

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

FOUR CORNERS PROPERTY

4C 1-122	YC22680-YC22801
271-308	YC22856-YC22893
355-404	YC22922-YC22971
405-412	YC23110-YC23117
413-438	YC22972-YC22997
439	YC28800
440-450	YC29001-YC29011

NTS 105B/16 and 105G/1
Latitude 61°01'N; Longitude 130°10'W

in the

Watson Lake Mining District
Yukon Territory

prepared by

Archer, Cathro & Associates (1981) Limited

for

STRATEGIC METALS LTD.

by

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

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
PROPERTY, LOCATION, CLAIM STATUS AND ACCESS	1
GEOMORPHOLOGY	2
EXPLORATION HISTORY	2
GEOLOGICAL SETTING	3
MINERALIZATION	4
SOIL GEOCHEMISTRY	5
2006 GEOPHYSICAL SURVEYS	6
CONCLUSIONS AND RECOMMENDATIONS	6
REFERENCES	8

APPENDICES

- I. STATEMENT OF QUALIFICATIONS
- II. GEOTECH LTD. VTEM AND MAGNETIC SURVEY REPORT

LIST OF FIGURES

<u>No.</u>	<u>Description</u>	<u>Following Page</u>
1	Property Location	1
2	Claim Location	1
3	Tectonic Setting	3
4	Stratigraphy	3
5	Geology and Copper Geochemistry	In Pocket

LIST OF TABLES

<u>No.</u>	<u>Description</u>	<u>Page</u>
I	Lithological Units at the Four Corners Property	4

INTRODUCTION

The Four Corners property is located in the Finlayson Lake District of southeastern Yukon Territory. It is owned by Strategic Metals Ltd. Previous work programs focused primarily on volcanogenic massive sulphide (VMS) mineralization and to a lesser degree emerald potential. Exploration done in 2006 was directed toward VMS potential.

This report describes geophysical surveys conducted by Geotech Ltd. on May 31 and June 1, 2006. The surveys were done from a base at Watson Lake. 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 Four Corners property consists of 256 contiguous mineral claims located in southeastern Yukon. The claim block is approximately centred at latitude 61°01' north and longitude 130°10' west on NTS map sheets 105B/16 and 105G/1 (Figure 1).

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

<u>Claim Name</u>	<u>Grant Number</u>	<u>Expiry Date</u>
4C 1-122	YC22680-YC22801	March 13, 2009
271-308	YC22856-YC22893	March 13, 2009
355-404	YC22922-YC22971	March 13, 2009
405-412	YC23110-YC23117	March 13, 2009
413-438	YC22972-YC22997	March 13, 2009
439	YC28800	March 13, 2011
440-450	YC29001-YC29011	March 13, 2011

*Expiry dates do not include 2006 work which has not yet been filed for assessment credit.

The property lies about 40 km west of the Robert Campbell Highway and 115 km by air northwest of the town of Watson Lake, where the closest year round helicopter base is located. In summer 2006, crew and gear were mobilized and demobilized daily from Watson Lake via an Astar 350 B2 contracted from Trans North Helicopters. Midday refuelling was done at a temporary staging area located alongside the Robert Campbell Highway.

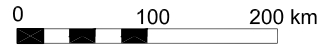
The closest ground access route is an abandoned winter trail that extends from the Robert Campbell Highway to a mineral property near Hasselberg Lake, approximately 8 km east southeast of the Four Corners property.

STRATEGIC METALS LTD.

FIGURE 1

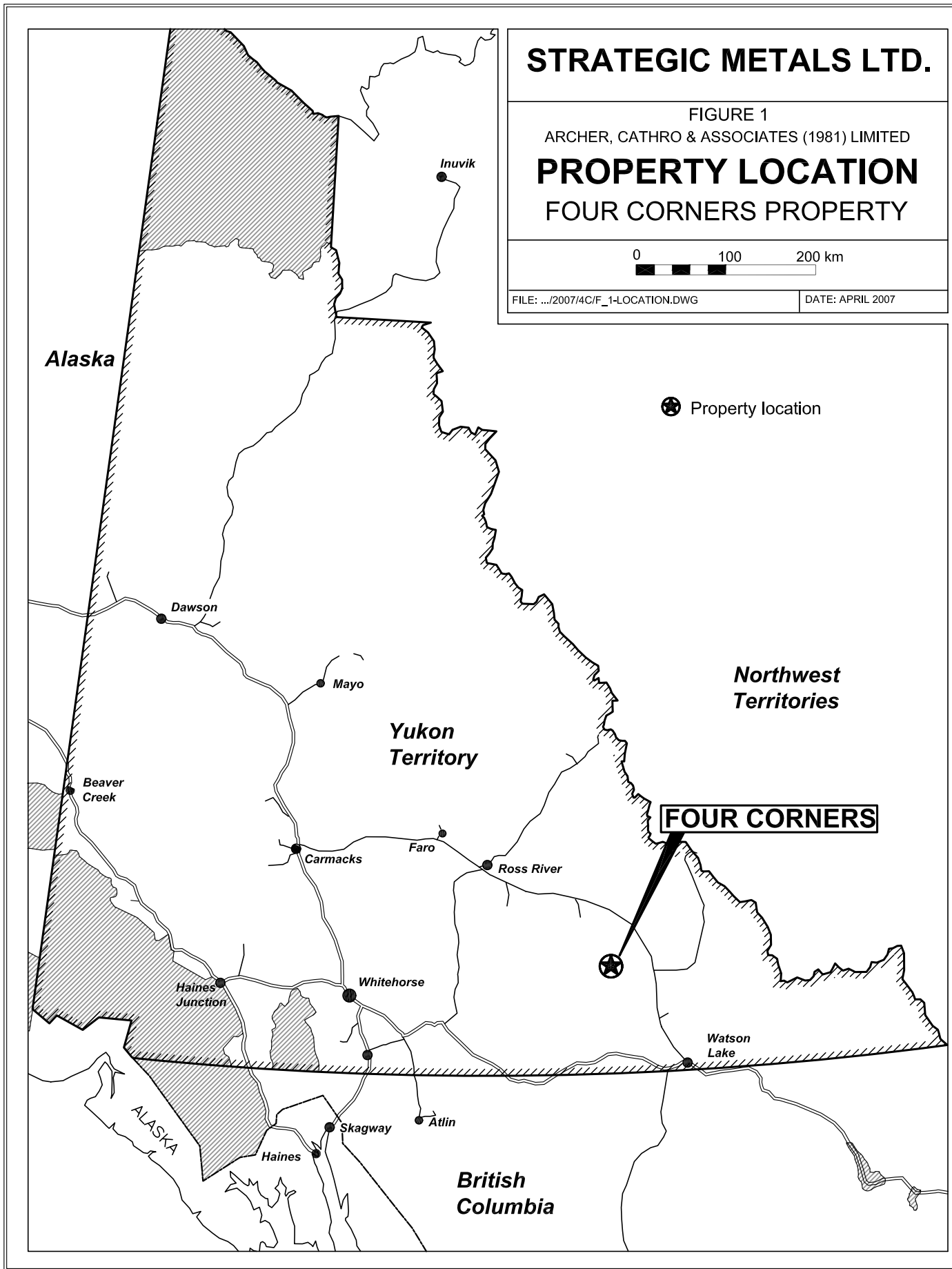
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

