ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
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ASSESSMENT REPORT

describing

GEOPHYSICAL SURVEYS

at the

CABIN LAKE PROPERTY

CL 1-16	YC72589-YC72604
C.L. 17-22	YB89158-YB89163
CL 23-32	YC72605-YC72614
C.L. 33-38	YB89173-YB89178
CL 39-48	YC72615-YC72624
C.L. 49-50	YB89216-YB89217
CL 51-60	YC72625-YC72634
C.L. 61-62	YB89228-YB89229
CL 63-72	YC72635-YC72644
C.L. 73	YB89240
CL 74-87	YC72645-YC72658
C.L. 88	YB89255
CL 89	YC72659
C.L. 90	YB89257
CL 91-93	YC72660-YC72662

NTS 105B4
Latitude 60º06'N; Longitude 131º47'W

in the
Watson Lake Mining District,
Yukon Territory

prepared by
Archer, Cathro & Associates (1981) Limited

for
TARSIS CAPITAL CORP.

by
W.A.Wengzynowski, P.Eng.
May 2008

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INTRODUCTION

The Cabin Lake property covers a potential volcanogenic hosted massive sulphide (VHMS) prospect located in southern Yukon. Tarsis Capital Corp. owns the property 100%.

This report describes the results of a helicopter-borne VTEM and magnetic survey conducted in September 2007 by Geotech Ltd. on behalf of Tarsis. The author supervised the geophysical work, the results of which are incorporated into this report. The author's Statement of Qualifications appear in Appendix I.

PROPERTY LOCATION, CLAIM DATA AND ACCESS

The Cabin Lake property consists of 93 contiguous mineral claims located in southern Yukon on NTS map sheets 105B4 at latitude 60°06'N and longitude 131°47'W (Figure 1). The claims are registered with the Watson Lake Mining Recorder in the name of Tarsis Capital. The locations of individual claims are shown on Figure 2 while claim registration data are listed below.

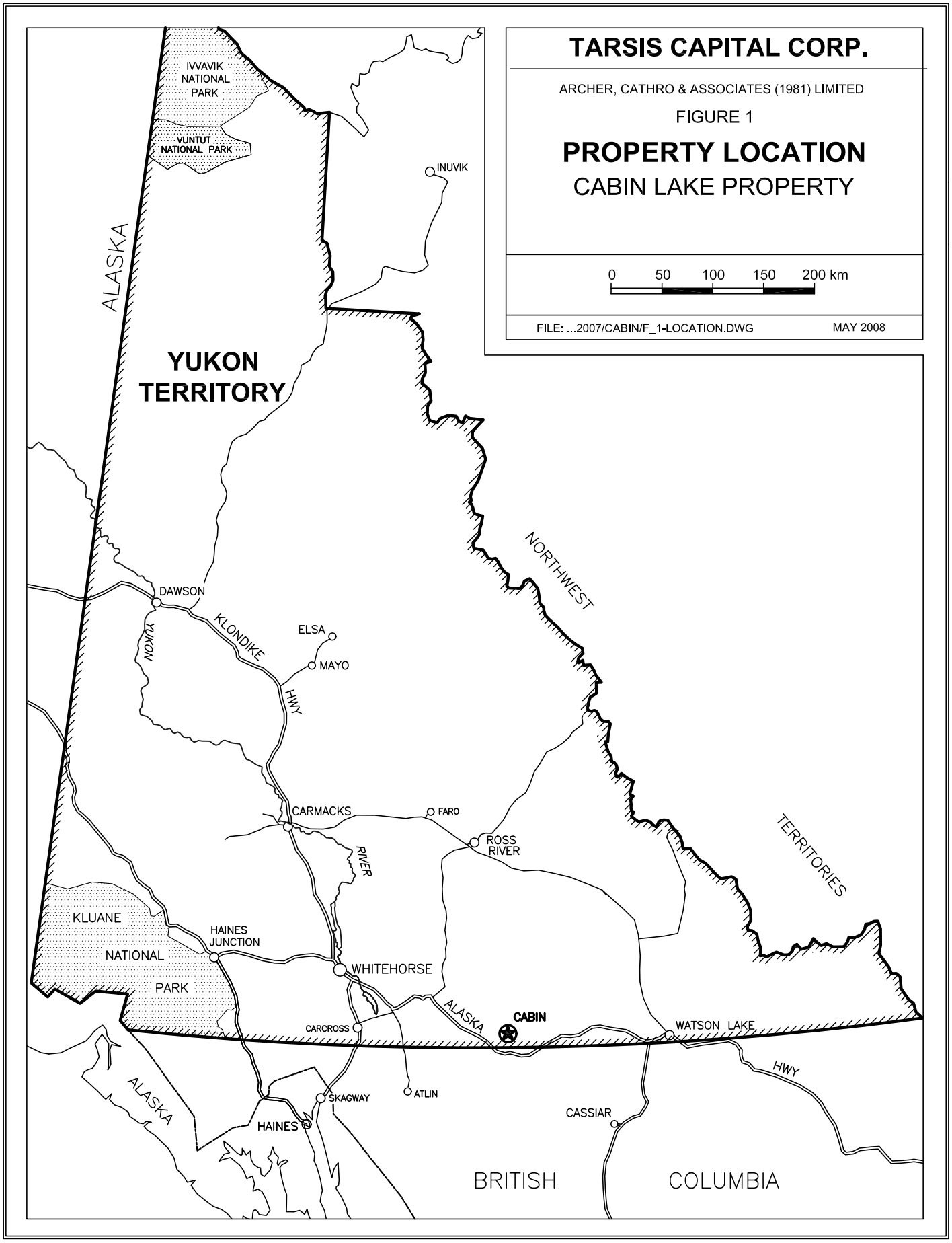
Claim Name	Grant Number	Expiry Date *
CL 1-16	YC72589-YC72604	November 1, 2008
C.L. 17-22	YB89158-YB89163	April 14, 2013
CL 23-32	YC72605-YC72614	November 1, 2008
C.L. 33-38	YB89173-YB89178	April 14, 2013
CL 39-48	YC72615-YC72624	November 1, 2008
C.L. 49-50	YB89216-YB89217	April 14, 2013
CL 51-60	YC72625-YC72634	November 1, 2008
C.L. 61-62	YB89228-YB89229	April 14, 2013
CL 63-72	YC72635-YC72644	November 1, 2008
C.L. 73	YB89240	April 14, 2013
CL 74-87	YC72645-YC72658	November 1, 2008
C.L. 88	YB89255	April 14, 2013
CL 89	YC72659	November 1, 2008
C.L. 90	YB89257	April 14, 2013
CL 91-93	YC72660-YC72662	November 1, 2008

* 2013 expiry dates include assessment credit for work done in 2007 but not yet accepted.

The Cabin Lake property is located 53 km east of Teslin, a village that lies alongside the Alaska Highway, approximately 183 km by road southeast of Whitehorse. In 2007, the geophysical survey was conducted by a helicopter from a temporary base at the Teslin airport.

HISTORY

In 1980 the Cabin Lake area was prospected by Cordilleran Engineering for Regional Resources Ltd. but no claims were staked.


TARSIS CAPITAL CORP.
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
FIGURE 1
PROPERTY LOCATION
CABIN LAKE PROPERTY
0 50 100 150 200 km
FILE: ...2007/CABIN/F_1-LOCATION.DWG
MAY 2008
IVVAVIK NATIONAL PARK
VUNTUT NATIONAL PARK
INUVIK
ALASKA
YUKON TERRITORY
NORTHWEST
TERRITORIES
DAWSON
YUKON
KLONDIKE
HWY
ELSA
MAYO
CARMACKS
FARO
ROSS RIVER
RIVER
KLUANE
NATIONAL
PARK
HAINES JUNCTION
WHITEHORSE
CARCROSS
ALASKA
CABIN
WATSON LAKE
HWY
ALASKA
SKAGWAY
ATLIN
HAINES
CASSIAR
BRITISH
COLUMBIA

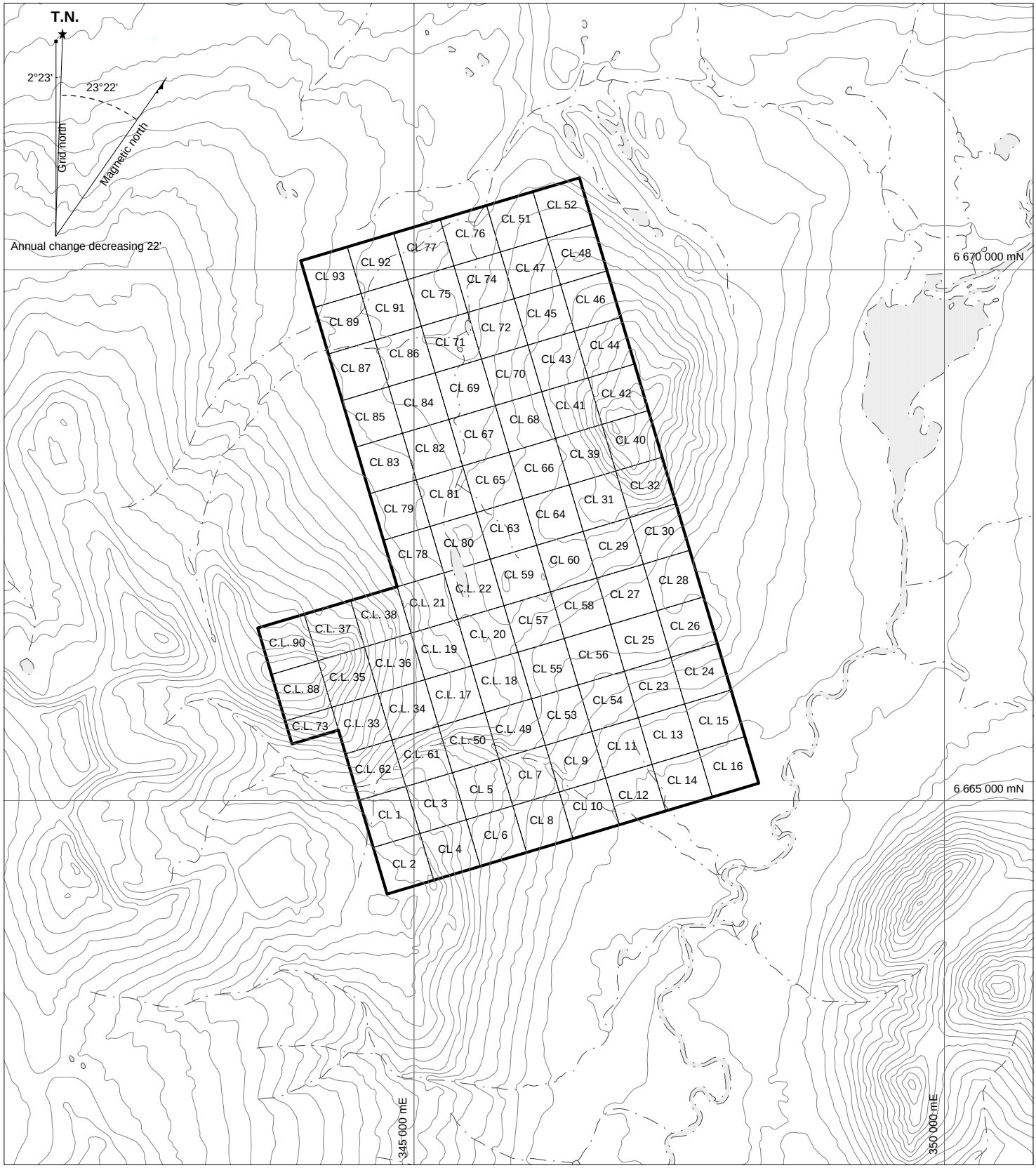


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FIGURE 2

CLAIM LOCATION

CABIN LAKE PROPERTY

0 0.5 2.5 km

UTM ZONE 9, NAD 83, 105B/04

FILE: ...2007/CABIN/F_2-CLAIM.WOR | DATE: MAY 2008

During the 1996 season Fairfield Minerals Ltd. carried out reconnaissance stream sediment sampling and follow-up prospecting programs in the area, the results of which led the company to stake CL 1-100 claims. After an initial program of prospecting, geological mapping, geochemical sampling and airborne geophysics, the company staked CL 101-122 in July 1997. In 1998, Fairfield carried out Induced Polarization (IP) surveys, soil geochemical sampling, prospecting and hand trenching.

In 2002 Fairfield was amalgamated with Almaden Resources Corporation to form Almaden Minerals Ltd. and the title of the claims for the Cabin Lake property was subsequently transferred and later purchased by Tarsis in April 2007.

GEOMORPHOLOGY

The property lies along the northwestern flank of the Cassiar Mountains and covers 1945 hectares north and east of Hazel Ridge down to the Smart River at the southeastern property limit. Local topography is generally moderate to steep, with elevations ranging from 1000 to 1700 meters. A local drainage in the west central part of the property, referred to as Copper Creek, drains much of the central and southern portion of the property, and flows easterly through a steep-walled valley. The northern and eastern CL claims drain to the north, via Antennae Lake and its outflow, Meadow Creek.

Bedrock exposure is generally sporadic at higher elevation and notably poor in topographically lower areas where alluvium and glacial till are prevalent. The CL claims are underlain by intermittent permafrost, particularly in areas of thick moss and dense forest cover.

Vegetation consists of thick stands of spruce, and fir on lower slopes, that become interspersed with grassy subalpine meadows at higher elevations. Swamps with willow, dwarf birch, alder and stunted conifers are interspersed throughout the property. Treeline in the vicinity of the Cabin Lake property occurs at 1450 m.

GEOLOGY

Regional Geology

The property lies within a belt of Yukon-Tanana Terrane rocks on the southwest side of the Tintina Fault Zone (Figure 3). This belt of rocks is part of an accreted island arc assemblage consisting of biomodal volcanics, coeval plutons and a variety of predominantly clastic sedimentary rocks (Mulligan, 1963). Yukon-Tanana Terrane rocks underlie much of west-central Yukon, including a displaced block immediately northeast of the Tintina Fault Zone referred to as the Finlayson Lake district, which hosts a number of VHMS deposits and prospects.

The area of Yukon-Tanana Terrane containing the Cabin Lake property is bound to the east by the D'Abbadie Thrust Fault, (Keijzer, et al., 1999). Rocks on the lower (eastern) plate of the thrust fault belong to the Cassiar Platform tectonic element, which consists of calcareous and non-calcareous sedimentary and metasedimentary units (Figure 4).

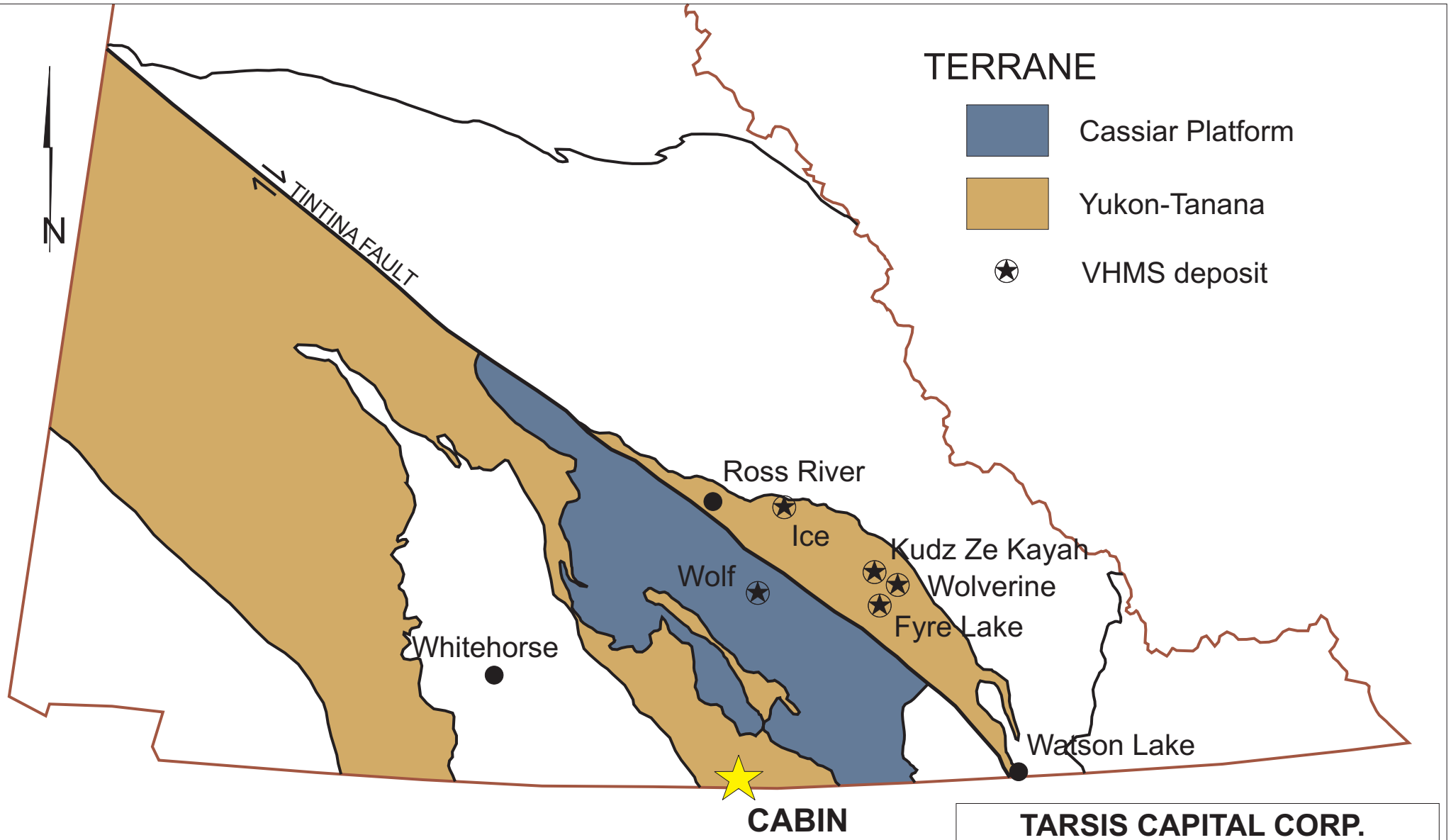

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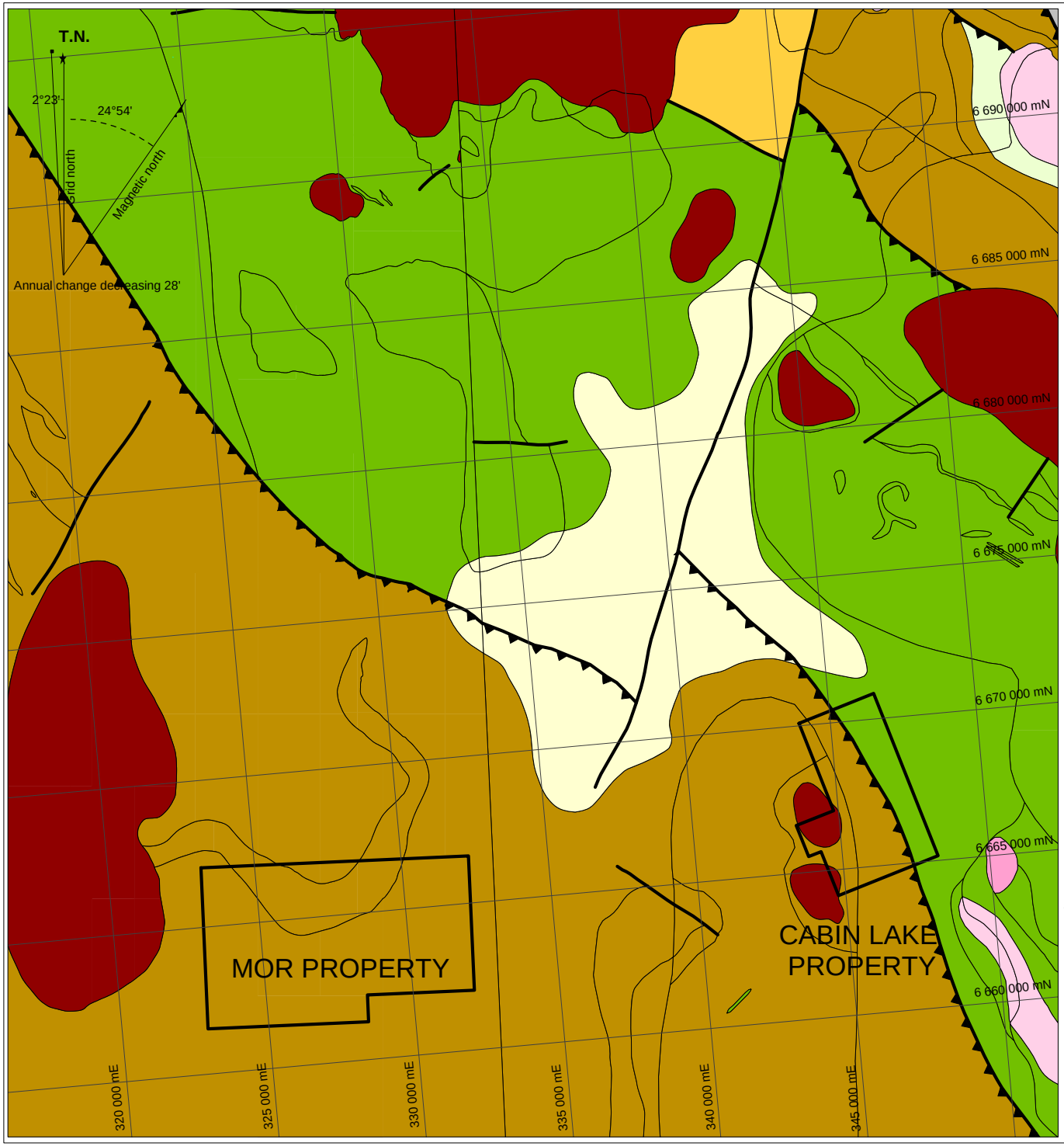
FIGURE 3

TECTONIC SETTING

CABIN LAKE PROPERTY

..FILE\: ...2007/CABIN/F_3-TEC.CDR MAY 2008



QUATERNARY
- Fluvial silt, sand and gravel

MID-CRETACEOUS
- Cassiar Suite

EARLY JURASSIC
- Aishihik Suite
- Long Lake Suite

MIDDLE PERMIAN
- Sulphur Creek Suite

CARBONIFEROUS
- Klinkit Group

DEVONIAN AND MISSISSIPPIAN
- Nasina Assemblage

UPPER PROTEROZOIC TO LOWER CAMBRIAN
- Ingenika Group

Fault

Thrust fault

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FIGURE 4

REGIONAL GEOLOGY

CABIN LAKE PROPERTY

0 2 10 km

UTM ZONE 9, NAD 83, 105B/04 & 105C/01

FILE: ...2007/CABIN/F_4-REG.WOR | DATE: MAY 2008

The following descriptions of the regional geological setting for the Cabin Lake area were taken from Young, 2003.

The region is part of the Omineca Belt of the Canadian Cordillera, a widespread zone of uplifted metamorphic and intrusive rocks that extends from northern British Columbia through the south-central Yukon and into Alaska. In the Cabin Lake area, this belt is characterized by several deformed Paleozoic assemblages which include a portion of the pericratonic Kootenay or Yukon-Tanana Terrane lying between the Teslin Fault to the west and the continental Cassiar terrane to the east. This Devono-Mississipian (Yukon-Tanana) stratigraphy is also known as the Big Salmon Complex particularly in adjacent northern British Columbia (Mihalynuk et al., 1998). Current studies by various workers of the Yukon Geology Program (INAC/EGSD, Murphy et al.) indicate that rocks of the Big Salmon Complex are at least partially equivalent to certain units (Nasina Assemblage) of the Yukon-Tanana Terrane which hosts Kudz Ze Kayah, Wolverine and Fyre VHMS deposits in the Finlayson Lake district, 160 km northeast of Cabin Lake.

An extensive manganiferous metachert ("crinkled chert") horizon occurs a few kilometres to the southeast of the MOR property and is suggested to be spatially related to VHMS style mineralization at the Cabin Lake property. This unit is considered to be of seafloor hydrothermal origin and may represent an exhalative horizon.

The main lithologies in the vicinity of the Cabin Lake property are summarized on the following table.

Table I - Main Lithological Units

Quarternary Overburden	Glacial till, lateral and terminal moraines and glaciofluvial outwash
Mid-Cretaceous or Early Tertiary Cassiar Suite	Granodiorite and biotite-quartz monzonite porphyry
Early Jurassic Aishihik Suite	Porphyritic granodiorite, monzonite, minor diorite and gabbro
Upper Carboniferous to Permian Klinkit Group	Mafic volcanics, epicalstics, phyllites, and quartzites with distributed carbonate lenses
Devonian to Mississippian Nasina Assemblage	Marble, quartzite, quartz ± muscovite ± biotite ± actinolite ± albite schist, and augen schist, metatuffs, and calcareous metavolcanics

(Gordey and Makepeace, 1999)

The Klinkit Group is an over-lap sequence that straddles both the Yukon-Tanana Terrane and Cassiar Platform.

Property Geology

The Cabin Lake property is underlain by siliceous metasediments believed to be part of the Devono-Mississippian Nasina Assemblage and metavolcanic schist's of the Carboniferous

Klinkit Assemblage, which have been locally intruded by two Cretaceous porphyritic stocks of the Cassiar Suite (Figure 5). Previous authors (Ritcey and Balon, 1998) segregated these regional units into several distinct map units as described below.

The stratigraphic units exposed in the central part of the Cabin Lake property north of Copper Creek are gently eastward dipping schistose metaquartzite/psammite with micaceous partings (Unit 1) overlain by variably deformed and metamorphosed andesitic to dacitic tuffs and flows (Unit 2). Pyritic purple/grey quartz-rich schist's (Unit 3) are documented near the break in slope on the central and western claims. These rocks are overlain by variably mineralised, pale grey quartz-sericite schist (Unit 4) that has undergone intense clay alteration.

Sheared and chloritized medium to coarse-grained metadiorite (Unit 5) is exposed at several localities north of Copper Creek.

