CULLEN RESOURCES LIMITED

TL-MABEL LAKE PROJECT, BC, CANADA

HELITEM HELICOPTER ELECTROMAGNETIC SURVEY

SURVEY & INTERPRETATION REPORT

W.S.PETERS

AUGUST 2012

SGC2470

SOUTHERN GEOSCIENCE
CONSULTANTS

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SUMMARY

A HELITEM survey of 387 line kms has been flown over the TL-Mabel Lake Project to try and locate significant base metal and/or graphite mineralisation.

The area is generally resistive with the exception of the several large stratigraphic conductors. Three dimensional conductivity depth modelling has shown these to be sub-horizontal in nature and it is thought that they are probably graphitic.

Individual discrete conductors have been interpreted on a line by line basis and eighteen conductor targets have been selected as possible massive sulphides and/or graphite mineralisation. Of these targets, eight are ranked high priority, five are moderate priority and the remaining five are low priority. One of the better conductor targets correlates directly with the known base metal mineralisation.

Magnetic targets have been interpreted on the basis that they may be pyrrhotite and/or magnetite associated with sulphide mineralisation. Of twelve targets selected, five are ranked high priority, two are moderate priority and the remaining five are low priority. One of the targets has a direct correlation with the known mineralisation and two other targets are of enhanced interest as they coincide with conductor targets.

The area is rugged and access is difficult but these are promising targets in a mineralised area and a significant effort should be made to field investigate them. Recommendations have been made regarding field investigation and subsequent exploration.

1 INTRODUCTION

This report briefly documents a HELITEM airborne survey completed by Fugro Airborne Limited (Job No. R11086) on behalf of Cullen Resources Limited (Cullen) at the TL-Mabel Lake project in October 2011 and the subsequent processing and interpretation by Southern Geoscience Consultants. This is not a full and rigorous interpretation or report but is sufficient to allow investigation of the key targets.

The project area is located about 100km northeast of Kelowna in British Columbia, Canada as shown in Figure 1. An oxidised massive sulphide mineralisation occurrence was recently discovered within the survey area using biogeochemical sampling. This mineralisation has been trenched with results of up to 3m at ~9% zinc as sphalerite associated with pyrite, pyrrhotite and graphite.

A total of 387 line kilometres of surveying was completed over an area of 48 km^2.

The primary objective of the survey was to delineate bedrock conductors associated with base metal sulphide mineralisation, and also to check potential for flake graphite mineralisation.

All coordinates presented in this report utilise the WGS84 Zone 11N UTM projection.

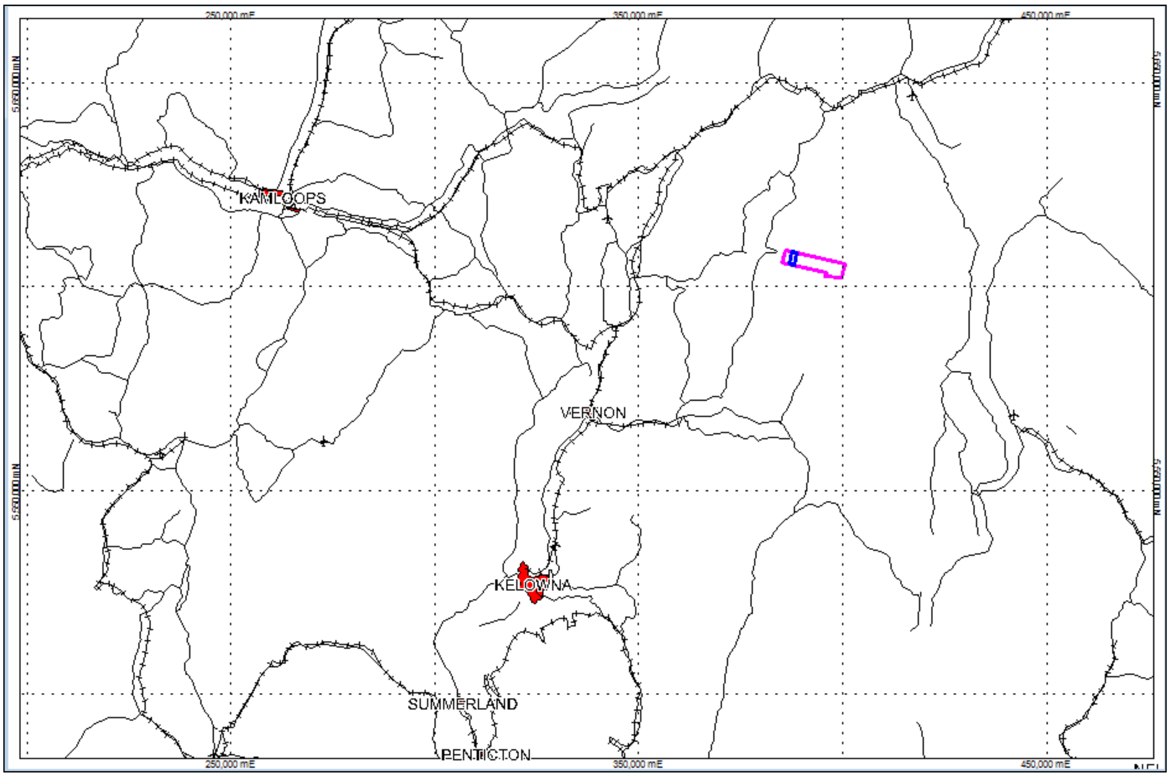


Figure 1: HELITEM survey area location plan.

1.1 Geological Background

This information is paraphrased from a report written by Colin Dunn and provided to SGC by Cullen Resources.

Six stratabound zinc-lead-silver deposits, called the "Monashee Zn-Pb-Ag" deposits, are known in highly metamorphosed and deformed Palaeoproterozic metasedimentary and meta-igneous rocks of the Monashee Complex of southeastern British Columbia (Figure 2). In all of the six deposits, mineralization occurs within a relatively narrow (~50-100m thick), pelitic schist-calcsilicate-marble-amphibolite-quartzite succession, called the Monashee Cover Sequence. The TL property is interpreted to contain this target (mineralized) Monashee cover sequence.

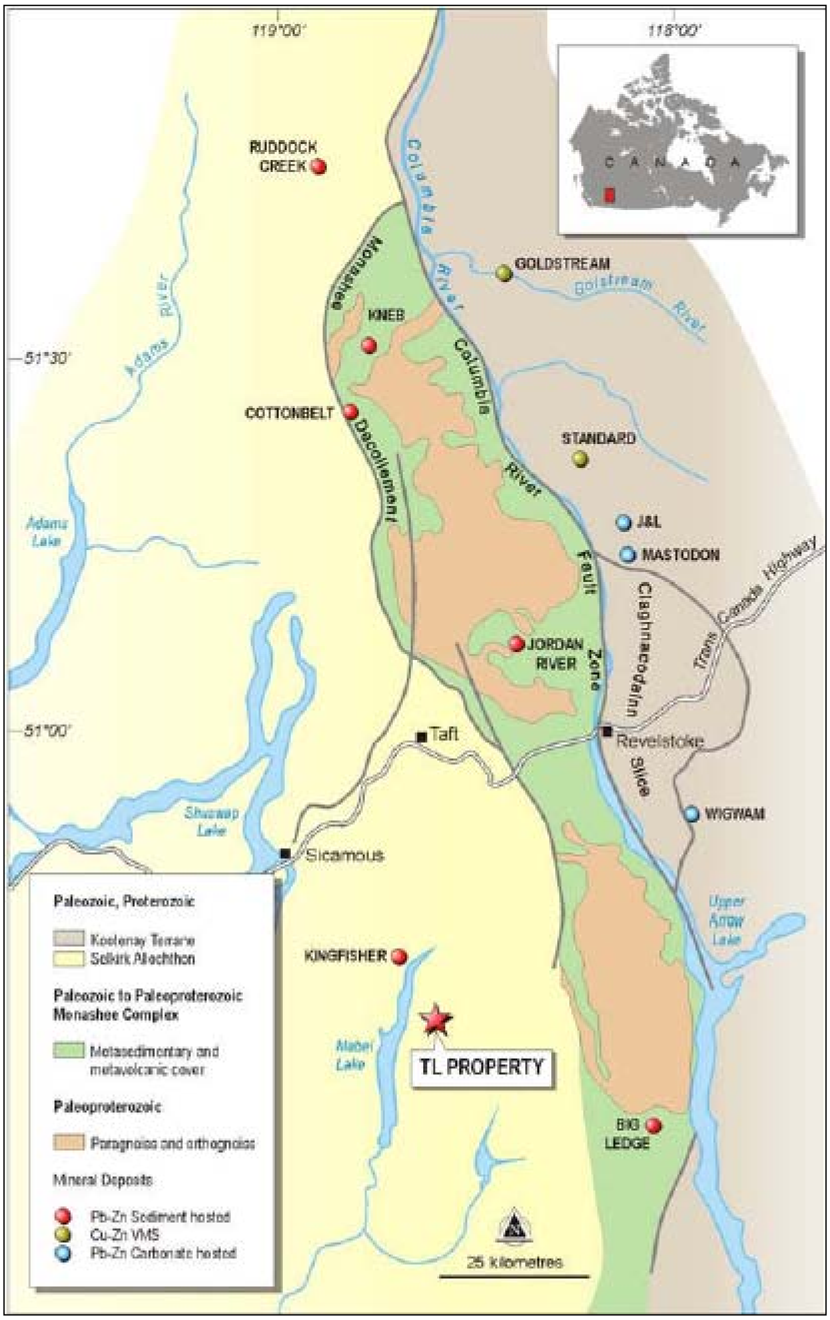


Figure 2. Regional geology and known mineral occurrences.

2 SURVEY DETAILS

The surveying was carried out during October 2011. All data was acquired with the HELITEM system working at a base frequency of 25Hz. The HELITEM system consists of a large diameter transmitter loop energized with current pulses, providing a peak dipole moment of approximately 2 x 10^6 Am^2. The HELITEM receiver is above the transmitter loop and slightly offset behind. This makes it a slightly asymmetric, in-loop type system with semi concentric Rx/Tx geometry.

2.1 Survey Issues

At the commencement of the survey SGC was advised that the line direction had been changed ninety degrees from that requested by Fugro in order to allow better drape in the rugged terrain. This would mean flying parallel to strike. This was unacceptable to SGC and it was requested that the lines remain orthogonal to strike. After much discussion Fugro did agree to fly the lines as originally planned and furthermore flew the more difficult lines in a single direction in order to get a decent terrain clearance.

Several days were lost to poor weather conditions.

2.2 Personnel

Supervision – Cullen Resources:	Chris Ringrose
Supervising Geophysicist:	Bill Peters
Contractor:	Fugro Airborne Surveys
Contractor Supervisor:	Amir H. Soltanzadeh
Contractor Processing:	Keith Landon

2.3 Equipment

Aircraft:	AS 350 B3
Transmitter:	HELITEM
Transmitter Loop Area:	708m^2 (2 turns)
Base Frequency:	30Hz
Pulse Width:	4 ms
Nominal TX Terrain Clearance:	~ 35m
Recording Sample:	10 samples per second
Peak Current:	1270A
Peak Dipole Moment	2 x 10^6 Am^2
Receiver:	HELITEM X, Y, Z multicoil
Nominal RX Terrain Clearance:	~ 62m
Magnetometer:	Scintrex CS-3 Caesium Vapour

2.4 Survey Specifications

Line Spacing:	150m (some 75m infill)
Coordinate System:	WGS84 Zone 11N

The waveforms are shown in Figure 3 and the channel/ window times are shown in Table 1 .

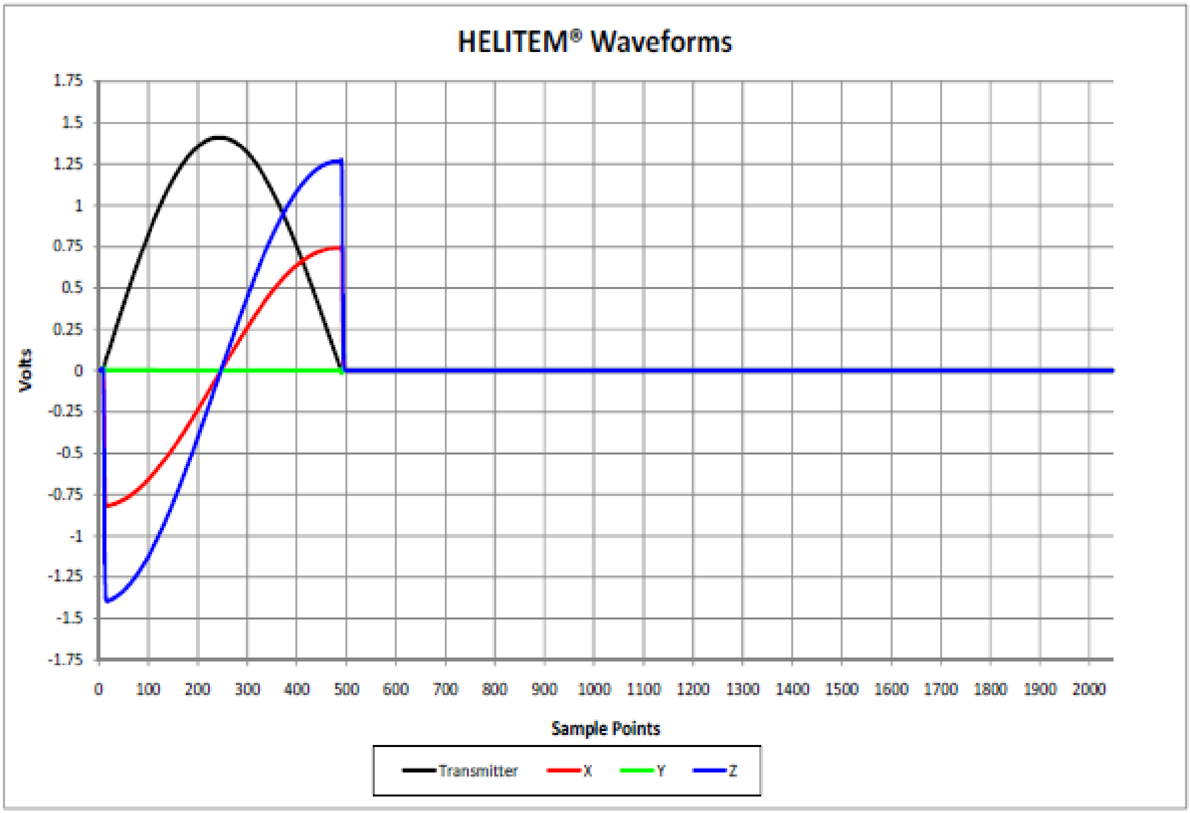


Figure 3: HELITEM Waveforms

Table 1: HELITEM Channel Window Times

Times from start of cycle:						Times after Tx turnoff:				
Gate	Start time (ms)	End Time (ms)	Midpoint (ms)	Width (ms)		Gate	Start time (ms)	End Time (ms)	Midpoint (ms)	Width (ms)
1	0.041	0.155	0.098	0.114	Ontime					
2	0.155	1.432	0.793	1.278	Ontime					
3	1.432	2.718	2.075	1.286	Ontime					
4	2.718	3.996	3.357	1.278	Ontime					
5	4.134	4.150	4.142	0.016	Offtime	5	0.138	0.154	0.146	0.016
6	4.150	4.175	4.163	0.024	Offtime	6	0.154	0.179	0.167	0.024
7	4.175	4.207	4.191	0.033	Offtime	7	0.179	0.211	0.195	0.033
8	4.207	4.240	4.224	0.033	Offtime	8	0.211	0.244	0.228	0.033
9	4.240	4.281	4.260	0.041	Offtime	9	0.244	0.285	0.264	0.041
10	4.281	4.329	4.305	0.049	Offtime	10	0.285	0.333	0.309	0.049
11	4.329	4.395	4.362	0.065	Offtime	11	0.333	0.399	0.366	0.065
12	4.395	4.468	4.431	0.073	Offtime	12	0.399	0.472	0.435	0.073
13	4.468	4.549	4.508	0.081	Offtime	13	0.472	0.553	0.512	0.081
14	4.549	4.655	4.602	0.106	Offtime	14	0.553	0.659	0.606	0.106
15	4.655	4.785	4.720	0.130	Offtime	15	0.659	0.789	0.724	0.130
16	4.785	4.940	4.862	0.155	Offtime	16	0.789	0.944	0.866	0.155
17	4.940	5.127	5.033	0.187	Offtime	17	0.944	1.131	1.037	0.187
18	5.127	5.355	5.241	0.228	Offtime	18	1.131	1.359	1.245	0.228
19	5.355	5.623	5.489	0.269	Offtime	19	1.359	1.627	1.493	0.269
20	5.623	5.957	5.790	0.334	Offtime	20	1.627	1.961	1.794	0.334
21	5.957	6.348	6.152	0.391	Offtime	21	1.961	2.352	2.156	0.391
22	6.348	6.828	6.588	0.480	Offtime	22	2.352	2.832	2.592	0.480
23	6.828	7.406	7.117	0.578	Offtime	23	2.832	3.410	3.121	0.578
24	7.406	8.105	7.756	0.700	Offtime	24	3.410	4.109	3.760	0.700
25	8.105	8.944	8.525	0.838	Offtime	25	4.109	4.948	4.529	0.838
26	8.944	9.961	9.452	1.017	Offtime	26	4.948	5.965	5.456	1.017
27	9.961	11.190	10.575	1.229	Offtime	27	5.965	7.194	6.579	1.229
28	11.190	12.663	11.926	1.473	Offtime	28	7.194	8.667	7.930	1.473
29	12.663	14.453	13.558	1.790	Offtime	29	8.667	10.457	9.562	1.790
30	14.453	16.667	15.560	2.214	Offtime	30	10.457	12.671	11.564	2.214

2.5 Survey Coverage

A total of 387 line kilometres were flown over an area of approximately ~46km^2. Details of the survey coverage are provided below in Table 2 and Table 3.

Table 2: Survey Boundary Coordinates

Block	Corners	X-UTM (E)	Y-UTM (N)
11086	1	385943.1	5608946
TL Property	2	400537.2	5605541
	3	399829.7	5602354
	4	395859.8	5602522
	5	395906.1	5603553
	6	385257.7	5605981

Table 3: Survey Line Details

BLOCK	LINES FROM	TO	FLIGHT DIRECTION	LINE SPACING	MEASURED LINE km
1	10010	11000	NNE-SSW (13°)	150 metres	318.2
	19010	19030	WNW-ESE (103°)	1400 metres	45.0
1 (infill)	10125	10195	NNE-SSW (13°)	150 metres (for 75m spacing with main lines)	24.2
				TOTAL:	387.4

2.6 Data Processing

Fugro supplied final data in Geosoft database and grid formats. Fugro also supplied a conductivity depth database. The Fugro logistics report is attached as **Appendix A**.

SGC processed the data and produced the following:

- Mapinfo GIS format channel images
- Mapinfo GIS format time constant images
- Mapinfo GIS format conductivity depth images
- Mapinfo GIS format magnetic images
- Mapinfo GIS format digital contours
- Mapinfo GIS format digital profiles
- Mapinfo GIS format DTM and Radar Altimeter Images
- Multiprofile plots showing conductivity-depth sections
- Mapinfo GIS format digital flight path

SGC also inverted the magnetic data and combined this with 3D conductivity information to create a 3D block model with various shells, sections, slices, etc.

3 DATA AND INTERPRETATION

3.1 Introduction and Methodology

In general the data was found of good quality and noise levels were low. There was minimal conductive regolith response across the survey area as would be expected in this mountainous terrain.

The data was examined and interpreted on a line-by-line basis in conjunction with the various images. Anomalies of interest were selected and qualitatively ranked. Dip directions were interpreted for the anomalies where possible and the probable source type documented. The symbols used are as follows:

- Yellow = Weak, early to mid time conductor.
- Green = Moderate, middle to late time conductor
- Red = Strong, well defined late time conductor
- Dip direction was interpreted as North, South (indicated by triangular symbols) or unknown (square symbols).

The anomalies were plotted in GIS and conductor axes were interpreted in conjunction with the magnetic data and 3D conductivity model to assist determining the strike direction and continuity of the conductors. Conductor axes follow the same classification and colour scheme as the anomalies. Dips and plunges were interpreted for the conductors where possible.

The final stage was to select and document conductive and magnetic targets of interest for follow up.

3.2 Interpretation Overview

The survey is located over rugged and mainly forested country as shown in Figure 4. The main access is via logging tracks which access the cleared areas seen in the imagery.

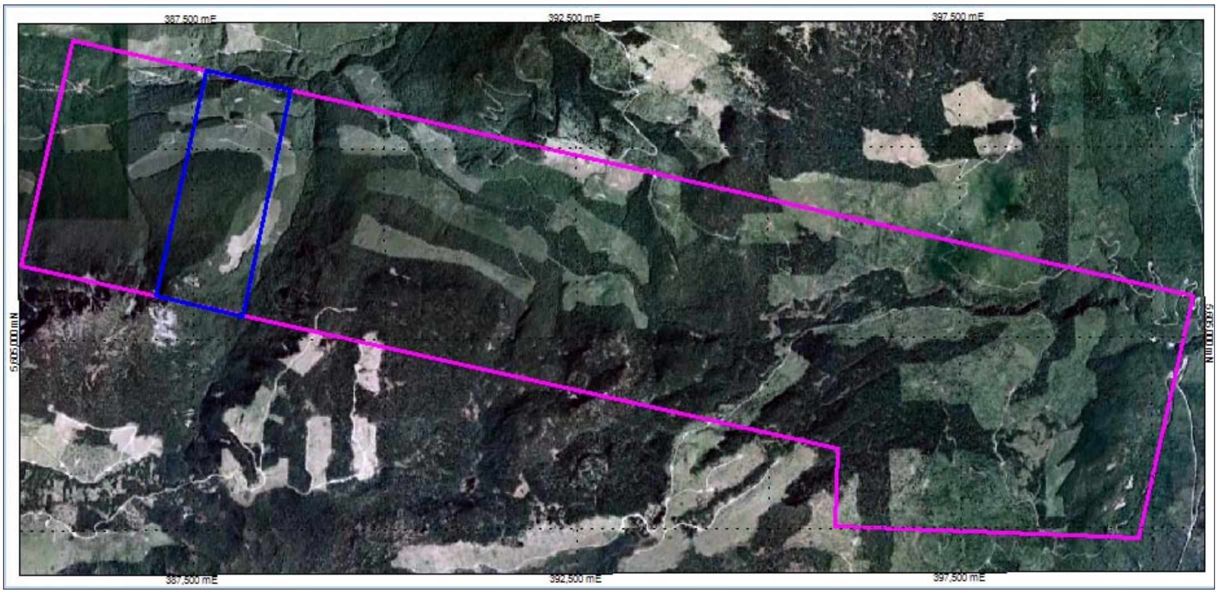


Figure 4: Survey outline over satellite imagery

The terrain is relatively rugged as shown in the elevation image from the survey (Figure 5). The elevations range from 1000m in the northwest corner through to 1900m in the south.

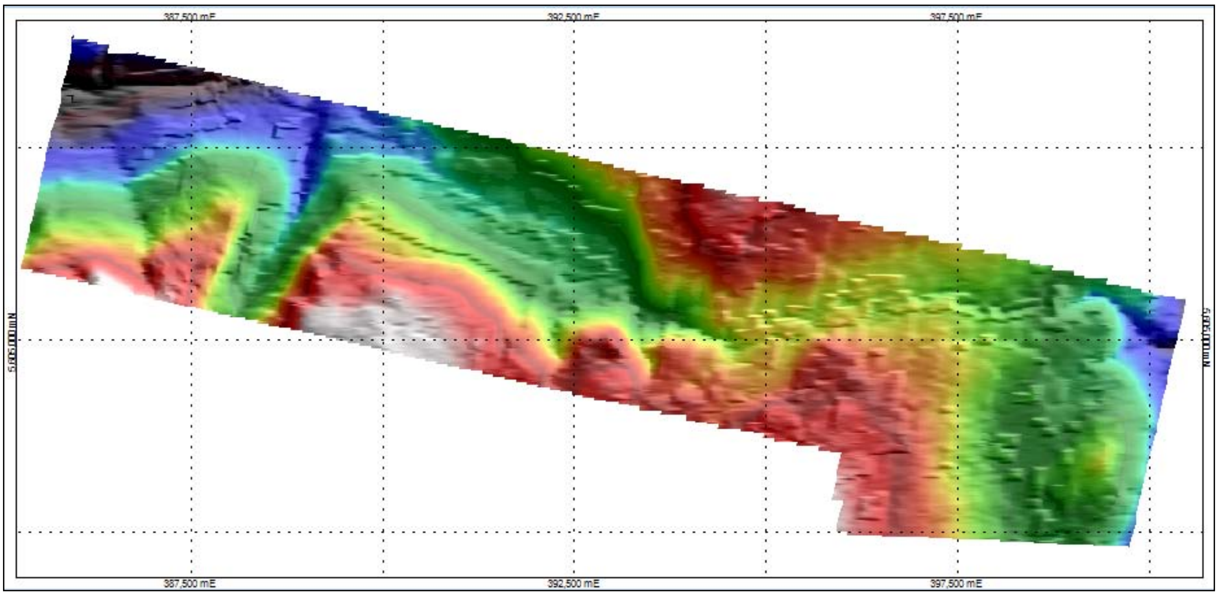


Figure 5: Elevation Image

The early time EM images as shown in Figure 6 and Plan 1 show that the area is predominantly very resistive with very little conductivity. The dominant conductive zones are in the west of the survey area and look to be mainly folded and stratigraphic in nature. The large conductive circular zone in the central west looks to be different and this is encouraging as it correlates with the known mineralisation mentioned earlier.