PROPERTY LOCATION FOUR CORNERS PROPERTY



FILE: .../2007/4C/F_1-LOCATION.DWG

DATE: APRIL 2007



★ Property location

Northwest
Territories

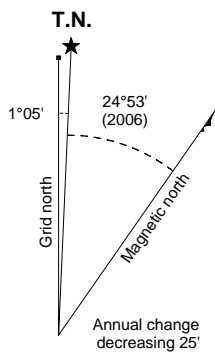
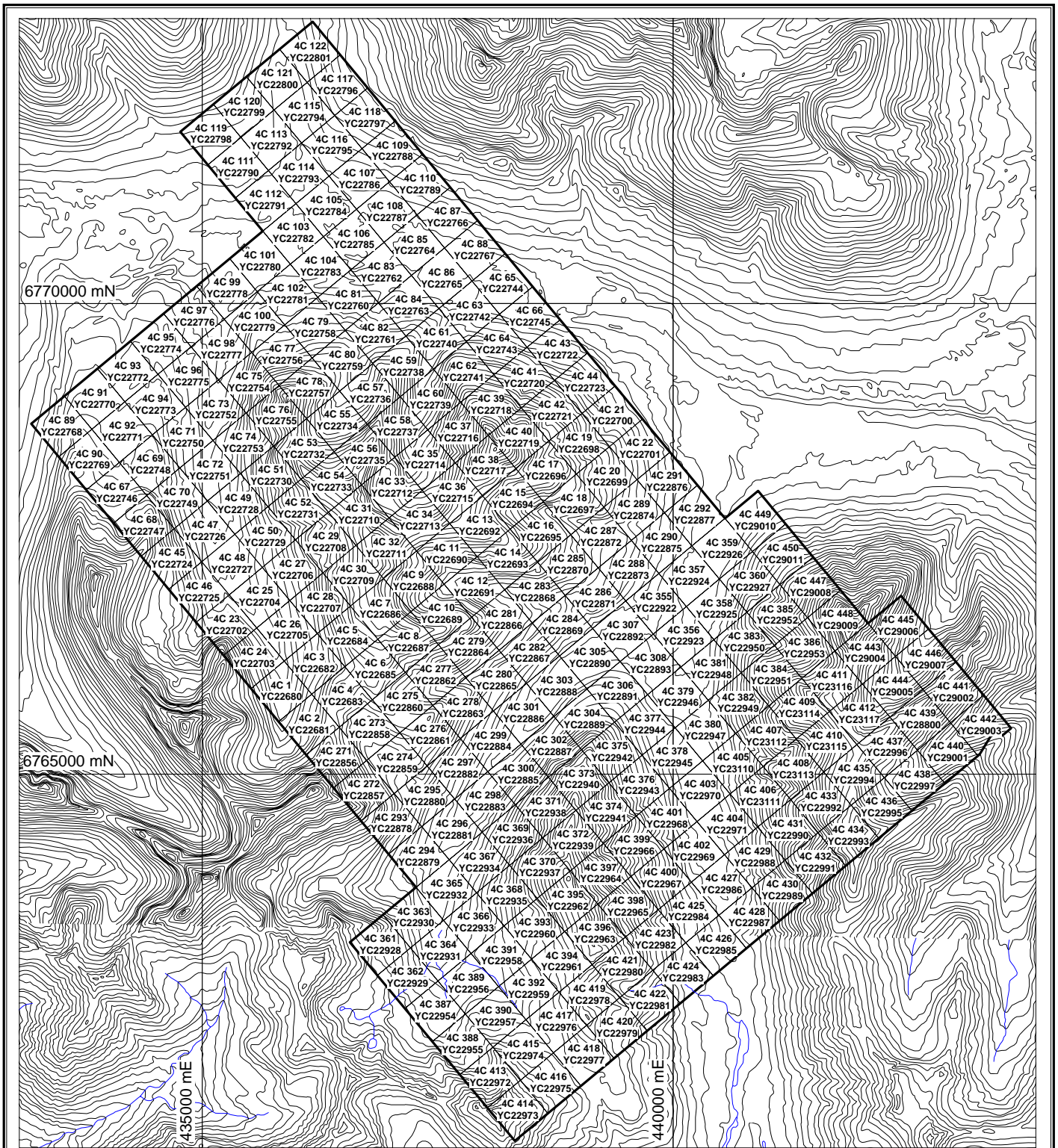
Yukon
Territory

FOUR CORNERS

British
Columbia

Alaska

ALASKA



STRATEGIC METALS LTD.

FIGURE 2
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
CLAIM LOCATION
FOUR CORNERS PROPERTY

0 2.5 km

UTM Zone 9, NAD83, NTS 105G/1 - 105B/16

FILE:./2007/4C/F2_CLAIM_LOC

DATE: MARCH 2007

GEOMORPHOLOGY

The Four Corners property lies within the Simpson Range of the Pelly Mountains, near the headwaters of the Liard River. Elevations range between 1080 and 1788 m. Topography is relatively rugged with predominantly north flowing creeks draining U-shaped valleys that often emanate from cirques. Slopes are moderate to steep, typically ranging between 20 and 45°. Ridge crests are mostly rounded uplands with extensive felsenmeer. Ice sheets covered the entire Pelly Mountain area during the Pleistocene with the main ice flow direction southeasterly along the larger river valleys. Alpine glacial features such as cirques, tarn lakes and lateral moraines are common.

Much of the property is above tree line. Vegetation ranges from scattered stunted spruce, balsam and willow at lower elevations, giving way to buckbrush and moss and ultimately to grass and lichen at higher elevations.

Several creeks draining the claim blocks provide ample water for camp purposes and there are numerous good campsite locations.

EXPLORATION HISTORY

Regional scale geological mapping on the map sheets encompassing the Four Corners property was done by Geological Survey of Canada (GSC) mapping parties (Poole, et al., 1960 and Tempelman-Kluit, 1977). Drainages in the vicinity of the Four Corners property were sampled during reconnaissance scale stream sediment geochemical surveys supervised by the GSC (Hornbrook and Ballantyne, 1978 and Hornbrook and Friske, 1988a).

The only record of previous exploration for metals on the ground now covered by the Four Corners property was work conducted by Cominco Ltd. between 1995 and 1998. That work targeted Kuroko-type volcanogenic massive sulphide mineralization modeled on the Kudze Kayah Deposit located 60 km north-northwest of the Four Corners property.

Cominco flew helicopter-borne geophysical surveys over most of the Finlayson Lake District following discovery of Kudze Kayah, and later staked numerous claim blocks to cover the resulting anomalies. Results from the geophysical surveys were not reported for assessment credit.

Parts of three old Cominco claim blocks (BL 1-93, Wat 1-165 and IC 1-28 claims) are now covered by the Four Corners property (Deklerk, 2002). Cominco's claims were staked in 1996 and 1997 and were explored in those years by reconnaissance scale geological mapping, prospecting and soil and silt sampling. In 1998 Cominco performed more detailed mapping and prospecting around a stratiform pyrite showing hosted within siliceous felsic exhalite and argillite on the IC claims. This showing (IC Showing) is in the northern part of the Four Corners property.

In spring 2003 Strategic staked the Four Corners property and immediately afterward optioned it to Firestone Ventures Inc. That summer Firestone explored for emeralds. Although a few small

beryl crystals were found, no green or gem quality stones were discovered. A few rock samples collected during that program returned elevated gold assays but no systemic follow up was done.

In 2005 after Firestone dropped its option, Strategic staked another twelve claims and explored the northeastern corner of the property for VMS potential by geological mapping, prospecting and soil geochemistry (Wengzynowski, 2006).

