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

# ASSESSMENT REPORT

describing

**VTEM GEOPHYSICAL SURVEYS**

at the

**TOP PROPERTY**

| | |
|---|---|
| Top 1-20 | YB53070-YB53089 |
| Top 21-24 | YC04762-YC04765 |

NTS 116B/04
Latitude 64˚11'N; Longitude 139˚50'W

in the

Dawson Mining District
Yukon Territory

prepared by

Archer, Cathro & Associates (1981) Limited

for

**EUREKA JOINT VENTURE**
Strategic Metals Ltd. - 50%
StrataGold Corporation - 50%

by

W.A. Wengzynowski, P.Eng.
December 2007

## TABLE OF CONTENTS



## APPENDICES

## FIGURES



## TABLES

## INTRODUCTION

The Top property was staked to cover a volcanogenic massive sulphide (VMS) exploration target. Exploration in 2007 was managed by Archer, Cathro & Associates (1981) limited on behalf of property owners Strategic Metals Ltd. (50%) and StrataGold Corporation (50%). Previous work programs outlined multi-element soil geochemical anomalies that were only partially tested by excavator and bulldozer trenching, resulting in discovery of thin and relatively low-grade oxidized VMS style mineralization.

This report describes airborne geophysical surveys conducted by Geotech Ltd. on August 31, 2007. The surveys were done from a base at the Dawson City airport. Archer Cathro & Associates (1981) Limited managed the program and provided some logistical support. The author supervised the program and his Statement of Qualifications appears in Appendix I.

## PROPERTY LOCATION, CLAIM STATUS AND ACCESS

The Top property consists of 24 contiguous mineral claims located in west-central Yukon. The claim block is approximately centred at latitude 64˚11' north and longitude 139˚50' west on NTS map sheet 116B/04 (Figure 1).

The claims are registered with the Dawson Mining Recorder in the name of Archer Cathro, which holds them in trust for Strategic Metals and StrataGold. The locations of individual claims are shown on Figure 2 while claim registration data are summarized as follows.

| Claim Name | Grant Number | Expiry Date* |
|---|---|---|
| Top 1-20 | YB53070-YB53089 | April 4, 2008 |
| Top 21-24 | YC04762-YC04765 | April 4, 2008 |

*Expiry dates do not include 2007 work which has not yet been filed for assessment credit.

The property is located immediately north of the Top of the World Highway, about 25 km northwest of Dawson City. In 2007, crew and survey gear were mobilized and demobilized daily from Dawson City via an Astar 350 B3 contracted from TRK Helicopters Ltd. Access for the purpose of ground exploration is by vehicle from Dawson City to the southeast corner of the claim block and then by foot to other parts of the property.

## GEOMORPHOLOGY

The southeast corner of the Top property, the main area of exploration interest, is located in the Klondike Plateau along a ridge crest which probably lies close to the original surface of a pre-Pleistocene peneplain. Because the area is unglaciated, oxidation and leaching of metals probably extends to depths of 20 m or more. The remainder of the claim block lies along the northeastern side of a relatively steep-sided, northwest trending creek valley. Elevations range from about 1225 m on the ridge crest to 640 m in the creek bottom at the northwest property boundary.

**STRATEGIC METALS LTD.**
**STRATAGOLD CORPORATION**

FIGURE 1

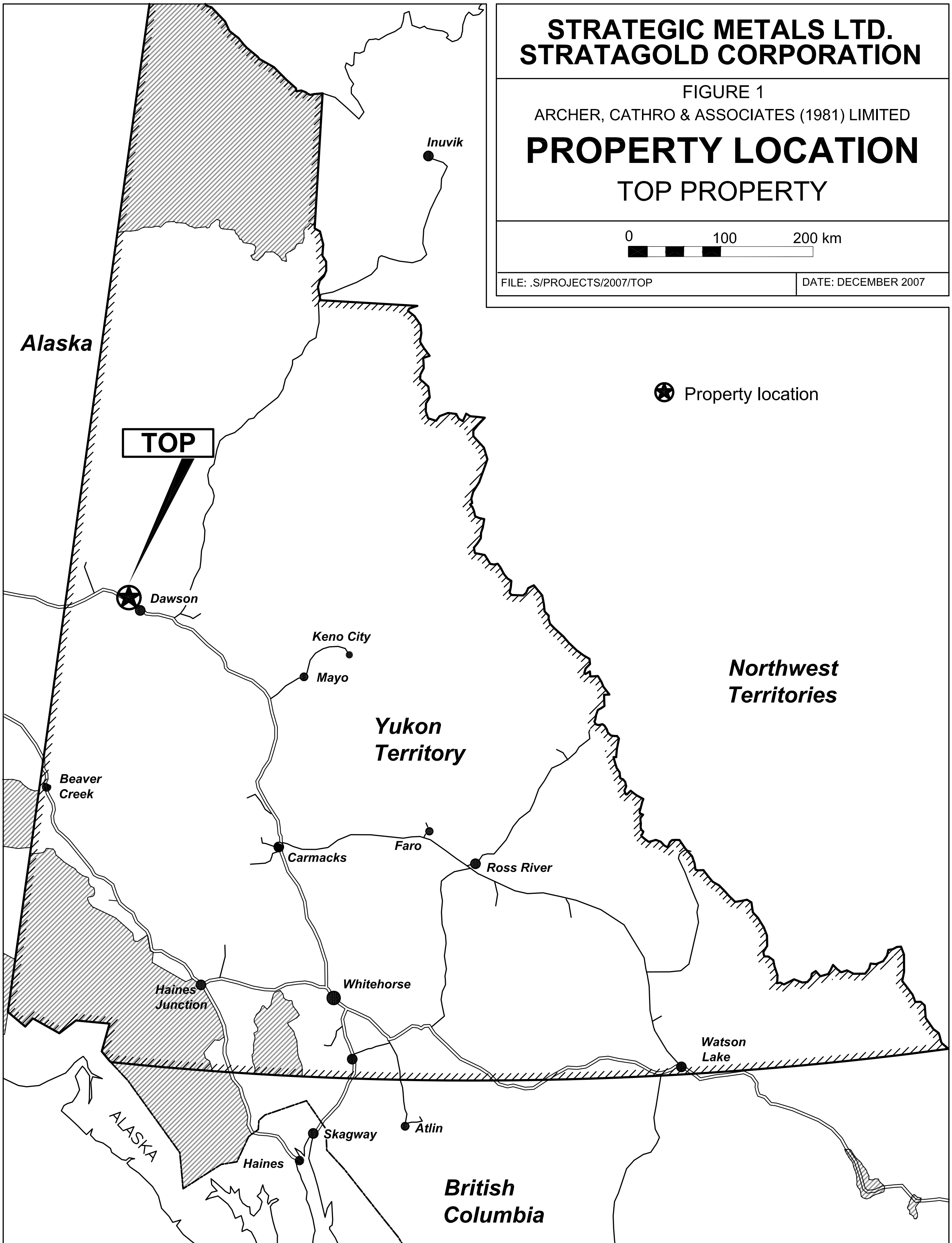
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