All stratigraphic units have been intruded by one of two unfoliated porphyritic bodies composed of either fine- to medium-grained grey diorite/granodiorite (Unit 6) or medium- to coarse-grained grey magnetite bearing biotite granodiorite with lesser pink-grey quartz monzonite (Unit 7). Unit 6 has been mapped locally within the strata in the west central part of the claim block and in abundance in the eastern part of the current claim block. Unit 7 occupies approximately 5 km^2 of the southern CL claims near the headwaters of Copper Creek and extends off the property to the west.

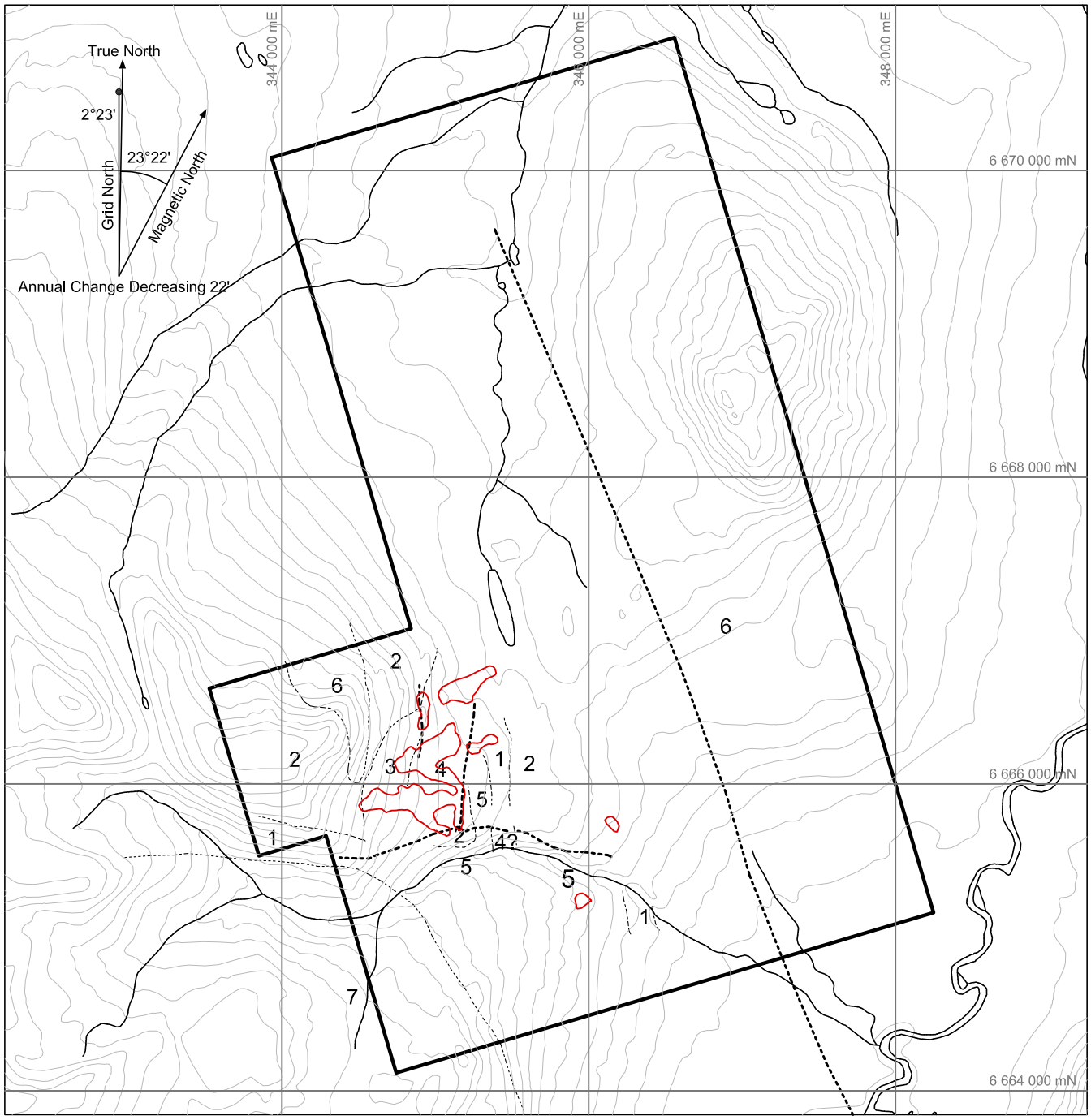
Weakly mineralized alteration zones are reported within Unit 7 in this area and are associated with quartz veins and stringers. Quartz veining is locally common on the claim block and is most prevalent near brittle fault zones in the central and northwestern part of the property. Structural trends are interpreted from air photos to be oriented roughly east and north-northwest.

MINERALIZATION AND GEOCHEMISTRY

Initial prospecting by Fairfield outlined several "kill zones" in the southwestern part of the claim block where semi massive and disseminated bands of pyrite and chalcopyrite were identified within the felsic metavolcanic stratigraphy. Sulphide mineralization in this area is interpreted to be stratabound (Young, 2003). Chip samples from hand and machine (Kubota) excavated trenches returned up to 0.35% Cu across 18.4 m. The true thickness of the exposure is unknown.

Grid soil sampling over a 1200 by 1200 m area outlined a strong 900 m by 500 m Cu anomaly with copper values greater than 150 ppm to a peak of 6324 ppm. Accompanying lead and zinc values in this area peaked at 220 ppm and 263 ppm, respectively. All other pathfinder elements were generally subdued.

Most of the prospecting conducted on the property was localized in the vicinity of the main soil geochemical anomaly where pyrite and chalcopyrite were identified in talus and several bedrock exposures. The highest concentration of sulphide was obtained from a purple weathering blocky schist outcrop reported to contain up to 5% chalcopyrite. A sample of this material returned 1.21% copper, 4.0 g/t silver and low values for all other pathfinder elements. All other talus and outcrop samples yielded lower than 1% copper.



7 Granodiorite: medium-grained with lesser quartz monzonite

6 Diorite: fine-grained undeformed

5 Diorite: coarse-grained sheared and chloritized

4 Quartz-sericite schist felsic metavolcanics

3 Siliceous schist, sulphide-bearing probable metasediment

2 Greenstone: metavolcanics and metasediments

1 Quartz-muscovite schist 'Quartzite' and psammite

>200 ppm Cu in soils

PROPERTY GEOLOGY

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FIGURE 5

PROPERTY GEOLOGY

CABIN LAKE PROPERTY

NAD 83, UTM ZONE 9
105B/04

FILE: ...2007/CABIN/F_5-GEO.DWG

DATE: MAY 2008

Trenching undertaken by a track mounted Kubota KH41 excavator across targets in the main copper-in-soil geochemical anomaly exposed predominantly quartz rich schist cut by diorite and andesite dykes. The best results were obtained from trench CLT9-3 where an 18.4 m collective sample interval reportedly returned 0.35% copper. None of the samples collected from the trenches were significantly elevated for lead, silver and zinc.

PRE 2007 GEOPHYSICAL SURVEYS

Aerodat Inc carried out an airborne geophysical survey employing a five frequency electromagnetic system and a high sensitivity cesium vapor magnetometer over the entire property, in June 1997 (Young, 2003).

The largest aeromagnetic feature on the Cabin Lake property is the relatively high field area underlain by granodiorite in the southwestern quadrant, which is in sharp contrast to an elongate zone of low total magnetic field that extends from the southern boundary of the claim group, along the eastern flank of the pluton, and northward into the soil geochemical grid. Dioritic rocks to the northwest of the grid may be indicated, at least in part, by a relatively weak magnetic high. The northern part of the large low-magnetic swath may reflect the presence of metamorphosed felsic volcanic rocks (quartz-sericite schist) in the grid area (and extending to the east), whereas the more intense low extending south of Copper Creek likely represents either the continuation of felsic units or a zone of hydrothermal alteration along the intrusive contact. In the core of this magnetic low, a single high amplitude EM conductor approximately 300 meters long is centered at historical grid location 4100N11900E. The only other high amplitude conductors are a series of discontinuous linear zones that appear to correspond with the interpreted contact between Nasina and Klinkit terranes near the eastern property boundary. Two anomalies west of this parallel set may be stratabound conductors. A short, weak conductor at grid location 4850N/1700E in the southern end of the grid area is notable in that it coincides with a small elongate magnetic high extending approximately from 4700N11675E to 5000N/1700E, in the southern part of the main copper-in-soil anomaly.

An induced polarization geophysical survey employing a 3 kw transmitter and 6 channel receiver was carried out in two phases, over 7050 meters of cut line, by Amerok Geosciences Ltd. in September 1997. This survey was undertaken primarily to determine the subsurface extent of mineralization discovered in the grid area. Survey lines were cut and surveyed at 100 meter spacings across the main mineralized zone and were established at 200 meter spacings to the north, east and south of the main mineralized zone.

Technical problems were encountered with field equipment along portions of survey lines 4900N, 5000N, 5200N and 5300N (Young, 2003). Calculated values of apparent resistivity, and to a lesser degree, of chargeability, may be in error for some of these areas. The interpretations are therefore subject to confirmation by re-surveying. Significant chargeability anomalies were recorded on all survey lines in the grid area, from 4700N to 5300N. In general, the higher chargeability zones correspond to elevated values of apparent resistivity, although the anomalies rarely coincide directly. Irregular zones of chargeability (>25 milliseconds) are present at depth. Within the broad anomalous areas, 40 milliseconds anomalies were recorded on sections 4700N, 4900N, 5000N and 5300N. The strongest near-surface IP responses on lines 4700N and 4900N

correspond roughly with the location of the airborne magnetic-EM anomaly. Some very high chargeability values were also obtained in a completely separate area near the eastern end of line 4900N, between 2050E and 2250E.

Additional IP surveys were conducted in 1998 to investigate copper mineralization associated with the felsic volcanic strata. A total of 5.5 line km of surveys were conducted and confirmed the existence of highly chargeable zones in the vicinity of the 1997 anomalies (Smith, 1998).

2007 GEOPHYSICAL SURVEY

Geotech Ltd. of Aurora, Ontario, performed a 167.4 line-km VTEM and magnetometer survey between September 18 and 29, 2007. The survey was conducted using an Astar B3 helicopter operated by TRK Helicopters and maintained a mean terrain clearance of 85 m. The block was flown at 100 line spacings with a tie line spacing of approximately 1000 m. Magnetic response and interpreted VTEM results are illustrated on Figure 6. Survey equipment and techniques used are described in a report contained in Appendix III.

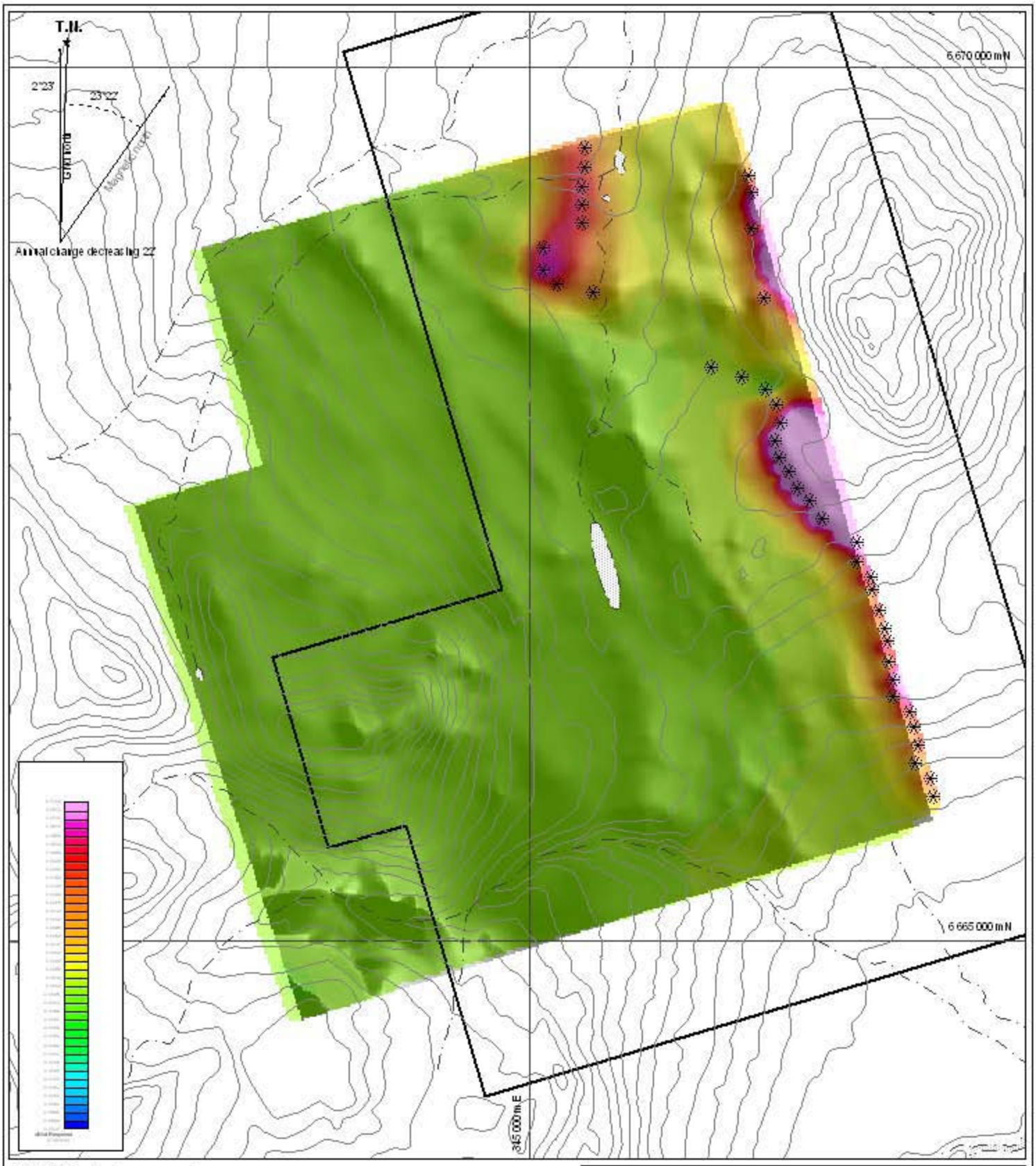
Rendered magnetic inversion data highlight a large positive magnetic anomaly in the southwestern part of the claim block that is associated with the previously mapped Mid-Cretaceous stock. Most of the remaining magnetic clusters are aligned along a northwesterly trend parallel to subparallel with the local stratigraphic trend. The most striking EM conductors are located along the eastern part of the survey grid and appear to be somewhat coincident with the regionally mapped contact between the Nasina and Klinkit Assemblages. The strongest of these anomalies is approximately 600 m long and has been modelled by Geotech as a shallowly dipping thick plate that may represent an accumulation of massive sulphide. Additional modelling is underway to better define these targets by Condor Consulting Ltd. No anomalies were detected in the vicinity of the soil geochemical grid and trench area defining the copper bearing volcanic strata.

DISCUSSION AND CONCLUSIONS

The Cabin Lake property covers a potential Kuroko style VHMS target in southern Yukon believed to be associated with favourable volcanic stratigraphy of the Yukon-Tarana Terrane. Exploration programs conducted by previous operators identified pyrite and chalcopyrite bearing felsic volcanic strata in the vicinity of a well defined copper-in-soil geochemical anomaly adjacent to a Mid-Cretaceous stock. Soil and rock geochemical results from grid sampling, prospecting traverses and trench sampling yielded elevated copper values but subdued response for other typical Kuroko VHMS pathfinder elements.

The origin of the copper mineralization is somewhat enigmatic at this time and may be associated with a hydrothermal alteration halo in proximity to the nearby intrusion, which reportedly contains chalcopyrite-molybenite-pyrite bearing quartz veinlets. The proximity of the intrusion may also partially account for the sericite and chlorite alteration plus local silification documented in the trenches.

Property-wide VTEM surveys did not identify EM conductors of any significance associated with the interpreted geochemically anomalous volcanic strata in the west central part of the claim



✳ EM picked anommaly

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FIGURE 6

LATE TIME dB/dt CHANNEL IMAGE ON SHADED RELIEF TMI IMAGE

CABIN LAKE PROPERTY

0 0.5 2.5 km

UTM ZONE 9, NAD 83, 1058.04

FILE: ...2007/CABIN/F_6-VTEM.WOR | DATE: MAY 2008

block. The strongest anomalies occur along the eastern edge of the survey approximately coincident with the contact between the Nasina and Klinkit Assemblages.

Additional work is definitely warranted and should focus on exploring the newly identified VTEM anomalies for VHMS potential. Conductivity depth imaging across the best target by Geotech suggests a shallow easterly dip, which is coincident with the local geology implying a possible stratabound target. The interpretation also shows a spatial association with a positive magnetic anomaly inferring the presence of magnetite and/or pyrrhotite.

Respectfully Submitted

Archer, Cathro & Associates (1981) Limited

W.A. Wengzynowski, P.Eng.

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APPENDIX I

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, William A. Wengzynowski, geological engineer, with business addresses in Vancouver, British Columbia and Whitehorse, Yukon Territory and residential address at 301 Fairway Drive, North Vancouver, British Columbia, V7G 1L4 do hereby certify that:

1. I am President of Archer, Cathro & Associates (1981) Limited.

2. I graduated from the University of British Columbia in 1993 with a B.A.Sc. in Geological Engineering, Option l, mineral and fuel exploration.

3. I registered as a Professional Engineer in the Province of British Columbia on December 12, 1998 (Licence Number 24119).

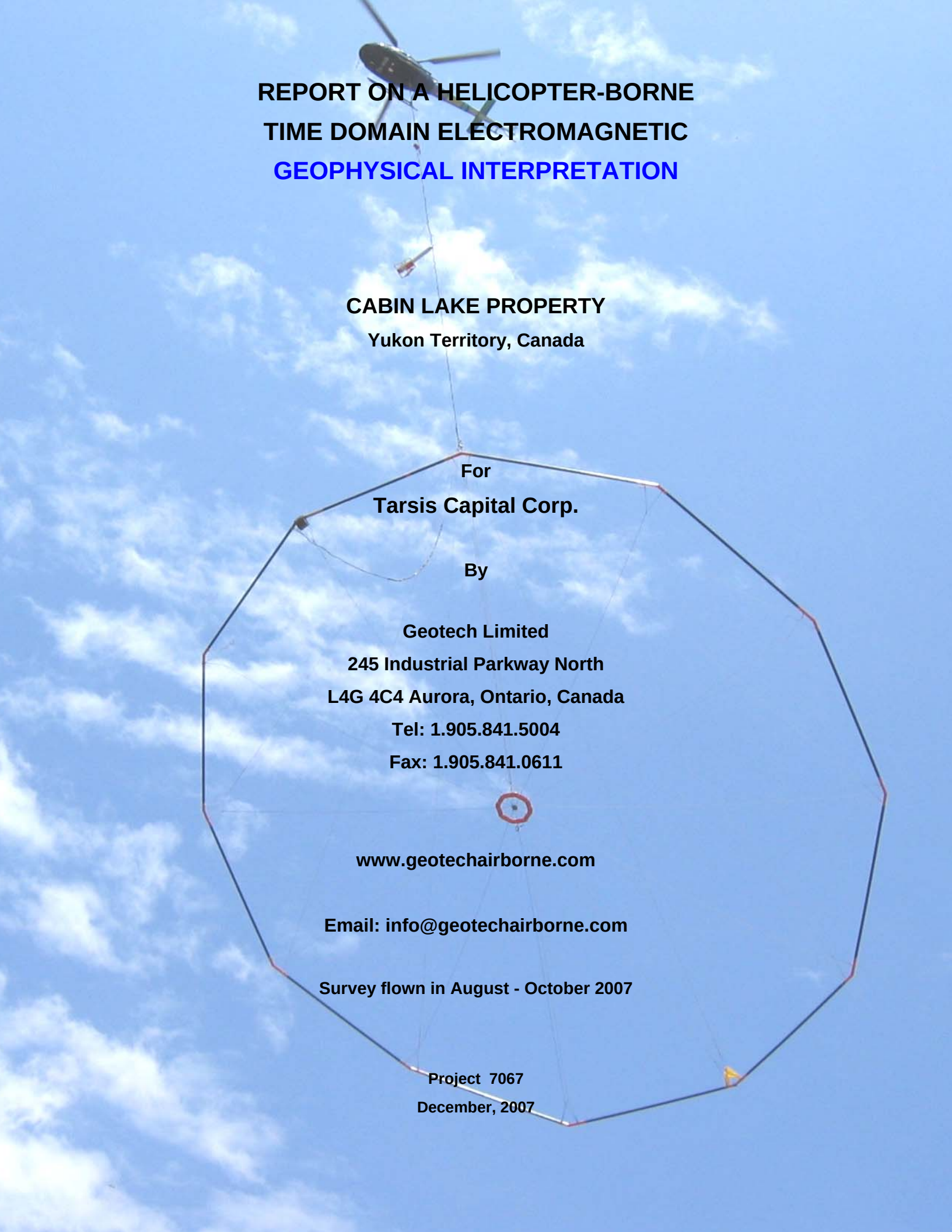
4. From 1983 to present, I have been actively engaged in mineral exploration in the Yukon Territory, Northwest Territories, northern British Columbia and Mexico.

5. I have personally participated in and supervised the fieldwork reported herein.

William A. Wengzynowski, B.A.Sc., P. Eng.

APPENDIX II

GEOPHYSICAL REPORTS BY GEOTECH LTD., INCLUDING CDS WITH THE DIGITAL SURVEY DATA



REPORT ON A HELICOPTER-BORNE TIME DOMAIN ELECTROMAGNETIC GEOPHYSICAL INTERPRETATION

CABIN LAKE PROPERTY

Yukon Territory, Canada

For

Tarsis Capital Corp.

By

Geotech Limited

245 Industrial Parkway North

L4G 4C4 Aurora, Ontario, Canada

Tel: 1.905.841.5004

Fax: 1.905.841.0611

www.geotechairborne.com

Email: info@geotechairborne.com

Survey flown in August - October 2007

Project 7067

December, 2007

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REPORT ON A HELICOPTER-BORNE
TIME DOMAIN ELECTROMAGNETIC INTERPRETATION

CABIN LAKE Property, Yukon Territory, Canada

1. INTRODUCTION

In September, 2007 a helicopter-borne electromagnetic survey was carried out by Geotech Ltd. for Tarsis Capital Corp. over the CABIN LAKE Property located in Yukon Territory, Canada.

This report includes the results of the geophysical interpretation, over this Property. The Property is located at approximately 190 km south-east from Whitehorse, in the Yukon Territory. The geographic coordinates of the block extents are: longitudes, 131º 49'48" W and 131º 44'44" W, and latitudes, 60º 05'15" N and 60º 08'08" N. The surveyed area is 16 km^2, and the total line kilometers flown are 160 km (Fig. 1).

The survey was conducted using the Geotech Ltd VTEM system. Principal geophysical sensors included a versatile time domain electromagnetic system and a high resolution cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter.

Data processing and map compilation, including generation of final digital data products were achieved at the office of Geotech Ltd in Aurora, Ontario.

The present report describes the results of the geophysical interpretation of this Property.

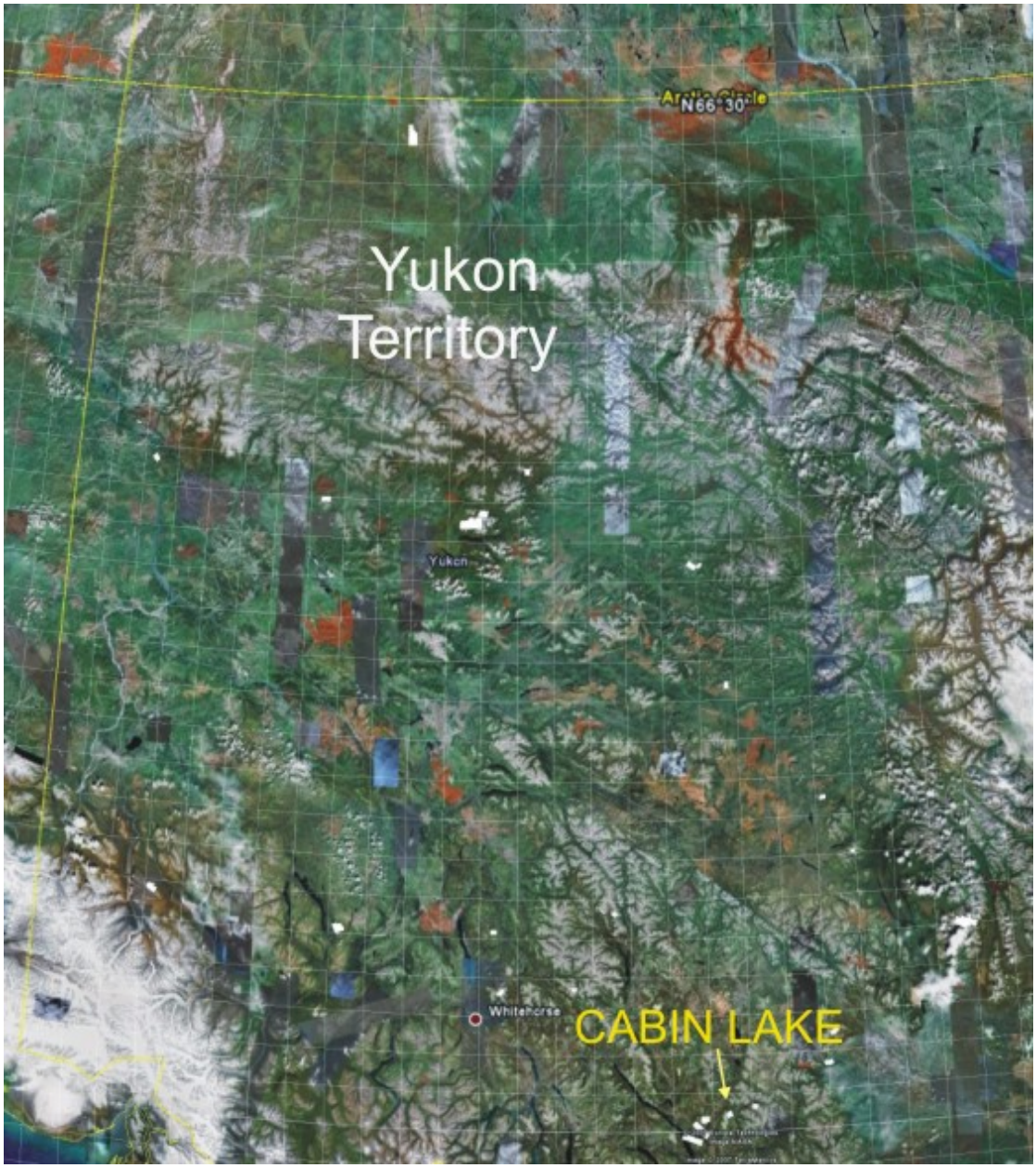

Fig. 1 Location of the CABIN LAKE Property on the satellite image.