GEOLOGICAL SETTING

Regional Geology

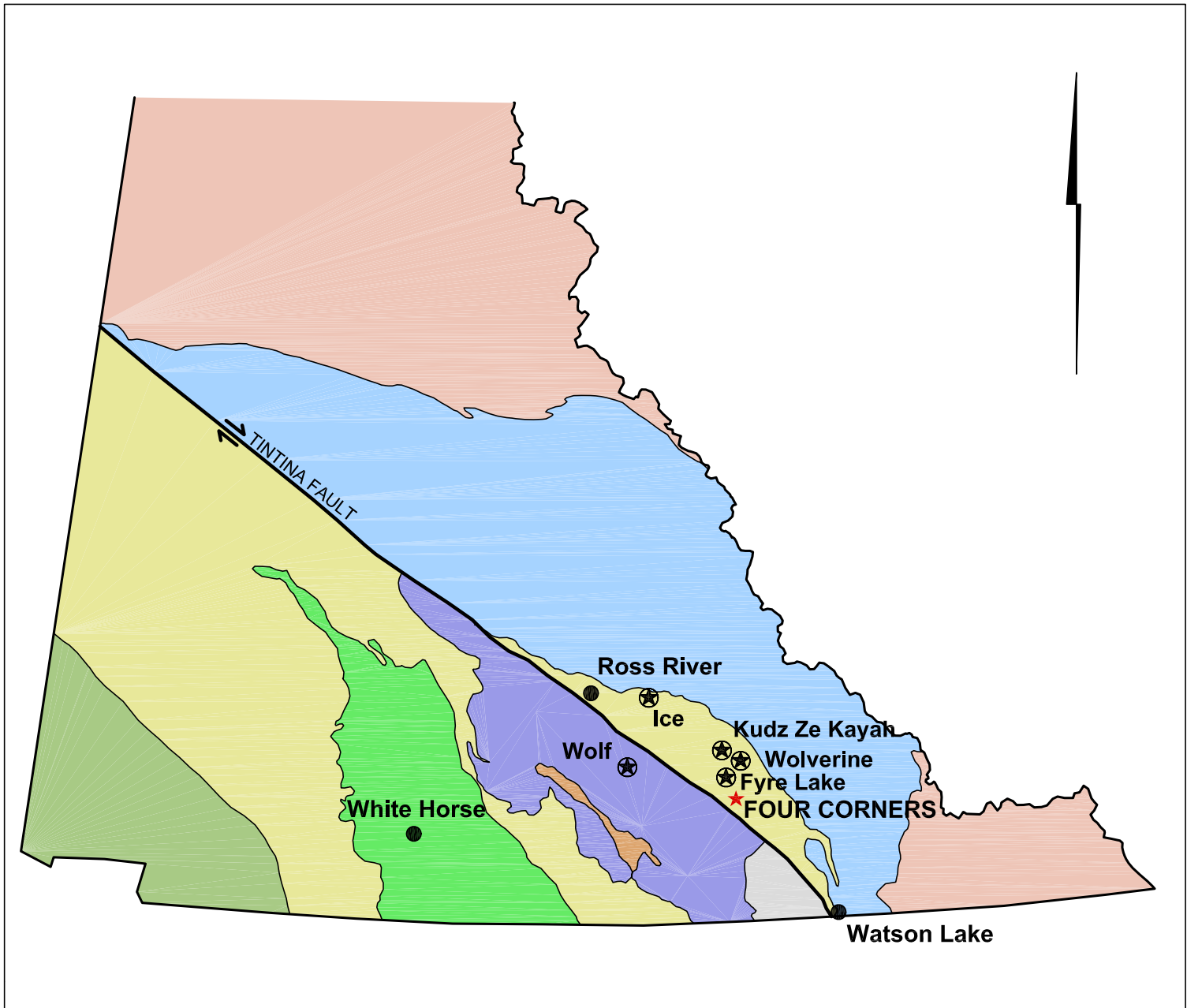
The Four Corners property lies within the Yukon-Tanana Terrane, 5 km northeast of the Tintina Fault (Figure 3). This regional scale, transcurrent fault extends across Yukon and into Alaska and resulted in approximately 420 to 460 km of dextral offset in Early Tertiary times (Mortensen, et al., 2000). The Yukon-Tanana Terrane is composed of complexly deformed, greenschist to lower amphibolite facies metamorphic rocks of Paleozoic age (Tempelman-Kluit, 1977). The main components are Pre-Late Devonian metaclastic and carbonate rocks and Late Devonian to Mississippian metavolcanic, metasedimentary and metaplutonic rocks. The latter package includes bimodal volcanic suites, serpentized ultramafic bodies thought to be sills, and granite and quartz monzonite stocks of the Simpson Range Plutonic Suite. Figure 4 is a schematic stratigraphic illustrating the relationships between the main Paleozoic units and their approximate ages.

Rocks of the Yukon-Tanana Terrane represent an island arc assemblage that was deformed and imbricated during accretion to the North America craton in the Late Paleozoic (Mortensen, 1992). A second stage of deformation occurred in the Early Cretaceous prior to emplacement of peraluminous granitic intrusions belonging to the approximately 112 Ma Anvil Plutonic Suite (Mortensen, 1999).











Since the mid-1990s, the Yukon-Tanana Terrane has been heavily explored for VMS mineralization. This exploration has resulted in the discovery of Kuroko-type mineralization at the Kudze Kayah (KZK), GP4F and Wolverine Deposits, Besshi-type mineralization at the Fire Lake Deposit and Cyprus-type mineralization at the Ice Deposit. The approximate locations of these deposits are shown on Figure 3 while their stratigraphic positions are illustrated on Figure 4.

Property Geology

Geology in the northeastern corner of the Four Corners property is shown on Figure 5. The lithological units and contacts are inferred because little detailed property mapping has been done and most contacts are obscured by talus, glacial till or vegetation. Unit descriptions and terminology used throughout this section are based on the most recent mapping in the Finlayson Lake District which was done by the Yukon Geology Program (Murphy and Piercey, 1999 and Murphy et al., 2003).



TERRANE

- | | | | |
|--|----------------------|---|-------------|
|  | Quaternary |  | VMS deposit |
|  | Mackenzie Platform |  | Property |
|  | Selwyn Basin | | |
|  | Slide Mountain | | |
|  | Cassiar Platform | | |
|  | Yukon-Tanana Terrane | | |
|  | Intermontane | | |
|  | Insular | | |

STRATEGIC METALS LTD.

FIGURE 3

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

TECTONIC SETTING
FOUR CORNERS PROPERTY

0 150 350 km

FILE: ...2007/4C/F_3-TECTONIC.DWG MARCH 2007

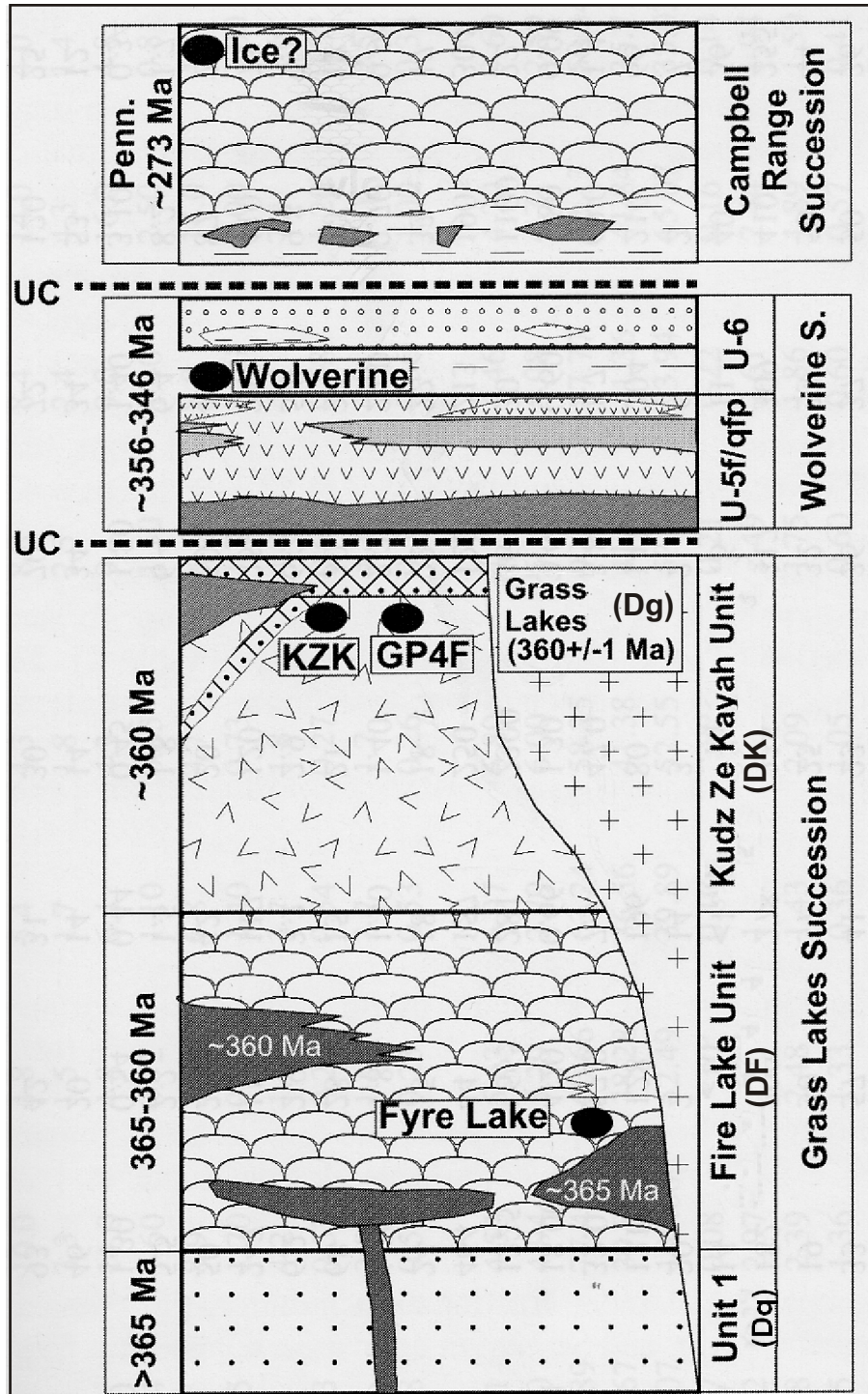


Fig 4. Schematic section of the Finlayson Lake District with the Paleozoic stratigraphy and location of VMS deposits. Dark intrusive rocks within the Fire Lake Unit are ultramafic unit Dum. Cretaceous granitic intrusions (Kg) are not shown. Modified after Murphy and Piercey (1999, 2000) and Piercey, et al, (2002)

STRATEGIC METALS LTD.	
FIGURE 4	
ARCHER, CATHRO & ASSOCIATES (1981) LIMITED	
STRATIGRAPHY	
FOUR CORNERS PROPERTY	
FILE: .../2007/4C/F_4-STRAT.CDR	DATE: MARCH 2007

Yukon-Tanana rocks on the Four Corners property form a stacked sequence comprised of three stratigraphic units and laterally extensive ultramafic sills. The lowest unit is composed of clastic metasedimentary rocks correlated to unit Dq. They are overlain by mafic metavolcanic rocks of unit DF or are separated from unit DF by a thick serpentinized ultramafic sill belonging to unit Dum. The layered sequence is capped by felsic metavolcanic rocks of unit DK. The youngest rocks on the Four Corners property are found along the western edge of the claim block where the layered rocks are intruded by a north-northwesterly elongated, approximately 15 sq km granitic stock of the Anvil Plutonic Suite (unit Kg). Unit descriptions are summarized in the following table.