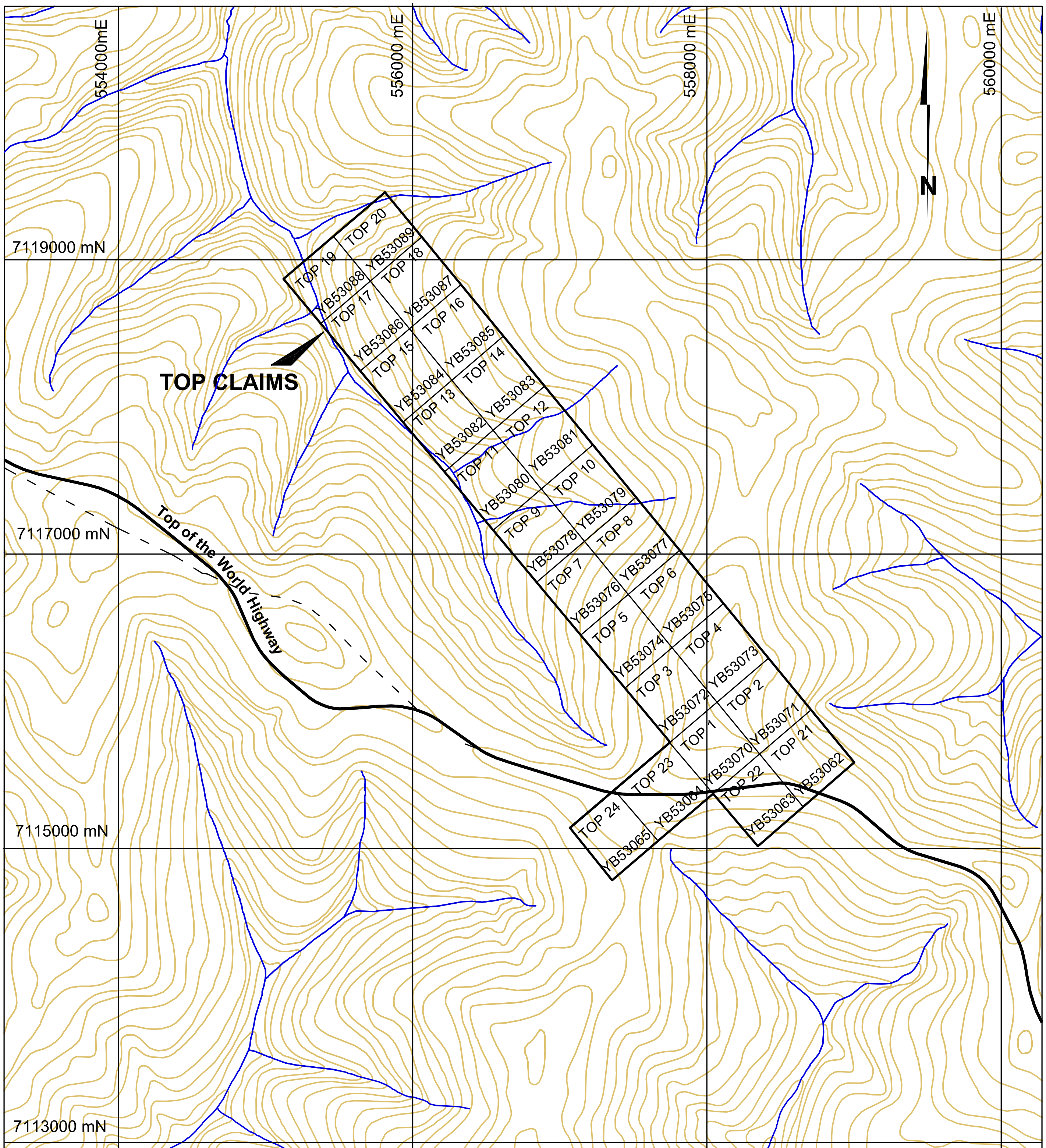
# PROPERTY LOCATION

## TOP PROPERTY

0 100 200 km

FILE: .S/PROJECTS/2007/TOP | DATE: DECEMBER 2007






**STRATEGIC METALS LTD.**
**STRATAGOLD CORPORATION**

FIGURE 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

# CLAIM LOCATION

## TOP PROPERTY

UTM ZONE 7, NAD 83, 116B/04

FILE: S:/PROJ/2007/Top/F2 DATE: DECEMBER 2007

Upper parts of the property are mantled with a thin veneer of frost-heaved felsenmeer and residual soils while lower elevations are covered with an unknown thickness of soliflucted residual overburden.

Treeline occurs at about 1070 m in this area. The southeastern part of the property which is mostly above 1070 m is only lightly vegetated with scrub brush and mosses while the lower elevations to the northwest support a mixture of deciduous and evergreen forest with a thick understorey of willows in poorly drained areas. Permafrost is likely to be continuous over most of the property.

## EXPLORATION HISTORY

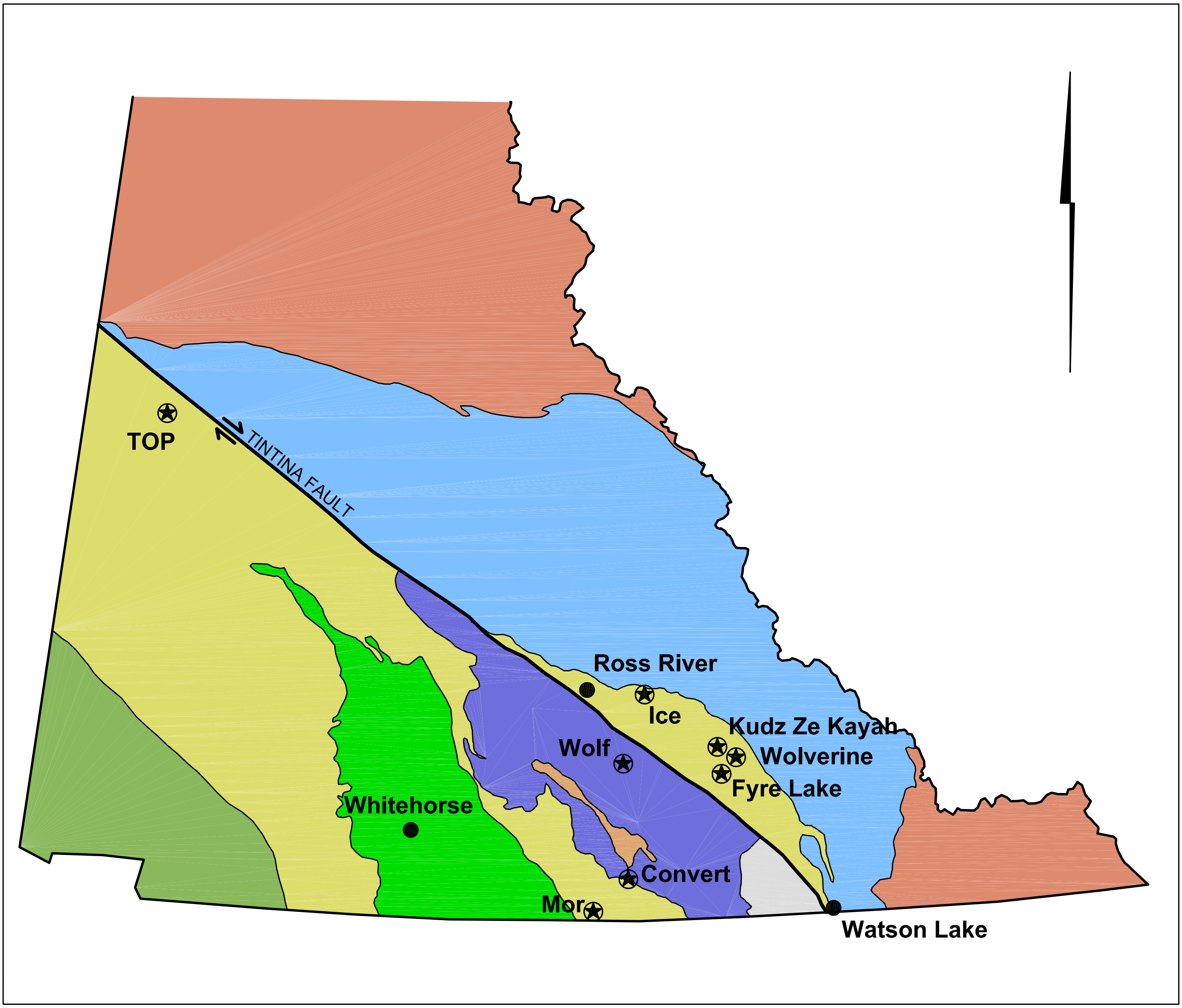
There is no public record of any exploration work done on the Top claims prior to 1995 when Nordac Resources Ltd. (a predecessor to Strategic Metals) carried out a short prospecting and soil sampling reconnaissance program to evaluate the potential for VMS mineralization (Carne, 1996). Nordac returned in 1997 to continue exploration with soil sampling, prospecting, geological mapping and excavator trenching (Heaton and Carne, 1997). Permafrost hampered the trenching program so proposed trenches were pre-stripped with a bulldozer to allow frost retreat before continuation of the excavator trenching in 1998 (Carne, 1999). All trenches were recontoured and reseeded with an appropriate grass seed mix at the end of the 1998 program.

## GEOLOGICAL SETTING

The Top claims lie within the Klondike segment of Yukon-Tanana tectonic terrane (Figure 3). Yukon-Tanana Terrane underlies a vast area, approximately the size of California, that lies west of autochthonous North America in central Yukon and Alaska. The sequence is geologically complex recording the tectonic incorporation of a Paleozoic volcanic and magmatic arc with its basement sequence onto the outboard edge of the northern Cordillera. It consists of a series of highly strained metavolcanic and metasedimentary rocks which have undergone polyphase deformation. Restoration of movement along the Tintina Fault demonstrates the Klondike segment is probably an along-strike continuation of the Finlayson Allochthon which contains the Kudz Ze Kayah, GP4F, Wolverine, Ice and Fyre Lake VMS deposits. These are hosted by Late Devonian to Mid-Mississippian metavolcanic and metasedimentary rocks.

The Top property is underlain by an unnamed sequence of metavolcanic and lesser metasedimentary rocks consisting of quartz-muscovite-chlorite schist, chlorite schist, quartz-feldspar-amphibole gneiss, metagabbro, micaceous quartzite, graphitic phyllite and marble (Figure 4). Compositional layering of bedrock on the property is subparallel to foliation that undulates locally with a gentle southerly dip on a regional scale. These rocks are assigned to an unnamed Middle Paleozoic sequence of unknown affinity by Mortensen (pers. comm., 1996) and Hunt (2002), and to the Permian Klondike Schist by Gordey and Makepeace (2003) and Colpron (2006).

The metavolcanic sequence is in thrust fault contact outside the property boundaries with Middle Paleozoic Nasina Series metasedimentary rocks consisting of quartzite, quartz-muscovite-biotite




TERRANE

- Quaternary
- Mackenzie Platform
- Selwyn Basin
- Slide Mountain
- Cassiar Platform
- Yukon-Tanana
- Intermontane
- Insular

