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MAGNETIC SURVEY

and

HORIZONTAL LOOP ELECTROMAGNETIC SURVEY

for

GRAND AMERICAN RESOURCES LIMITED

on the

TOWER CLAIM GROUP

in

CUNNINGHAM TOWNSHIP

PORCUPINE MINING DIVISION

DISTRICT OF COCHRANE

ONTARIO

by

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Lead on this file

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Table of Contents

List of Figures

INTRODUCTION

During May, 1988, linecutting and a total field magnetic survey and a two frequency Max-Min II horizontal loop electromagnetic (HLEM) survey were completed on the 17 contiguous unpatented mining claims known as the Tower Claim Group in Cunningham Township.

A total of 20.89 miles (33.62 km) of linecutting was completed with 20.89 miles of magnetic survey lines and 18.63 miles of Max-Min II electromagnetic survey grid lines. The survey was completed from May 10 to 24, 1988, by personnel of Guy Thibault Exploration Services and Kian A. Jensen Exploration and Consulting Services under the supervision of the author. The data reductions, drafting, interpretation and report were completed by the author from May 30 to July 28, 1988.

The project area is located approximately 40.4 miles (65 km) west of the junction of Highways 101 and 144 to the Foleyet Timber Access Road. South on the all weather gravel access road for approximately 42.3 miles (68 km) to a side logging road which is about 6.2 miles (10 km) south of the former Kenty Gold Mine. Helicopter access was used for the remainder of the 5 miles to the Tower Claim Group. The claims cover the ground between the Kidd Creek Mines base metal deposit and the Shunsby Mine base metal deposit in the central portion of Cunningham Township, Porcupine Mining Division, District of Cochrane, Ontario.

The purpose of the survey was to identify the lithological units, structural features and favourable areas for gold mineralization and base metal mineralization.

LOCATION AND ACCESS

The 17 unpatented mining claims cover the area in the central portion of Cunningham Township, Porcupine Mining Division, District of Cochrane, Ontario as shown in Figure 1.

The project area is located approximately 40.4 miles (65 km) west of the junction of Highways 101 and 144 to the Foleyet Timber Access Road. South on the all weather gravel access road for approximately 42.3 miles (68 km) to a side logging road which is about 6.2 miles (10 km) south of the former Kenty Gold Mine. Helicopter access was used for the remainder of the 5 miles to the Tower Claim Group. The claims cover the ground between the Kidd Creek base metal deposit and the Shunsby Mine base metal deposit in the central portion of Cunningham Township, Porcupine Mining Division, District of Cochrane, Ontario.

Additional access in the winter for the Tower Claim Group is from Sultan northward on the old Sultan-Kenty Mine road and in places following recent trap lines. A new timber access road in presently under construction heading northward in Blamey Township to within 1 mile (1.6 km) of the southeast property boundary. A road access map is included in the Appendix.

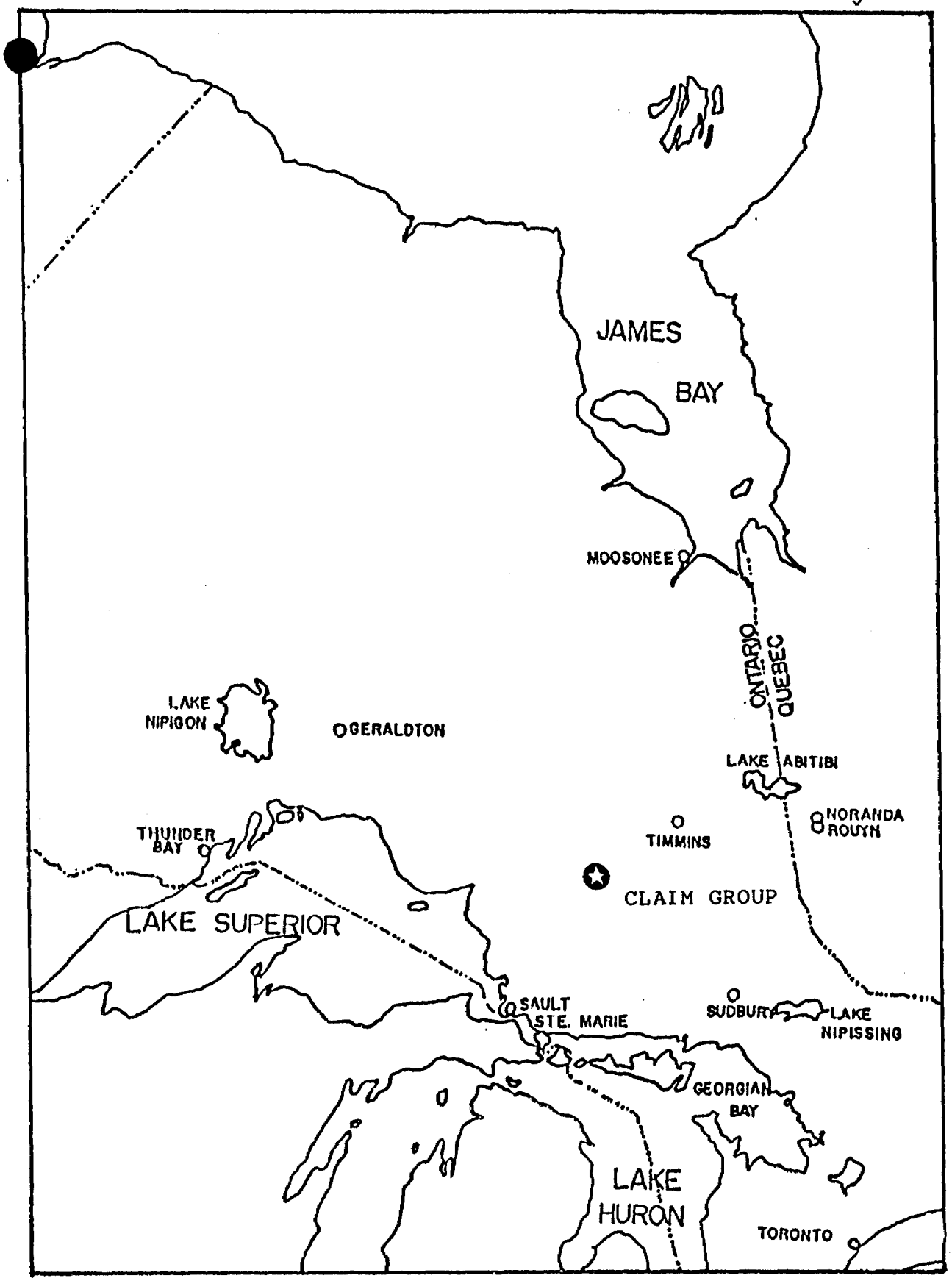


Figure 1: Location Map of the Tower Claim Group for Grand American Minerals Limited, Cunningham Township, Porcupine Mining Division, Ontario

PROPERTY

The property is held 100% by Grand American Minerals Limited of 700 One Bentall Centre, 505 Burrard Street, Vancouver, British Columbia, V7X 1M4. The property consists of 17 unpatented mining claims and recording dates as indicated below and as shown in Figure 2:

P-1030179 to P-1030195 inclusively January 25,1988

TOPOGRAPHY AND VEGETATION

The topography on the claim group varies extremely with flat tag alder and cedar swampy ground in the southern portion of the grid, gentle and moderater grade hills in the central and western portion of the grid, to very steep cliffs on the north central to north eastern, boundary and the south eastern portions. The fire tower is located on a high hill with an approximate elevation of 300+ feet above the surrounding area.

The vegetation ranges from tag alder and dense cedar swamps in the southern portion and extreme northern sections near Beavertail Lake, to birch and poplar and scattered jack pine in the remainder of the area.

The drainage of the area is by two systems. The northern portion of the claim group is drained by Tower Lake to Springer Lake which flows into Beavertail Lake on the northern boundary. The southern portion of the property is drained by the generally north-south cedar swamp to a narrow, gentle to rapid westerly flowing stream into Isaiah Creek.

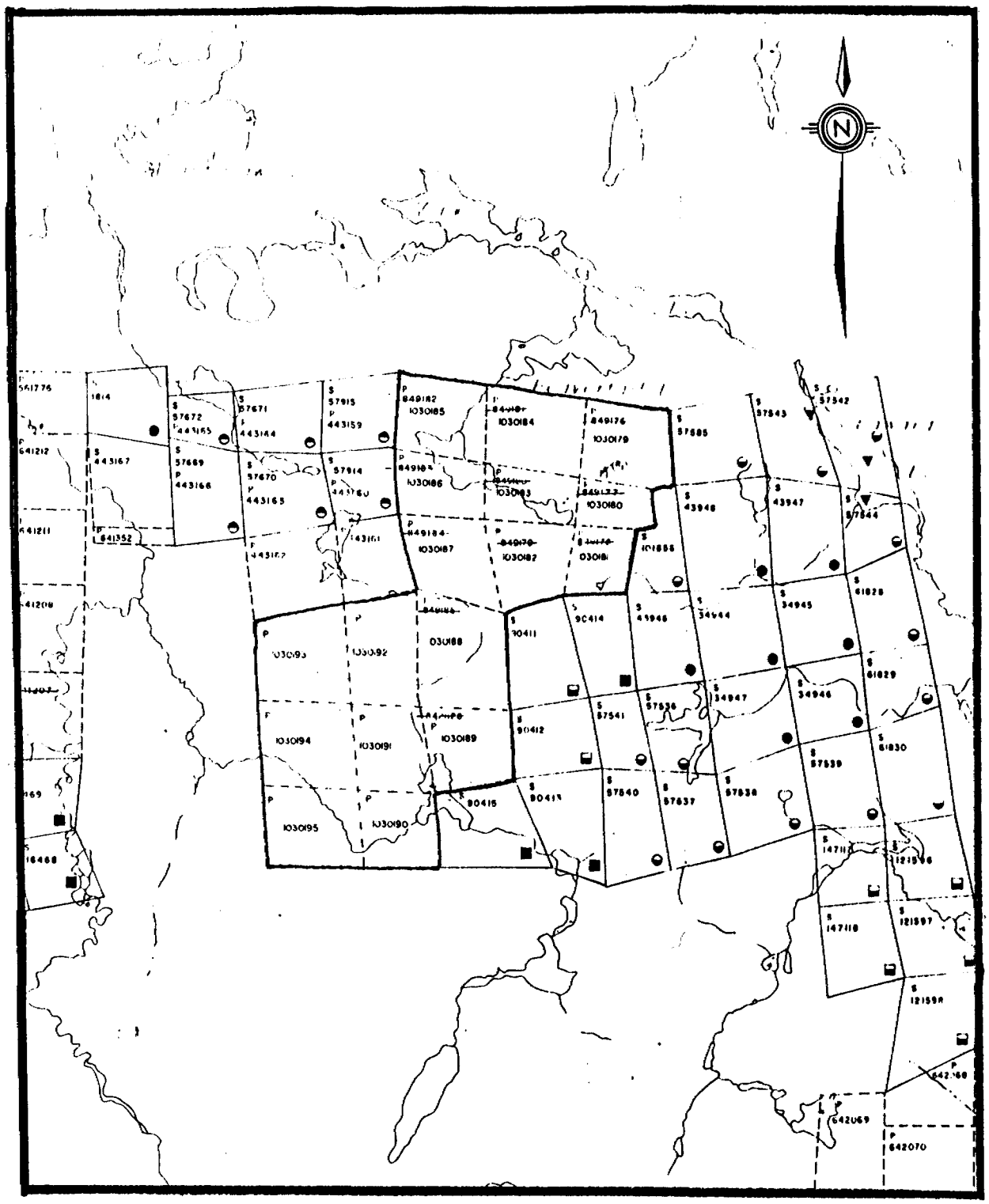


Figure 2: Claim Map and Property Location of the Tower Claim Group (outlined in red) in the Central Part of Cunningham Township, Ontario.
Scale 65% reduction of 1:20 000

GENERAL GEOLOGY

The area has been mapped by V.B. Meen (1944) and G.M. Siragusa (1987). The following is a general description of the lithological units taken from the above sources.