Table I - Lithological Units at the Four Corners Property
(after Murphy and Piercey, 1999 and Murphy et al., 2003)

Unit (Age)	Description
Qob (Quaternary)	Unconsolidated alluvium, colluvium, lacustrine and glacial deposits
Kg (Mid-Cretaceous)	Massive to weakly foliated, medium to coarse grained biotite-muscovite granite, generally equigranular
Dum (Late Devonian)	Brown weathering, dark green to black, variably serpentinized dunite, includes gabbro and/or pyroxenite locally
DK (Late Devonian)	Kudz ze Kayah felsic metavolcanic unit: feldspar-muscovite-quartz schist
DF (Late Devonian)	Fire Lake mafic metavolcanic unit: massive to subtly layered chlorite-biotite-plagioclase-actinolite schist
Dq (Pre-Late Devonian)	Biotite-muscovite-feldspar-quartz schist, micaceous quartzite and psammite, quartz-biotite-muscovite metapelitic schist, and marble

Compositional layering in the stratified rocks approximately parallels foliation. The foliation attitudes strike northwesterly and dip moderately to the north or south, about a northwest plunging anticlinal axis.

Although no high angle faults have been mapped on the property, abundant quartz veins in the central part of the claim block indicate that extensional structures are present.

Two thrust faults have been identified in the Four Corners area. The larger of these shallowly dipping structures lies about 3 km north of the property and forms the southern limit of a major feature called the Money Klippe. Rocks within this klippe are quite different from those on the Four Corners property. The other thrust is located southeast of the claim block. It only affects the local layered sequence and creates a 7 sq km klippe, within which part of the stratigraphic section is repeated.

MINERALIZATION

Four types of mineralization have been discovered on the Four Corners property. Beryl crystals and gold mineralization are probably related to Cretaceous age intrusive activity while VMS-

type mineralization at the IC and HS Showings is believed to be related to Devonian-Mississippian volcanism. The occurrences are briefly described in the following paragraphs.

Isolated **beryl** crystals were found at two locales in tourmaline bearing, quartz-feldspar pegmatite float surrounded by calcareous schist talus of the Fire Lake metavolcanic stratigraphy. Some of the schist is weakly skarnified with epidote and diopside crystals developed along limy bands. The larger of the two beryl crystals has a 1.3 cm diameter cross section, is opaque to translucent and exhibits a pale blue colour. Beryl of this type is characterized as non-gem quality aquamarine.

Gold bearing, silica altered rocks are found in the northwestern part of the property. They form a more than 100 m long talus train surrounded by Fire Lake chlorite schist. The talus train is about 8 m wide and consists primarily of white quartz flooded material. In the centre of the train is a 1 to 3 m wide band of distinctive green chalcedony believed to be coloured by finely disseminated chrome mica. A sample composed of several chips from two, 70 cm diameter boulders of the green chalcedony assayed 4.28 g/t gold and 2.64 g/t silver. Another chip sample taken nearby across 3 m of talus, centred on the green chalcedony band returned 198 ppb gold. The source of the mineralized talus is not exposed.

The **IC Showing** is located in the extreme northeastern part of the property. It is strataform and is hosted in siliceous felsic exhalite and argillite of the Kudzu Kayah unit near the transition from the Fire Lake mafic metavolcanic rocks. The mineralization consists of massive pyrite bands that are 1 to 15 cm thick and contain trace amounts of sphalerite and galena. Specimens of this banded mineralization returned low values ranging up to 0.8% lead and 0.2% zinc. The showing lies within a 1000 m long by 300 m wide coincident lead-zinc-silver soil geochemical anomaly. Peak values from the anomaly are 825 ppm lead, 571 ppm zinc and 5.9 ppm silver. Scattered anomalous copper values to a maximum of 393 ppm were also noted (Bannister and Holroyd, 1998 and Senft, 1997) from previous soil geochemical surveys.

The **HS Showing** also lies in the northeast part of the property. The area is moderately steep but outcrop is rare due to heavy vegetation. The mineralization consists of limonite boxwork and limonitic chlorite schist discovered in a small vegetation "kill zone" within a section of Fire Lake metavolcanics. Specimens of limonite-rich material assayed between 0.58 and 0.97% copper with near background values for most other metals except cobalt (119 to 184 ppm) and zinc (262 to 2850 ppm). The showing is at the east end of a 2.5 km long copper-in-soil geochemical anomaly (described in the following section).

SOIL GEOCHEMISTRY

Soil samples were mostly taken in 2005 on two grids located along the northern edge of the claim block. Geochemical results for copper are shown on Figure 5. The highest concentrations of moderately to strongly anomalous values are found on the easterly grid where high copper values (100 to 810 ppm) form a relatively continuous band about 250 m wide and 2500 m long. This band closely conforms to the inferred surface trace of the Fire Lake metavolcanic strata. The highest concentration of moderately anomalous silver values occurs along this same stratigraphic horizon about 1000 m to the west of the copper-rich band, across a broad

unsampled creek valley. The best cobalt values lie immediately west of the best silver values. This progressive shift of anomalous values may indicate some form of primary metal zoning within the Fire Lake strata. Most anomalous values for the other metals occur as scattered spot highs.

Peak values for various metals are 2.4 ppm silver, 35 ppb gold, 140 ppm cobalt, 810 ppm copper, 164 ppm lead and 1130 ppm zinc. Most of the elevated lead and zinc values are underlain by Kudz ze Kayah felsic metavolcanic strata which overlie the Fire Lake strata.

2006 GEOPHYSICAL SURVEYS

In late spring 2006 Geotech Ltd. of Ontario conducted helicopter-borne, VTEM and magnetic surveys over the northeastern part of the property.

A total of 132 line kilometres was flown on May 31 and June 1. The block was flown at 100 m line spacing with two perpendicular tie lines roughly 950 m apart. Where possible, the apparatus maintained a terrain clearance of 45 m.

VTEM response outlined four distinct conductor axes all contained within the Fire Lake unit. Two of the conductors occur along the contact between the Fire Lake mafic volcanic strata and the ultramafic unit in the western part of the grid and are supported by strong copper-in-soil response and a moderately strong but well defined, linear magnetic anomaly. The other two anomalies occur in the vicinity of the HS and IC Showings.

The total magnetic field data highlights the inferred trace of the ultramafic assemblage very well. A subtle but well defined magnetic high coincides with the westernmost VTEM conductor axis as illustrated on Figure 5.

Further reduction of the VTEM data is currently underway and additional modeling will be done for the best conductors identified through this process. The report documenting the survey by Geotech Ltd. is contained in Appendix II.

CONCLUSIONS AND RECOMMENDATIONS

Previous work at the Four Corners property suggests potential for Kuroko-type and Besshi-type VMS mineralization within the favourable Kudz ze Kayah and Fire Lake units. The 2006 geophysical surveys identified four conductors in the vicinity of known showings and along the trend of soil geochemical anomalies within the Fire Lake unit.

Additional work is warranted. The next phase should consist of detail evaluation of the conductors primarily by prospecting and hand trenching, to be followed by diamond drilling if warranted.

Respectfully submitted,

ARCHER, CATHRO AND ASSOCIATES (1981) LIMITED.

A handwritten signature in black ink, appearing to read "W.A. Wengzynowski". The signature is written in a cursive style with a large initial "W".

W.A Wengzynowski, P.Eng.