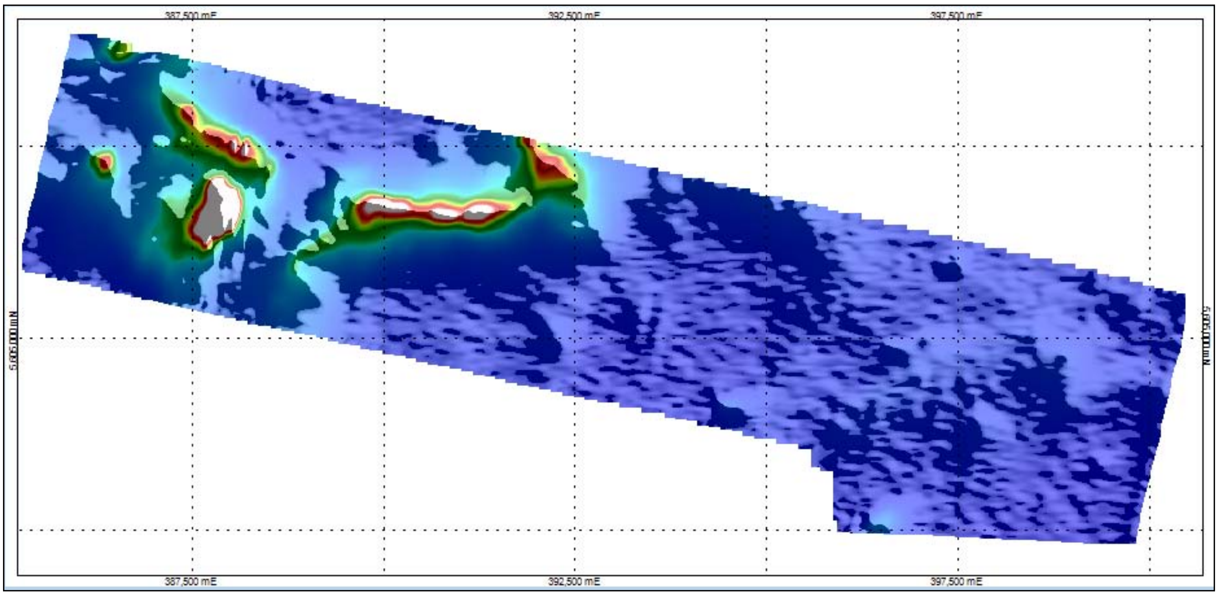


Figure 6: Channel 10 dB/dT Z Component Image (red-white is high, blue is low)

The later time EM images as seen in Figure 7 show the stronger and larger conductors persisting with the EM responses migrating down dip/plunge. The conductive zone associated with the known mineralisation has faded indicating that it may have rather less conductance and/or depth extent than the stratigraphic conductors.

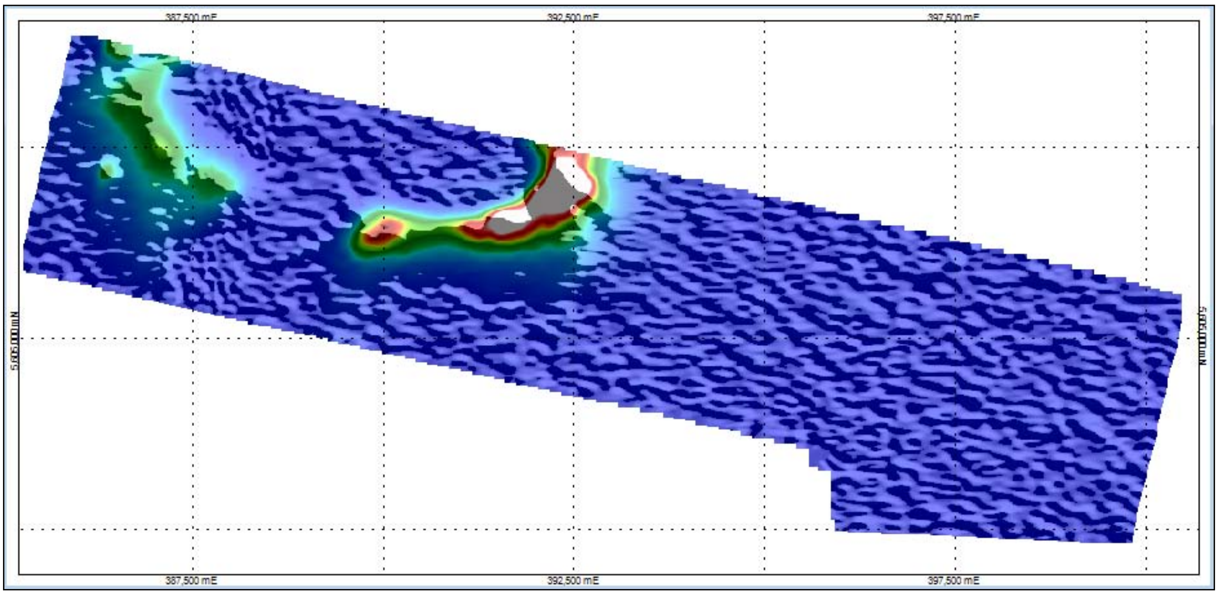


Figure 7: Channel 25 dB/dT Z Component Image (red-white is high, blue is low)

The survey also collected X component data as shown in Figure 8 and Figure 9. This component is in the direction of the flight lines and is thus biased towards EW striking conductors.

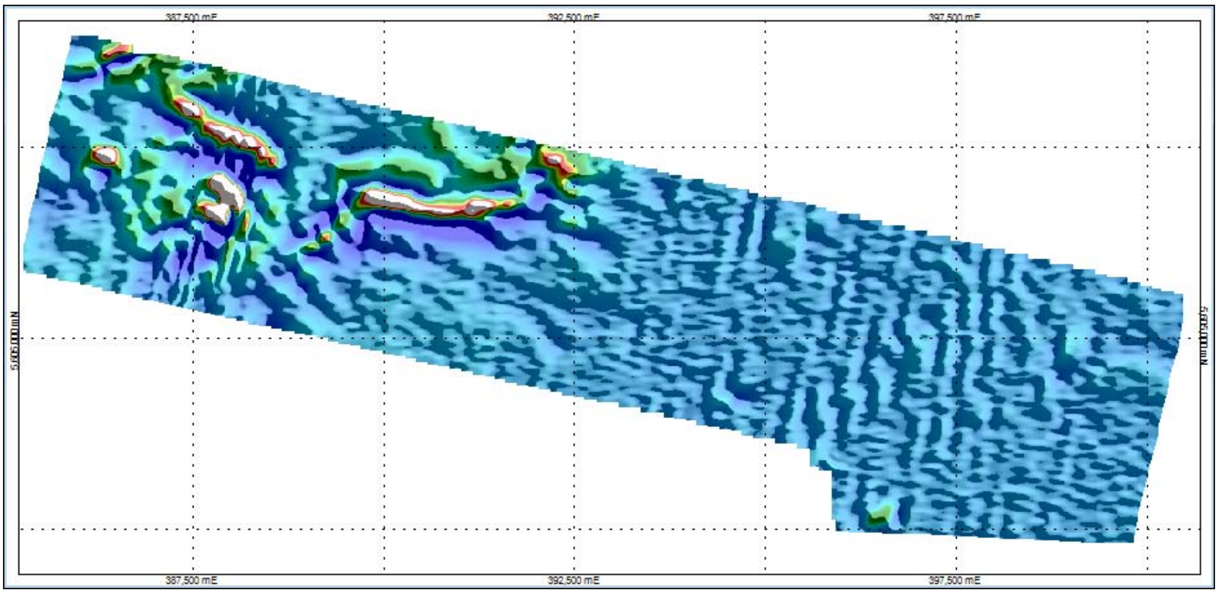


Figure 8: Channel 10 dB/dT X Component Image (red-white is high, blue is low)

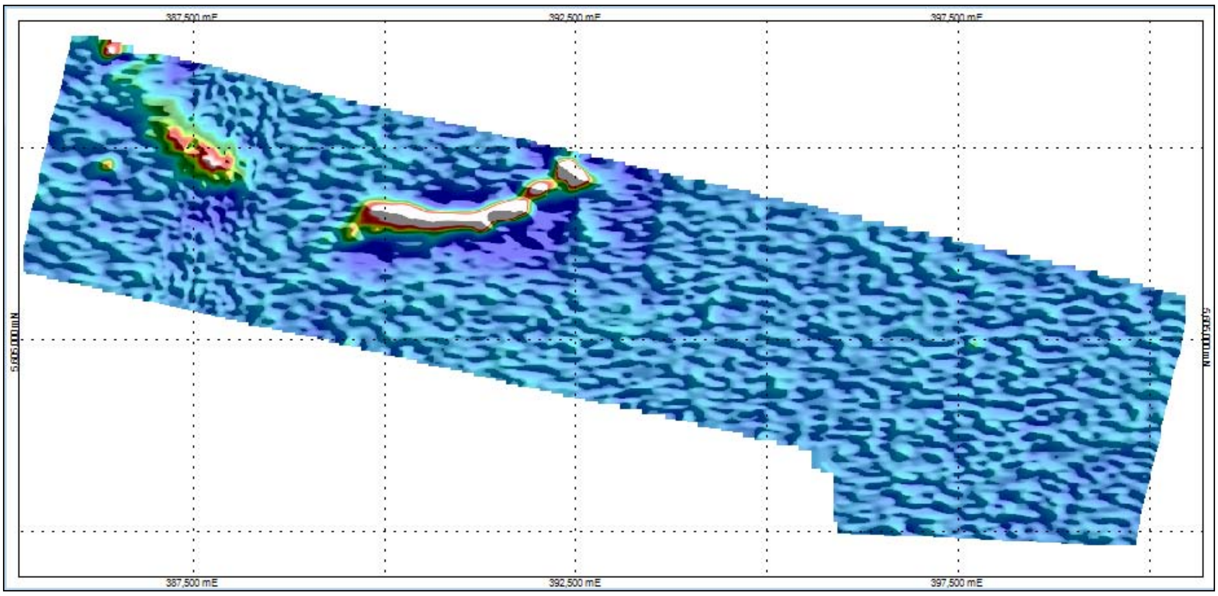


Figure 9: Channel 25 dB/dT X Component Image (red-white is high, blue is low)

The Tau or Time Constant image shown in Figure 10 clearly shows the dominant stratigraphic conductors.

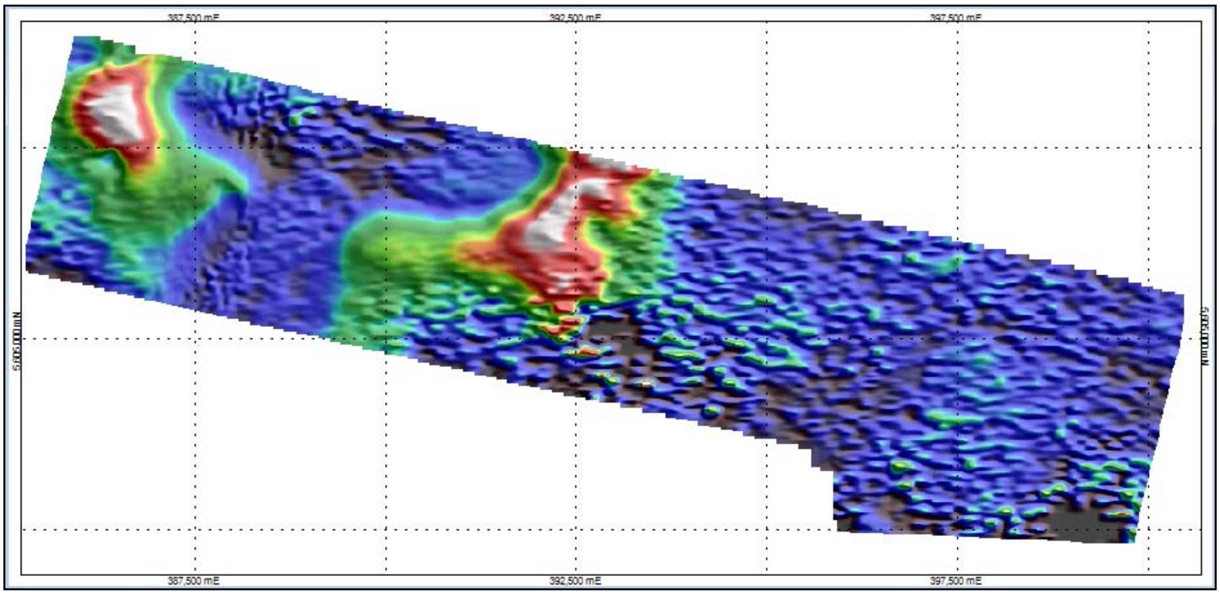


Figure 10: Tau (Time Constant) Image (red-white is high, blue is low)

Conductivity Depth Slices were made at -50m and -150 depths as shown in Figure 11 and Figure 12 . These show that the conductive zone associated with the known mineralisation appears to be depth limited. They also clearly illustrate the dips of the stratigraphic conductors.

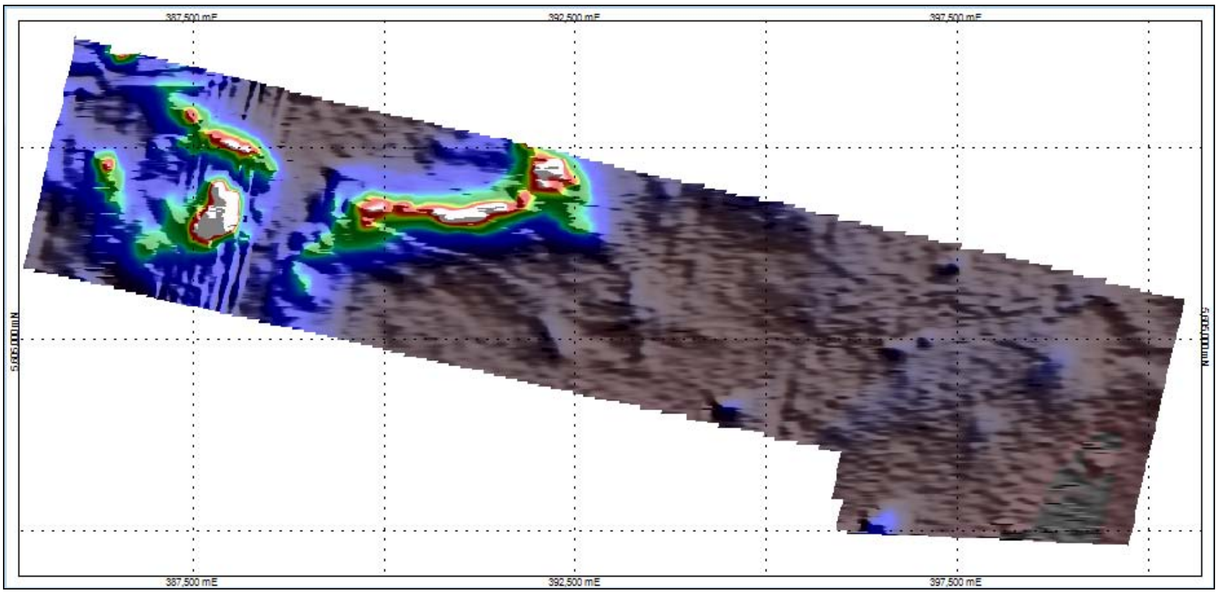


Figure 11: Conductivity Depth Slice (-50m) Image (red-white is high, blue is low)

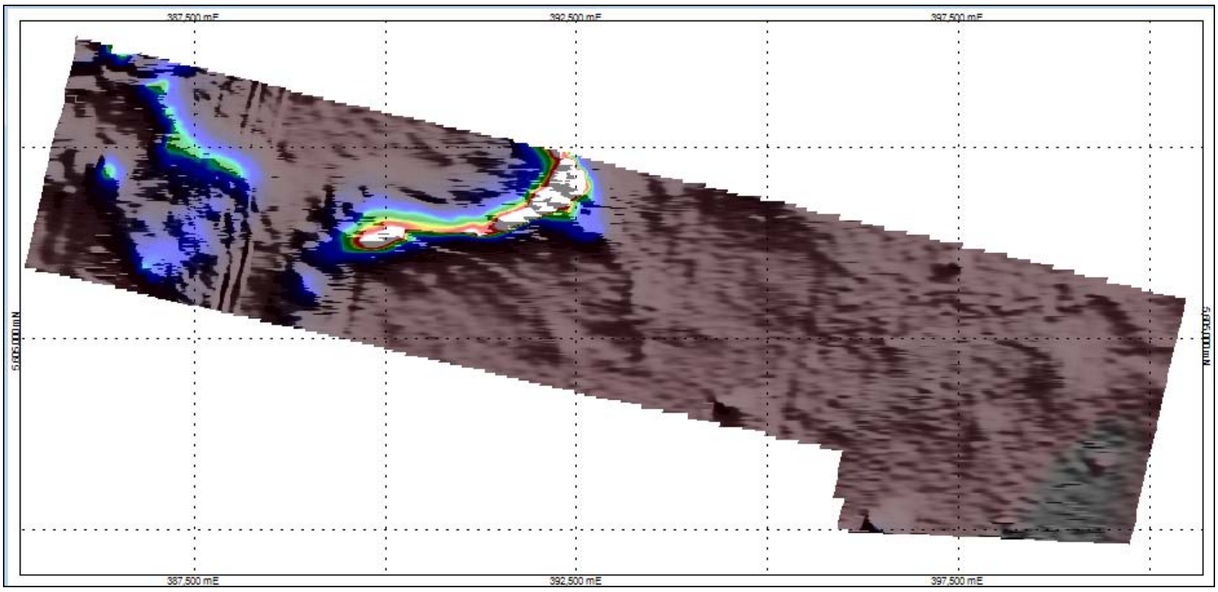


Figure 12: Conductivity Depth Slice (-150m) Image (red-white is high, blue is low)

The conductivity depth 3D model shows the distribution and geometry of the larger sub-horizontal conductors very well as shown in Figure 13 and Figure 14. They appear to be part of the same stratigraphic horizon (probably graphitic) that is incised and cut out by a prominent deep north-south striking valley.

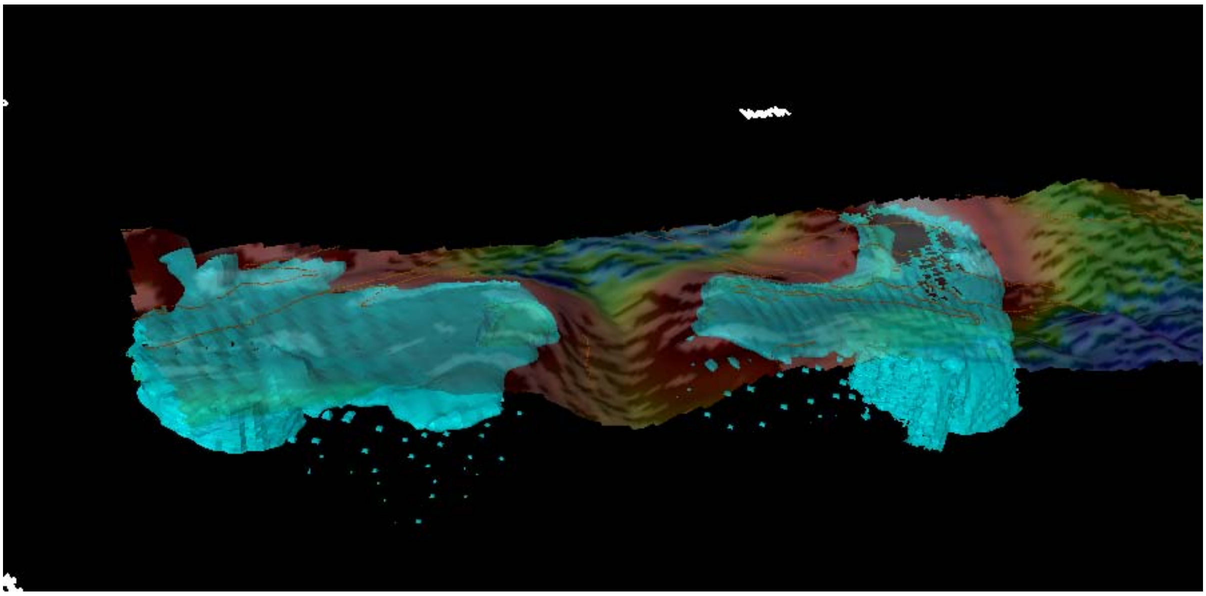


Figure 13: 3D view of main stratigraphic conductors viewed from the south and above

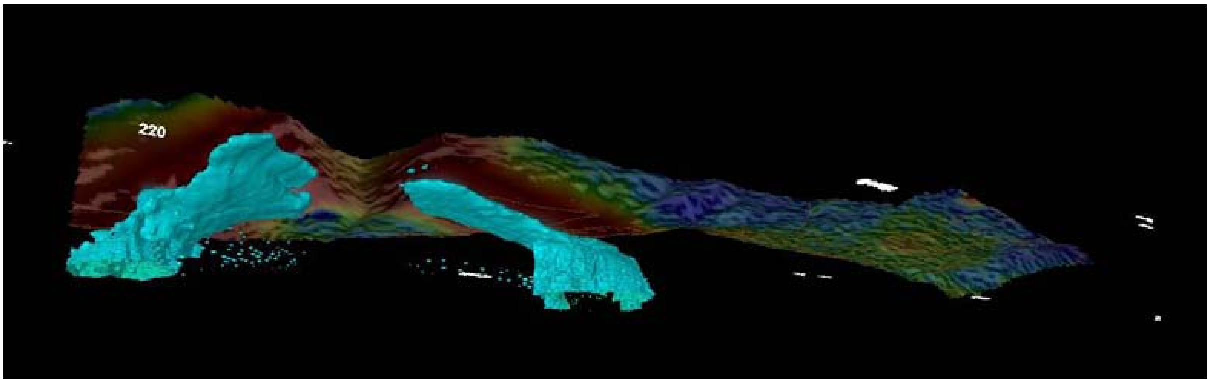


Figure 14: 3D view of main stratigraphic conductors viewed from the south and below

The magnetic data (Figure 15 and Plan 2) shows a relatively confused picture probably due to the sub-horizontal stratigraphy. A prominent north-south striking low zone in the west coincides with a prominent valley and probably represents where a sub-horizontal magnetic horizon has been cut out. In the east of the area there are two well defined parallel NE-SW striking magnetic units.

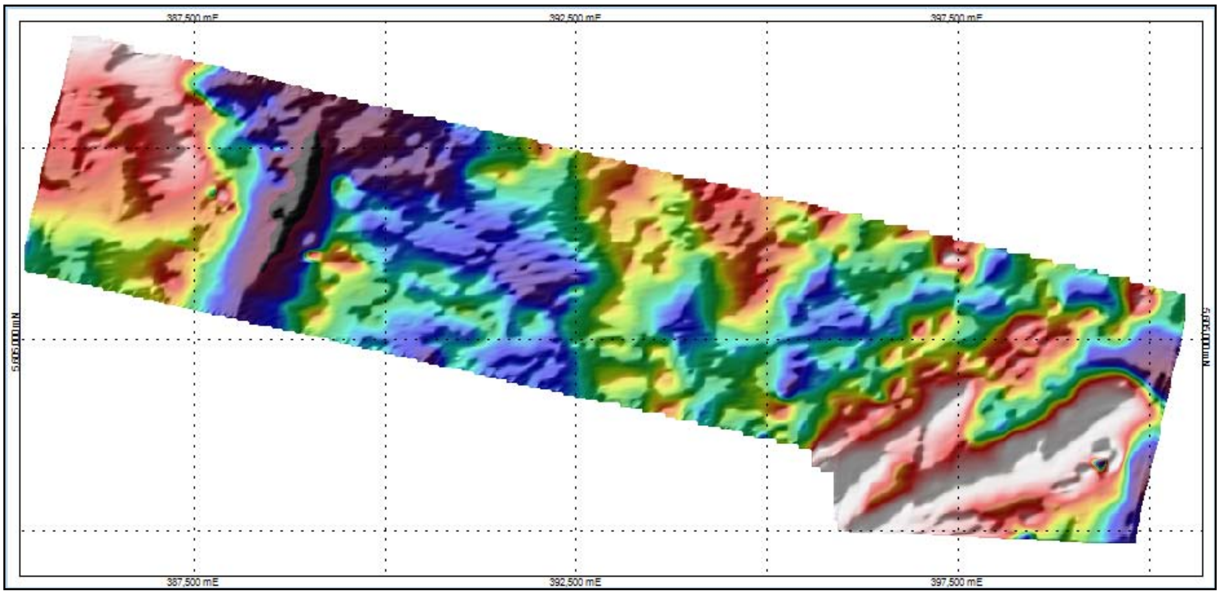


Figure 15: RTP TMI (Magnetics) Image (red-white is high, blue is low)

A 3D inversion of the magnetic data as shown in Figure 16 and Figure 17 confirms that the valley cuts out a magnetic sequence in the west. This magnetic sequence seems to be below the main conductive sequence but more or less conformable. The parallel magnetic units in the east look to be the limbs of an anticlinal fold.

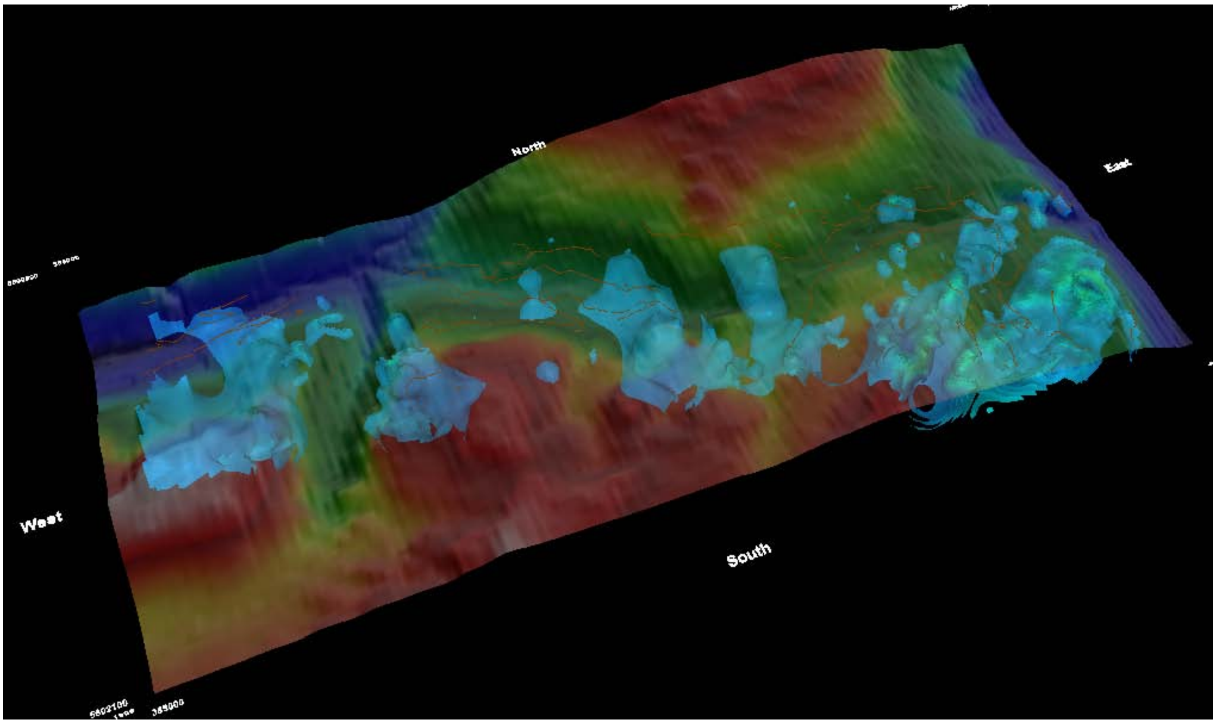


Figure 16: 3D Magnetic Inversion viewed from the south and above

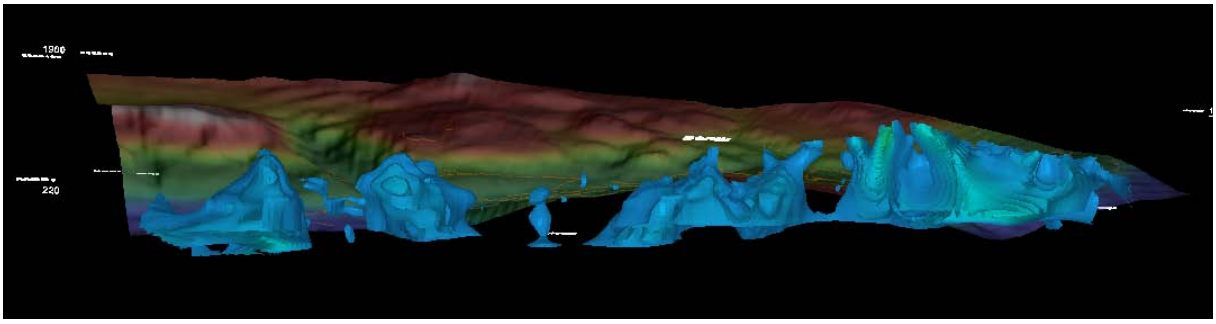


Figure 17: 3D Magnetic inversion viewed from the south

3.3 Conductor Interpretation

As discussed in Section 3.1 the various conductors have been interpreted and classified as poor, moderate or good. Dips and plunges have been interpreted. The conductors are shown below in Figure 18 superimposed over the satellite imagery and also in Plan 3.