In the northern part of Cunningham Township, metamorphosed high-magnesium tholeiitic basalt are the prominent volcanic unit. The metavolcanics trend east-southeast, and are locally pillowed, vesicular or amygdaloidal and rarely variolitic. The metamorphism has seldom exceeded the greenschist facies.

Cycles of chemical and clastic sedimentation occurred during development of the basaltic series and resulted in the deposition of chert iron formation and epiclastic rocks in the middle and upper section of the series. The chert consists of laminated to medium bedded, barren to ferruginous chert which is commonly interbedded with iron rich layers and locally sulphide mineralization.

The main iron formation in Cunningham Township is located about 1600 meters south of Mink Lake (Tower Claim Group). This formation is broadly triangular and covers an area of about 2 square kilometers. The strike of the chert varies from west-northwest on the west side to north-northeast on the east side.

Closely associated with the chert units are relatively small bodies of feldspar porphyry. Southwest of the fire tower, this porphyry is thought to be a subjacent felsic volcanic rock in the core of the folded eastern tip of the chert unit.

Interbedded with the metavolcanics in the upper and central sections of the basaltic sequence are bands of epiclastic metasediments of polymictic conglomerate, subordinate arkosic arenite and minor slate.

Irregular shaped and variable size mafic intrusives are found spatially associated with the metavolcanics. The composition ranges from diorite to gabbro with the later being dominant.

A small pluton of massive porphyritic quartz monzonite of about 13 square kilometers underlies part of western and southwestern Cunningham Township. The Isaiah Creek Fault bisects the pluton with the western half being displaced about 2000 meters south.

PREVIOUS EXPLORATION ACTIVITIES

The original interest in the area was in 1904 to 1907 by the Ridout Mining Company for economic iron deposits associated with the iron formations. In 1927, galena and sphalerite veins were found in the chert unit. Over the years the main exploration interest has been toward the search for base metal deposits.

In 1933, gold was discovered at Allen Lake by Swayze-Huycke Gold Mines Limited. However, after diamond drilling, shaft sinking to 150 feet and underground development, the gold mineralization did not extend to depth. A sample of pyritized basalt to the northwest of the shaft assayed Fe 8.63% and Au 0.34 g/t.

Other gold showings in Cunningham Township include the MacGregor Property at Peter Lake. The chert unit contains veins of galena and sphalerite and assayed Fe 3.5%, Zn 3.0%, Pb 1.9%, Cu 780 ppm, Ni 84 ppm, Au 1.028 g/t and Ag 7.199 g/t.

On claim S-34945 of the Consolidated Shunsby property (west of the Tower Claim Group), a sample of sphalerite mineralization assayed Zn 5.46%, Fe 4.25%, Pb 0.51%, Cu 0.28%, Ag 9.94 g/t and Au 0.34 g/t.

Northeast of Isaiah Lake, a composite sample of magnetite stringer from a strained ferruginous chert unit assayed Fe 32.5% and Au 0.68% g/t.

The following is a description of the exploration activities surrounding the Tower Claim Group and then work conducted within the boundaries of the Tower Claim Group.

A) Surrounding the Tower Claim Group:

Page-Harley Mines Limited - 1952

This property covers the same claims of Texas Gulf and the Maneast Uranium Group 2. During 1952, they completed 5 drill holes on claim S-57672 and S-57671. The assays were not reported.

Sootheran, E. and Paul, H. - 1954

This property is located on the eastern boundary of the Tower Claim Group. In January, 1954, an EM survey was conducted to locate mineralized faults. A northwest to north-northwest anomaly was located in the southern part of the property. In September, 1954, diamond drilling was completed, the assays were not reported. This property was then optioned to Consolidated Mining and Smelting Company of Canada Limited.

American Metals Company Limited - 1954

During 1954 and 1955, this company completed a magnetic and electromagnetic surveys and geological mapping on 3 blocks of claims. The North West Fayolle Group consisted of the present day claims S-101856, S-90411, S-90412, S-90413 and S-90414 which are located adjacent to the south part of the eastern boundary.

Mr.W.S. Savage, resident geologist for the area, mapped the above mining claims in 1955 and indicated the locations of the diamond drill holes.

Mid Engineering Services Limited - 1956

In June, 1956, a total of 8 diamond drill holes were completed on an outcrop on former claim S-90807 or present day claim P-1030194. All holes were less than 50 feet and no assays were reported.

Maneast Uranium Limited (Group 2) - 1956

During 1956, they completed 13 holes on claim S-76342 and 8 holes on claim S-90807, 1 hole on claim S-57669 (present claim S-443166), 1 hole on S-57670 (present claim S-443163) and 1 hole on S-57671 (present claim S-443164). Drill logs are available but no assays are recorded.

Willars, J.C. Property - 1958

This property consists of mining claim S-101856 located on the northeastern part of the Tower Claim Group. During May, 1958, 6 diamond drill holes all less than 50 feet long were completed near the south boundary progressing westwards. No assays are reported.

Newman, Roy G. - Sicintine Mines Limited Option - 1973

In 1973, 1 diamond drill hole was completed on patented claim S-443165 which intersected iron formation, however no samples were taken. During 1975, Sicintine Mines Limited completed a VEM and fluxgate magnetic surveys and drilled 3 holes on S-422500 which was north of present day claim S-443164. No assays were reported.

Texas Gulf Canada Limited (Cunningham 42) - 1976 to 1979

In 1976, a magnetic and HLEM (EM-17) surveys were conducted on the 7 claim group. The iron formation contains 2 strongly conductive zones and it appears that the economic mineralization is located in the southern conductor. The best intersection by the previous operators was Pb 1.63% and Zn 5.02% over 60 feet. From May to June, 1979, Texas Gulf diamond drilled 6 short holes between Dill Lake and Doe Lake. None of the assays are reported. It is reported that Kidd Creek Mines Limited have estimated that the drilled indicated deposit contains 100,000 tons of 3% Zn, 1% Pb and 0.5% Cu.

M.W. Resources Limited - 1981

The OMEP-81-5-C-55 covered the work conducted by this company, which involved the evaluation of the Shunsby base metal deposit. The results indicated that the North and South Zones contained an estimated 2.4 million tons of).39% Cu, and 2.37% Zn. Gold and silver values were not included in the evaluation. A detail estimate of the high grade core of North Zone near Hiram Lake indicated 80,000+ tons of 3.9% Cu, 6.2% Zn, 1.2 opt Ag and 0.03 opt Au.

B) Within the Tower Claim Group Boundaries:

Anglo Sudbury Mining and Metal Corporation Limited - 1937

In 1937, they held 7 mining claims of which claims S-9305 and S-9319 are covered by present claims P-1030192, P-1030191, and parts of P-1030193 and P-1030194. The majority of their work was concentrated in the Peter Lake area.

Page-Harley Mines Limited - 1953

During 1953, they drilled 7 holes on S-61030 (present claim P-1030182), 1 hole on S-61132 (present claim P-1030186) and 1 hole on S-62785 (present claim P-1030183). The drill holes are numbered from 19 to 27 inclusively for a total of 2976 feet, and only the following holes have assays reported. Drill holes 20 and 21 intersected brecciated iron formation which assayed Pb trace to 0.68%, Zn nil to 3.72%, and Cu trace to 0.19%; and Pb 0.10 to 0.68%, and Zn nil to 2.98%, respectively. Hole 21 was logged as showing a 21 meter intersection of "ore formation". Hole 22 assayed Pb 0.72%, Zn 2.58% and Cu 0.09%. None of the drill samples were assayed for gold.

Maneast Uranium Limited (Group 1) - 1956

This group of claims was located in the southeastern part of the Tower Claim Group and the adjoining property of Shunsby. In January, 1956, 3 holes number 5, 6 and 7 along the northern boundary of S-61137 (present claim P-1030189). Drill hole 5, 6 and 7 were located 450 feet, 675 feet and 800 feet respectively west of No.4 post of S-61137. The following is a summary of the drilling information, no assays were reported:

Hole	Bearing	Dip	Length	Bedrock
5	N 45 E	-50	304 ft	17'-210' iron formation and porphyry 210'-304' diorite, porphyry, diabase
6	N 45 E	-45	114 ft	10'-76' iron formation and diorite 76'-114' diorite
7	N 80 E	-45	73 ft	22'-73' diorite

Sootheran, E. - 1968

The ground consisted of 6 mining claims as follows: S-145927 (present S-443162), S-145928 (present P-1030193), S-145929 (present P-1030194) and S-145930 to S-145932 inclusively. In November, 1968, 3 drill holes were completed on the claim west of present day claim P-1030193. The holes intersected a breccia zone in the granite and the best assay returned Au 0.04 opt and Ag 0.02 opt. During October, 1970, stripping and trenching was completed on the same claim.

Consolidated Shunsby Mines Limited, Grandora Option and M.W. Resources Limited - 1955 to present

The majority of the exploration work conducted in Cunningham Township were completed by the above companies on the original ground staked by Sootheran and Paul which was optioned to Consolidated Shunsby Mines Limited. During the years, additional claims were staked which partly covered the present property of Grand American Mineral Limited.

The following is a brief summary of the work conducted by these companies and companies which have optioned the ground, which cover or partly cover the present Tower Claim Group.

Consolidated Shunsby Mines Limited - 1957 to 1970:

- 1957 and 1965 total of 2259 feet drilled
- Magnetic and Turam (EM) surveys
- geological mapping of Tower Group
- south of Tower Lake a 5 foot wide mineralization zone open at both ends returned an average grade of 1% Pb, 3.8% Zn (present claim P-1030183)
- a wide zone of low grade Pb and Zn with minor Cu in a brecciated chert horizon southern part of claim (present claim P-1030182)
- soil geochemical survey for Cu, Pb, and Zn only, several interesting anomalies were located

Grandora Exploration Limited - 1975:

- geological mapping of Tower Group
- soil geochemical survey on the northeastern 6 claims
- trenching on present claims P-1030188 and P-1030189 on the eastern boundaries

Placer Development Limited - 1979 to 1980

- Magnetic, EM-16 and EM-17 surveys on the North Grid area covering 11 claims which located many east-west trending anomalies

M.W. Resources Limited - 1978, 1980 to present
- sediment and water geochemistry for Cd, Cu, Pb, Zn and Ag
- evaluation report
- diamond drilling 2 holes in the southeast corner of present claim P-1030179, which indicated heavy sulphide mineralization and a 5 cm band of massive galena and minor sphalerite
- diamond drilling 3 holes near the south boundary of present claim P-1030182

A total of 25 diamond drill holes have been completed by various companies over the years in generally 7 areas. It appears that the soil geochemical anomalies coincide with several of the electromagnetic anomalies. In total the previous work has been concentrated in the areas south of Tower Lake, the east side of Springer Lake, the northeast corner of the property, and the south boundary area of P-1030182.

