



## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

**TITLE OF REPORT:** Report on a helicopter-borne AeroTEM System Electromagnetic survey and magnetic survey, Rosetta Stone property, southern British Columbia

**TOTAL COST:** \$85679.00

**AUTHOR(S):** Jonathan Rudd and Trygve Höy  
**SIGNATURE(S):**

**NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):** not applicable  
**STATEMENT OF WORK EVENT NUMBER(S)/DATE(S):** 4277841/April 29, 2009

**YEAR OF WORK:** 2008

**PROPERTY NAME:** Rosetta Stone

**CLAIM NAME(S) (on which work was done):**

536449, 538604, 538605, 543592, 558556, 558557, 558558, 558559, 558560, 558561, 558562, 558563, 559984, 559985, 559986, 560562, 560563, 560724, 560725, 560726, 579415, 579419, 579425, 579427, 579430, 579433

**COMMODITIES SOUGHT:** gold, lead, zinc, silver, copper, molybdenum

**MINERAL INVENTORY MINFILE NUMBER(S):** 082KSW053, 082KSW067, 082KSW129, 082KSW127, 082KSW132, 082KSW161, 082KSW171, 082KSW177, 082KSW178, 082KSW180, 082KSW182

**MINING DIVISION:** Slocan

**NTS / BCGS:** 082K002, 082K012

**LATITUDE:**

**LONGITUDE:)**

**UTM Zone:** 11

**EASTING:** 424000

**NORTHING:** 5550000

**OWNER(S):** T. P. Kennedy.

**MAILING ADDRESS:**

2290 De Wolfe Avenue, Kimberley, B.C., V1A 1P5

**OPERATOR(S)** Kootenay Gold Inc.

**MAILING ADDRESS:**

550-999 W. Hastings Street, Vancouver, B.C., V6C 2W2

**REPORT KEYWORDS**

Slocan Group, Rossland Group, Kuskanax batholith, epithermal gold, polymetallic lead-zinc-silver veins, gold-quartz veins, Aeroquest airborne geophysical survey, electromagnetic, magnetic, Eocene faulting, gold-sulphide quartz veins

**REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:**

Assessment reports: 11203, 11742, 11867, 12624, 12858, 17847, 18444, 18446, 18678, 18702;

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (in metric units)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping	a		
Photo interpretation			
GEOFYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne	11588 ha	536449,538604,538605,543592,558556,558557,558558,558559,558560,558561,558562,558563,559984,559985,559986,560562,560563,560724,560725,560726,579415,579419,579425,579427,579430,579433	84429.00
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock			
Other	I		
DRILLING (total metres, number of holes, size, storage location)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling / Assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale/area)			
PREPATORY / PHYSICAL			
Line/grid (km)			
Topo/Photogrammetric (scale, area)			
Legal Surveys (scale, area)			
Road, local access (km)/trail			
Trench (number/metres)			
Underground development (metres)			
Other	admin report		1200.00
<b>TOTAL COST</b>			<b>\$85679.00</b>

**Report on a Helicopter-Borne AeroTEM System  
Electromagnetic and Magnetic Survey,  
Rosetta Stone Property,  
Southern British Columbia**

**BC Geological Survey  
Assessment Report  
30771**

NTS map sheet 082K04  
1:20,000 trim map sheets 82K002 and 82K012  
centered at UTM 5550000N and 424000E

Slocan Mining Division

by  
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Aeroquest International,  
7687 Bath Road, Mississauga, Ontario, L4T 3T1

and

Trygve Höy, P.Eng, Ph.D  
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claim owner: T.P. Kennedy  
claim operator: Kootenay Gold Inc.  
550-999 W. Hastings Street  
Vancouver, B.C., V6C 2W2

April 24, 2009

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## Report on a Helicopter-Borne AeroTEM System Electromagnetic and Magnetic Survey, Rosetta Stone Property, Southern British Columbia

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## Introduction

This report describes a helicopter-borne geophysical survey carried out on behalf of Kootenay Gold Inc. on their Rosetta Stone property west of the north end of Slocan Lake in southeastern British Columbia. The report summarizes a considerable part of the data that is included as Appendix 3, authored by Jonathon Rudd of Aeroquest International based in Mississauga, Ontario.

### *Location*

The Rosetta Stone property is located in the southwest corner of 1:50,000 topographic sheet 082K/04, within the Selkirk Mountains immediately southeast of Arrow Lake and west of Slocan Lake (Figure 1). Topography is relatively steep, ranging from 800 meters in valley bottoms to approximately 2500 meters on ridges in the south central part of the property. The area is incised by MacDonald Creek and its tributaries which flow westward into Upper Arrow Lake. Well maintained gravel logging roads provide access to a considerable part of the area, particularly in valley bottoms, but access to higher elevations is often difficult.

The Rosetta Stone claim block covers an area of 11588 hectares (115.9 square km) as shown in Figure 2. A list of claims, 100% owned by Tom Kennedy, is given in Table 1. The airborne geophysical survey covered a single block, the Rosetta Stone block, with an area of 61.6 square kilometers. The geophysical maps are produced as a series of 1:10,000 sheets (Figures 4-6).

### *Property history*

The area underlain by the Rosetta Stone property has been mapped at a scale of 1:63,360 (1 inch to 1 mile) by Hyndman (1968). Other than mapping associated with assessment work, little recent mapping has been done on the property. Recent work by prospector Tom Kennedy discovered several new gold occurrences, and the results of reconnaissance mapping by R.I. Thompson in 2008, under contract to Kootenay Gold Exploration, will be released as a 43-101 compliant report.

The property has had considerable past exploration, though this has largely been restricted to prospecting, soil and silt geochemical surveys, and some ground and airborne geophysical surveys. There is little diamond drilling recorded on properties. Most work was done in the 1980s as shown in the summary list of assessment reports (Table 2). A considerable part of this exploration was spurred by successful exploitation of the Millie Mac property (082KSW051) near the southern edge of the claim block and by exploration programs in the early 1980s, including underground development, at Tillicum (082FNW234), a high grade gold skarn deposit located 2-3 km south of the Rosetta Stone claims.

Several BC Minfile occurrences are known on the property and on immediately adjacent claims. These, and those that are located close the claim boundaries, are listed in Table 3. The Millie Mack vein deposit is located just south of the property. It was worked intermittently between 1899 and 1979, producing 671,794 grams silver (25,600 oz), 9,829 grams gold (316 oz Au) and 20,611 kg of lead from 382 tonnes reported mined.

Tom Kennedy began prospecting the area in 2006 and initially discovered epithermal gold mineralization related to structural breccias. Subsequent work led to discovery of several new gold vein occurrences, and based on these discoveries, the Rosetta Stone property was optioned to Kootenay Gold Inc

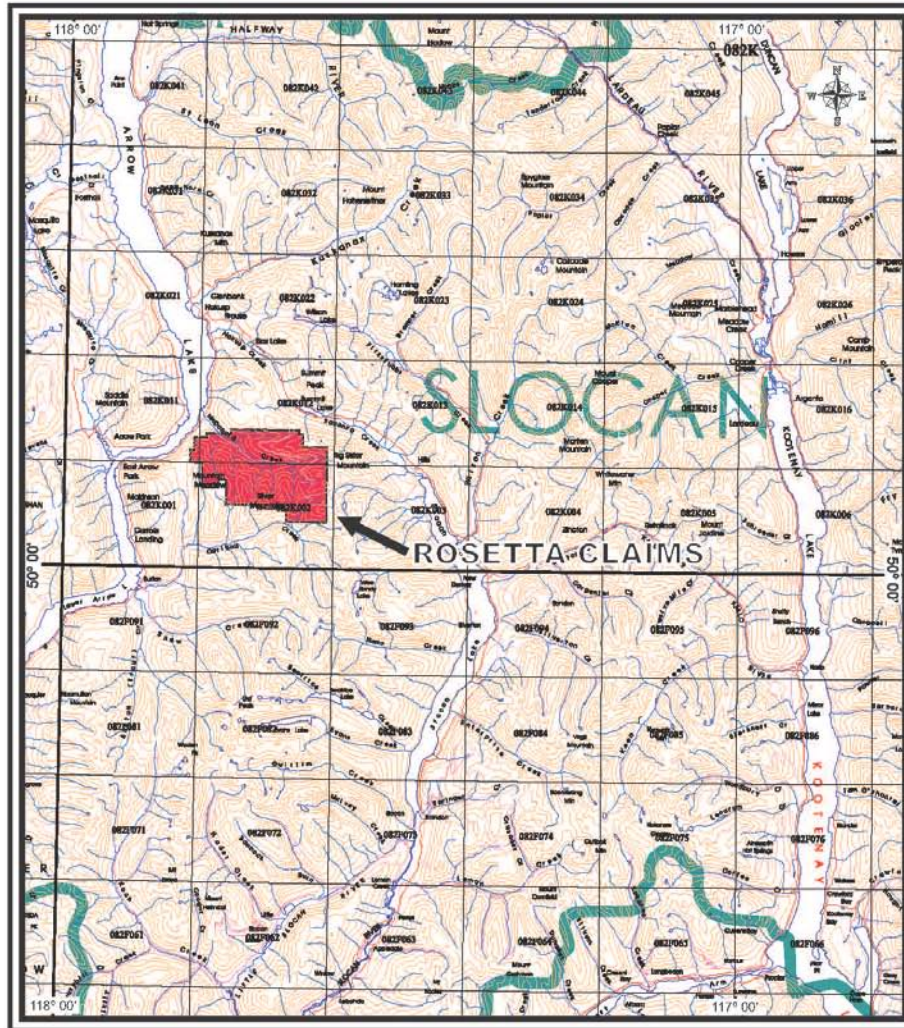


Figure 1: Location map, Rosetta Stone property

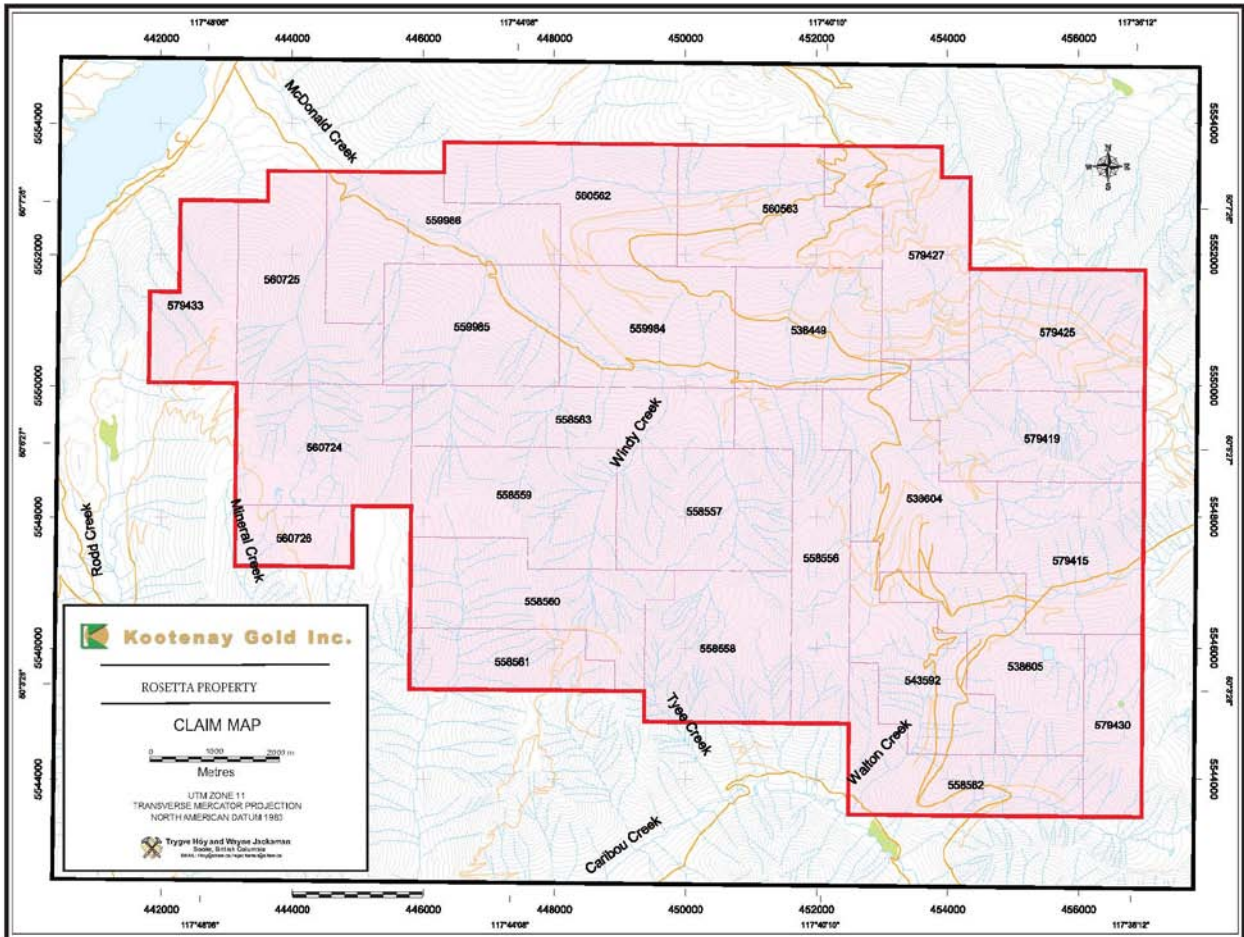


Figure 2: Claim map, Rosetta Stone property; see Table 1 for list of claims

		<b>New Good</b>			
	<b>Number</b>	<b>To Date</b>	<b>Claim name</b>	<b>size (ha)</b>	<b>UTM sheet</b>
1	536449	15-Sept-10	Remac	414.47	082K.012
2	538604	15-Sept-10	Remac 2	518.32	082K.002
3	538605	15-Sept-10	Remac 3	456.35	082K.002
4	543592	15-Sept-10	Shan	394.13	082K.002
5	558556	15-Sept-10	Remac 4	497.66	082K.002
6	558557	15-Sept-10	Remac 5	497.60	082K.002
7	558558	15-Sept-10	Remac 6	497.79	082K.002
8	558559	15-Sept-10	Remac 7	497.59	082K.002
9	558560	15-Sept-10	Remac 8	497.72	082K.002
10	558561	15-Sept-10	Remac 9	269.64	082K.002
11	558562	15-Sept-10	Remac 10	414.99	082K.002
12	558563	15-Sept-10	Remac 11	456.03	082K.002
13	559984	15-Sept-10	Moremac 3	497.36	082K.012
14	559985	15-Sept-10	Moremac 2	497.35	082K.012
15	559986	15-Sept-10	Moremac 3	497.22	082K.012
16	560562	15-Sept-10	Normac 1	497.18	082K.012
17	560563	15-Sept-10	Normac 2	497.20	082K.012
18	560724	15-Sept-10	Westmac 1	497.49	082K.002
19	560725	15-Sept-10	Westmac 2	497.29	082K.012
20	560726	15-Sept-10	Westmac 3	165.87	082K.002
21	579415	15-Sept-10	Maceast1	476.95	082K.002
22	579419	15-Sept-10	Maceast2	497.51	082K.002
23	579425	15-Sept-10	Maceast3	497.37	082K.012
24	579427	15-Sept-10	Maceast4	497.25	082K.012
25	579430	15-Sept-10	Maceast5	248.97	082K.002
26	579430	15-Sept-10	Macwest 1	<u>310.81</u>	082K.011
	<b>Total</b>			<b>11588.11</b>	
	<b>size:</b>				

Table 1: List of claims under option to Kootenay Gold Corp., Rossetta Stone property, southeastern British Columbia; see figures 1 and 2 for location.