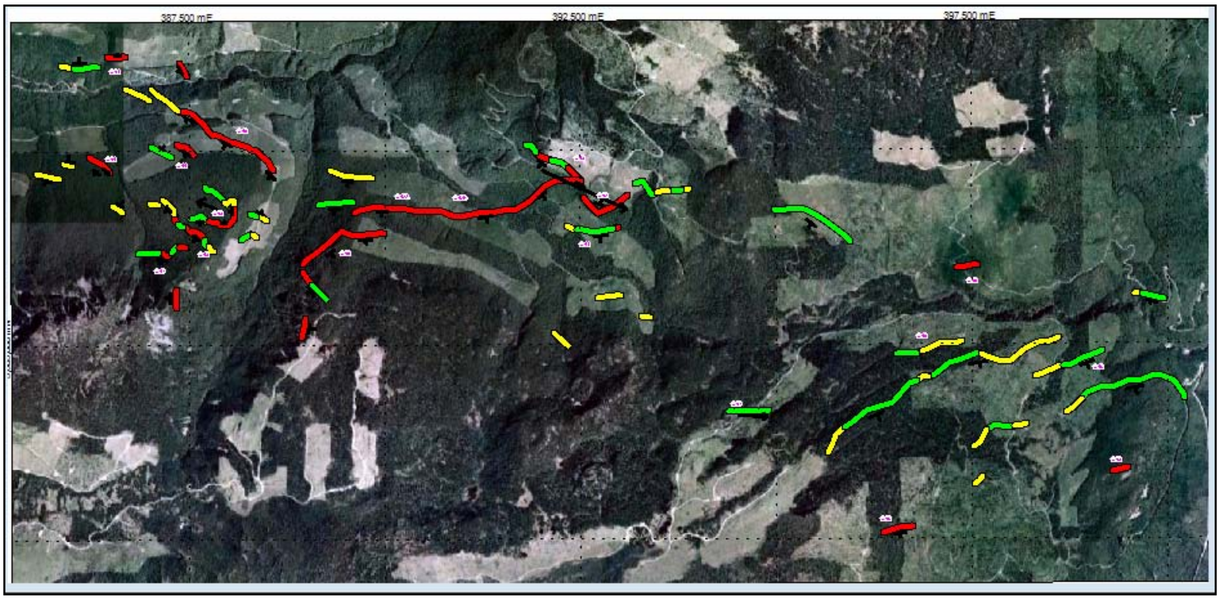


Figure 18: EM Conductors over Satellite Imagery (red-good, green-moderate, yellow-weak)

There are a number of short strike length “good” conductors that are not obvious in the various EM images. These are lower amplitude but discrete and good anomalies that are interpreted from the profile data. This illustrates the importance of using multi-channel line profile information to interpret EM data rather than relying on images.

No detailed interpretation or modelling of the various conductors has been undertaken at this stage as the main objective is to select targets for ground investigation.

4 CONDUCTOR TARGETS

Nineteen locations have been selected as targets for field investigation. These locations tabulated in Table 4 are the shallowest/ best looking part of selected conductors. No quantitative modelling has been done so all comments are qualitative at this stage. Detailed modelling can be done on conductors of interest and drill holes designed.

Initially the main target was discrete "sulphide" type conductors but the focus is also on more extensive "graphite" stratigraphic conductors. These would previously have been screened out during sulphide targeting but they are now included in the target selection.

As discussed previously the conductivity depth 3D model (Figure 13 & Figure 14) provides a good feel for the distribution of the larger sub-horizontal conductors.

Table 4: Conductor Target Centre Coordinates

Description	Easting	Northing	Priority
C-01	386351	5607355	High
C-02	392604	5606809	Low
C-03	387920	5606538	High
C-04	386601	5608708	Moderate
C-05	397447	5606003	High
C-06	396444	5602596	High
C-07	394462	5604134	Moderate
C-08	399381	5603378	High
C-09	389251	5606291	High
C-10	388100	5607604	High
C-11	387475	5607546	Moderate
C-12A	390199	5606737	High
C-12B	390895	5606650	High
C-13	392261	5607328	Moderate
C-14	392533	5606479	Low
C-15	396763	5604876	Low
C-16	398921	5604820	Low
C-17	387186	5606165	Low
C-18	387668	5606411	Moderate

Each target is discussed individually below.

4.1 Target C-01

This is a short strike length confined conductor dipping south and plunging east which has no obvious magnetic or topographic expression. It is a moderate to good conductor and looks to be reasonably shallow. In summary – this is a **high priority** field follow up target.

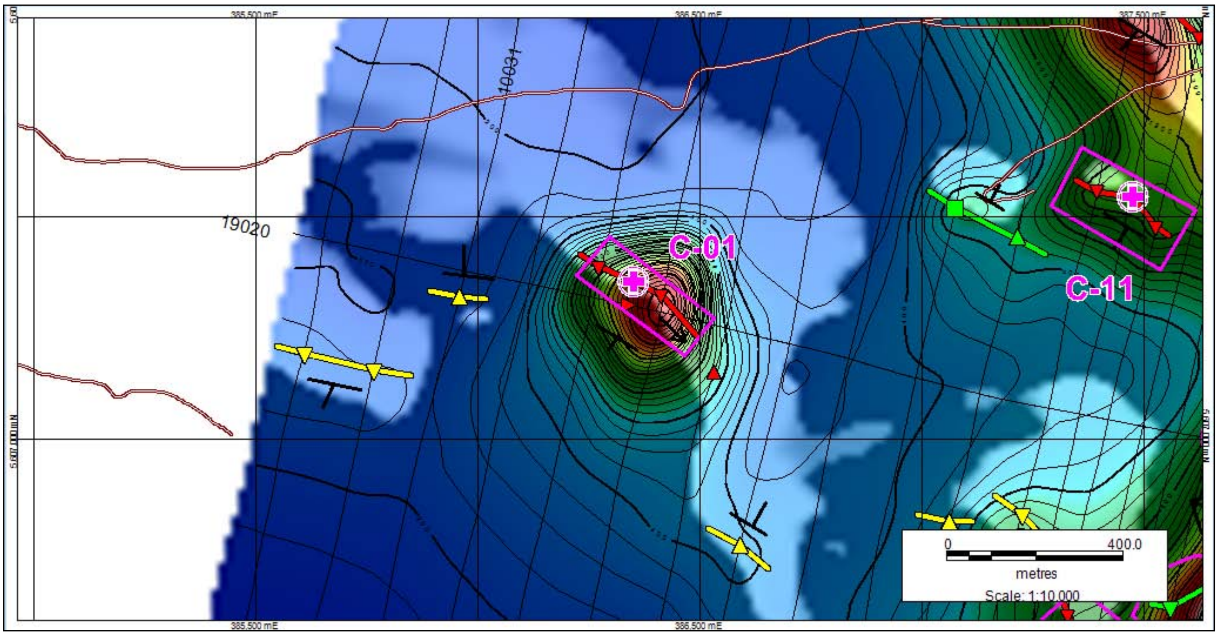


Figure 19: Conductor Target C-01 over Ch10 dB/dT Z Component Image

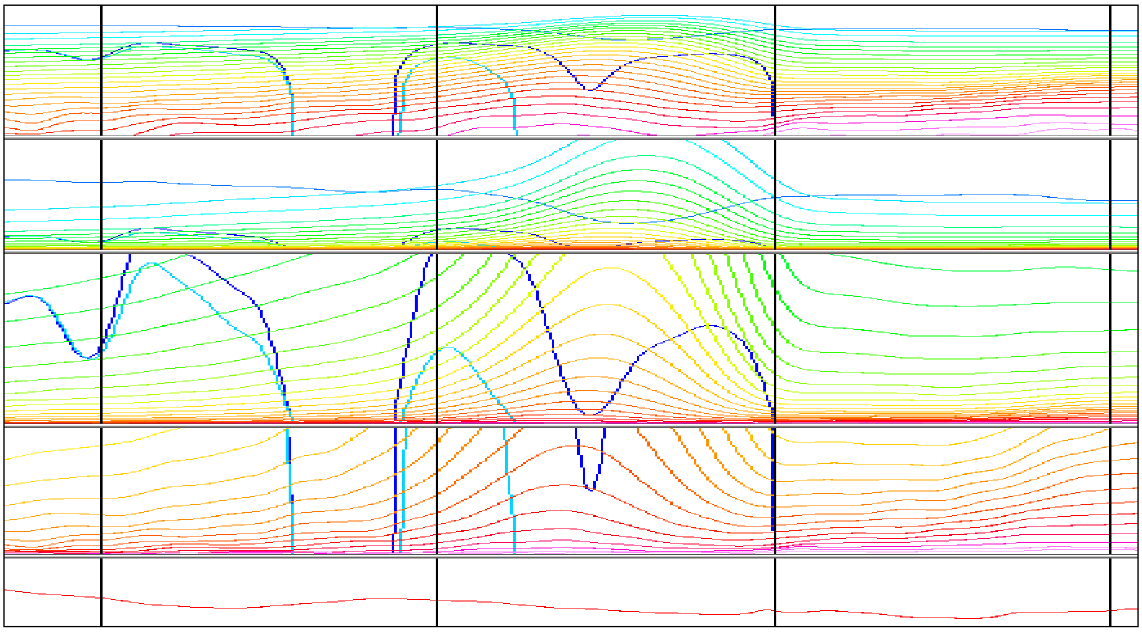


Figure 20: Conductor Target C-01 - Multi-channel Line Profile

4.2 Target C-02

This is a target picked in an attempt to find discrete non-stratigraphic conductors. It is probably a down plunge part of the conductive features to the west. It looks to dip north and plunge east. It has no obvious magnetic or topographic correlation. It has good conductance but may well be reasonably deep. In summary – this is a relatively **low priority** field follow up target as it is unlikely to outcrop and is probably related to shallower targets to the west.

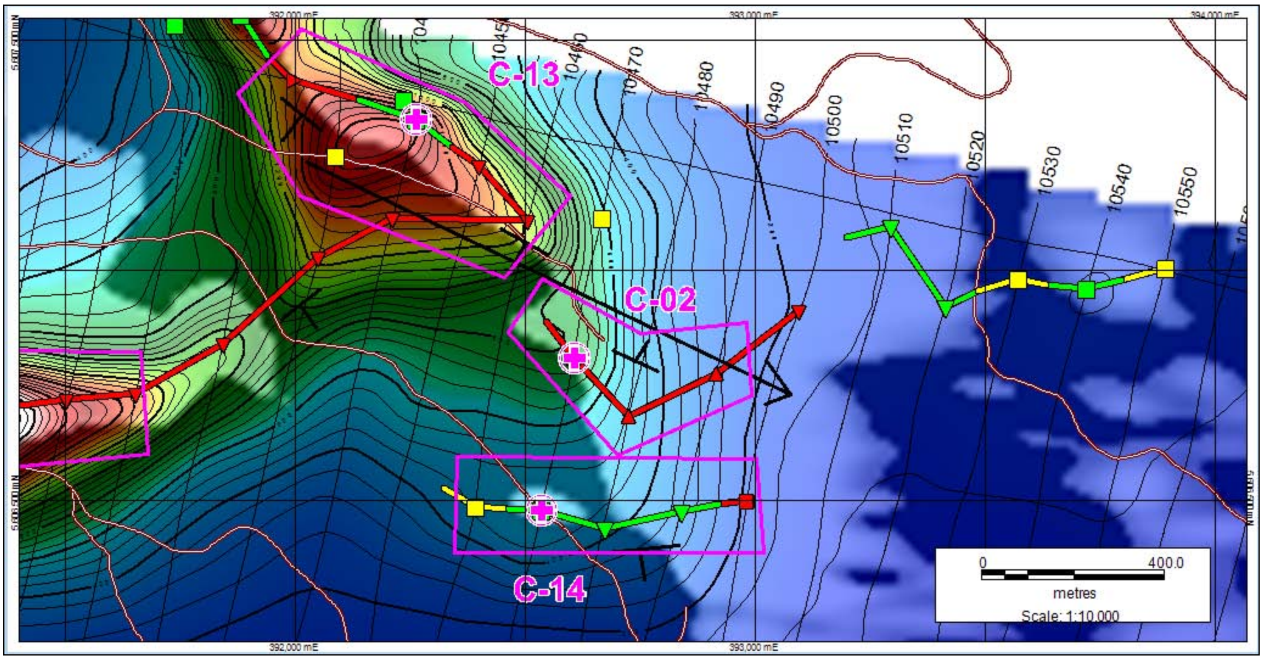


Figure 21: Conductor Target C-02 over Ch10 dB/dT Z Component Image

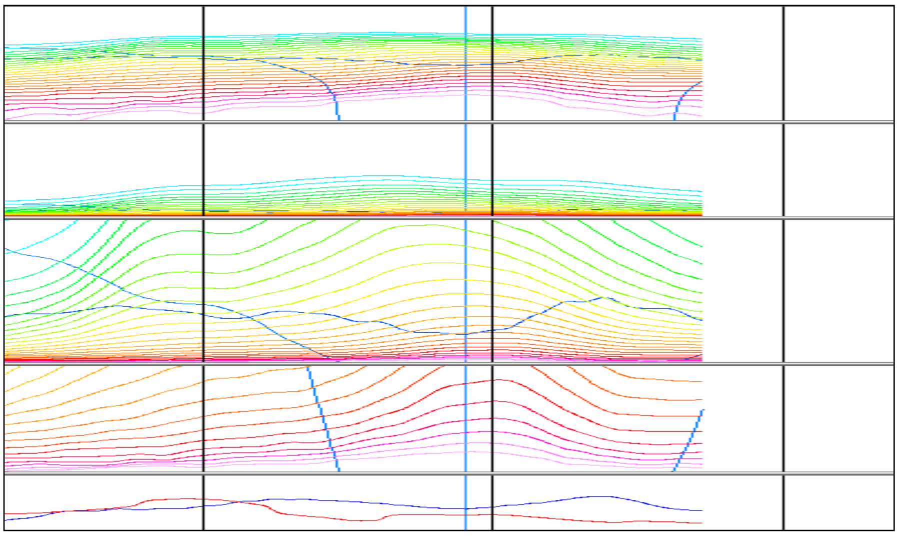


Figure 22: Conductor Target C-02 - Multi-channel Line Profile

4.3 Target C-03

This is one of the most attractive **high priority** targets as it is reasonably extensive in size but still discrete. It appears to lie above the main large stratigraphic conductor and it correlates directly with the known mineralisation and trenching. The geometry looks to be a sub-horizontal shallow basin or synclinal feature plunging west. It is located at the top of a ridge. It has moderate conductance. It has some magnetic correlation and there is a discrete strong dipolar magnetic anomaly in the vicinity of the trenches which could be due to pyrrhotite, magnetite or a man-made source of some sort.

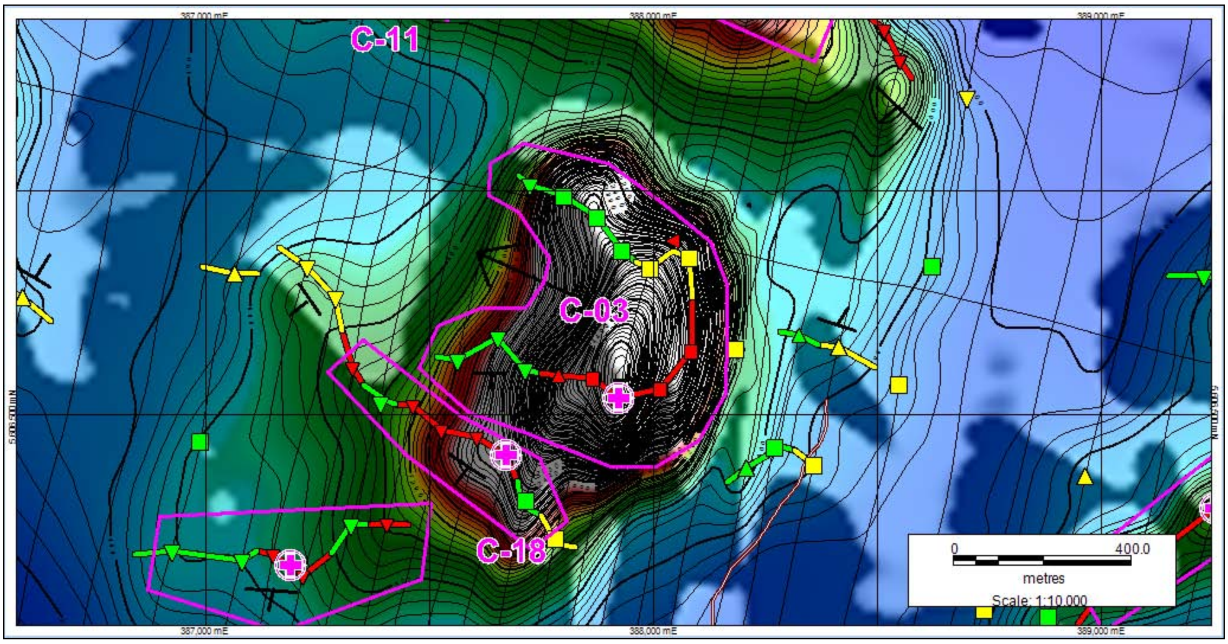


Figure 23: Conductor Target C-03 over Ch10 dB/dT Z Component Image

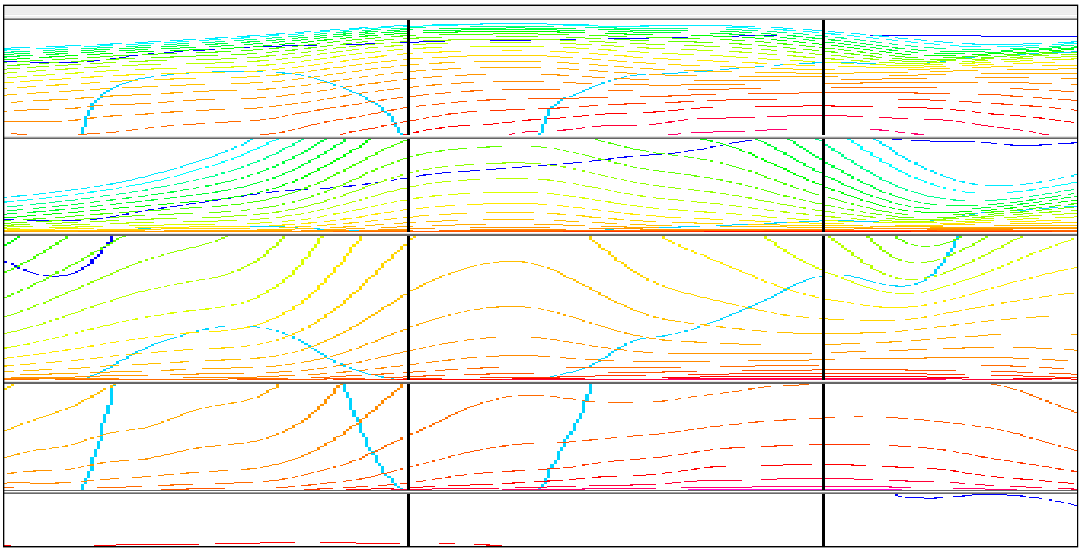


Figure 24: Conductor Target C-03 - Multi-channel Line Profile

4.4 Target C-04

This is an incompletely defined conductor at the northern edge of the survey and as such its geometry and extent is uncertain. It has moderate to good conductance and looks to be shallow. It may have some minor magnetic correlation. This is a **moderate priority** target for follow up.

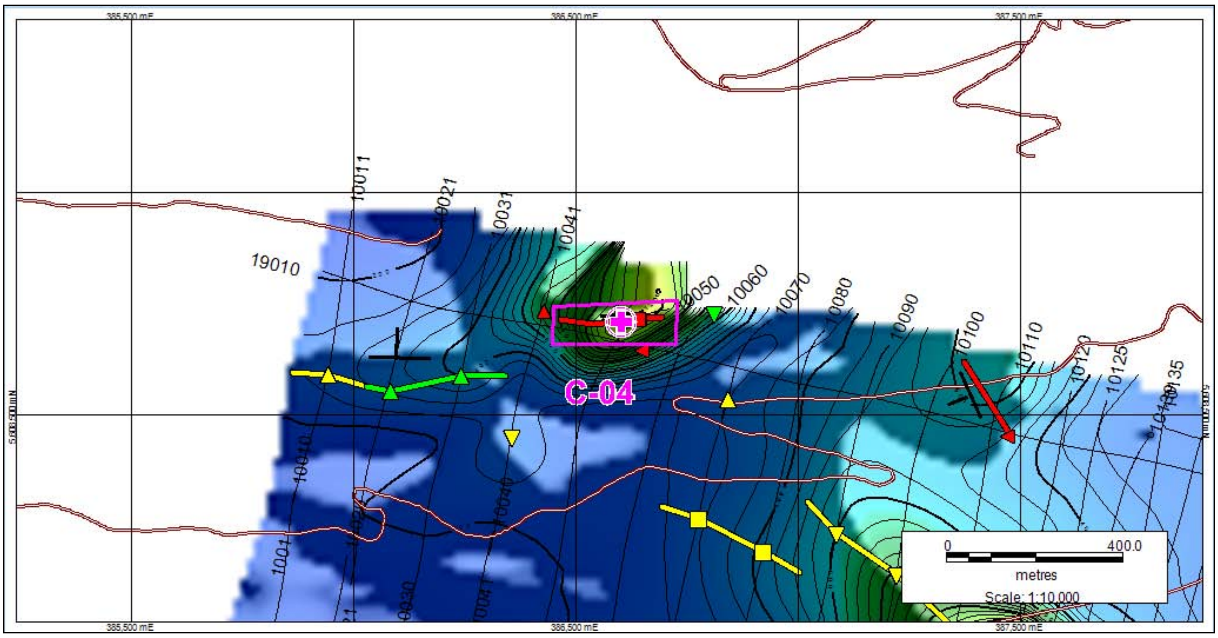


Figure 25: Conductor Target C-04 over Ch10 dB/dT Z Component Image

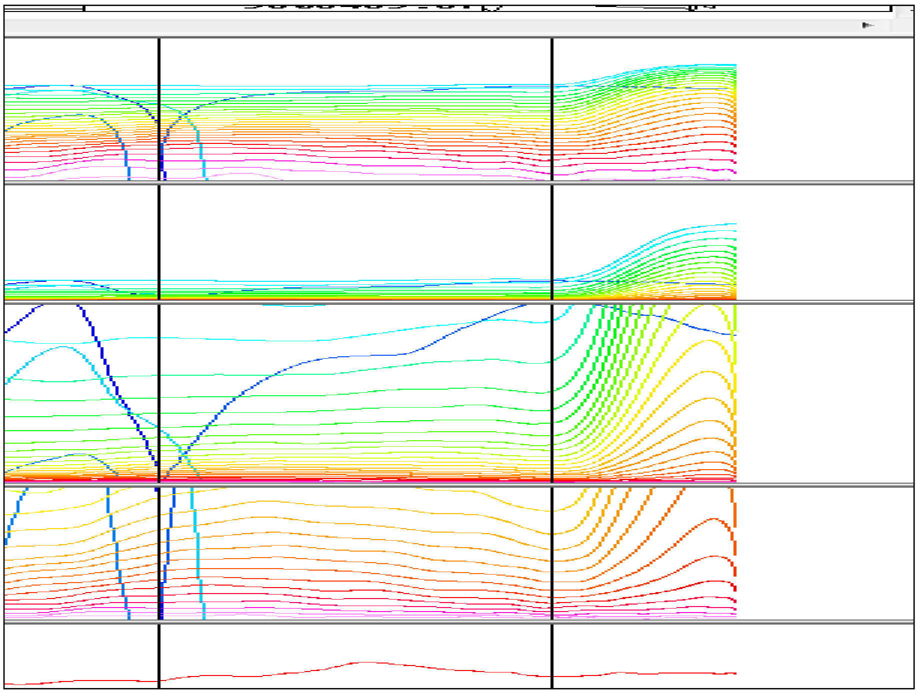


Figure 26: Conductor Target C-04 - Multi-channel Line Profile

4.5 Target C-05

This is a short strike length discrete conductor with good conductance. Its geometry is uncertain as is its depth but it is thought to be reasonably shallow. It has a strong coincident discrete magnetic anomaly.

This is an attractive **high priority** follow up target. It needs to be checked carefully to see if it has a man-made source.