✪ VMS deposit

**STRATEGIC METALS LTD.**
**STRATAGOLD CORPORATION**

FIGURE 3

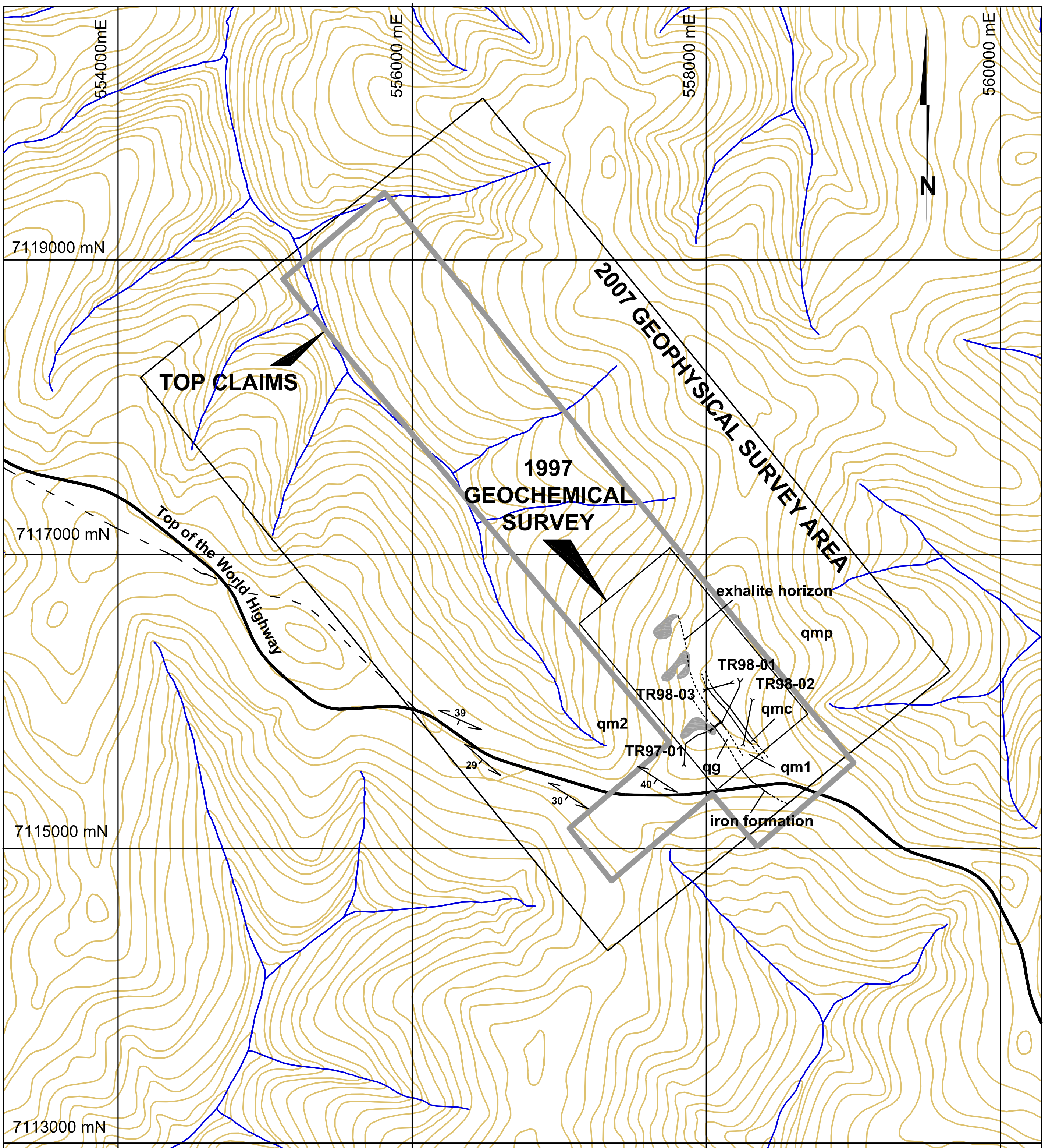
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

# TECTONIC SETTING

## TOP PROPERTY

0 150 350 km

FILE: ...S:/PROJECT/2007/TOP DECEMBER 2007




| | | | |
|---|---|---|---|
| excavator trench | | qm2 | quartz-muscovite schist |
| multi-element geochemical anomaly | | qg | quartz-graphite phyllite |
| | | qm1 | quartz-muscovite schist |
| 40 | attitude of foliation | qmc | chloritic quartz-muscovite schist |
| | | qmp | chloritic quartz-muscovite schist with plagioclase phenocrysts |

UTM ZONE 7, NAD 83, 116B/04

**STRATEGIC METALS LTD.**
**STRATAGOLD CORPORATION**

FIGURE 4

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

# COMPILATION MAP

## TOP PROPERTY

FILE:S:/PROJECTS/2007/TOP DATE: DECEMBER 2007 schist and marble. The thrust faults are often marked by slivers of carbonatized and serpentinized ultramafic rocks.

**Table I - Lithological Units at the Top Property**
(from Carne, 1999)

| Unit | Description |
|---|---|
| qm2 | Quartz-muscovite schist |
| qg | Quartz-graphite phyllite |
| qm1 | Quartz-muscovite schist |
| qmc | Chloritic quartz-muscovite schist |
| qmp | Chloritic quartz-muscovite schist with plagioclase porphyroblasts |

## MINERALIZATION

Since the mid-1990s, Yukon-Tanana Terrane has been heavily explored for VMS mineralization. This exploration has resulted in the discovery of Kuroko-type mineralization at the Kudz ze Kayah (KZK), GP4F and Wolverine Deposits, Besshi-type mineralization at the Fyre Lake Deposit and Cyprus-type mineralization at the Ice Deposit. The approximate locations of these deposits are shown on Figure 3.

The Top claims were staked to cover unexplained strong multi-element stream sediment geochemical anomalies resulting from surveys conducted previously in the area by Archer Cathro. These appear to reflect a source within a sequence of felsic metavolcanic rocks that are associated with an iron oxide-rich unit exposed in road cuts at the southeast end of the claim block. Cominco geologists apparently located oxidized massive sulphide float cobbles in a road cut about 2.5 km east of the Top property.

Excavator trenching exposed a metamorphosed andesite to rhyolite succession that is capped with a completely oxidized, 0.7 m thick barium, manganese and base metal rich horizon. A channel sample of this material returned 250 ppm copper, 1980 ppm lead, 2830 ppm zinc, 4490 ppm manganese and 2190 ppm barium. The metalliferous horizon is overlain by a layer of siliceous graphitic phyllite and a thin veneer of oxidized iron formation.

## SOIL GEOCHEMISTRY

The area underlying the Top claims is unglaciated and surface weathering with accompanying oxidation and leaching of base metals is probably well developed. Based on previous results of extensive geochemical exploration programs carried out by Archer Cathro in the Dawson Range, anomalous threshold values for copper, lead and zinc in soils are set at approximately 25, 50 and 100 ppm, respectively. Moderately to strongly anomalous values for copper, lead and/or zinc were obtained from soil samples taken from a discontinuous, linear zone in the southeastern part of the property. This 1300 m long north-northwestern trend is roughly conformable with foliation and lies down slope of the stratigraphic interval believed to be prospective for VMS mineralization. A number of strongly anomalous silt samples collected to the northwest in previous years suggests that the area of interest could exceed several kilometres in strike length. A compilation of the historical geochemical data is presented in Figure 4.

## 2007 GEOPHYSICAL SURVEYS

Geotech Ltd. of Ontario conducted helicopter-borne, VTEM and magnetic surveys over the property and adjacent areas on August 31, 2007. The VTEM system allows for deep penetration while maintaining high spatial resolution and resistivity discrimination. Principal geophysical sensors included a VTEM system and a high sensitivity cesium magnetometer. Ancillary equipment included a Global Positioning System (GPS) navigational system and a radar altimeter.

A total of 173.17 line kilometres were flown at 100 m line spacing with two perpendicular tie lines roughly 1000 m apart. Where possible, the apparatus maintained a terrain clearance of 70 m. Twenty-four measurement gates were used to record receiver decay in the range from 120 to 6578 microseconds. A three stage filtering process was used to reject major sferic events and to reduce system noise. The signal to noise ratio was further improved by the application of a low pass linear digital filter. The sensitivity of the magnetic sensor is 0.02 nanoTesla at a sampling interval of 0.1 seconds. Corrections for diurnal variation and tie line levelling were made during data processing. Preliminary data and maps from Geotech are included as Appendix II.

Examination of the data shows that electromagnetic response is flat over most of the property with the exception of two very weak conductors in the northwest corner of the survey. The underlying conductance suggests the anomalies are associated with a relatively flat lying or shallow southwest dipping body. A parallel, high intensity total field magnetic anomaly lies down slope of this area.

## CONCLUSIONS AND RECOMMENDATIONS

Thin, low-grade VMS style mineralization has been outlined by previous exploration at the southeast end of the Top property. Preliminary results of airborne geophysical data collected in 2007 demonstrate that the known showings do not have an anomalous electromagnetic signature. The potential for more significant mineralization is suggested by a combination of weakly anomalous electromagnetic and strong magnetic response at the northwest corner of the survey area, off the current claim block. The electromagnetic and magnetic anomalies are consistent with sulphide bearing strata overlain by magnetic iron formation. Streams that drain the electromagnetic anomaly are moderately anomalous for copper, lead and zinc.

Additional work is warranted in this area. The electromagnetic and magnetic anomalies should be staked and explored with prospecting and grid soil sampling to be followed by diamond drilling if results of that work are positive.

Respectfully submitted,

ARCHER, CATHRO AND ASSOCIATES (1981) LIMITED.

W.A. Wengzynowski, P.Eng.

## REFERENCES

Carne, R. C.
1996 Geochemical Survey Report on the Top Property, Assessment Report 093535.

Carne, R.C.
1999 Report on Excavator trenching on the Top Property, Assessment Report 093952.

Colpron, M. (compiler)
2006 Tectonic assemblage map of Yukon-Tanana and related terranes in Yukon and northern British Columbia (1:1 000 000 scale). Yukon Geological Survey, Open File 2006-1

Gordey, S. P. and Makepeace, A. J.
2003 Yukon digital geology. Geological Survey of Canada, Open File 1749, and Yukon Geological Survey, Open File 2003-9(D).

Heaton, T.C. and Carne, R.C.
1997 Report on Geochemical Survey and Trenching on the Top Property, Assessment Report 093765.

Hunt, J.A.
2002 Volcanic-associated massive sulphide (VMS) mineralization in the Yukon-Tanana Terrane and coeval strata of the North American miogeocline, in the Yukon and adjacent areas. Exploration and geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Bulletin 12, 107 p.

