50	<20
1100E	975S		9	<5	<10
1100E	1000S		<5	5	<10
1100E	1025S		6	<5	8
1100E	1050S		11	<25	<15
1100E	1075S		6	<5	<10
1100E	1100S		7	<5	<5
1100E	1125S		6	<35	<15
1100E	1150S		6	<5	<10
1100E	1175S		11	5	8
1100E	1200S		40	12	93
1100E	1225S	A	53	I.S.	35
1100E	1225S	B	33	21	27
1100E	1275S		117	241	81
1100E	1300S		85	915	178
1100E	1325S		106	146	79
1100E	1350S		57	50	148
1100E	1375S		77	44	46
1100E	1400S		79	76	40

Note: Most samples were underweight for fire assay (less than 15 grams), especially the -100 and -40 mesh fractions. Detection limits and precision were adversely affected. I.S. means "Insufficient Sample" for meaningful analysis.

105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS
iPL 97H0795

2036 Columbia Street
Vancouver, B C
Canada V5Y 3E1
Phone (604) 879-7878
Fax (604) 879-7898

Northern Analytical Laboratories **63 Samples** Out: Aug 21, 1997 In: Aug 18, 1997 [079513:01:06:79082197]

Project : W.O. 7884
Shipper : Norm Smith
Shipment: PO#: 332328
Analysis:
ICP(AqR)30

Comment:

Document Distribution

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tehorse
YT Y1A 2Z7
Canada
Att: Norm Smith

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DL	3D	EM	BT	BL
0	0	0	0	0

Ph:403/668-4968
Fx:403/668-4890
Em:NAL@hypertech.yk.ca

CODE	AMOUNT	TYPE	PREPARATION DESCRIPTION	PULP	REJECT
B311	63	Pulp	Received as it is, no sample prep.	12M/Dis	00M/Dis

NS=No Sample Rep=Replicate M=Month Dis=Discard

Analytical Summary

##	Code	Method	Units	Description	Element	Limit Low	Limit High
01	0721	ICP	ppm	Ag ICP	Silver	0.1	99.9
02	0711	ICP	ppm	Cu ICP	Copper	1	20000
03	0714	ICP	ppm	Pb ICP	Lead	2	20000
04	0730	ICP	ppm	Zn ICP	Zinc	1	20000
05	0703	ICP	ppm	As ICP	Arsenic	5	9999
06	0702	ICP	ppm	Sb ICP	Antimony	5	999
07	0732	ICP	ppm	Hg ICP	Mercury	3	9999
08	0717	ICP	ppm	Mo ICP	Molydenum	1	999
09	0747	ICP	ppm	Tl ICP (Incomplete Digestion)	Thallium	10	999
10	0705	ICP	ppm	Bi ICP	Bismuth	2	9999
11	0707	ICP	ppm	Cd ICP	Cadmium	0.1	99.9
12	0710	ICP	ppm	Co ICP	Cobalt	1	9999
13	0718	ICP	ppm	Ni ICP	Nickel	1	9999
14	0704	ICP	ppm	Ba ICP (Incomplete Digestion)	Barium	2	9999
15	0727	ICP	ppm	W ICP (Incomplete Digestion)	Tungsten	5	999
16	0709	ICP	ppm	Cr ICP (Incomplete Digestion)	Chromium	1	9999
17	0729	ICP	ppm	V ICP	Vanadium	2	9999
18	0716	ICP	ppm	Mn ICP	Manganese	1	9999
19	0713	ICP	ppm	La ICP (Incomplete Digestion)	Lanthanum	2	9999
20	0723	ICP	ppm	Sr ICP (Incomplete Digestion)	Strontium	1	9999
21	0731	ICP	ppm	Zr ICP	Zirconium	1	9999
22	0736	ICP	ppm	Sc ICP	Scandium	1	9999
23	0726	ICP	%	Ti ICP (Incomplete Digestion)	Titanium	0.01	1.00
24	0701	ICP	%	Al ICP (Incomplete Digestion)	Aluminum	0.01	9.99
25	0708	ICP	%	Ca ICP (Incomplete Digestion)	Calcium	0.01	9.99
26	0712	ICP	%	Fe ICP	Iron	0.01	9.99
27	0715	ICP	%	Mg ICP (Incomplete Digestion)	Magnesium	0.01	9.99
28	0720	ICP	%	K ICP (Incomplete Digestion)	Potassium	0.01	9.99
29	0722	ICP	%	Na ICP (Incomplete Digestion)	Sodium	0.01	5.00
30	0719	ICP	%	P ICP	Phosphorus	0.01	5.00

EN=Envelope # RT=Report Style CC=Copies IN=Invoices Fx=Fax(1=Yes 0=No) Totals: 2=Copy 2=Invoice 0=3½ Disk
DL=Download 3D=3½ Disk EM=E-Mail BT=BBS Type BL=BBS(1=Yes 0=No) ID=C030901
* Our liability is limited solely to the analytical cost of these analyses.