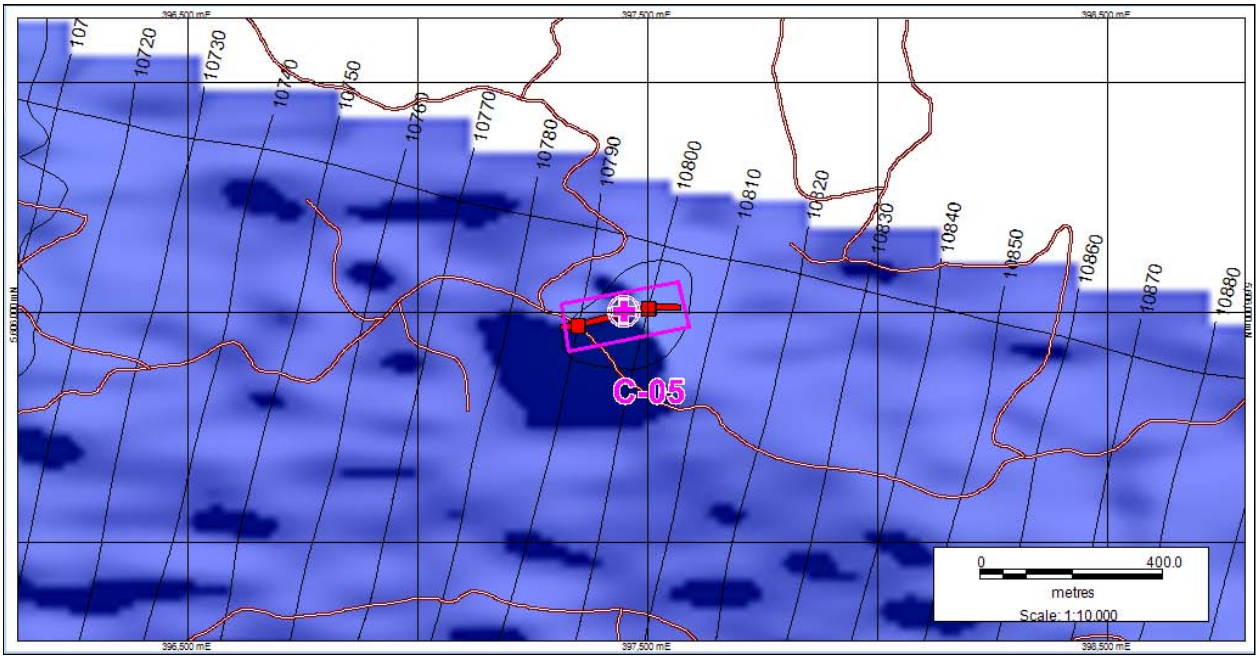


Figure 27: Conductor Target C-05 over Ch10 dB/dT Z Component Image

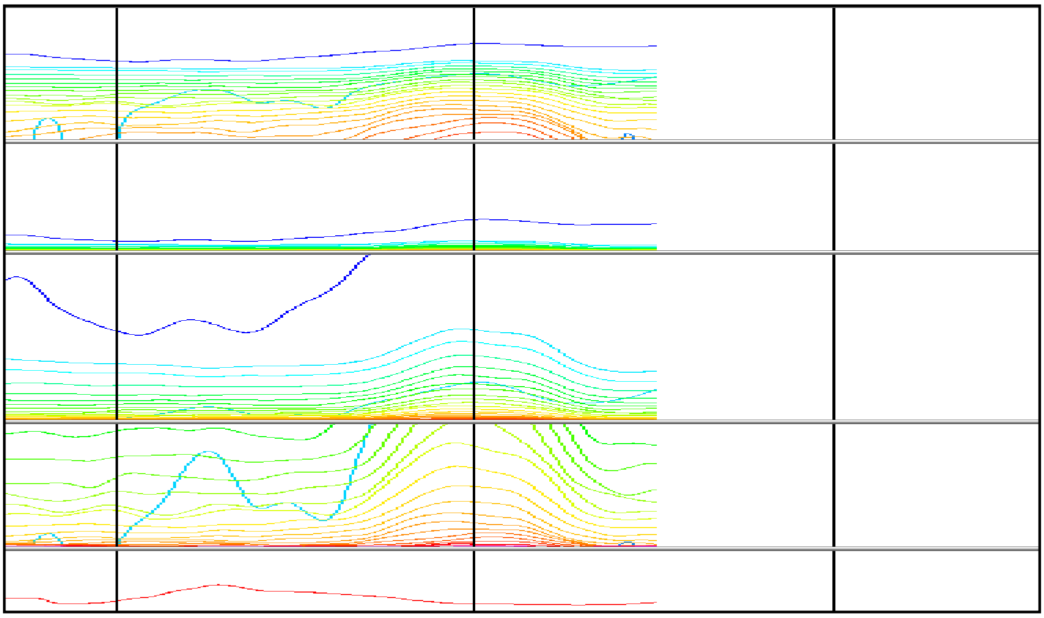


Figure 28: Conductor Target C-05 - Multi-channel Line Profile

4.6 Target C-06

This is an incompletely defined but discrete conductor at the southern edge of the survey. Its geometry and extent is uncertain, however it looks to dip south. It has good conductance and looks to be shallow. It coincides with a northeast striking magnetic feature but the correlation may be only coincidence as the magnetic body is much more strike extensive. This is a **high priority** target for follow up.

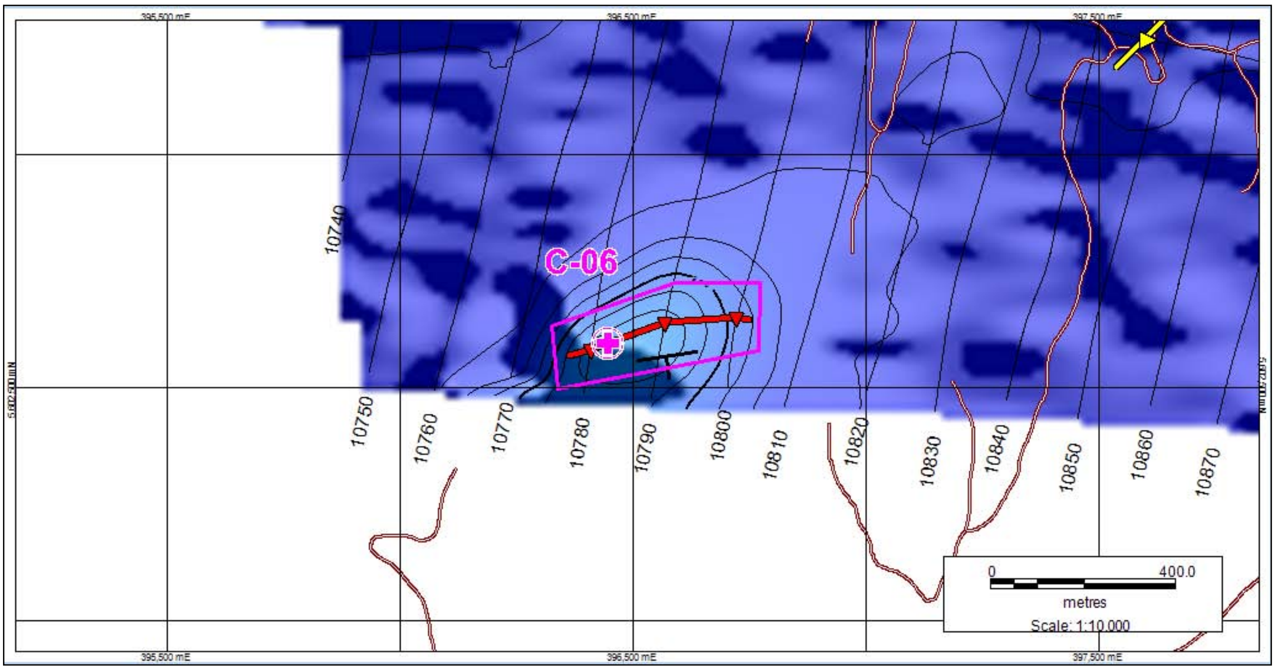


Figure 29: Conductor Target C-06 over Ch10 dB/dT Z Component Image

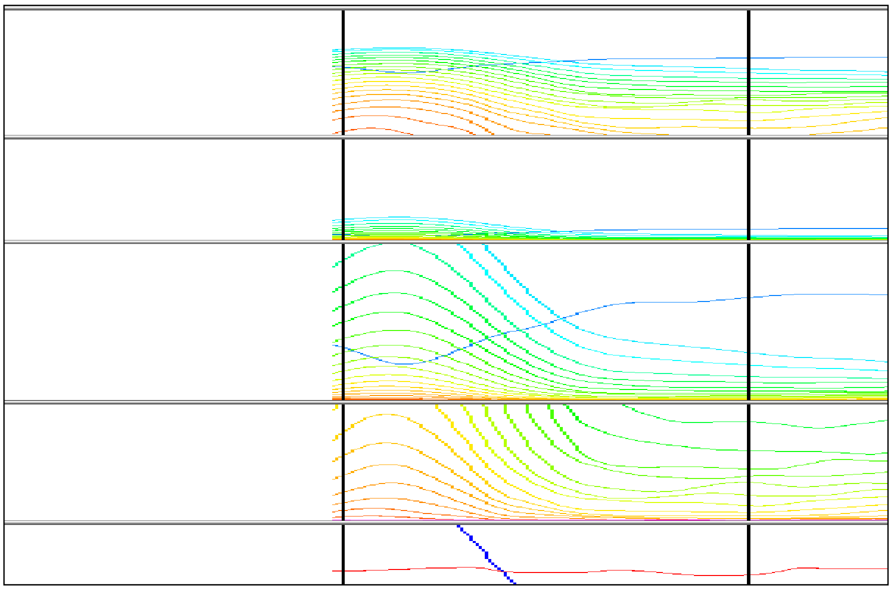


Figure 30: Conductor Target C-06 - Multi-channel Line Profile

4.7 Target C-07

This is a short strike length discrete conductor at the southern edge of the survey. Its dip is uncertain but it looks to plunge to the east. It has quite poor conductance and looks to be shallow. It has perhaps some minor magnetic correlation. Despite the poor conductance, the isolated discrete nature of this target makes it a **moderate priority** for follow up.

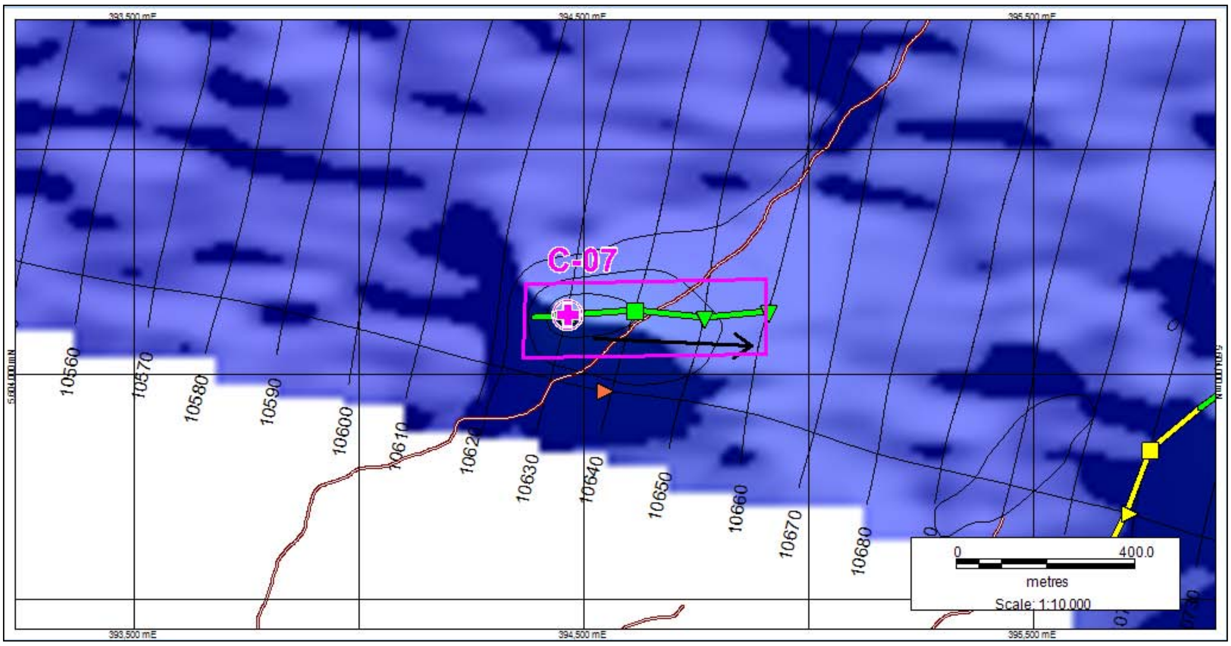


Figure 31: Conductor Target C-07 over Ch10 dB/dT Z Component Image

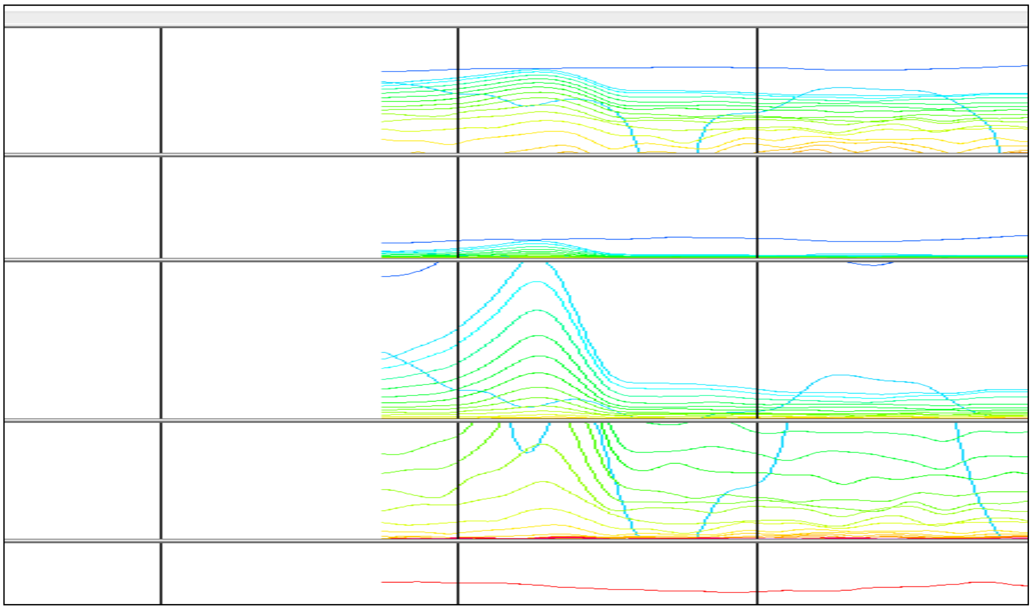


Figure 32: Conductor Target C-07 - Multi-channel Line Profile

4.8 Target C-08

This is a very short strike length discrete conductor with uncertain geometry. It has a low amplitude anomaly but moderate conductance. The low amplitude suggests that it may be quite deep. Contradicting this is the fact that it has a strong coincident shallow magnetic anomaly. It sits on top of a hill raising the possibility that it could be some sort of man-made source such as an antenna but nothing can be seen on Google Earth.

This is a **high priority** field follow up target.

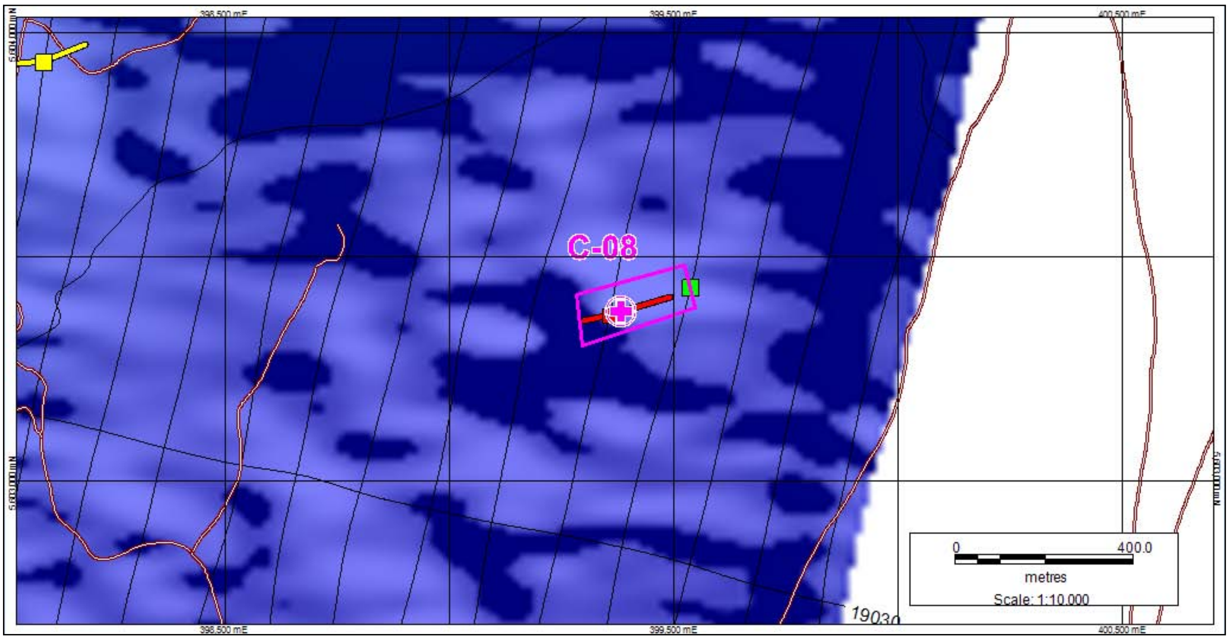


Figure 33: Conductor Target C-08 over Ch10 dB/dT Z Component Image

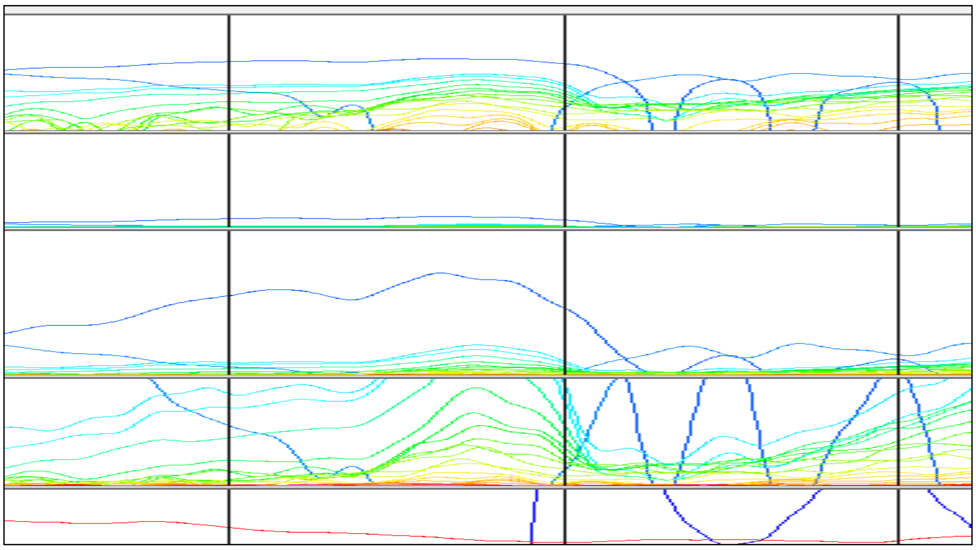


Figure 34: Conductor Target C-08 - Multi-channel Line Profile

4.9 Target C-09

This looks to be part of an extensive stratigraphical conductor that dips shallowly to the southeast into a hill. It has good conductance and extensive strike. It is shallow and probably outcrops. There is possibly some magnetic correlation; in particular there is a strong shallow magnetic anomaly to the southwest along strike.

This is a **high priority** follow up target.

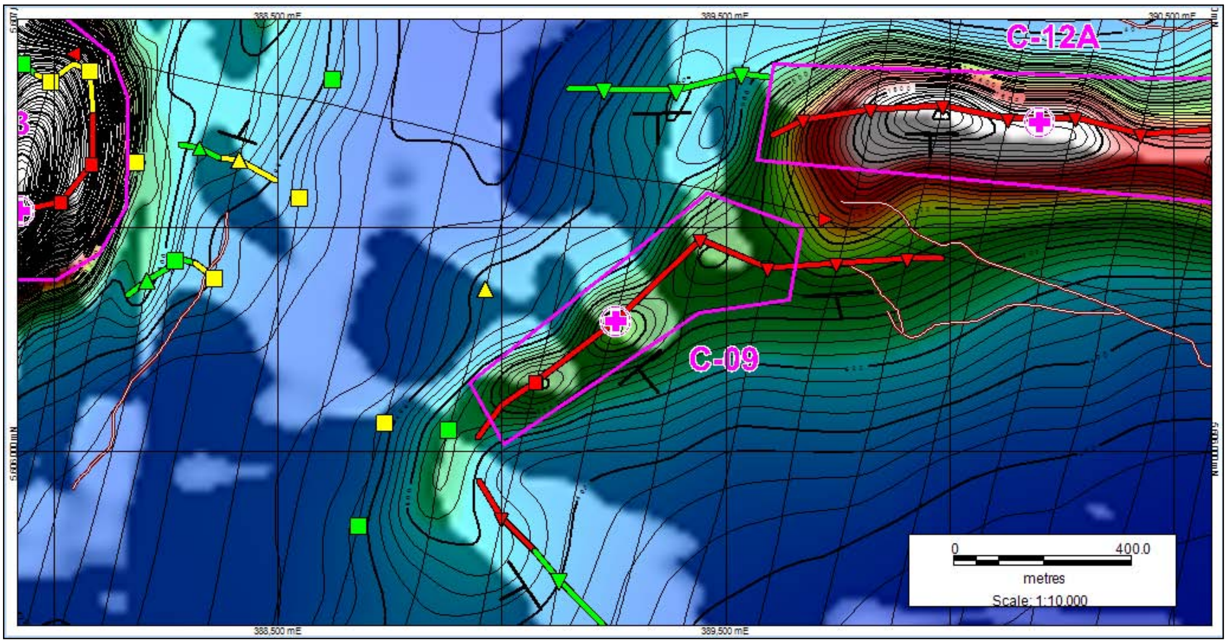


Figure 35: Conductor Target C-09 over Ch10 dB/dT Z Component Image

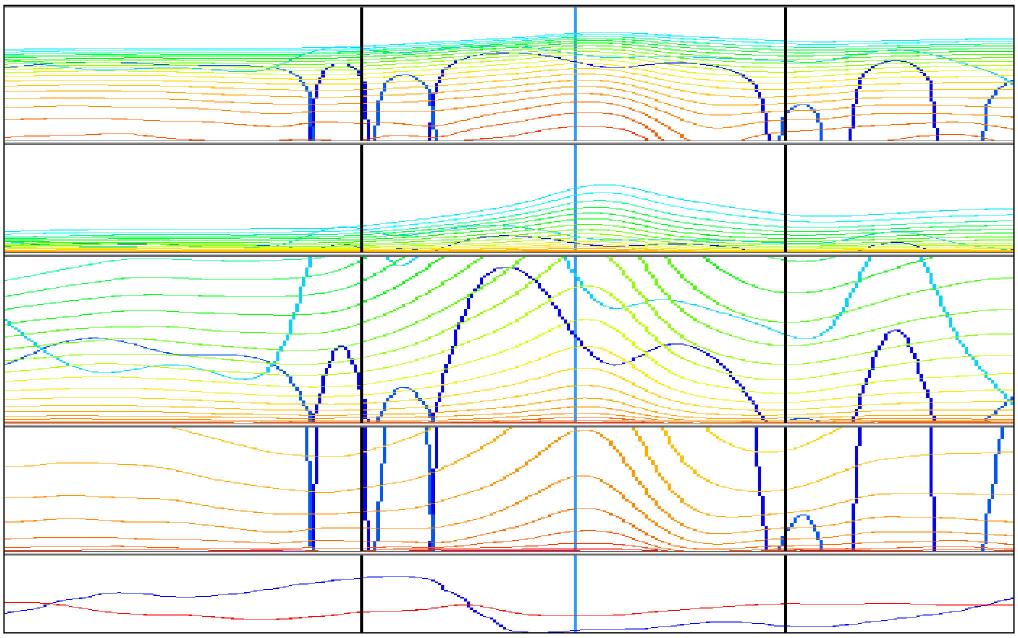


Figure 36: Conductor Target C-09 - Multi-channel Line Profile

4.10 Target C-10

This looks to be part of an extensive stratigraphical conductor that dips shallowly to the south into a hill. It has good conductance and extensive strike. It is relatively shallow and probably outcrops. There is no clear magnetic correlation.

This is a **high priority** follow up target for stratigraphic conductors.

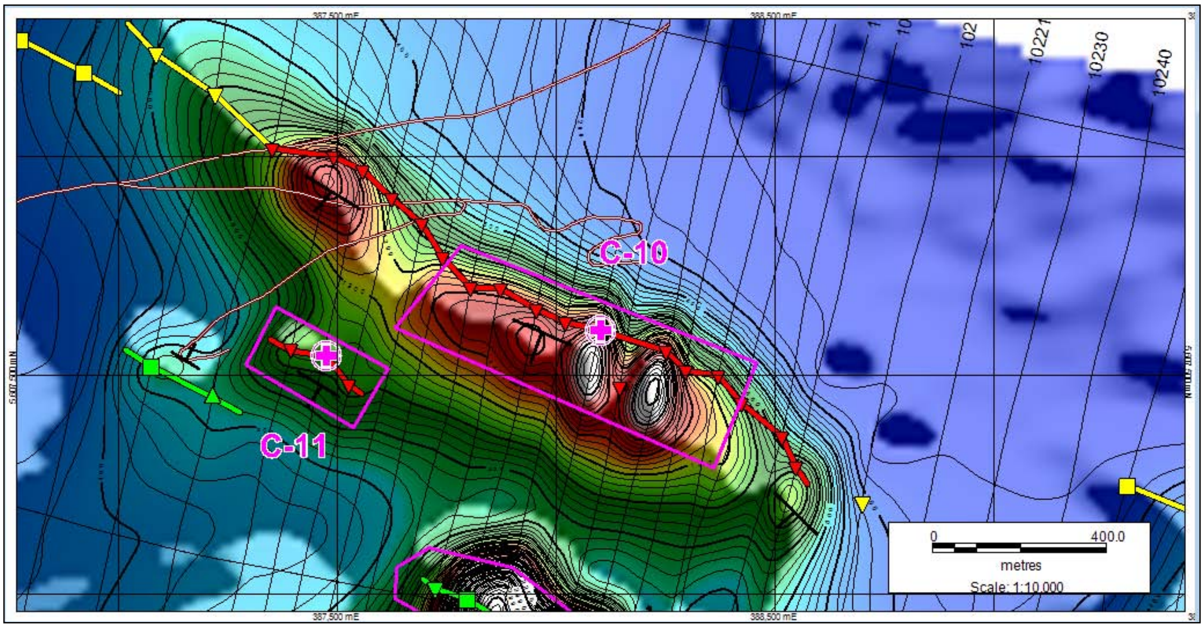


Figure 37: Conductor Target C-10 over Ch10 dB/dT Z Component Image

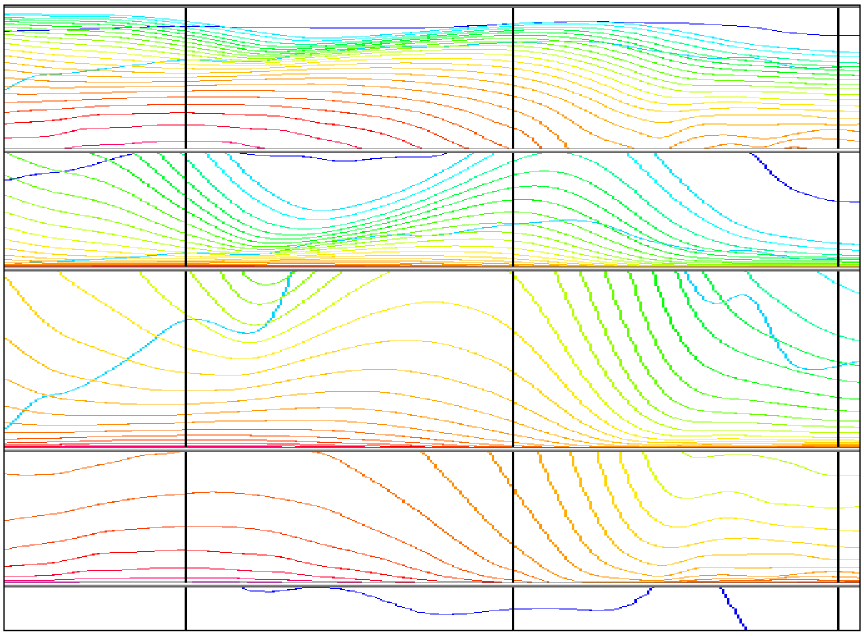


Figure 38: Conductor Target C-10 - Multi-channel Line Profile

4.11 Target C-11

This is a flanking conductor to C-10 and may be part of the same conductor. It also dips to the south and has good conductance. It does correlate with a much more extensive magnetic feature but this may be just coincidence

This is a low to **moderate priority** follow up target for stratigraphic conductors.