## 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, P. Eng.

Statement of Expenditures
Top 1-24 Mineral Claims
November 27, 2007

<u>Contract VTEM Survey</u>

| | |
|---|---|
| Geotech Ltd. | <u>$37,194.68</u> |

# Geotech Ltd.

30 Industrial Parkway South, Aurora ON L4G 3W2

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

| DATE: | INVOICE: |
|---|---|
| 10/12/2007 | 991107 |

RECEIVED DEC 0 4 2007 MINING RECORDER DAWSON CITY, Y.T. Government of Yukon

TOP = $35 089.32 + $2105.36
= $37194.68

| TERMS: | Project |
|---|---|
| Due on receipt | 7067 |

| Description | | Amount |
|---|---|---|
| Helicopter-borne time domain electromagnetic geophysical survey with VTEM system<br>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 Previous Billing | | |
| Invoice 991034 | ($289,040.00) | |
| Invoice 991078 | ($190,505.00) | |
| Total Billable Amount | $665,651.00 | |
| Business Number: 110859469 | | |

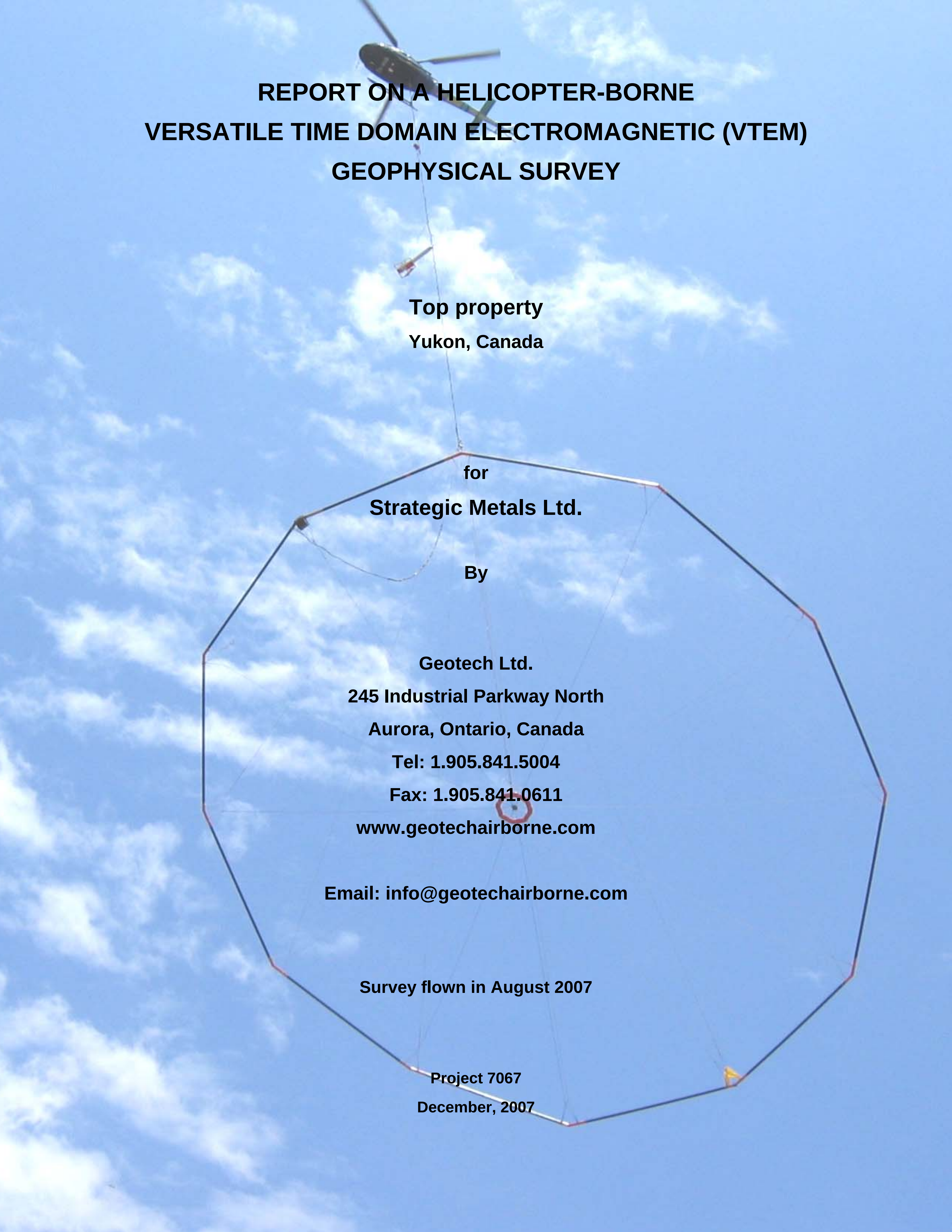
Ale - 15740.54
Burwash - 12 218.54
Cabin - 33955.98
Dawson - 21969.52
GK - (10408.48)
Fairweather - 26560.49
Gram (Mt Hinton) - 54432.85
Hart - 32515.80
Hidden - 8081.37
Highway - 64498.40
Hopeful - 42331.13
Hopper - 18930.28
Hy - 33868.92
Jake - 2308.40
Mars - 28500.60
Mor - 42190.87
Landeiro (QB) 17057.54
Mt Hinton - 20434.42
Nimo (Rich) - 58082.57
Rosy - 18204.54
Nimo (Nich) - (55523.83)
Tart - (26958.33)
Obvious - 20240.71
Tes - 64498.40
Plata - 61361.67
Top - 35089.32
Iran - 8273.46
Lino - 9441.72
Ram - 12552.70
unallocated - 1800.00
856156

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

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

# APPENDIX II

# VTEM AND MAGNETIC SURVEY REPORT BY GEOTECH LTD.



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

**Top property**

**Yukon, Canada**

**for**

**Strategic Metals Ltd.**

**By**


**Geotech Ltd.**

**245 Industrial Parkway North**

**Aurora, Ontario, Canada**

**Tel: 1.905.841.5004**

**Fax: 1.905.841.0611**

**www.geotechairborne.com**

**Email: info@geotechairborne.com**


**Survey flown in August 2007**


**Project 7067**

**December, 2007**

TABLE OF CONTENTS



**APPENDICES**

REPORT ON A HELICOPTER-BORNE
VERSATILE TIME DOMAIN ELECTROMAGNETIC SURVEY

Top property, Yukon, Canada

## Executive Summary

This report describes the Helicopter-borne geophysical survey carried out on behalf of Strategic Metals Ltd. 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 173.27 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 Dawson City, 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 to perform a helicopter-borne geophysical survey over one block located in Yukon, Canada.

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

Bill Wengzynowski, acted on behalf of Strategic Metals Ltd. during data acquisition and data processing phases of this project.

The survey block is as shown in Appendix A.

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

The helicopter was based at the Dawson City airport for the duration of the survey. Survey flying was completed on August 31st, 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 December, 2007.

## 1.2. Survey and System Specifications

The survey block was flown at nominal traverse line spacing of 100 metres, at N51°E / N231°W direction. Tie lines were flown perpendicular to traverse lines.

Where possible, the helicopter maintained a mean terrain clearance of 105 metres, which translated into an average height of 70 metres above ground for the bird-mounted VTEM system and 90 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 Strategic Metals Ltd.

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 115 kilometers north west of the town of Dawson City.

Topographically, the survey area exhibits a hilly terrain, with elevation range from 230 metres to 1220 metres above sea level.

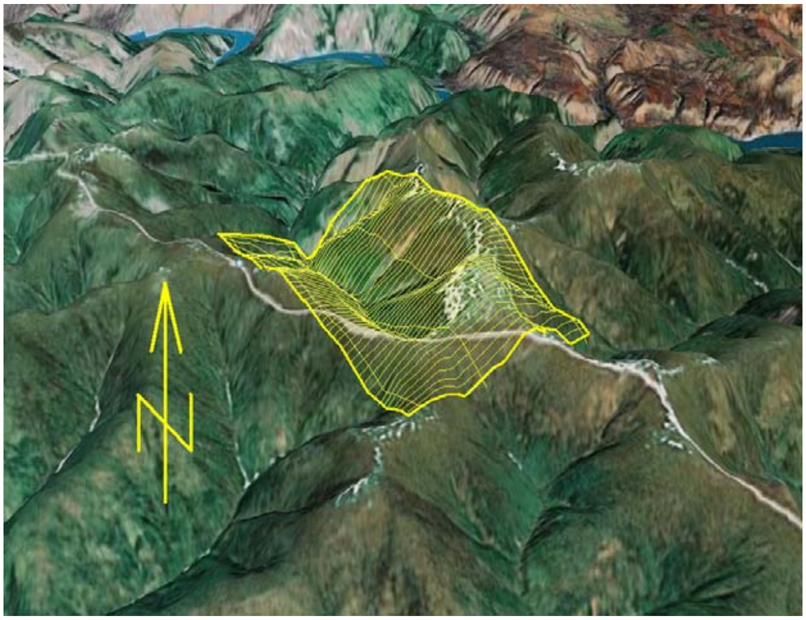



Figure 1 – Projection of flight path on topography.

## 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 |
|---|---|---|---|---|---|
| TOP | 100 | 15.09 | 153.17 | N51°E / N231°W | L20010 - L20510 |
| | 1000 | | 20.10 | N141°E / N321°W | T20910 - T20940 |

Table 1 - Survey block

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

### 2.2. Survey Operations

Survey operations were based in Dawson City, 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 |
|---|---|---|---|---|---|
| 30-Aug-07 | 74, 75 | 114.10 | TOP | Dawson City, Yukon | Other blocks flown same day |
| 31–Aug 07 | 76 | 59.17 | TOP | Dawson City, Yukon | Other blocks flown same day |

Table 2 - Survey schedule

### 2.3. Flight Specifications

The nominal EM sensor terrain clearance was 70 m (EM bird height above ground, i.e. helicopter is maintained 105 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 Top. 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, Toping 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.