REFERENCES

- Bannister, V.L. and Holroyd, R.W.
1998 Pelly Mountain Area, Cominco Ltd. Assessment Report #093861 on the Wat 1-165, BL 1-93 and IC 1-28 Claims.
- Deklerk, R. (compiler)
2002 Yukon MINFILE 2002 entries 105B52 and 105G146. Indian and Northern Affairs Canada, Yukon Region: CD-ROM.
- Hornbrook, E.H.W. and Ballantyne, S.B.
1978 Regional Stream Sediment and Water Geochemical Reconnaissance Data, Yukon Territory (NTS 105B), GSC O.F. 563, 1978.
- Hornbrook, E.H.W. and Friske, P.W.B.
1988a Regional Stream Sediment and Water Geochemical Data, Southeastern Yukon (NTS 105G), GSC O.F. 1648, 1988.
- Mortensen, J.K.
1992 Pre-Mid-Mesozoic Tectonic Evolution of the Yukon-Tanana Terrane, Yukon and Alaska; *Tectonics*, Vol. 11, pp. 836-853.
- Mortensen, J.K.
1999 YUKONAGE, an Isotopic Database for the Yukon Territory, *in* Yukon Digital Geology, GSC O.F. D3826, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada O.F. 1999-1(D).
- Mortensen, J.K., Hart, C.J.R., Murphy, D.C. and Heffernan, S.
2000 Temporal Evolution of Early and Mid-Cretaceous Magmatism in the Tintina Gold Belt, *in* The Tintina Gold Belt: Concepts, Exploration and Discoveries; B.C. and Yukon Chamber of Mines, Special Volume 2, pp. 49-57.
- Murphy, D.C. and Piercey, S.J.
1999 Geological Map of Parts of Finlayson Lake (105G/7, 8 and parts of 1, 2 and 9) and Frances Lake (parts of 105H/5 and 12) Map Areas, Southeastern Yukon, Indian and Northern Affairs Canada, Exploration and Geological Services Division, Yukon Region, Open File 1999-4.
- Murphy, D.C. and Piercey, S.J.
2000 Syn-mineralization faults and their reactivation, Finlayson Lake massive sulfide belt, Yukon-Tanana Terrane, Southeastern Yukon. Indian and Northern Affairs Canada, Exploration and Geological Services Division, Yukon Region, pp. 55-66.

- Murphy, D.C., Lipovsky, P.S., Stuart, A., Fonseca, A., Groat, L. and Piercey, S.J.
2003 Geological Setting of Emeralds at Regal Ridge (S.E. Yukon) Provides Clues to Their Origin and to Other Places to Explore; Yukon Geological Survey, Government of Yukon, Poster Presentation, 2003 Cordilleran Geology and Exploration Roundup, Vancouver.
- Piercey, S.J., Mortensen, J.K., Murphy, D.C., Paradis, S. and Creaser, R.A.
2002 Geochemistry and tectonic significance of alkalic mafic magmatism in the Yukon-Tanana terrane, Finlayson Lake region, Yukon; Canadian Journal of Earth Sciences, Vol. 39, No. 12, December 2002, pp. 1729-1744.
- Poole, W.H., Roddick, J.A. and Green, L.H.
1960 Geology, Wolf Lake, Yukon Territory (NTS 105B), GSC Map 10-1960.
- Senft, D.A.
1997 Simpson Range Area, Pelly Mountains, Cominco Ltd. Assessment Report #093883 on the Wat 1-165 and BL 1-93 Claims.
- Tempelman-Kluit, D.J.
1977 Geology, Quiet Lake (NTS 105F) and Finlayson Lake (NTS 105G), Yukon Territory GSC O.F. 486.
- Wengzynowski, W.A.
2006 Geological survey at the Four Corners property , assessment report for Strategic Metals Ltd, P8.

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 1, 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

GEOTECH LTD. VTEM AND MAGNETIC SURVEYS REPORT



**REPORT ON A HELICOPTER-BORNE
TIME DOMAIN ELECTROMAGNETIC
GEOPHYSICAL SURVEY**

FOUR CORNERS PROPERTY
Yukon Territory, Canada

for
Strategic Metals Ltd.

By

Geotech Limited
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 May - July 2006

Project 663
October 2006

TABLE OF CONTENTS

Executive Summary	3
1. INTRODUCTION	4
1.1 <i>General Considerations</i>	4
1.2 <i>Survey and System Specifications</i>	4
1.3 <i>Data Processing and Final Products</i>	5
1.4 <i>Topographic Relief</i>	5
2. DATA ACQUISITION	6
2.1 <i>Survey Area</i>	6
2.2 <i>Survey Operations</i>	6
2.3 <i>Flight Specifications</i>	9
2.4 <i>Aircraft and Equipment</i>	10
2.4.1 <i>Survey Aircraft</i>	10
2.4.2 <i>Electromagnetic System</i>	10
2.4.3 <i>Airborne magnetometer</i>	12
2.4.4 <i>Ancillary Systems</i>	12
2.4.5 <i>Base Station</i>	13
3. PERSONNEL	14
4. DATA PROCESSING AND PRESENTATION	15
4.1 <i>Flight Path</i>	15
4.2 <i>Electromagnetic Data</i>	15
4.3 <i>Magnetic Data</i>	16
5. DELIVERABLES	17
5.1 <i>Survey Report</i>	17
5.2 <i>Maps</i>	17
5.3 <i>Gridded Data</i>	17
5.4 <i>Digital Data</i>	18
6. CONCLUSIONS	20
 APPENDICES	
A. Survey block Location Maps	20
B. Survey block coordinates	21
C. General modeling results of the VTEM system	22
D. VTEM Wave Form	23

REPORT ON A HELICOPTER-BORNE

TIME DOMAIN ELECTROMAGNETIC SURVEY

Four Corners Property, Yukon Territory, Canada

Executive Summary

During the period of May 20th to July 8th, 2006, Geotech Limited carried out a helicopter-borne geophysical survey for Strategic Metals Ltd. over ten blocks located in the Yukon Territory, Canada, including **Four Corners Property**.

Principal geophysical sensors included a versatile time domain electromagnetic system (VTEM) and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 2750.77 line-km. were flown, including 132 line-km. for **Four Corners Property**.

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

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

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 Limited and Strategic Metals Ltd., to perform a helicopter-borne geophysical survey over the multiple blocks, located in Yukon Territory, Canada, including **Four Corners Property**.

2750.77 line-km of geophysical data were acquired during the survey.

The survey coordinates for **Four Corners Property** are as shown in Appendix A.

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

The helicopter was obtained from TransNorth Helicopters for the duration of the survey. Multiple fuel caches were arranged.

Survey flying was completed on July 8th, 2006. 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 Limited in November 2006.

1.2. *Survey and System Specifications*

The **Four Corners Property** survey block was flown at a nominal traverse line spacing of 100 metres.

Tie lines were flown perpendicular to traverse lines at approximately 950 metres, as shown in Section 2 of this report.

Where suitable, survey lines were extended beyond original block boundary to reach the minimum length of 3 km.

Where possible, the helicopter maintained a mean terrain clearance of 80 metres, which translated into an average height of 45 metres above ground for the bird-mounted VTEM system and 45 metres for the magnetic sensor.

The survey was flown using an Astar B2 helicopter, registration C-GTNU, operated by TransNorth Helicopters Limited. 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 Limited.

Database, grid 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

The **Four Corners Property** survey block location is shown on the location map (Appendix A).

It is located approximately 130 km. NW of the town of Watson Lake and approximately 270 km. ENE of Whitehorse.

Topographically, the block exhibits a rugged mountainous relief, with an elevation range of 1100 metres to 1850 metres above sea level.

2. DATA ACQUISITION

2.1. Survey Area

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

Survey areas	Line /Tie spacing (m)	Line /Tie - km	Line / Tie direction	Line number	Line KM
Four Corners	100	120.0	N44E	4010 - 4370	131.9
	950	11.9	N46W	4910 - 4930	

Table 1 - Survey block

The survey block boundary is shown in Appendix B.

2.2. Survey Operations

Survey operations were based in several locations in the Yukon Territory for the acquisition phase of the survey, including Watson Lake for the **Four Corners Property**. The following table shows the timing of the various flights.

Four Corners Property was flown along with other blocks in the same vicinity.