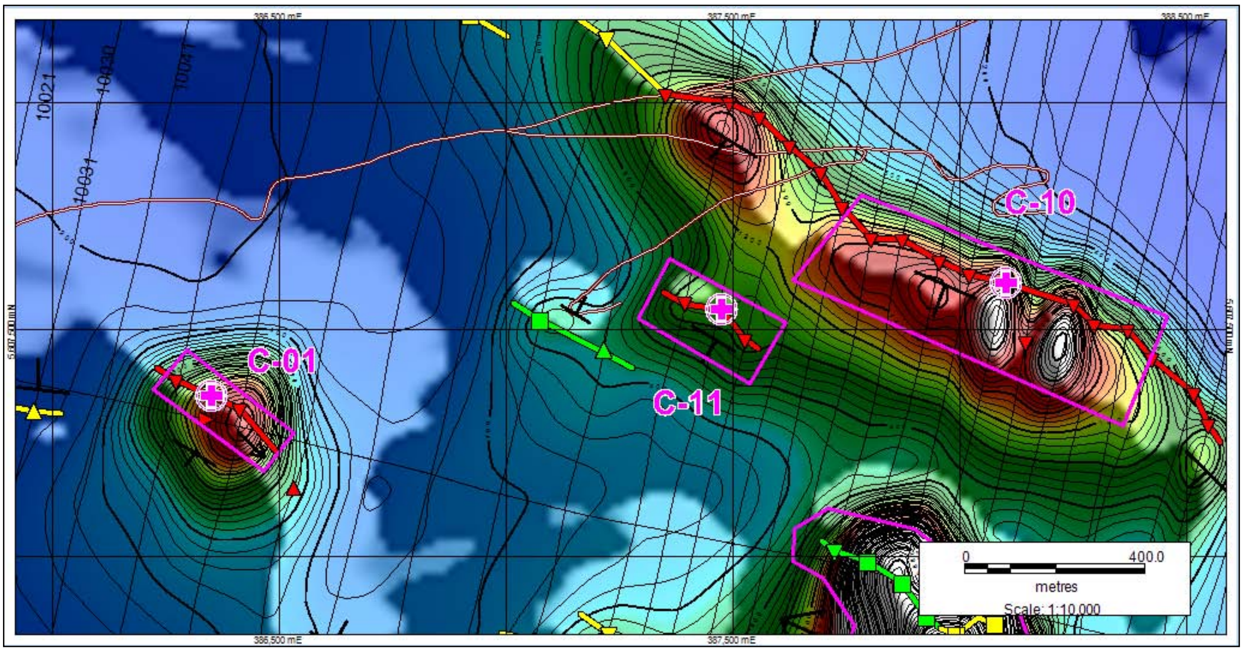


Figure 39: Conductor Target C-11 over Ch10 dB/dT Z Component Image

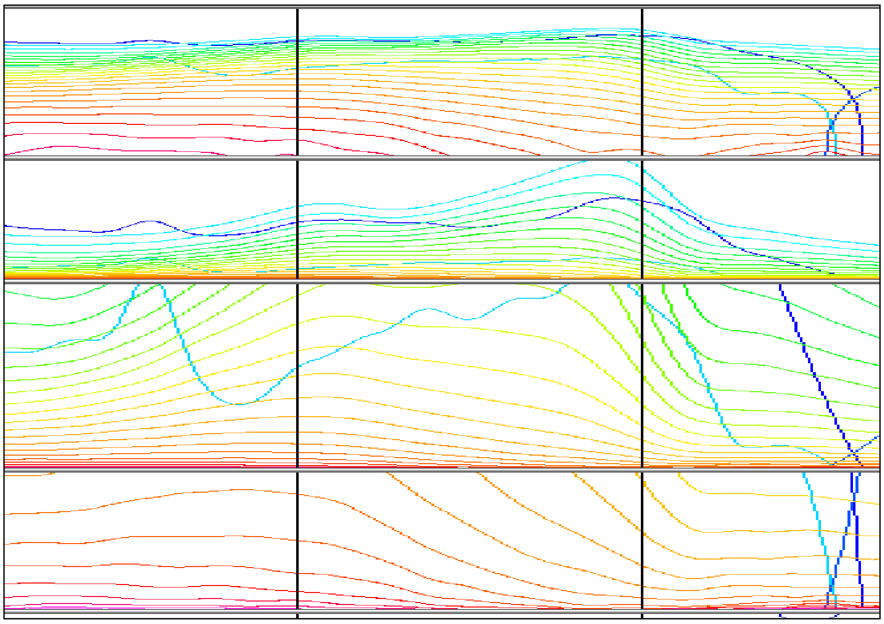


Figure 40: Conductor Target C-11 - Multi-channel Line Profile

4.12 Targets C-12A-B

This is a strong "stratigraphic" conductor with high conductance and extensive strike length dipping shallowly to the south. It is probably the same horizon as C-09 and C-13. It has a possible weak but uncertain magnetic correlation. Two targets have been selected to test the same horizon. This is a **high priority** follow up target for stratigraphic conductors.

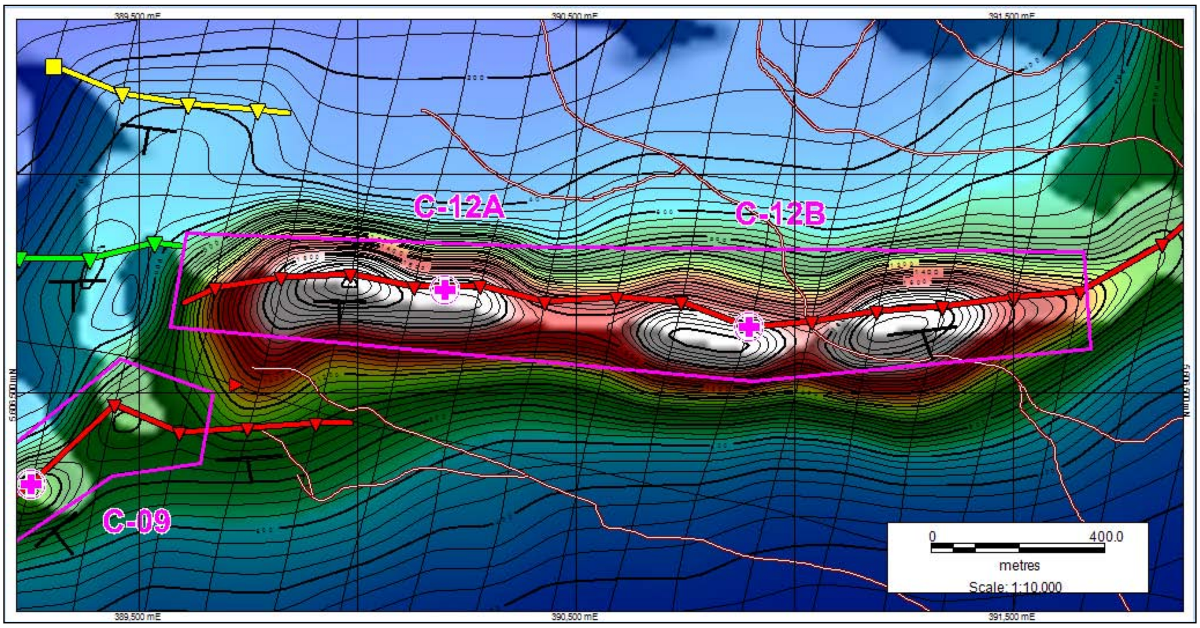


Figure 41: Conductor Target C-12A-B over Ch10 dB/dT Z Component Image

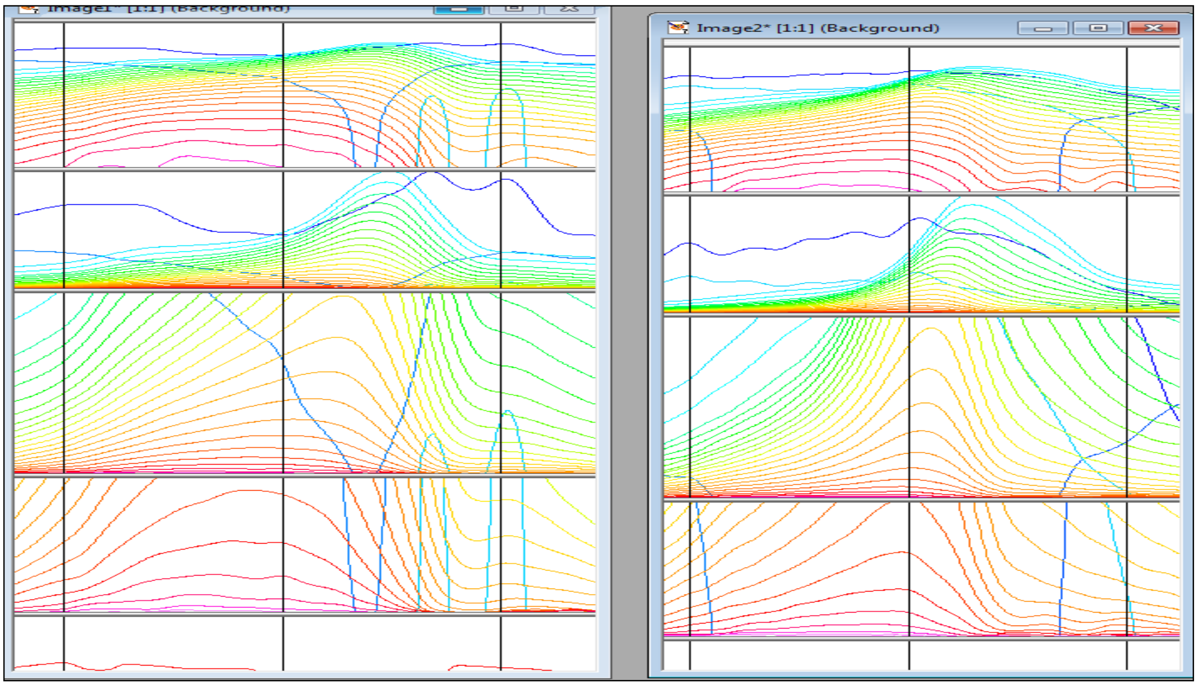


Figure 42: Conductor Target C-12A-B - Multi-channel Line Profile

4.13 Target C-13

This is another strong "stratigraphic" conductor with high conductance dipping shallowly to the south. It is probably a northern limb of the same horizon as C-09 and C-12. There is no convincing magnetic correlation. This is a **moderate priority** follow up target for stratigraphic conductors.

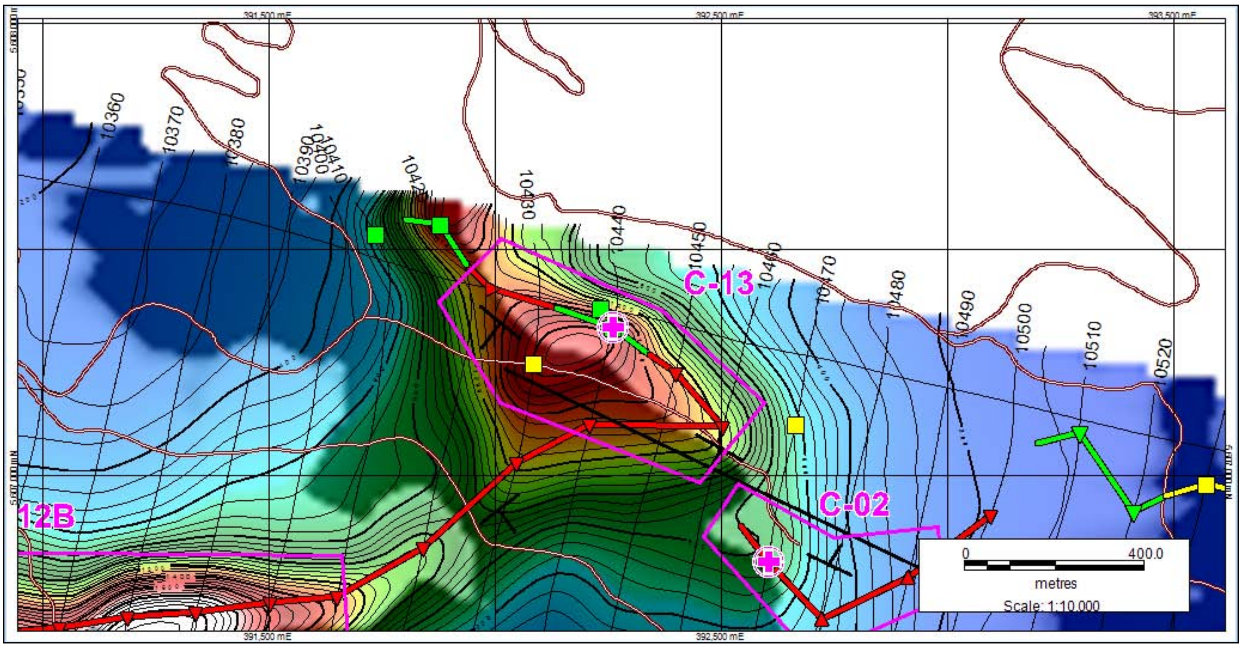


Figure 43: Conductor Target C-13 over Ch10 dB/dT Z Component Image

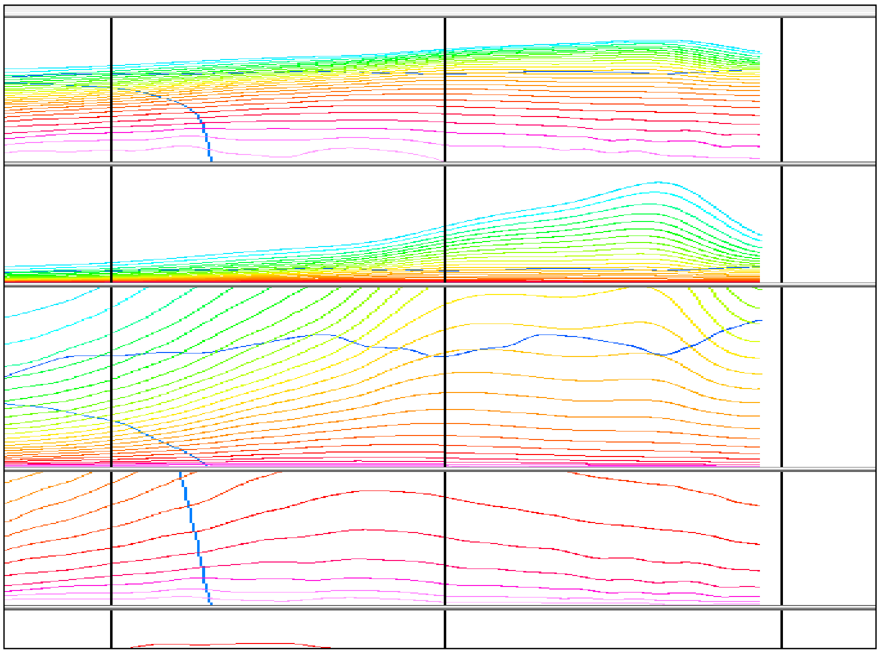


Figure 44: Conductor Target C-13 - Multi-channel Line Profile

4.14 Target C-14

This is weaker flanking conductor dipping to the south. There is no magnetic correlation. This is a **low priority** follow up target.

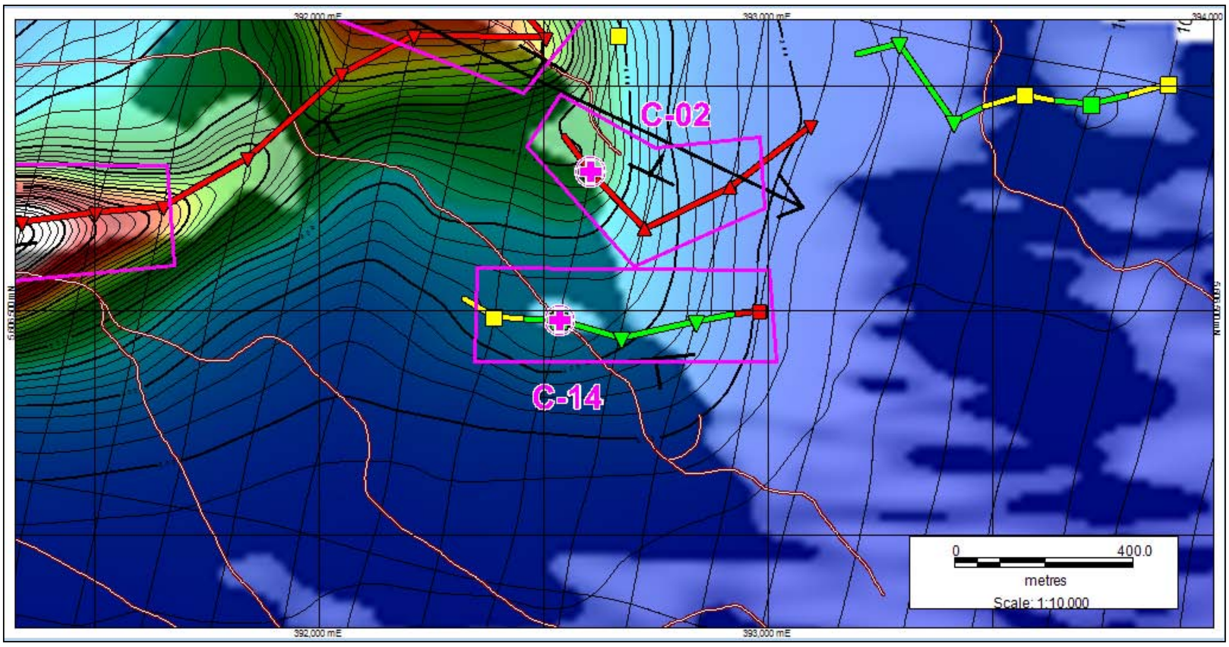


Figure 45: Conductor Target C-14 over Ch10 dB/dT Z Component Image

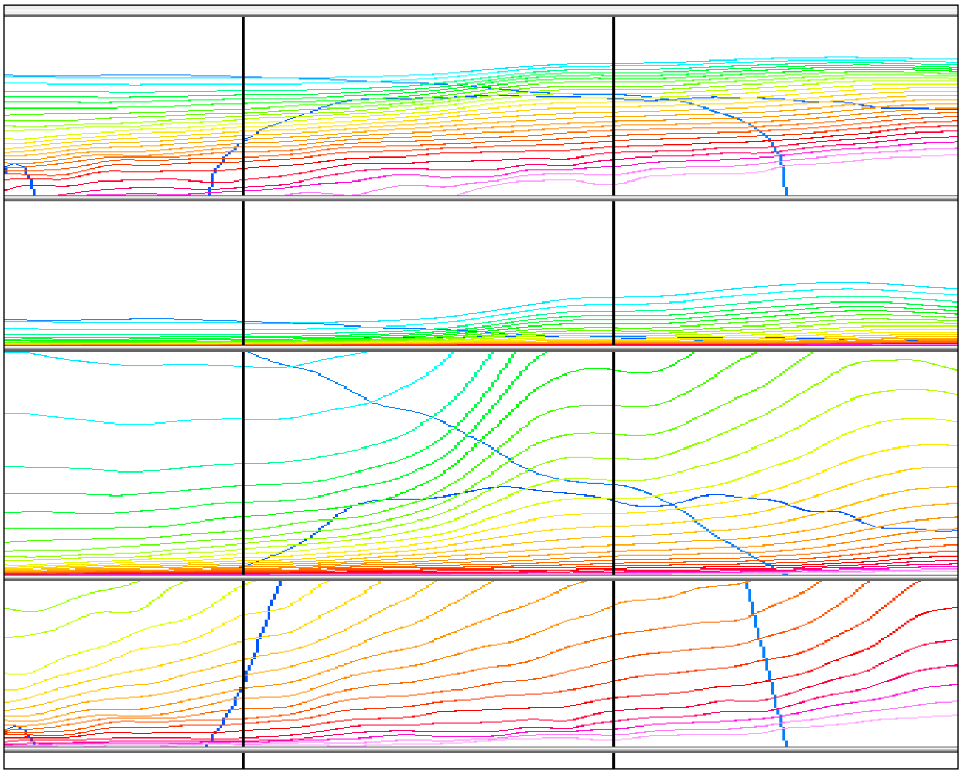


Figure 46: Conductor Target C-14 - Multi-channel Line Profile

4.15 Target C-15

This is a weak "stratigraphic" conductor with poor conductance. Dip is uncertain. There is some vague magnetic correlation. It looks reasonably shallow. This is a **low priority** follow up target for stratigraphic conductors.

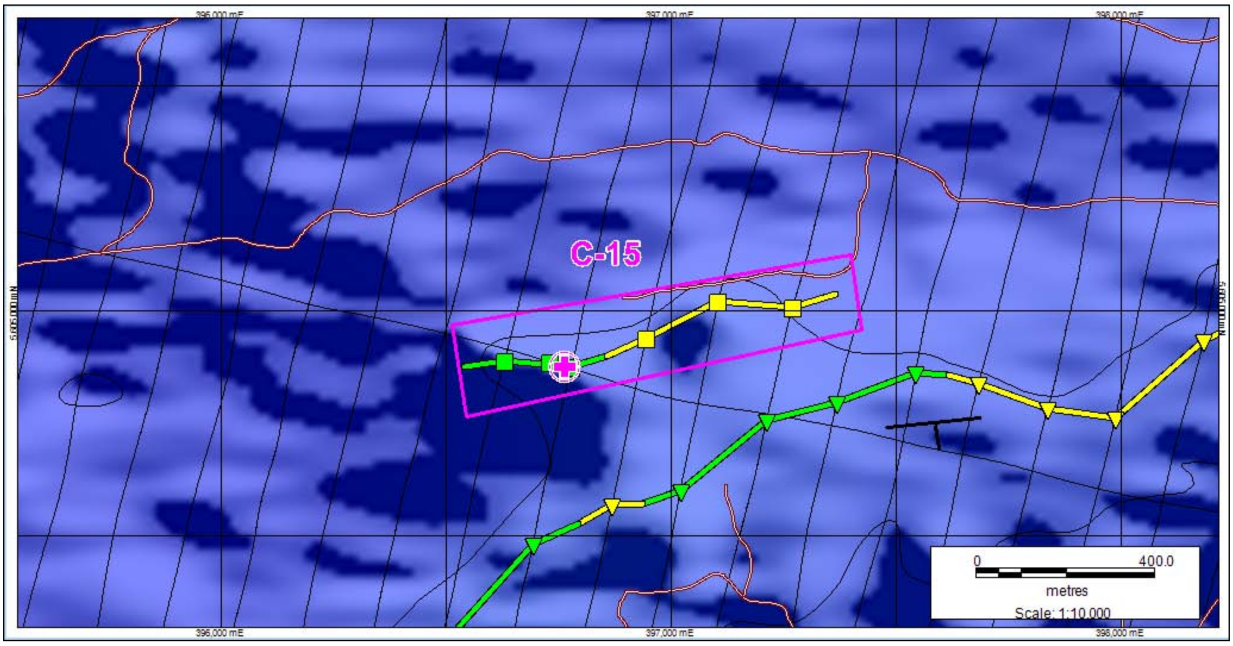


Figure 47: Conductor Target C-15 over Ch10 dB/dT Z Component Image

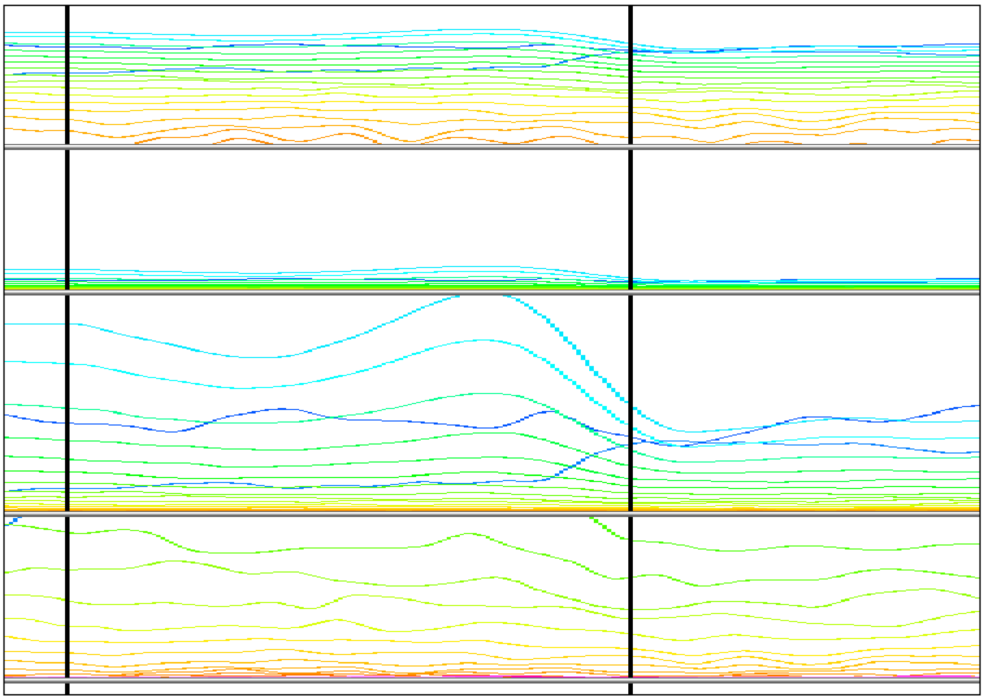


Figure 48: Conductor Target C-15 - Multi-channel Line Profile

4.16 Target C-16

This is another weak "stratigraphic" conductor with poor conductance. Dip looks to be to the south. There is some vague magnetic correlation. It could be relatively deep. This is a **low priority** follow up target for stratigraphic conductors.