GEOPHYSICAL SURVEY

INTRODUCTION:

A total of 20.89 miles (33.62 km) of grid was established to cover the 17 mining claims. Two baselines were established perpendicular to the geology, being and east-west baseline in the northern portion and a north-south baseline (labelled Line 0) for the southern and southwestern portion of the property.

All grid lines were established at intervals of 100 meters with pickets every 25 meters. The line cutting was completed by personnel of Guy Thibault Exploration Services and the geophysical crews from May 10 to 22, 1988.

A total of 20.89 miles (33.62 km) of magnetic surveying was completed by the author from May 13 to 19, 1988, and by M. Caron and A. Delisle on May 24, 1988. Two Geometrics G-826/816 proton procession magnetometers were utilized for the data collection. The instrument specifications are located in the Appendix.

A total of 18.63 miles (29.98 km) of horizontal loop electromagnetic (HLEM) surveying was completed by M. Caron and A. Delisle from May 18 to 23 and 25, 1988, under the supervision of the author. The unit used for this survey was the Apex Max-Min II system in metric units. The instrument specifications are located in the Appendix.

The data reductions, drafting, interpretation and report were completed by the author from May 30 to July 28, 1988.

MAGNETIC SURVEY:

The magnetic base station was established on a feldspar porphyry outcrop which was located the west side of the main cabin north of Tower Lake. The grid co-ordinates are 3+50mE and 0+25mS with a mean base value was 57,787 gammas. The base line and all the tie lines were surveyed at 25 meter intervals in a looping fashion to establish accurate control stations for each grid line. The north-south grid lines were surveyed at 25 meter intervals. Portions of 3 different lines were surveyed at an interval of 12.5 meters to evaluate the range and complexity of the magnetic signature of the iron formation.

The data was corrected for the daily drift and the tie-ins at the control stations. A base level of 57,000 gammas has been removed from all the observed readings.

The corrected data was plotted on a base map with a scale of 1 cm to 25 meters (1:2500). The data was contoured at 100 gamma intervals wherever possible as shown in Figure 3.

HORIZONTAL LOOP ELECTROMAGNETIC (HLEM) SURVEY:

The horizontal loop electromagnetic (HLEM) survey was conducted with the metric Apex Max-Min II unit with a coplanar coil configuration. The coil separation used for the entire survey was 50 meters due to the narrow nature of the suspected conductive horizons. The 50 meter coil separation was maintained during the survey regardless of the topography. The survey frequencies were 444 hz and 1777 hz and the readings were observed at 25 meter intervals.

Before commencing the survey, a phase mixing test was conducted with the unit at a 50 meter coil separation on frequencies 444 hz and 1777 hz. The results fall within the normal guidelines for the instrument.

During the survey, the transmitter was trailing while the receiver was the lead. At each station, the receiver operator would take an inclinometer reading of the slope of the topography, this value was used to tilt both the transmitter and receiver coils to maintain the coplanar configuration. The maximum inclinometer reading in which the HLEM unit can be tilted is 70%. The In-Phase and Quadrature values as a percentage of the primary electromagnetic field were recorded. The actual reading point and plotting location is midway between the two operators.

Two areas were difficult if not impossible to obtain valid readings. The first area was located on Lines 1 South and 2 South at the scarp. The inclinometer readings were within the 70% limits, but the readings were off-scale (100% +/-). The second area was the northeast portion of the grid which the slope exceeded the 70% limit. This was due to the steep cliffs and deep gullies between high hills. A total of 0.51 miles (0.85 km) could not obtain on scale In-Phase and Quadrature readings.

The data reductions required the correction for the topographic effects on the In-Phase and Quadrature readings. The coil separation of 50 meters was maintained regardless of the topographic effects. During the variations in the topography the coils were less than 50 meters in the true horizontal distance. The following are the equations required to reduce the data:

$$\text{In-Phase} = + \left(1 - \left(\text{Costan}^{-1}\left(\frac{\%\ \text{grade}}{100}\right)\right)^3\right) \times 100$$

$$\text{In-Phase \& Quadrature} = x \left(1/\text{Cos} \left(\tan^{-1}\left(\frac{\%\ \text{grade}}{100}\right)\right)^3\right)$$

The corrected data is plotted on base maps with a scale of 1 cm to 25 meters (1:2500). The data is plotted at a scale of 1 cm to 10% of the primary field. The In-Phase values are on the left side of the line and the Quadrature is on the right side of the line. The right side of the line is positive and the left side of the line is negative. Figure 4 shows the data and profiles for Frequency 444 hz and Figure 5 shows the data and profiles for frequency 1777 hz.

INTERPRETATION:

The results of the interpretation of both the magnetic survey and the electromagnetic survey are located on Figure 6.

A) Lithological Units:

The magnetic survey indicated at least five major lithological units within the claim group. The following is a brief description of the units.

Unit 1: Felsic Intrusives

This unit is located in the south western portion of the property and is composed of medium grained porphyritic pink granite. Several outcrops were examined by the author. The contact of the granitic intrusive is approximately 50 metres east of a long northerly trending magnetic low. This feature could be a possible fault or shear zone.

Unit 2: Mafic Intrusives

This unit is composed of gabbro with varying grain sizes. The principle locations of the interpreted units are in the south and southwest portion of the property. The unit located from 8 West to 11 West on Lines 8 South and 9 South appear to represent a fold pinching to the south and open to the north. Two small bodies located at 4+50 West on Line 12 South and 4+75 West on Line 15 South may be either gabbro of weakly magnetic iron formation. It appears that the southern area from Line 14 South at Line 0 to Line 15 South at 3 West is a large gabbro intrusive.

One gabbroic outcrop was examined by the author on Line 1 East at 4+75 North. This intrusive does not have a distinct magnetic signature to identify its extent within the mafic metavolcanics.

Unit 3: Metasediments

This unit is sub-divided into two distinctly different units, low to moderate magnetic signature and high to extremely high magnetic signature.

Unit 3a is composed of water lain metasediments, cherty metasediments and possibly water lain metavolcanic tuffs. Since the interpretation was based upon the magnetic characteristics and due to the reading interval, it is possible that some very narrow magnetic bands of iron formation may be present within these units. Also, some of the magnetite rich iron formation may be replaced by sulphide mineralization and the magnetic signature would be destroyed.

Unit 3b is composed of magnetite rich iron formation. The locations of this unit are fairly broad and may be composed of numerous narrow bands of magnetite, chert, sediments and water lain metavolcanic tuffs.

The chemical metasedimentary Unit 3 is located in the northern and central portions of the property. The northern and northeastern zone of sediments appear to represent a basin depositional environment. The unit on the northern part dips moderate to shallow to the south while the southern part dips moderate to shallow to the north. It appears that the nose of the eastern portion of this basin is possibly plunging off the property at the eastern boundary near Line 8 East at 1+50 South. The southwestern portion appears to be either folded or drag folded due to the northerly trending fault, in a southerly strike direction.

The second main location of Unit 3 is the western portion of the north half of the property. It appears that the unit strikes approximately north-south and consists of several isoclinal folds. The magnetic high bands appear to be discontinuous and may represent increase sulphide content.

The area between the two distinct metasedimentary units, is represented by a magnetic low and is probably due to a fault alteration zone. The rock composition may be either metasedimentary or metavolcanic in origin. A similar are possibly exists south of Line 11 South from 2 West to 5 West.

Unit 4: Felsic Metavolcanics or Intrusive

This unit is located north, east and west of Tower Lake. In places examined by the author, the unit appears to be a feldspar porphyry intrusive. Its location approximates the center of the sedimentary depositional basin. The contacts are probably some what irregular with the exception of the south contact which is fault bounded.

Unit 5: Mafic Metavolcanics

This unit consists of moderately magnetic, chloritic rich tuffs, pyroclastics, flows and pillows. It appears that this unit is overlain by the metasediments. It is located on the northern part of the property, around the edges of the sedimentary basin, and to the southwestern part of the property between the granite and the sediments. Two areas of possible mafic metavolcanics or metasediments are located in the northerly trending zone west of Line 0.

B) Structural Features:

A minimum of seven faults or shear zones were located. The main zones are the northerly trending major fault located at 1+50 West. This is probably a very wide zone and the extreme magnetic low indicates extensive alteration probably by carbonatization.

The next major fault zone is located near the south shore of Tower Lake at the contact of the iron formation and the feldspar porphyry intrusive trending in a west-northwest direction. Sulphide mineralization and significant assay results are located near this fault zone.

A shear zone outcrops north of 0+75 West on Line 7 South. This zone appears to be trending in a northeast direction. This zone is carbonatized and contains quartz veining. However, the HLEM survey indicates its center is located at 0+50 West on Line 7 South.

A short shear zone appears to displace the iron formation between Lines 12 South and 13 South.

Two near parallel north-northeast trending faults are located in the granitic intrusive in the southwestern portion of the property. The magnetic low located near the contact of the granitic intrusive may be an alteration zone due to either faulting or shearing which appears to be near parallel to the Isaiah Lake Fault.

It is possible in the intensely folded and complex nature of the iron formation that some of the fold axis may be fault and/or shear zones. Additional geological information would be required to refine the structural interpretation within the area of the metasedimentary units.

C) Electromagnetic Anomalies:

The HLEM survey located a total of 38 anomalies. These anomaly axis are lettered from A to Z and AA to AG. Wherever possible a complete interpretation has been done. However, within the iron formation, some anomalies could be separated while others had interference from nearby sources. The location of the anomalies from both frequencies are plotted on Figure 6. Since frequency 444 hz. is less affected by the overburden, the interpretation and results are from this lower frequency.

The following is a brief summary of the results of the HLEM survey and the anomaly interpretation:

Anomaly A, A' and A":

This 600+ meter long anomaly is located from the base line to Line 6 South from 2+25 West to 1+00 West. It is possible that this anomaly is related to the fault zone and on the east side of a magnetic high. Two line sections had readings off scale. The conductivity-thickness product ranges from 31 to 85 and depths from 8 to 13 meters to the top of the anomaly. The dip appears to be about 40 degrees West.

It is possibly that the southern extension is a portion of anomaly J and anomaly M are related to this anomaly. Also, the northern part may be related to anomaly A', located off shore on Line 3 West and anomaly A" located at 3+00 North on Line 5 West.

Anomaly B:

The conductivity-thickness product of 115 and depth of 6 meters is related to a 40 degree South dipping cherty horizon which outcrops on the shore line.

Anomaly C and C':

This anomaly could not be defined due to partial data. However, it is related to a high magnetic iron formation at or near the property boundary. This anomaly and corresponding iron formation may be folded and be related to the anomaly C' located on Line 1 South at 4+37 West. This anomaly C' has a conductivity-thickness product of 300, a depth of 6 meters and dipping about 40 degrees West.

Anomaly D:

This anomaly is located at 1+25 North on Line 4 West. The conductivity-thickness 8.5 and depth of 15.5 meters are probably inaccurate due to the traverse-anomaly strike angle. This anomaly is interesting as it is located near the metasedimentary and metavolcanic contact.