2. SURVEY DESCRIPTION

In September 2007, Geotech Ltd. carried out a helicopter-borne geophysical survey over the CABIN LAKE property located in Yukon. Geotech Ltd. utilized a Versatile Time Domain Electromagnetic System to measure the electromagnetic induction field (B-field) and the vertical component of its time derivative (dB/dt). The electromagnetic measurements were made at the off-time mode. The concentric in-loop system was towed at a distance of 42 m from the helicopter. The VTEM Transmitter uses a trapezoid waveform shape with 7.2 ms duration operating at a base frequency of 30Hz. The dipole moment was approximately 425 000 NIA. The half-waveform period was 16.7 ms. A towed cesium and high resolution magnetometer was used to measure the Earth's magnetic field intensity. Data positioning and navigation were assured by a Novatel WAA GPS with accuracy less then 3m.

A Terra TRA radar altimeter was used to measure the terrain clearance. The helicopter was flying at a constant speed of 80 km/h and was keeping a constant ground clearance of 90 m when the terrain allowed it. The traverse lines direction was N74°E and the tie lines direction was N16°W. The distance between the traverse lines and the tie lines was 100m and 1000m, respectively. A more detailed description of the survey parameters is provided in the logistics/processing report.

3. *GEOLOGICAL CONSIDERATIONS*

3.1 Topography

The terrain is very rugged with a high mountain belt trending roughly in the NS direction. The absolute altitudes range from 950 m to 1250 m approximately. Due to the terrain roughness, it was difficult to keep a constant ground clearance while surveying this area.

Fig.2 Topography of the CABIN LAKE Property with the flight path.

3.2 Regional geological context

The Yukon Territory is situated in the northern part of the large geologic (and physiographic) belt known as the Cordillera. It is composed of relatively young mountain belts that range from Alaska to Mexico. The Yukon Territory is composed of a diverse type of rocks recording more than a billion years of geological history. Most of them have been affected by folding, faulting, metamorphism and uplift during various tectono-metamorphic events over at least the last 190 million years. This deformation has resulted in a complex arrangement of rock units and the mountainous terrain that has shaped today's geology. Geologically, Yukon is divided into two main components which are largely separated by the Tintina Trench. Formations northeast of the Tintina Fault consist of a thick, older sequence of sedimentary rocks which was deposited upon a stable geological basement. Rocks southwest of the Tintina Trench are composed of a younger, complex mosaic of igneous and metamorphic, representing numerous accreted terranes (Fig. 3).

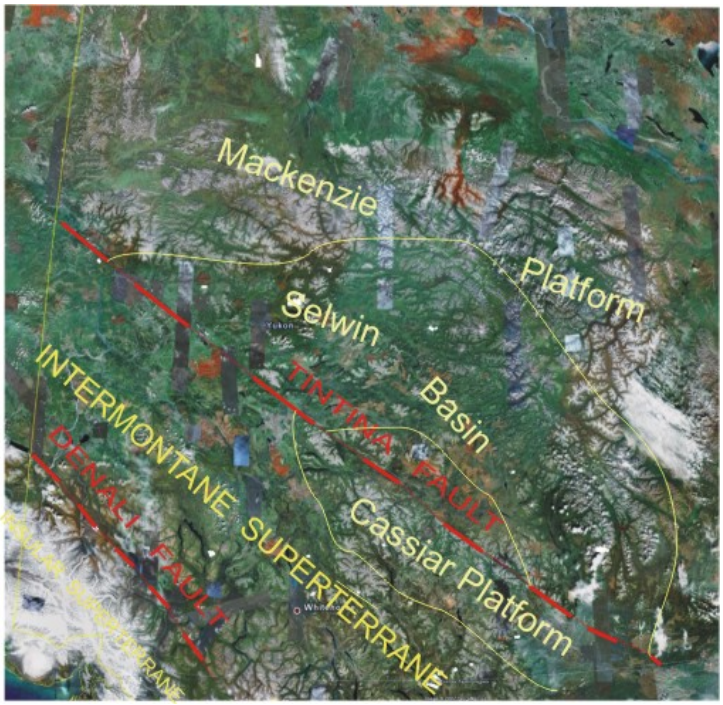

Fig.3. The major tectonic elements of Yukon superimposed on the satellite image. The figure indicates that the territory is composed of two dominant rock packages separated by the Tintina Fault: thick packages of sediments (northeast) and accreted Terranes (Southwest).

3.3 Geological context of the CABIN LAKE Property

The Cabin Lake property is underlain by bi-modal volcanic sequences hosting disseminated sulphides. These rocks are prospective for Volcanogenic Massive Sulphide mineralization. The volcanic rocks are trending in the north-northeast direction and are shallowly dipping eastwardly. These volcanic rocks are intruded by three different types of intrusions, comprising undeformed granodiorite and diorite. Major and minor structures appear to be dominated by a north steeply dipping northwest trend. Subordinate structures are oriented roughly east-west.

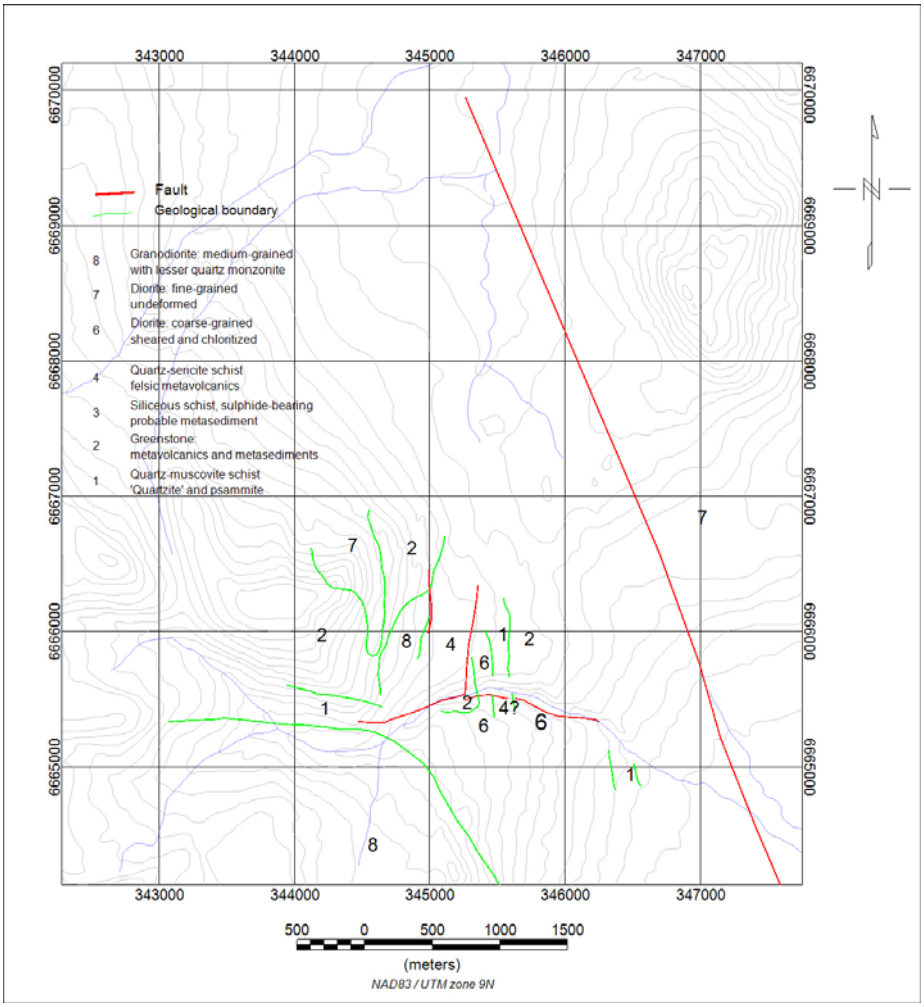

Fig. 4 Geological scheme of the CABIN LAKE Property.

3.4 Mineralization

The main mineralization known in the CABIN LAKE Property consists of disseminated sulfides associated with volcanic rocks. Massive sulfide mineralization has not been identified in this block.

4. INTERPRETATION OF THE MAGNETIC DATA

4.1 Introduction

Aeromagnetic surveys are routinely used as a powerful tool at different stages in mining exploration and in geological mapping. Because geological formations have different concentrations of magnetic minerals, they exhibit different magnetic signatures in the magnetic field, depending on the susceptibility contrast of rocks and the characteristics of the magnetic field. Thus, observed magnetic field over an area, can provide useful information that can assist the lithological and the structural mapping. It can be used to detect iron-rich mineral deposits, and/or mineral deposits associated with highly magnetic rocks (mafic and ultramafic formations).

4.2 Analysis of the Magnetic data

The observed magnetic field over the CABIN LAKE Property is shown in Fig.5. The magnetic field values are ranging from 57500 nT to 64600 nT, yielding a difference in the magnetic field intensity of more than 7000 nT. This large difference is due to the strong circular anomaly observed in the extreme SW corner of the map. The nature of this anomaly could be a mafic or ultramafic structure not indicated in the geological map. Magnetic lineaments trending in the NW direction are observed in the eastern part of the area. They could be related to mafic dykes and / or faults containing magnetic material (magnetite, pyrrhotite, etc..) . In the central area, the magnetic field expresses a more or less quiet character with low intensities. Several short wavelength lineaments trending in the NW direction are indicated in the northwestern portion of the map. An anomalous zone that coincides with the outcrop of dioritic rocks is clearly indicated in the central area.

Since the contents of the observed magnetic maps include the response of shallow and deep magnetic sources, it is difficult to analyze the maps containing different wavelength anomalies. Distinguishing shallow features from deeper ones can be performed via several methods of field separation and filtering.

Figure 6 shows the reduced to the pole magnetic field map, and upward continued to 100m. The short wavelength anomalies related to shallow sources have been suppressed. The map highlights the NS trending lineament (eastern part) and the outlines of the magnetic structure (Southwestern corner).

Figure 7 illustrates the vertical gradient of the TMI. The vertical gradient map shows the enhancement effect of magnetic signals caused by shallow sources and related to faults and contacts.

The tilt derivative map illustrated in Fig. 8 yields another example of amplifying short wavelength signals generated by shallow sources. The tilt derivative known as being the local phase is computed from the vertical and horizontal gradients. As illustrated in the Tilt derivative map several shallow magnetic lineaments trending mostly in the NW direction can be identified in this area. Most of them are probably associated with faults or hidden mafic dykes. Both maps provide a better focalization of the strong anomaly observed in the southwestern corner of the map.

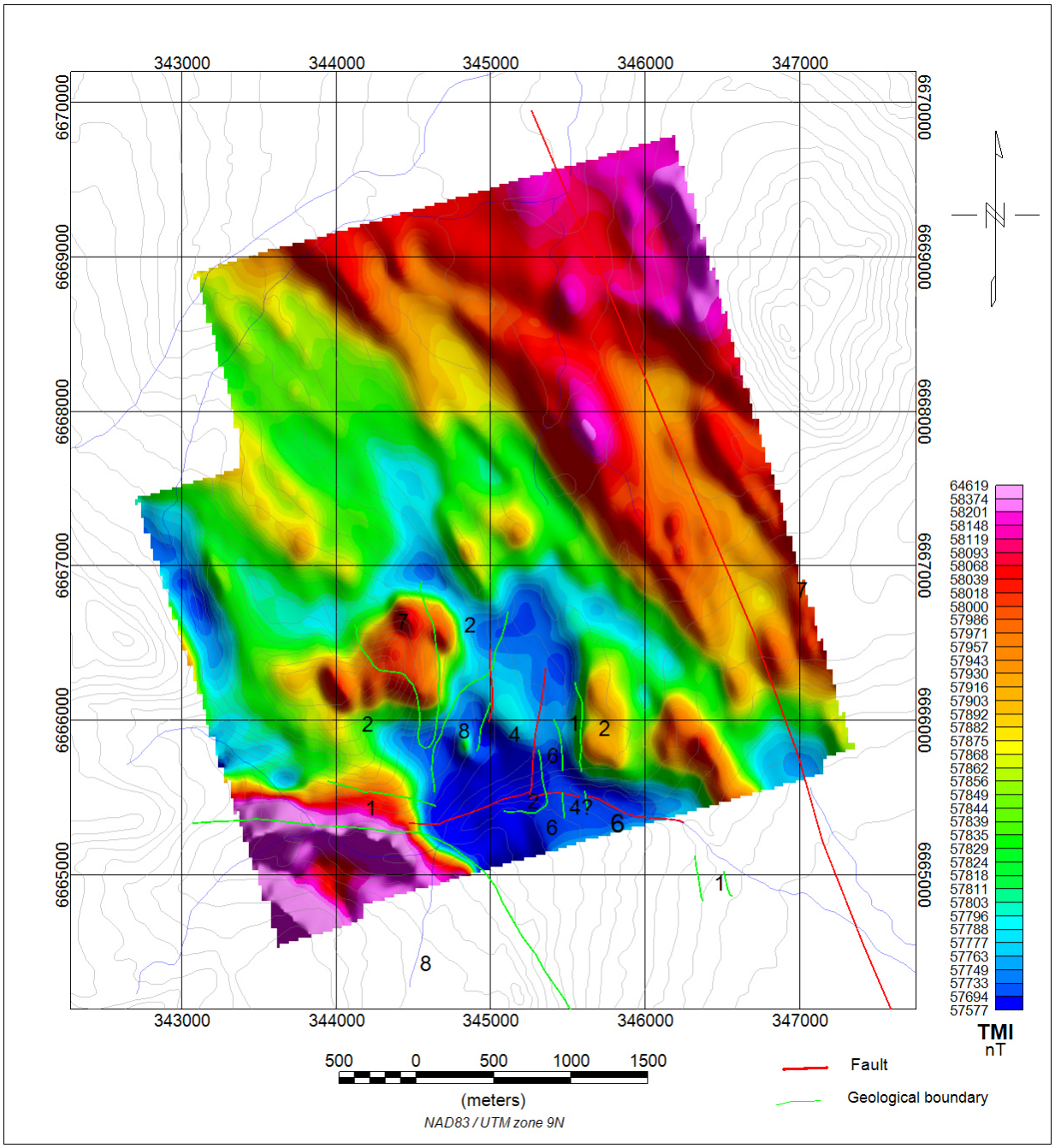

Fig. 5 TMI image of the CABIN LAKE Property.

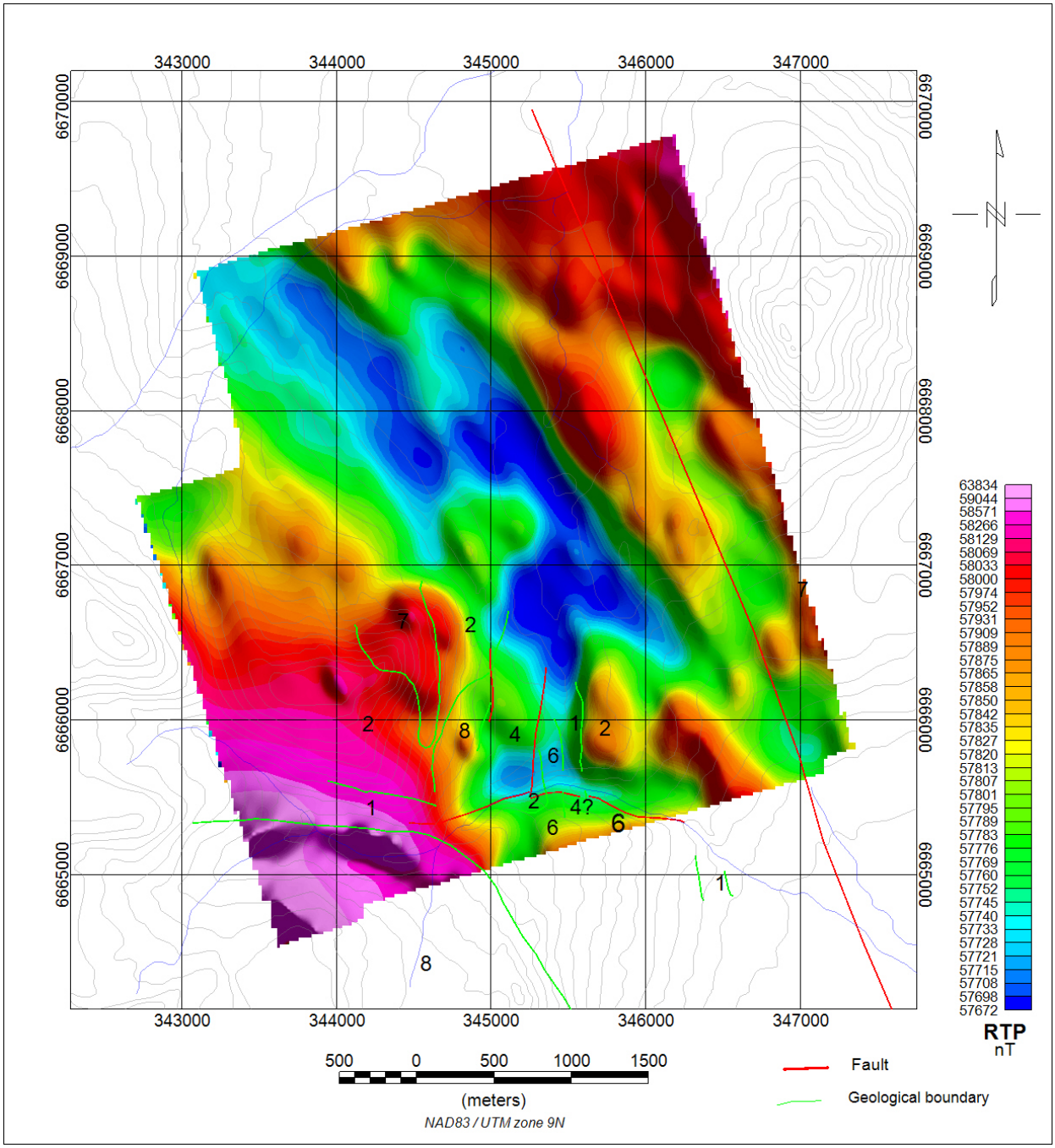

Fig.6 Color shaded relief of the reduced to the pole TMI with upward continuation to 100m.

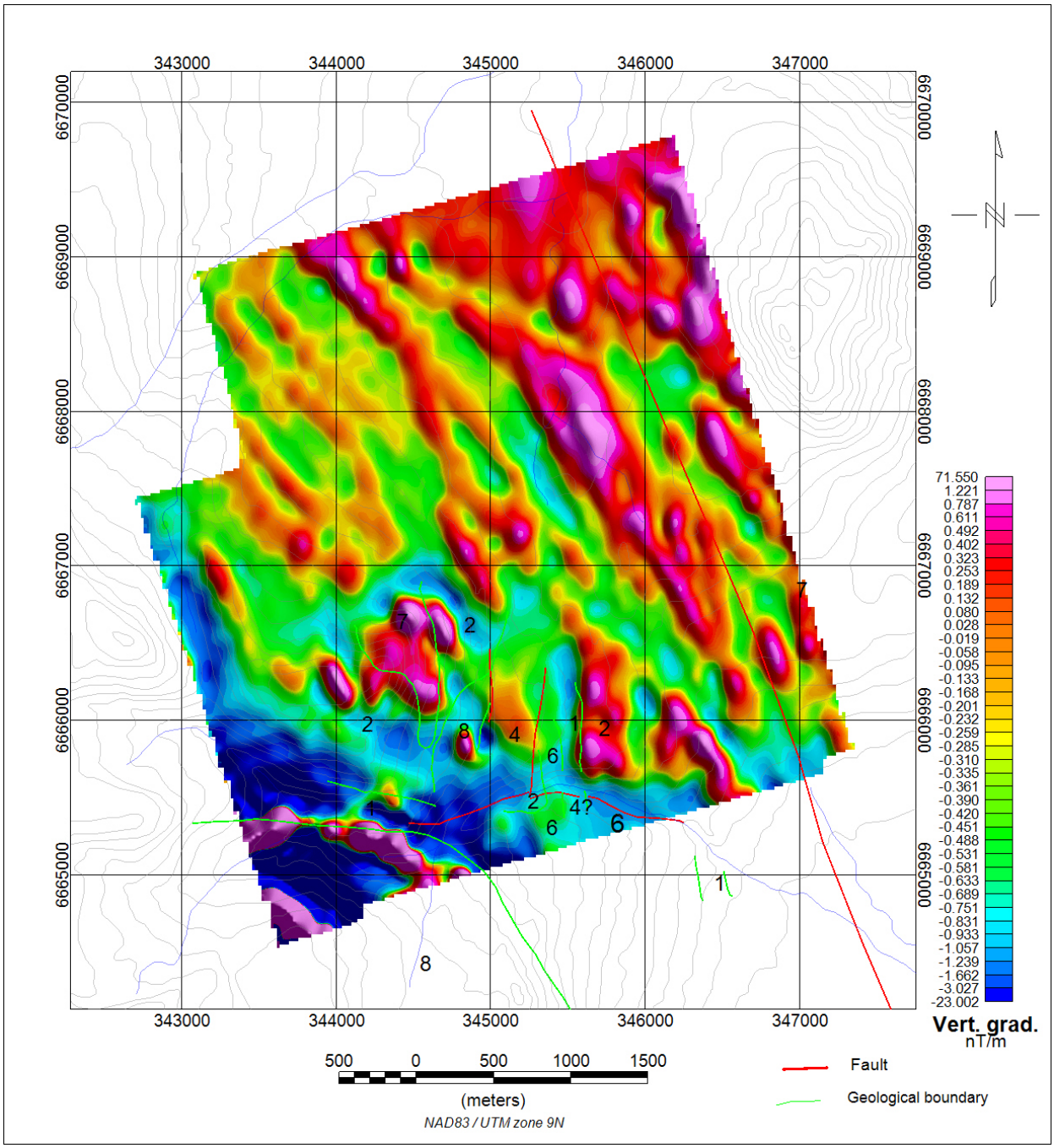

Fig.7 Color shaded relief of the vertical gradient of the magnetic field.

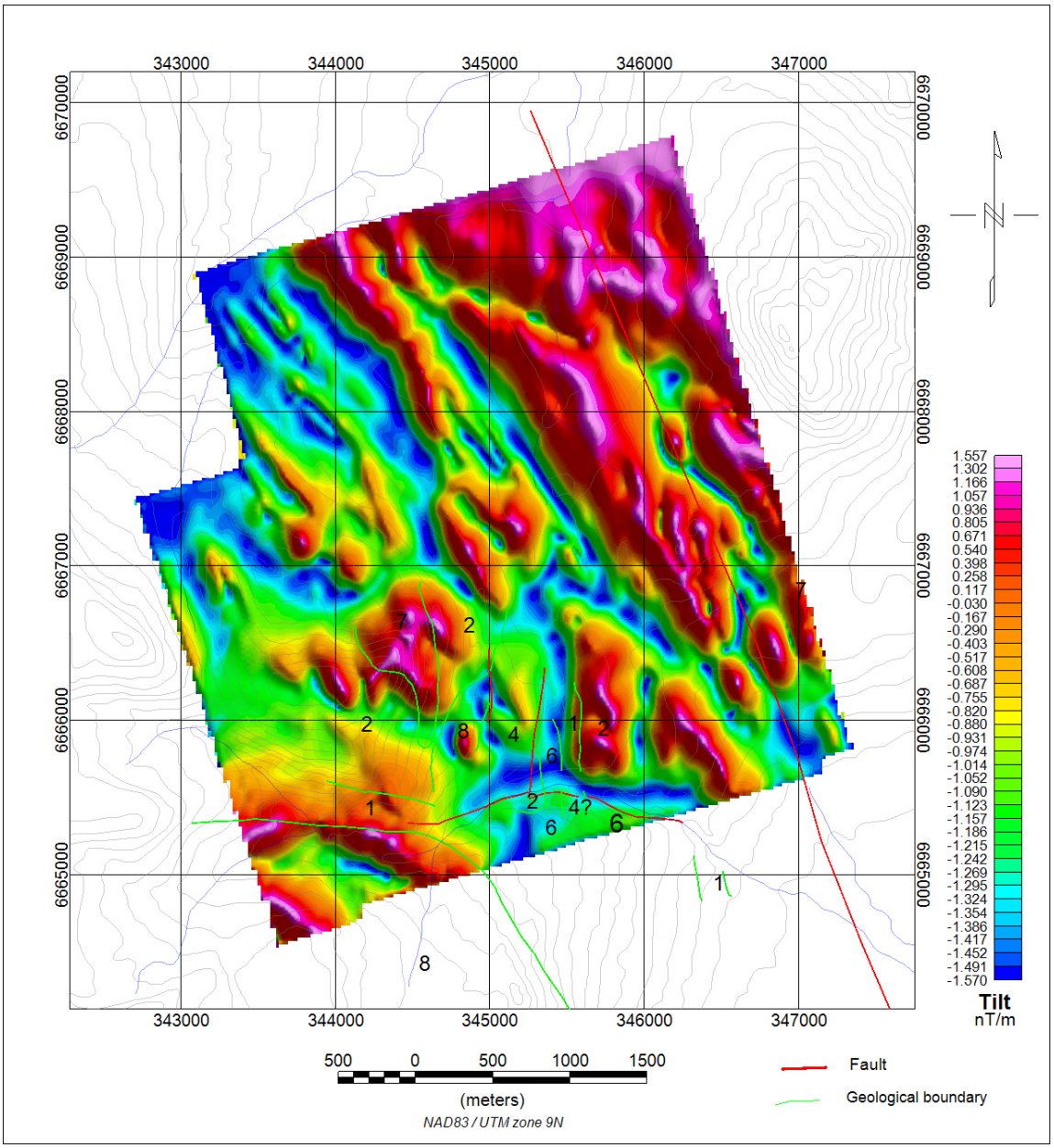

Fig. 8 Color shaded relief of the Tilt derivative.