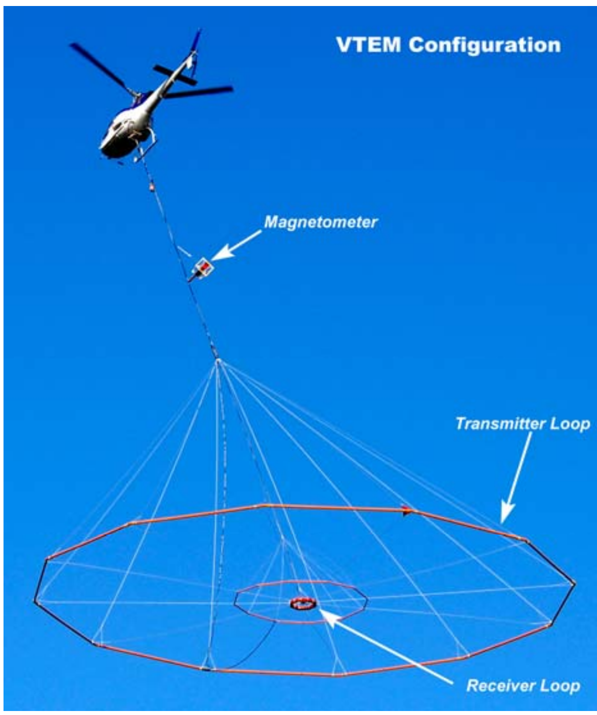



Figure 2 – VTEM configuration

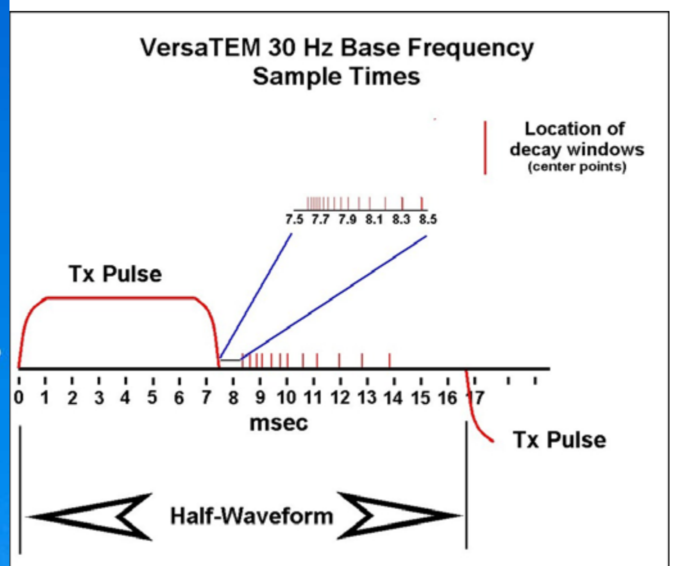



Figure 3 – Sample times

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 | ( Microseconds ) | | | |
| Index | 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 Dawson City, 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 / QC Geophysicist: | Sean Hayes |
| Operator: | Keith Lavelly |

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

| | |
|---|---|
| Pilot: | Roy Stevenson |
| Engineer: | Darren Shipman |

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.

The survey area shows an average magnetic activity. Maximum values of 57,650 nT are observed in the northern corner of the block. Average of 57,550 nT is detected in the survey area.

# 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 7N. 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 TOP 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:
  7067Top_final

| | |
|---|---|
| X: | X positional data (metres – WGS84, utm zone 7 north) |
| Y: | Y positional data (metres – WGS84, utm zone 7 north) |
| Z: | GPS antenna elevation (metres - ASL) |
| Radar: | Helicopter terrain clearance from radar altimeter (metres - AGL) |
| Radarb: | EM Loop terrain clearance from radar altimeter (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 $(pV*ms)/(A*m^4)$ |
| BF[28]: | B-field 2745 microsecond time channel $(pV*ms)/(A*m^4)$ |
| BF[29]: | B-field 3286 microsecond time channel $(pV*ms)/(A*m^4)$ |
| 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 7067Top_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,

| | |
|---|---|
| Top_magfin: | Total magnetic intensity (nT) |
| Top_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 10 metres was used.

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

| | |
|---|---|
| Top_Magfin: | Total magnetic intensity contours and colour image |
| Top_dBdt: | VTEM dB/dt profiles, Time Gates 0.234 – 6.578 ms in linear - logarithmic scale |
| Top_EMLP: | VTEM B-field profiles, Time Gates 0.234 – 6.578 ms 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 Top property, located in Yukon, Canada.

The total area coverage is 15.09 $km^2$. Total survey line coverage is 173.27 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.

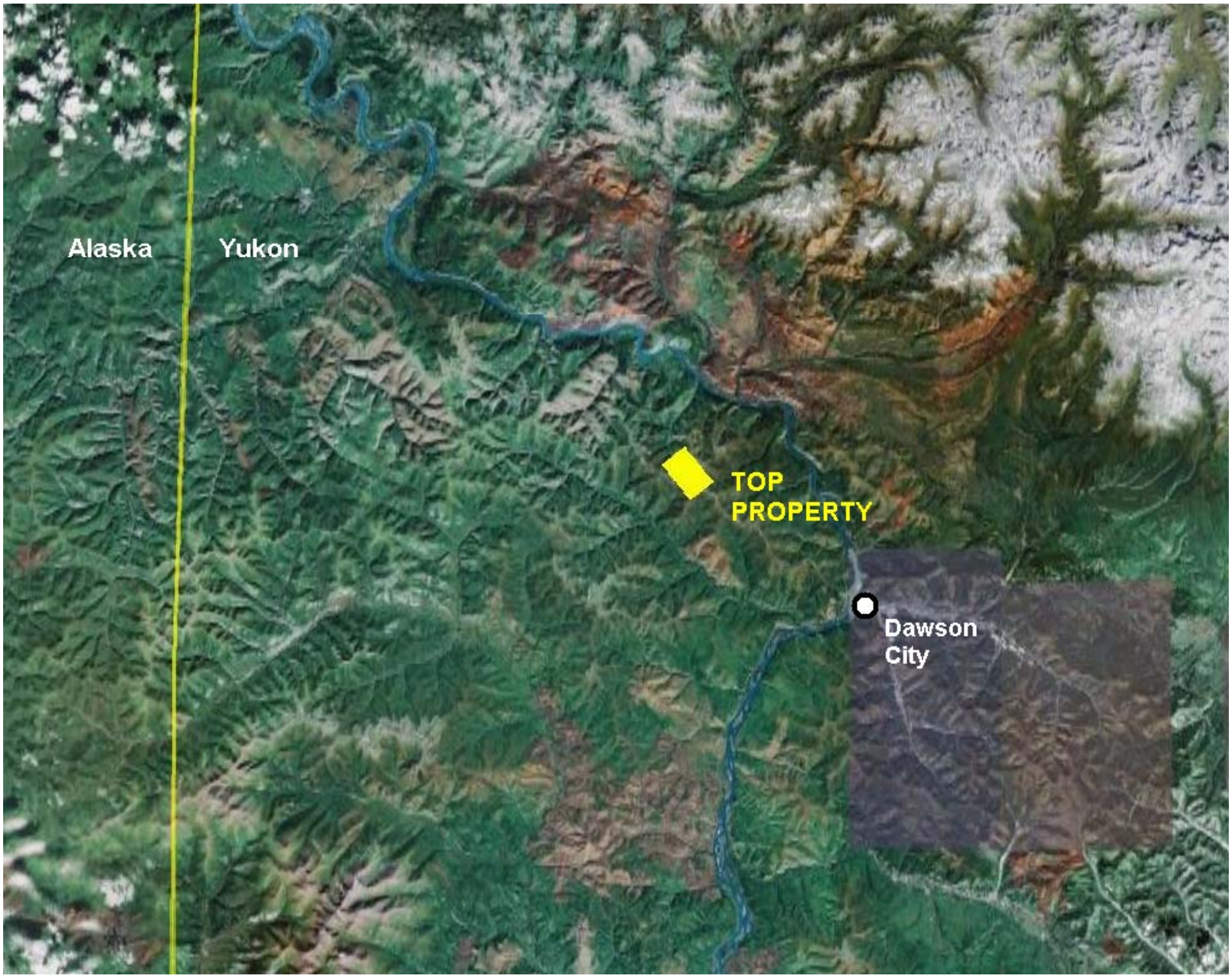
A number of EM anomaly groupings were identified. Ground follow-up of those anomalies should be carried out if favourably supported by other geoscientific data.