Date	Flights	Production	Block	Crew location	REMARK
20-May		0		Whitehorse	Mobilization to Whitehorse
21-May		0		Whitehorse	Assembly of system
22-May		0		Whitehorse	Helicopter installation, test flight
23-May		0		Teslin	Mobilization to Teslin - no production
24-May		0		Teslin	No production due to weather
25-May	1,2,3	109.5	BAR	Teslin	
26-May	4, 1, 2	161.09	BAR, CONVERT	Teslin	
27-May	7,8	95.62	CONVERT	Teslin	flying aborted – due to weather
28-May	9	18.83	BAR	Teslin	flying aborted – due to weather
29-May		0		Watson Lake	move to Watson lake, prepare fuel cache
30-May	10, 11, 12	118.74	SIM	Watson Lake	
31-May	13, 14, 15	109.46	SIM, 4C	Watson Lake	
01-Jun	16, 17, 18	87.97	4C	Watson Lake	flying aborted – due to rough terrain
02-Jun	19	5.38	SIM	Ross River	Re-flight
03-Jun	20	91.37	TIDD	Ross River	flying aborted – due to weather
04-Jun		0		Ross River	No production due to weather
05-Jun	21, 22, 23	270.54	TIDD	Ross River	
06-Jun	24, 25, 26	194.78	TIDD	Ross River	flying aborted – due to weather
07-Jun	27, 28, 29	269.91	TIDD	Ross River	
08-Jun	30,31	92.81	TIDD	Ross River	rough terrain
09-Jun		0		Ross River	
21-Jun		0		Mayo	Ferry flights, move fuel to MARG
22-Jun		0		Mayo	No production due to weather
23-Jun	1, 2	84.68	MARG	Mayo	flying aborted – due to weather
24-Jun	3,4,5	158.36	MARG	Mayo	
25-Jun	6,7	123.1	MARG	Mayo	
26-Jun		0		Dawson City	No production due to weather
27-Jun		0		Dawson City	No production due to weather
28-Jun	1,2,3	111	MIC	Dawson City	flying aborted – due to weather
29-Jun	3,4	139.51	MIC, MAG	Dawson City	
30-Jun	5,6,7	115.74	MAG	Dawson City	flying aborted – due to weather
01-Jul	7,8	101.59	CN	Dawson City	
02-Jul	9	76.63	CN	Dawson City	flying aborted – due to weather
03-Jul	10, 11	121.16	CN	Dawson City	
04-Jul	1,2	66	PAN	Dawson City	
05-Jul	3	3	PAN	Dawson City	Test flights
06-Jul	4	24	PAN	Dawson City	
07-Jul		0			helicopter inspection
08-Jul		0		Burwash	Burwash Block cancelled due to rough topo

Table 2 - Survey schedule

2.3. Flight Specifications

The nominal EM sensor terrain clearance was 45 m (EM bird height above ground, i.e. helicopter is maintained 80 m above ground). 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 the 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 camp 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 B2 helicopter, registration C-GTNU - owned and operated by TransNorth 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 Versatile Time Domain EM (VTEM) system. The layout of the configuration used for this survey is as indicated in Figure 1 below.

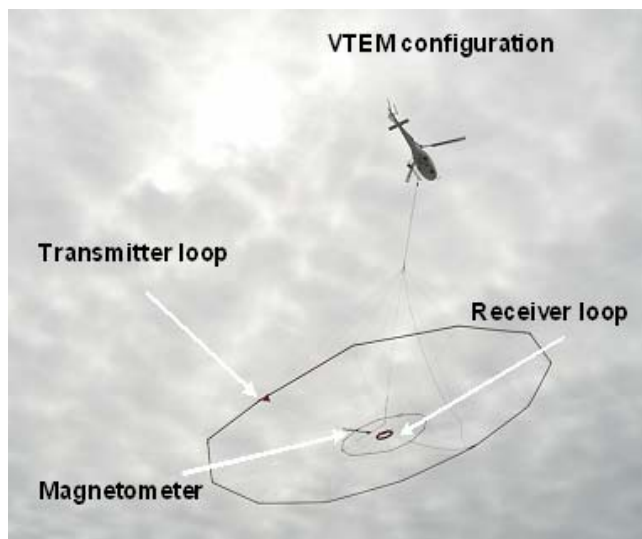


Figure 1 - VTEM Configuration

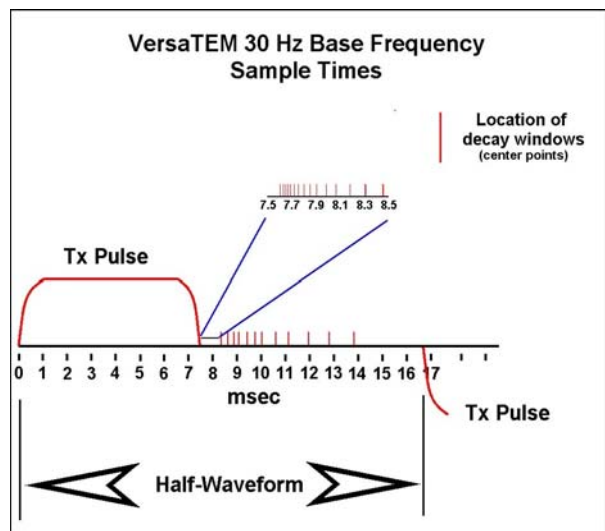


Figure 2 - VTEM sample times

Receiver and transmitter coils are concentric and Z-direction oriented.

The receiver decay recording scheme is shown diagrammatically in Figure 2.

Twenty-six measurement gates were used in the range from 130 μ s to 7540 μ s, as shown in the following table.

VTEM Decay Sampling scheme (Microseconds)			
Time gate	Start	End	Width
130	120	140	20
150	140	160	20
170	160	180	20
190	180	205	25
220	205	240	35
260	240	280	40
300	280	325	45
350	325	380	55
410	380	445	65
480	445	525	80
570	525	625	100
680	625	745	120
810	745	885	140
960	885	1045	160
1130	1045	1235	190
1340	1235	1470	235
1600	1470	1750	280
1900	1750	2070	320
2240	2070	2450	380
2660	2450	2920	470
3180	2920	3480	560
3780	3480	4120	640
4460	4120	4880	760
5300	4880	5820	940
6340	5820	6860	1040
7540	6860	8220	1360

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 167 A.
Duty cycle was 37%.
Peak dipole moment was 355,000 NIA.

Receiver coil diameter was 1.2 metre, the number of turns was 100.
Receiver effective area was 113 m²
Wave form – trapezoid.
Recording sampling rate was 10 samples per second.

The EM bird was towed 35 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 separate bird towed at the same altitude as the EM sensor. 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. Contents and update rates were as follows:

DATA TYPE	SAMPLING
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
Radar Altimeter	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 bench sensitivity of 0.002 nT. The base station records the magnetic field together with the GPS time at 1 Hz on a base station computer. The base station magnetometer sensor was installed 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

Crew chiefs / Operators: Graeme Lille, Calin Cosma, Brad Marsh

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

Pilots: Stephen Soubliere,
Mechanical Engineer: Margo Hager

Office

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

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

Overall management of the survey was carried out from the Aurora office of Geotech Ltd. by Edward Morrison, President.

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 spheric events and to reduce system noise. Local spheric 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 spheric 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 gate times, in logarithmic scale.

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

The VTEM output voltage of the receiver coil 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.

Tie line levelling was carried out by adjusting intersection points along the traverse lines. A micro-levelling procedure was then applied. This technique is designed to remove persistent low-amplitude components of flight-line noise remaining after tie line levelling.

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 0.2 cm. at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

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 WORD format.

5.2. *Maps*

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

The following maps are presented to Strategic Metals Ltd. on paper as results of the helicopter-borne geophysical survey carried out over the **Four Corners Property**.

- Total Magnetic Field contours and colour images
- Logarithmic scale VTEM profiles, Time Gates 0.22 - 6.34 ms

5.3. *Gridded Data*

Total Magnetic Field grid is provided to Strategic Metals Ltd. in Geosoft GRD format. Grid cell size was adjusted to suit the parameters of the individual block.

For traverse line spacing of 100 metres, 10 m grid cell size was used.

5.4. Digital Data

There are three (3) main directories,

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

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

VTEM_fp_GoogleEarth contains kmz file containing flightpath of the Four Corners Property.