4.3 Inversion of the magnetic data

Several computer-based techniques can be used to automatically detect magnetic sources and yield estimations of their geometrical and physical parameters. These techniques can be either used to gridded data (3D methods) or to profiles (2D methods). Euler deconvolution is a well established technique, allowing a rapid interpretation of a large amount of magnetic data. This method is mainly aimed to delineate magnetic sources boundaries and to estimate their depths.
Fig. 9 shows the results obtained with the Euler deconvolution inversion using a structural index of 1, a depth tolerance of 10% and a square deconvolution window having a size of 200 × 200 metres. Euler solutions have been plotted on the total gradient (analytic signal) map for better illustration. The picks of total gradient are used to located and delineate the magnetic sources boundaries.
Euler solution are mostly related to shallow sources (<100 m). Most of them are related to the magnetic lineaments tending in the NW confirming the qualitative analysis of the reduced maps. The magnetic inversion indicates that the estimated depths of the magnetic structure located in the southwestern corner of the area are less than 50m.

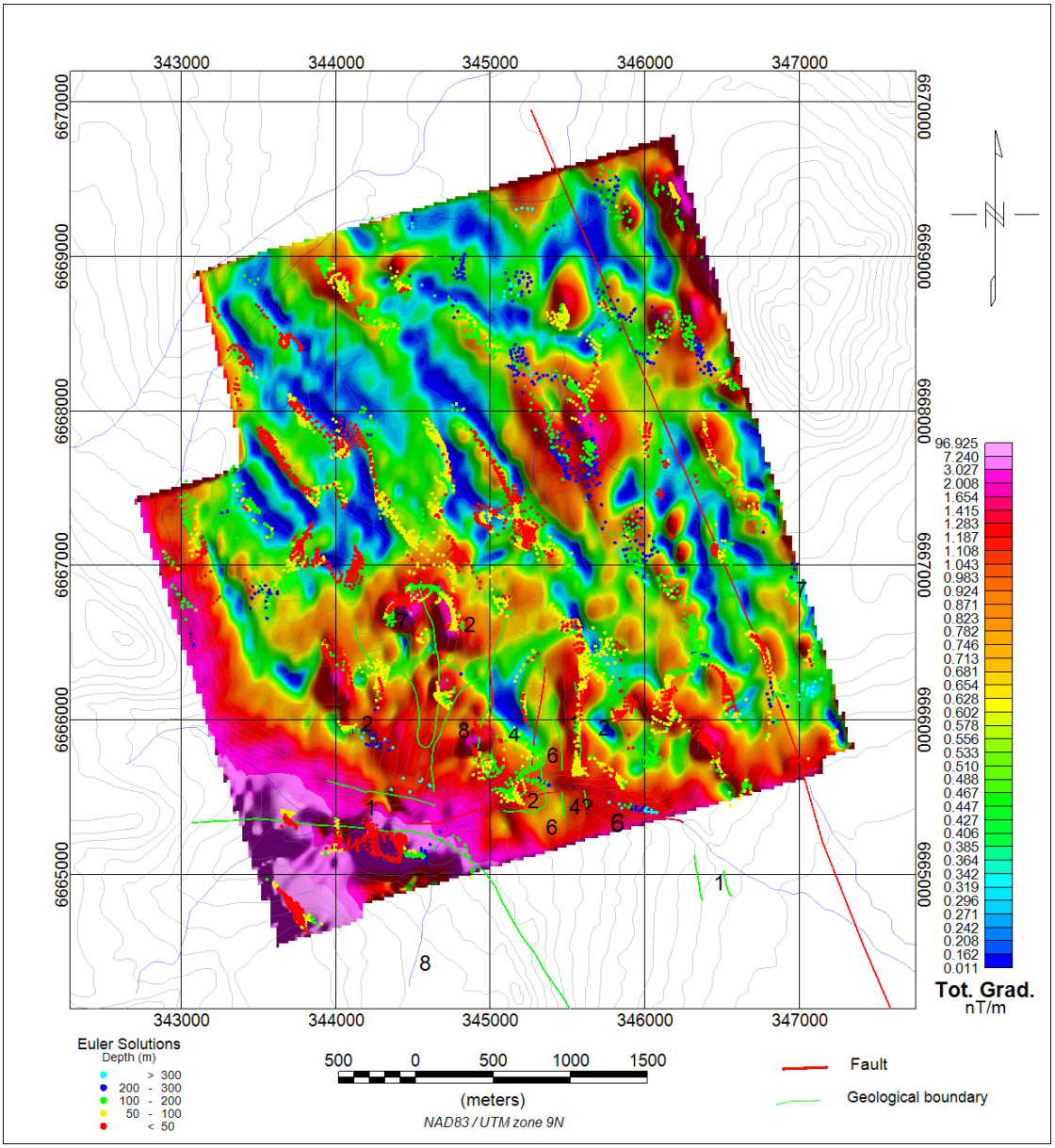

Fig. 9 Euler deconvolution solutions plotted on the total gradient image.

5. INTERPRETATION of VTEM DATA

5.1 Introduction

Transient electromagnetic surveys have proven to be a very efficient tool in mineral exploration by detecting hidden deposits characterized by higher conductivities than the medium in which they are embedded. Because Time domain systems have a much greater depth penetration compared to the Frequency domain systems, these systems are considered as a tool of choice in the mining exploration. The Geotech Helicopter VTEM system, operating in the Time domain, uses concentric-loop geometry with the receiver mounted in the centre of a larger transmitter loop. Both loops are oriented in the vertical plane. This configuration has a number of advantages, as a maximum coupling, sharper anomalies by comparison to airborne fixed wing systems, and the shape of the anomalies in independent of the flight path orientation. Furthermore, the high moment transmitter combined with the lower terrain clearance yields stronger secondary field signals in most conductors when compared to other systems. The actual VTEM systems measure both the electromagnetic induction field B and its time derivative dB/dt. This system specificity has a lot of advantages, as the dB/dt better resolves the shallow conductive sources while the B-field exhibits a better resolution for deep conductors.

5.2 VTEM anomalies shape

For concentric-loop geometry systems when both loops are oriented in the Z-axis (VTEM system) thick dipping or horizontal conductors exhibit a characteristic single peak, while steeply dipping and thin conductors manifest a double peak. The minimum indicates the location of the top of the thin conductor, and the major peak indicates the side towards which the conductor is dipping. Synthetic models anomalies were generated for the plate type conductors are provided in the Appendix A to better understand the shape of the VTEM anomalies

5.3 Analysis of the EM results

Figures 12 and 13 show the stacked profiles in pseudo-logarithmic scale of the dB/dt and B-field channels, respectively. Both maps show the existence of 2 linear anomalous zones (A and B) trending south- north roughly. Both anomalous zones are composed of anti-symmetric anomalies indicating the response of northeasterly shallow dipping conductive bedrock (Figs. 10, and 11).
The interpretation of the EM profiles was performed using in-house built software converting the EM decays into picked anomalies along the profiles and providing estimates of the conductance and the decay constant (tau) of isolated anomalies. The picked EM anomalies were posted on the late time EM channel. Figures 14 and 15 illustrate the results of the picked anomalies superimposed on the dB/dt, and B-field late time channel (3.911 ms after the current shut off), respectively.
The estimated conductance values for the Zone A anomalies are around 10 S. The calculated tau constants for this zone are ranging from 4 ms to 6 ms roughly. The anomalies of the second zone (B) are characterized by higher conductance values, ranging between 10 and 20 S, however the estimated tau values are lower (less than 4 ms) compared with those of the zone A. The picked anomaly maps show the existence of a linear NW trending conductor and bordering the southeastern side of the map.
It is worth mentioning that the observed EM anomalies are in very good spatial correlation with the observed magnetic signal as indicated in Fig. 16.
The interpretation map (Fig. 16) shows the results of the magnetic and electromagnetic analysis superimposed on the magnetic total gradient image. The magnetic interpretation suggests the existence of two cross cutting faulting systems trending in the NW and NE directions, respectively. It also shows that the detected EM anomalies are in very good correlation with the magnetic signal. As indicated in the interpretation map, anomalies of the zone A are correlated with a deep magnetic structure located at a depth between 200 m and 300 m.. However, anomalies of the zone B are correlated with a shallower linear magnetic structure (<200m). The existence of a good correlation of the detected conductive bedrocks with the magnetic signal is a good indication for the possible occurrence of massive sulfide mineralization containing magnetic minerals such as magnetite and pyrrhotite.

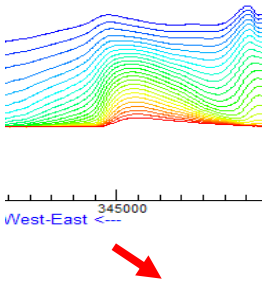

Fig. 10 EM profiles of the anomalous zone A, (line 8050). The red arrow indicates the dip direction of the conductor.

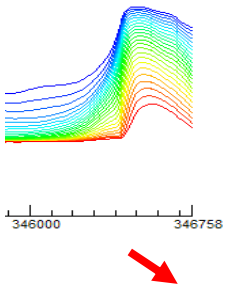

Fig. 11 EM profiles of the anomalous zone B, (line 8220) showing strong response of the late time decays. The red arrow indicates the dip direction of the conductor

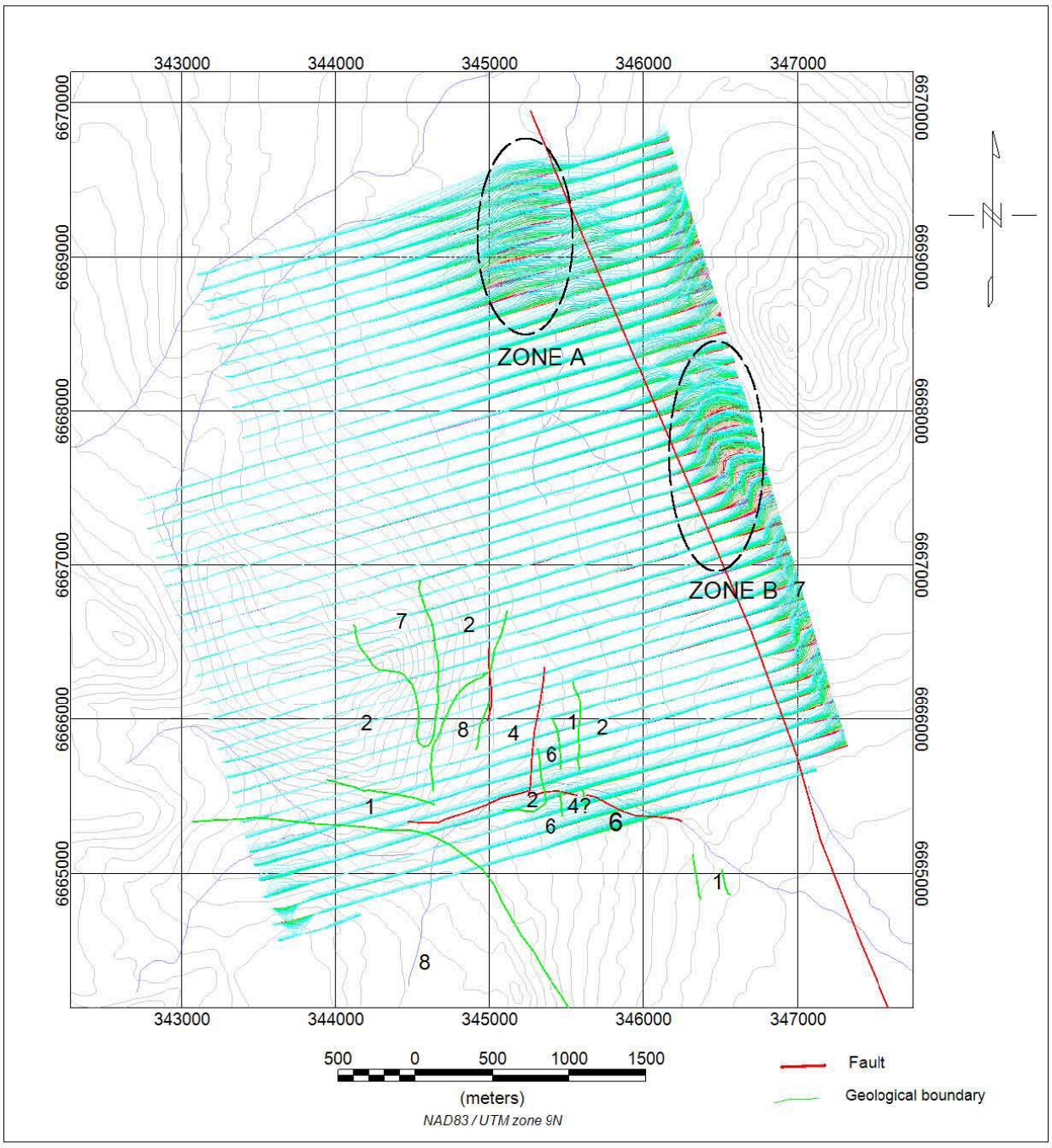

Fig. 12 Stacked EM dB/dt profiles at log-linear scale. Early time decays are in green and late time in red.

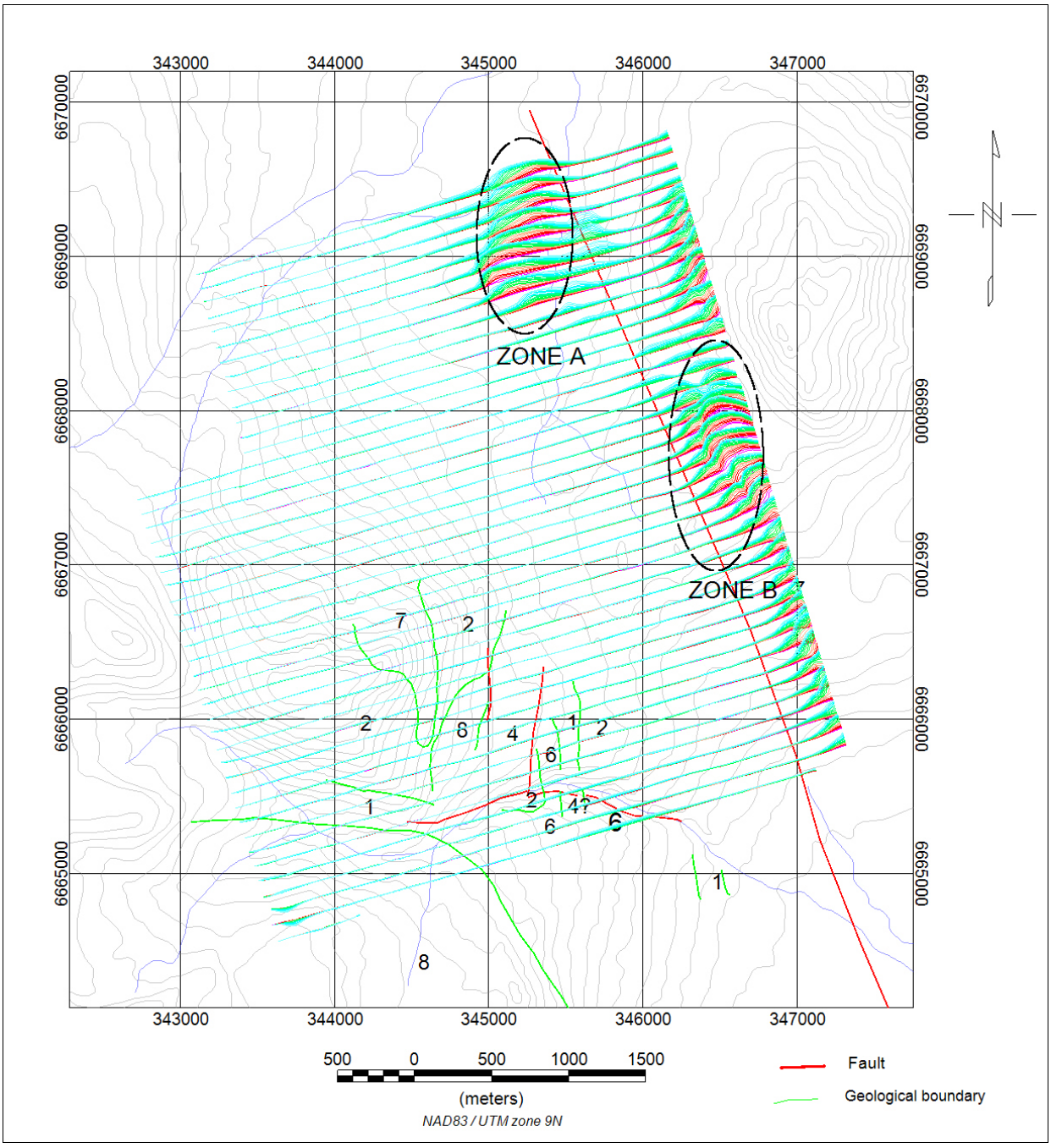

Fig. 13 Stacked EM B-Field profiles at log-linear scale. Early time decays are in green and late time in red.

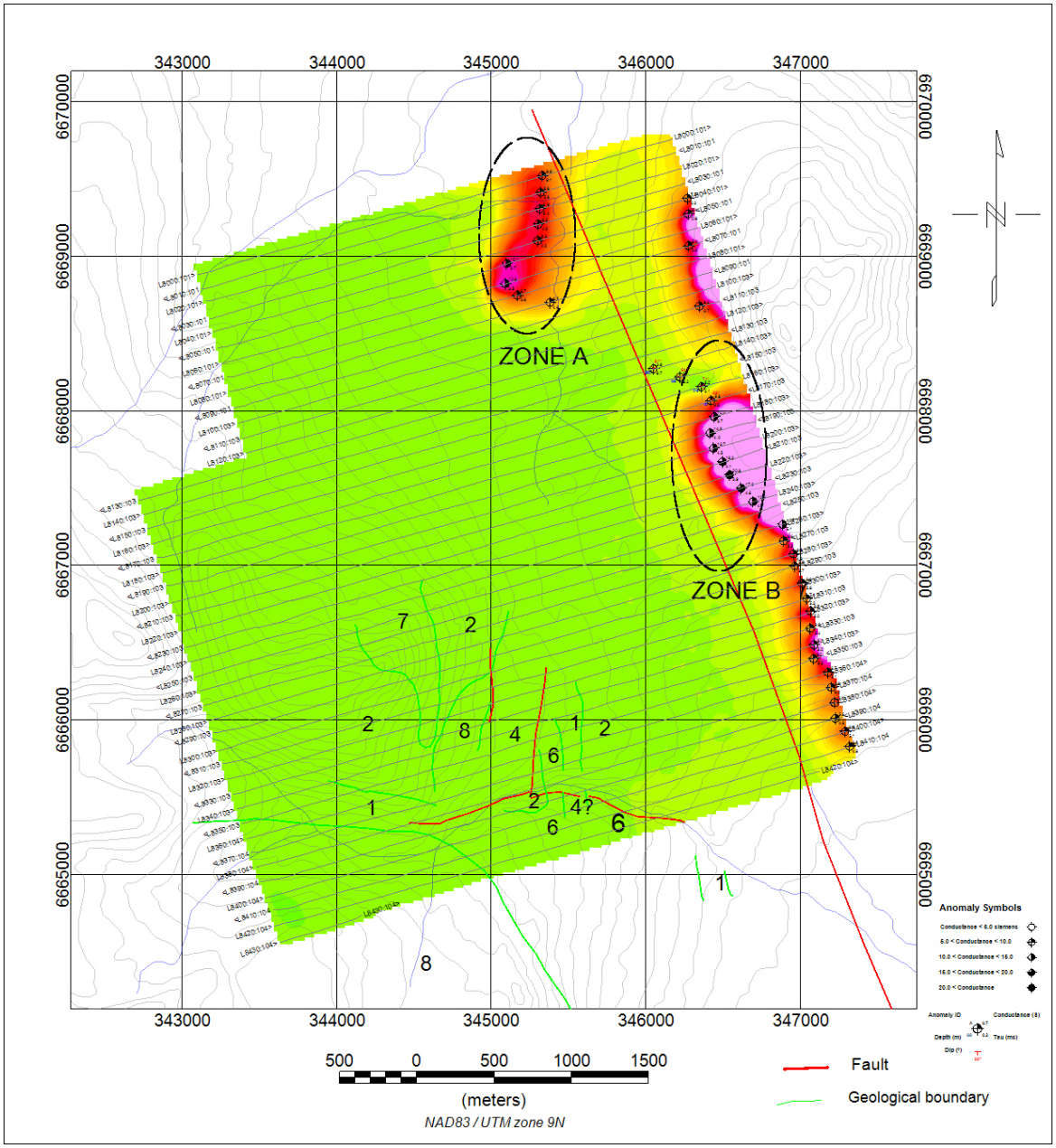

Fig. 14 EM picked anomalies plotted on the late time dB/dt channel image.

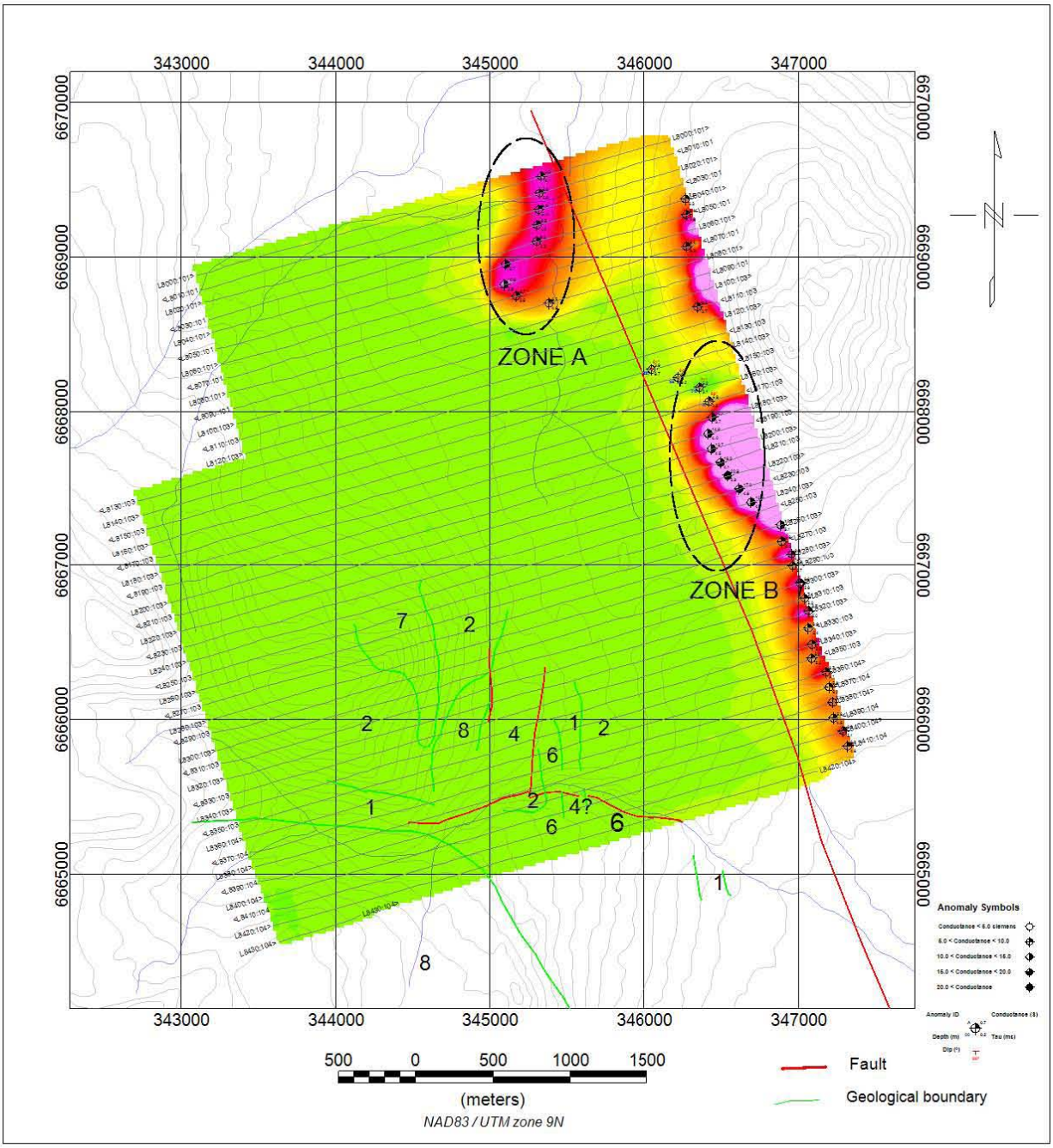

Fig. 15 EM picked anomalies plotted on the late time B-Field channel image.