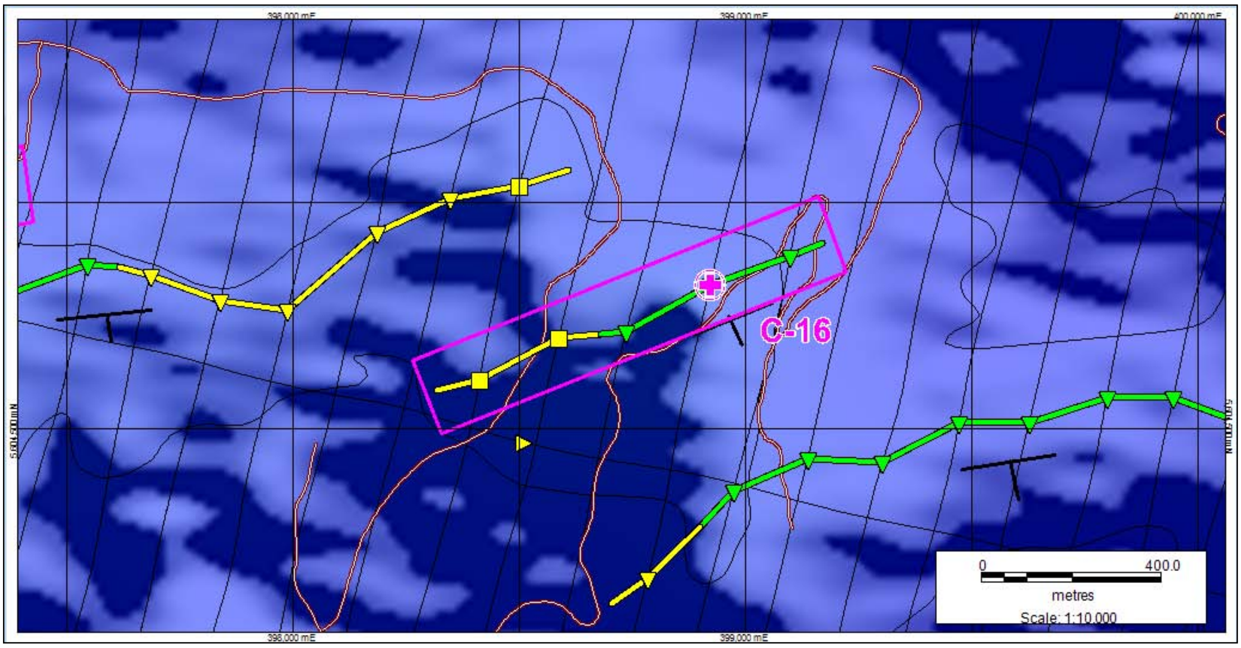


Figure 49: Conductor Target C-16 over Ch10 dB/dT Z Component Image

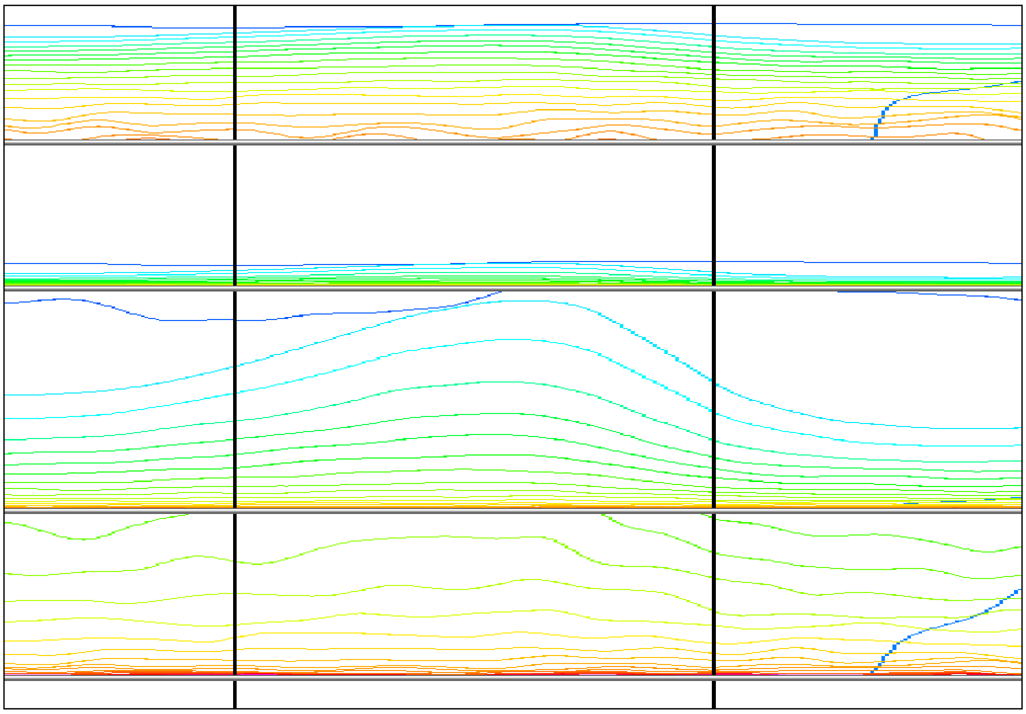


Figure 50: Conductor Target C-16 - Multi-channel Line Profile

4.17 Target C-17

This is a high conductance conductor which is probably part of the main stratigraphic conductor underlying this area which would include the northern limb at C-10. Dip looks to be to the south. There is some vague magnetic correlation. It is probably relatively deep. This is a **low priority** follow up target.

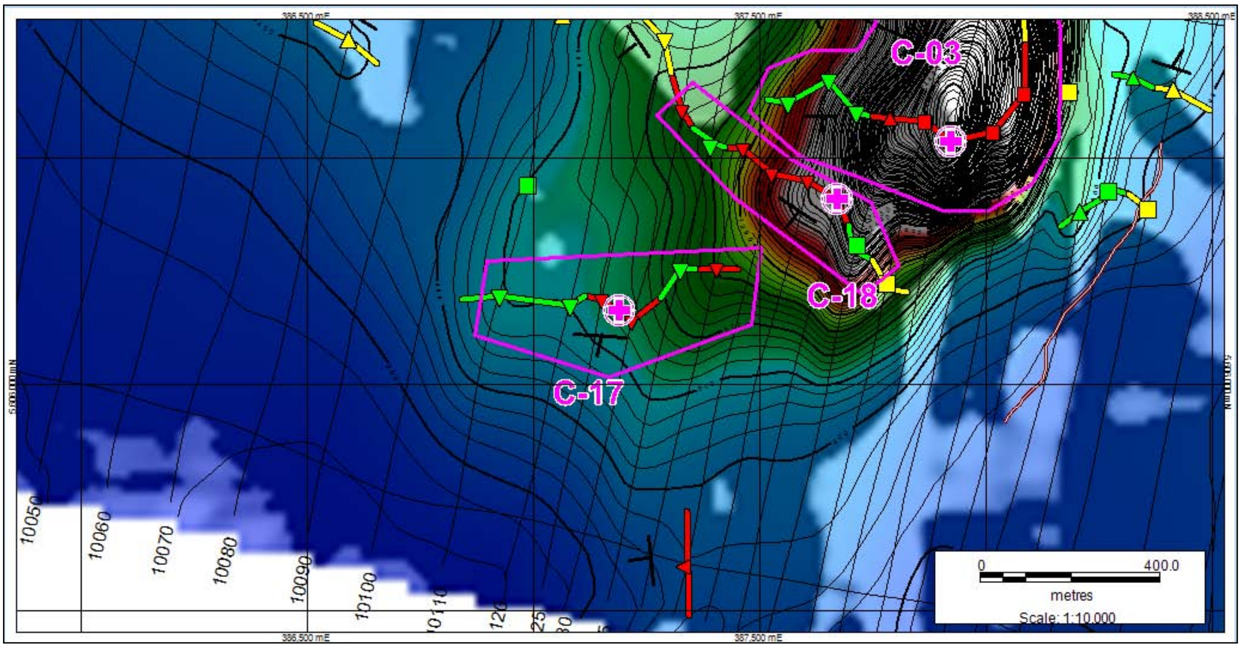


Figure 51: Conductor Target C-17 over Ch10 dB/dT Z Component Image

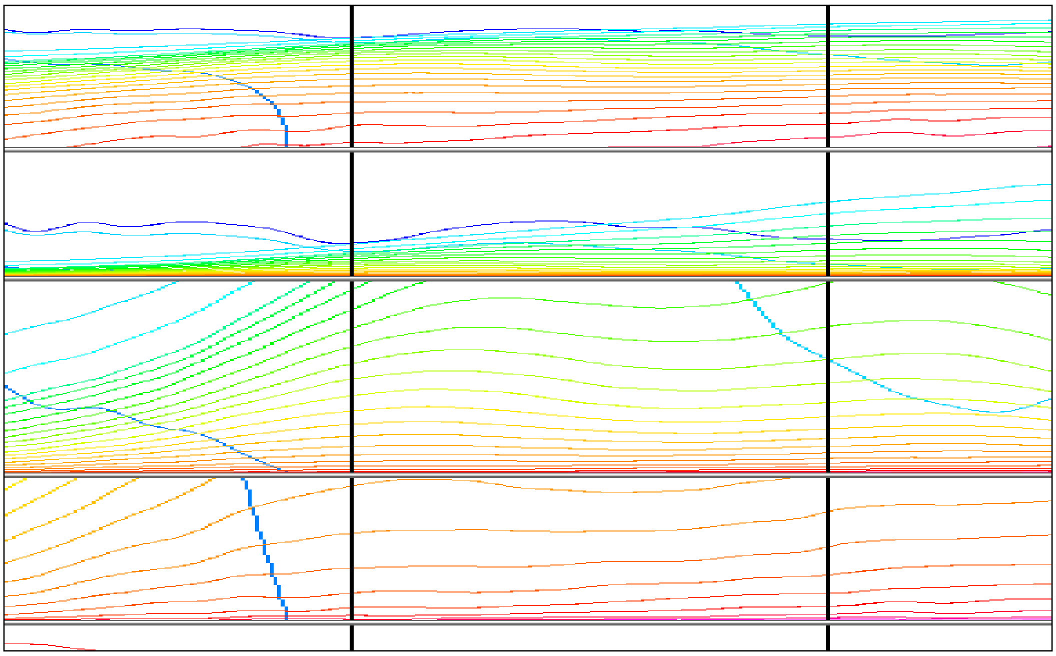


Figure 52: Conductor Target C-17 - Multi-channel Line Profile

4.18 Target C-18

This is a moderate to high conductance conductor which may be part of the main stratigraphic conductor underlying this area which would include the northern limb at C-10. Alternatively it could be related to the shallower upper conductor C-03 which looks to be related to the known mineralisation. Dip looks to be to the south. There is no clear magnetic correlation. Depth is uncertain but may be reasonably shallow. This is a **moderate priority** follow up target.

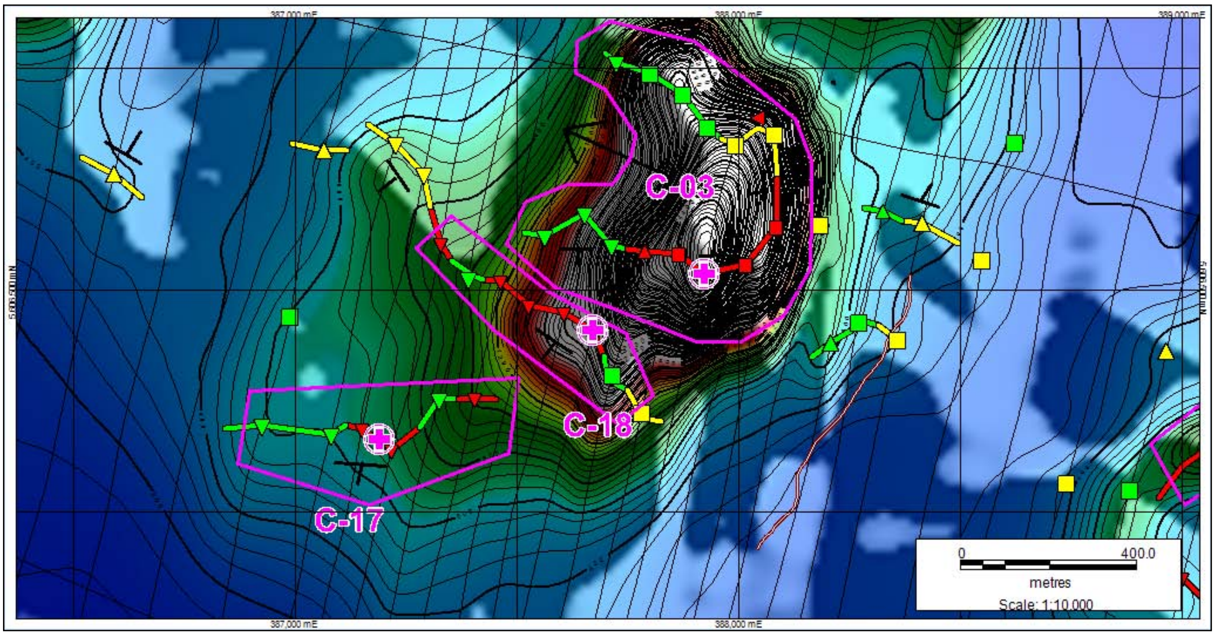


Figure 53: Conductor Target C-18 over Ch10 dB/dT Z Component Image

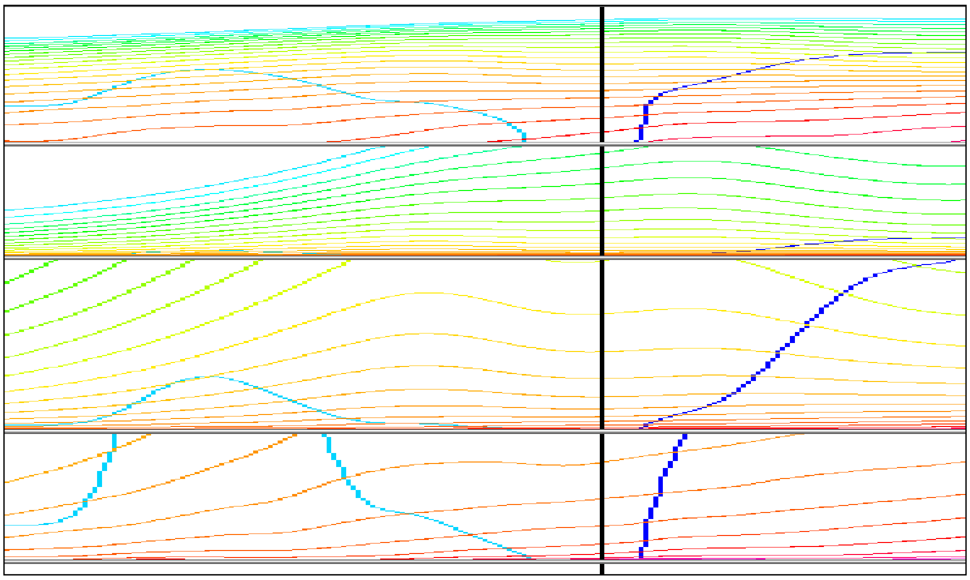


Figure 54: Conductor Target C-18 - Multi-channel Line Profile

5 MAGNETIC TARGETS

The magnetic targets have been selected mainly as discrete shallow unusual magnetic responses that look unrelated to normal stratigraphic magnetic patterns. Several in the east of the area are larger anomalies that may be magnetic lithologies. Some targets look very shallow and have the appearance of possibly cultural responses due to man-made causes. The main target type of interest is magnetite and/or pyrrhotite associated with base metal mineralisation.

Twelve target locations have been selected and are listed below in Table 5 for possible field inspection.

Table 5: Magnetic Target Centre Coordinates

ID	East	North	Priority
M-01	387836	5606907	High
M-02	399421	5603441	High
M-03	397394	5606051	High
M-04	389066	5606112	High
M-05	388137	5607794	Moderate
M-06	388603	5607435	High
M-07	397346	5604132	Low
M-08	399162	5603257	Moderate
M-09	398980	5603028	Low
M-10	396979	5605122	Low
M-11	399331	5603945	Low
M-12	395962	5602896	Low

These locations are the shallowest/ best looking part of the magnetic zones of interest. They are indicated by magenta diamond symbols within the magenta magnetic zone outlines on the following plans.

The locations of the targets are shown in Figure 55 below.

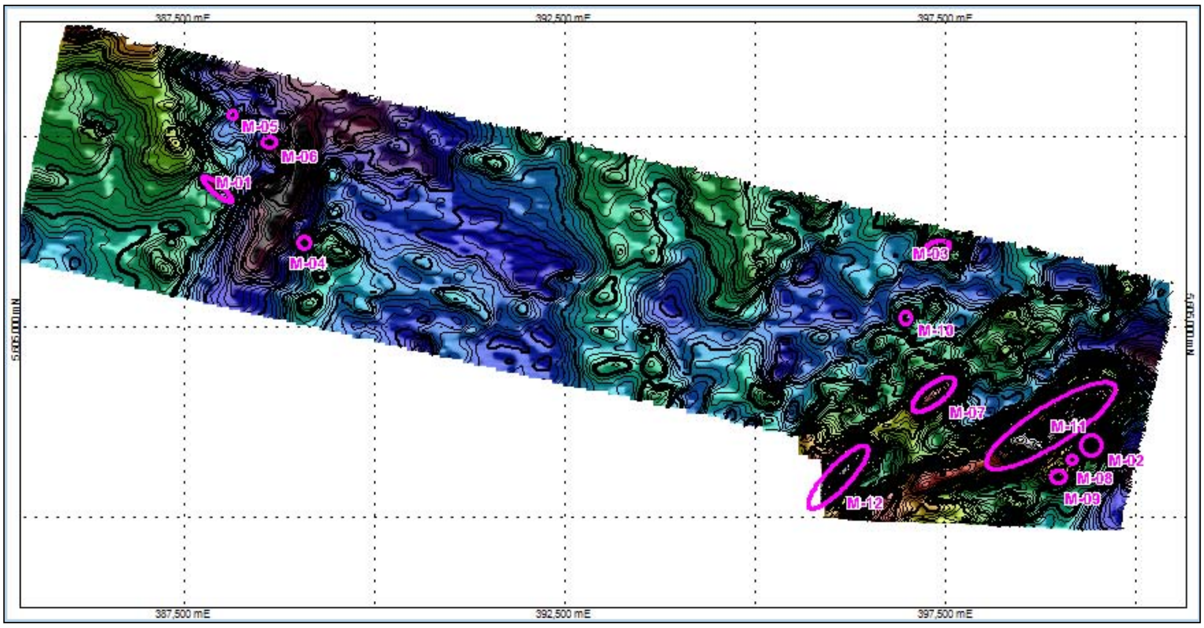


Figure 55: Magnetic Targets over RTP TMI Image

Each target is discussed individually below.

5.1 Target M-01

This discrete anomaly is quite complex with some negative parts suggesting magnetic remanence (assuming that no man-made objects such as vehicles were not on the location during the survey).

It has a direct correlation with the known trenching and mineralisation and is thus of significant interest.

It strikes NW-SE and has a strike length of about 350m. It is situated within Conductor Target C-03.

It is a **high priority** follow up target.

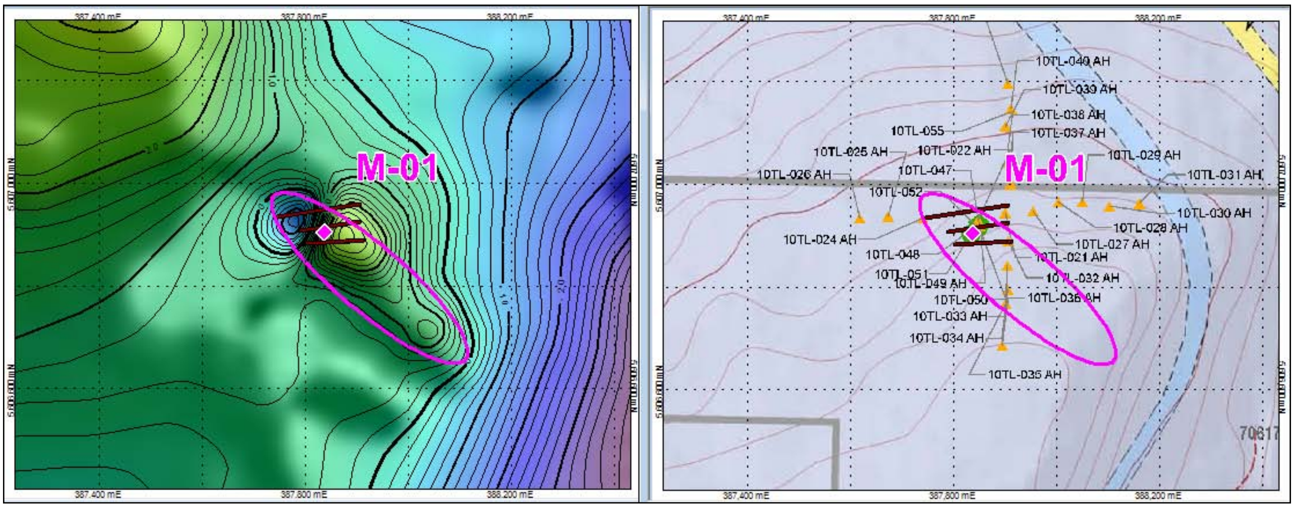


Figure 56: Magnetic Target M-01 over RTP TMI Image

5.2 Target M-02

This discrete anomaly is quite strong and complex with some negative parts suggesting magnetic remanence. It is on top of a hill and is probably related to Targets M-08 and M-09 along the same ridge. It correlates directly with Target Conductor C-08 and is thus of enhanced interest.

Isolated magnetic anomalies on tops of hills can be due to lightning strikes magnetising the rocks so this is a possibility.

It is a **high priority** follow up target.

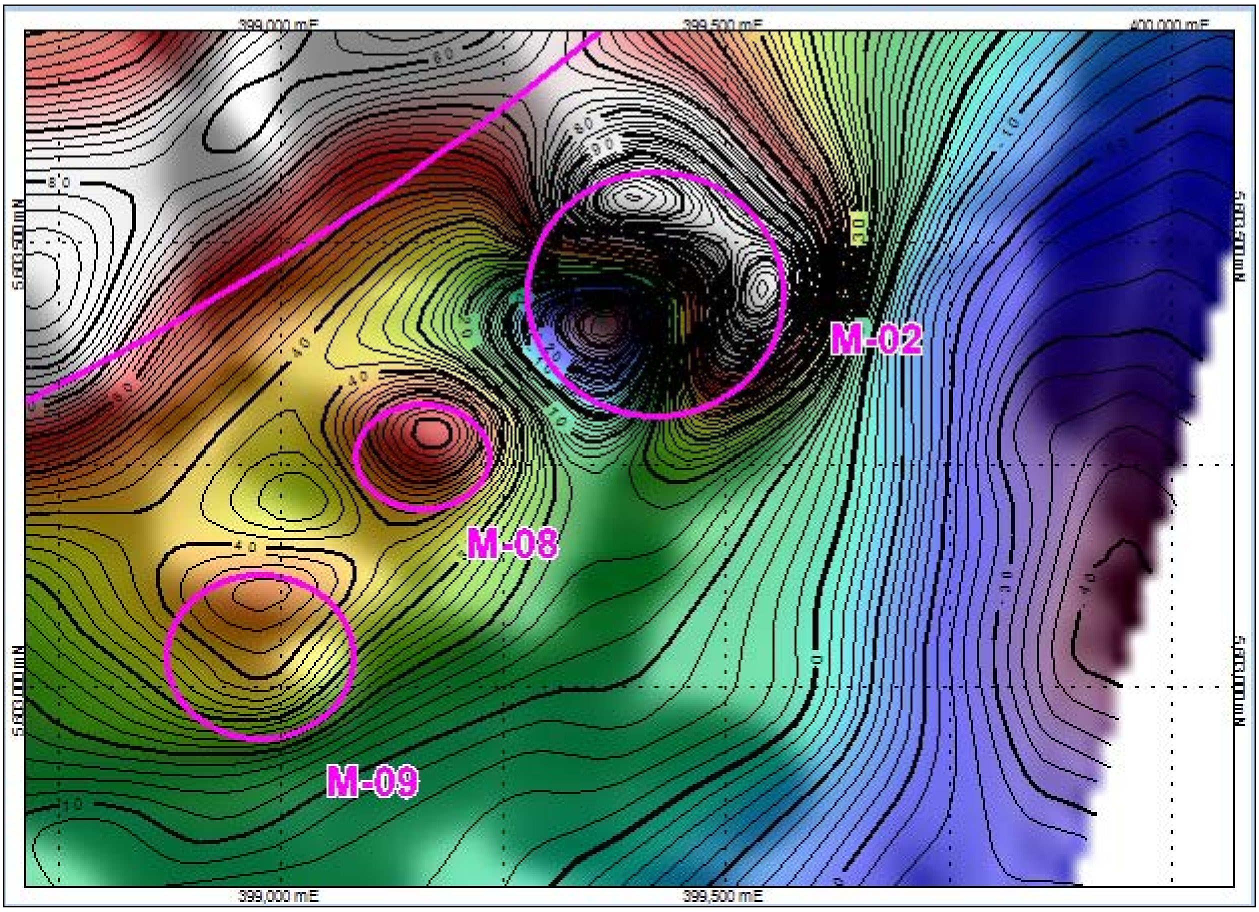


Figure 57: Magnetic Target M-02 over RTP TMI Image

5.3 Target M-03

This discrete anomaly which is about 200m in length correlates directly with Conductor Target C-05 and is thus of enhanced interest.

It is a **high priority** follow up target.