Anomaly E:

This north-northwest striking anomaly located on the base line at 3+50 West has a conductivity-thickness product of 285, depth of 5 meters and dipping at 70 degrees East. This is possibly due to a shear zone.

Anomaly F:

Interpretation was impossible to complete. It is located in the possible nose of a folded magnetic band of iron formation and may be due to fracturing at 3 West on Line 1 South.

Anomaly G:

Interpretation was impossible to complete due to interference from nearby anomalies. It is located within a high magnetic iron formation at 2 West on Line 4 South.

Anomaly H:

This anomaly is located within a band of high magnetic iron formation at 2+50 on Line 5 South. The conductivity-thickness product is 34, depth of 5 to 10 meters and dipping 40 degrees East. This is probably caused by sulphide mineralization and/or replacement within the iron formation.

Anomaly I:

This anomaly is at 2+25 West on Line 4 South with a conductivity-thickness product of 50, depth of 10 meters and dipping 40 degrees West. The anomaly is located between two highly magnetic bands of iron formation and may be due to sulphide mineralization.

Anomaly J and J':

This north-northeast trending anomaly is located from 2+25 West on Line 9 South to 0+75 West on Line 5 South. The conductivity-thickness product averages 45 to 57, depth of 11 to 15 meters and dips 40 degrees West. The exceptions to the above interpretation are located on Line 6 South where the conductivity-thickness product is 225 and may be due to the interference of the south end of anomaly A, and Line 5 South where the dip is 40 degrees to the East.

This anomaly may be due to a possible fault or shear zone.

Anomaly K:

This north-northeast trending anomaly is located within a folded portion of a high magnetic iron formation. The northern portion could not be interpreted due to interference from anomaly J. The southern portion has a conductivity-thickness product of 23 and depth of 10 meters, and may be related to the northeast trending fault.

Anomaly L:

No interpretation on this anomaly could be completed due to the complexity of the signature. It appears that this anomaly may be due to either a single large source at depth or two narrow sources approximately 25+ meters apart. Whichever the case, it is located in a moderate magnetic unit between two high magnetic bands of iron formation.

Anomaly M and N:

This area requires additional surveying to unravel the complexity of the anomalies. Anomaly M has the northern portion possibly related to a fault and the anomaly may be an extension of anomaly A. The southern portion has a conductivity-thickness product of 85, depth of 15 meters and a dip of near vertical to 80 degrees West.

Anomaly N located on Line 0 at 7+50 South is wide with a conductivity-thickness product of 60, depth of 6 meters and dipping between 80 to 60 degrees South.

Both anomalies are located within the moderate magnetic metasediments or tuffaceous sediments.

Anomaly O and O':

The conductivity-thickness product is 10 with a depth of 10.5 meters and dipping 40 degrees East. This anomaly strikes north-northeast within a high magnetic band of iron formation with the northern portion located near or east of the property boundary.

The folded north and eastern portion of this anomaly is lettered O' and is located at of near the south property boundary. Only partial data is available and complete interpretation is impossible to complete.

Anomaly P and P':

This northerly trending anomaly may be related to a fault zone located near the fold axis in the northern portion of the iron formation and on the west side of the high magnetic iron formation. The conductivity-thickness product of either 80 or 110, depth of 5 to 13 meters and dipping from 30 to 60 degrees East. The exception to the above is the portion located on Line 0 which has the 110 conductivity thickness product and a dip of near vertical to 80 degrees South.

Anomaly Q:

This short anomaly is located at 2+25 West on Line 12 South and has a conductivity-thickness product of 45, depth of 18.5 meters and dipping 40 degrees West. It is located approximately 25 meters west of the magnetic iron formation.

Anomaly R:
This extremely weak and poor anomaly is located at the contact of the magnetic iron formation on Line 13 South at 2 West.

Anomaly S:
This weak and poor anomaly may be due to either a weak source or the overburden.

Anomaly T:
This anomaly is located between two high magnetic iron formation bands. The interpretation was impossible to complete due to the existence of multi anomalies. It is possible that the anomaly dips about 20 degrees north. This area requires additional surveying in detail with additional grid lines to define the several anomalies.

Anomaly U:
This anomaly is located in the metasedimentary unit and is not related to iron formation but probably due to a shear zone. The conductivity-thickness product is 170 with a depth 7.5 meters and dipping 80 degrees North.

Anomaly V:
This anomaly is located in the metavolcanics at 3+75 to 3+50 South on Lines 6 East and 7 East respectively. The anomaly has a conductivity-thickness product of 20 to 45, depths from 6 to 15 meters and dipping 40 degrees North.

Anomaly W:
This anomaly is located in a moderated magnetic area on the north flank of a magnetic iron formation. The conductivity-thickness product is 45, depth of 7 meters and dipping about 40 to 70 degrees North. This anomaly is in a zone of multi-anomalies and the interpretation may be affected from the interference from the other anomalies.

Anomaly X:
This 400 meter long weak to moderate anomaly south of Tower Lake could not be accurately interpreted due to the interference from nearby anomalies. It is located within to the north flank of a magnetic band of iron formation.

Anomaly Y:
The anomaly is located at 0+50 South on Line 0 to 0+75 South on Line 1 East and related to the north flank of a magnetic iron formation and possibly the Tower Lake Fault. The conductivity-thickness product ranges from 200 to 48, depth from 5 to 13 meters and dipping approximately 40 degrees North. It appears the anomaly is probably due to the fault on the west side and possible sulphide mineralization on the east side.

Anomaly Z:

This anomaly is located near the south shoreline of Tower Lake and only partial anomaly data was collected due to the lake. This anomaly may be due to sulphide mineralization either at the contact of the feldspar porphyry intrusive and metasediments or the Tower Lake Fault. Additional surveying is required for the interpretation of this anomaly.

Anomaly AA:

This is located at 3 North on Line 1 East with a conductivity-thickness product of 48 to 68, a depth of 14 to 16.5 meters and dipping approximately 40 degrees South. This anomaly is related to the contact of the iron formation bearing metasedimentary unit and the massive metasedimentary to tuffaceous metavolcanic unit to the north.

Anomaly AB:

This anomaly is related to the high magnetic iron formation trending east-west located at about 2+25 North from Lines 2 East to 4 East. Due to the topography and the off scale readings on the inclinometer and the Max-Min unit, the anomaly could not be located on either Lines 5 East or 6 East. The conductivity-thickness product ranges from 57 to 100, depth ranges from surface to 16 meters and dipping approximately 40 degrees South.

Anomaly AC:

This is located between two High magnetic iron formation at 1+75 North on Line 3 East with a conductivity-thickness product of 285, depth 5 meters and dipping about 40 degrees South. This may be due to a shear zone within the metasediments.

Anomaly AD:

The one line anomaly is located on Line 5 East with a conductivity-thickness product of 140, depth of 5 meters and dipping approximately 40 degrees South. It is related to magnetic iron formation.

Anomaly AE and AF:

The 40 degrees North dipping anomaly with a conductivity-thickness product from 85 to 95 and depth of 10 meters appear to be cross cutting the iron formation and may be related to either a shear zone or separate anomalies related to the flanks of the iron formation.

It is possible that the west portion may be related to a poor defined anomaly at 1+50 North on Line 4 East and may be due to the contact of the feldspar porphyry intrusive. If this is the case then the eastern portion may be related to anomaly AF which has a higher conductivity-thickness of 250 and also dipping north.

Anomaly AG:

At 1+25 North on Line 1 East the anomaly is related to a moderate magnetic metasedimentary unit on the north flank of a iron formation near the contact of the feldspar porphyry intrusive. The conductivity-thickness is 48 to 67, depth of 10 to 11 meters and dipping about 40 degrees south.

CONCLUSIONS

The geophysical surveys identified the major lithological units. Difficulty was encountered in the separation of the granite intrusive and the metavolcanics. This was due to similar magnetic susceptibility of the mafic metavolcanics and the granitic intrusive in the southwest portion of the property. Also, similar difficulty arose with the contact between the massive metasedimentary unit and the massive metavolcanic unit in the northern portion of the property.

It appears that the metasediments in the northern portion of the property form a syncline depositional basin feature. The nose is suspected to consist of several tight folds. The southern portion of the basin appears to consists of refolded folds which are suspected to be overturned.

The western central iron formation units appear to be a series of isoclinal overturned folds.

Several major and minor faults and/or shear zones were located. However, due to the folding and complexity of the iron formation, possible faults within or near parallel to the strike were difficult to interpreted.

The electromagnetic HLEM survey was very successful in the location of 38 anomalies of varying conductivity-thickness. The depths to the top of the anomalies were relatively constant with one exception as in Anomaly L. This anomaly is either two near parallel conductive bodies or a wide deeply buried conductive body.

The dips of the various anomalies were in the range of 40 degrees. The multi-conductive zones located in the southern parts of Lines 1 East to 3 East, appear to be near horizontal to 40 degrees. A few exceptions to the 40 degree dip are parts of anomalies A", E, M, N, P, U and W. These are steeply dipping and may represent a different period of mineralization from those located and associated with the various units of the metasediments (iron formation).

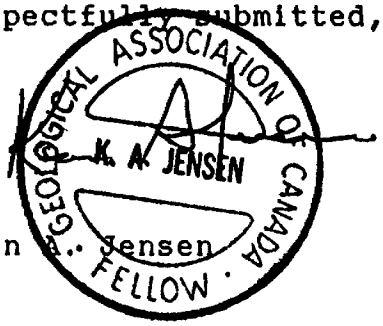
The following anomalies appear to justify addition work. Anomalies G, H and I within the iron formation. The Anomalies A, J, J' and M which are located and may be associated the northerly trending fault zone. Also, Anomalies P and P' warrants additional work as this may be the southern portion of the same fault zone. Anomalies AA and AB in the northern portion of the property warrants additional work as these may be the source of the base metal soil geochemical anomalies detected by previous exploration work.

The northeastern contact of the feldspar porphyry intrusive and the iron formation has a weak anomaly probably due to the grid line orientation and additional work is justified for this area. Also, the entire southern portion of the porphyry contact should be examined in detail, Anomalies Y and Z. The trenches with the interesting base metal assays are located near the southern shore line of Anomaly Z.

The last area that warrants additional work is the iron formation units south of Tower Lake, Anomalies O', T, W and X. The previous diamond drilling was done northwards and possibly drilled down dip of the units.

During previous work by the author in the adjoining townships, gold mineralization is associated with the east-northeast and the north-northwest to northwest structural features.

Respectfully submitted,



Kian A. Jensen

RECOMMENDATIONS

Based upon the available information and the surveys conducted by the author for Grand American Minerals Limited, the first priority is the completion of the geological mapping of the property with emphasis in the vicinity of the various anomalies. All structural features located should be examined in detail and may warrant additional work in the form of either stripping or trenching.

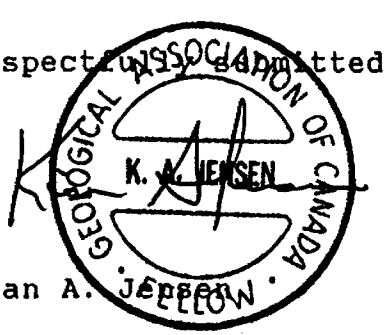
Upon the completion of the geological mapping, the geophysical surveys should be re-interpreted using the strike and dip information and structural information to clearly define the complex folding.