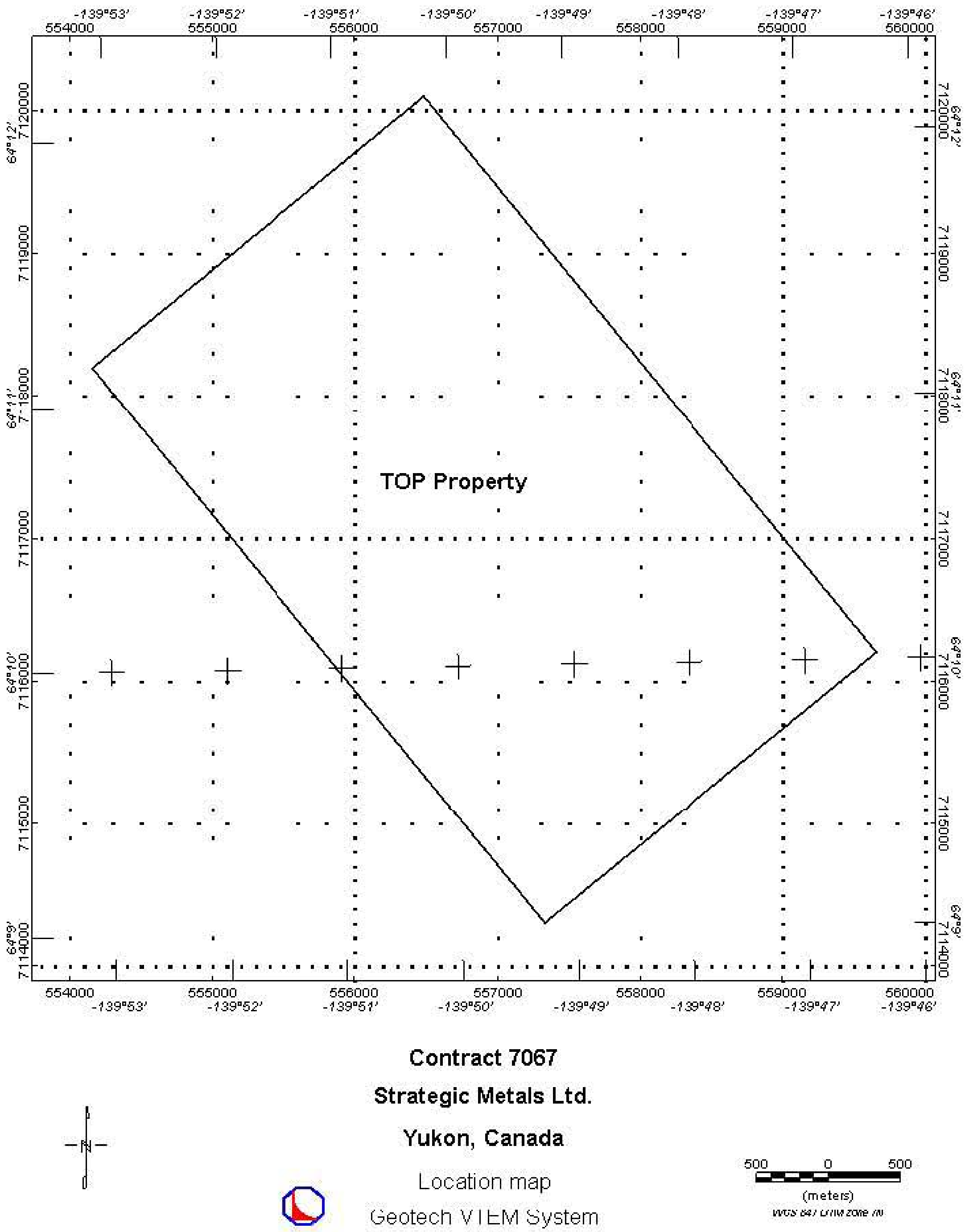
Respectfully submitted,

George Lev
**Geotech Ltd.**
December, 2007

**APPENDIX A**

**SURVEY BLOCK LOCATION MAP**




-139°53'
-139°52'
-139°51'
-139°50'
-139°49'
-139°48'
-139°47'
-139°46'
554000
555000
556000
557000
558000
559000
560000
7120000
7119000
7118000
7117000
7116000
7115000
7114000
64°12'
64°11'
64°10'
64°9'
TOP Property
Contract 7067
Strategic Metals Ltd.
Yukon, Canada
Location map
Geotech VTEM System
N
500
0
500
(meters)

## APPENDIX B

## SURVEY BLOCK COORDINATES

(WGS 84, UTM zone 7 north)

### Top property

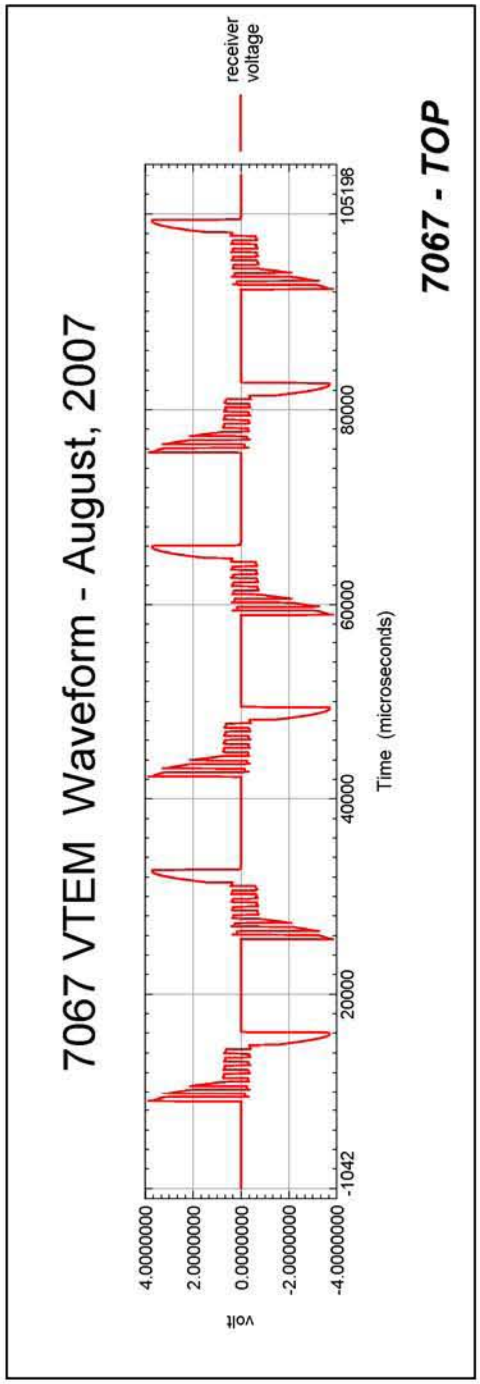
| TOP | |
|---|---|
| Easting x | Northing y |
| 556479 | 7120099 |
| 559656 | 7116205 |
| 557329 | 7114307 |
| 554152 | 7118200 |

## APPENDIX C

## MODELING VTEM DATA

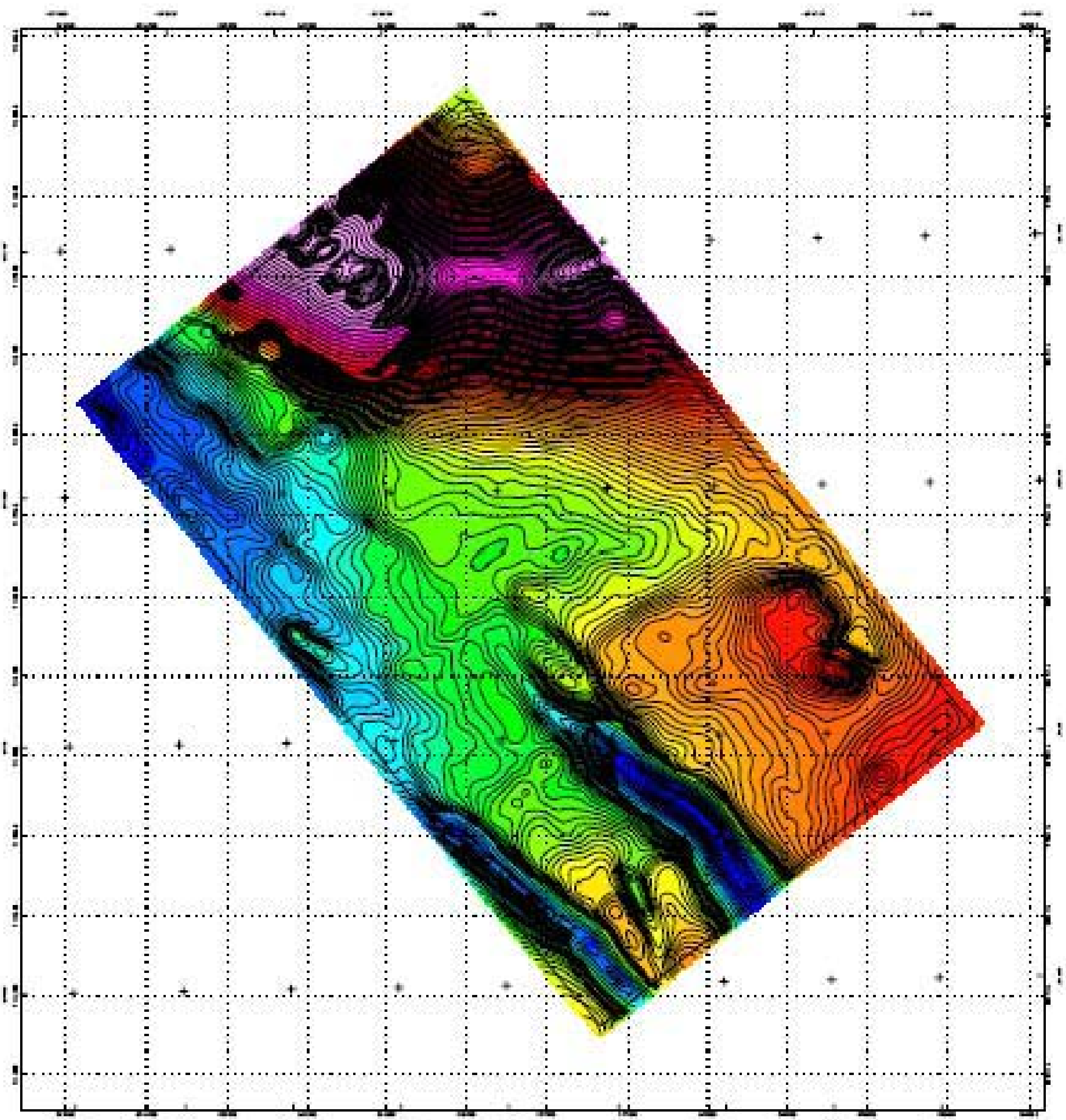
**APPENDIX D**

**VTEM WAVEFORM**



**APPENDIX E**

**GEOPHYSICAL MAP**



**TOP PROPERTY**
**Strategic Metals Ltd.**

# 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.

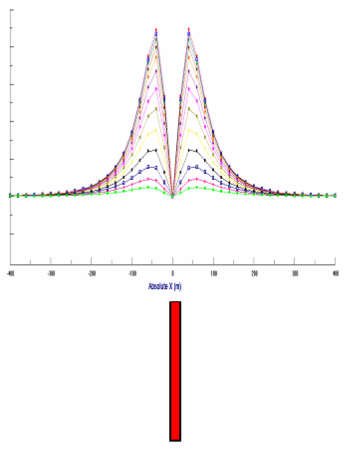
Figure H shows a special case where two plates are positioned to represent a synclinal structure. Note that the main characteristic to remember is the centre amplitudes are higher (approximately double) compared to the high shoulder of a single plate. This model is very representative of tightly folded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