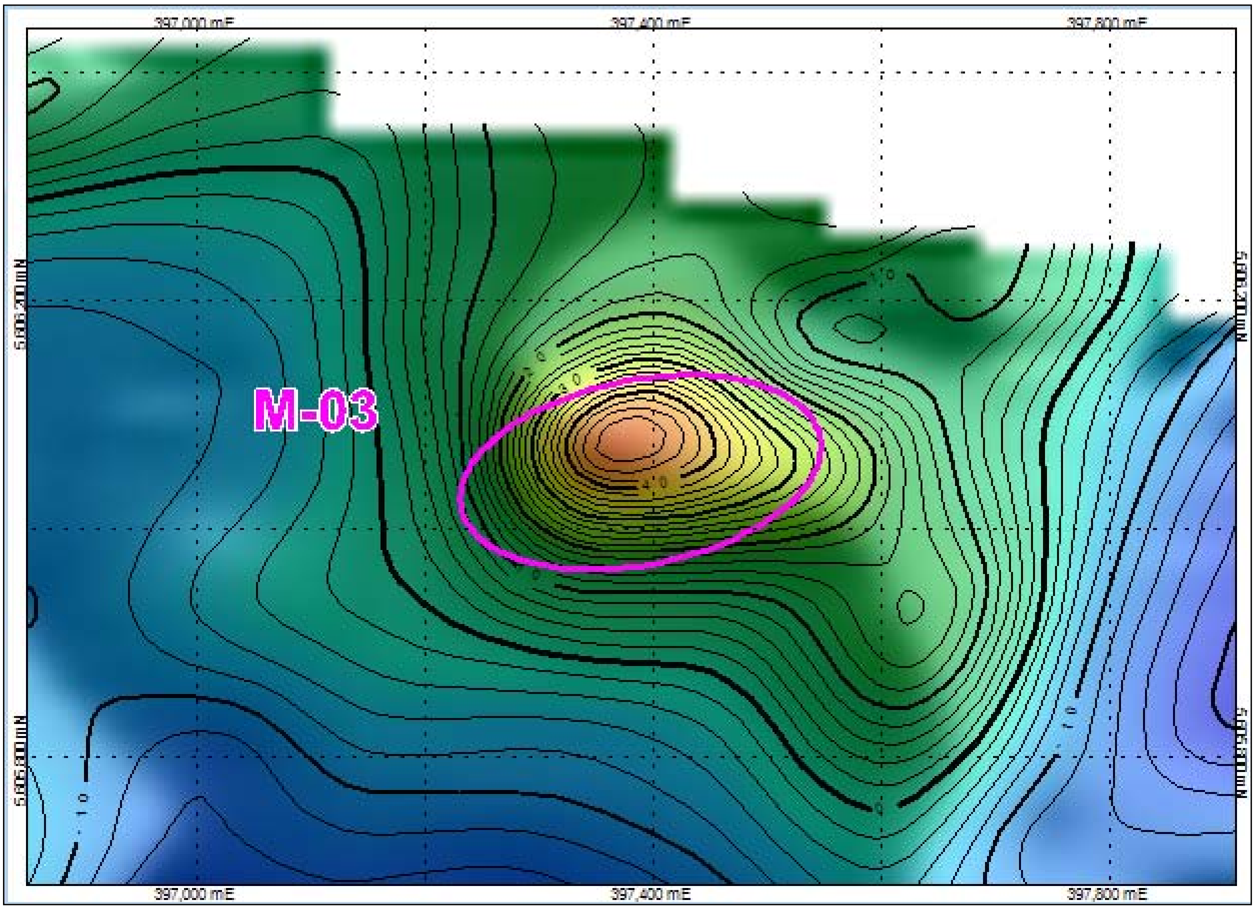


Figure 58: Magnetic Target M-03 over RTP TMI Image

5.4 Target M-04

This discrete anomaly is small in size (100m across?) and has a shallow source. It coincides with the southern end of Conductor Target C-09.

It is a **high priority** follow up target.

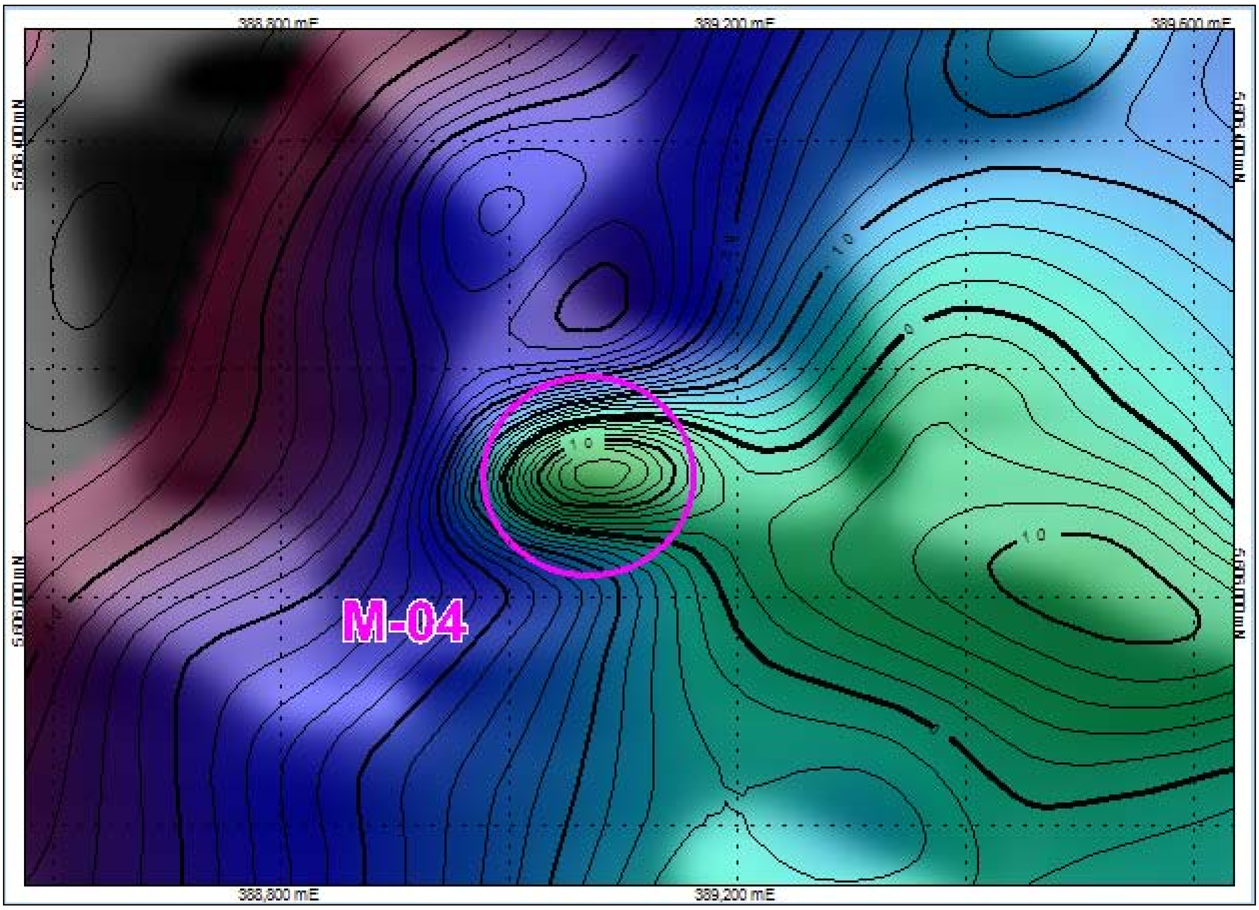


Figure 59: Magnetic Target M-04 over RTP TMI Image

5.5 Target M-05

This discrete anomaly is relatively small in size. It is not dissimilar to various other small magnetic responses that have not been selected. If this target proves interesting, the other similar responses could be investigated.

It is a **moderate priority** follow up target.

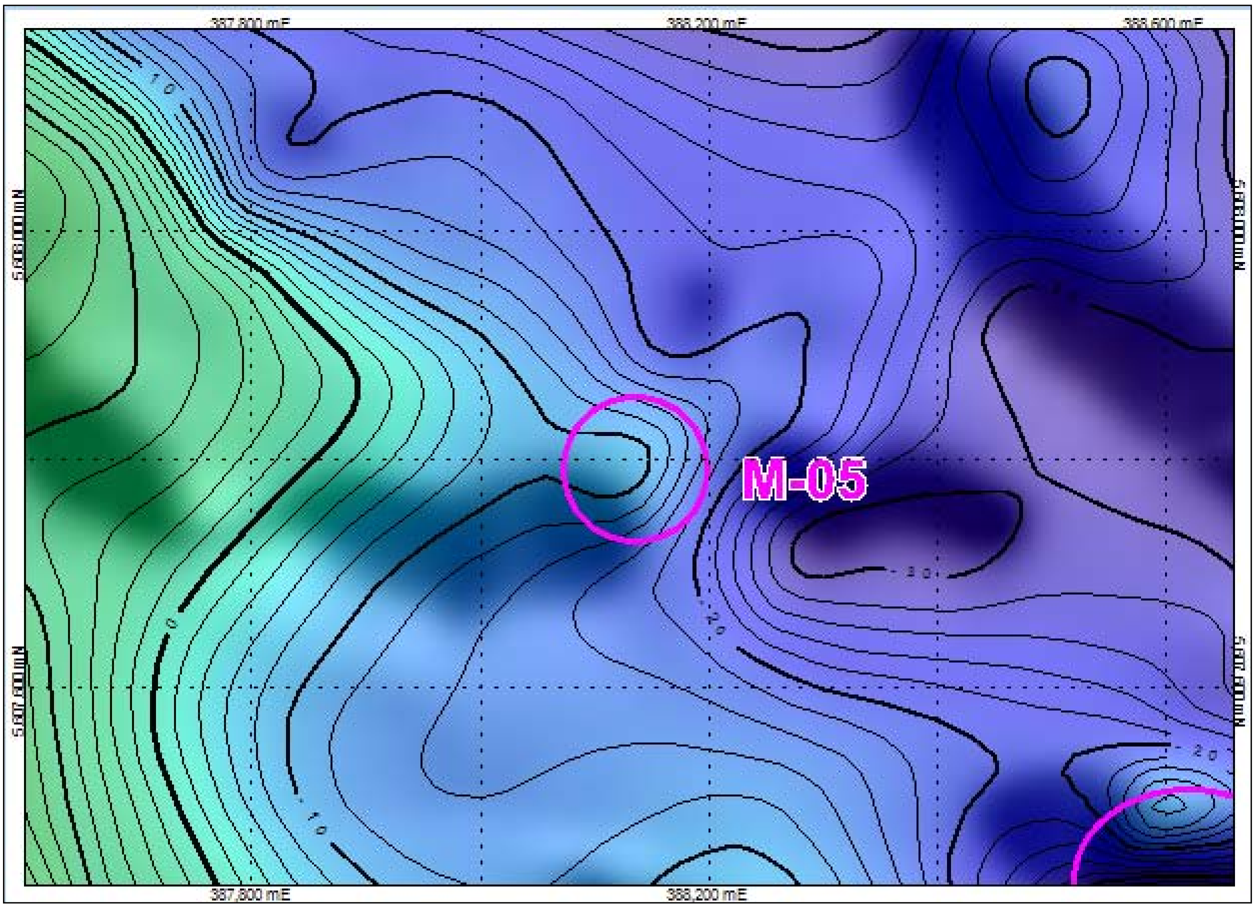


Figure 60: Magnetic Target M-05 over RTP TMI Image

5.6 Target M-06

This discrete anomaly has a significant dipolar response in the RTP image suggesting magnetic remanence. It is relatively small in size and relatively shallow.

This is a **high priority** follow up target.

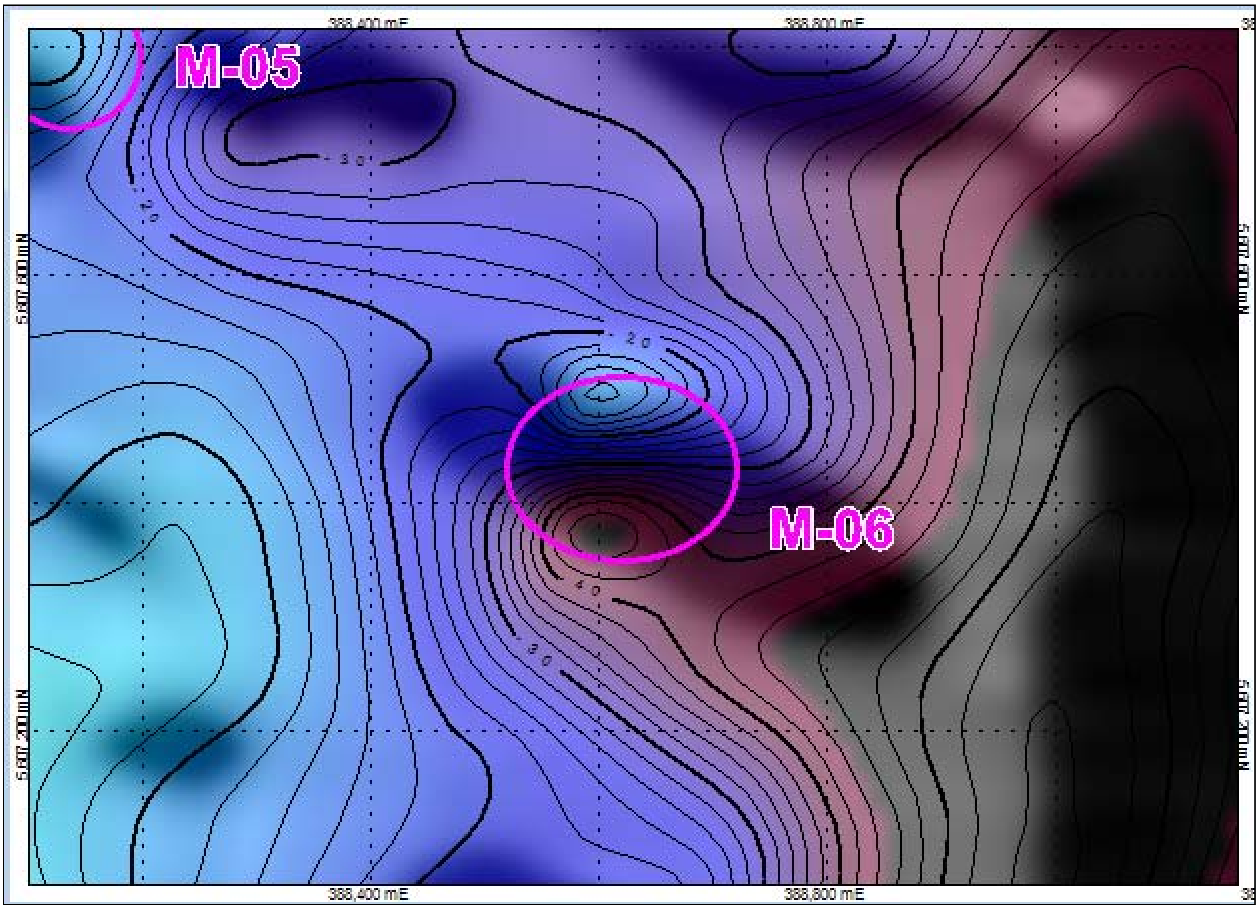


Figure 61: Magnetic Target M-06 over RTP TMI Image

5.7 Target M-07

This anomaly is part of a long NE-SW trend which includes M-12 and looks stratigraphic.

This is a **low priority** follow up target.

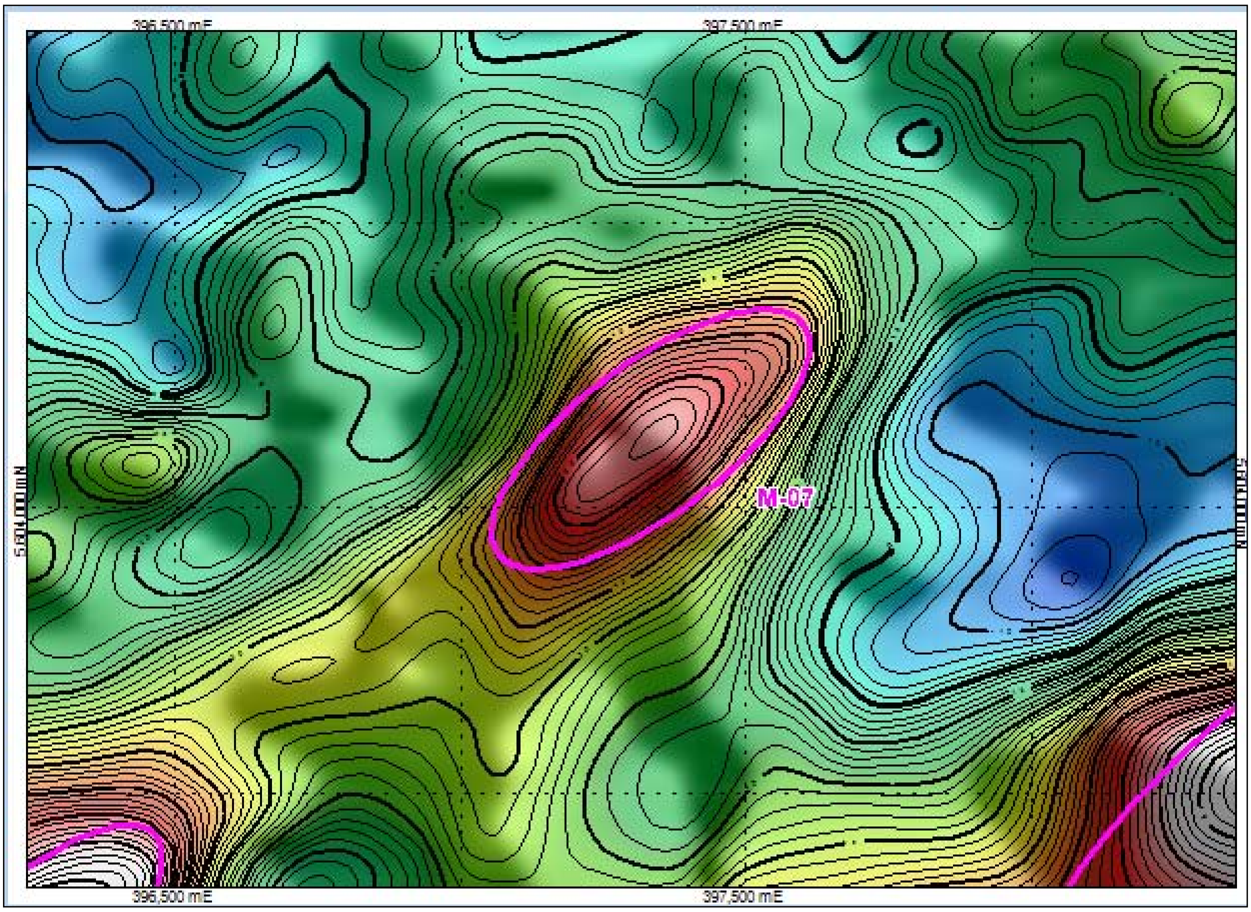


Figure 62: Magnetic Target M-07 over RTP TMI Image

5.8 Target M-08

This small discrete anomaly is probably related to M-02 and M-09.

It is a **moderate priority** follow up target.

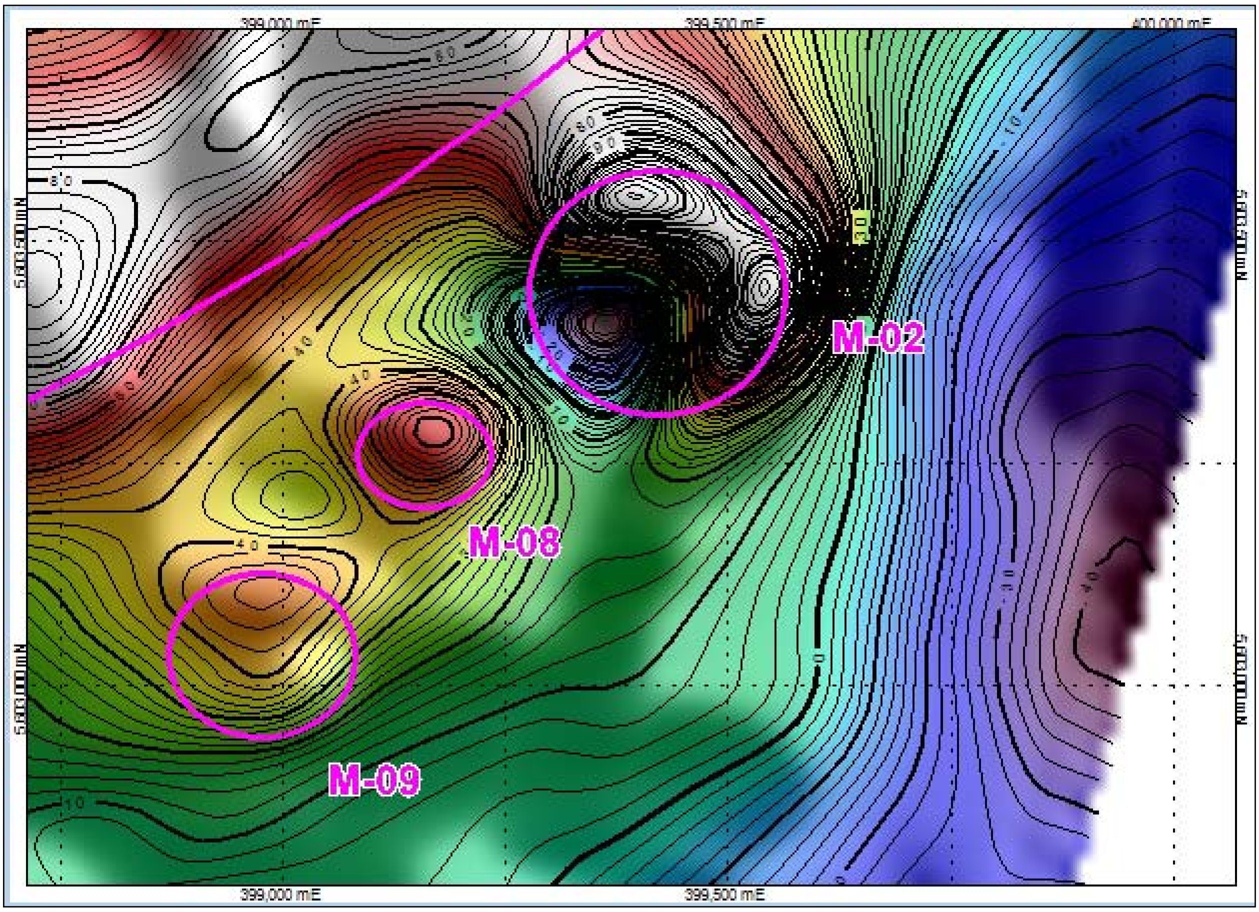


Figure 63: Magnetic Target M-08 over RTP TMI Image

5.9 Target M-09

This small discrete anomaly is probably related to M-02 and M-08.

It is a **low priority** follow up target

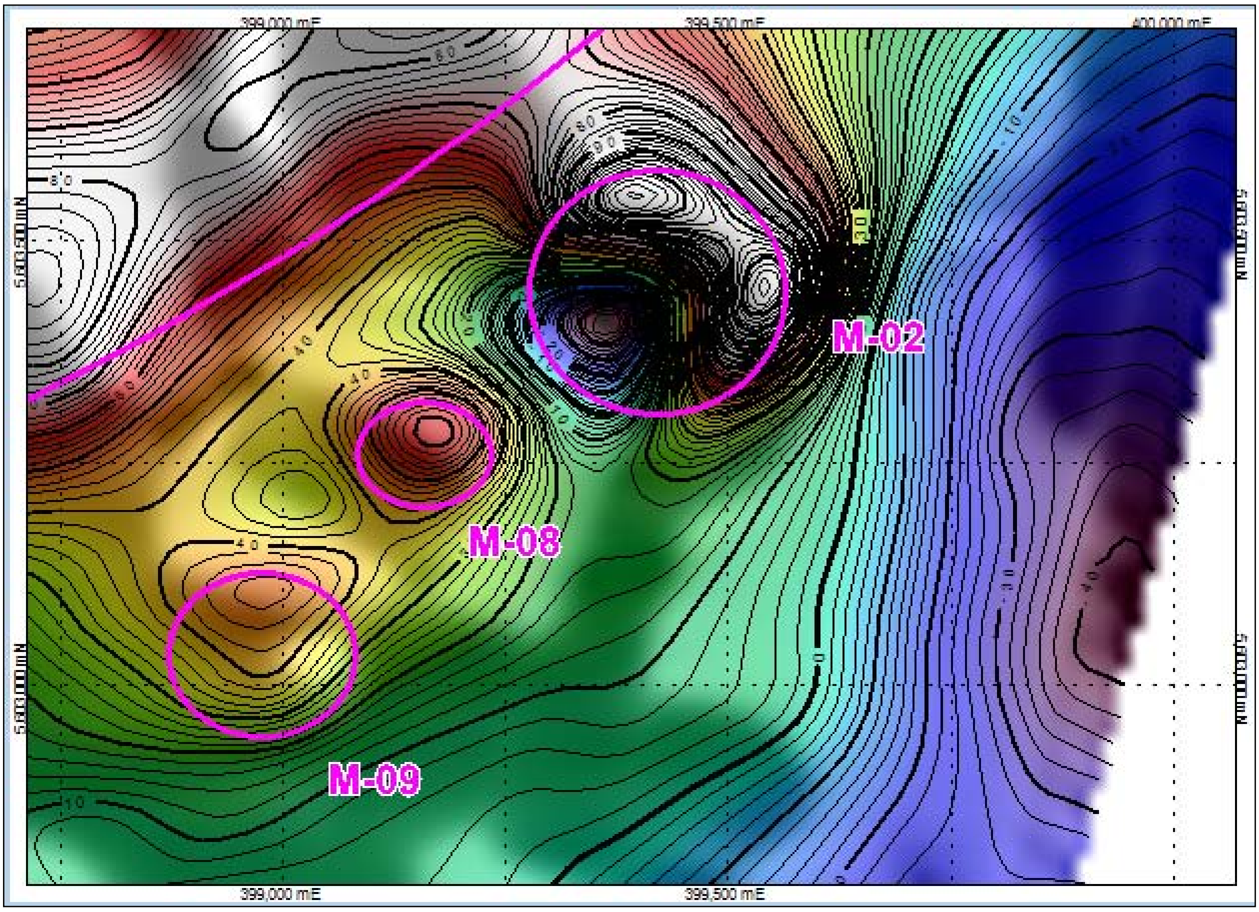


Figure 64: Magnetic Target M-09 over RTP TMI Image

5.10 Target M-10

This small discrete anomaly is relatively unremarkable.

This is a **low priority** follow up target.