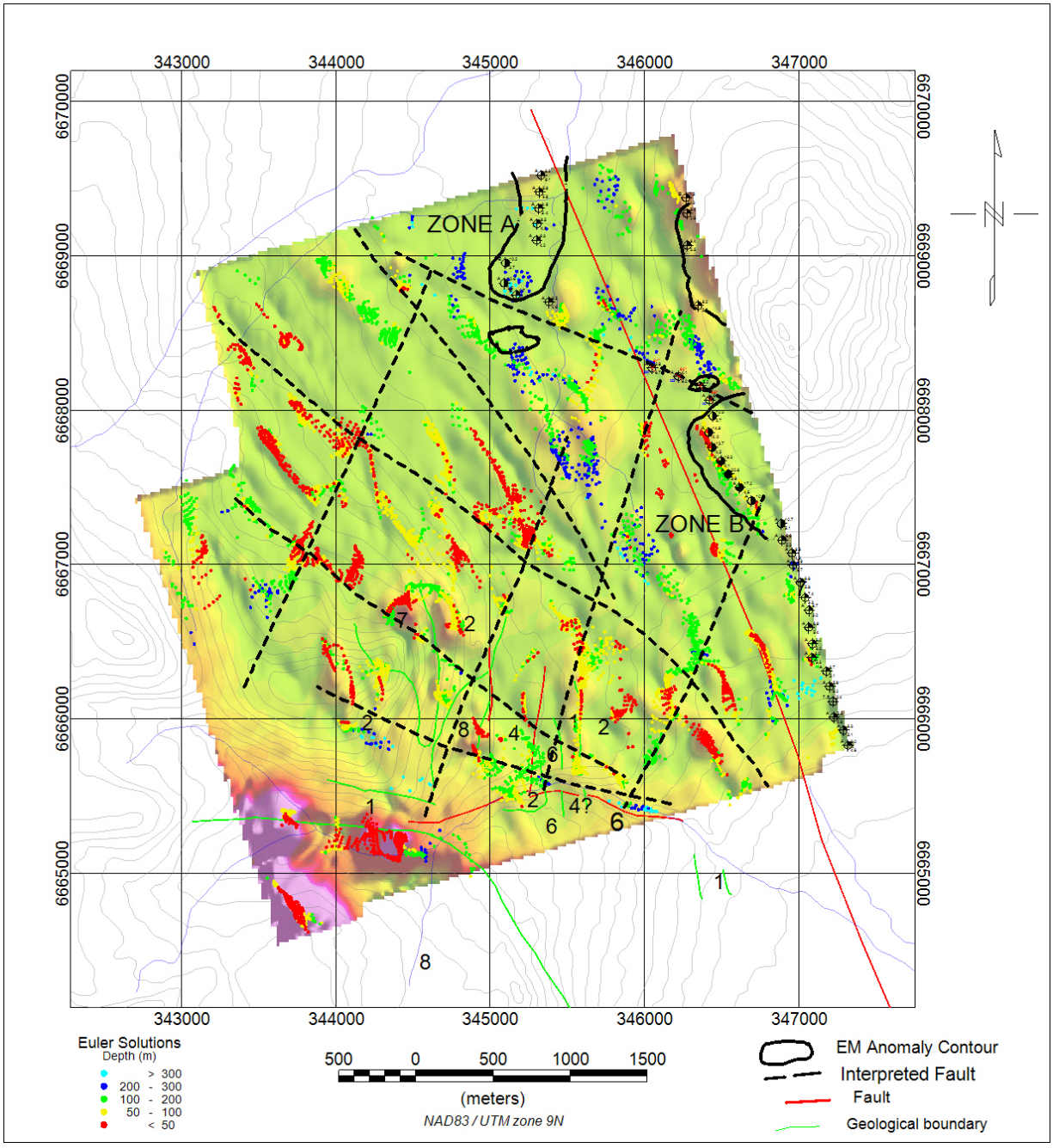

Fig. 16 Interpretation map showing the results of the magnetic and electromagnetic data analysis.

5.4 Selected Anomalies

Four individual anomalies extracted from the described above anomalous zones have been selected for modeling by converting the EM decays into CDIs . The anomalies are located on the following lines: L8020, L8050, L8210, and L8220. The summarized characteristics of the selected anomalies are given in the following table:

Line	Anomaly ID	Anomaly Type description	Conductor geometry	X-location m	Y-location m	Conductance S	Dip	Dip Azimut	Taus ms
L8020	A	One broad anti-symmetric peak	Thick shallow dipping plate	345314	6669307	8.9	Shallow	SE	5.4
L8050	B	One broad anti-symmetric peak	Thick shallow dipping plate	345099	6668953	10.2	Shallow	SE	3.7
L8210	A	One broad anti-symmetric peak	Thick shallow dipping plate	346495	6667669	18.3	Shallow	NE	4.1
L8220	A	One broad anti-symmetric peak	Thick shallow dipping plate	346542	6667585	20.8	Shallow	NE	3.9

Table 1. Summarized results of the selected anomalies.

5.5 Conductivity Depth Sections

Conductivity depth imaging (CDI) is considered as one of the important steps in the analysis and interpretation of electromagnetic data. CDI allows providing useful information of the conductivity distribution of the considered cross section. CDI were performed for the selected lines using the EMflow software. The obtained results are shown in Figures17-20.

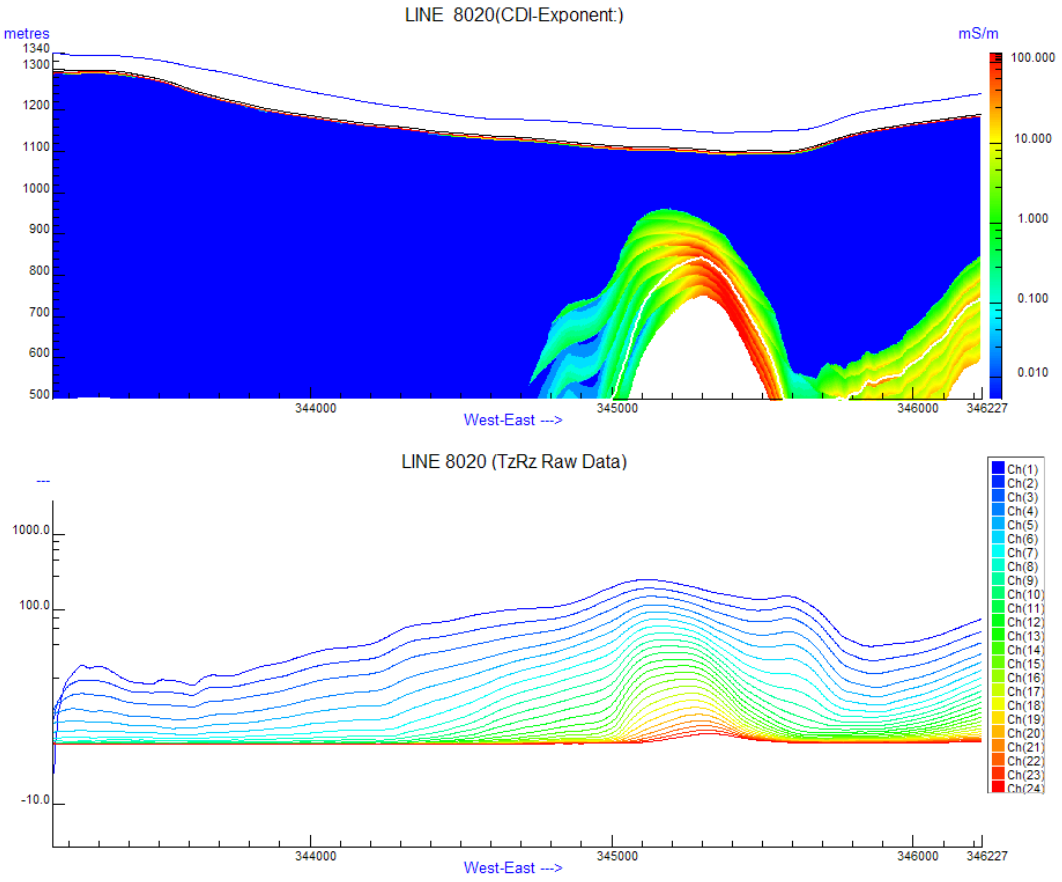

Figure17 shows the CDI section for the line L8010 (Zone A). The section indicates the presence of a good conductive bedrock at a depth less than 200 m. The bedrock is dipping in the east-southern direction. Drilling tests are recommended on this anomaly to detect a possible massive sulfide mineralization VMS type.

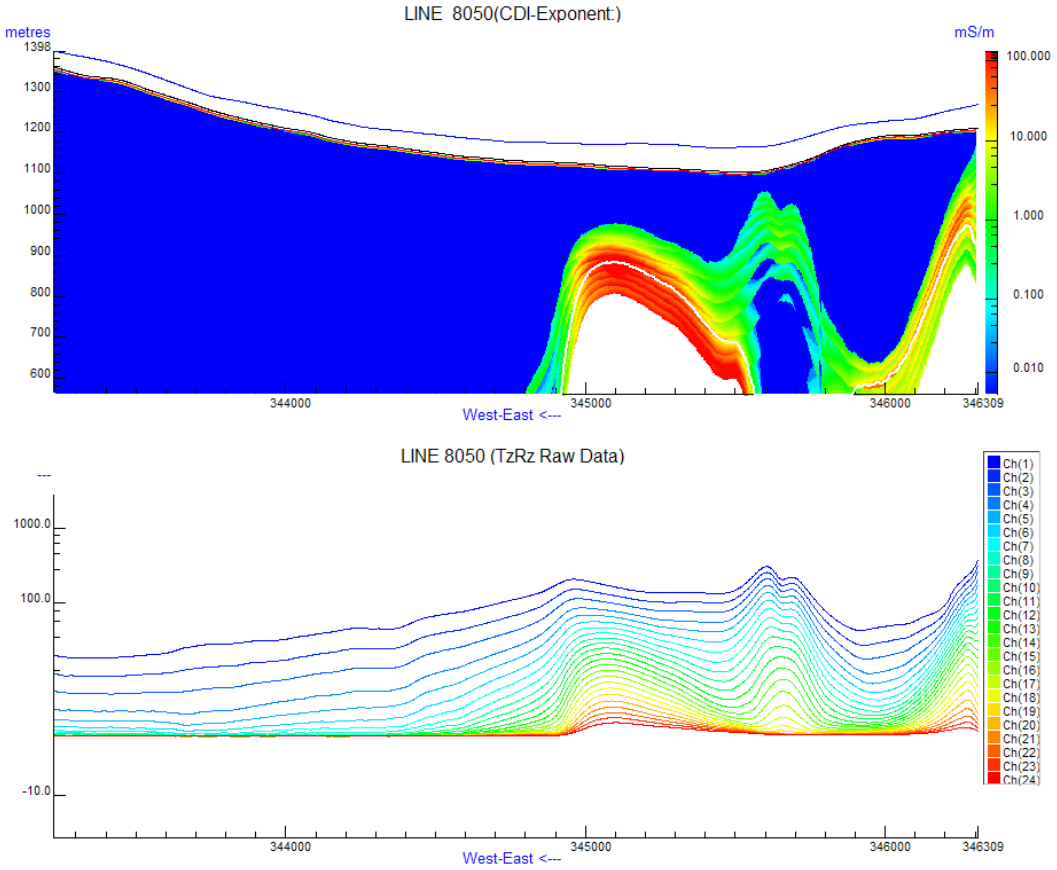

Figure 18 shows the CDI section for the line L8050 (Zone A). The section indicates the presence of a good conductive bedrock at a depth less than 200 m. The bedrock is dipping in the east-southern direction. Drilling tests are recommended on this anomaly to detect a possible massive sulfide mineralization VMS type.

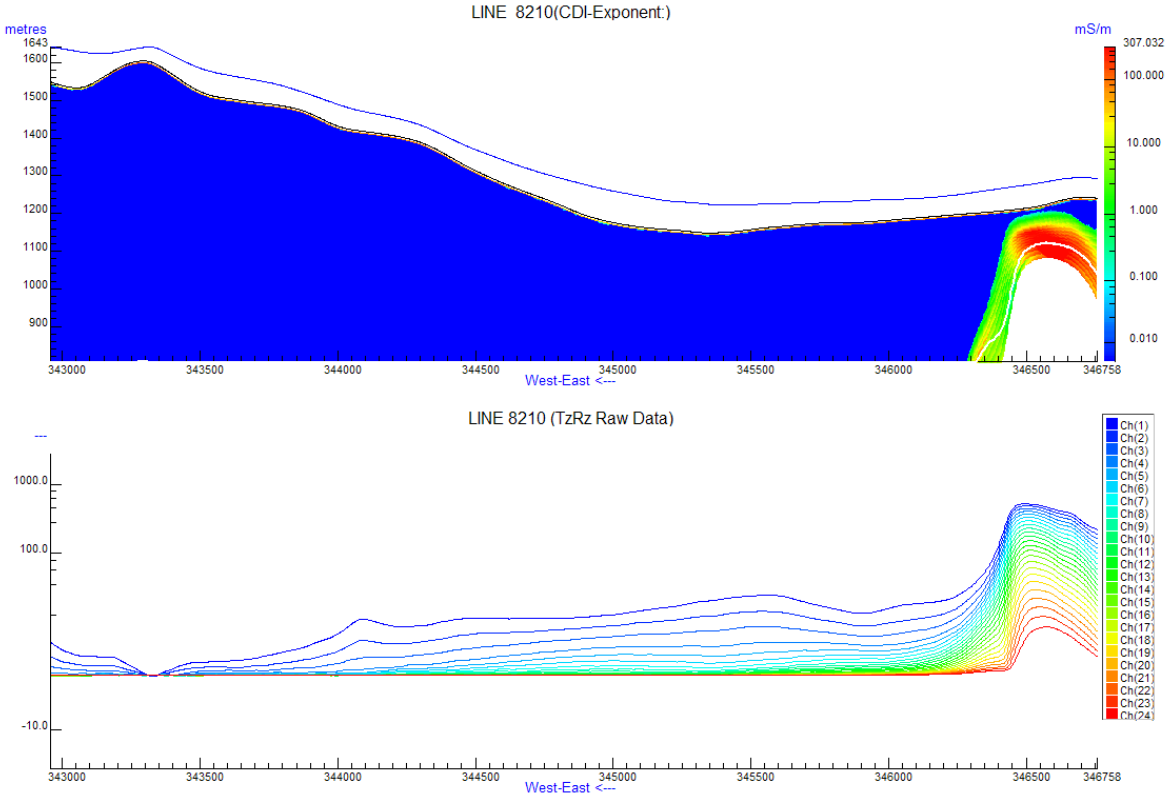

Figure 19 shows the CDI section for the line L8210 (Zone B). The section highlights the existence at the end of the profile of a shallow dipping good conductor (depth <100m). Drilling tests are recommended on this anomaly to detect a possible massive sulfide mineralization VMS type.

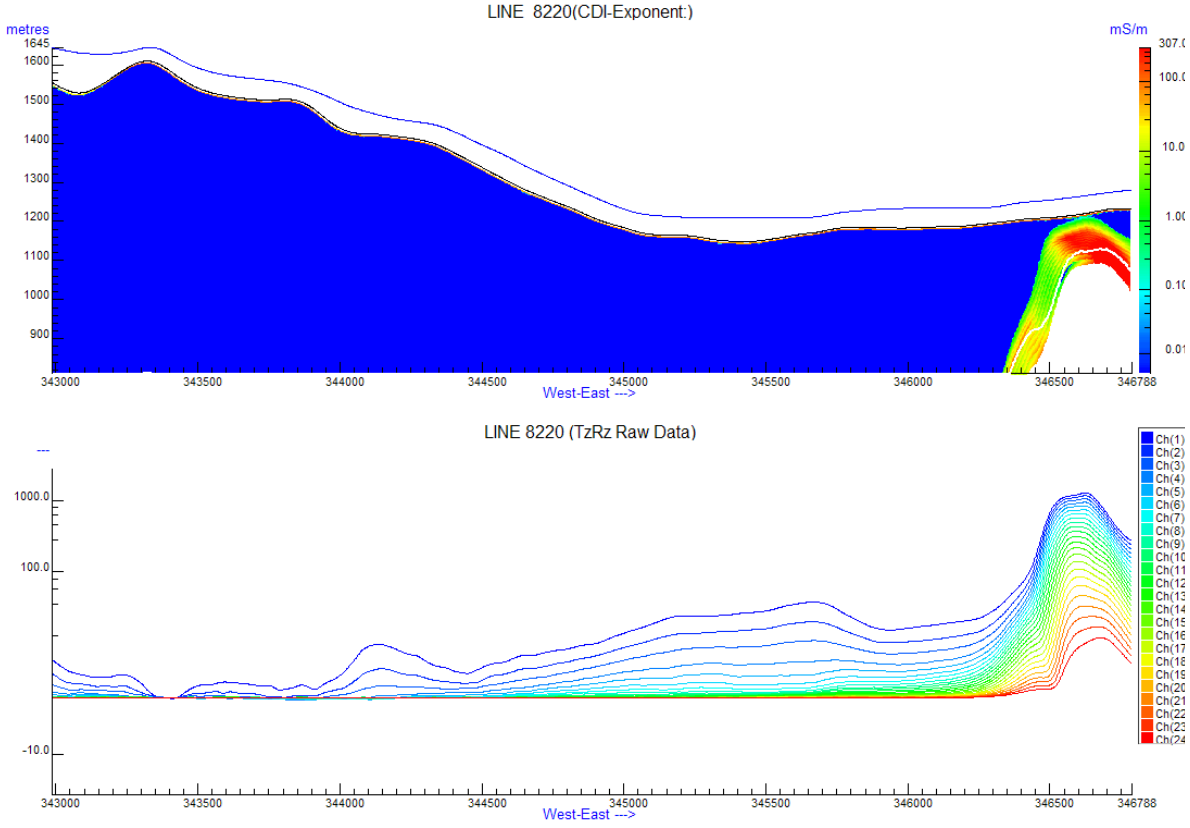

Figure 20 shows the CDI section for the line 8220 (Zone B). The section highlights the existence at the end of the profile of a shallow dipping good conductor (depth <100m). Drilling tests are recommended on this anomaly to detect a possible massive sulfide mineralization VMS type.

6. CONCLUSIONS AND RECOMMANDATIONS

The analysis of the magnetic map of the CABIN LAKE property revealed that this area is characterized by a high magnetic activity. A strong anomaly with amplitude exceeding 7000 nT with a possible mafic/ultramafic nature was observed in the SW corner of the area. Several magnetic lineaments trending in the NW direction were identified. Their origin is probably associated with a dike/faulting system. The Euler deconvolution inversion method has shown that most of the detected magnetic sources are situated at depth less than100m. Deeper sources (>200m) are located in the eastern part of the area. The magnetic interpretation using different reduced maps suggests the presence of two cross cutting faulting systems trending in the NW and NE directions.
The VTEM survey reveals the existence of 2 anomalous zones of interest. Both zones are in very good correlation with the magnetic field, indicating the metallic nature of the detected conductive bedrocks. The picked anomaly maps and the CDI sections performed for 4 lines clearly show the existence of good conductors dipping shallowly in the eastern direction and located at relatively shallow depths (<200 m) for the first conductor and (<100m) for the second one). The analyzed anomalies can represent a good target associated with VMS mineralization.
The recommendation is to conduct some drilling tests on both anomalous zones (A, B) to determine a possible massive sulfide mineralization.

Respectfully submitted,

Dr. Nasreddine Bournas
Geotech Ltd.
December, 2007

7. REFERENCES

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3. A.B. REID, J.M. ALLSOP, H. GRANSER, A.J. MILLETT AND I.W. SOMERTON, 1990, Magnetic interpretation in three dimensions using Euler deconvolution, , G*eophysics, 55, 80-91.*

4. Yukon Geological Survey, www.geology.gov.yk.ca

APPENDIX A

VTEM ANOMALY MODELING

I. THIN PLATE

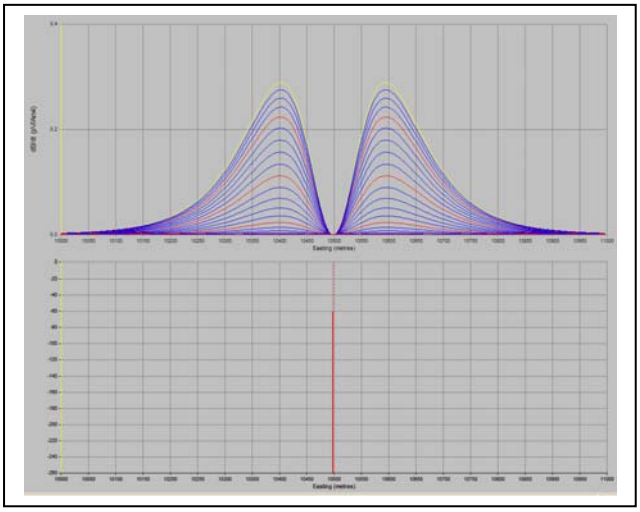

Figure A-1: dB/dt response of a shallow vertical thin plate. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

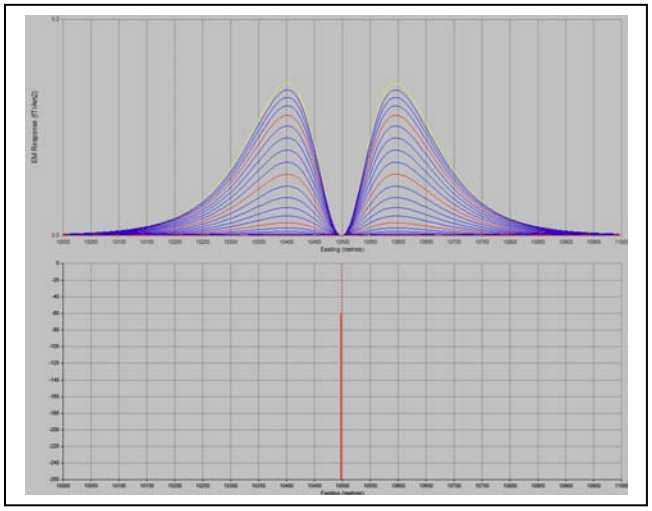

Figure A-2: B-field response of a shallow vertical thin plate. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment.

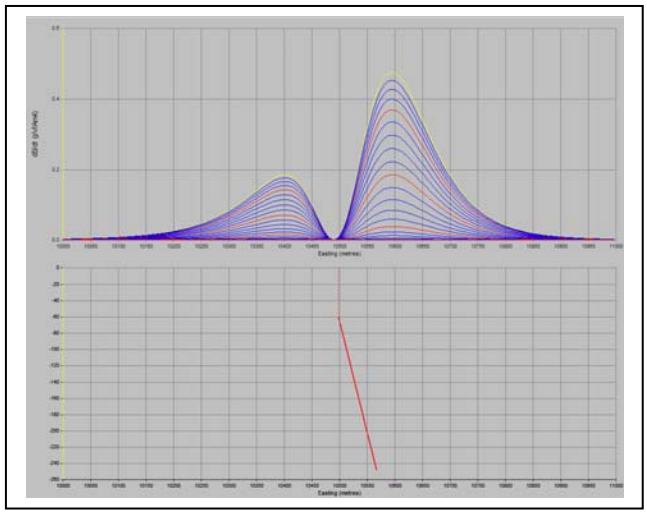

Figure A-3: dB/dt response of a shallow skewed thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

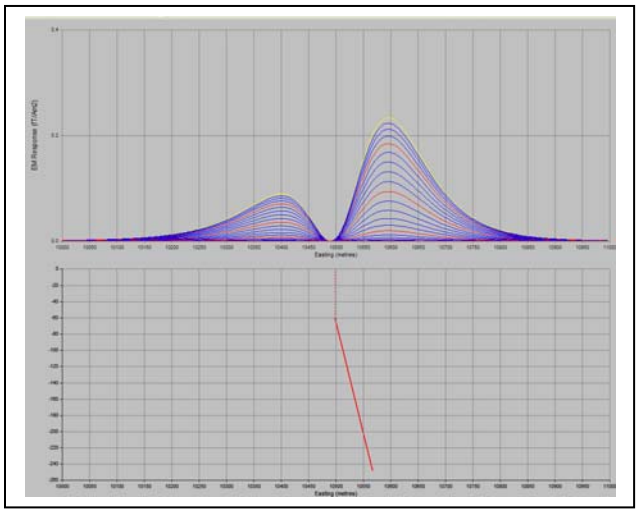

Figure A-4: B-field response of a shallow skewed thin plate. Depth=100 m, CT=20 S.The EM response is normalized by the dipole moment.

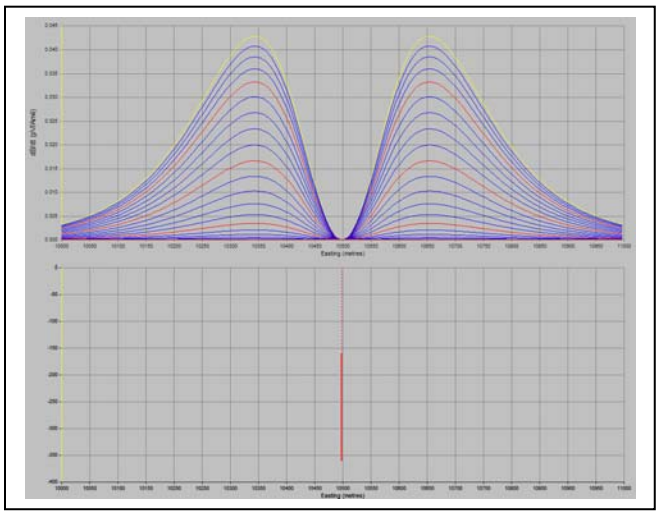

Figure A-5: dB/dt response of a deep vertical thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

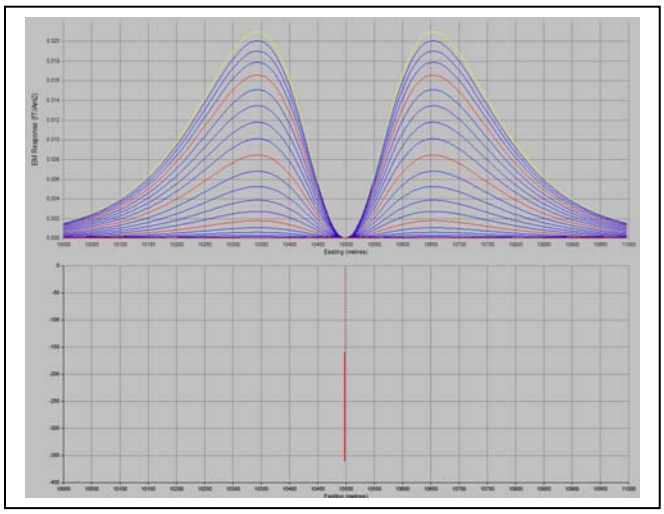

Figure A-6: B-Field response of a deep vertical thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment.