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) (on the tail of the helicopter)
Gtime1:	GPS time (seconds of the day)
Radar:	Helicopter terrain clearance from radar altimeter (metres - AGL)
DEM:	Digital elevation model (metres)
Mag1:	Raw Total Magnetic field data (nT)
Basemag:	Base station magnetic data (nT)
Mag2:	Total Magnetic field base station corrected data (nT)
Mag3:	Levelled Total Magnetic field data (nT)
C130f:	Raw 130 microsecond time channel (pV/A/m ⁴)
C150f:	Raw 150 microsecond time channel (pV/A/m ⁴)
C170f:	Raw 170 microsecond time channel (pV/A/m ⁴)
C190f:	Raw 190 microsecond time channel (pV/A/m ⁴)
C220f:	Raw 220 microsecond time channel (pV/A/m ⁴)
C260f:	Raw 260 microsecond time channel (pV/A/m ⁴)
C300f:	Raw 300 microsecond time channel (pV/A/m ⁴)
C350f:	Raw 350 microsecond time channel (pV/A/m ⁴)
C410f:	Raw 410 microsecond time channel (pV/A/m ⁴)
C480f:	Raw 480 microsecond time channel (pV/A/m ⁴)
C570f:	Raw 570 microsecond time channel (pV/A/m ⁴)
C680f:	Raw 680 microsecond time channel (pV/A/m ⁴)

C810f:	Raw 810 microsecond time channel (pV/A/m ⁴)
C960f:	Raw 960 microsecond time channel (pV/A/m ⁴)
C1130f:	Raw 1130 microsecond time channel (pV/A/m ⁴)
C1340f:	Raw 1340 microsecond time channel (pV/A/m ⁴)
C1600f:	Raw 1600 microsecond time channel (pV/A/m ⁴)
C1900f:	Raw 1900 microsecond time channel (pV/A/m ⁴)
C2240f:	Raw 2240 microsecond time channel (pV/A/m ⁴)
C2660f:	Raw 2660 microsecond time channel (pV/A/m ⁴)
C3180f:	Raw 3180 microsecond time channel (pV/A/m ⁴)
C3780f:	Raw 3780 microsecond time channel (pV/A/m ⁴)
C4460f:	Raw 4460 microsecond time channel (pV/A/m ⁴)
C5300f:	Raw 5300 microsecond time channel (pV/A/m ⁴)
C6340f:	Raw 6340 microsecond time channel (pV/A/m ⁴)
C7540f:	Raw 7540 microsecond time channel (pV/A/m ⁴)
PLinef:	Power line monitor (linear trend removed)

- Grids in Geosoft GRD format, as follow,

4c_magfin: Total Magnetic field (nT)

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information.

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

4c_magfin: Total Magnetic Field image and contours

4c_EM-LP: Logarithmic scale profiles, Time Gates 0.22 – 6.34 ms

- ASCII file VTEM WaveForm.xyz in Geosoft format containing the following channel:

Volt: output voltage of the receiver coil
(volts, sampling rate 20 microseconds)

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

6. CONCLUSIONS

A versatile time domain electromagnetic helicopter-borne geophysical survey has been completed over 10 blocks located in the Yukon Territory, Canada, including **Four Corners Property**.

Total survey line coverage is 2750.77 line kilometres, including 132 line-km. for the **Four Corners Property**. The principal sensors included a Time Domain EM system and a magnetometer. Results have been presented as colour contour maps and stacked profiles.

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

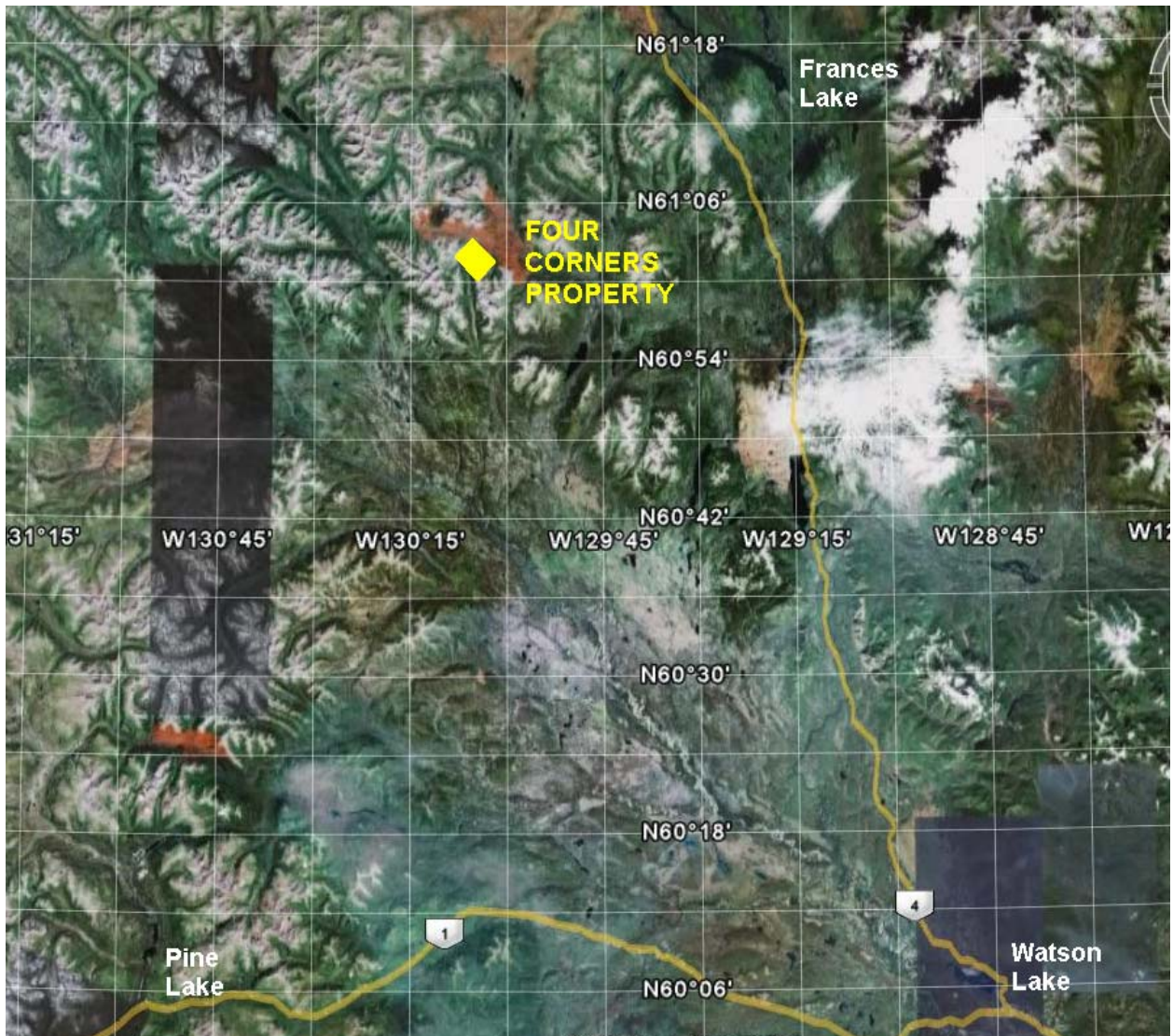
Respectfully submitted,

Marta Orta
on behalf of

George Lev
Geotech Limited
November 8, 2006

APPENDIX A

SURVEY BLOCK LOCATION MAP



APPENDIX B
SURVEY BLOCK COORDINATES

(WGS 84, UTM zone 9N)

FOUR CORNERS	
440823.0	6768288.0
439432.0	6766851.0
442166.0	6763973.0
443595.0	6765433.0

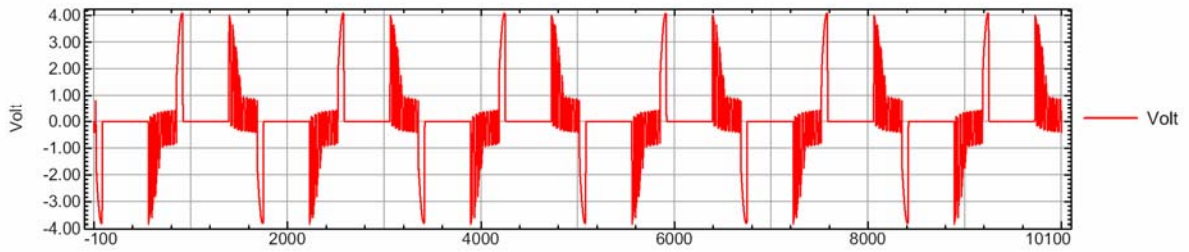
APPENDIX C

General Modeling Results of the VTEM Stysem

APPENDIX D

VTEM WAVE FORM

VTEM Waveform, May - July 2006



GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM

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 metres 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.