Additional detail grids should be established to define the following anomalous areas: 1) Stringer Lake, 2) Tower Lake, 3) the northern porphyry contact with line orientation to the northeast, 4) Anomaly M and N with both north-south and east-west fill-in lines, and 5) detail readings on the existing and fill-in grid lines to cover the area south of Tower Lake.

Based upon the results of the additional recommended work, a limited diamond drilling program may be warranted for the location of not only base metal deposits, but also for gold mineralization.

Dated at Timmins, Ontario
July 28, 1988

Respectfully submitted,



Kian A. Jensen

Kian A. Jensen
Exploration and Consulting Services

CERTIFICATE

With reference to my report on the Magnetic Survey and Electromagnetic Survey on the Tower Claim Group for Grand American Resources Limited, Dated July 28, 1988.....

I, Kian A. Jensen, of the City of Timmins, Ontario, do hereby certify the following to be true and accurate to the best of my knowledge:

1) That I received an Honour B.Sc. degree in Earth Science, Geology Major, from the University of Waterloo,

2) That I have been employed as a geologist and/or geophysicist by various exploration companies and consulting companies since 1978,

3) That I have been and still am a member in good standing in the following associations:

a) Society of Exploration Geophysicists - Associate, 1981
b) Geological Association of Canada - Fellow, 1983

4) That I am the author of the corresponding report, and have been actively exploring and prospecting in the Timmins area since 1981,

5) That I have no interest directly or indirectly in the mining claims comprising the property described in this report or in the shares of any company or companies in this joint venture on this property or the surrounding properties, nor do I expect to receive any directly or indirectly.

Dated this 28th day of July, 1988
Timmins, Ontario

GEOLOGICAL ASSOCIATION OF CANADA
K. A. JENSEN
FELLOW

Kian A. Jensen, B.Sc.
Consulting Geologist/Geophysicist

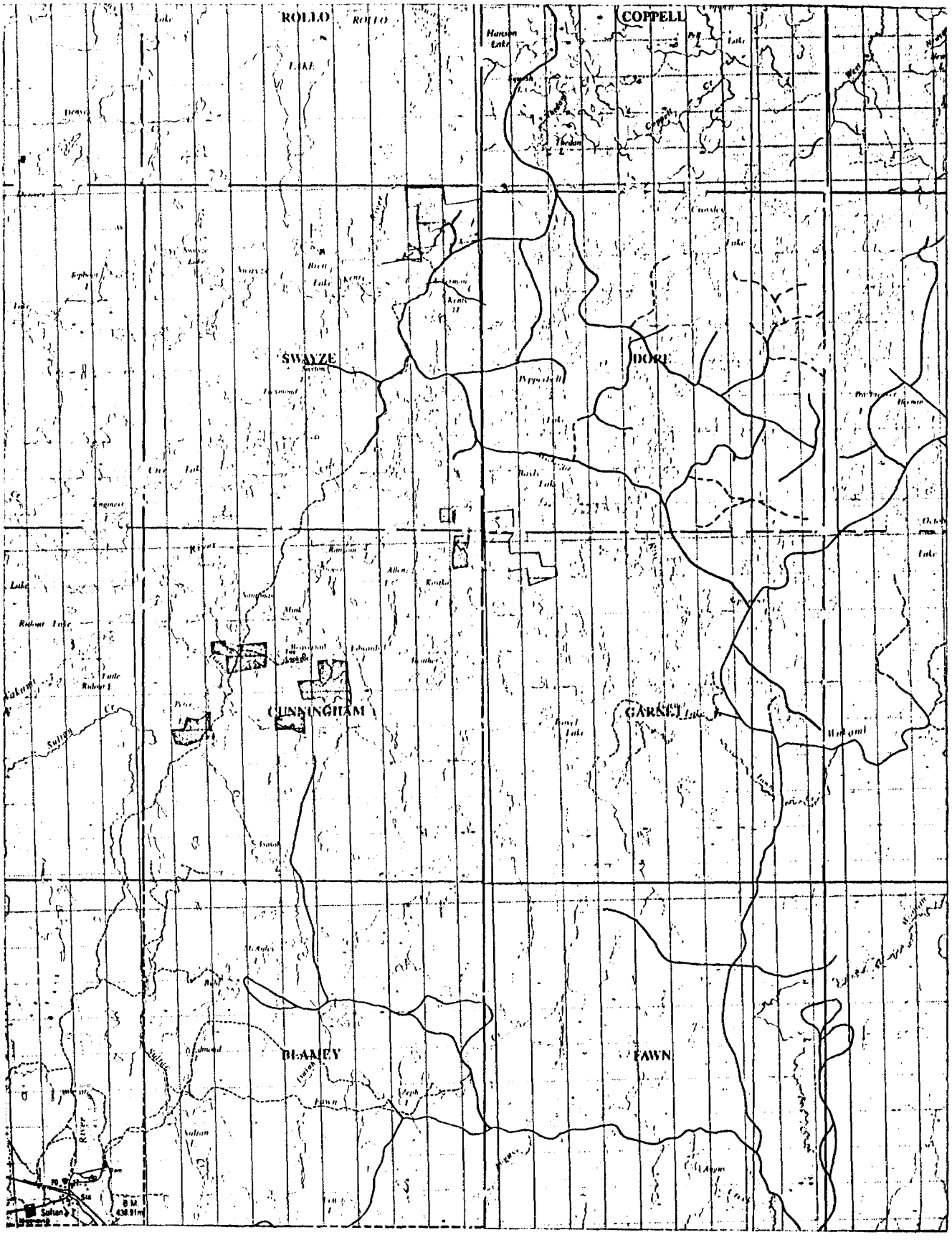
APPENDIX

Road Access Map

Geometrics Magnetometer Specifications

Apex Max-Min II Specifications

Kian A. Jensen
Exploration and Consulting Services



Road Acess Map for Grand American Minerals Limited, Tower Claim Group, Cunningham Township, Porcupine Mining Division, Ontario. Scale 1:26 400.

Operating Manual
Model G - 826
Portable Proton Magnetometer

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

The Model G - 826 Portable Proton Mangetometer is a complete system designed for man-carry field applications requiring simple operation and stable measurements of the total intensity of the earth's magnetic field. The G - 826 is accurate and has a sensitivity of ±1 gamma over a range from 20,000 to 90,000 gammas. Since the instrument measures total field intensity, the accuracy of each measurement is not affected by sensor orientation. The inherent simplicity of the G - 826 proton magnetometer allows rapid, accurate measurements to be obtained from a rugged, compact field instrument. This is a precision instrument and reasonable attention must be given to handling, battery condition, and magnetic environment.

1.2 MAGNETIC ENVIRONMENT

It is important that the earth's magnetic field is not perturbed by allowing unwanted magnetic objects to come close to the sensor. Such objects include rings, keys, watches, belt buckles, pocket knives, metal pencils, zippers, etc. When the sensor is used on the staff, one gamma surveys are easily performed provided the sensor is kept at a distance of three feet from the operator. When the sensor is used in the backpack, certain articles of clothing and some types of batteries within the console will cause a five to ten gamma heading error in the readings. The G - 826, however, still provides one gamma sensitivity and repeatability despite the presence of such a base line shift. The backpack feature is recommended for use in difficult terrain where "hands free" operation is required.

Prior to survey use, objects that are suspected to be magnetic may be checked in the following manner:

1. Attach sensor to staff and connect coiled signal cable to console. Sensor should not be moved or turned during the test, and the suspected article should be far away initially.

2. Cycle the magnetometer a few times by depressing the READ button--releasing--and waiting for a reading each cycle.

3. Observe measurement readings. Each reading should repeat to ±1 gamma. (A slow shift may occur over several minutes due to a diurnal change in the earth's field.)

4. Place the suspected article at the distance from the sensor expected during actual survey operation.

5. Cycle magnetometer several times and note the readings.

6. Remove the article and repeat steps 2 and 3 to check for diurnal shifts in the earth's field. If a diurnal shift is present, repeat entire test.

7. If the readings obtained in step 5 differ by more than ±1 gamma (± one count) from those obtained in steps 3 and 6, then the article is magnetic.

IF THE ARTICLE IS HIGHLY MAGNETIC, OR IF THE SENSOR IS INSIDE OR NEAR A BUILDING OR VEHICLE, THE PROTON PRECESSION SIGNAL WILL BE LOST, GIVING COMPLETELY ERRATIC READINGS AND LOSS OF ± 1 COUNT REPEATABILITY.

The magnetometer should not be operated in areas that are known sources of radio frequency energy, power line noise (transformers), in buildings or near highly magnetic objects. The sensor should always be placed on the staff above the ground, or in the "backpack." The sensor will NOT operate properly when placed directly on the ground.

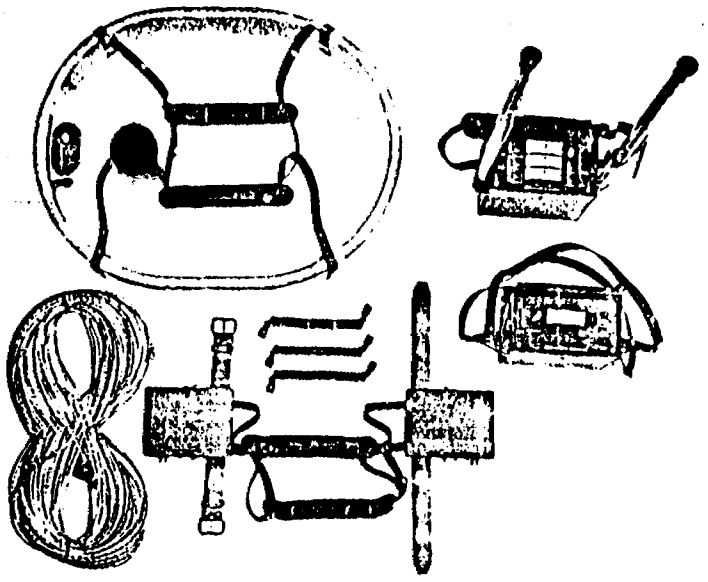
1.3 SPECIFICATIONS

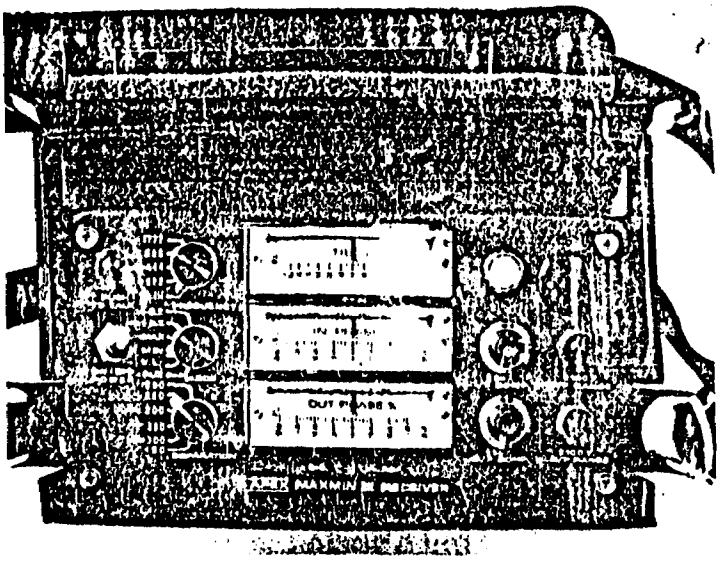
Sensitivity:	±1 gamma throughout range
Range:	20,000 to 90,000 gammas (worldwide)
Tuning:	Multi-position switch with signal amplitude indicator light on display
Gradient Tolerance:	Exceeds 800 gammas/feet

Sampling Rate:	Manual push button, one reading each six seconds.
Output:	Five digit numeric display with readout directly in gammas.
Power Requirements:	Twelve 1.5 volt "D" cell universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.
Temperature Range:	Console and sensor: -40° to +85° C.
	Battery pack: 0° to +50° C (limited use to -15° C; lower temperature battery belt operation — optional).
Accuracy (Total Field):	±1 gamma through 0° to +50° C temperature range.
Sensor:	High signal, noise cancelling, mounted on staff or attached to backpack.
Size:	Console: 3.5 x 7 x 11 inches (9 x 18 x 28 cm) Sensor: 3.5 x 5 inches (9 x 13 cm) Staff: 1 inch diameter x 8 ft. length (3 cm x 2.5m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.5
Sensor and signal cable:	4	1.8
Aluminum staff:	2	.9
	11.5	5.2





SPECIFICATIONS :

Frequencies: 111, 222, 444, 888 and 1777 Hz

Modes of Operation:
- MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer cable.
- MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
- V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 50, 100, 150, 200, 250 and 300 m (MMIII) or 200, 300, 400, 600, 800 and 1000 ft (MMIIIF). Coil separations in V.L.mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90mm edgewise meters in V.L.mode.