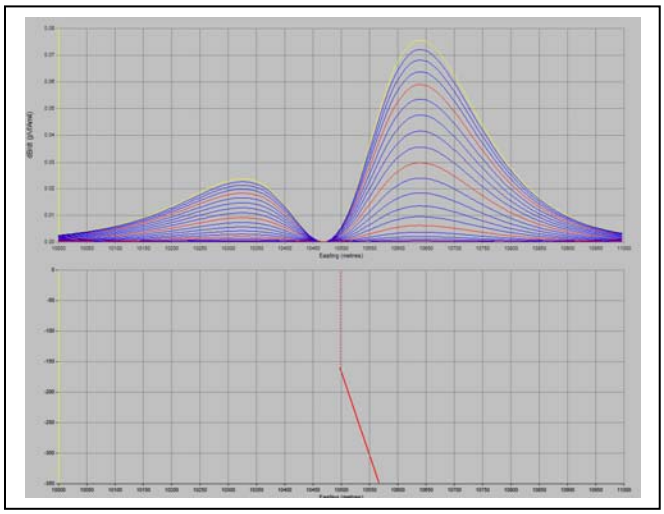

Figure A-7: dB/dt response of a deep skewed thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

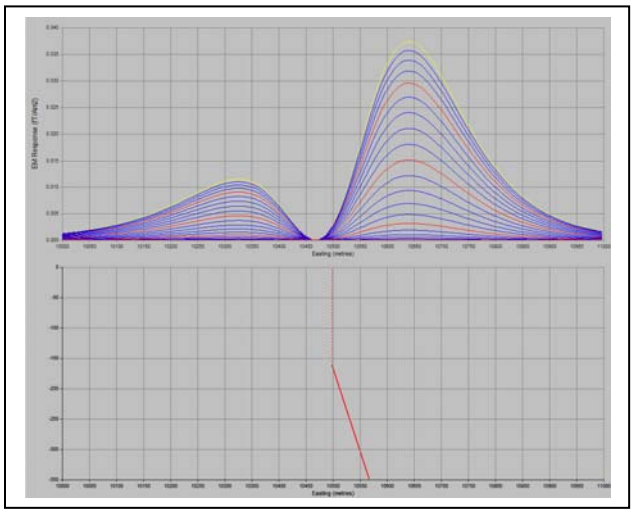

Figure A-8: B-field response of a deep skewed thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment.

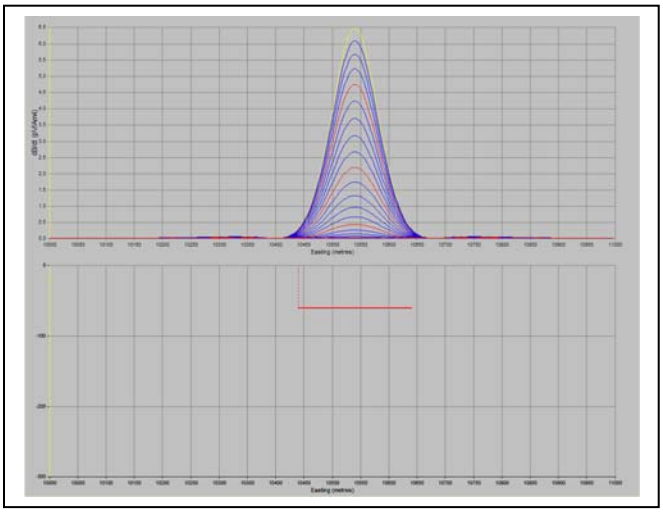

Figure A-9: dB/dt response of a shallow horizontal thin plate. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

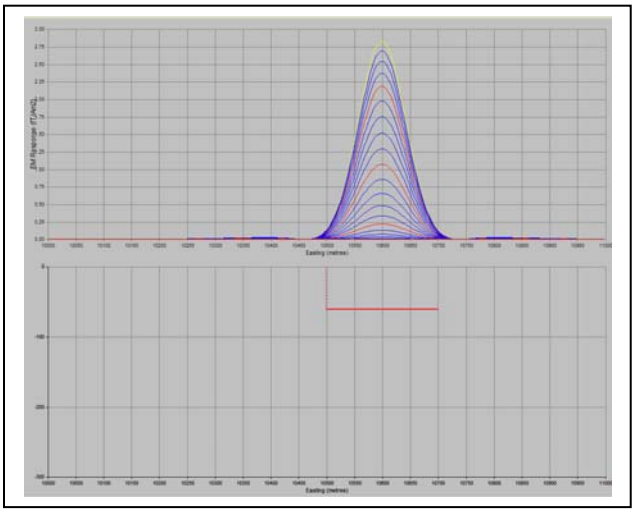

Figure A-10: B-Field response of a shallow horizontal thin plate. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment.

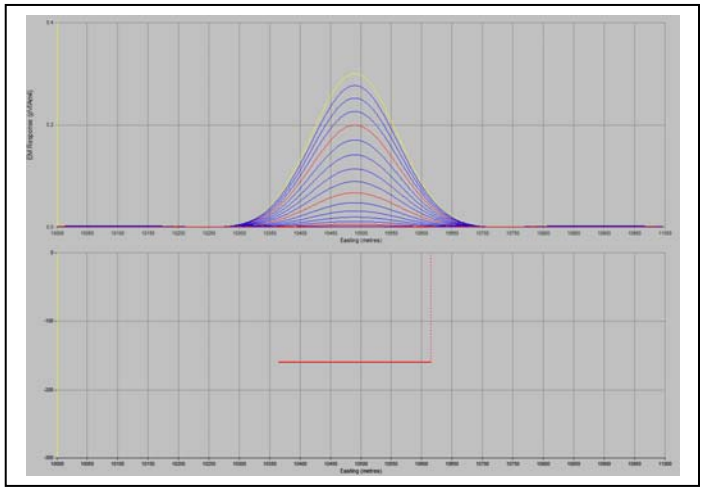

Figure A-11: dB/dt response of a deep horizontal thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

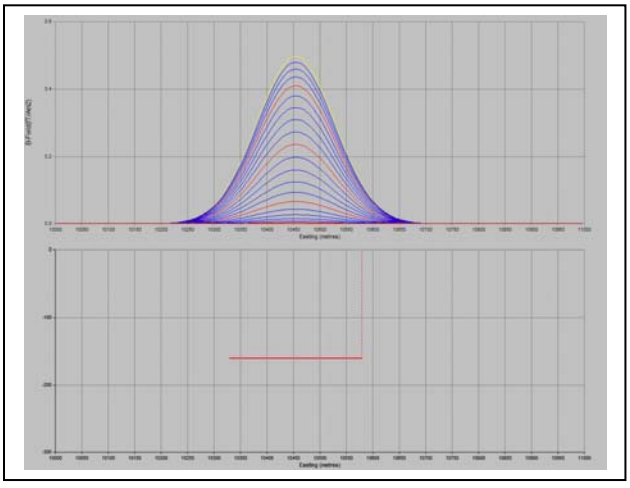

Figure A-12: B-Field response of a deep horizontal thin plate. Depth=200 m, CT=20 S. The EM response is normalized by the dipole moment.

II. THICK PLATE

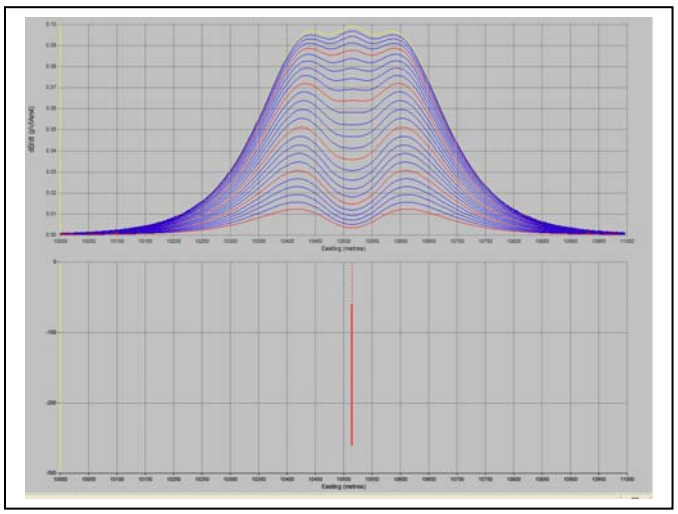

Figure A-13: dB/dt response of a shallow vertical thick plate. Depth=100 m, C=12 S/m, thickness=20 m. The EM response is normalized by the dipole moment and the Rx area.

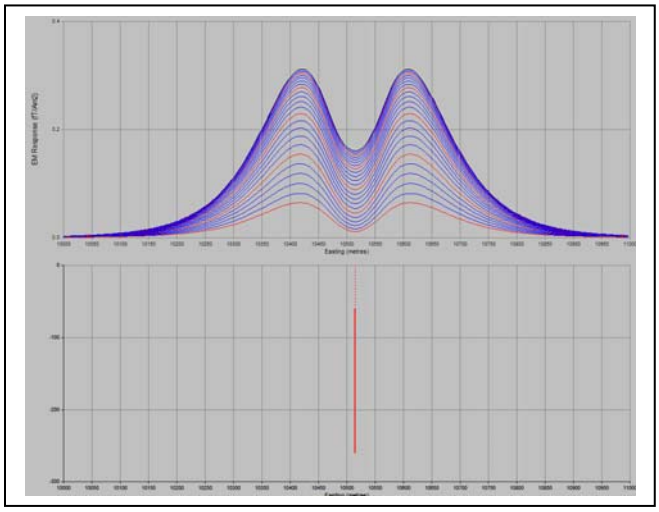

Figure A-14: B-Field response of a shallow vertical thick plate. Depth=100 m, C=12 S/m, thickness= 20 m. The EM response is normalized by the dipole moment.

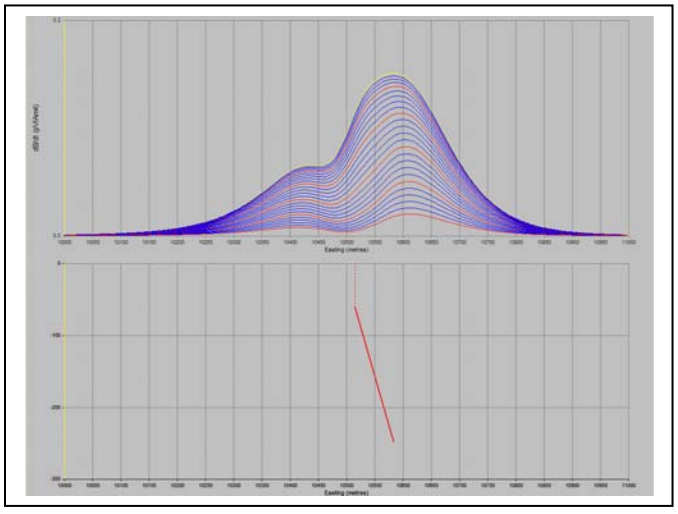

Figure A-15: dB/dt response of a shallow skewed thick plate. Depth=100 m, C=12 S/m, thickness=20 m. The EM response is normalized by the dipole moment and the Rx area.

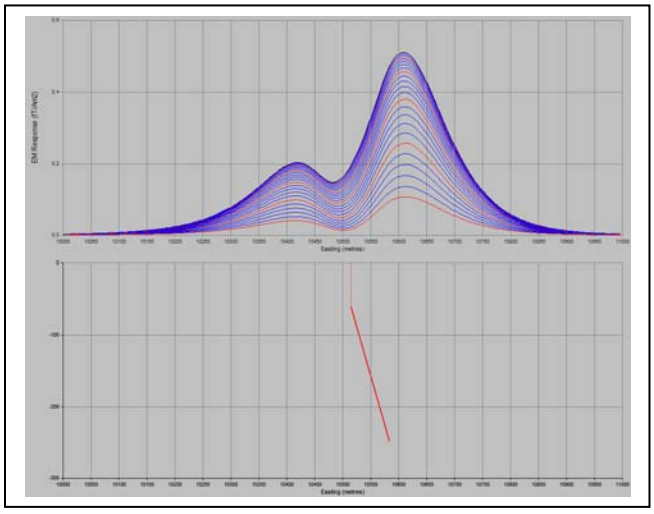

Figure A-16: B-Field response of a shallow skewed thick plate. Depth=100 m, C=12 S/m, thickness=20 m. The EM response is normalized by the dipole moment.

III. MULTIPLE THIN PLATES

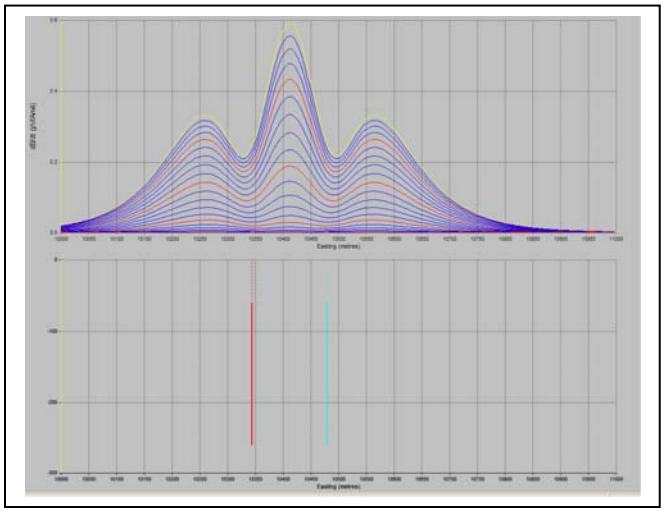

Figure A-17: dB/dt response of two vertical thin plates. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment and the Rx area.

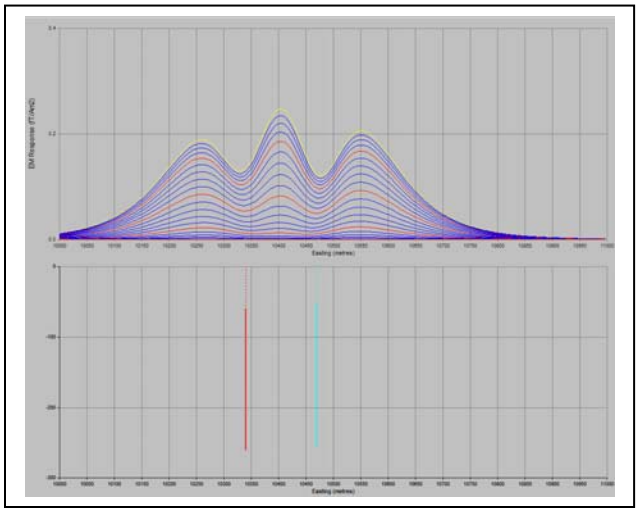

Figure A-18: B-Field response of two vertical thin plates. Depth=100 m, CT=20 S. The EM response is normalized by the dipole moment.

GEOTECH LTD.

Survey Specifications:

Dates Flown: September 18-September 29, 2007
Survey Base: Teslin, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N74°E/N254°W
Nominal Tie Line Spacing: 1000 metres
Nominal Tie Line Directions: N162°E/N342°W
Nominal helicopter terrain clearance 85 metres
EM Loop is 40 metres under helicopter
Magnetic sensor is 15 metres under helicopter

Instruments:

Geotech Time Domain Electromagnetic System (VTEM) with concentric Rx/Tx geometry
Transmitter Loop Diameter 26 m, Base Frequency 30 Hz
Dipole Moment 424,400 NIA
Transmitter Wave Form: Trapezoid, Pulse Width 7.22 ms
Geometrics Optically-pumped,
High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Anomaly Symbols

- Conductance < 5.0 siemens
- 5.0 < Conductance < 10.0
- 10.0 < Conductance < 15.0
- 15.0 < Conductance < 20.0
- 20.0 < Conductance

Anomaly ID — Conductance (S)
Depth (m) — Tau (ms)
Dip (°)

1.6903
0.2309
0.1983
0.1761
0.1566
0.1432
0.1314
0.1209
0.1112
0.1022
0.0937
0.0857
0.0765
0.0691
0.0620
0.0549
0.0481
0.0414
0.0347
0.0280
0.0200
0.0133
0.0067
-0.0001
-0.0069
-0.0140
-0.0211
-0.0285
-0.0377
-0.0457
-0.0542
-0.0632
-0.0729
-0.0834
-0.0952
-0.1085
-0.1281
-0.1503
-0.1829
-0.0044

B-Field Response
fT/(A*m^2)

Legend:

Roads
Lakes, Rivers
Swamps
Topographic contours

Scale 1:10000
100 0 100 200 300 400 500
(meters)
NAD83 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System

EM picked anomalies & late Time B-Field Channel (3.911 ms)

Flown and processed by Geotech Ltd.
30 Industrial Parkway South
Aurora, Ontario, Canada
www.geotechairborne.com

November 2007

Project 7067

GEOTECH LTD.

Survey Specifications:

Dates Flown: September 18-September 29, 2007
Survey Base: Teslin, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
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Transmitter Wave Form: Trapezoid, Pulse Width 7.22 ms
Geometrics Optically-pumped,
High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Anomaly Symbols

Conductance < 5.0 siemens
5.0 < Conductance < 10.0
10.0 < Conductance < 15.0
15.0 < Conductance < 20.0
20.0 < Conductance

Anomaly ID — Conductance (S)
Depth (m) — Tau (ms)
Dip (°)

71.550
1.229
0.792
0.613
0.495
0.404
0.325
0.255
0.191
0.134
0.082
0.030
-0.018
-0.057
-0.094
-0.132
-0.167
-0.200
-0.230
-0.258
-0.285
-0.309
-0.334
-0.361
-0.390
-0.420
-0.451
-0.488
-0.531
-0.581
-0.633
-0.689
-0.751
-0.832
-0.933
-1.058
-1.239
-1.664
-3.042
-23.002

Vertical Gradient
nT/m

Legend:

Roads
Lakes, Rivers
Swamps
Topographic contours

Scale 1:10000
100 0 100 200 300 400 500
(meters)
NAD83 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System
Vertical gradient of TMI

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30 Industrial Parkway South
Aurora, Ontario, Canada
www.geotechairborne.com

November 2007

Project 7067

GEOTECH LTD.

Survey Specifications:

Dates Flown: September 18-September 29, 2007
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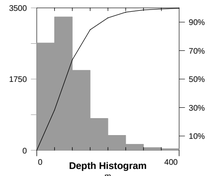
Transmitter Wave Form: Trapezoid, Pulse Width 7.22 ms
Geometrics Optically-pumped,
High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Euler Solutions

Depth (m)

> 300	
200 - 300	
100 - 200	
50 - 100	
< 50	



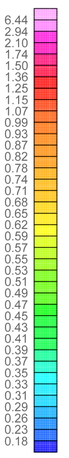
Anomaly Symbols

Conductance < 5.0 siemens
5.0 < Conductance < 10.0
10.0 < Conductance < 15.0
15.0 < Conductance < 20.0
20.0 < Conductance

Anomaly ID
Conductance (S)
Depth (m)
Tau (ms)
Dip (°)

Geological boundary
Fault
Interpreted Fault
EM Anomaly Contour

8 Granodiorite: medium-grained with lesser quartz monzonite
7 Diorite: fine-grained undeformed
6 Diorite: coarse-grained sheared and chloritized
4 Quartz-sericite schist felsic metavolcanics
3 Siliceous schist, sulphide-bearing probable metasediment
2 Greenstone: metavolcanics and metasediments
1 Quartz-muscovite schist 'Quartzite' and psammite



Scale 1:10000
100 0 100 200 300 400 500
(meters)
NAD83 / UTM zone 9N

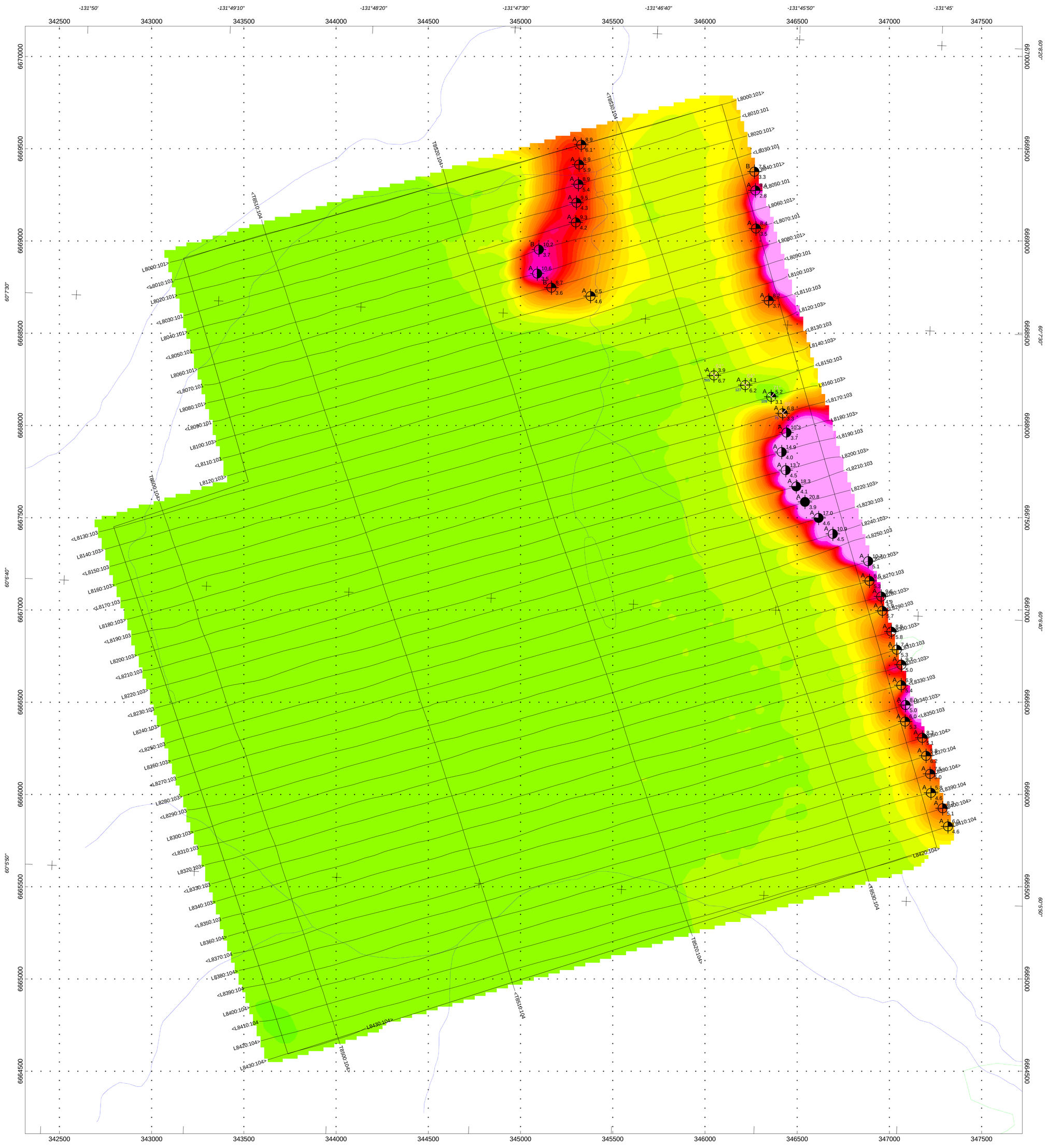
Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System
INTERPRETATION MAP

Flown and processed by Geotech Ltd.
30 Industrial Parkway South
Aurora, Ontario, Canada
www.geotechairborne.com

November 2007

Project 7067



GEOTECH LTD.

Survey Specifications:

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Survey Base: Teslin, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
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High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Anomaly Symbols

Conductance < 5.0 siemens
5.0 < Conductance < 10.0
10.0 < Conductance < 15.0
15.0 < Conductance < 20.0
20.0 < Conductance

Anomaly ID — Conductance (S)
Depth (m) — Tau (ms)
Dip (°)

0.7209
0.0830
0.0711
0.0630
0.0558
0.0509
0.0466
0.0428
0.0392
0.0359
0.0328
0.0299
0.0265
0.0238
0.0212
0.0186
0.0161
0.0137
0.0112
0.0088
0.0058
0.0034
0.0010
-0.0015
-0.0040
-0.0066
-0.0092
-0.0119
-0.0153
-0.0182
-0.0213
-0.0246
-0.0282
-0.0320
-0.0363
-0.0412
-0.0484
-0.0565
-0.0684
-0.0037

dB/dt Response
pT/(A*m^4)

Legend:

Roads
Lakes, Rivers
Swamps
Topographic contours

Scale 1:10000
100 0 100 200 300 400 500
(meters)
NAD83 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System

EM picked anomalies & late Time dB/dt Channel (3.911 ms)

Flown and processed by Geotech Ltd.
30 Industrial Parkway South
Aurora, Ontario, Canada
www.geotechairborne.com

November 2007

Project 7067

REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM) GEOPHYSICAL SURVEY

Cabin Lake property

Yukon, Canada

for

Tarsis Capital Corp.

By

Geotech Ltd.

30 Industrial Parkway South

Aurora, Ontario, Canada

Tel: 1.905.841.5004

Fax: 1.905.841.0611

www.geotechairborne.com

Email: info@geotechairborne.com

Survey flown in September 2007

Project 7067

October, 2007

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REPORT ON A HELICOPTER-BORNE
VERSATILE TIME DOMAIN ELECTROMAGNETIC SURVEY

Cabin Lake property, Yukon, Canada

Executive Summary

This report describes the Helicopter-borne geophysical survey carried out on behalf of Tarsis Capital Corp. by Geotech Ltd. over one block in Yukon, Canada.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEM) system and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 167.4 line-km were flown.

In-field data processing involved quality control and compilation of data collected during the acquisition stage, using the in-field processing centre established in Teslin, Yukon. Preliminary and final data processing, including generation of final digital data products were done at the office of Geotech Ltd. in Aurora, Ontario.

The processed survey results are presented as electromagnetic stacked profiles and total magnetic intensity grid.

Digital data includes all electromagnetic and magnetic products plus positional, altitude and raw data.

1. INTRODUCTION

1.1 General Considerations

These services are the result of the Agreement made between Geotech Ltd. and Archer Cathro & Associates (1981) Limited, to perform a helicopter-borne geophysical survey over one block located in Yukon, Canada.

167.37 line-km of geophysical data were acquired during the survey.

Bill Wengzynowski acted on behalf of Tarsis Capital Corp. during data acquisition and data processing phases of this project.

The survey block is as shown in Appendix A.

The crew was based in Teslin, Yukon for the acquisition phase of the survey, as shown in Section 2 of this report.

The helicopter was based at the Teslin, airport for the duration of the survey. Survey flying was completed on September 29th, 2007. Preliminary data processing was carried out daily during the acquisition phase of the project. Final data presentation and data archiving was completed in the Aurora office of Geotech Ltd. in October, 2007.