BC Certified Assayer: David Chiu

INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS
iPL 97H0795

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Canada V5Y 3E1
Phone (604) 879-7878
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Client : Northern Analytical Laboratories
Project: W.O. 7884

63 Samples
63=Pulp

[079513:01:06:79082197]

Out: Aug 21, 1997
In : Aug 18, 1997

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
11000E 900S -40 P	<	71	4	37	<	<	<	2	<	<	<	20	24	66	<	48	127	373	2	14	1	3	0.11	1.19	0.53	3.42	1.39	0.12	0.04	0.03
11000E 900S -100 P	<	94	10	46	<	<	<	1	<	<	<	22	29	84	<	57	165	378	3	22	2	4	0.12	1.42	0.67	4.33	1.53	0.11	0.04	0.04
11000E 900S -200 P	<	111	14	62	<	<	<	2	<	<	<	26	38	106	<	69	161	457	3	28	2	5	0.16	2.14	0.86	4.31	2.30	0.11	0.05	0.05
11000E 925S -40 P	<	67	5	44	<	<	<	2	<	<	<	21	26	81	<	46	113	523	3	21	1	3	0.11	1.40	0.69	3.15	1.54	0.11	0.04	0.05
11000E 925S -100 P	<	93	7	57	<	<	<	2	<	<	<	25	34	102	<	61	150	535	3	27	2	4	0.14	1.98	0.75	4.09	2.04	0.11	0.04	0.06
11000E 925S -200 P	<	100	12	65	<	<	<	2	<	<	<	27	39	100	<	70	158	487	3	26	2	5	0.17	2.28	0.74	4.31	2.41	0.12	0.04	0.05
1[illegible]E 950S -40 P	<	55	6	43	<	<	<	2	<	<	0.6	20	22	115	<	37	80	714	3	32	1	2	0.08	1.29	0.84	2.44	1.16	0.06	0.04	0.07
1[illegible]E 950S -100 P	<	79	8	52	<	<	<	2	<	<	0.1	23	28	128	<	46	109	746	4	34	1	3	0.10	1.66	0.81	3.20	1.44	0.08	0.04	0.07
11000E 950S -200 P	<	111	21	66	9	<	<	2	<	<	<	24	33	120	<	53	119	613	4	31	2	4	0.12	1.94	0.73	3.46	1.78	0.07	0.05	0.06
11000E 975S -40 P	<	58	4	38	<	<	<	1	<	<	<	19	25	63	<	45	123	388	3	18	1	3	0.10	1.29	0.50	3.39	1.23	0.08	0.04	0.05
11000E 975S -100 P	<	87	4	52	<	<	<	2	<	<	<	23	32	97	<	57	146	466	5	31	2	4	0.13	1.78	0.65	4.05	1.53	0.10	0.05	0.05
11000E 975S -200 P	<	93	6	61	<	<	<	3	<	<	<	25	38	107	<	65	149	452	6	33	3	5	0.16	2.14	0.70	4.19	1.90	0.10	0.05	0.06
11000E 1000S -40 P	<	102	6	47	<	<	<	2	<	<	0.4	17	25	91	<	39	93	417	4	27	2	3	0.10	1.45	0.67	2.73	1.21	0.06	0.04	0.05
11000E 1000S -100 P	<	93	7	56	<	<	<	2	<	<	<	22	30	103	<	51	123	445	5	31	2	4	0.13	1.91	0.69	3.51	1.63	0.08	0.04	0.05
11000E 1000S -200 P	<	96	8	61	5	<	<	1	<	<	<	22	34	103	<	55	130	433	4	31	2	4	0.14	2.10	0.67	3.71	1.83	0.08	0.04	0.05
11000E 1025S -40 P	<	67	6	45	<	<	<	2	<	<	0.5	22	25	81	<	40	100	503	4	24	1	3	0.10	1.63	0.52	2.98	1.28	0.06	0.04	0.05
11000E 1025S -100 P	<	86	7	58	<	<	<	2	<	<	<	24	31	104	<	52	125	539	5	30	2	5	0.13	2.16	0.63	3.69	1.71	0.07	0.04	0.06
11000E 1025S -200 P	<	91	10	60	<	<	<	2	<	<	<	25	33	107	<	54	126	527	5	31	2	5	0.13	2.25	0.64	3.73	1.80	0.08	0.04	0.06