Scale Ranges:
In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L): Sensitivity adjustable by separation switch.

NOW ALSO ±4% QUADRATURE FULL SCALE.

Readability: In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1% .

Repeatability: ±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output:
- 111 Hz : 600 Atm^2
- 222 Hz : 550 Atm^2
- 444 Hz : 300 Atm^2
- 888 Hz : 150 Atm^2
- 1777 Hz : 75 Atm^2

Receiver Batteries: 9V trans. radio type batteries (4). Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: Rechargeable gel-type batteries. Total capacity: 24V, 9 Ah. (Two 14.4V 1A chargers supplied).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +60°C (-40°F to +140°F).

Receiver Weight: 6kg (13 lbs.)

Transmitter Weight: 26kg (57 lbs.)

Shipping Weight: Typically 100kg (220lbs.), with one of each reference cable length.
Shipped in two field/shipping cases.

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: 06-966775 APEXPARA MKHM

Ministry of Northern Development and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

DOCU W 8E

41010NE0018 2.11465 CUNNINGHAM

900

2806.50054 Minin

Type of Survey(s)
MAGNETIC AND ELECTROMAGNETIC

Township or Area
CUNNINGHAM TWP

Claim Holder(s)
GRAND AMERICA~~XX~~ MINERALS LIMITED

Prospector's Licence No.
T-5121

Address
700 ONE BENTALL CENTRE, 505 BURRARD ST., VANCOUVER, B.C. V7X 1M4

Survey Company
K.A. JENSEN EXPLORATION & CONSULTING

Date of Survey (from & to)
10 05 88 (Day | Mo. | Yr.) — 24 05 88 (Day | Mo. | Yr.)

Total Miles of line Cut
20.89 MILES

Name and Address of Author (of Geo-Technical report)
KIAN A. JENSEN, P.O. BOX 37, SOUTH PORCUPINE, ONTARIO, P0N 1H0

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	20
	- Magnetometer	40
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
AUG 3 1988	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	1030179	
	1030180	
	1030181	
	1030182	
	1030183	
	1030184	
	1030185	
	1030186	
	1030187	
	1030188	
	1030189	
	1030190	
	1030191	
	1030192	
	1030193	
	1030194	
	1030195	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
OCT 24 1988
MINING LANDS SECTION

RECORDED
AUG 03 1988

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
OFFICE
NOV 7 1988
RECEIVED

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work: 17

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
1020	Aug 3/88	
	Date Approved as Recorded	Branch Director
	20 Oct 88	

Date	Recorded Holder or Agent (Signature)
Aug 2/88	Kian Jensen

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
KIAN A. JENSEN, P.O. BOX 37, SOUTH PORCUPINE, ONTARIO P0N 1H0

Date Certified	Certified by (Signature)
Aug 2/88	Kian Jensen

9362 (85/12)

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File
(1) CROWN RESERVE				

SWAYZE TWP.

GREENLAW TWP.

GARNET TWP.

BLAMEY TWP.

Wakami River
Ransom Lake
Yarwood Lake
Allen L.
Kostiko L.
Santimaw L.
Mink L.
Beavertail L.
Edward L.
Heather L.
Peter Lake
Isaiah L.

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	◓
" MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	▬
" MINING RIGHTS ONLY	▬
LICENCE OF OCCUPATION	▼
ORDER IN COUNCIL	OC
RESERVATION	(R)
CANCELLED	⊗
SAND & GRAVEL	(S)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913 VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1

500 Metres 0 1000 Metres

10 0 10 20 30 40 50 60 70 Chains

500 Feet 0 1000 2000 3000 4000 5000 Feet

SCALE 1:20 000

RECEIVED
MAY 11 1988

TOWNSHIP

CUNNINGHAM

M.N.R. ADMINISTRATIVE DISTRICT
CHAPLEAU
MINING DIVISION
PORCUPINE
LAND TITLES / REGISTRY DIVISION
SUDBURY Received Sept 15/86

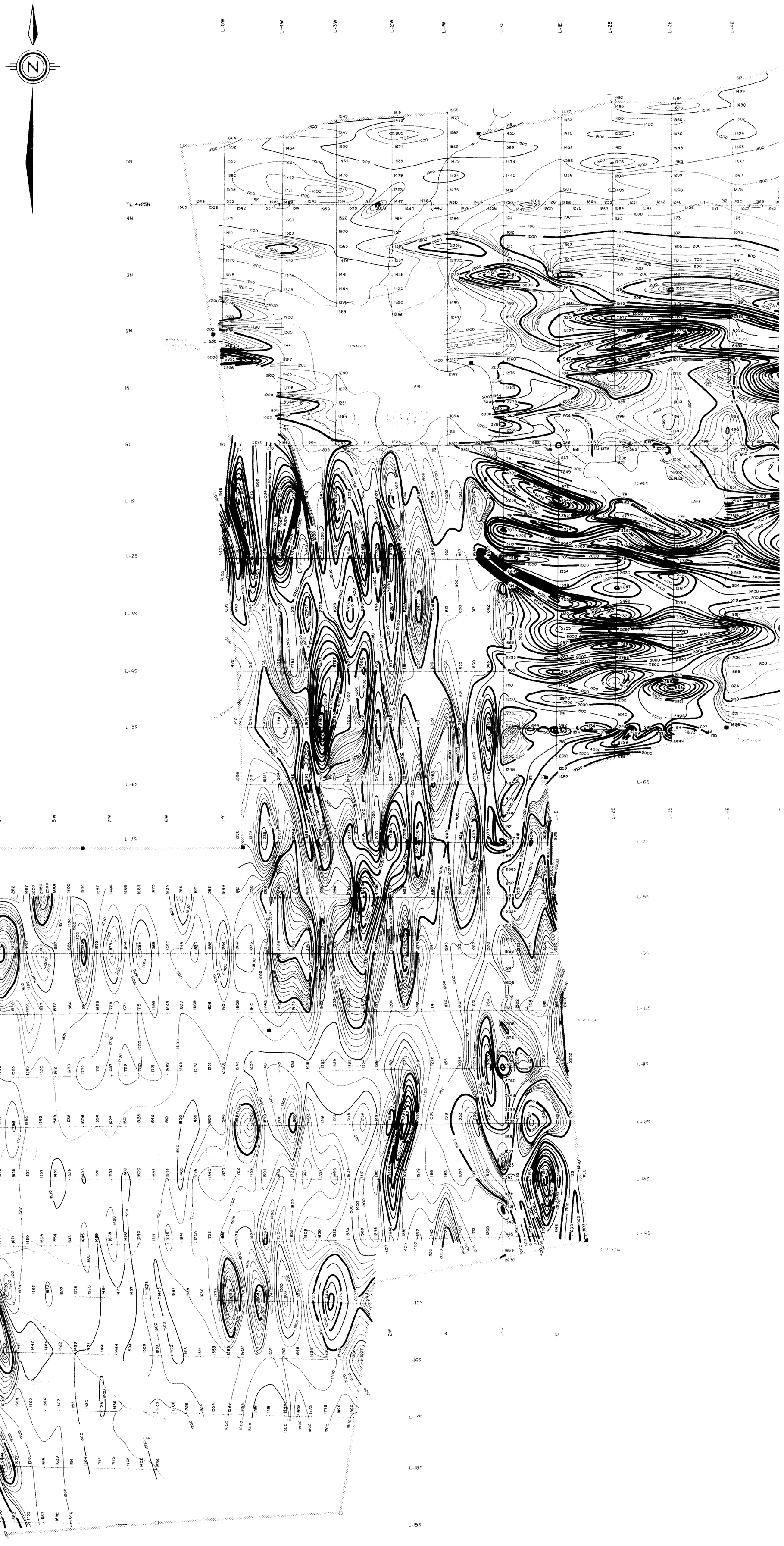
Ontario Ministry of Natural Resources
Ministry of Northern Development and Mines