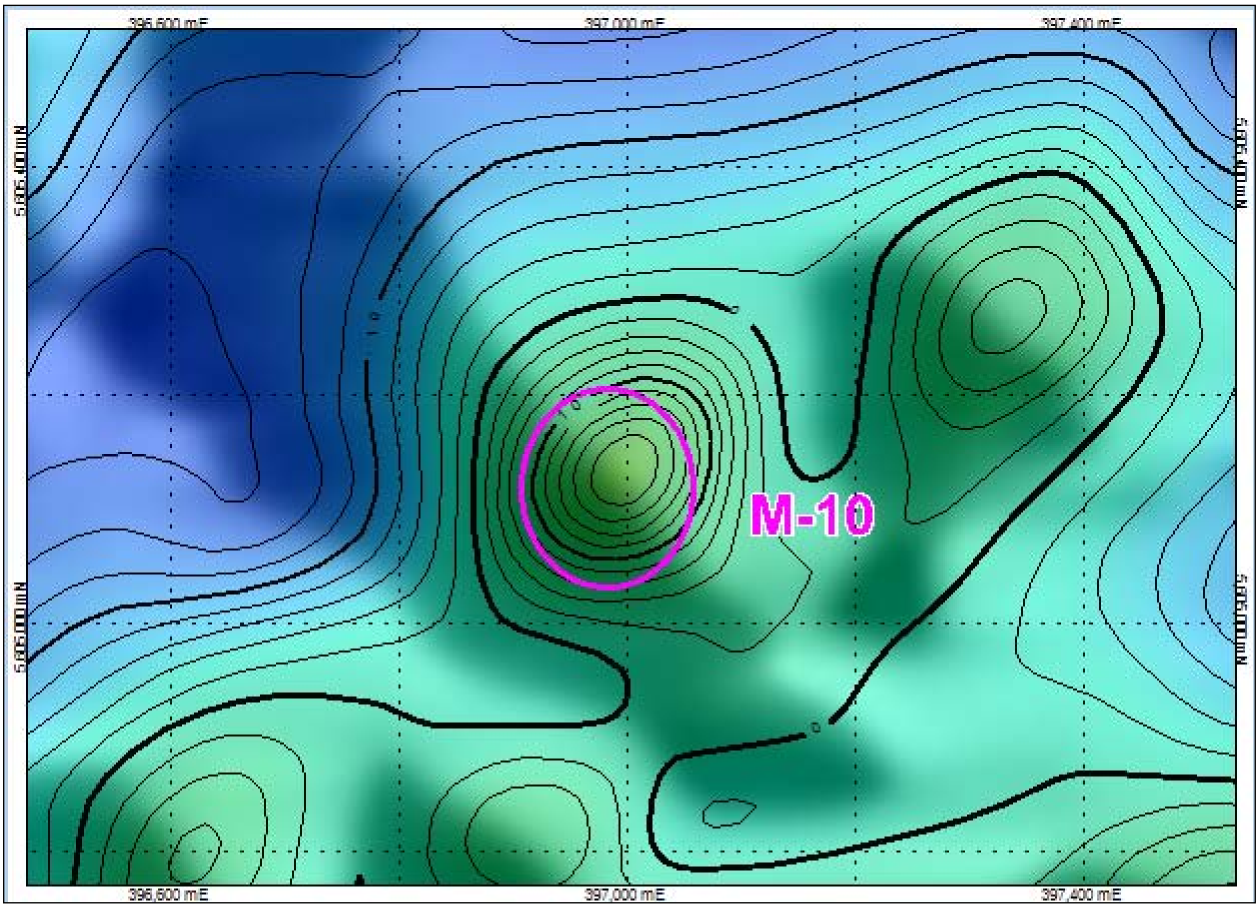


Figure 65: Magnetic Target M-10 over RTP TMI Image

5.11 Target M-11

This anomaly is a more magnetic part of a long NE-SW trend which looks stratigraphic.

It is a **low priority** follow up target.

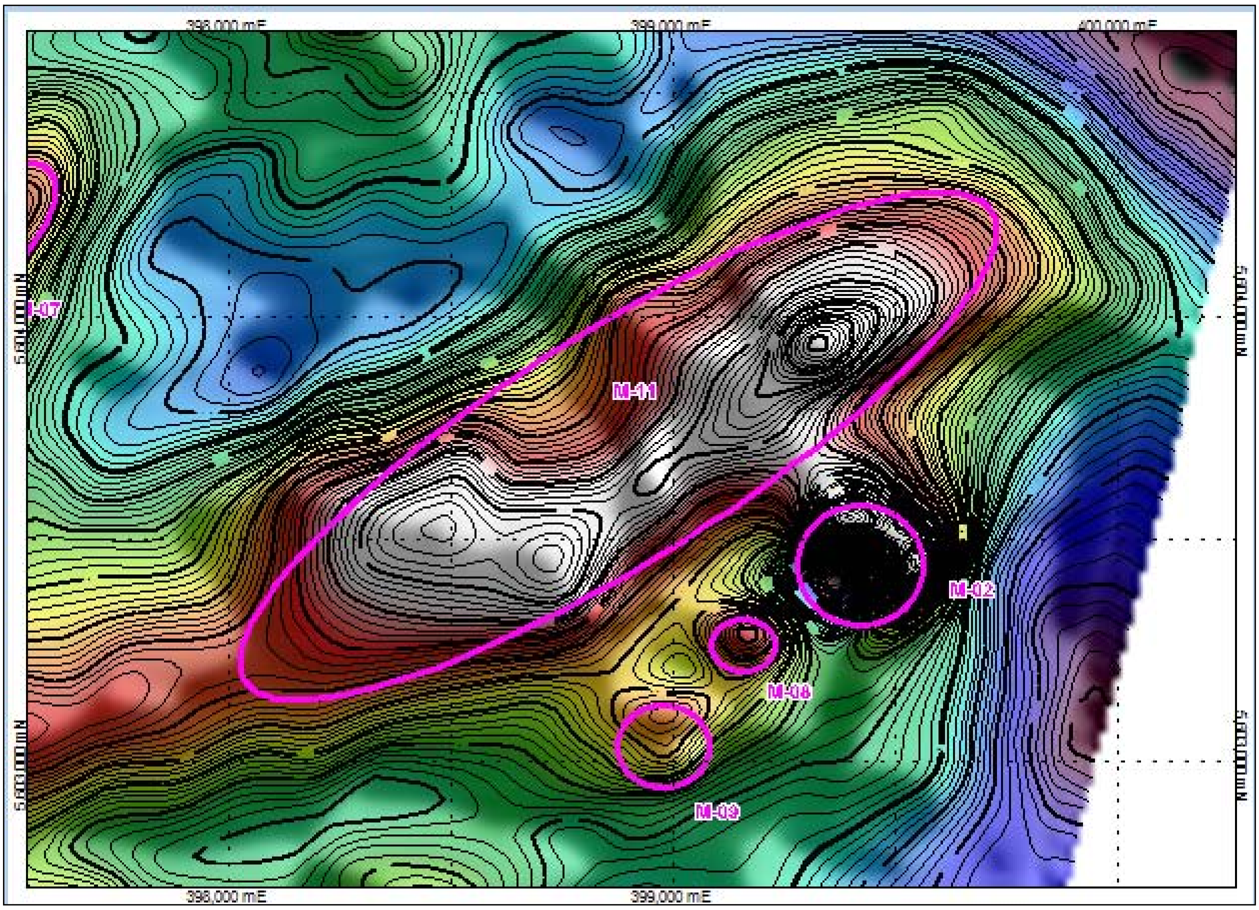


Figure 66: Magnetic Target M-11 over RTP TMI Image

5.12 Target M-12

This anomaly is part of a long NE-SW trend which includes M-07 and looks stratigraphic.

This is a **low priority** follow up target.

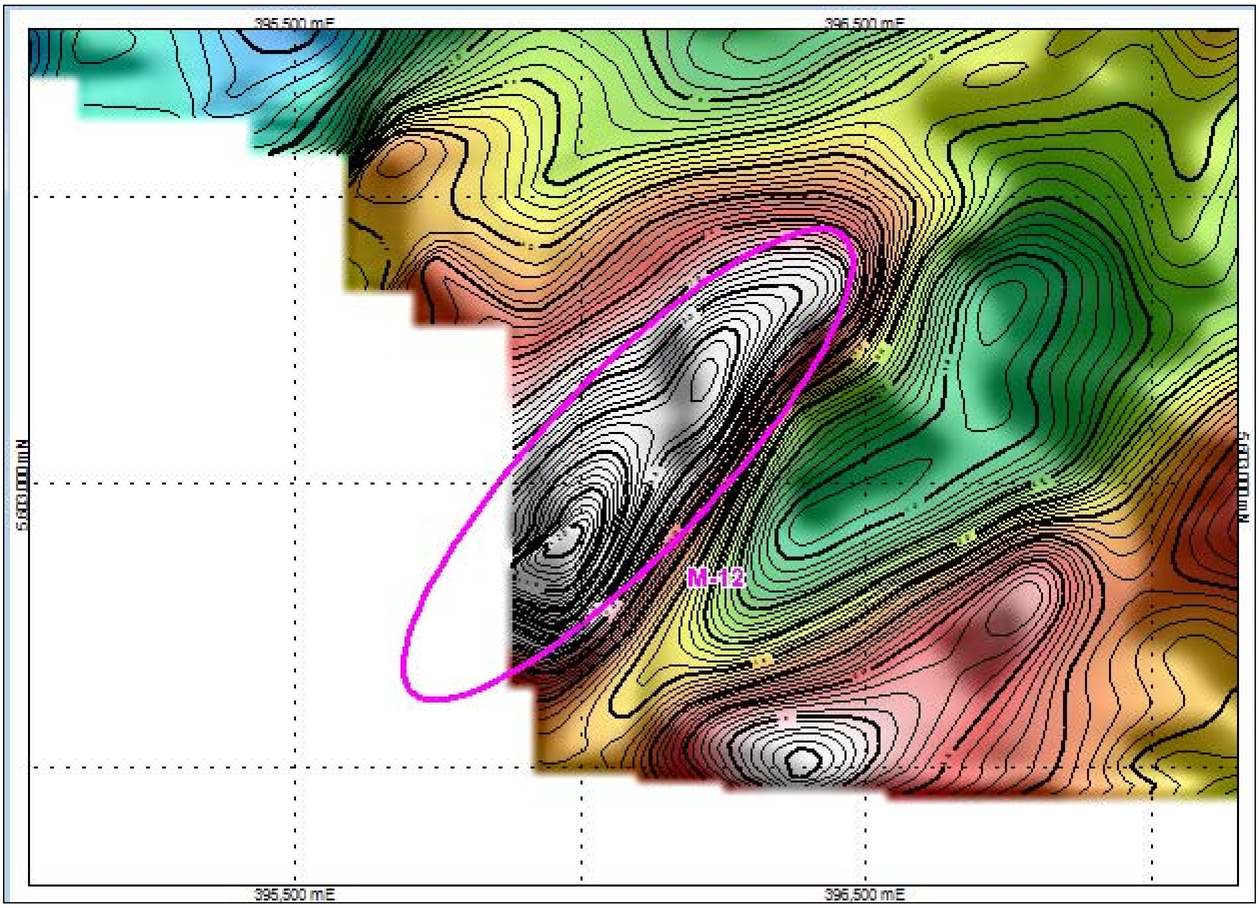


Figure 67: Magnetic Target M-12 over RTP TMI Image

6 CONCLUSIONS AND RECOMMENDATIONS

The HELITEM survey was well flown by Fugro after some initial issues regarding line direction and drape performance. The magnetic and EM data are all of good quality and the large amount of information is well presented by the data processing into GIS raster and vector products of various types for the EM, magnetic and elevation data.

The area is quite resistive with the exception of the main large stratigraphic looking conductors.

The 3D conductivity depth modelling has proved very useful in showing the sub-horizontal nature and geometry of these larger “stratigraphic” conductors which are probably graphitic. Similarly the 3D magnetic inversion and model have helped understand the distribution and geometry of the magnetic units in the area.

The interpretation of discrete conductors using the individual multi-channel line profiles has allowed the interpretation of a number of promising conductors that could not easily be recognised in the traditional EM images.

The conductor targets selected are chosen on their chances of being due to massive sulphide and/or significant graphite mineralisation. Of the eighteen conductor targets selected, eight are high priority, five are moderate priority and the remaining five are low priority.

For base metal exploration, the most interesting conductors for initial follow up are C-01 & C-03 first and then followed by Targets C-05, C-06m C-07 and C-08. For graphite exploration the initial recommended targets are C-09, C-10, C-11 and C-13.

The magnetic targets are mainly chosen on the hope that they may be pyrrhotite and/or magnetite associated with sulphide mineralisation. Of the twelve magnetic targets selected, five are high priority, two are moderate priority and the remaining five are low priority. Target M-01 is the highest priority because of its direct correlation with the known mineralisation. Targets M-02 to M-06 are all very discrete short strike length unusual magnetic features and would be next priority for follow up. Targets M-02 and M-03 are of enhanced interest as they coincide with Conductor Targets C-05 and C-08 respectively.

It is realised that the area is rugged and access is difficult. Nevertheless these are good targets in a mineralised area and a significant effort should be made to field investigate them. Hopefully a field visit by an experienced geologist will explain the source of the conductive and/or magnetic features and this will then decide the worthiness and viability of ongoing exploration of the individual targets. In the absence of a clear explanation, limited ground magnetic and/or electromagnetic surveys will be required followed by trenching and/or drilling.

It is recommended that once a decision to explore a target further via trenching or drilling is made, that the target be first modelled to determine its location and geometry more accurately.

The use of helicopter EM-magnetic surveying has allowed this area to be explored cost effectively and efficiently and the technique is strongly recommended for similar projects.

7 REFERENCES

Dunn. C. et al, 2011: Technical Report "Geology and Geochemistry of the TL Property, Tsuius Creek, Southeastern British Columbia"

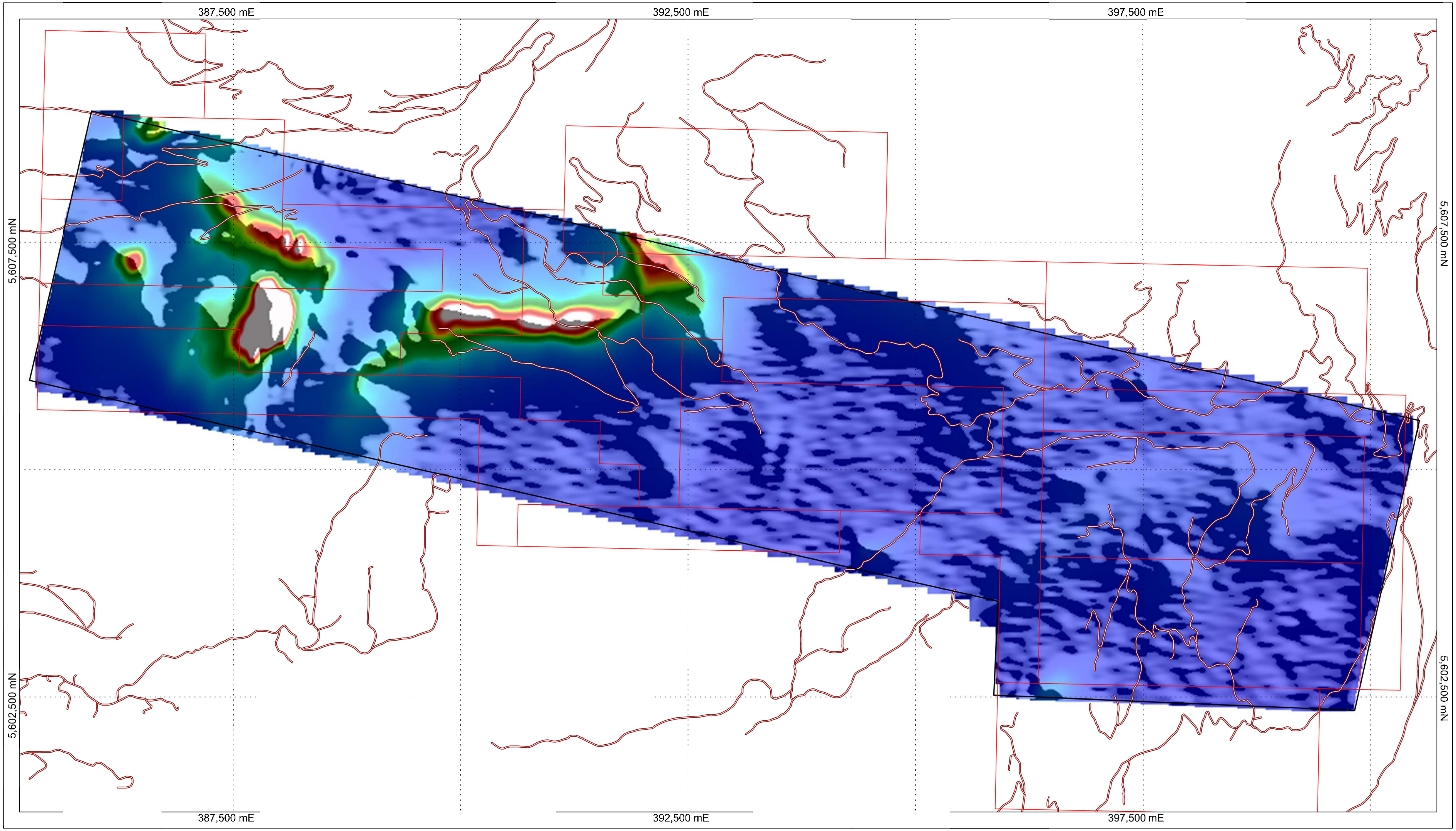
APPENDIX A:

FUGRO AIRBORNE SURVEYS.

TL HELITEM SURVEY

LOGISTICS REPORT

PLANS



SOUTHERN GEOSCIENCE CONSULTANTS

N

0 1,250 2,500
metres

SCALE 1:25 000

DATUM: WGS 84
GRID: UTM ZONE 11N

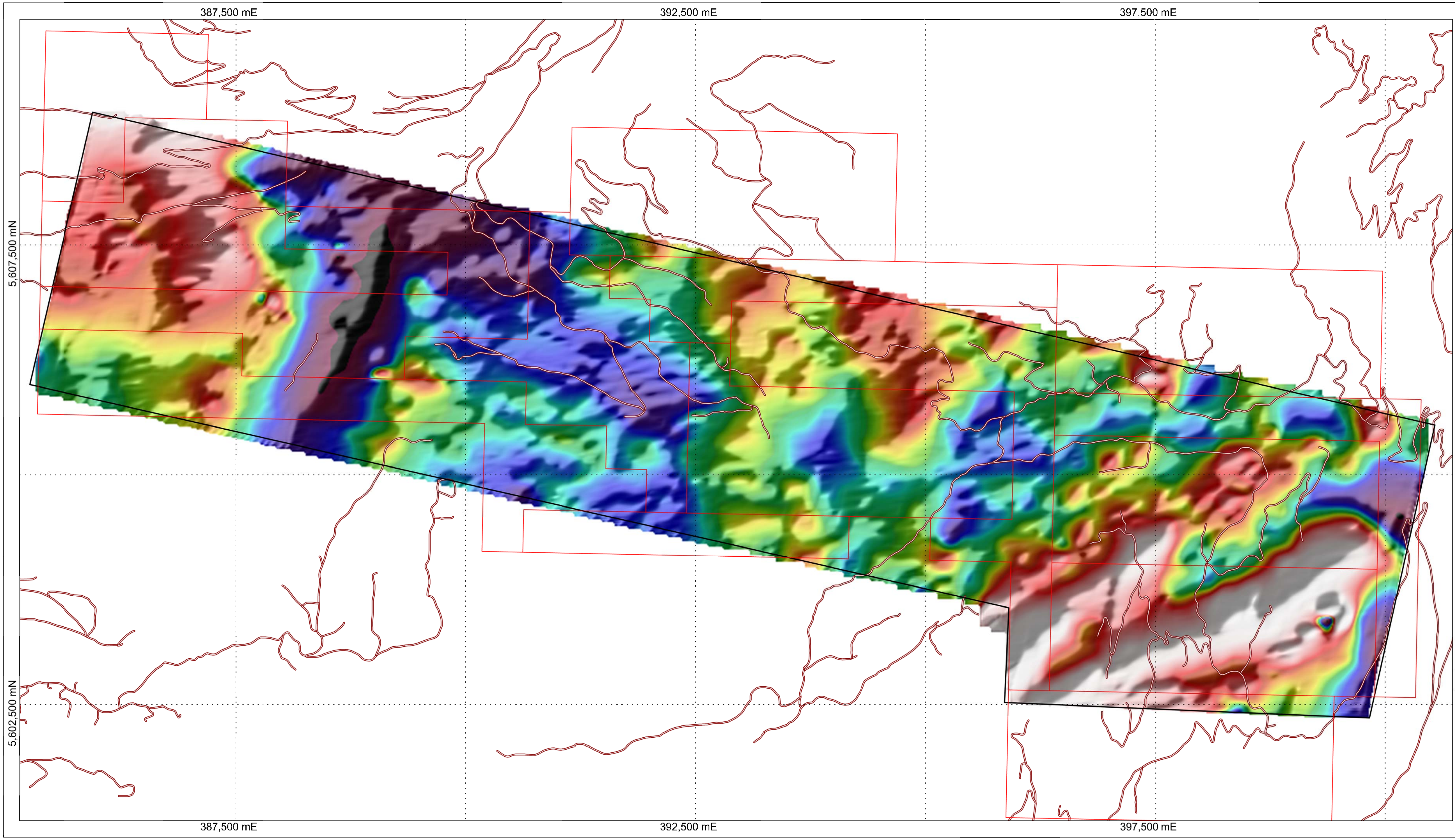
SOUTHERN GEOSCIENCE CONSULTANTS

Plan 1

Cullen Resources Limited
TL-Mabel Lake Project
British Columbia, Canada
HELITEM Survey
Channel 10 dB/dT Z-Component Image

SCALE: 1:25 000	GEO: W .S. PETERS
DATE: 18th September 2012	GIS: W.S.Peters

WWW.SGC.COM.AU



SOUTHERN GEOSCIENCE CONSULTANTS

N

0 1,250 2,500

metres

SCALE 1:25 000

DATUM: WGS 84
GRID: UTM ZONE 11N

SOUTHERN GEOSCIENCE CONSULTANTS

Plan 2

Cullen Resources Limited

TL-Mabel Lake Project

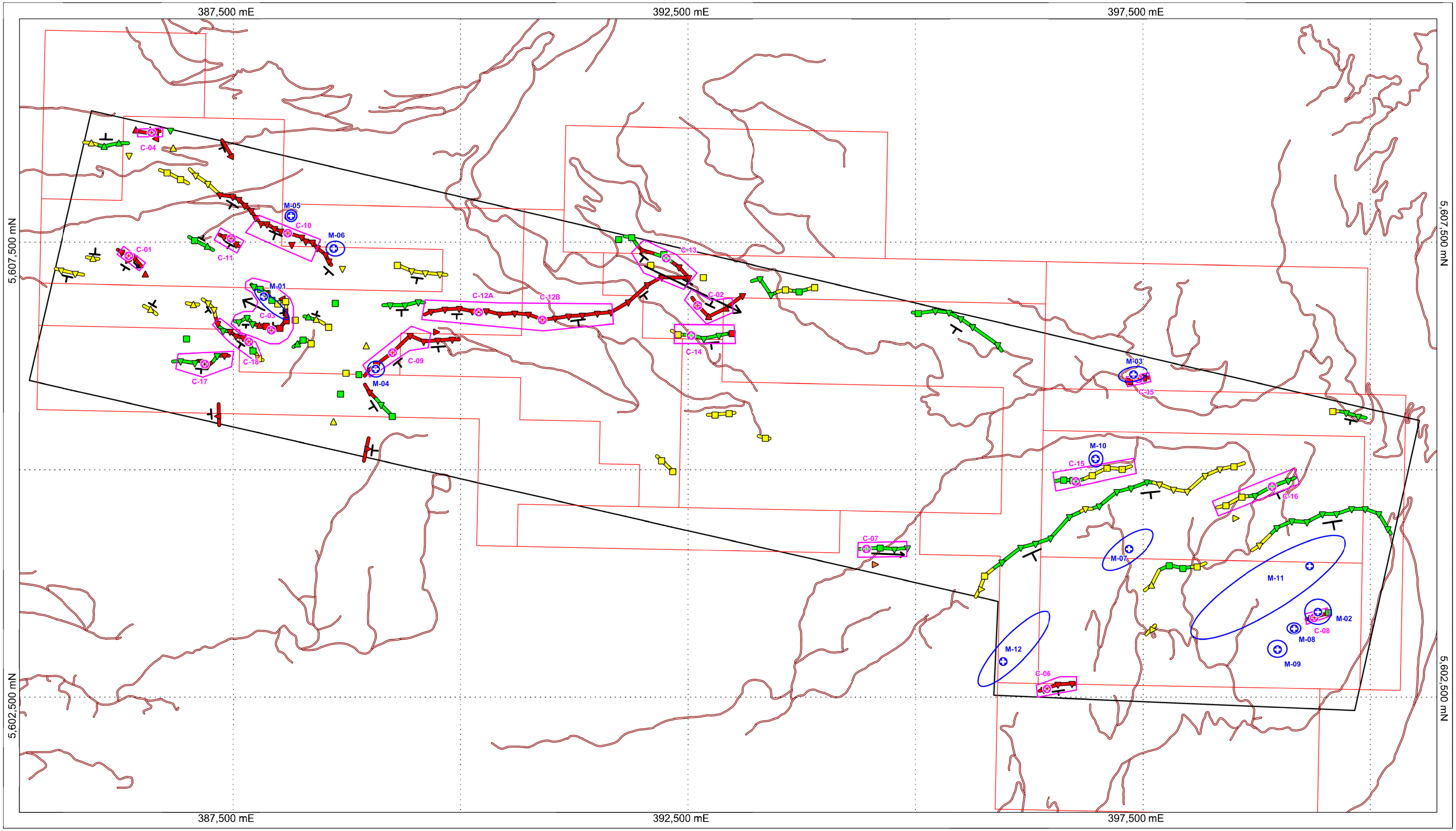
British Columbia, Canada

HELITEM Survey

Reduced to Pole Total Magnetic Intensity Image

SCALE: 1:25 000	GEO: W.S. PETERS
DATE: 18th September 2012	GIS: W.S.Peters

WWW.SGC.COM.AU



INTERPRETATION LEGEND

- Good EM Anomaly
- Moderate EM Anomaly
- Poor EM Anomaly
- Anomaly showing south dip
- Anomaly showing north nip
- Anomaly with uncertain dip
- Good Conductor Axis
- Moderate Conductor Axis
- Poor Conductor Axis
- Conductor Dip
- Conductor Plunge
- C-01 Conductor Target
- Conductor Target Follow Up Centre
- M-01 Magnetic Target
- Magnetic Target Follow Up Centre
- Tracks
- Survey Outline
- Tenement Boundaries

SOUTHERN GEOSCIENCE CONSULTANTS

N

1,250 2,500

metres

SCALE 1:25 000

DATUM: WGS 84
GRID: UTM ZONE 11N

SOUTHERN GEOSCIENCE CONSULTANTS

Plan 3

Cullen Resources Limited

TL-Mabel Lake Project

British Columbia, Canada

HELITEM Survey

Interpretation Plan

SCALE: 1:25 000	GEO: W .S. PETERS
DATE: 18th September 2012	GIS: W.S.Peters

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