1.2. Survey and System Specifications

The survey block was flown at nominal traverse line spacing of 100 metres, at N74°E / N254°W direction. Tie lines were flown perpendicular to traverse lines.

Where possible, the helicopter maintained a mean terrain clearance of 85 metres, which translated into an average height of 50 metres above ground for the bird-mounted VTEM system and 70 metres for the magnetic sensor.

The survey was flown using an Astar B3 helicopter, registration C-GTFX. The helicopter was operated by TRK helicopters. Details of the survey specifications may be found in Section 2 of this report.

1.3. Data Processing and Final Products

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Ltd.

A database, grids and maps of final products were presented to Tarsis Capital Corp.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set.

1.4. Topographic Relief and cultural features

The survey block is located in Yukon, approximately 50 kilometers east of the town of Teslin.

Topographically, the survey area exhibits a challenging mountainous terrain, with elevation range from 950 metres to 1680 metres above sea level.

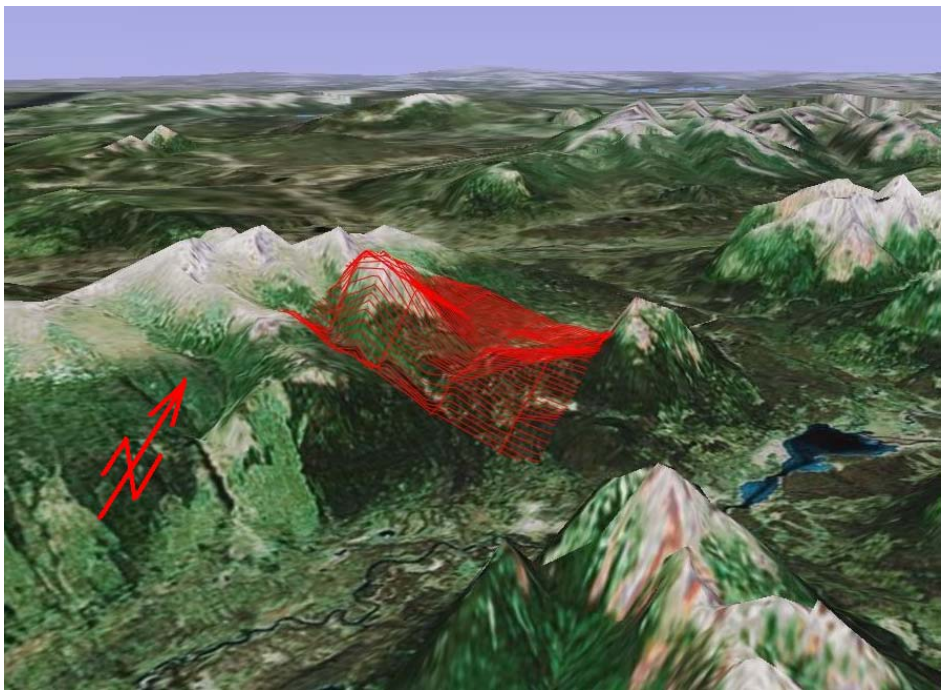

Figure 1 – Projection of flight path on topography.

2. DATA ACQUISITION

2.1. Survey Area

The survey block (see location map, Appendix A) and general flight specifications are as follows:

Survey block	Line spacing (m)	Area (Km2)	Line-km	Flight direction	Line number
CABIN LAKE	100	15.0	151.6	N74°E / N254°W	L8000 – L8430
	1000		15.7	N162°E /N342°W	T8500 - T8530

Table 1 - Survey block

Survey block boundaries co-ordinates are provided in Appendix B.

2.2. Survey Operations

Survey operations were based in Teslin, Yukon for the acquisition phase of the survey.

The following table shows the timing of the flying.

Date	Flight #	Flown KM	Block	Crew Location	Comments
18-Sept-07	101	32	CABIN LAKE	Teslin, Yukon	Production (shared with other blocks)
29-Sept-07	103,104	135.37	CABIN LAKE	Teslin, Yukon	Block finished

Table 2 - Survey schedule

2.3. Flight Specifications

The nominal EM sensor terrain clearance was 50 m (EM bird height above ground, i.e. helicopter is maintained 85 m above ground) due to rough terrain and helicopter crew safety. Nominal survey speed was 80 km/hour. The data recording rates of the data acquisition was 0.1 second for electromagnetics and magnetometer, 0.2 second for altimeter and GPS. This translates to a geophysical reading about every 2 metres along flight track. Navigation was assisted by a GPS receiver and data acquisition system, which reports GPS co-ordinates as latitude/longitude and directs the pilot over a pre-programmed survey grid.

The operator was responsible for monitoring of the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic feature.

On return of the aircrew to the base the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer.

2.4. Aircraft and Equipment

2.4.1. Survey Aircraft

An Astar B3 helicopter, registration C-GTFX - owned and operated by TRK Helicopters Ltd. - was used for the survey. Installation of the geophysical and ancillary equipment was carried out by Geotech Ltd.

2.4.2. Electromagnetic System

The electromagnetic system was a Geotech Time Domain EM (VTEM) system. The configuration is as indicated in Figure 2 below.

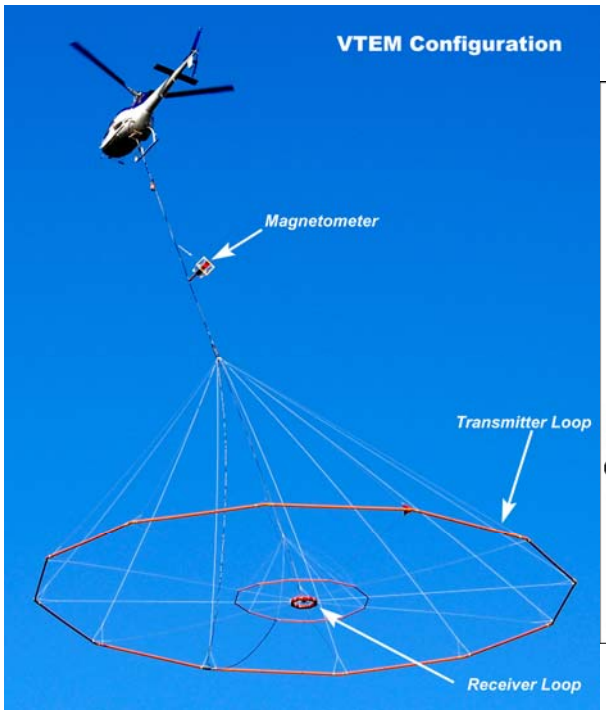

Figure 2 – VTEM configuration

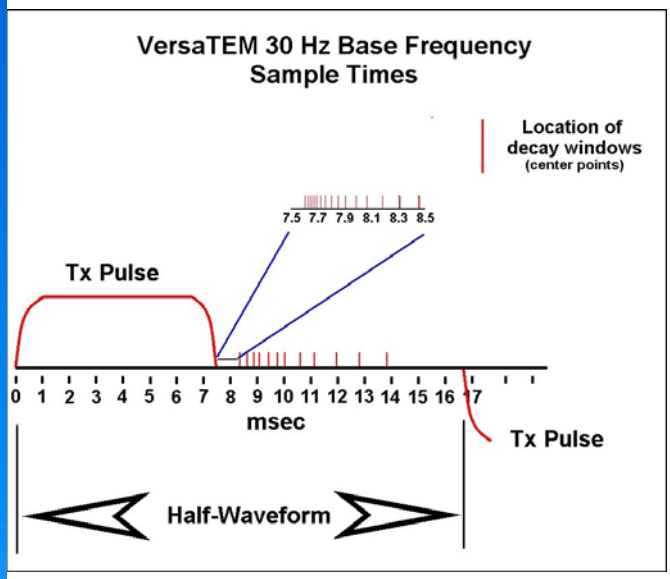

Figure 3 – Sample times

Receiver and transmitter coils are concentric and Z-direction oriented.
The receiver decay recording scheme is shown diagrammatically in Figure 3.

Twenty-four measurement gates were used in the range from 120 µs to 6578 µs, as shown in Table 3.

VTEM Decay Sampling scheme				
Array Index	(Microseconds)			
	Time Gate	Start	End	Width
10	120	110	131	21
11	141	131	154	24
12	167	154	183	29
13	198	183	216	34
14	234	216	258	42
15	281	258	310	53
16	339	310	373	63
17	406	373	445	73
18	484	445	529	84
19	573	529	628	99
20	682	628	750	123
21	818	750	896	146
22	974	896	1063	167
23	1151	1063	1261	198
24	1370	1261	1506	245
25	1641	1506	1797	292
26	1953	1797	2130	333
27	2307	2130	2526	396
28	2745	2526	3016	490
29	3286	3016	3599	583
30	3911	3599	4266	667
31	4620	4266	5058	792
32	5495	5058	6037	979
33	6578	6037	7203	1167

Table 3 - VTEM decay sampling scheme

Transmitter coil diameter was 26 metres, the number of turns was 4.
Transmitter pulse repetition rate was 30 Hz.
Peak current was 192 Amp.
Pulse width was 7.2 ms
Duty cycle was 43%.
Peak dipole moment was 407,600 NIA.

Receiver coil diameter was 1.2 metre, the number of turns was 100.
Receiver effective area was 113.1 m^2
Wave form – trapezoid.
Recording sampling rate was 10 samples per second.

The EM bird was towed 42 m below the helicopter.

2.4.3. Airborne magnetometer

The magnetic sensor utilized for the survey was a Geometrics optically pumped cesium vapour magnetic field sensor, mounted in a separated bird, towed 15 metres below the helicopter, as shown on figure 1. The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds. The magnetometer sends the measured magnetic field strength as nanoTeslas to the data acquisition system via the RS-232 port.

2.4.4. Ancillary Systems

2.4.4.1. Radar Altimeter

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit.

2.4.4.2. GPS Navigation System

The navigation system used was a Geotech PC based navigation system utilizing a NovAtel's WAAS enable OEM4-G2-3151W GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and an NovAtel GPS antenna mounted on the helicopter tail.
The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system.

2.4.4.3. Digital Acquisition System

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. The data type and sampling interval as provided in table 4.

DATA TYPE	SAMPLING
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
RadarAltimeter	0.2 sec

Table 4 - Sampling Rates

2.4.5. Base Station

A combine magnetometer/GPS base station was utilized on this project. A Geometrics Cesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer.

The base station magnetometer sensor was installed 100 metres from the airport in Teslin, away from electric transmission lines and moving ferrous objects such as motor vehicles.

The magnetometer base station's data was backed-up to the data processing computer at the end of each survey day.

3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project:

Field

Project Manager:	Harish Kumar
Crew chief:	Paul Taylor
Operator:	Keith Lavelley

The survey pilot and the mechanic engineer were employed directly by the helicopter operator – TRK Helicopters Ltd.

Pilot:	Roy Stevenson
	Randy Marks
Engineer:	Darren Shipman
	Chris Ward

Office

Data Processing / Reporting:	George Lev
Data Technician:	Maria Jagodkin

Data acquisition and processing phases were carried out under the supervision of Andrei Bagrianski, Surveys Manager. Overall management of the project was undertaken by Edward Morrison, President, Geotech Ltd.

4. DATA PROCESSING AND PRESENTATION

4.1. Flight Path

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the UTM coordinate system in Oasis Montaj.

The flight path was drawn using linear interpolation between x, y positions from the navigation system. Positions are updated every second and expressed as UTM eastings (x) and UTM northings (y).

4.2. Electromagnetic Data

A three stage digital filtering process was used to reject major sferic events and to reduce system noise. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. The filter used was a 16 point non-linear filter.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 20 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear - logarithmic scale for both B-field and dB/dt response.

Generalized modeling results of the VTEM system, written by Geophysicist Roger Barlow, are shown in Appendix C.

Graphical representation of the VTEM output voltage of the receiver coil and the transmitter current is shown in Appendix D.

4.3. Magnetic Data

The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data was edited and merged into the Geosoft GDB database on a daily basis. The aeromagnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations.

A micro-levelling procedure was applied to remove persistent low-amplitude components of flight-line noise remaining in the data. Where Tie lines were available, Tie line levelling was carried out by adjusting intersection points along the traverse lines.

The corrected magnetic data was interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of approximately 0.1 cm at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

Due to a very rugged topography, the helicopter could not maintain a constant terrain clearance. Thus, significant altitude differences occurred in adjacent lines and resulted in variations of the geophysical data. Efforts were made to level the geophysical signal as much as possible, but in several cases levelling would have been meaningless as it would create an artificial signal not relevant to real situation.

5. DELIVERABLES

5.1. Survey Report

The survey report describes the data acquisition, processing, and final presentation of the survey results.

The survey report is provided in two paper copies and digitally in PDF format.

5.2. Maps

Final maps were produced at a scale of 1:10,000.
The coordinate/projection system used was the WGS84, UTM zone 9N. All maps show the flight path trace and topographic data. Latitude and longitude are also noted on maps.

The following maps are presented on paper,

- dB/dt profiles, Time Gates 0.234 – 6.578 ms in linear - logarithmic scale
- B-field profiles, Time Gates 0.234 – 6.578 ms in linear - logarithmic scale
- Total Magnetic intensity contours and colour image

5.3. Digital Data

Two copies of DVDs were prepared.

There are two (2) main directories,

Data contains a database, grids and maps, as described below.

Report contains a copy of the report and appendices in PDF format.

a kmz file containing flightpath of the CABIN LAKE property.
A free version of Google Earth software can be downloaded from,
http://earth.google.com/download-earth.html

- Database in Geosoft GDB format, containing the following channels:

X:	X positional data (metres – WGS84, utm zone 9 north)
Y:	Y positional data (metres – WGS84, utm zone 9 north)
Z:	GPS antenna elevation (metres - ASL)
Radar:	Helicopter terrain clearance from radar altimeter (metres - AGL)
Radarb:	EM Loop terrain clearance (metres – AGL)
DEM:	Digital elevation model (metres)
Gtime1:	GPS time (seconds of the day)
Mag1:	Raw Total Magnetic field data (nT)
Basemag:	Magnetic diurnal variation data (nT)
Mag2:	Total Magnetic field diurnal variation corrected data (nT)
Mag3:	Leveled Total Magnetic field data (nT)
SF[10]:	dB/dt 120 microsecond time channel (pV/A/m^4)
SF[11]:	dB/dt 141 microsecond time channel (pV/A/m^4)
SF[12]:	dB/dt 167 microsecond time channel (pV/A/m^4)
SF[13]:	dB/dt 198 microsecond time channel (pV/A/m^4)
SF[14]:	dB/dt 234 microsecond time channel (pV/A/m^4)
SF[15]:	dB/dt 281 microsecond time channel (pV/A/m^4)
SF[16]:	dB/dt 339 microsecond time channel (pV/A/m^4)
SF[17]:	dB/dt 406 microsecond time channel (pV/A/m^4)
SF[18]:	dB/dt 484 microsecond time channel (pV/A/m^4)
SF[19]:	dB/dt 573 microsecond time channel (pV/A/m^4)
SF[20]:	dB/dt 682 microsecond time channel (pV/A/m^4)
SF[21]:	dB/dt 818 microsecond time channel (pV/A/m^4)
SF[22]:	dB/dt 974 microsecond time channel (pV/A/m^4)
SF[23]:	dB/dt 1151 microsecond time channel (pV/A/m^4)
SF[24]:	dB/dt 1370 microsecond time channel (pV/A/m^4)
SF[25]:	dB/dt 1641 microsecond time channel (pV/A/m^4)
SF[26]:	dB/dt 1953 microsecond time channel (pV/A/m^4)
SF[27]:	dB/dt 2307 microsecond time channel (pV/A/m^4)
SF[28]:	dB/dt 2745 microsecond time channel (pV/A/m^4)
SF[29]:	dB/dt 3286 microsecond time channel (pV/A/m^4)
SF[30]:	dB/dt 3911 microsecond time channel (pV/A/m^4)
SF[31]:	dB/dt 4620 microsecond time channel (pV/A/m^4)
SF[32]:	dB/dt 5495 microsecond time channel (pV/A/m^4)
SF[33]:	dB/dt 6578 microsecond time channel (pV/A/m^4)
BF[10]:	B-field 120 microsecond time channel (pV*ms)/(A*m^4)
BF[11]:	B-field 141 microsecond time channel (pV*ms)/(A*m^4)
BF[12]:	B-field 167 microsecond time channel (pV*ms)/(A*m^4)
BF[13]:	B-field 198 microsecond time channel (pV*ms)/(A*m^4)
BF[14]:	B-field 234 microsecond time channel (pV*ms)/(A*m^4)

BF[15]: B-field 281 microsecond time channel (pV*ms)/(A*m^4)
BF[16]: B-field 339 microsecond time channel (pV*ms)/(A*m^4)
BF[17]: B-field 406 microsecond time channel (pV*ms)/(A*m^4)
BF[18]: B-field 484 microsecond time channel (pV*ms)/(A*m^4)
BF[19]: B-field 573 microsecond time channel (pV*ms)/(A*m^4)
BF[20]: B-field 682 microsecond time channel (pV*ms)/(A*m^4)
BF[21]: B-field 818 microsecond time channel (pV*ms)/(A*m^4)
BF[22]: B-field 974 microsecond time channel (pV*ms)/(A*m^4)
BF[23]: B-field 1151 microsecond time channel (pV*ms)/(A*m^4)
BF[24]: B-field 1370 microsecond time channel (pV*ms)/(A*m^4)
BF[25]: B-field 1641 microsecond time channel (pV*ms)/(A*m^4)
BF[26]: B-field 1953 microsecond time channel (pV*ms)/(A*m^4)
BF[27]: B-field 2307 microsecond time channel (pV*ms)/(A*m^4)
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BF[30]: B-field 3911 microsecond time channel (pV*ms)/(A*m^4)
BF[31]: B-field 4620 microsecond time channel (pV*ms)/(A*m^4)
BF[32]: B-field 5495 microsecond time channel (pV*ms)/(A*m^4)
BF[33]: B-field 6578 microsecond time channel (pV*ms)/(A*m^4)
PLM: Power line monitor

Electromagnetic B-field and dB/dt data is found in array channel format between indexes 10 – 33, as described above.

- Database 7067cabin_wform.gdb in Geosoft GDB format, containing the following channels:

  Time: Sampling rate interval, 10.416 microseconds
  Volt: output voltage of the receiver coil (volt)

- Grids in Geosoft GRD format, as follow,

  CabinLake_magfin: Total magnetic intensity (nT)

  CabinLake_DEM: Digital elevation model (m)

  A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information.
  Grid cell size of 25 metres was used.

- Maps at 1:10,000 scale in Geosoft MAP format, as follow,

  CabinLake_Magfin: Total magnetic intensity contours and colour image

  CabinLake_dBdt: VTEM dB/dt profiles, Time Gates 0.234 – 6.578 ms in linear - logarithmic scale

  CabinLake_EMLP: VTEM B-field profiles, Time Gates 0.234 – 6.578ms

  in linear - logarithmic scale

- A *readme.txt* file describing the content of digital data, as described above.

6. CONCLUSIONS

A helicopter-borne versatile time domain electromagnetic (VTEM) geophysical survey has been completed over the Cabin Lake property, located in Yukon, Canada.

The total area coverage is 15 km^2. Total survey line coverage is 167.4 line kilometres. The principal sensors included a Time Domain EM system and a magnetometer. Results have been presented as stacked profiles and contour colour images at a scale of 1:10,000.

Final data processing at the office of Geotech Ltd. in Aurora, Ontario was carried out under the supervision of Andrei Bagrianski, Surveys Manager.

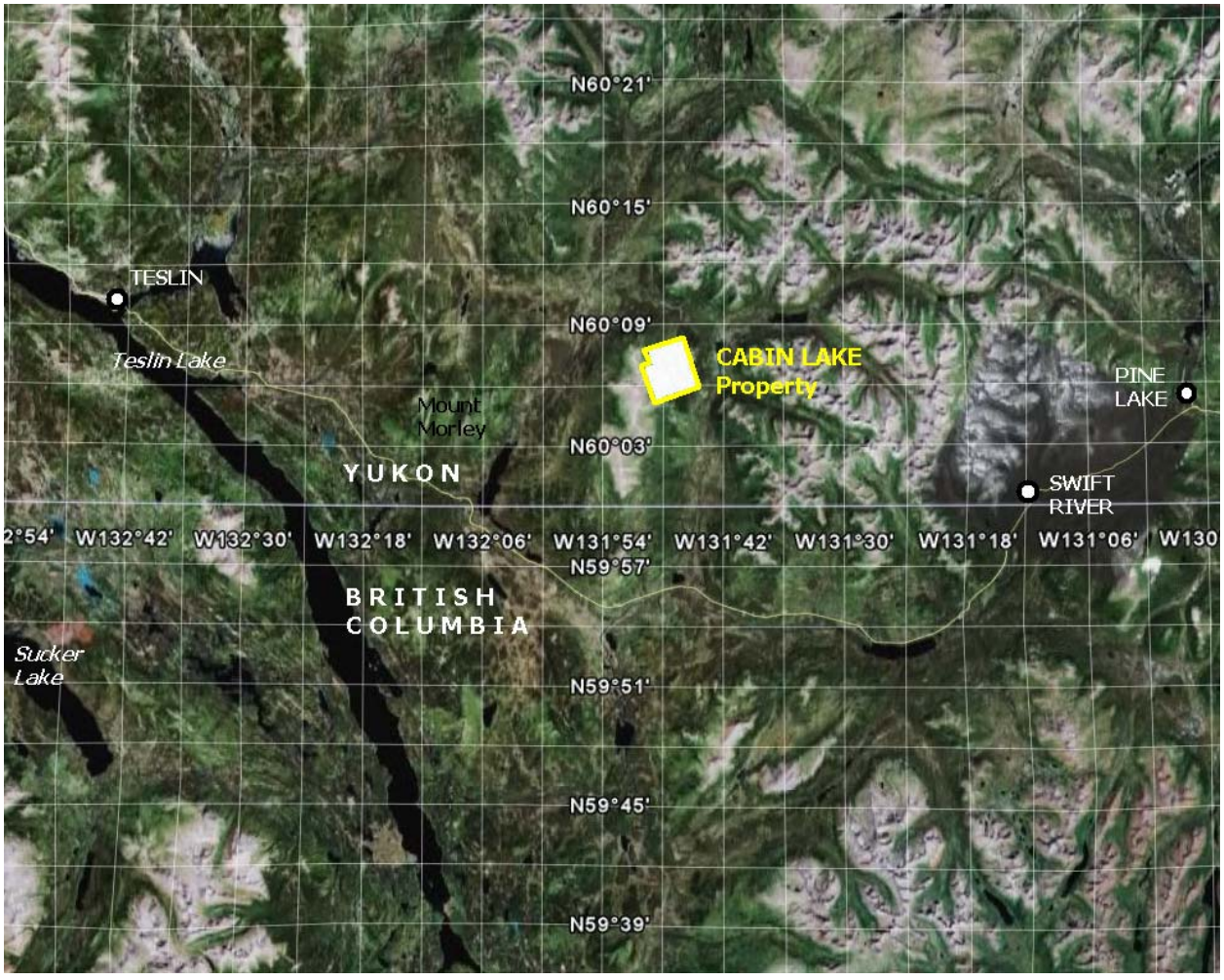
A number of EM anomaly groupings were identified. Ground follow-up of those anomalies should be carried out if favourably supported by other geoscientific data.

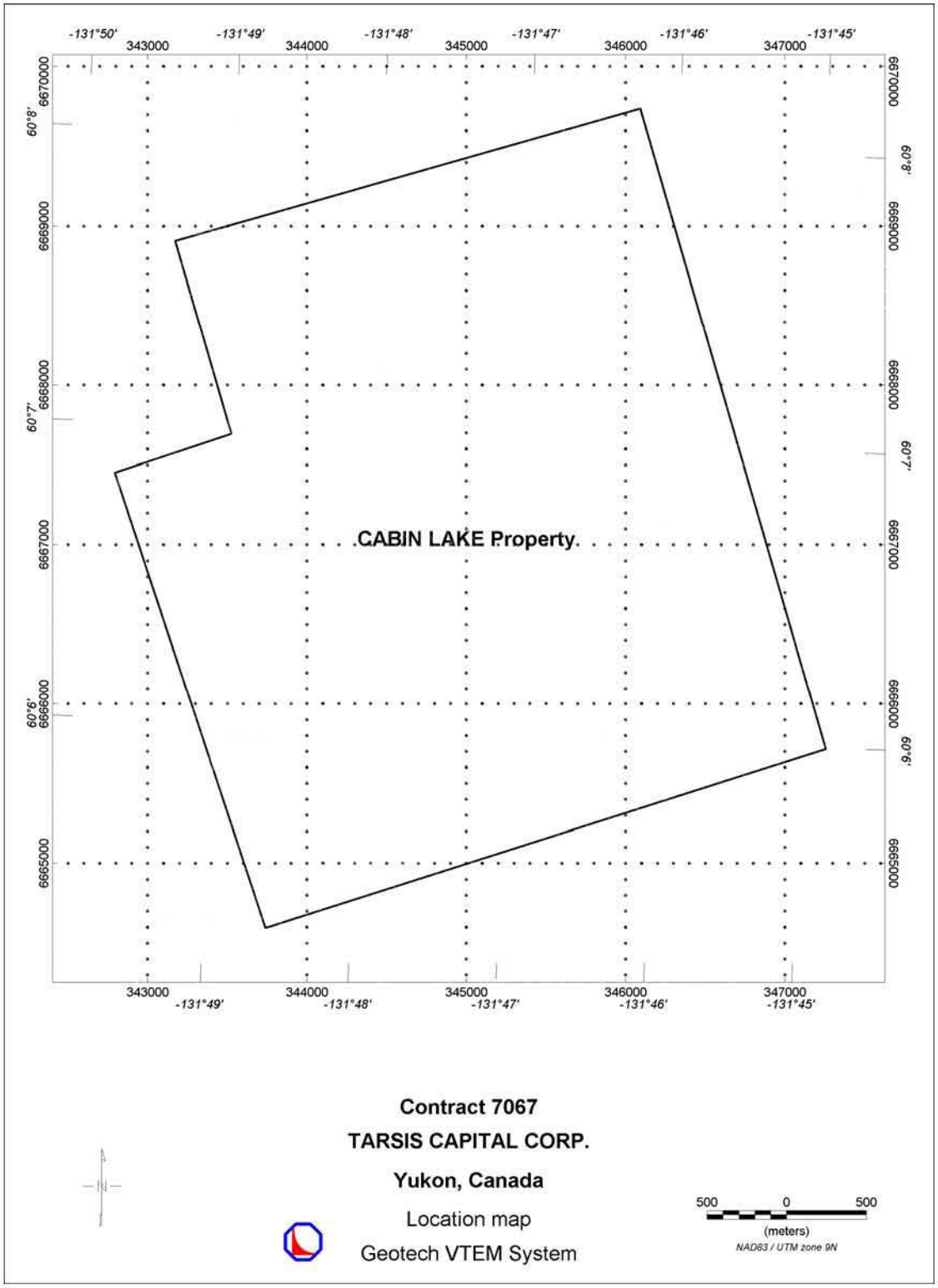
Respectfully submitted,

George Lev
Geotech Ltd.
November, 2007

APPENDIX A

SURVEY BLOCK LOCATION MAP




-131°50'
343000
-131°49'
344000
-131°48'
345000
-131°47'
346000
-131°46'
347000
-131°45'
6670000
60°8'
6669000
6668000
60°7'
6667000
6666000
60°6'
6665000
CABIN LAKE Property
Contract 7067
TARSIS CAPITAL CORP.
Yukon, Canada
Location map
Geotech VTEM System
500
0
500
(meters)
NAD83 / UTM zone 9N

APPENDIX B

SURVEY BLOCK COORDINATES
(WGS 84, UTM zone 9 north)

Cabin Lake property

Cabin Lake	
Easting	Northing
x	y
343173	6668907
346092	6669739
347256	6665715
343739	6664594
342794	6667451
343525	6667695

APPENDIX C

MODELING VTEM DATA

MODELING VTEM DATA

Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a 26.1 meters diameter transmitter loop that produces a dipole moment up to 625,000 NIA at peak current. The wave form is a bi-polar, modified square wave with a turn-on and turn-off at each end. With a base frequency of 30 Hz, the duration of each pulse is approximately 7.5 milliseconds followed by an off time where no primary field is present.