Date AUGUST, 1986
Number G-1095

CK-Aggie, Sept 15/86

41010NE0818 2.11465 CUNNINGHAM

200



N

TL 11+00OW

10W

9W

8W

7W

6W

5W

4W

3W

2W

1W

L-0

1E

2E

3E

4E

5E

5N

TL 4+25N

4N

3N

2N

1N

BL

1S

2S

3S

4S

5S

6S

7S

8S

9S

10S

11S

12S

13S

14S

15S

16S

17S

18S

19S

L-5W

L-4W

L-3W

L-2W

L-1W

L-0

L-1E

L-2E

L-3E

L-4E

BUSH ROAD
TO KIDD CREEK
Cu-Zn-Pb DEPOSIT

SPRINGER LAKE

TELEGRAPH LINE

BUILDINGS

TOWER

LAKE

POND

BUSH ROAD

No Data Available Due To Off Scale Readings

P-1030185

P-1030184

P-1030186

P-1030183

P-1030187

P-1030182

P-1030193

P-1030192

P-1030188

P-1030194

P-1030191

P-1030189

P-1030195

P-1030190

ALL EAST - WEST SURVEY LINES

Quadrature data

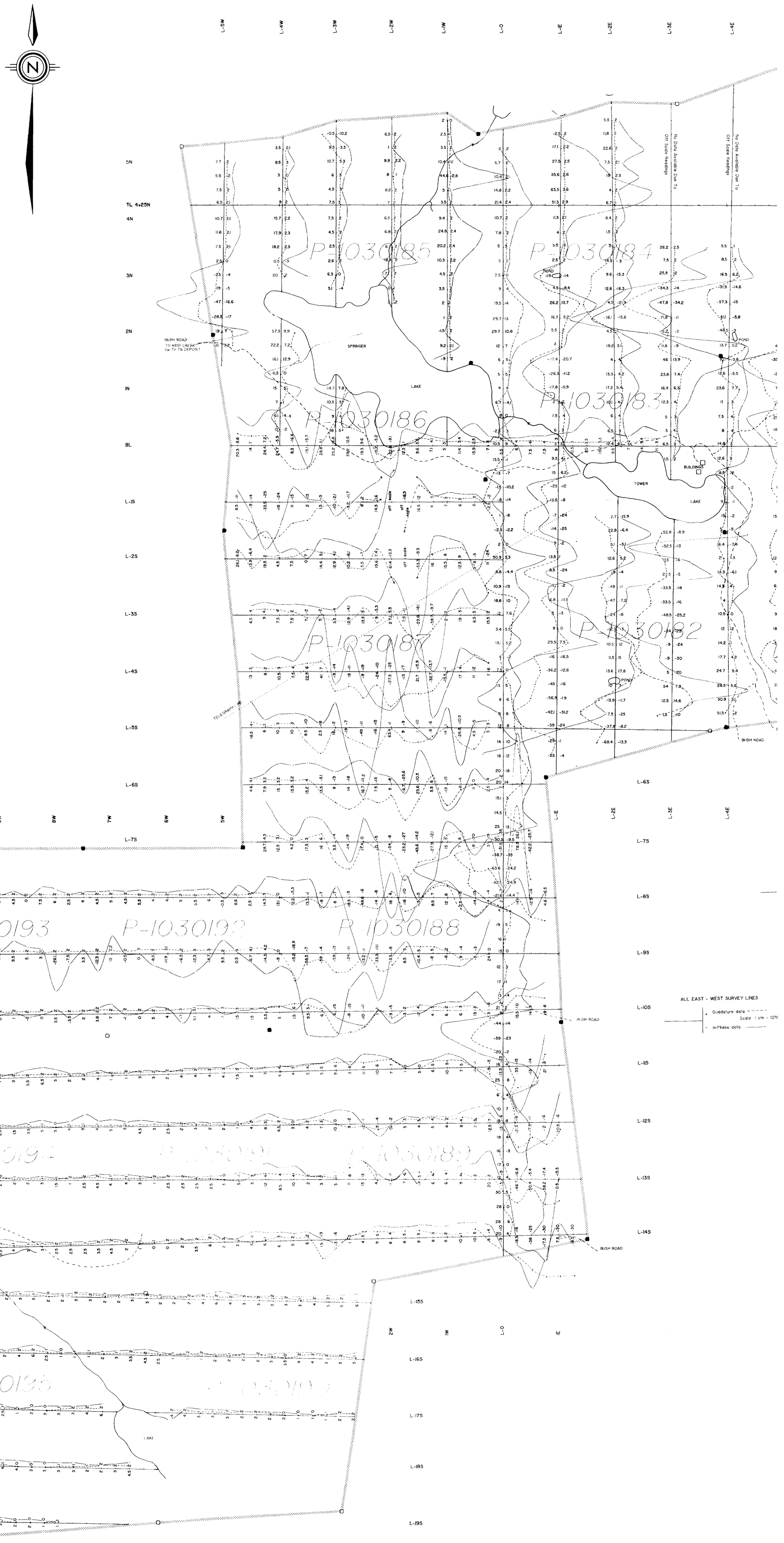
In-Phase data

Scale = 1 cm =

APEX MAX-MIN II
COIL SEPARATION 50metres

Rx 25m 25m Tx

PLOTTING POSITION



ALL EAST - WEST SURVEY LINES

Quadature data ------

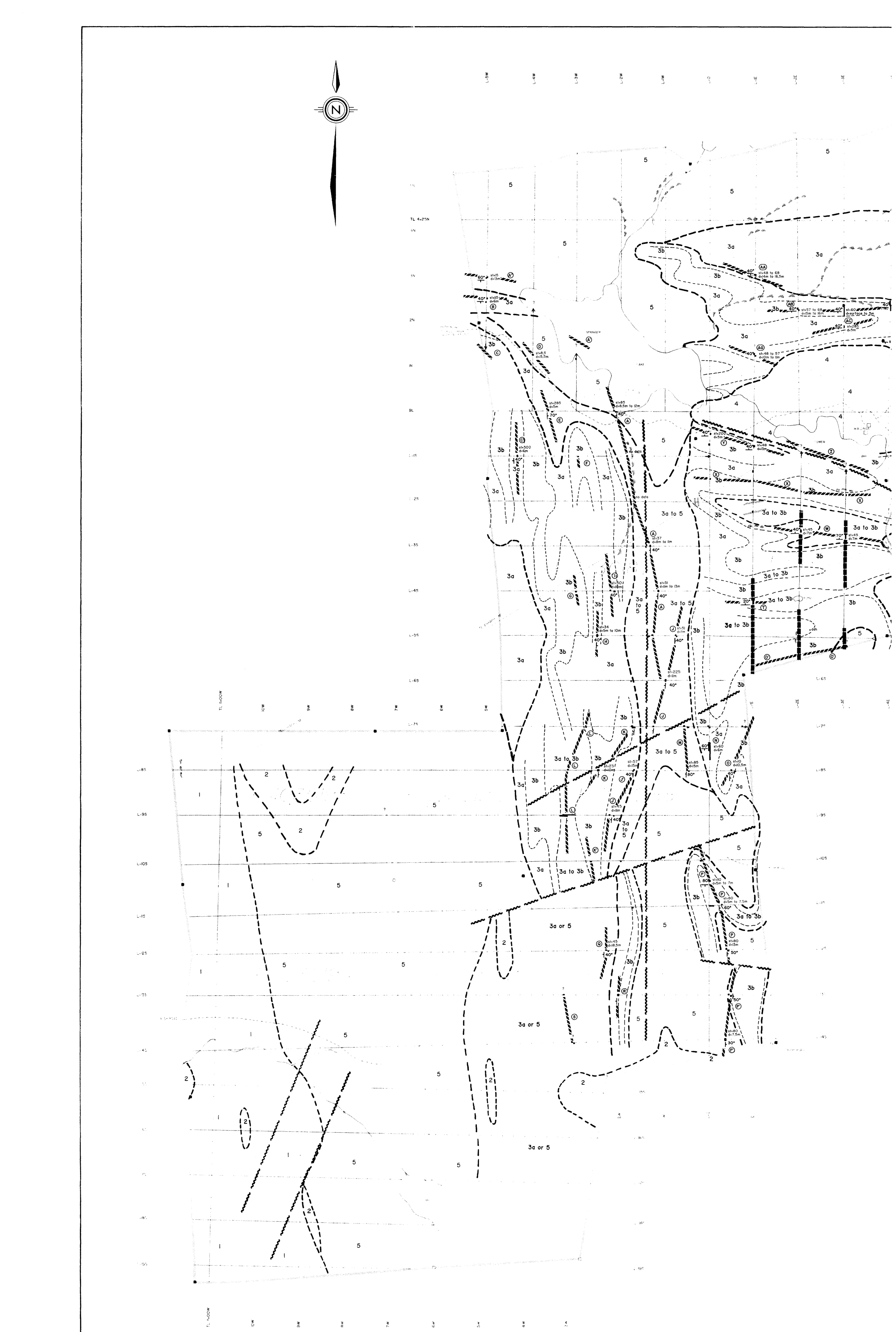
Scale 1 cm = 10%

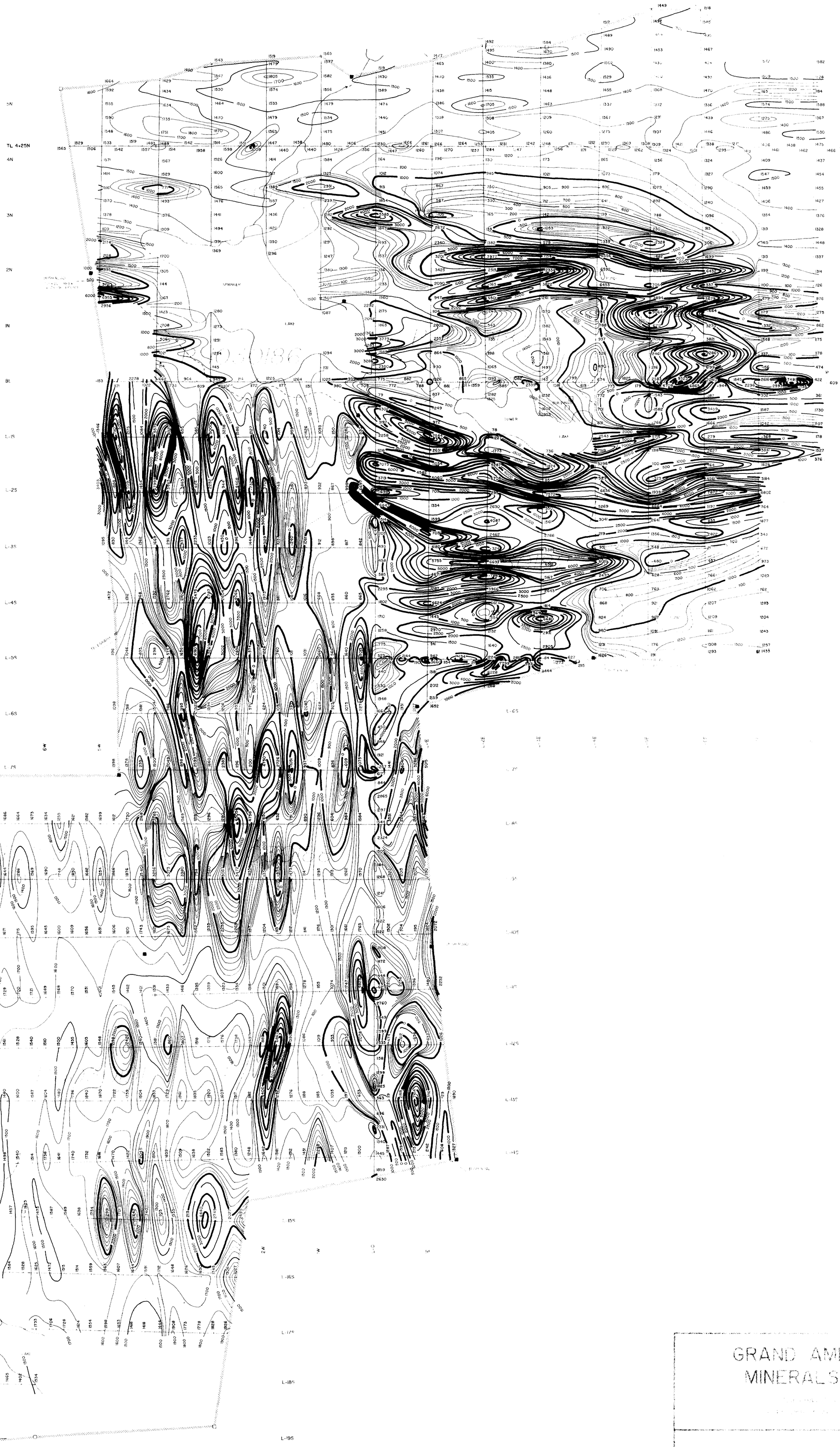
In-Phase data ——

APEX MAX-MIN II
COIL SEPARATION 50 metres

Rx ⊥ 25m ⊥ 25m ⊥ TX

Plotting Position





GEOMETRICS PROTON PRECESSION MAGNETOMETER
BASE LEVEL 57,000 gammas

BASE STATION 0+25 S, 3+50 E
VALUE 57,787 gammas

GRAND AMERICAN MINERALS LTD.