11000E 1050S -40 P	<	83	9	47	<	<	<	1	<	<	0.6	21	27	85	<	39	97	584	5	27	2	4	0.10	1.59	0.63	2.87	1.26	0.06	0.04	0.05
11000E 1050S -100 P	<	105	9	57	<	<	<	2	<	<	<	24	33	100	<	48	120	635	5	32	2	4	0.11	1.89	0.68	3.52	1.49	0.07	0.04	0.06
11000E 1050S -200 P	<	96	7	64	<	<	<	2	<	<	<	24	34	99	<	53	123	549	5	31	2	5	0.13	2.20	0.66	3.66	1.80	0.08	0.05	0.06
11000E 1075S -40 P	<	69	6	45	6	<	<	1	<	<	0.5	23	26	90	<	38	92	599	5	27	1	4	0.10	1.67	0.69	2.82	1.19	0.05	0.04	0.05
11000E 1075S -100 P	<	95	8	66	7	<	<	2	<	<	<	27	35	119	<	55	128	614	6	35	2	5	0.14	2.46	0.69	3.80	1.83	0.08	0.05	0.06
11000E 1075S -200 P	0.1	93	9	66	12	<	<	2	<	<	<	26	35	117	<	54	125	575	6	34	2	5	0.14	2.45	0.67	3.75	1.84	0.08	0.05	0.06
11000E 1100S -40 P	<	40	5	33	<	<	<	1	<	<	0.3	14	15	53	<	25	71	351	3	19	1	2	0.08	1.04	0.39	2.13	0.75	0.05	0.04	0.04
[illegible]E 1100S -100 P	<	77	5	56	<	<	<	2	<	<	<	20	29	100	<	47	118	430	4	32	2	5	0.12	1.98	0.62	3.49	1.43	0.07	0.05	0.05
1[illegible]00E 1100S -200 P	<	78	8	60	6	<	<	2	<	<	<	21	31	104	<	50	122	381	5	32	2	5	0.13	2.15	0.61	3.61	1.58	0.08	0.05	0.05
11000E 1125S -40 P	<	59	5	48	<	<	<	1	<	<	0.5	17	24	93	<	37	88	428	5	32	2	4	0.10	1.65	0.73	2.73	1.16	0.07	0.04	0.05
11000E 1125S -100 P	<	71	7	56	7	<	<	2	<	<	<	20	29	98	<	42	105	474	5	34	2	4	0.11	1.88	0.71	3.21	1.36	0.08	0.04	0.05
11000E 1125S -200 P	<	78	10	62	<	<	<	2	<	<	<	20	30	93	<	44	108	435	4	32	2	4	0.12	1.98	0.65	3.24	1.48	0.08	0.05	0.05
11000E 1150S -40 P	<	47	3	38	<	<	<	1	<	<	0.4	15	19	74	<	25	68	453	4	24	1	3	0.08	1.12	0.53	2.10	0.75	0.05	0.04	0.05
11000E 1150S -100 P	<	83	9	67	10	<	<	2	<	<	<	25	33	127	<	49	117	662	6	37	2	5	0.13	2.30	0.74	3.55	1.59	0.08	0.05	0.06
11000E 1150S -200 P	<	85	13	72	7	<	<	3	<	<	0.1	26	37	131	<	52	123	639	5	37	2	5	0.14	2.48	0.73	3.74	1.74	0.09	0.05	0.06
11000E 1175S -40 P	<	168	5	41	<	<	<	2	<	<	0.5	18	19	67	<	29	77	457	4	23	1	3	0.09	1.24	0.60	2.53	0.83	0.05	0.04	0.04
11000E 1175S -100 P	<	208	7	64	<	<	<	2	<	<	<	27	33	115	<	50	127	643	6	37	3	5	0.15	2.27	0.72	3.85	1.55	0.09	0.05	0.05
11000E 1175S -200 P	<	209	9	68	6	<	<	3	<	<	<	27	36	115	<	52	128	579	6	35	3	5	0.15	2.45	0.66	3.88	1.73	0.10	0.05	0.04
11000E 1200S -40 P	0.2	504	9	52	<	<	<	2	<	<	<	24	28	70	<	38	97	555	5	27	2	4	0.09	1.40	0.95	3.18	0.99	0.09	0.05	0.05
11000E 1200S -100 P	<	487	6	64	<	<	<	2	<	<	0.1	22	31	91	<	42	115	510	5	39	3	4	0.11	1.68	0.83	3.59	1.14	0.09	0.05	0.06
11000E 1200S -200 P	0.1	673	13	75	<	<	<	2	<	<	<	24	38	103	<	49	123	489	6	41	4	5	0.14	2.04	0.80	3.80	1.35	0.10	0.06	0.06
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