Assessment report	Date	Operator	Author	work done
11203	1983	Brandy Resources Ltd.	G. White; E. Pezzot	airborne geophysics
11351	1983	Tillicum Gold Mines	J.W. George	soil survey
11742	1983	Unicom Res. Ltd.	H. Laanela	silt, soil survey; geology
11867	1983	VBC Minerals Inc.	G. White; E. Pezzot	airborne geophysics
12624	1984	C.J. Westerman	C.J. Westerman	soil, silt survey soil survey; ground geophysics
12858	1984	VBC Minerals Inc.	L. Sookochoff	geophysics
13341	1984	Tillicum Gold Mines	J.W. George	prospecting soil survey; ground geophysics
14179	1985	Tillicum Gold Mines	J.W. George	geophysics
15625	1986	Tillicum Gold Mines Meadow Mountain	J.W. George	soil survey
17847	1988	Res. Meadow Mountain	B. Ainsworth	soil survey
18444	1988	Res.	D. Jenkins	soil survey soil survey; ground geophysics
18446	1988	M. Hriskevich Meadow Mountain	D. Jenkins	geophysics soil survey; ground geophysics
18678	1989	Res.	D. Jenkins	geophysics
18702	1989	M. Hriskevich	M. Hriskevich	prospecting

Table 2: List of assessment work carried out on the Rosetta Stone property or on immediately adjacent ground.

Minfile	Name	Status	Commodities	NTS Location	Classification
082KSW051	Millie Mac	past prod.	Ag, Pb, Zn, Au, Cu	082K04E	polymetallic veins
082KSW053	Caribou Au	showing	Au	082K04W	gold-quartz vein
082KSW067	Shakespeare	prospect	Ag, Pb, Zn, Cu, Au	082K04W	polymetallic veins
082KSW129	Nepe	showing	Ag, Cu	082K04W	polymetallic veins
082KSW132	Cris	showing	Ag, Pb, Zn	082K04E	polymetallic vein?
082KSW161	Kusp	prospect	Pb, Zn, Ag	082K04E	volc. massive sulphide
082KSW171	Eureka	prospect	Ag, Pb, Zn, Au	082K04E	polymetallic vein
082KSW177	Eureka southwest	showing	Ag, Pb, Zn, Au	082K04E	polymetallic vein
082KSW178	Mountain Meadow Mo	showing	Mo	082K04W	porphyry molybdenite
082KSW180	Mountain Meadow Arsenopyrite	showing	Au, Ag	082K04W	gold-quartz veins
082KSW182	Tyee	showing	Au, Zn	082K04E	gold-quartz veins ?

Table 3: Minfile occurrences on Rosetta Stone property, and on immediately adjacent claims.



## Summary of work

The helicopter-borne geophysical survey, as described in Appendix 3, included 468.2 line kilometers. The survey was flown on September 18<sup>th</sup> to 20<sup>th</sup>, 2008, at 150 meter line spacing in an E-W survey flight direction. The extent of the survey, covering an area of 61.6 square kilometers, is shown in Figure 3. The geophysical sensor is Aeroquest's "AeroTEM II time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity caesium vapour magnetometer". The summary data is presented in the form of digital maps, at 1:10,000 scales, and include a contoured, coloured total magnetic intensity map (Figure 4), a contoured electromagnetic and anomaly map (Figure 5) and an "aeroTEM" off-time profile map (Figure 6).

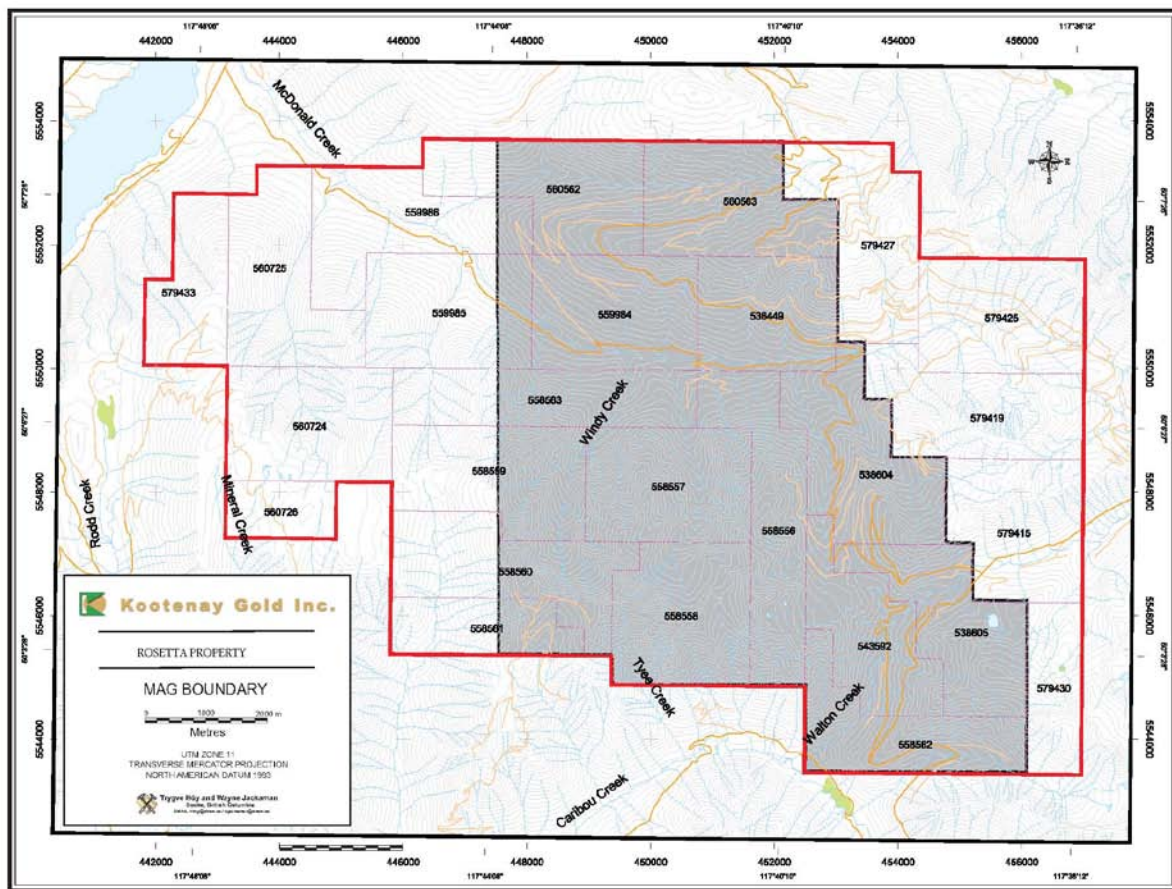


Figure 3: Extent of Airborne geophysical survey, Rosetta Stone block.

## Technical Data and Interpretation

The airborne geophysical survey was done on the Rosetta Stone property in order to help determine the extent of main lithologic units in areas underlain by overburden and in areas that have not been mapped geologically at a detailed scale. Furthermore, it was hoped that the survey would help define and determine the extent of structures that could control both known and prospective mineralization.

Details of the geophysical data are given in Appendix 3 and only summarized here. Data is presented as a series of 1:10,000 maps, covering the northern (Plates 1) and southern (Plates 2) parts of the area.

The geology of the Rosetta Stone property area has been mapped by Hyndman (1968) and this brief description is taken from that report. The area is within an east-trending Mesozoic succession of metavolcanic and metasedimentary rocks between the Middle Jurassic Kuskanax batholith to the north and the Cretaceous Whatshaw batholith to the south. The Mesozoic succession comprises mainly Early Triassic Slocan Group metasediments with some remnant selvages and zones of overlying Early Jurassic Elise Formation. Both these successions host considerable mineralization to the south and east, with the Elise Formation, the central volcanic succession of the Rosslund Group containing many of the intrusive related Cu-Au veins of the Rosslund camp (Höy and Andrew, 2001), and the Slocan Group hosting the polymetallic Ag-Pb-Zn veins of the Slocan Silver camp (Hedley, 1952).

A number of small intrusive bodies occur throughout the Rosetta Stone property. These are mainly Cretaceous in age and include the Mount Meadow and East Caribou plutons, ranging in composition from diorite to monzonite to quartz monzonite. An elongated, east-west trending diorite to monzodiorite intrusion, referred to as the Ruby Range stock crosses the central part of the area. Several of the vein occurrences in the area, listed in BC Minfile and in Table 3 above, appear to be related, at least spatially, to these stocks.

The area is structurally complex, with an early east-west fabric overprinted by later, typically more north trending faults and shears. Although most vein mineral occurrences are related to faults and shears, a systematic study of these relationships in the Rosetta Stone map area has not been done.

The total magnetic intensity map (Fig. 4) helps define major lithologic units throughout the area. In particular, granitic bodies that are shown on the geological map of Hyndman (1968) roughly coincide with magnetic highs, although their exact boundaries and possible subsurface extent can be modified. The Ruby Red stock which is mapped as an elongate east-west trending body through the central part of the map area appears as a magnetic high on its eastern end and as an irregular magnetic high in the central part of the geophysical survey. Similarly a magnetic high, though less well pronounced, in the southeastern part coincides approximately with the approximate sub-circular exposure of the East Caribou stock. The general west to northwesterly trend of magnetic anomalies in the northern of the two sheets (Figure 4, Plate 1) defines the general lithologic trend of units within the Slocan Group. The broad west-northwest positive anomalies in the northern part of the map may record more magnetic rocks of Elise Formation mafic metavolcanics, though this would imply their extent is



considerably larger than is shown on the geology map of Hyndman (1968). A very prominent northeast trending magnetic low in the southeastern part of the survey may reflect an unrecognized structural break. It coincides with several lithologic cutoffs, including the inferred Milford Group-Slocan Group contact, the eastern extent of the Elise Formation to the northeast and the approximated Milford Group-Goat Canyon stock contact to the southwest.

The electromagnetic (EM) anomalies (Figure 5, Plates 1 and 2) commonly define north trending linears. These are particularly prominent in the southern part of the survey and are not readily correlated with known structures or conductors. However, they do approximate both the location and orientation of some mapped faults and may therefore either indicate that either the faults are mis-plotted or have parallel unrecognized splays. Interpretation of numerous conductors in the northern part of the survey area is difficult as this area is underlain largely by undifferentiated Slocan Group. The large number of EM anomalies, and their orientation, parallel to known mineralized trends related to Tertiary events, need to be further evaluated by ground prospecting and geological surveys.

In summary, considerable more work is required relating numerous EM anomalies with structures or mineralization. Many are yet to be explained and will require ground “truthing”, through prospecting and mapping. The mineral potential of the Rosetta Stone property is high, based in part on the number of known occurrences on or immediately adjacent to the property, the close proximity to the past producing Millie Mac and Tillicum properties, and to the recent discovery, by prospecting, of several new gold occurrences.

## References

- B.C. Minfile reports: *B.C. Ministry of Energy and Mines*, BC Minfile data base
- B.C. Assessment reports: *B.C. Ministry of Energy and Mines*, Aris data base.
- Hedley, M. S. (1952): Geology and ore deposits of the Sandon area, Slocan Mining Division, British Columbia; *B.C. Department of Mines*, Bulletin 29.
- Hoy, T. and Andrew, K.P.L. (2001): Metallogeny and mineral deposits of the Nelson-Rosland map area; *B.C. Ministry of Energy and Mines*, Bulletin 109.
- Hyndman, D.W. (1968): Petrology and structure of the Nakusp map area, British Columbia; *Geological Survey of Canada*, Bulletin 161.
- Thompson, R.I. (2009): Geological report on the Rosetta Stone block, Nakusp area, southeastern British Columbia; Kootenay Gold Corp. 43-101 compliant report, in preparation.

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**Appendix 1:**  
**Statement of Costs**

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Aeroquest airborne survey	
453 line kms @ \$149.00/km	\$67,429.00
mobilization / demobilization charge	17,000.00
Report preparation (T. Höy and W. Jackaman)	<u>1,200.00</u>
Total cost	\$85,679.00

## Appendix 2a

### STATEMENT OF QUALIFICATIONS: Jonathan Rudd

---

I, Jonathan Rudd, P.Eng. do hereby certify that:

1. I attained the degree of Bachelor of Science in Engineering (BScE) in geophysics from Queens University, Kingston, Ontario in 1988.
2. I am a member of the Association of Professional Engineers of Ontario and an associate member of the Society of Exploration Geophysicists.
3. I have worked as an exploration geophysicist continuously for a total of 20 years since my graduation from university, 5 years with MPH Consulting, 6 years with Dighem, 2.5 years with the Ontario Geological Survey, 2 years with Wallbridge Mining Company Limited and 4.5 years with Aeroquest Limited as manager and Senior Geophysicist.
4. I had oversight of the data acquisition, data processing and logistical reporting for the AeroTEM survey over this property.
5. I, and my co-author Trygve Hoy, are responsible for the preparation of this report entitled: "Report on a Helicopter-borne AeroTEM System Electromagnetic and Magnetic Survey, Rosetta Property, southern British Columbia" dated April 24, 2009.

Dated this 24th Day of April, 2009.

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Jonathan Rudd, P.Eng.

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**Appendix 2b****STATEMENT OF QUALIFICATIONS: Trygve Hoy**

---

I, Trygve Høy, PhD., P. Eng. do hereby certify that:

6. I attained the degree of Doctor of Philosophy (PhD) in geology from Queens University, Kingston, Ontario in 1974.
7. I have an MSc. in Geology from Carleton University, Ottawa, Ontario (1970), and a BSc. in Geology from the University of British Columbia (1968).
8. I am a member of the Association of Professional Engineers and Geoscientists of BC. and a member of the Society of Economic Geologists.
9. I have worked as a geologist for a total of 33 years since my graduation from university, 27 years as a project geologist with the B.C. Geological Survey Branch and 6 years as an independent consulting geologist.
10. I am familiar with the geology of the Rosetta Stone area, and have done considerable work in surrounding areas, mainly to the east and south.
11. I, and my co-author Jonathan Rudd, are responsible for the preparation of this report entitled: "Report on a Helicopter-borne AeroTEM System Electromagnetic and Magnetic Survey, Rosetta Stone Property, southern British Columbia" dated April 24, 2009.

Dated this 24th Day of April, 2009.

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Trygve Høy, P.Eng.

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**Appendix 3:**

**Report on a helicopter-borne aero-Tem system electromagnetic and  
magnetic survey by Aeroquest International**

**by**

**Jonathan Rudd, P.Eng. (Ontario)**

**Aeroquest International  
7687 Bath Road  
Mississauga, Ontario  
L4T 3T1**

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# Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey



**Aeroquest Job # 08138**

## **Rosetta Stone Block**

Nakusp, B.C., Canada  
NTS 082K04

For

**Kootenay Gold Inc.**

by



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Mississauga, ON, L4T 3T1  
Tel: (905) 672-9129  
Fax: (905) 672-7083  
[www.aeroquest.ca](http://www.aeroquest.ca)

Report date: November 2008

# **Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey**

**Aeroquest Job # 08138**

**Rosetta Stone Block**

Nakusp, B.C., Canada  
NTS 082K04

For

**Kootenay Gold Inc.**

Suite 960 - 1055 W. Hastings St.  
Vancouver, British Columbia  
Canada V6E 2E9  
604-601-5650

by



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Fax: (905) 672-7083  
[www.aeroquest.ca](http://www.aeroquest.ca)

Report date: November 2008

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- ZOFF0 – AeroTEM Z0 Off-time, with line contours and EM anomaly symbols.
- EM – AeroTEM off-time profiles Z2 – Z12 and EM anomaly symbols.

## **1. INTRODUCTION**

This report describes a helicopter-borne geophysical survey carried out on behalf of Kootenay Gold Inc. on their Rosetta Stone Block, Nakusp, British Columbia.