## Variation of Prism Depth

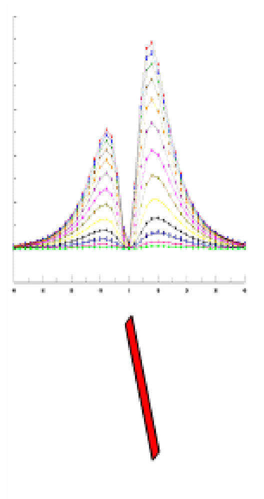
Finally, with prism models, another algorithm is required to represent current on the plate. A plate model is considered to be infinitely thin with respect to thickness and incapable of representing the current in the thickness dimension. A prism model is constructed to deal with this problem, thereby,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

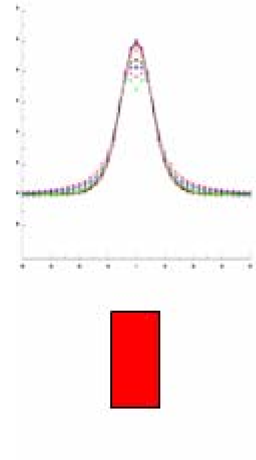
**A**



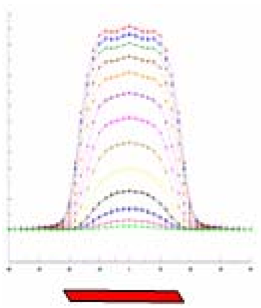
**B**



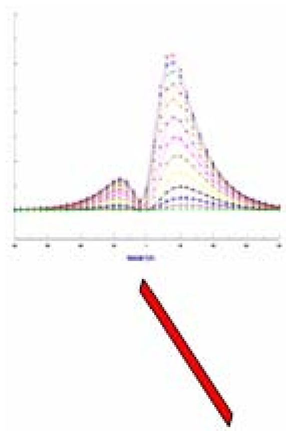
**C**



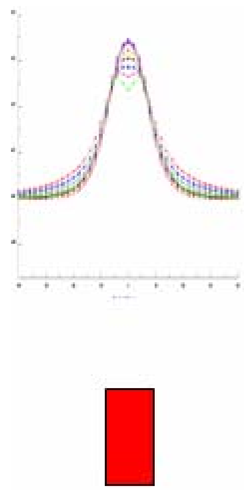
**D**



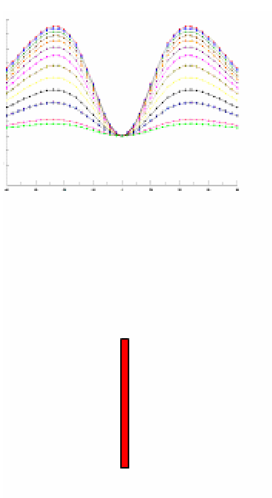
**E**



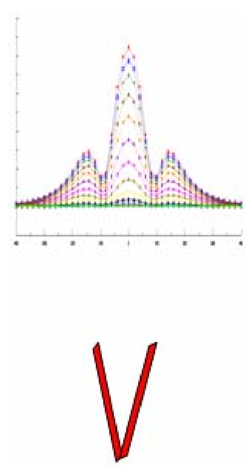
**F**



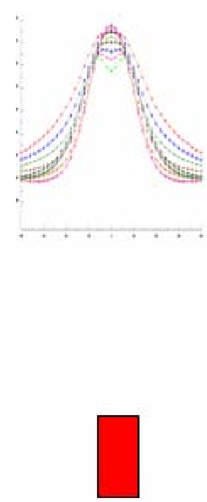
**G**



**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.

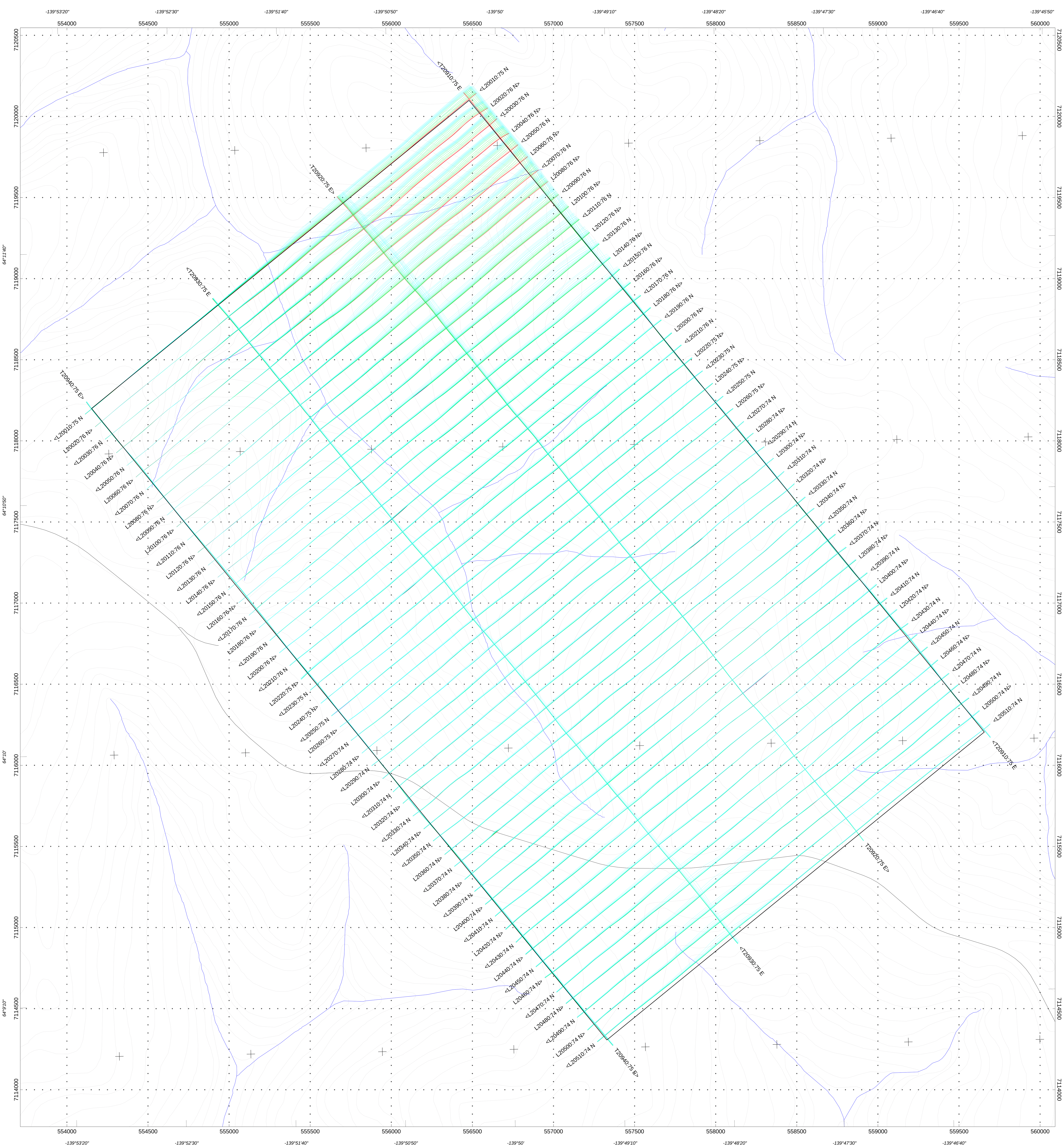
The EM interpretation process used, places considerable emphasis on determining an understanding of the general conductive patterns in the area of interest. Each area has different characteristics and these can effectively guide the detailed process used.

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.

GEOTECH LTD.



Survey Specifications:

Dates Flown: August 30-31, 2007
Survey Base: Dawson City, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N51°E/N231°W
Nominal Tie Line Spacing: 1000 metres
Nominal Tie Line Directions: N141°E/N321°W
Nominal helicopter terrain clearance 105 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 approx. 400,000 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**

**Legend:**

**Roads**
**Lakes, Rivers**
**Swamps**
**Topographic contours**

Scale 1:10000

100 0 100 200 300 400 500

(meters)

*WGS 84 / UTM zone 7N*

# Strategic Metals Ltd.
# Block TOP
# Yukon, Canada

Geotech VTEM System
## dB/dt Profiles
## Time Gates 0.234 - 6.578 ms

**Flown and processed by Geotech Ltd.**
**245 Industrial Parkway North,**
**Aurora, Ontario, Canada L4G 4C4**
www.geotechairborne.com

***December 2007***

Project 7067

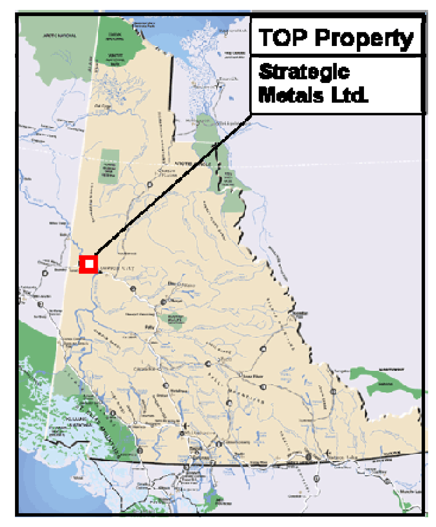
GEOTECH LTD.