During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Measurements are made during the off-time, when only the secondary field (representing the conductive targets encountered in the ground) is present.

Late in 2006, Geotech Ltd. incorporated a B-Field measurement in the VTEM system. The B-Field measurements have the advantage of containing more spectral energy at low spectral frequencies than the dB/dt measurements; hence, greater amplitudes and accuracies when encountering targets with higher conductances (> 500 Siemens). The converse is true at higher spectral frequencies where dB/dt measurements are best applied. The B-field is most widely used in nickel exploration where a small percentage of targets are extremely conductive (> 2500 Siemens) and less resolvable or invisible (below the noise threshold) using dB/dt measurements.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

Variation of Plate Depth

Geometries represented by plates of different strike length, depth extent, dip, plunge and depth below surface can be varied with characteristic parameters like conductance of the target, conductance of the host and conductivity/thickness and thickness of the overburden layer.

Diagrammatic models for a vertical plate are shown in figures A and G at two different depths, all other parameters remaining constant. With this transmitter-receiver geometry, the classic **M** shaped response is generated. Figure A shows a plate where the top is near surface. Here, amplitudes of the duel peaks are higher and symmetrical with the zero centre positioned directly above the plate. Most important is the separation distance of the peaks. This distance is small when the plate is near surface and widens with a linear relationship as the plate (depth to top) increases. Figure G shows a much deeper plate where the separation distance of the peaks is much wider and the amplitudes of the channels have decreased.

Variation of Plate Dip

As the plate dips and departs from the vertical position, the peaks become asymmetrical. Figure B shows a near surface plate dipping 80º. Note that the direction of dip is toward the high shoulder of the response and the top of the plate remains under the centre minimum.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90º to about 30º. The method is not sensitive enough where dips are less than about 30º. Figure E shows a plate dipping 45º and, at this angle, the minimum shoulder starts to vanish. In Figure D, a flat lying plate is shown, relatively near surface. Note that the twin peak anomaly has been replaced by a symmetrical shape with large, bell shaped, channel amplitudes which decay relative to the conductance of the plate.

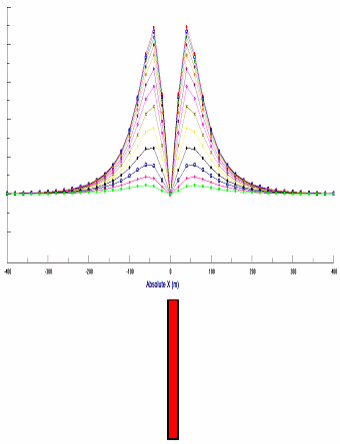
Figure H shows a special case where two plates are positioned to represent a synclinal structure. Note that the main characteristic to remember is the centre amplitudes are higher (approximately double) compared to the high shoulder of a single plate. This model is very representative of tightly folded formations where the conductors where once flat lying.

Variation of Prism Depth

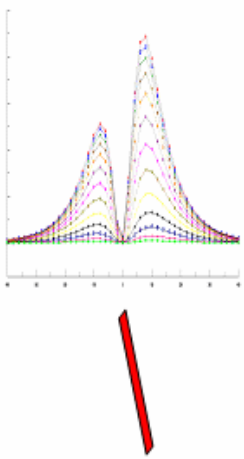
Finally, with prism models, another algorithm is required to represent current on the plate. A plate model is considered to be infinitely thin with respect to thickness and incapable of representing the current in the thickness dimension. A prism model is constructed to deal with this problem, thereby, representing the thickness of the body more accurately.

Figures C, F and I show the same prism at increasing depths. Aside from an expected decrease in amplitude, the side lobes of the anomaly show a widening with deeper prism depths of the bell shaped early time channels.

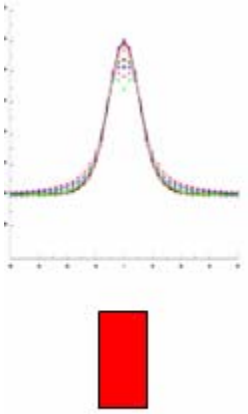
A



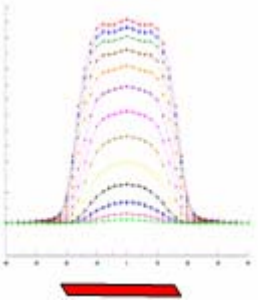
B



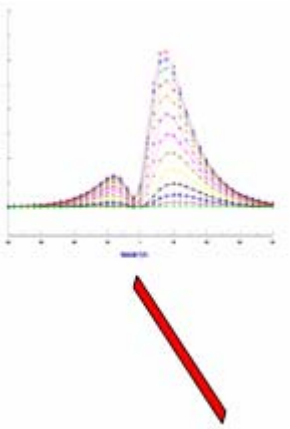
C



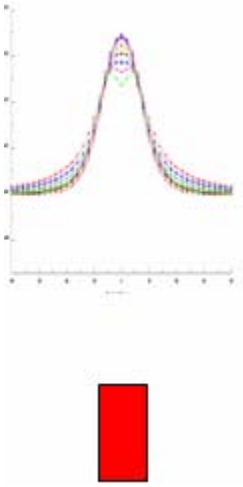
D



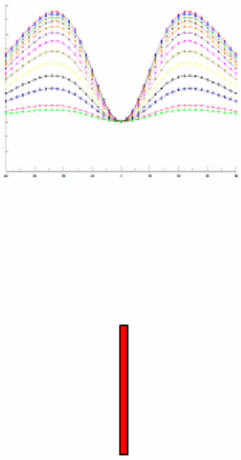
E



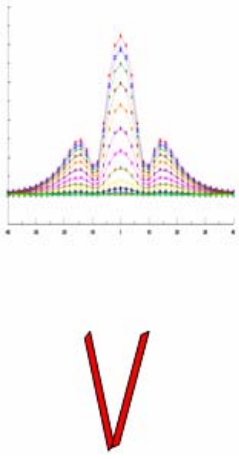
F



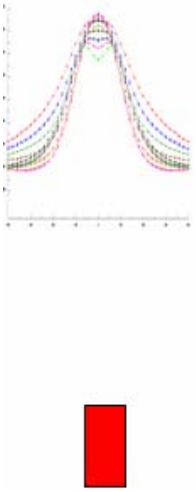
G



H



I



General Modeling Concepts

A set of models has been produced for the Geotech VTEM® system with explanation notes (see models A to I above). The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

When producing these models, a few key points were observed and are worth noting as follows:

- For near vertical and vertical plate models, the top of the conductor is always located directly under the centre low point between the two shoulders in the classic **M** shaped response.

- As the plate is positioned at an increasing depth to the top, the shoulders of the **M** shaped response, have a greater separation distance.

- When faced with choosing between a flat lying plate and a prism model to represent the target (broad response) some ambiguity is present and caution should be exercised.

- With the concentric loop system and Z-component receiver coil, virtually all types of conductors and most geometries are most always well coupled and a response is generated (see model H). Only concentric loop systems can map this type of target.

The modelling program used to generate the responses was prepared by PetRos Eikon Inc. and is one of a very few that can model a wide range of targets in a conductive half space.

General Interpretation Principals

Magnetics

The total magnetic intensity responses reflect major changes in the magnetite and/or other magnetic minerals content in the underlying rocks and unconsolidated overburden. Precambrian rocks have often been subjected to intense heat and pressure during structural and metamorphic events in their history. Original signatures imprinted on these rocks at the time of formation have, it most cases, been modified, resulting in low magnetic susceptibility values.

The amplitude of magnetic anomalies, relative to the regional background, helps to assist in identifying specific magnetic and non-magnetic rock units (and conductors) related to, for example, mafic flows, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.

In addition to simple amplitude variations, the shape of the response expressed in the wave length and the symmetry or asymmetry, is used to estimate the depth, geometric parameters and magnetization of the anomaly. For example, long narrow magnetic linears usually reflect mafic flows or intrusive dyke features. Large areas with complex magnetic patterns may be produced by intrusive bodies with significant magnetization, flat lying magnetic sills or sedimentary iron formation. Local isolated circular magnetic patterns often represent plug-like igneous intrusives such as kimberlites, pegmatites or volcanic vent areas.

Because the total magnetic intensity (TMI) responses may represent two or more closely spaced bodies within a response, the second derivative of the TMI response may be helpful for distinguishing these complexities. The second derivative is most useful in mapping near surface linears and other subtle magnetic structures that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical derivative results. These higher amplitude zones reflect rock units having strong magnetic susceptibility signatures. For this reason, both the TMI and the second derivative maps should be evaluated together.

Theoretically, the second derivative, zero contour or colour delineates the contacts or limits of large sources with near vertical dip and shallow depth to the top. The vertical gradient map also aids in determining contact zones between rocks with a susceptibility contrast, however, different, more complicated rules of thumb apply.

Concentric Loop EM Systems

Concentric systems with horizontal transmitter and receiver antennae produce much larger responses for flat lying conductors as contrasted with vertical plate-like conductors. The amount of current developing on the flat upper surface of targets having a substantial area in this dimension, are the direct result of the effective coupling angle, between the primary magnetic field and the flat surface area. One therefore, must not compare the amplitude/conductance of responses generated from flat lying bodies with those derived from near vertical plates; their ratios will be quite different for similar conductances.

Determining dip angle is very accurate for plates with dip angles greater than 30º. For angles less than 30º to 0º, the sensitivity is low and dips can not be distinguished accurately in the presence of normal survey noise levels.

A plate like body that has near vertical position will display a two shoulder, classic **M** shaped response with a distinctive separation distance between peaks for a given depth to top.

It is sometimes difficult to distinguish between responses associated with the edge effects of flat lying conductors and poorly conductive bedrock conductors. Poorly conductive bedrock conductors having low dip angles will also exhibit responses that may be interpreted as surfacial overburden conductors. In some situations, the conductive response has line to line continuity and some magnetic correlation providing possible evidence that the response is related to an actual bedrock source.

The EM interpretation process used, places considerable emphasis on determining an understanding of the general conductive patterns in the area of interest. Each area has different characteristics and these can effectively guide the detailed process used.

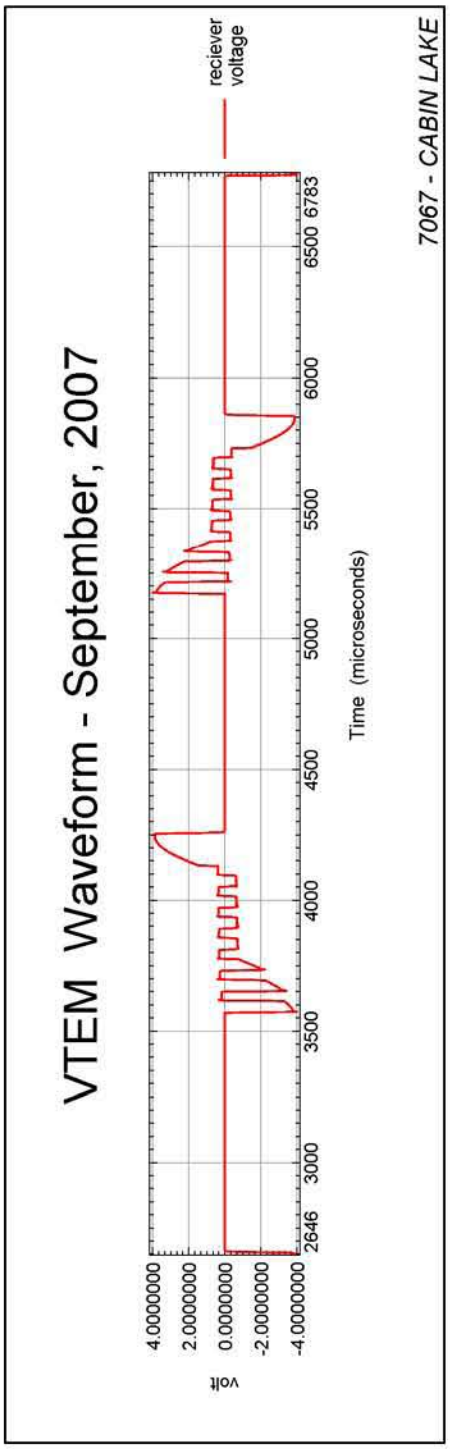
The first stage is to determine which time gates are most descriptive of the overall conductance patterns. Maps of the time gates that represent the range of responses can be very informative.

Next, stacking the relevant channels as profiles on the flight path together with the second vertical derivative of the TMI is very helpful in revealing correlations between the EM and Magnetics.

Next, key lines can be profiled as single lines to emphasize specific characteristics of a conductor or the relationship of one conductor to another on the same line. Resistivity Depth sections can be constructed to show the relationship of conductive overburden or conductive bedrock with the conductive anomaly.

APPENDIX D

VTEM WAVEFORM



GEOTECH LTD.

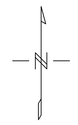
Survey Specifications:

Dates Flown: September 18-September 29, 2007
Survey Base: Teslin, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N74°E/N254°W
Nominal Tie Line Spacing: 1000 metres
Nominal Tie Line Directions: N162°E/N342°W
Nominal helicopter terrain clearance 85 metres
EM Loop is 35 metres under helicopter
Magnetic sensor is 15 metres under helicopter

Instruments:

Geotech Time Domain Electromagnetic System (VTEM)
with concentric Rx/Tx geometry
Transmitter Loop Diameter 26 m, Base Frequency 30 Hz
Dipole Moment 407,600 NIA
Transmitter Wave Form: Trapezoid, Pulse Width 7.22 ms
Geometrics Optically-pumped,
High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Profiles scale 1 mm = 0.05 pV/A/m^4
(Linear between +/-0.2 pV/A/m^4
logarithmic above 0.2 pV/A/m^4)



- 0.234 ms
- 0.281 ms
- 0.339 ms
- 0.406 ms
- 0.484 ms
- 0.573 ms
- 0.682 ms
- 0.818 ms
- 0.974 ms
- 1.151 ms
- 1.370 ms
- 1.641 ms
- 1.953 ms
- 2.307 ms
- 2.745 ms
- 3.286 ms
- 3.911 ms
- 4.620 ms
- 5.495 ms
- 6.578 ms
- 7.828 ms

Legend:

- Roads
- Lakes, Rivers
- Swamps
- Topographic contours

Scale 1:10000

100 0 100 200 300 400 500
(meters)
WGS84 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System
dB/dt Profiles
Time Gates 0.234 - 7.828 ms

Flown and processed by Geotech Ltd.
30 Industrial Parkway South,
Aurora, Ontario, Canada L4G 3W2
www.geotechairborne.com

November 2007

Project 7067

GEOTECH LTD.

Survey Specifications:

Dates Flown: September 18-September 29, 2007
Survey Base: Teslin, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N74°E/N254°W
Nominal Tie Line Spacing: 1000 metres
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Transmitter Wave Form: Trapezoid, Pulse Width 7.22 ms
Geometrics Optically-pumped,
High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Magnetic field
(nT)

58332
58186
58146
58118
58090
58062
58038
58018
58000
57984
57968
57954
57940
57928
57914
57902
57890
57880
57872
57866
57858
57852
57846
57840
57836
57832
57828
57822
57816
57810
57802
57792
57782
57770
57756
57740
57728
57688

Contour intervals:

2 nT
10 nT
50 nT

Legend:

Roads
Lakes, Rivers

Swamps
Topographic contours

Scale 1:10000

100 0 100 200 300 400 500
(meters)
WGS84 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System
Total Magnetic Field Map

Flown and processed by Geotech Ltd.
30 Industrial Parkway South
Aurora, Ontario, Canada
www.geotechairborne.com

November 2007

Project 7067

GEOTECH LTD.

Survey Specifications:

Dates Flown: September 18-September 29, 2007
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High Sensitivity Cesium Magnetometer
Magnetometer Resolution 0.02 nT at 10 samples/sec

Profiles scale 1 mm = 0.05 (pV*ms)/A/m^4
(Linear between +/-0.2 (pV*ms)/A/m^4
logarithmic above 0.2 (pV*ms)/A/m^4)

- 0.234 ms (B-field)
- 0.281 ms (B-field)
- 0.339 ms (B-field)
- 0.406 ms (B-field)
- 0.484 ms (B-field)
- 0.573 ms (B-field)
- 0.682 ms (B-field)
- 0.818 ms (B-field)
- 0.974 ms (B-field)
- 1.151 ms (B-field)
- 1.370 ms (B-field)
- 1.641 ms (B-field)
- 1.953 ms (B-field)
- 2.307 ms (B-field)
- 2.745 ms (B-field)
- 3.286 ms (B-field)
- 3.911 ms (B-field)
- 4.620 ms (B-field)
- 5.495 ms (B-field)
- 6.578 ms (B-field)
- 7.828 ms (B-field)

Legend:

- Roads
- Lakes, Rivers
- Swamps
- Topographic contours

Scale 1:10000

100 0 100 200 300 400 500
(meters)
WGS84 / UTM zone 9N

Tarsis Capital Corp.
Block CABIN LAKE
Yukon, Canada

Geotech VTEM System
B-Field Profiles
Time Gates 0.234 - 7.828 ms

Flown and processed by Geotech Ltd.
30 Industrial Parkway South,
Aurora, Ontario, Canada L4G 3W2
www.geotechairborne.com

November 2007

Project 7067

095020

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
1016 – 510 West Hastings Street
Vancouver, B.C. V6B 1L8
Telephone: 604-688-2568 Fax: 604-688-2578

AFFIDAVIT

I, Joan Mariacher, of Vancouver, B.C. make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on Mor 1-106 mineral claims on Claim Sheet 105C/1 is accurate.

Joan Mariacher

Sworn before me at Vancouver, B.C.

this 11th day of March, 2008.

Statement of Expenditures
Mor 1-106 Mineral Claims
March 10, 2008

Contract VTEM Survey	
Geotech Ltd.	$72,280.46

Geotech Ltd.

30 Industrial Parkways South, Aurora ON L4G 3W2

BILL TO:
Archer, Cathro & Associates (1981) Limite 1016-510 West Hastings Street Vancouver, BC Canada V6B 1L8

RECEIVED
MAR 11 2008
MINING RECORDER
WATSON LAKE, YT
Government of Yukon

DATE:	INVOICE:
30-May-2007	991034

TERMS:	Project
Due on receipt	7067

Description		Amount
Helicopter-borne time domain electromagnetic geophysical survey with VTEM system Interm Billing - 50% of the estimated total charge plus GST is payable on execution of the agreement:		289,040.00
Contract (Yukon and northern BC.)		
Estimated 2444 line km @ $70.00	$171,080.00	
12 blocks @ $2,000.00 per block	$24,000.00	
Estimated 25 days @ $6,000.00 per day	$150,000.00	
Helicopter time charges for estimated* 120 hours $1,800.00 per hour	$216,000.00	
Helicopter mob/demob	$10,000.00	
Crew and equipment mob/demob	$7,000.00	
Minimum survey charge	$578,080.00	
50% of $578,080.00	$289,040.00	
Business Number: 110859469		

17342.40

✓	Ale - 22537.48	✓ Mor - ~~4596.88~~ 16920.65	
✓	Bernard - 1749.86	✓ Nick - 5553.83	
✓	GK - 10408.48	✓ Ryo - 24351.16	
✓	Hogan - 27185.04	✓ Ran - 18003.28	
✓	Hy - 48609.17	✓ Jet - 26928.33	
✓	Jake - 8481.44	✓ Uno - 13469.05	

30638 2.40

Subtotal	Can$289,040.00
GST	Can$17,342.40
TOTAL	Can$306,382.40

Please Remit By Bank Transfer To:
TD CANADA TRUST
16655 YONGE ST., UNIT 1
NEWMARKET, ONTARIO L3X 1V6
TRANSIT # 3102
ACCOUNT #5217874

Tel: 905-841-5004 Fax: 905-841-0611 email: info@geotechairborne.com

Geotech Ltd.

30 Industrial Parkway South, Aurora ON L4G 3W2

RECEIVED
MAR 11 2008
MINING RECORDER
WATSON LAKE, YT
Government of Yukon

BILL TO:
Archer, Cathro & Associates (1981) Limite 1016-510 West Hastings Street Vancouver, BC Canada V6B 1L8

DATE:	INVOICE:
12/2007	991107

TERMS:	Project
Due on receipt	7067

Description		Amount
Helicopter-borne time domain electromagnetic geophysical survey with VTEM system Interm Billing - 90% of the estimated total charge plus any additional charges, including but not limited to additional line km, standby days, plus GST is payable completion of flying.		665,651.00
Contract (Yukon and northern BC.)		
Estimated 5690 line km @ $70.00	$398,300.00	
29 blocks @ $2,000.00 per block	$58,000.00	
65 days @ $6,000.00 per day	$390,000.00	
Helicopter time charges for 227.3 hours @ $1,800.00 per hour	$409,140.00	
Helicopter mob/demob	$10,000.00	
Crew and equipment mob/demob	$7,000.00	
Minimum survey charge	$1,272,440.00	
90% of $1,278,440.00	$1,145,196.00	
Less Previoius Billing		
Invoice 991034	($289,040.00)	
Invoice 991078	($190,505.00)	
Total Billable Amount	$665,651.00	

Business Number: 110859469

Please Remit By Bank Transfer To:
TD CANADA TRUST
16655 YONGE ST., UNIT 1
NEWMARKET, ONTARIO L3X 1V6
TRANSIT # 3102
ACCOUNT #5217874

Subtotal	Can$665,651.00
GST	Can$39,939.06
TOTAL	Can$705,590.06

Tel: 905-841-5004 Fax: 905-841-0611 email: info@geotechairborne.com

Geotech Ltd.

245 Industrial Parkway North, Aurora ON L4G 4C4

Bill To
Archer, Cathro & Associates (1981) Limite 1016-510 West Hastings Street Vancouver, BC Canada V6B 1L8

Date	Invoice #
1/16/2008	991203

Terms	Project
Due on receipt	7067

Description		Amount
Helicopter-borne time domain electromagnetic geophysical survey with VTEM system Final Billing - Theremaining balance of total survey charge is payable right before delivery of the products		214,859.80
Contract (Yukon and northern BC.)		
Basic survey charge 5657 line km @ $70.00	$395,990.00	
28 blocks @ $2,000.00 per block	$56,000.00	
65 days @ $6,000.00 per day	$390,000.00	
Helicopter time charges for 227.3 hours @ $1,800.00 per hour	$409,140.00	
Helicopter mob/demob	$10,000.00	
Crew and equipment mob/demob	$7,000.00	
Em anomaly maps 5657km @1.50/km 10742.95	$8,485.50	
25 Interpretational reports @$3,000	$75,000.00	
Fuel 6276 Liters	$8,440.30	
Total Survey charge	$1,360,055.80	
Less Previoius Billing		
Invoice 991034	($289,040.00)	
Invoice 991078	($190,505.00)	
Invoice 991107	($665,651.00)	
Billable Amount	$214,859.80	
Business Number: 110859469		

Alle - 7700.65
Barnett - 6649.52
Cabin - 7167.47
Dorsey - 5688.18
Fairweather - 623.58
Hart - 6989.74
Hidden - 3975.84
Highway - 10934.85
Hopeful - 8195.04
Hyder - 8666.56
Hy - 13152.70
Jake - 4308.93
Mar - 6494.17
MM - ~~10130.54~~ 10637.49
Mt Hinton - 31298.60
Nimo (Rich) - 10143.78
Obvious - 5427.34
Rau - 13526.47
Ranchero (QB) - 8086.24
Ran - 6747.07
Rain - 5224.91
Tes - 10934.85
Tag - 7307.60
Tanch - 3998.57
Uno - 5803.45

22560.75

Please Remit By Bank Transfer To:
TD CANADA TRUST
16655 YONGE ST., UNIT 1
NEWMARKET, ONTARIO L3X 1V6
TRANSIT#3102
ACCOUNT#5217874

Subtotal	Can$214,859.80
GST	Can$10,742.99
Total	Can$225,602.79

Tel: 905-841-5004 Fax: 905-841-0611 email: info@geotechairborne.com