The principal geophysical sensor is Aeroquest's exclusive AeroTEM II (Echo) time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity caesium vapour magnetometer. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, video recorder, and a base station magnetometer. Full-waveform streaming EM data is recorded at 36,000 samples per second. The streaming data comprise the transmitted waveform, and the X component and Z component of the resultant field at the receivers. A secondary acquisition system (RMS) records the ancillary data.

The total survey coverage is 468.2 line-km, of which 452.7 line-km fell within the defined project area (Appendix 1). The Rosetta Stone survey block was flown at 150 metre line spacing, and at 90°/270° direction. The survey flying described in this report took place from September 18 – 20, 2008. This report describes the survey logistics, the data processing, presentation, and provides the specifications of the survey.

## **2. SURVEY AREA**

The Project area (Figure 1) is located southeastern British Columbia approximately 75 km north of Nelson and 115 km east of Vernon. Smaller towns closer to the project area include Nakusp 15 km to the north and New Denver, 20 km east. The survey comprised a single block, the Rosetta Stone Block with an area of 61.6 km<sup>2</sup> over mountainous terrain. Elevations ranged from approximately 800 – 2500 m above sea level. The survey block boundary coordinates are tabulated in Appendix 1.

There are 46 mining claims either partially or wholly covered by the survey. Claim ownership is tabulated in Appendix 2.

The base of survey operations was at Nakusp.

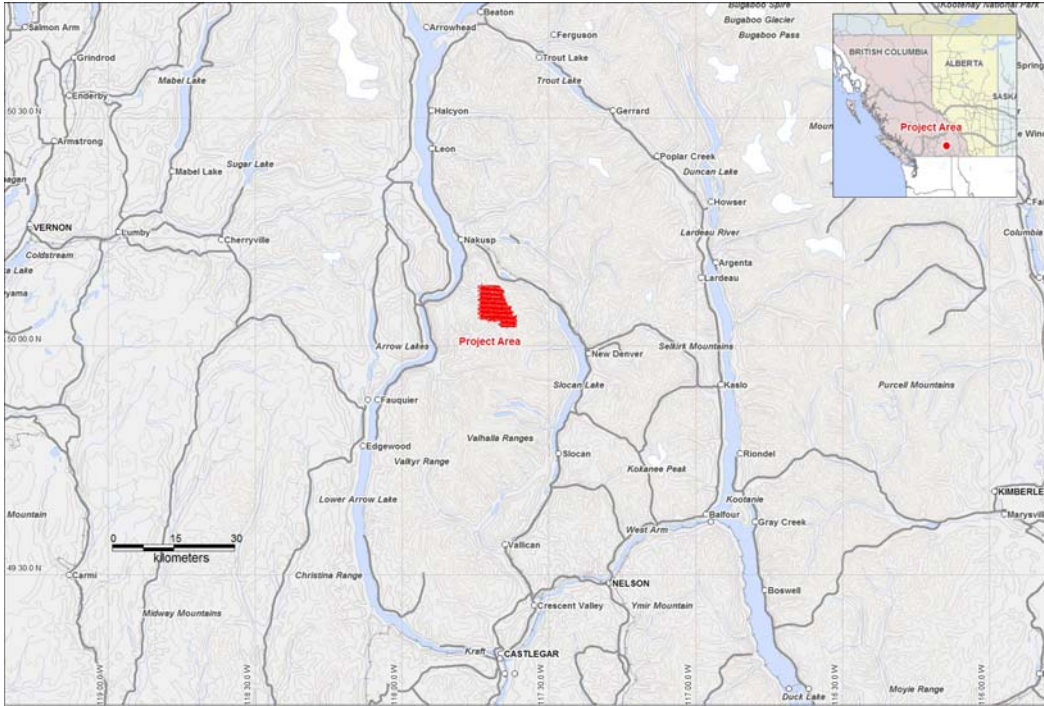


Figure 1. Project Area

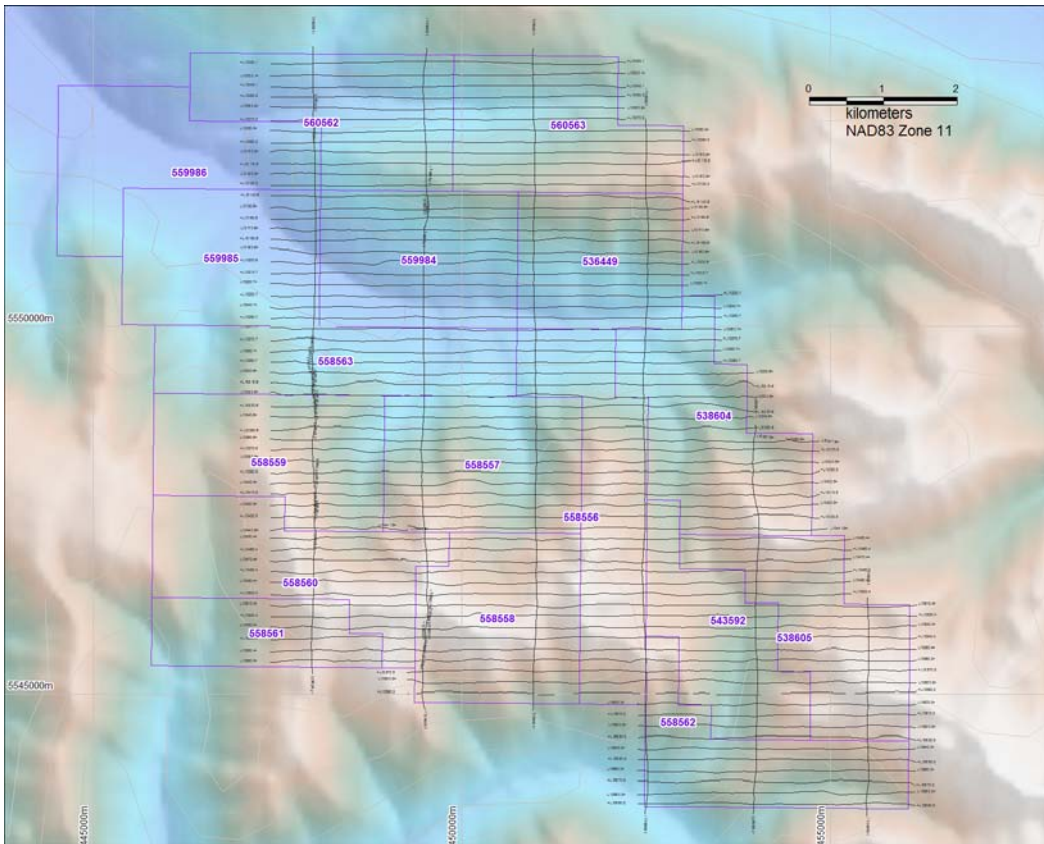


Figure 2. Project flight path and mining claims over shaded topography

### 3. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarised in the following table:

Project Name	Line Spacing (metres)	Line Direction	Survey Coverage (line-km)	Date flown
Rosetta Stone	150	90°/270°	468.2	September 18-20, 2008

Table 1. Survey specifications summary

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 150 metres. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1500 metres.

The nominal EM bird terrain clearance is 30 metres, but can be higher in more rugged terrain due to safety considerations and the capabilities of the aircraft. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 17 metres above the EM bird and 21 metres below the helicopter (Figure 4). A second magnetometer is installed on the tail of the EM bird. Nominal survey speed over relatively flat terrain is 75 km/hr and is generally lower in rougher terrain. Scan rates for ancillary data acquisition is 0.1 second for the magnetometer and altimeter, and 0.2 second for the GPS determined position. The EM data is acquired as a data stream at a sampling rate of 36,000 samples per second and is processed to generate final data at 10 samples per second. The 10 samples per second translate to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

#### 3.1. NAVIGATION

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The x-y-z position of the aircraft, as reported by the GPS, is recorded at 0.2 second intervals. The system has a published accuracy of less than 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

#### 3.2. SYSTEM DRIFT

Unlike frequency domain electromagnetic systems, the AeroTEM II system has negligible drift due to thermal expansion. The operator is responsible for ensuring the instrument is properly warmed up prior to departure and that the instruments are operated properly throughout the flight. The operator maintains a detailed flight log during the survey noting the times of the flight and any unusual geophysical or topographic features. Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

#### 3.3. FIELD QA/QC PROCEDURES

On return of the pilot and operator to the base, usually after each flight, the AeroDAS streaming EM data and the RMS data are carried on removable hard drives and FlashCards, respectively and transferred to the data processing work station. At the end of each day, the base station magnetometer data on FlashCard is retrieved from the base station unit.



Data verification and quality control includes a comparison of the acquired GPS data with the flight plan; verification and conversion of the RMS data to an ASCII format XYZ data file; verification of the base station magnetometer data and conversion to ASCII format XYZ data; and loading, processing and conversion of the steaming EM data from the removable hard drive. All data is then merged to an ASCII XYZ format file which is then imported to an Oasis database for further QA/QC and for the production of preliminary EM, magnetic contour, and flight path maps.

Survey lines which show excessive deviation from the intended flight path are re-flown. Any line or portion of a line on which the data quality did not meet the contract specification was noted and reflown.

## **4. AIRCRAFT AND EQUIPMENT**

### **4.1. AIRCRAFT**

A Lama helicopter - registration C-GLOV was used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters, Calgary, Alberta. Installation of the geophysical and ancillary equipment was carried out by Aeroquest Limited personnel in conjunction with a licensed aircraft. The survey aircraft was flown at a nominal terrain clearance of 220 ft (65 metres).



Figure 3. Helicopter registration number C-GLOV

### **4.2. MAGNETOMETER**

The AeroTEM II airborne survey system employs the Geometrics G-823A caesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 21 metres below the helicopter (Figure 4). The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird is 51 metres (170 ft.). The magnetic data is recorded at 10 Hz by the RMS DGR-33.

### 4.3. MAGNETOMETER II

In addition to the main magnetometer bird on the main tow line, the AeroTEM II system includes an additional G-828A magnetometer installed on the tail of the EM bird (Figure 4). The sensor is located 37 metres below the helicopter and has a superior nominal terrain clearance of 31 m. Data is recorded at 300 samples a second and down sampled to 10 Hz by the AeroDAS acquisition system.



Figure 4. AeroTEM II EM bird. Arrow indicates the location of the second caesium magnetometer sensor.

### 4.4. ELECTROMAGNETIC SYSTEM

The electromagnetic system is an Aeroquest AeroTEM II time domain towed-bird system (Figure 4, Figure 5). The current AeroTEM II transmitter dipole moment is 38.8 kNIA. The AeroTEM bird is towed 38 metres (125 ft) below the helicopter. More technical details of the system may be found in Appendix 4.

The wave-form is triangular with a symmetric transmitter on-time pulse of 1.10 ms and a base frequency of 150 Hz (Figure 6). The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 120 contiguous channels of raw X and Z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 27.78 microseconds starting at the beginning of the transmitter pulse. This 120 channel data is referred to as the raw streaming data. The AeroTEM system has two separate EM data recording streams, the conventional RMS DGR-33 and the AeroDAS system which records the full waveform (Figure 6).

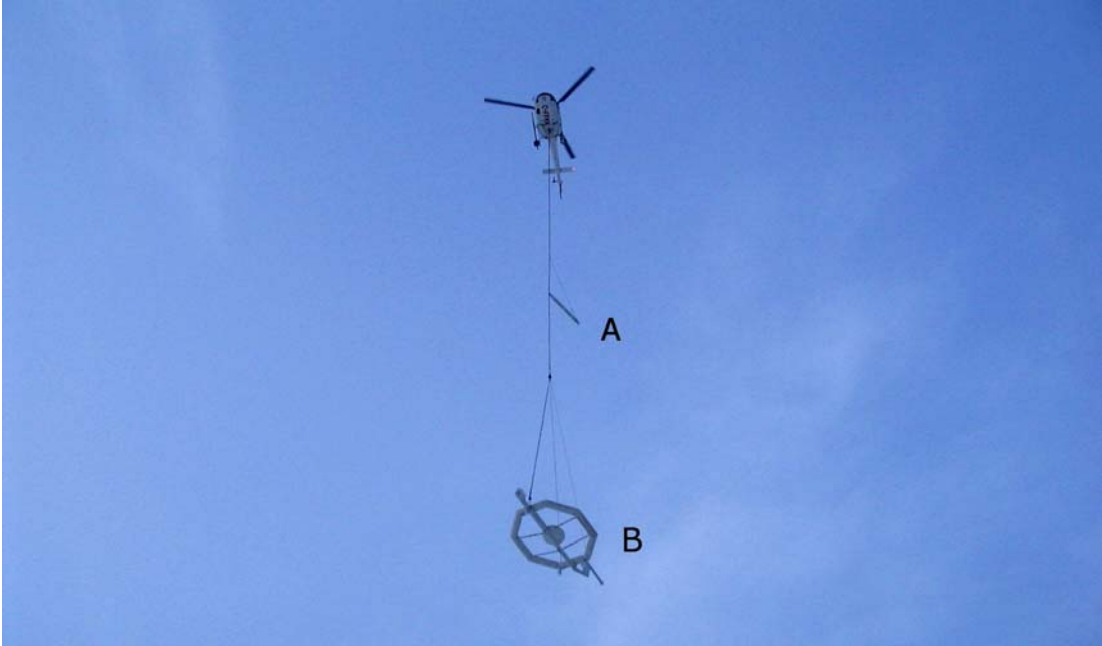


Figure 5. The magnetometer bird (A) and AeroTEM II EM bird (B)

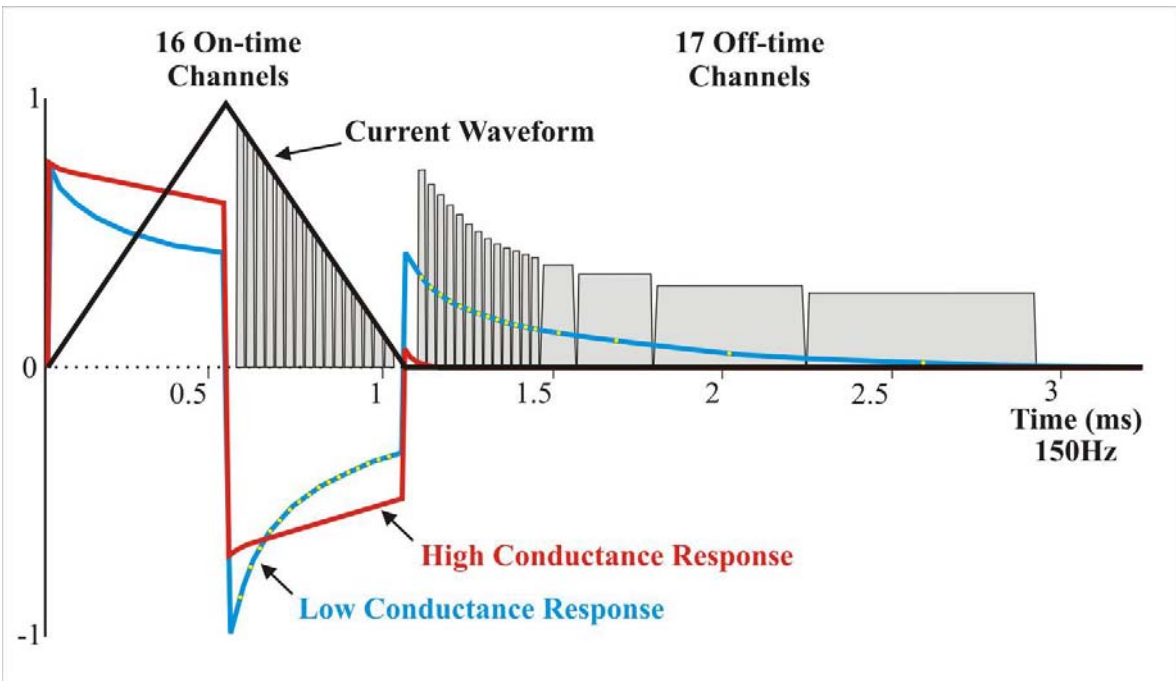


Figure 6. Schematic of Transmitter and Receiver waveforms

#### 4.5. AERODAS ACQUISITION SYSTEM

The 120 channels of raw streaming data are recorded by the AeroDAS acquisition system (Figure 7) onto a removable hard drive. The streaming data are processed post-survey to yield 33 stacked and binned on-time and off-time channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:

Average TxOn           -7.6124 us  
Average TxSwitch   577.1125 us  
Average TxOff        1113.8390 us

Channel	Sample Range	Time Width (us)	Time Center (us)	Time After TxOn (us)
On1	3 - 3	27.778	69.444	77.057
On2	4 - 4	27.778	97.222	104.835
On3	5 - 5	27.778	125.000	132.612
On4	6 - 6	27.778	152.778	160.390
On5	7 - 7	27.778	180.556	188.168
On6	8 - 8	27.778	208.333	215.946
On7	9 - 9	27.778	236.111	243.724
On8	10 - 10	27.778	263.889	271.501
On9	11 - 11	27.778	291.667	299.279
On10	12 - 12	27.778	319.444	327.057
On11	13 - 13	27.778	347.222	354.835
On12	14 - 14	27.778	375.000	382.612
On13	15 - 15	27.778	402.778	410.390
On14	16 - 16	27.778	430.556	438.168
On15	17 - 17	27.778	458.333	465.946
On16	18 - 18	27.778	486.111	493.724

Channel	Sample Range	Time Width (us)	Time Center (us)	Time After TxOff (us)
Off0	43 - 43	27.778	1180.556	66.717
Off1	44 - 44	27.778	1208.333	94.494
Off2	45 - 45	27.778	1236.111	122.272
Off3	46 - 46	27.778	1263.889	150.050
Off4	47 - 47	27.778	1291.667	177.828
Off5	48 - 48	27.778	1319.444	205.605
Off6	49 - 50	55.556	1361.111	247.272
Off7	51 - 52	55.556	1416.667	302.828
Off8	53 - 54	55.556	1472.222	358.383
Off9	55 - 56	55.556	1527.778	413.939
Off10	57 - 59	83.333	1597.222	483.383
Off11	60 - 62	83.333	1680.556	566.717
Off12	63 - 66	111.111	1777.778	663.939
Off13	67 - 72	166.667	1916.667	802.828
Off14	73 - 80	222.222	2111.111	997.272
Off15	81 - 93	361.111	2402.778	1288.939
Off16	94 - 113	555.556	2861.111	1747.272

#### 4.6. RMS DGR-33 ACQUISITION SYSTEM

In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM decay in the Z direction and one in the X direction are recorded by the RMS DGR-33 acquisition system at 10 samples per second and plotted real-time on the analogue chart recorder. These channels are derived by a binning, stacking and filtering procedure on the raw streaming data. The primary use of the RMS EM data (Z1 to Z6, X1) is to provide for real-time QA/QC on board the aircraft.



The channel window timing of the RMS DGR-33 6 channel system is described in the table below.

RMS Channel	Start time (µs)	End time (µs)	Width (µs)	Streaming Channels
Z1, X1	1269.8	1322.8	52.9	48-50
Z2	1322.8	1455.0	132.2	50-54
Z3	1428.6	1587.3	158.7	54-59
Z4	1587.3	1746.0	158.7	60-65
Z5	1746.0	2063.5	317.5	66-77
Z6	2063.5	2698.4	634.9	78-101



Figure 7. AeroTEM II Instrument Rack.

#### 4.7. MAGNETOMETER BASE STATION

The base magnetometer was a Geometrics G-859 caesium vapour magnetometer system with integrated GPS. Data logging and UTC time synchronisation was carried out within the magnetometer, with the GPS providing the timing signal. The data logging was configured to measure at 1.0 second intervals. Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area of low magnetic gradient and free of cultural noise sources. A continuously updated display of the base station values was available for viewing and regularly monitored to ensure acceptable data quality and diurnal variation.

#### 4.8. RADAR ALTIMETER

A Terra TRA 3500/TRI-30 radar altimeter is used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. Therefore, the recorded

data reflect the height of the helicopter above the ground. The Terra altimeter has an altitude accuracy of +/- 1.5 metres.

#### **4.9. VIDEO TRACKING AND RECORDING SYSTEM**

A high resolution digital colour 8 mm video camera is used to record the helicopter ground flight path along the survey lines. The video is digitally annotated with GPS position and time and can be used to verify ground positioning information and cultural causes of anomalous geophysical responses.



Figure 8. Digital video camera typical mounting location.

#### **4.10. GPS NAVIGATION SYSTEM**

The navigation system consists of an Ag-Nav Incorporated AG-NAV2 GPS navigation system comprising a PC-based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, a Mid-Tech RX400p WAAS-enabled GPS receiver mounted on the instrument rack and an antenna mounted on the magnetometer bird. WAAS (Wide Area Augmentation System) consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations located on the east and west coasts collect data from the reference stations and create a GPS correction message. This correction accounts for GPS satellite orbit and clock drift plus signal delays caused by the atmosphere and ionosphere. The corrected differential message is then broadcast through one of two geostationary satellites, or satellites with a fixed position over the equator. The corrected position has a published accuracy of less than 3 metres.

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 11N projection. The real-time differentially corrected GPS positional data was recorded by the RMS DGR-33 in geodetic coordinates (latitude and longitude using WGS84) at 0.2 s intervals.

#### **4.11. DIGITAL ACQUISITION SYSTEM**

The AeroTEM received waveform sampled during on and off-time at 120 channels per decay, 300 times per second, was logged by the proprietary AeroDAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is

27.77 microseconds. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field-processing computer.

The RMS Instruments DGR33A data acquisition system was used to collect and record the analogue data stream, i.e. the positional and secondary geophysical data, including processed 6 channel EM, magnetics, radar altimeter, GPS position, and time. The data was recorded on 128 Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder.

## **5. PERSONNEL**

The following Aeroquest personnel were involved in the project:

- Manager of Operations: Duncan Wilson
- Manager of Data Processing: Gord Smith
- Field Data Processor: Thomas Wade
- Field Operator: Doug Spence
- Data Interpretation and Reporting: Chris Kahue, Marion Bishop, Matt Everson

The survey pilot, Joel Reavie, was employed directly by the helicopter operator – Hi-Wood Helicopters.

## **6. DELIVERABLES**

### **6.1. HARDCOPY DELIVERABLES**

The report includes a set of six 1:10,000 maps. The survey area is covered by a two map plates and three geophysical data products are delivered as listed below:

- TMI – Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- ZOFF0 – AeroTEM Z0 Off-time, with line contours and EM anomaly symbols.
- EM – AeroTEM off-time profiles Z2 – Z12 and EM anomaly symbols.

The coordinate/projection system for the maps is NAD83 – UTM Zone 11N. For reference, the latitude and longitude in WGS84 are also noted on the maps.

All the maps show flight path trace, skeletal topography, and conductor picks represented by an anomaly symbol classified according to calculated off-time conductance. The anomaly symbol is accompanied by postings denoting the calculated off-time conductance, a thick or thin classification and an anomaly identifier label. The anomaly symbol legend and survey specifications are displayed on the left margin of the maps.

### **6.2. DIGITAL DELIVERABLES**

#### **6.2.1. Final Database of Survey Data (.GDB)**

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. A description of the contents of the individual channels in the database can be found in Appendix 2. A copy of this digital data is archived at the Aeroquest head office in Mississauga.

### **6.2.2. Geosoft Grid files (.GRD)**

Levelled Grid products used to generate the geophysical map images. Cell size for all grid files is 30 metres.

- Total Magnetic Intensity from upper Mag sensor (maguf.grd)
- AeroTEM Z Offtime Channel 1 (llzoff\_ralt.grd)

### **6.2.3. Digital Versions of Final Maps (.MAP, .PDF)**

Map files in Geosoft .map and Adobe PDF format.

### **6.2.4. Google Earth Survey Navigation Files (.KMZ)**

Flight navigation lines, geophysical grids, EM Anomalies, EM Profiles in Google earth .kmz format. Double click to view flight lines in Google Earth.

### **6.2.5. Free Viewing Software (.EXE)**

Geosoft Oasis Montaj Viewing Software  
Adobe Acrobat Reader  
Google Earth Viewer

### **6.2.6. Digital Copy of this Document (.PDF)**

Adobe PDF format of this document.

## **7. DATA PROCESSING AND PRESENTATION**

All in-field and post-field data processing was carried out using Aeroquest proprietary data processing software and Geosoft Oasis Montaj software. Maps were generated using 36-inch wide Hewlett Packard ink-jet plotters.

### **7.1. BASE MAP**

The geophysical maps accompanying this report are based on positioning in the NAD83 datum. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 11 North. A summary of the map datum and projection specifications is given following:

- Ellipse: GRS 1980
- Ellipse major axis: 6378137m eccentricity: 0.081819191
- Datum: North American 1983 - Canada Mean
- Datum Shifts (x,y,z) : 0, 0, 0 metres
- Map Projection: Universal Transverse Mercator Zone 11 (117°W)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

For reference, the latitude and longitude in WGS84 are also noted on the maps.

The background vector topography was sourced from Natural Resources Canada 1:50000 National Topographic Data Base data and the background shading was derived from NASA Shuttle Radar Topography Mission (SRTM) 90 metre resolution DEM data.

## **7.2. FLIGHT PATH & TERRAIN CLEARANCE**

The position of the survey helicopter was directed by use of the Global Positioning System (GPS). Positions were updated five times per second (5 Hz) and expressed as WGS84 latitude and longitude calculated from the raw pseudo range derived from the C/A code signal. The instantaneous GPS flight path, after conversion to UTM co-ordinates, is drawn using linear interpolation between the x/y positions. The terrain clearance was maintained with reference to the radar altimeter. The raw Digital Terrain Model (DTM) was derived by taking the GPS survey elevation and subtracting the radar altimeter terrain clearance values. The calculated topography elevation values are relative and are not tied in to surveyed geodetic heights.

Each flight included at least two high elevation 'background' checks. These high elevation checks are to ensure that the gain of the system remained constant and within specifications.

## **7.3. ELECTROMAGNETIC DATA**

The raw streaming data, sampled at a rate of 36,000 Hz (120 channels, 300 times per second) was reprocessed using a proprietary software algorithm developed and owned by Aeroquest Limited. Processing involves the compensation of the X and Z component data for the primary field waveform. Coefficients for this compensation for the system transient are determined and applied to the stream data. The stream data are then pre-filtered, stacked, binned to the 33 on and off-time channels and checked for the effectiveness of the compensation and stacking processes. The stacked data is then filtered, levelled and split up into the individual line segments. Further base level adjustments may be carried out at this stage. The filtering of the stacked data is designed to remove or minimize high frequency noise that cannot be sourced from the geology.

The final field processing step was to merge the processed EM data with the other data sets into a Geosoft GDB file. The EM fiducial is used to synchronize the two datasets. The processed channels are merged into 'array format; channels in the final Geosoft database as Zon, Zoff, Xon, and Xoff.

Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peaks and troughs in the off-time Z channel responses correlated with X channel responses. The auto-picked anomalies were reviewed and edited by a geophysicist on a line by line basis to discriminate between thin and thick conductor types. Anomaly picks locations were migrated and removed as required. This process ensures the optimal representation of the conductor centres on the maps.

At each conductor pick, estimates of the off-time conductance have been generated based on a horizontal plate source model for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Some of the EM anomaly picks do not display a Tau value; this is due to the inability to properly define the decay of the conductor usually because of low signal amplitudes. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values. For high conductance sources, the on-time conductance values may be used, since it provides a more accurate measure of high-conductance sources. Each symbol is also given an identification letter label, unique to each flight line. Conductor picks that did not yield an acceptable estimate of off-time conductance due to a low amplitude response were classified as a low conductance source. Please refer to the anomaly symbol legend located in the margin of the maps.

#### **7.4. MAGNETIC DATA**

Prior to any levelling the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a bi-directional grid technique with a grid cell size of 30 metres. The final levelled grid provided the basis for threading the presented contours which have a minimum contour interval of 5 nT.

### **8. GENERAL COMMENTS**

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. Below is a brief interpretation of the results. For a detailed interpretation please contact Aeroquest Limited.

#### **8.1. MAGNETIC RESPONSE**

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. This data can be used to interpret the location of geological contacts and other structural features such as faults and zones of magnetic alteration. The sources for anomalous magnetic responses are generally thought to be predominantly magnetite because of the relative abundance and strength of response (high magnetic susceptibility) of magnetite over other magnetic minerals such as pyrrhotite.

#### **8.2. EM ANOMALIES**

The EM anomalies on the maps are classified by conductance (as described earlier in the report) and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response (Figure 9). For a vertically orientated thick source (say, greater than 10 metres), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 10). Because of these differing responses, the AeroTEM system provides discrimination of thin and thick sources and this distinction is indicated on the EM anomaly symbols (N = thin and K = thick). Where multiple, closely spaced conductive sources occur, or where the source has a shallow dip, it can be difficult to uniquely determine the type (thick vs. thin) of the source (Figure 11). In these cases both possible source types may be indicated by picking both thick and thin response styles. For shallow dipping conductors the 'thin' pick will be located over the edge of the source, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly.



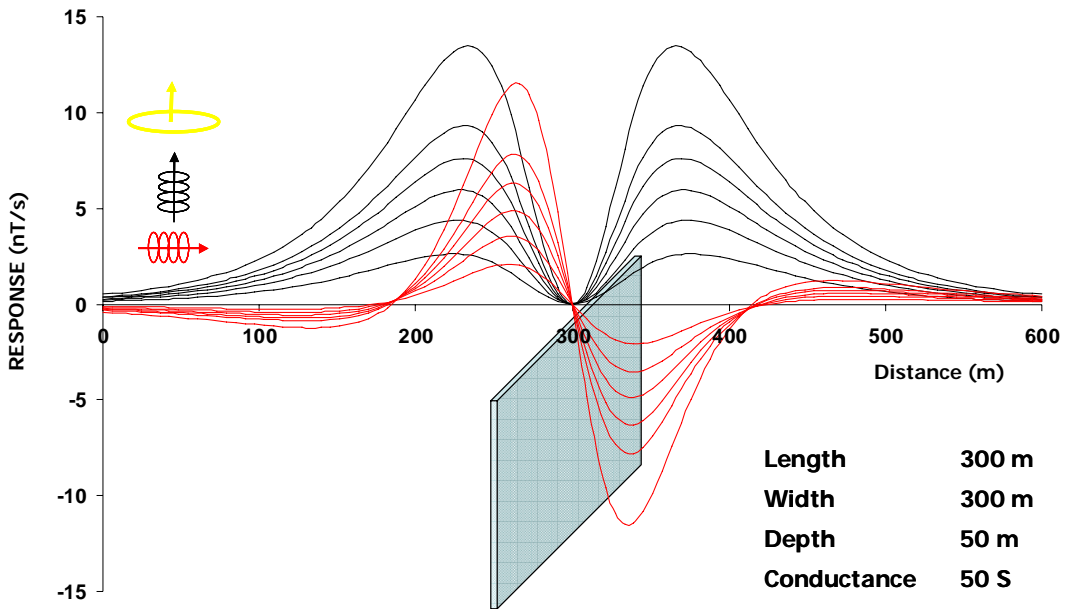


Figure 9. AeroTEM response to a 'thin' vertical conductor.