—=No Test ıs=Insufficient Sample Del=Delay Max=No Estimate Rec=ReChec' m=x1000 %=Estimate % P=Pulp

INTERNATIONAL PLASMA LABORATORY LTD

CERTIFICATE OF ANALYSIS
iPL 97H0795

2036 Columbia Street
Vancouver, B C
Canada V5Y 3E1
Phone (604) 879-7878
Fax (604) 879-7898

Client : Northern Analytical Laboratories
Project: W.O. 7884

63 Samples

63=Pulp

[079513:01:06:79082197]

Out: Aug 21, 1997
In : Aug 18, 1997

Sample Name	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppm	Mo ppm	Tl ppm	Bi ppm	Cd ppm	Co ppm	Ni ppm	Ba ppm	W ppm	Cr ppm	V ppm	Mn ppm	La ppm	Sr ppm	Zr ppm	Sc ppm	Ti %	Al %	Ca %	Fe %	Mg %	K %	Na %	P %
11000E 1225SA -40 P	2.5	1278	9	53	<	<	<	2	<	<	0.6	24	22	88	<	27	68	614	7	34	2	3	0.07	1.32	1.13	2.78	0.77	0.06	0.04	0.06
11000E 1225SA -100 P	1.5	1336	10	77	<	<	<	3	<	<	<	31	36	118	<	48	115	706	7	40	3	5	0.12	2.31	1.03	3.87	1.52	0.09	0.05	0.06
11000E 1225SA -200 P	1.3	1134	7	76	7	<	<	2	<	<	<	28	35	109	<	49	116	572	5	36	3	5	0.14	2.34	0.86	3.85	1.60	0.08	0.05	0.06
11000E 1225SB -40 P	1.2	1039	4	43	<	<	<	2	<	<	0.6	18	20	74	<	25	60	300	6	26	2	3	0.07	1.16	1.13	2.62	0.63	0.04	0.04	0.05
11000E 1225SB -100 P	1.1	1133	7	70	18	<	<	2	<	<	<	26	33	122	<	46	108	386	7	40	3	5	0.13	2.26	1.06	3.64	1.38	0.08	0.05	0.06
11000E 1225SB -200 P	1.0	997	9	80	14	<	<	2	<	<	<	26	37	128	<	52	115	368	7	39	3	6	0.15	2.67	0.88	3.85	1.73	0.10	0.06	0.06
1[illegible]E 1275S -40 P	2.3	1209	4	68	<	<	<	2	<	<	<	24	25	55	<	31	85	585	3	24	2	3	0.09	1.21	1.32	4.06	0.73	0.06	0.05	0.05
[illegible]E 1275S -100 P	1.7	1146	7	76	<	<	<	3	<	<	<	26	31	86	<	42	119	620	5	35	3	5	0.12	1.78	1.12	4.36	1.11	0.08	0.05	0.06
11000E 1275S -200 P	1.6	1244	9	89	<	<	<	2	<	<	<	28	41	106	<	51	124	585	6	38	3	6	0.14	2.37	0.89	4.16	1.56	0.10	0.06	0.06
11000E 1300S -40 P	1.7	909	6	70	<	<	<	2	<	<	<	31	24	46	<	29	82	552	3	19	2	3	0.08	1.05	1.21	3.98	0.64	0.07	0.05	0.05
11000E 1300S -100 P	2.0	1087	6	82	<	<	<	3	<	<	<	37	31	79	<	37	118	679	3	30	2	4	0.11	1.41	1.05	4.58	0.85	0.06	0.05	0.06
11000E 1300S -200 P	3.0	1415	9	93	<	<	<	3	<	<	<	46	40	118	<	51	122	828	6	38	3	6	0.13	2.35	0.93	4.29	1.42	0.09	0.05	0.06
11000E 1325S -40 P	0.9	778	5	57	<	<	<	3	<	<	<	24	22	51	<	28	72	511	3	22	1	3	0.08	1.03	0.90	3.25	0.62	0.06	0.05	0.05