MAGNETIC SURVEY

2.11465

K.Jensen, M.Caron, A.Delisle — May 13 to 19, 24, 1988

K. A. JENSEN
GEOLOGICAL ASSOCIATION OF CANADA · FELLOW ·

L-5W L-4W L-3W L-2W L-1W L-0 L-1E L-2E L-3E L-4E L-5E L-6E L-7E L-8E

6N
5N
TL 4+25N
4N
3N
2N
1N
BL
L-1S
L-2S
L-3S
L-4S
L-5S
L-6S
L-7S
L-8S
L-9S
L-10S
L-11S
L-12S
L-13S
L-14S
L-15S
L-16S
L-17S
L-18S
L-19S
TL 5+00S

8W 7W 6W 5W 4W 3W 2W 1W L-0 1E 2E 3E 4E 5E 6E 7E 8E

P-1030185 P-1030184 P-1030179 P-1030186 P-1030183 P-1030180 P-1030182 P-1030187 P-1030192 P-1030188 P-1030191 P-1030189

No Data Available Due To Off Scale Readings

BUSH ROAD TO KIDD CREEK Cu-Zn-Pb DEPOSIT

SPRINGER LAKE TOWER BUILDINGS POND FIRE TOWER

TELEGRAPH LINE

BUSH ROAD TO SHUNSBY Cu-Zn DEPOSIT

BUSH ROAD

In-Phase data ——— Quadrature data - - - -
Scale 1 cm = 10% Primary Field
ALL NORTH - SOUTH SURVEY LINES

ALL EAST - WEST SURVEY LINES
Quadrature data - - - -
Scale = 1 cm = 10% Primary Field
In-Phase data ———

APEX MAX-MIN II
COIL SEPARATION 50metres
Rx 25m ⊥ 25m Tx
PLOTTING POSITION

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CUNNINGHAM TOWNSHIP
PORCUPINE MINING DIVISION

MAX-MIN II
444 hz

2.11465

Scale 1:2500
25 0 50 100 200 300
METRES

Survey by: M.Caron, A.Delisle Date: May 18 to 25, 1988
Revision by: Date:

Project No. 88-004
File No.

Kian A. Jensen
Exploration and Consulting Geophysicist

GEOLOGICAL ASSOCIATION OF CANADA
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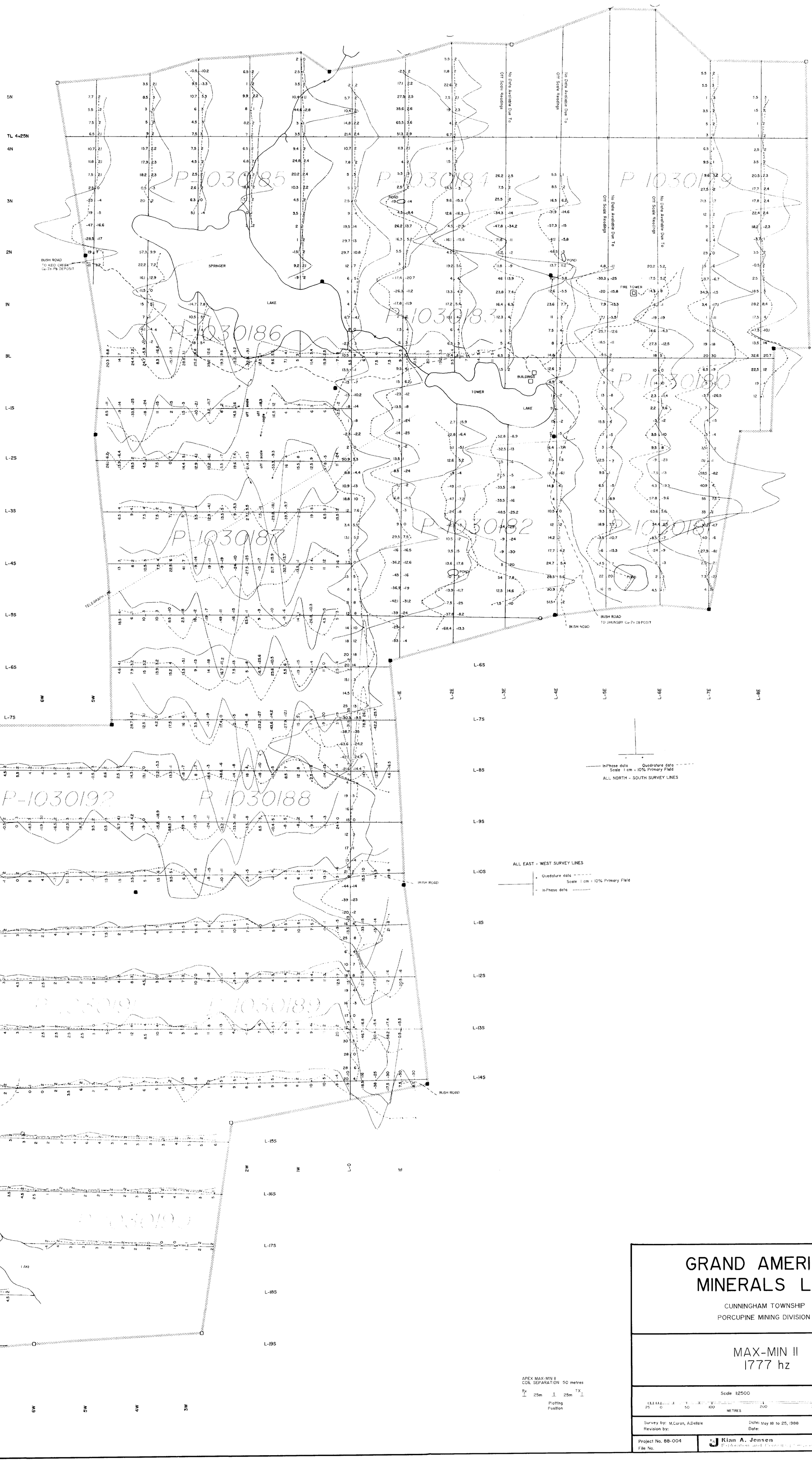

APEX MAX-MIN II
COIL SEPARATION 50 metres

Rx 25m 25m TX

Plotting Position

GRAND AMERICAN MINERALS LTD.

CUNNINGHAM TOWNSHIP
PORCUPINE MINING DIVISION

MAX-MIN II
1777 hz

2.11465

Scale 1:2500

25 0 50 100 200 300
METRES

Survey by: M.Caron, A.Delisle — Date: May 18 to 25, 1988
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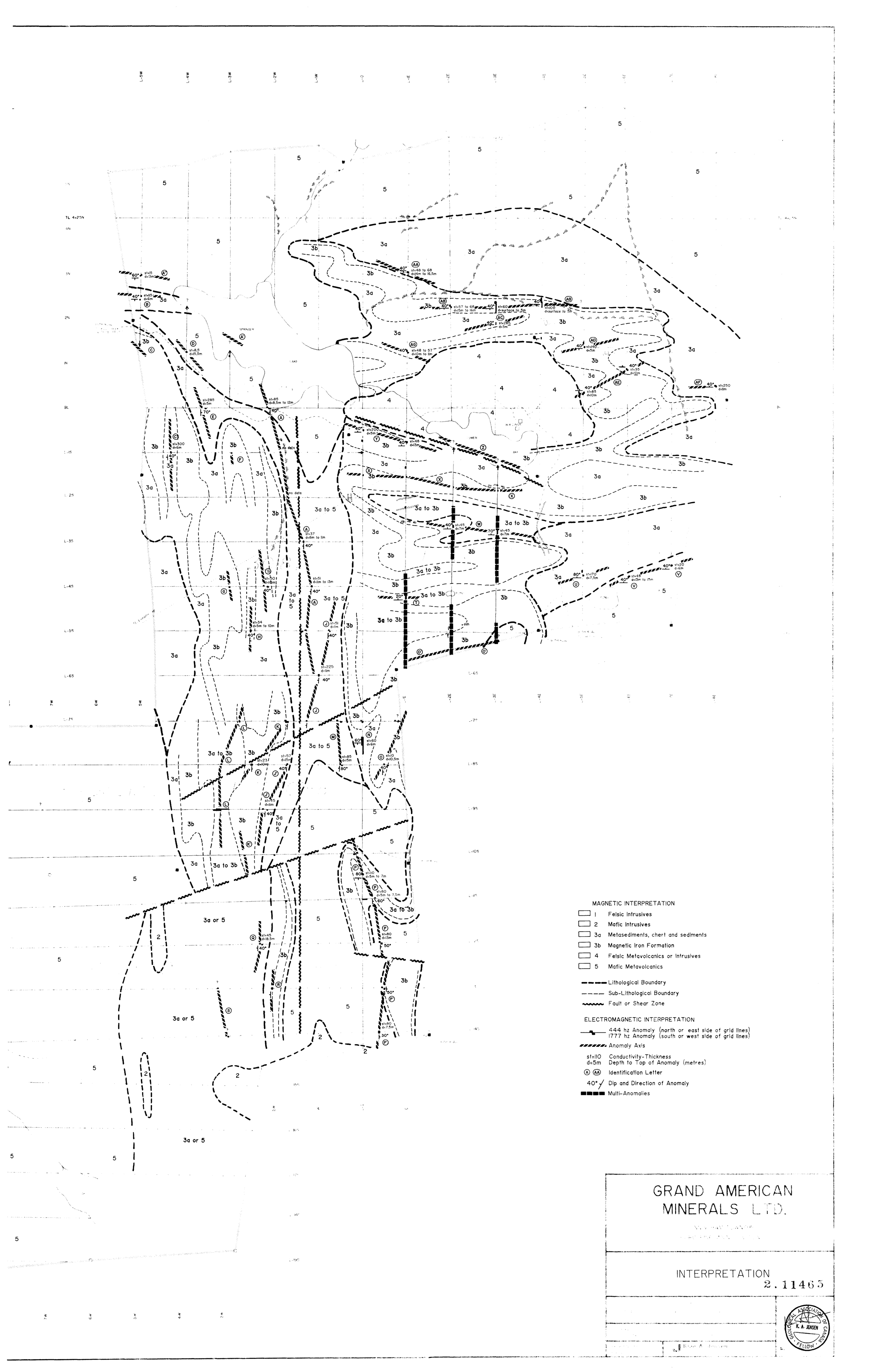

MAGNETIC INTERPRETATION

- 1 Felsic Intrusives
- 2 Mafic Intrusives
- 3a Metasediments, chert and sediments
- 3b Magnetic Iron Formation
- 4 Felsic Metavolcanics or Intrusives
- 5 Mafic Metavolcanics

Lithological Boundary

Sub-Lithological Boundary

Fault or Shear Zone

ELECTROMAGNETIC INTERPRETATION

444 hz Anomaly (north or east side of grid lines)
1777 hz Anomaly (south or west side of grid lines)

Anomaly Axis

st=110 Conductivity-Thickness
d=5m Depth to Top of Anomaly (metres)

Ⓐ ⒶⒶ Identification Letter

40° Dip and Direction of Anomaly

Multi-Anomalies

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INTERPRETATION
2.11465

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