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 dual 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 80°. 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 90° to about 30°. The method is not sensitive enough where dips are less than about 30°. Figure E shows a plate dipping 45° and, at this angle, the

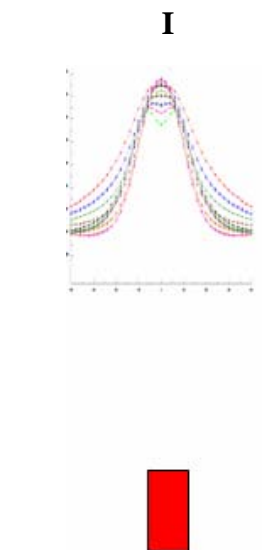
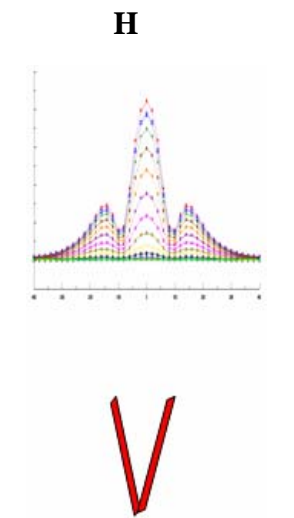
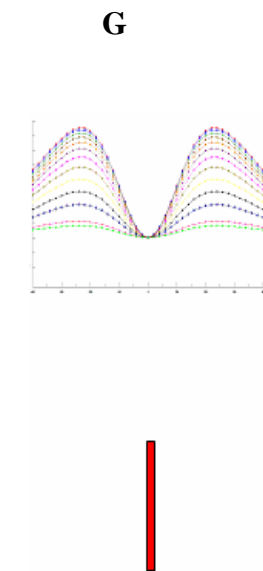
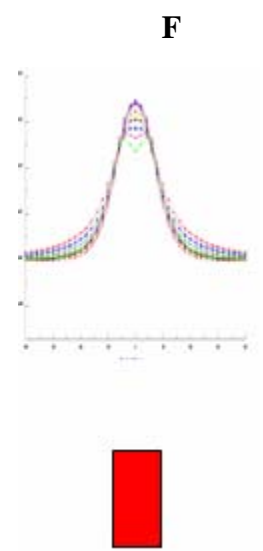
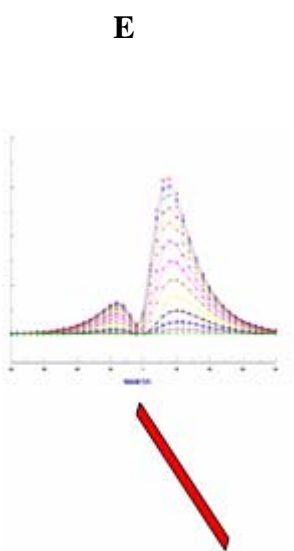
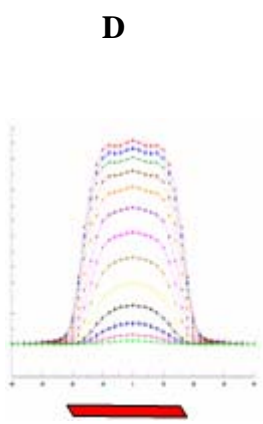
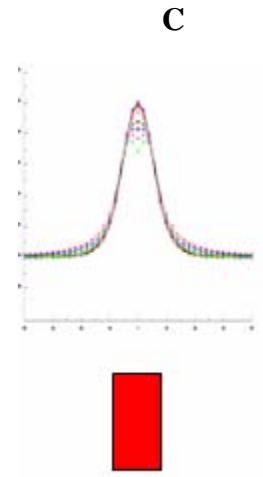
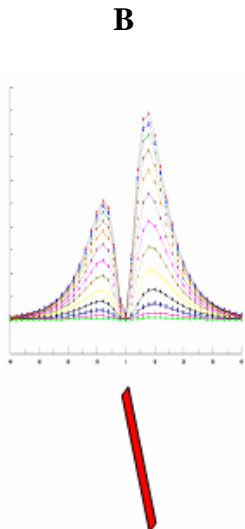
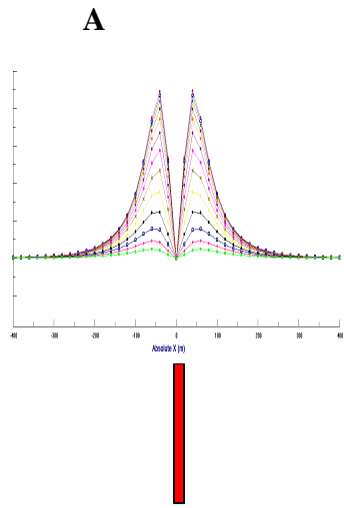
minimum shoulder starts to vanish. In Figure D, a flat lying plate is shown, relatively near surface. Note that the twin peak anomaly has been replaced by a symmetrical shape with large, bell shaped, channel amplitudes which decay relative to the conductance of the plate.

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 were 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.



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, in 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 30°. For angles less than 30° to 0°, 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 surficial 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.

STRATEGIC METALS LTD.

FIGURE 5
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
GEOLOGY AND
COPPER GEOCHEMISTRY
FOUR CORNERS FROPRTY

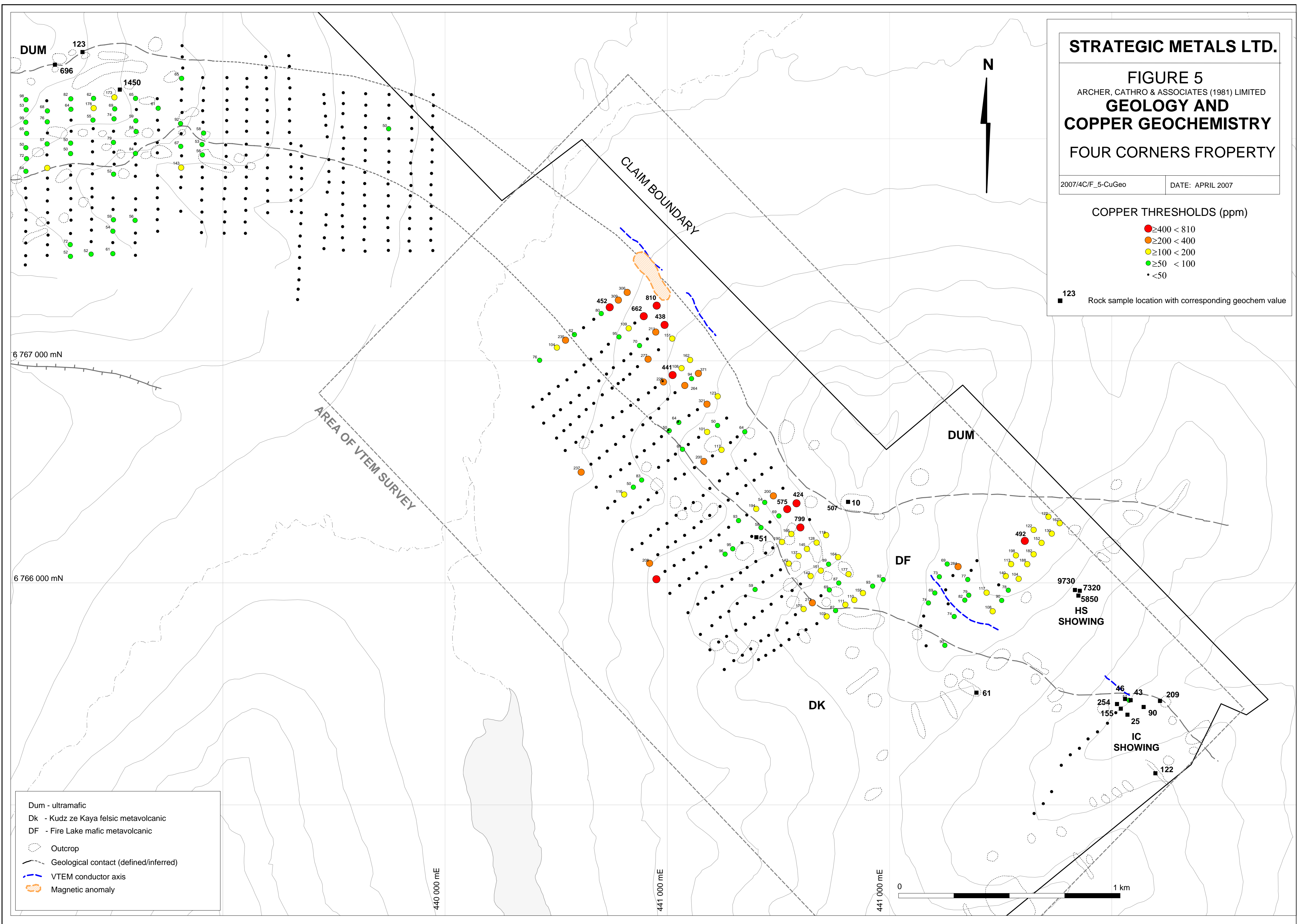
2007/4C/F_5-CuGeo

DATE: APRIL 2007

COPPER THRESHOLDS (ppm)

- $\geq 400 < 810$
- $\geq 200 < 400$
- $\geq 100 < 200$
- $\geq 50 < 100$
- < 50

■ 123 Rock sample location with corresponding geochem value



Dum - ultramafic
 Dk - Kudz ze Kaya felsic metavolcanic
 DF - Fire Lake mafic metavolcanic

○ Outcrop
 - Geological contact (defined/inferred)
 - VTEM conductor axis
 - Magnetic anomaly

6 767 000 mN
 6 766 000 mN

440 000 mE
 441 000 mE
 441 000 mE

0 1 km