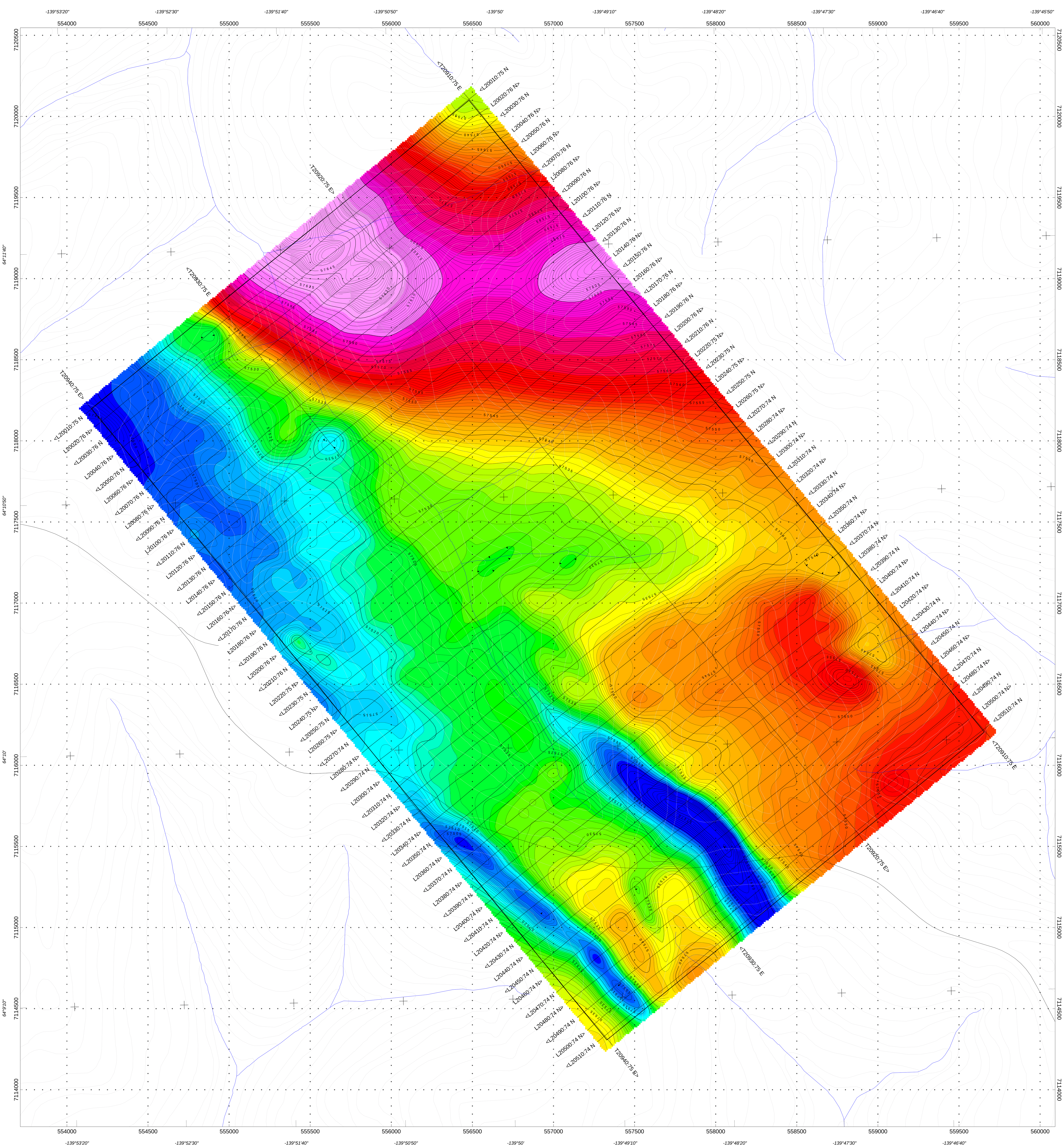
Survey Specifications:

Dates Flown: August 30-31, 2007
Survey Base: Dawson City, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N51°E/N231°W
Nominal Tie Line Spacing: 1000 metres
Nominal Tie Line Directions: N141°E/N321°W
Nominal helicopter terrain clearance 105 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 approx. 400,000 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




Magnetic field (nT)

Contour intervals:
1 nT
5 nT
20 nT

Legend:
Roads
Lakes, Rivers
Swamps
Topographic contours

Scale 1:10000

100 0 100 200 300 400 500

(meters)

*WGS 84 / UTM zone 7N*

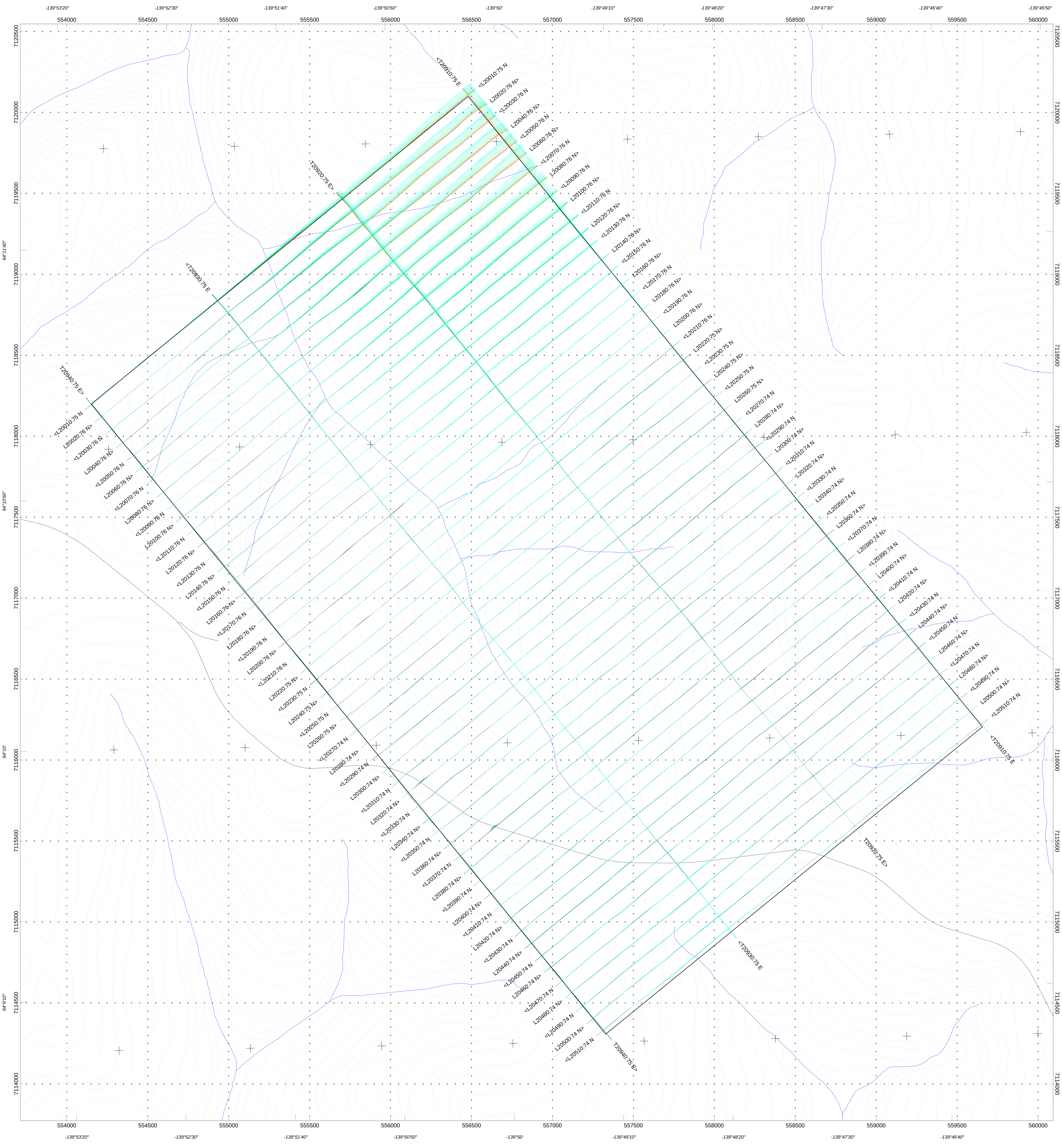
Strategic Metals Ltd.
Block TOP
Yukon, Canada

Geotech VTEM System
Total Magnetic Field Map

**Flown and processed by Geotech Ltd.**
**245 Industrial Parkway North,**
**Aurora, Ontario, Canada L4G 4C4**
www.geotechairborne.com

***December 2007***

Project 7067



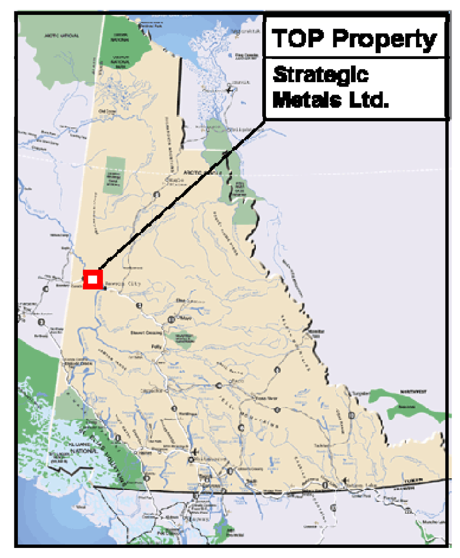
GEOTECH LTD.

## Survey Specifications:

Dates Flown: August 30-31, 2007
Survey Base: Dawson City, YT
Aircraft: Astar B3 helicopter, Registration C-GTFX
Nominal Flight Line Spacing: 100 metres
Nominal Flight Line Directions: N51°E/N231°W
Nominal Tie Line Spacing: 1000 metres
Nominal Tie Line Directions: N141°E/N321°W
Nominal helicopter terrain clearance 105 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 approx. 400,000 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*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)**

**Legend:**

**Roads**
**Lakes, Rivers**
**Swamps**
**Topographic contours**

Scale 1:10000

100 0 100 200 300 400 500
(meters)
*WGS 84 / UTM zone 7N*

# Strategic Metals Ltd.
# Block TOP
# Yukon, Canada

Geotech VTEM System
## B-Field Profiles
## Time Gates 0.234 - 6.578 ms

**Flown and processed by Geotech Ltd.**
**245 Industrial Parkway North.,**
**Aurora, Ontario, Canada L4G 4C4**
www.geotechairborne.com

***December 2007***

Project 7067