11000E 1325S -100 P	1.5	996	6	76	<	<	<	2	<	<	<	27	29	80	<	36	116	576	5	32	2	4	0.11	1.45	1.06	4.43	0.82	0.07	0.05	0.06
11000E 1325S -200 P	1.7	1252	12	88	10	<	<	3	<	<	<	29	39	119	<	51	121	559	6	42	3	6	0.14	2.39	0.95	4.22	1.39	0.09	0.06	0.07
11000E 1350S -40 P	2.4	1382	5	60	<	<	<	2	<	<	<	36	29	109	<	36	91	880	7	39	2	4	0.10	1.71	1.15	3.33	0.98	0.07	0.05	0.06
11000E 1350S -100 P	2.2	1302	7	75	<	<	<	2	<	<	<	35	34	109	<	42	110	808	6	40	2	5	0.11	1.98	1.03	3.94	1.19	0.08	0.05	0.06
11000E 1350S -200 P	2.1	1186	12	79	<	<	<	2	<	<	<	32	35	112	<	47	112	649	6	38	3	5	0.13	2.24	0.89	3.89	1.44	0.09	0.06	0.06
11000E 1375S -40 P	1.6	1022	6	51	<	<	<	2	<	<	0.6	32	22	83	<	29	77	760	5	31	2	3	0.08	1.40	0.84	2.89	0.80	0.06	0.04	0.05
11000E 1375S -100 P	1.6	1207	6	69	<	<	<	2	<	<	<	30	32	106	<	41	104	700	6	39	2	5	0.11	1.93	0.92	3.70	1.13	0.07	0.05	0.06
11000E 1375S -200 P	1.6	1155	11	74	5	<	<	3	<	<	<	26	34	108	<	45	103	548	6	37	3	5	0.12	2.10	0.82	3.63	1.30	0.09	0.05	0.05
11000E 1400S -40 P	0.5	673	6	52	<	<	<	2	<	<	<	23	22	53	<	27	78	566	4	24	2	3	0.08	1.06	0.93	3.22	0.62	0.07	0.05	0.04
11000E 1400S -100 P	3.2	1110	6	75	<	<	<	3	<	<	<	25	31	92	<	40	116	589	6	39	3	5	0.11	1.71	1.03	4.08	0.98	0.09	0.05	0.05
11000E 1400S -200 P	1.3	1402	10	89	5	<	<	3	<	<	<	25	39	115	<	50	115	534	7	44	4	6	0.13	2.31	1.01	4.03	1.34	0.11	0.06	0.06
Min Limit	0.1	1	2	1	5	5	3	1	10	2	0.1	1	1	2	5	1	2	1	2	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Max Reported*	99.9	20000	20000	20000	9999	999	9999	999	999	9999	99.9	9999	9999	9999	999	9999	9999	9999	9999	9999	9999	9999	1.00	9.99	9.99	9.99	9.99	9.99	5.00	5.00
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

---=No Test [illegible]s=Insufficient Sample Del=Delay Max=No Estimate Rec=ReCheck m=x1000 %=Estimate % P=Pulp

TABULATION OF CLAIMS

DATE	RECIPIENT	NATURE	AMOUNT
June 5, 1997	Heli Dynamics	Helicopter	4,359 61
August 4, 1997	"	"	4,833 16
August 10, 1997	"	"	4,737 42
August 16, 1997	"	"	3,962.21
August 8, 1997	Amerok	Geophysics	3,000.00
August 25, 1997	"	"	8,021 00
September 3, 1997	"	"	85.60
December 17, 1997	Yukon Engineering	Linecutting	12,624.85
August 8, 1997	NAL	Assays	1,186 90
TOTAL			$42,828.75