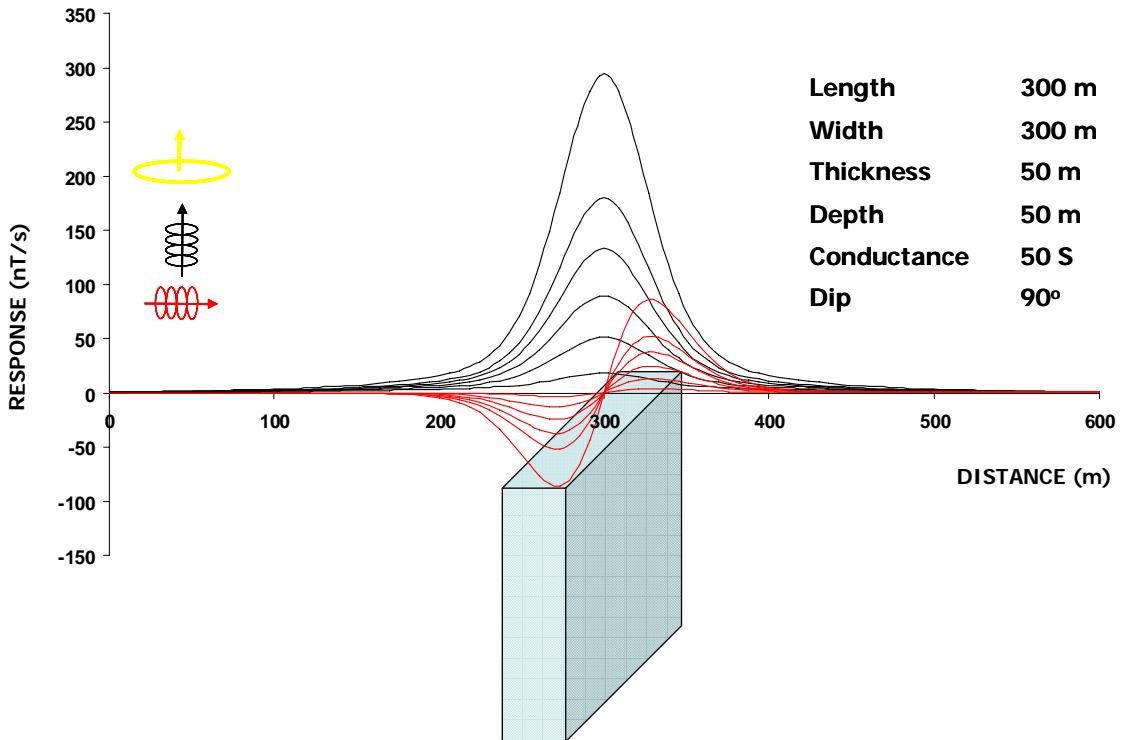


Figure 10. AeroTEM response for a 'thick' vertical conductor.

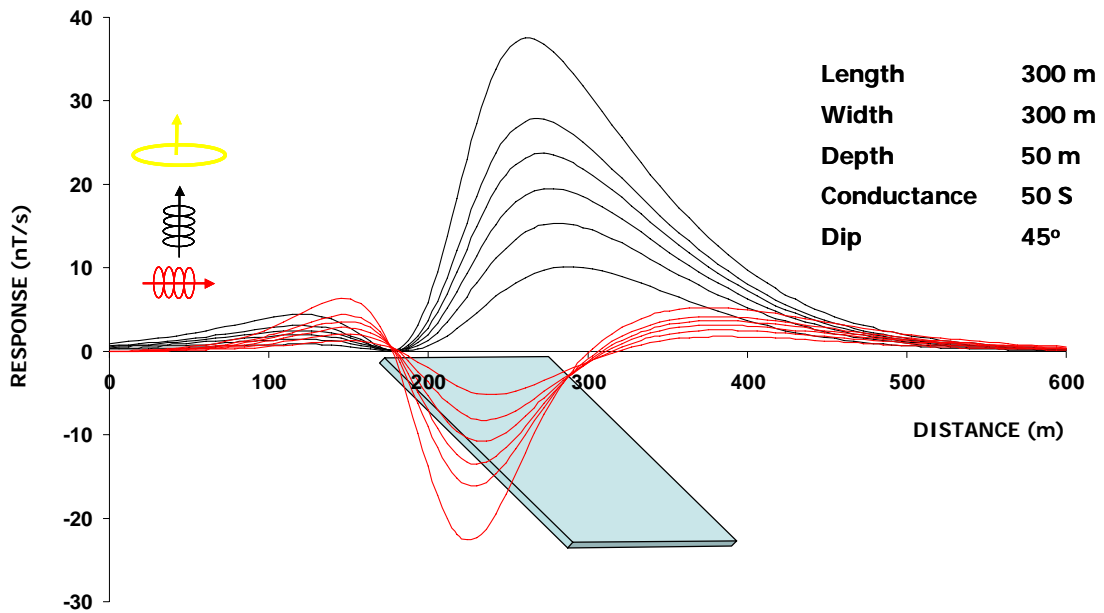


Figure 11. AeroTEM response over a 'thin' dipping conductor.

All cases should be considered when analyzing the interpreted picks and prioritizing for follow-up. Specific anomalous responses which remain as high priority should be subjected to numerical modeling prior to drill testing to determine the dip, depth and probable geometry of the source.

Respectfully submitted,

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Chris Kahue  
Aeroquest Limited  
November 2008

Reviewed By:

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Gord Smith  
Aeroquest Limited  
November 2008



## APPENDIX 1: SURVEY BOUNDARIES

The following table presents the Rosetta Stone Block boundaries. All geophysical data presented in this report have been windowed to 100m outside these outlines. X and Y positions are in metres: NAD83 UTM Zone 11N.

### Rosetta Stone Block:

X	Y
447499.9	5553706.4
452125.1	5553662.5
452116.7	5552735.9
453010.3	5552727.9
452989.8	5550411.5
453436.7	5550407.6
453428.6	5549481.1
453875.7	5549477.2
453867.7	5548550.6
454761.9	5548542.9
454750.2	5547153.1
455197.4	5547149.3
455189.6	5546222.8
456084.4	5546215.4
456061.5	5543435.7
452480.9	5543466.3
452493.2	5544856.1
449361.1	5544884.8
449365.5	5545348.1
447500.5	5545366.4

## APPENDIX 2: MINING CLAIMS

From Government of British Columbia, Mineral Titles Online (November 2008)

Tenure Number	Claim Name	Owner	Good To Date	Area (Ha)
538604	REMAC 2	KENNEDY, THOMAS PETER JAMES	2009/jul/15	518.32
538605	REMAC 3	KENNEDY, THOMAS PETER JAMES	2009/jul/15	456.345
543592	SHAN	KENNEDY, THOMAS PETER JAMES	2009/jul/15	394.126
558556	REMAC 4	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.656
558557	REMAC 5	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.604
558558	REMAC 6	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.789
558559	REMAC 7	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.591
558560	REMAC 8	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.715
558561	REMAC 9	KENNEDY, THOMAS PETER JAMES	2009/jul/15	269.643
558562	REMAC 10	KENNEDY, THOMAS PETER JAMES	2009/jul/15	414.993
558563	REMAC 11	KENNEDY, THOMAS PETER JAMES	2009/jul/15	456.027
559984	MOREMAC 1	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.358
559985	MOREMAC 2	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.351
559986	MOREMAC 3	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.22
560562	NORMAC 1	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.176
560563	NORMAC 2	KENNEDY, THOMAS PETER JAMES	2009/jul/15	497.196
536449	REMAC	KENNEDY, THOMAS PETER JAMES	2009/jul/15	414.468

### APPENDIX 3: DESCRIPTION OF DATABASE FIELDS

The GDB file is a Geosoft binary database. In the database, the Survey lines and Tie Lines are prefixed with an "L" for "Line" and "T" for "Tie".

COLUMN	UNITS	DESCRIPTOR
line		Line number
flight		Flight #
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
x	m	UTM Easting (NAD83, Zone 11N)
y	m	UTM Northing (NAD83, Zone 11N)
galt	m	GPS elevation of magnetometer bird
ralt	m	Helicopter radar altimeter (height above terrain)
bheight	m	Terrain clearance of EM bird
dtm	m	Digital Terrain Model
basemag	nT	Base station total magnetic intensity
Magl	nT	Final levelled total magnetic intensity from lower magnetometer sensor (installed on the tail of the EM bird).
Magu	nT	Final levelled total magnetic intensity from upper magnetometer sensor (mag bird on tow cable)
Zon	nT/s	EM On-Time Z component Channels 1-16
Zoff	nT/s	EM Off-Time Z component Channels 0-16
Xon	nT/s	EM On-Time X component Channels 1-16
Xoff	nT/s	EM Off-Time X component Channels 0-16
pwrline		powerline monitor data channel
Grade		Classification from 1-7 based on conductance of conductor pick
Anom_labels		Letter label of conductor pick (Unique per flight line)
Off_Con	S	Off-time conductance at conductor pick
Off_Tau	µs	Off-time decay constant at conductor pick
Anom_ID		EM Anomaly response style (K= thickK, N = thiN)
Off_AllCon	S	Off-time conductance
Off_AllTau	µs	Off-time decay constant
TranOff	s	Transmitter turn off time
TranOn	s	Transmitter turn on time
TranPeak	A	Transmitter peak current
TranSwitch	s	Transmitter peak current time
Off_pick		Anomaly pick channel

## APPENDIX 4: AEROTEM ANOMALY LISTING

### Rosetta Stone Block:

Line	Anom	ID	Cond (S)	Tau (µs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10020	A	K	16.96	411.85	1	18:47.7	80.68	449363.3	5553597
10030	A	K	13.2	363.32	1	21:51.4	69.76	448072.2	5553420
10030	B	K	18.39	428.81	1	22:23.5	78.97	448612.6	5553406
10030	C	N	14.24	377.39	1	22:55.3	76.32	449261.6	5553412
10030	D	K	8	282.8	1	23:45.0	83.8	450448.4	5553411
10040	A	K	15.47	393.33	1	26:19.7	66.97	450582.6	5553268
10040	B	K	15.57	394.63	1	26:50.3	66.79	449865	5553263
10040	C	K	9.77	312.63	1	27:03.1	53.35	449543.3	5553258
10040	D	N	26.29	512.74	1	27:40.0	70.57	448752.6	5553245
10040	E	K	19.52	441.82	1	28:10.9	62.17	448001.1	5553245
10050	A	K	3.42	184.95	2	17:48.5	76.99	451816.7	5553131
10050	B	K	5.64	237.56	2	18:13.1	66.42	451189.8	5553118
10050	C	K	5.62	237.09	2	18:30.7	67.65	450731.6	5553110
10050	D	K	11.44	338.26	2	19:17.6	78.26	449738.3	5553095
10050	E	N	16.16	401.97	2	20:19.8	86.11	448189	5553115
10050	F	K	16.38	404.71	2	20:33.7	67.91	447833.1	5553111
10060	A	K	21.7	465.85	2	21:41.8	74.33	447866.8	5552976
10060	B	K	8.99	299.8	2	22:14.3	64.22	448462	5552959
10060	C	K	16.12	401.44	2	22:26.4	59.83	448779.8	5552945
10060	D	K	6.28	250.53	2	22:49.9	71.2	449346.1	5552939
10060	E	K	15.45	393.1	2	23:09.6	81.83	449826.7	5552953
10060	F	K	1.75	132.26	2	24:32.7	57.29	451752.7	5552971
10070	A	K	2.99	173.02	2	25:43.8	72.98	451754.8	5552834
10070	B	K	11.6	340.6	2	26:01.7	80.09	451416.3	5552824
10070	C	K	5.61	236.77	2	26:32.7	74.11	450625.5	5552810
10070	D	K	18.11	425.54	2	27:36.7	60.08	448944.5	5552813
10070	E	K	14.54	381.35	2	27:52.0	67.01	448565	5552816
10070	F	K	18.25	427.19	2	28:22.0	70.75	447947.1	5552803
10070	G	K	15.12	388.84	2	28:35.3	64.99	447663	5552796
10080	A	K	21.9	467.99	2	29:54.4	50.85	447801	5552643
10080	B	K	13.6	368.83	2	30:26.3	63.59	448267.2	5552630
10080	C	K	22.95	479.03	2	30:45.6	64.12	448734.2	5552640
10080	D	K	16.19	402.4	2	31:11.9	57.73	449413.3	5552659
10080	E	N	3.84	195.89	2	31:44.4	57.47	450211.5	5552665
10080	F	K	5.77	240.2	2	32:41.6	62.13	451641.4	5552654
10080	G	N	0.97	98.56	2	33:07.1	64.04	452241	5552661

Line	Anom	ID	Cond (S)	Tau ( $\mu$ s)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10080	H	N	3.45	185.69	2	33:26.1	77.64	452671.2	5552665
10090	A	K	4.06	201.52	2	34:23.6	73.99	452794.1	5552519
10090	B	K	2.09	144.53	2	34:43.7	69.77	452331.4	5552513
10090	C	K	1.98	140.85	2	35:09.4	76.08	451767.3	5552513
10090	D	K	5.39	232.14	2	35:37.6	88.02	451175.1	5552503
10090	E	K	3.23	179.7	2	35:53.5	73.87	450799.9	5552501
10090	F	N	16.28	403.46	2	36:29.6	81.72	449819.2	5552502
10090	G	K	18.17	426.28	2	36:34.7	77.29	449680.4	5552501
10090	H	K	10.65	326.28	2	36:59.2	73.27	449066.5	5552510
10090	I	K	10.05	317.09	2	37:39.7	66.06	448062	5552497
10090	J	K	16.59	407.25	2	37:54.4	89.33	447683.5	5552482
10100	A	K	19.38	440.2	2	38:48.9	69.03	447636.5	5552386
10100	B	K	26.72	516.94	2	39:13.6	63.1	447994.1	5552383
10100	C	K	9.97	315.72	2	39:42.4	60.9	448485.9	5552360
10100	D	K	13.89	372.7	2	40:10.2	68.37	449185.5	5552362
10100	E	K	17.8	421.91	2	40:53.0	79.28	450360.8	5552346
10100	F	K	12.36	351.52	2	41:06.8	72.62	450704.2	5552344
10100	G	K	16.21	402.65	2	41:18.5	77.32	450977.7	5552348
10100	H	K	5.93	243.56	2	42:09.0	66.12	452231.3	5552349
10110	A	K	5.68	238.33	2	43:53.4	76.71	452275.3	5552202
10110	B	K	10.06	317.12	2	44:30.5	74.67	451432.7	5552222
10110	C	N	12.38	351.82	2	45:06.8	75.74	450465.1	5552199
10110	D	K	9.68	311.12	2	45:21.9	74.18	450051.8	5552199
10110	E	K	18.88	434.55	2	45:28.9	69.19	449863.1	5552202
10110	F	K	20.89	457.02	2	45:50.5	75.06	449306	5552221
10110	G	K	19.77	444.65	2	46:21.2	79.31	448529.1	5552212
10110	H	K	15.71	396.33	2	47:04.6	68.98	447594.6	5552211
10120	A	K	23.81	487.94	2	48:27.4	86.72	447571.3	5552081
10120	B	K	25.85	508.44	2	48:41.7	73.66	447757.9	5552084
10120	C	K	25.18	501.8	2	49:28.3	75.67	448462.6	5552063
10120	D	K	13.03	360.96	2	50:12.1	82.1	449389.9	5552056
10120	E	K	19.61	442.88	2	50:41.9	87.65	450166.7	5552055
10120	F	K	2.93	171.13	2	52:11.9	89.36	452490.9	5552049
10130	A	N	19.36	440.01	2	53:26.6	82.77	452533.1	5551916
10130	B	K	19.36	440.01	2	54:54.0	79.13	450197.8	5551931
10130	C	K	42.89	654.94	2	55:07.6	50.44	449815.1	5551928
10130	D	K	27.31	522.59	2	56:06.3	84.02	448319.9	5551902
10130	E	K	26.11	510.93	2	56:36.6	85.11	447673.8	5551910
10140	A	K	10.04	316.87	6	27:35.1	111.26	452634.4	5551749

Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10140	B	K	4.76	218.27	6	27:51.7	65.93	452240	5551750
10140	C	K	9.34	305.55	6	29:15.5	73.94	450132.6	5551781
10140	D	K	28.69	535.59	6	31:04.7	83.72	447617.5	5551772
10150	A	K	26.38	513.57	6	31:50.5	80.27	447679.9	5551596
10150	B	K	38.08	617.11	6	31:59.0	75.9	447845.3	5551569
10150	C	K	33.14	575.63	6	32:21.5	55.37	448190.1	5551598
10150	D	K	21.53	464.03	6	32:33.8	65.29	448363.3	5551605
10150	E	K	16.92	411.34	6	33:53.1	78.25	449976.8	5551614
10150	F	K	11.69	341.97	6	34:25.2	77.55	450732	5551606
10150	G	K	5.77	240.18	6	34:59.2	68.4	451451.1	5551601
10150	H	K	9.98	315.86	6	35:14.9	77.9	451859.9	5551607
10150	I	K	5.25	229.23	6	35:44.3	98.82	452559.5	5551601
10160	A	K	15.77	397.17	6	38:37.5	77.06	451504.3	5551480
10160	B	K	19.55	442.2	6	39:49.1	82.27	449657.8	5551479
10160	C	K	32.54	570.4	6	40:39.1	79.7	448365.1	5551474
10160	D	K	31.37	560.07	6	40:57.1	87.83	447909.6	5551465
10170	A	K	33.77	581.15	6	41:48.2	79.08	447709.2	5551310
10170	B	K	21.32	461.74	6	42:13.4	74.16	448216.7	5551309
10170	C	K	29.4	542.18	6	42:37.5	77.74	448687.6	5551299
10170	D	K	20.35	451.09	6	43:39.8	73.27	450110.9	5551302
10170	E	K	12.91	359.32	6	44:02.3	74.02	450663	5551303
10170	F	K	9.45	307.45	6	44:45.9	75.45	451517	5551301
10180	A	K	19.26	438.87	6	48:31.2	64.96	451414.9	5551202
10180	B	K	15.26	390.59	6	48:44.3	62.43	451067.3	5551167
10180	C	K	16.86	410.64	6	49:21.1	63.58	450107	5551170
10180	D	N	14.97	386.92	6	49:32.1	74.85	449848.8	5551171
10180	E	K	15.95	399.43	6	49:44.6	63.37	449549.8	5551171
10180	F	K	27.01	519.7	6	50:02.3	57.06	449118.5	5551171
10180	G	K	13.9	372.83	6	50:19.8	69.6	448686.3	5551189
10180	H	K	36.95	607.84	6	50:55.5	79.65	447848.2	5551153
10190	A	K	24.51	495.11	6	52:22.8	66.97	448641.3	5551006
10190	B	N	30.04	548.12	6	52:34.6	73.68	448883	5551022
10190	C	K	20.01	447.3	6	52:53.6	78.51	449329	5551009
10190	D	K	16.64	407.96	6	53:01.7	78.44	449539.8	5550998
10190	E	K	19.84	445.37	6	53:28.3	84.83	450178.9	5551011
10190	F	K	19.22	438.4	6	54:13.0	56.3	451187.7	5550995
10190	G	K	10.33	321.47	6	54:30.8	71.26	451677.5	5551002
10190	H	K	5.69	238.48	6	55:34.9	42.13	452594.5	5551005
10190	I	K	8.21	286.47	6	55:53.7	52.6	452818.8	5551020

Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10200	A	K	7.02	264.91	6	57:15.4	81.97	451742.1	5550867
10200	B	K	15.95	399.32	6	57:31.5	58.11	451280.7	5550877
10200	C	K	12.49	353.41	6	58:18.4	55	450067	5550874
10200	D	K	8.8	296.58	6	58:33.9	74.85	449676.7	5550852
10200	E	N	23.66	486.38	6	59:06.9	69.86	448907.5	5550861
10200	F	K	19.25	438.8	6	59:19.3	73.2	448634.9	5550849
10200	G	K	21.08	459.12	6	59:34.5	84.88	448247.4	5550865
10210	A	K	7.52	274.32	7	50:51.1	62.97	451946.5	5550712
10210	B	K	15.06	388.13	7	51:12.6	57.09	451392.5	5550713
10210	C	K	16.39	404.86	7	52:20.3	90.66	449761.5	5550708
10210	D	N	21.74	466.21	7	52:53.6	86.13	448939.6	5550703
10210	E	K	17.64	419.97	7	53:03.0	81.23	448713.6	5550715
10210	F	K	26.48	514.6	7	53:19.4	85.13	448350.8	5550728
10210	G	K	20.34	451	7	53:39.1	58.03	447861.6	5550712
10220	A	N	13.65	369.46	7	55:40.5	72.95	448950.2	5550550
10220	B	K	14.01	374.29	7	55:44.5	66.98	449038.5	5550554
10220	C	K	13.31	364.77	7	56:23.4	68.71	449930.4	5550558
10220	D	K	20.13	448.62	7	56:33.7	70.89	450185.9	5550559
10220	E	K	24.19	491.88	7	57:09.9	68.97	451004.6	5550552
10220	F	K	21.78	466.67	7	57:25.1	73.05	451394.4	5550552
10220	G	K	13.19	363.19	7	57:39.4	79.15	451750.3	5550549
10220	H	K	8.84	297.33	7	58:20.4	76.32	452709.5	5550553
10230	A	N	30.77	554.74	7	59:49.3	52.4	452953.8	5550404
10230	B	K	7.26	269.41	7	00:00.8	57.84	452677.8	5550397
10230	C	K	8.37	289.35	7	00:37.1	84.62	451813.1	5550416
10230	D	K	14.63	382.51	7	00:56.2	46.3	451367.1	5550410
10230	E	K	22.73	476.8	7	01:43.2	77.21	450265.8	5550409
10230	F	K	23.36	483.34	7	02:16.4	66.05	449492.2	5550404
10230	G	N	17.14	413.98	7	02:46.4	84.73	448763.5	5550407
10230	H	K	19.01	436.04	7	02:59.7	71.3	448409.2	5550415
10230	I	K	17.86	422.67	7	03:21.1	74.63	447888	5550409
10230	J	K	20.75	455.55	7	03:41.0	80.1	447549.5	5550402
10240	A	K	22.17	470.81	7	04:51.9	90.21	447913.6	5550259
10240	B	K	11.24	335.21	7	05:18.3	69.64	448409.4	5550267
10240	C	K	10.07	317.33	7	05:46.3	86.16	449029.7	5550264
10240	D	K	10.7	327.07	7	06:56.5	78.47	450549.2	5550254
10240	E	K	19.43	440.81	7	07:31.4	68.74	451314.7	5550266
10240	F	K	19.52	441.79	7	07:46.8	76.71	451655.1	5550266
10240	G	K	15.52	393.91	7	07:57.4	69.61	451881	5550249



Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10240	H	K	18.19	426.55	7	08:36.0	66.59	452714.6	5550272
10250	A	K	16.33	404.06	7	09:50.2	74.79	453150.6	5550124
10250	B	K	20.23	449.81	7	10:44.3	91.44	451740.5	5550100
10250	C	K	15.7	396.21	7	11:16.1	70.65	450916.8	5550120
10250	D	K	14.46	380.24	7	12:31.0	86.13	449115.3	5550113
10250	E	K	12	346.36	7	12:56.6	76.39	448529.1	5550101
10250	F	K	15.96	399.55	7	13:22.8	59.19	447920.6	5550111
10260	A	N	9.14	302.36	7	16:08.2	94.51	448550.2	5549958
10260	B	K	11.91	345.18	7	16:47.4	82.26	449359.6	5549968
10260	C	K	17.32	416.21	7	17:21.0	66.09	450123.9	5549940
10260	D	K	7.21	268.58	7	17:53.2	60.24	450816.8	5549945
10260	E	N	25.93	509.24	7	18:20.3	73.53	451390	5549950
10260	F	K	20.79	455.96	7	18:35.8	60.86	451704	5549957
10260	G	K	14.91	386.19	7	19:18.8	72.28	452660.5	5549960
10260	H	K	14.25	377.55	7	19:26.3	69.13	452788.5	5549951
10260	I	K	11.99	346.29	7	19:53.6	72.58	453386.1	5549958
10270	A	K	19.15	437.66	7	20:42.6	84.71	453338.6	5549820
10270	B	K	8.1	284.59	7	21:31.1	96.95	452203.8	5549810
10270	C	K	16.64	407.88	7	21:54.5	80.2	451628.7	5549804
10270	D	K	6.06	246.19	7	22:29.7	66.85	450786	5549804
10270	E	K	23.92	489.03	7	22:56.8	53.57	450168.7	5549809
10270	F	K	10.05	317	7	23:27.2	80.81	449553.1	5549827
10270	G	K	21.19	460.37	7	24:20.1	65.6	448447.4	5549800
10270	H	K	21.54	464.11	7	25:30.5	62.94	447641.7	5549820
10280	A	K	30.16	549.15	7	27:12.4	99.79	447633.5	5549662
10280	B	K	18.2	426.62	7	28:01.5	84.48	448548	5549656
10280	C	K	13.74	370.65	7	29:08.4	89.41	449945.5	5549641
10280	D	K	13.63	369.24	7	29:21.0	85.28	450227.4	5549669
10280	E	K	21.33	461.87	7	31:23.7	71.54	452976.5	5549646
10280	F	K	19.03	436.24	7	31:44.4	72.29	453385.3	5549669
10290	A	K	7	264.55	7	33:51.4	81.13	451540.5	5549503
10290	B	K	10.57	325.13	7	34:46.1	58.21	450263	5549502
10290	C	K	9.05	300.85	7	35:47.5	85.21	449019.6	5549501
10300	A	K	17.69	420.61	6	49:18.5	85.33	449165.2	5549358
10300	B	K	5.42	232.79	6	50:04.1	74.6	450241.9	5549361
10300	C	K	5.29	230.11	6	51:04.4	73.81	451779.7	5549363
10300	D	K	6.66	258.07	6	51:56.8	86.09	453200.4	5549347
10310	A	K	5.17	227.28	6	43:44.1	91.64	451877.2	5549217
10310	B	K	20.1	448.38	6	45:31.3	74.39	449130	5549210

Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10320	A	K	1.92	138.45	6	38:23.5	90.83	450348.8	5549038
10320	B	N	7.82	279.55	6	40:03.0	67.02	452313.1	5549033
10330	A	N	2.17	147.3	6	30:30.5	61.65	452381.6	5548927
10330	B	K	2.17	147.3	6	30:35.4	64.82	452286.7	5548927
10340	A	K	12.64	355.52	6	22:13.1	92.42	447611.4	5548759
10340	B	K	36.02	600.17	6	22:31.6	71.05	447989.1	5548756
10340	C	K	0.89	94.23	6	23:00.4	121.34	448443.9	5548755
10340	D	K	5.97	244.36	6	27:24.7	81.74	452484.8	5548728
10340	E	K	20.83	456.44	6	27:59.9	61.96	453102.7	5548736
10350	A	K	1.56	124.99	6	15:09.0	76.81	453265.1	5548631
10350	B	K	5.42	232.89	6	15:50.1	56.04	452494.7	5548627
10350	C	K	6.99	264.39	6	20:59.3	64.47	448174.9	5548631
10350	D	K	16.28	403.53	6	21:26.6	93.43	447808.8	5548613
10360	A	K	24.51	495.05	6	04:06.5	103.55	447567.8	5548456
10360	B	K	2.64	162.38	6	04:45.2	146.11	448154.5	5548467
10360	C	K	8.29	287.85	6	09:46.3	122.08	452450.5	5548466
10360	D	K	7.99	282.72	6	10:19.8	73.41	453152.7	5548456
10370	A	K	9.83	313.5	5	21:37.5	65.1	452787	5548304
10370	B	N	5.29	230.06	5	21:45.0	65.32	452674.3	5548317
10370	C	K	8.62	293.67	5	21:59.8	68.56	452474.2	5548320
10370	D	K	10.53	324.45	5	26:21.9	97.97	447978	5548340
10390	A	K	6.99	264.3	5	04:46.7	65.26	452532.8	5548022
10390	B	N	17	412.26	5	05:04.7	79.49	452422.5	5548022
10410	A	K	6.89	262.42	5	47:37.6	93.72	452637.1	5547705
10410	B	K	13.61	368.95	5	47:54.3	71.56	452405.8	5547723
10420	A	K	10.89	330.01	5	37:41.6	98.05	447813.4	5547553
10430	A	K	10.43	322.95	5	30:40.8	76.89	452569.3	5547413
10430	B	K	21.74	466.22	5	31:16.5	85.79	452201.9	5547417
10430	C	K	8.57	292.69	5	31:45.5	80.42	451738.7	5547422
10430	D	K	15.07	388.15	5	35:58.8	53.08	447924.2	5547410
10440	A	K	3.7	192.43	5	19:23.9	76.69	448690.7	5547242
10440	A	K	*	*	5	21:23.8	40.13	449287.2	5547288
10440	B	K	*	*	5	21:42.8	41.21	449426.2	5547252
10440	C	K	*	*	5	22:17.1	88.64	449920.6	5547251
10440	D	K	*	*	5	25:06.7	61.66	451654.1	5547251
10440	E	K	*	*	5	25:26.4	98.88	452104.4	5547268
10450	A	K	17.35	416.5	4	04:51.0	101.76	448136.2	5547131
10450	B	K	22.93	478.9	4	06:04.3	60.33	449282.8	5547100
10450	C	K	4.77	218.32	4	06:35.3	71.77	449612.9	5547106

Line	Anom	ID	Cond (S)	Tau ( $\mu$ s)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10450	D	K	5.34	231.01	4	06:48.7	94.46	449881.1	5547112
10450	E	K	6.2	249	4	07:53.2	79.46	451036.5	5547088
10450	F	K	12.11	347.98	4	08:06.8	63.02	451308.5	5547101
10450	G	K	20.86	456.78	4	08:44.3	75.69	451697.6	5547106
10450	H	K	15.51	393.82	4	08:53.4	87.54	451894.8	5547108
10460	A	K	20.42	451.83	4	57:23.6	84.21	452851.9	5546923
10460	B	K	21.31	461.6	4	58:15.2	77.64	452041.3	5546970
10460	C	K	21.47	463.38	4	58:25.8	73.18	451868.9	5546964
10460	D	K	27.23	521.83	4	58:31.0	69.59	451758.4	5546957
10460	E	K	14.85	385.39	4	59:00.0	64.81	451278.5	5546957
10460	F	K	17.19	414.65	4	00:33.6	76.65	449655.2	5546960
10460	G	K	23.79	487.78	4	00:50.8	113.38	449303.1	5546940
10460	H	K	20.3	450.55	4	01:59.6	70.76	448017.3	5546979
10470	A	K	20.04	447.71	4	47:52.5	80.71	448107.8	5546823
10470	B	K	24.84	498.39	4	48:32.7	74.96	448895.8	5546826
10470	C	K	16.54	406.68	4	49:35.6	60.79	449349.4	5546809
10470	D	K	18.93	435.1	4	52:33.2	81.86	452014.6	5546803
10480	A	K	20.02	447.43	4	41:28.9	74.08	452033.4	5546687
10480	B	K	30.3	550.5	4	41:41.6	74.76	451778.5	5546683
10480	C	K	7.34	270.91	4	42:51.7	74.56	450299.6	5546683
10480	D	K	14.08	375.23	4	43:20.2	66.58	449803.2	5546668
10480	E	K	26.44	514.16	4	43:49.8	62.76	449659.8	5546662
10480	F	K	21.95	468.51	4	44:22.2	46.25	449553.9	5546655
10480	G	K	34.18	584.62	4	44:40.2	80.67	449357.7	5546639
10480	H	K	21.7	465.82	4	45:24.1	71.57	448486.8	5546657
10480	I	K	23.12	480.8	4	45:45.6	47.63	448242.9	5546672
10490	A	K	17.33	416.35	4	32:01.7	63.31	448294	5546529
10490	B	N	20.15	448.85	4	32:25.4	70.28	448796.8	5546534
10490	C	K	26.85	518.16	4	32:48.4	89.33	449315	5546533
10490	D	K	25.81	508	4	35:55.0	82.36	451844.2	5546508
10490	E	K	14.93	386.35	4	36:12.0	92.71	452163.6	5546499
10490	F	K	12.1	347.84	4	38:13.6	52.57	455077.5	5546513
10500	A	K	20.62	454.04	4	25:32.5	83.16	452530.1	5546377
10500	B	K	17.23	415.13	4	26:02.5	65.4	452178.5	5546355
10500	C	K	26.36	513.38	4	26:17.1	70.53	452001.6	5546362
10500	D	K	8.17	285.91	4	27:46.7	96.97	450120.3	5546360
10500	E	K	16.45	405.57	4	28:13.4	58.94	449825.5	5546355
10500	F	K	17.23	415.14	4	28:36.3	54.36	449603.3	5546334
10500	G	K	22.25	471.66	4	29:21.3	66.58	448748.5	5546331

Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10510	A	K	12.3	350.74	4	18:01.4	81.52	450085.8	5546207
10510	B	K	24.15	491.43	4	19:50.7	75.44	452012.1	5546223
10520	A	K	1.15	107.1	4	08:46.1	88.58	454778	5546064
10520	B	K	20.25	449.96	4	10:48.9	84.12	452131.3	5546062
10520	C	K	8.57	292.66	4	12:31.5	86.29	450151.7	5546087
10530	A	K	21.32	461.77	4	03:45.4	54.55	451982.7	5545902
10530	B	K	6.02	245.38	4	04:20.5	89.82	452812.2	5545910
10540	A	K	9.13	302.23	4	53:23.8	108.85	452685.6	5545763
10540	B	K	12.78	357.47	4	53:31.9	77.76	452460.2	5545765
10540	C	K	16.05	400.64	4	53:48.1	72.95	452171.8	5545761
10540	D	K	25.16	501.61	4	53:58.0	69.23	451961.6	5545769
10540	E	K	29.59	543.97	4	55:00.6	65.89	450671.3	5545756
10550	A	K	32.74	572.23	4	41:47.5	85.02	449588.6	5545584
10550	B	K	22.67	476.1	4	42:51.4	66.4	450672.9	5545602
10550	C	K	19.87	445.75	4	43:53.6	70.93	452087.7	5545607
10550	D	K	13.28	364.47	4	44:13.0	73.04	452544.4	5545607
10550	E	N	3.54	188.08	4	44:44.2	101.3	453065.2	5545594
10560	A	K	12.89	359.01	3	15:52.9	55.86	448359.3	5545446
10560	B	K	3.55	188.49	3	16:47.1	68.47	448893.5	5545451
10560	C	K	19.92	446.27	3	17:29.0	89.06	449592.9	5545462
10560	D	K	20.47	452.43	3	18:36.4	82.46	450642.6	5545452
10560	E	K	25.19	501.87	3	19:41.3	59.91	451833.5	5545476
10560	F	K	19.85	445.56	3	19:52.4	77.14	452031.7	5545468
10560	G	K	10.94	330.71	3	20:43.8	99.61	452623.1	5545464
10560	H	K	4.27	206.63	3	21:53.8	94.89	453806.3	5545440
10570	A	K	16.04	400.56	3	09:17.9	81.97	452669.6	5545302
10570	B	K	27.39	523.34	3	09:49.0	100.32	452019.6	5545329
10570	C	K	22.81	477.64	3	10:52.0	67.58	450639.8	5545323
10570	D	K	23.33	482.98	3	11:55.4	71.49	449685	5545315
10570	E	K	16.63	407.75	3	12:06.9	77.1	449419.1	5545298
10580	A	K	10.87	329.64	3	57:31.6	88.56	449694.4	5545139
10580	B	K	11.63	341.04	3	58:51.0	88.14	450688.6	5545169
10580	C	K	16.35	404.29	3	00:00.6	77.51	452007.9	5545149
10580	D	K	14.13	375.94	3	00:45.4	78.34	452698.7	5545194
10580	E	K	0.33	57.66	3	03:12.1	57.74	454774.1	5545147
10590	A	K	1.74	132.07	3	50:46.5	101.77	454800.7	5545022
10590	B	K	14.19	376.66	3	53:18.4	68.37	452710.1	5545009
10590	C	K	10.15	318.59	3	53:42.7	98.97	452389.2	5545008
10590	D	K	17.27	415.56	3	55:06.8	77.71	450701	5545022

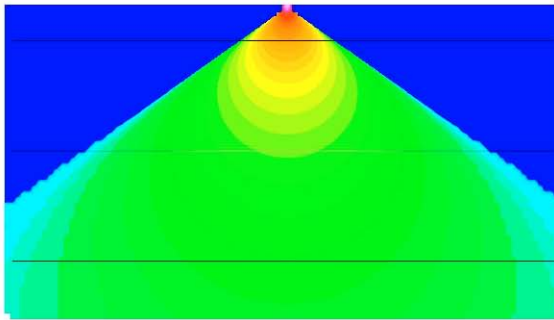
Line	Anom	ID	Cond (S)	Tau (μs)	Flight #	UTC Time	Bird height (m)	Easting (m)	Northing (m)
10590	E	K	16.13	401.63	3	56:00.1	106.44	449649.6	5545030
10600	A	K	12.2	349.3	3	44:40.8	88.04	452385.5	5544863
10600	B	K	13.5	367.39	3	45:03.9	81.96	452719	5544880
10610	A	K	9.4	306.55	3	41:16.0	74.74	452709.3	5544719
10620	A	K	*	*	3	33:05.3	103.14	452744.9	5544550
10630	A	N	3.4	184.42	3	30:11.3	78.13	454971.8	5544413
10640	A	N	2.07	143.78	3	27:09.9	86.24	455053.9	5544248
10660	A	K	1.78	133.31	3	18:23.9	83.59	455387.9	5543968
10680	A	K	1.24	111.44	3	08:59.6	89.15	455623.3	5543641
10690	A	K	0.98	99.21	3	00:34.2	96.96	455699.1	5543519
19020	A	K	19.81	445.11	1	42:41.8	84.49	447983.5	5553196
19020	A	K	*	*	1	45:39.6	73.39	448000.6	5552441
19020	B	K	*	*	1	47:35.1	78.03	448001.8	5550376
19020	C	K	*	*	1	48:21.5	81.3	447995.4	5550123
19020	A	K	*	*	1	57:15.1	79.48	448020.6	5548713
19020	B	K	*	*	1	57:56.7	75.2	447975.7	5548464
19030	A	K	*	*	1	14:53.6	71.52	449492.1	5547303
19030	B	K	*	*	1	17:16.1	87.37	449482.6	5549892
19030	C	K	*	*	1	18:30.0	46.93	449491.9	5551225
19030	A	K	*	*	1	19:36.1	70.27	449540.5	5551493
19030	A	K	*	*	1	22:55.3	82.31	449510.4	5552523
19030	B	K	*	*	1	23:49.1	86.64	449478.2	5553323
19040	A	K	8.44	290.46	1	28:48.0	91.45	450970.9	5553034
19040	B	K	11.39	337.47	1	29:27.0	66.39	450989.3	5552339
19040	C	K	16.25	403.09	1	31:34.2	92.67	450975.7	5550757
19040	D	K	18.3	427.77	1	31:49.4	74.47	450977.4	5550500
19040	E	K	12.63	355.45	1	35:52.3	75.35	451008.8	5547145
19050	A	K	15.12	388.83	1	45:51.9	106.99	452489.7	5545774
19050	B	K	8.67	294.53	1	47:36.9	60.15	452487.7	5548199
19050	C	K	4.55	213.31	1	47:56.9	73.61	452467.5	5548652
19050	D	K	4.39	209.54	1	51:29.0	79.59	452523.3	5551553
19070	A	K	4.27	206.75	1	07:44.0	90.04	455511.1	5543712

## APPENDIX 5: AEROTEM DESIGN CONSIDERATIONS

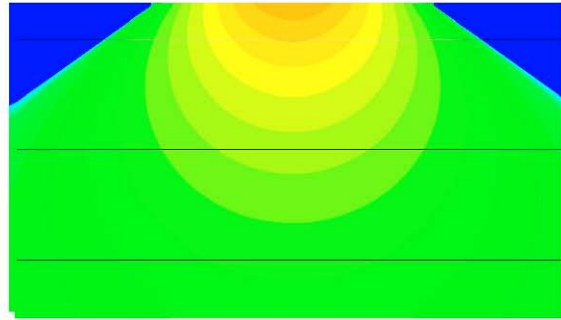
Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at slower speed and collect data with high spatial resolution, and with great accuracy, means the helicopter EM systems provide more detail than any other EM configuration, airborne or ground-based. Spatial resolution is especially important in areas of complex geology and in the search for discrete conductors. With the advent of helicopter-borne high-moment time domain EM systems the fixed wing platforms are losing their *only* advantage – depth penetration.

### **Advantage 1 – Spatial Resolution**

The AeroTEM system is specifically designed to have a small footprint. This is accomplished through the use of concentric transmitter-receiver coils and a relatively small diameter transmitter coil (5 m). The result is a highly focused exploration footprint, which allows for more accurate “mapping” of discrete conductors. Consider the transmitter primary field images shown in Figure 1, for AeroTEM versus a fixed-wing transmitter.



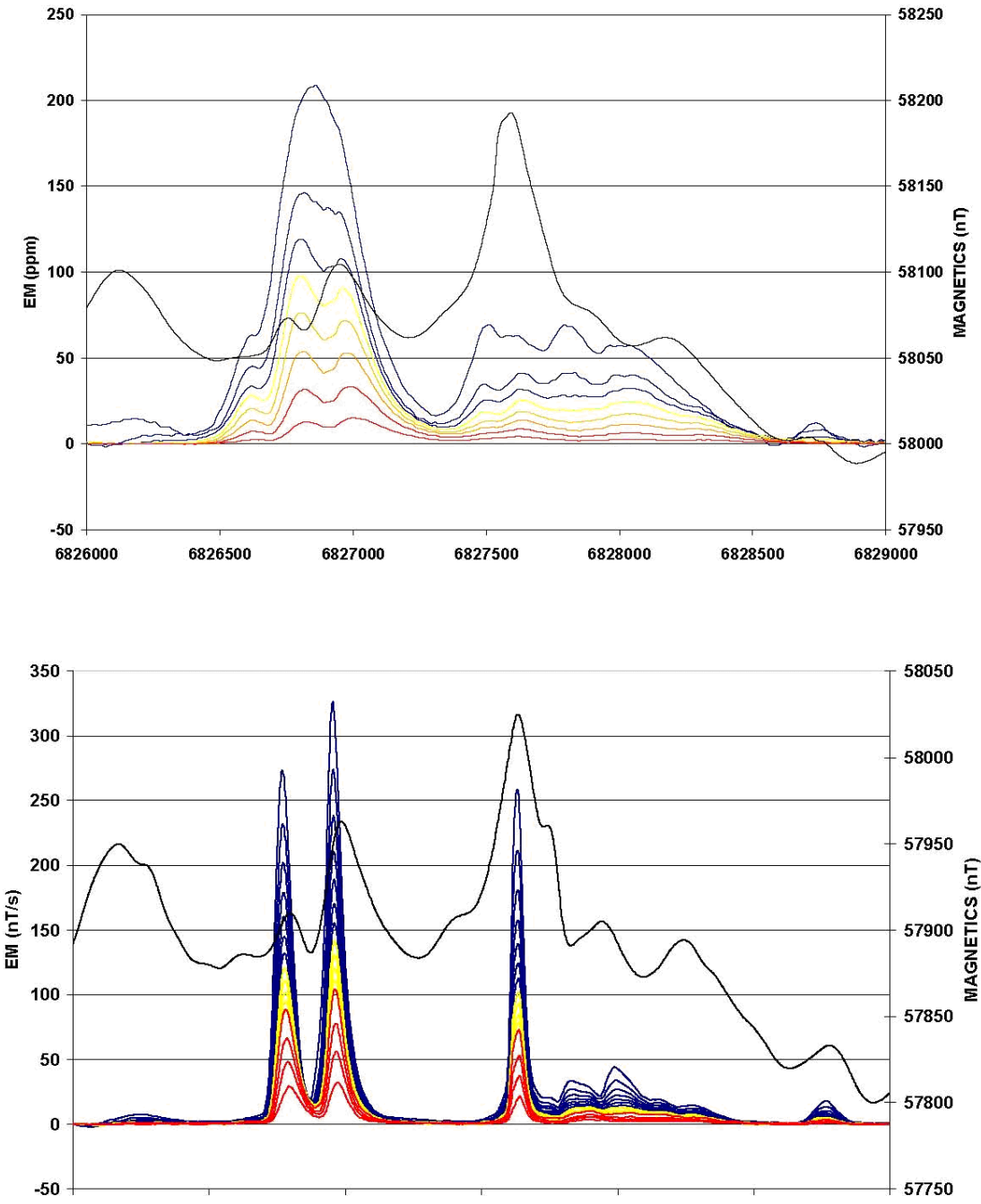
The footprint of AeroTEM at the earth's surface is roughly 50m on either side of transmitter



The footprint of a fixed-wing system is roughly 150 m on either side of the transmitter

**Figure 1. A comparison of the footprint between AeroTEM and a fixed-wing system, highlights the greater resolution that is achievable with a transmitter located closer to the earth's surface. The AeroTEM footprint is one third that of a fixed-wing system and is symmetric, while the fixed-wing system has even lower spatial resolution along the flight line because of the separated transmitter and receiver configuration.**

At first glance one may want to believe that a transmitter footprint that is distributed more evenly over a larger area is of benefit in mineral exploration. In fact, the opposite is true; by energizing a larger surface area, the ability to energize and detect discrete conductors is reduced. Consider, for example, a comparison between AeroTEM and a fixed-wing system over the Mesamax Deposit (1,450,000 tonnes of 2.1% Ni, 2.7% Cu, 5.2 g/t Pt/Pd). In a test survey over three flight lines spaced 100 m apart, AeroTEM detected the Deposit on all three flight lines. The fixed-wing system detected the Deposit only on two flight lines. In exploration programs that seek to expand the flight line spacing in an effort to reduce the cost of the airborne survey, discrete conductors such as the Mesamax Deposit can go undetected. The argument often put forward in favour of using fixed-wing systems is that because of their larger footprint, the flight line spacing can indeed be widened. Many fixed-wing surveys are flown at 200 m or 400 m. Much of the survey work performed by Aeroquest has been to survey in areas that were previously flown at these wider line spacings. One of the reasons for AeroTEM's impressive discovery record has been the strategy of flying closely spaced lines and finding all the discrete near-surface conductors. These higher resolution surveys are being flown within existing mining camps, areas that improve the chances of discovery.



**Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.**

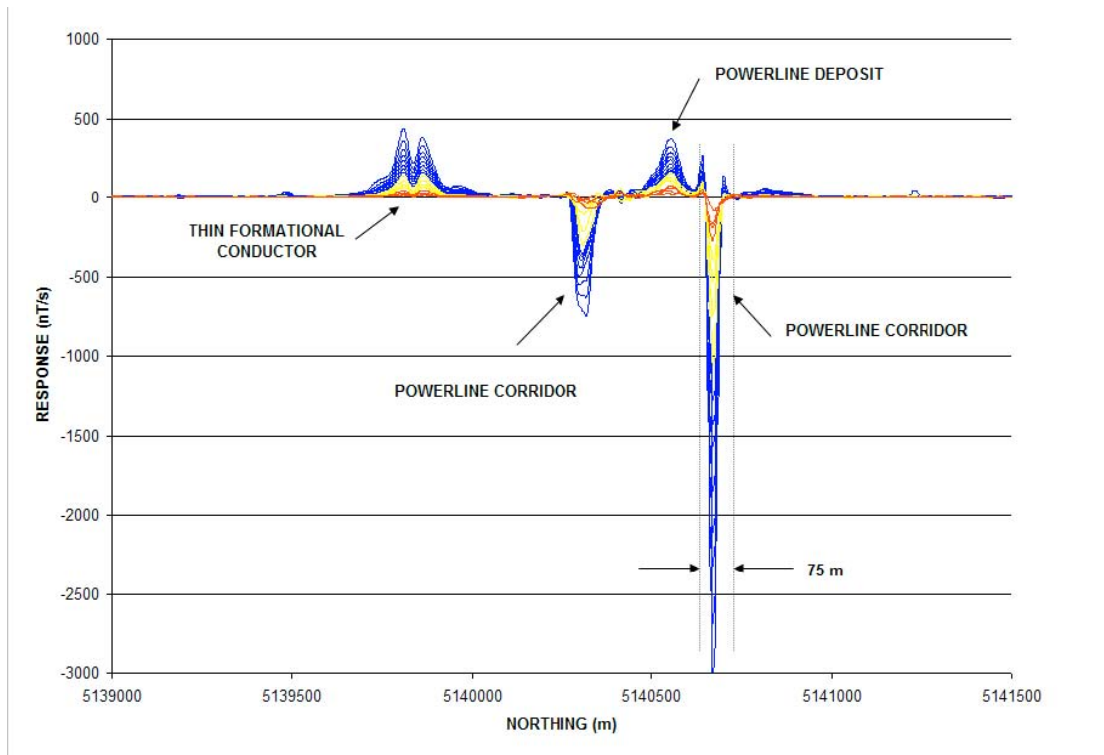
The small footprint of AeroTEM combined with the high signal to noise ratio (S/N) makes the system more



suitable to surveying in areas where local infrastructure produces electromagnetic noise, such as power lines and railways. In 2002 Aeroquest flew four exploration properties in the Sudbury Basin that were under option by FNX Mining Company Inc. from Inco Limited. One such property, the Victoria Property, contained three major power line corridors.

The resulting AeroTEM survey identified all the known zones of Ni-Cu-PGE mineralization, and detected a response between two of the major power line corridors but in an area of favourable geology. Three boreholes were drilled to test the anomaly, and all three intersected sulphide. The third borehole encountered 1.3% Ni, 6.7% Cu, and 13.3 g/t TPMs over 42.3 ft. The mineralization was subsequently named the Powerline Deposit.

The success of AeroTEM in Sudbury highlights the advantage of having a system with a small footprint, but also one with a high S/N. This latter advantage is achieved through a combination of a high-moment (high signal) transmitter and a rigid geometry (low noise). Figure 3 shows the Powerline Deposit response and the response from the power line corridor at full scale. The width of power line response is less than 75 m.



**Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish this response from that of two closely spaced conductors is by interpreting the X-axis coil response.**

#### **Advantage 2 – Conductance Discrimination**

The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still superior to systems that rely on lower base frequencies to detect high conductance targets, but do not measure in the on-time.

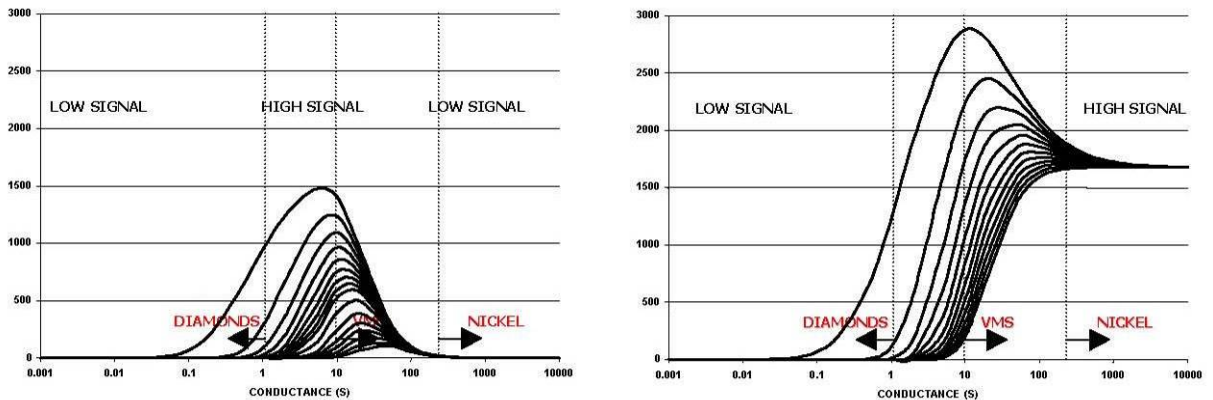
The peak response of a conductive target to an EM system is a function of the target conductance and the EM system base frequency. For time domain EM systems that measure only in the off-time, there is a drop in the peak response of a target as the base frequency is lowered for all conductance values below the peak system

response. For example, the AeroTEM peak response occurs for a 10 S conductor in the early off-time and 100 S in the late off-time for a 150 Hz base frequency. Because base frequency and conductance form a linear relationship when considering the peak response of any EM system, a drop in base frequency of 50% will double the conductance at which an EM system shows its peak response. If the base frequency were lowered from 150 Hz to 30 Hz there would be a fivefold increase in conductance at which the peak response of an EM occurred.

However, in the search for highly conductive targets, such as pyrrhotite-related Ni-Cu-PGM deposits, a fivefold increase in conductance range is a high price to pay because the signal level to lower conductance targets is reduced by the same factor of five. For this reason, EM systems that operate with low base frequencies are not suitable for general exploration unless the target conductance is more than 100 S, or the target is covered by conductive overburden.

Despite the excellent progress that has been made in modeling software over the past two decades, there has been little work done on determining the optimum form of an EM system for mineral exploration. For example, the optimum configuration in terms of geometry, base frequency and so remain unknown. Many geophysicists would argue that there is no single ideal configuration, and that each system has its advantages and disadvantages. We disagree.

When it comes to detecting and discriminating high-conductance targets, it is necessary to measure the pure in phase response of the target conductor. This measurement requires that the measured primary field from the transmitter be subtracted from the total measured response such that the secondary field from the target conductor can be determined. Because this secondary field is in-phase with the transmitter primary field, it must be made while the transmitter is turned on and the transmitter current is changing. The transmitted primary field is several orders of magnitude larger than the secondary field. AeroTEM uses a bucking coil to reduce the primary field at the receiver coils. The only practical way of removing the primary field is to maintain a rigid geometry between the transmitter, bucking and receiver coils. This is the main design consideration of the AeroTEM airframe and it is the only time domain airborne system to have this configuration.



The off-time AeroTEM response for the 16 channel configuration.

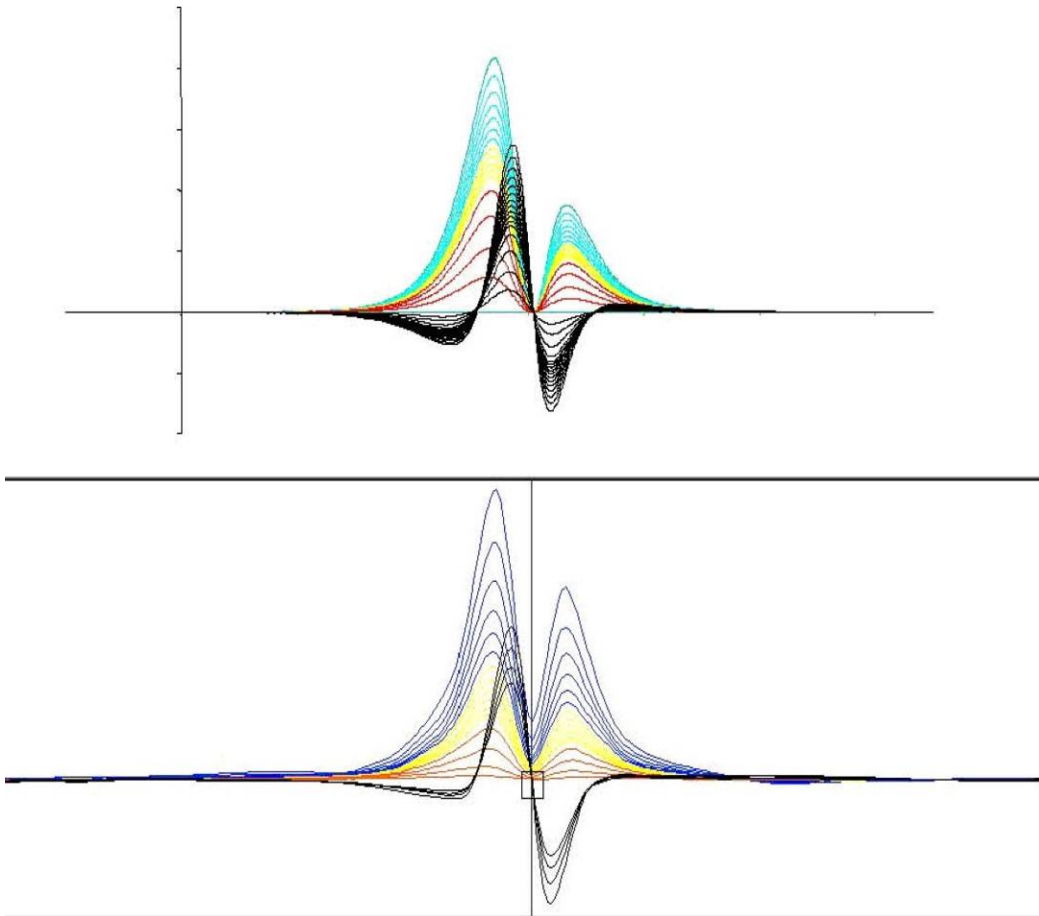
The on-time response assuming 100% removal of the measured primary field.

**Figure 4. The off-time and on-time response nomogram of AeroTEM for a base frequency of 150 Hz. The on-time response is much stronger for higher conductance targets and this is why on-time measurements are more important than lower frequencies when considering high conductance targets in a resistive environment.**

### Advantage 3 – Multiple Receiver Coils

AeroTEM employs two receiver coil orientations. The Z-axis coil is oriented parallel to the transmitter coil and both are horizontal to the ground. This is known as a maximum coupled configuration and is optimal for detection. The X-axis coil is oriented at right angles to the transmitter coil and is oriented along the line-of-flight.

This is known as a minimum coupled configuration, and provides information on conductor orientation and thickness. These two coil configurations combined provide important information on the position, orientation, depth, and thickness of a conductor that cannot be matched by the traditional geometries of the HEM or fixed-wing systems. The responses are free from a system geometric effect and can be easily compared to model type curves in most cases. In other words, AeroTEM data is very easy to interpret. Consider, for example, the following modeled profile:



**Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude Z-axis peak. Using the X-axis cross-over is the only way of differentiating the Z-axis response from being two closely spaced conductors.**

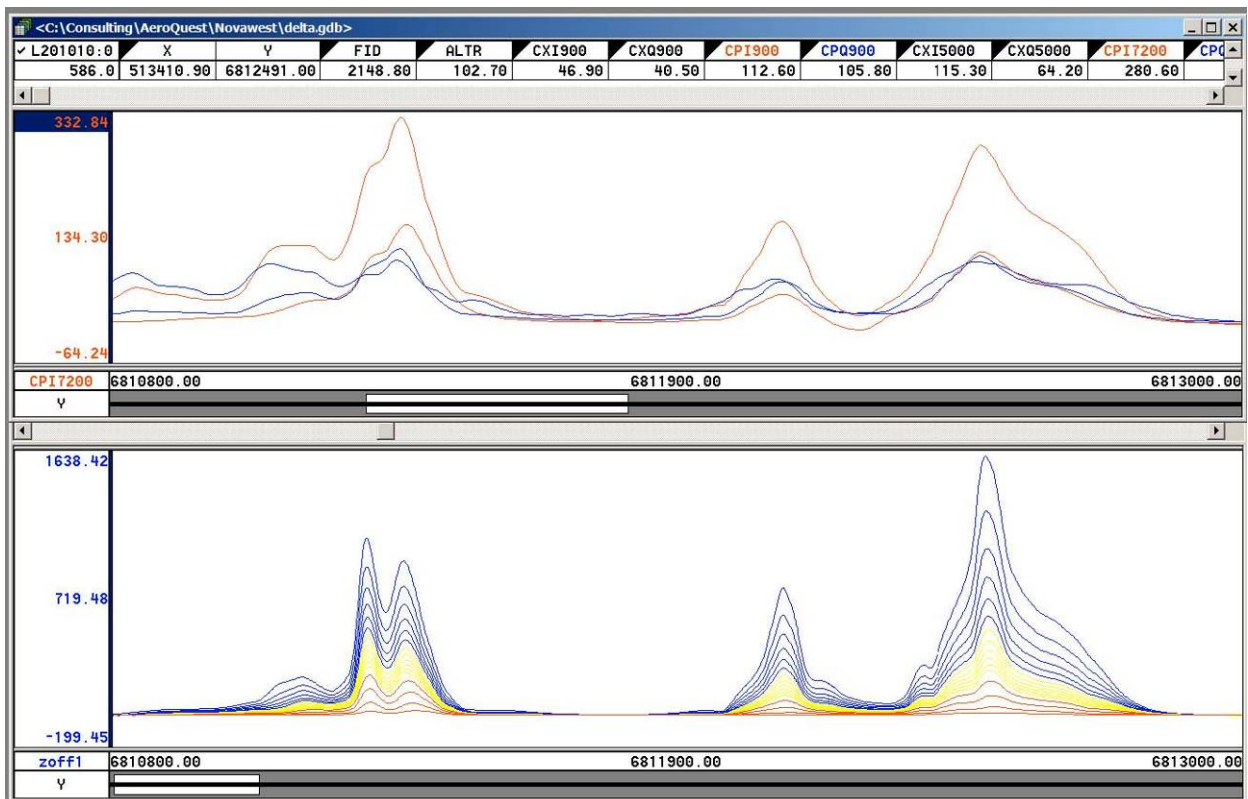
### **HEM versus AeroTEM**

Traditional helicopter EM systems operate in the frequency domain and benefit from the fact that they use narrowband as opposed to wide-band transmitters. Thus all of the energy from the transmitter is concentrated in

a few discrete frequencies. This allows the systems to achieve excellent depth penetration (up to 100 m) from a transmitter of modest power. The Aeroquest Impulse system is one implementation of this technology.

The AeroTEM system uses a wide-band transmitter and delivers more power over a wide frequency range. This frequency range is then captured into 16 time channels, the early channels containing the high frequency information and the late time channels containing the low frequency information down to the system base frequency. Because frequency domain HEM systems employ two coil configurations (coplanar and coaxial) there are only a maximum of three comparable frequencies per configuration, compared to 16 AeroTEM off-time and 12 AeroTEM on-time channels.

Figure 6 shows a comparison between the Dighem HEM system (900 Hz and 7200 Hz coplanar) and AeroTEM (Z-axis) from surveys flown in Raglan, in search of highly conductive Ni-Cu-PGM sulphide. In general, the AeroTEM peaks are sharper and better defined, in part due to the greater S/N ratio of the AeroTEM system over HEM, and also due to the modestly filtered AeroTEM data compared to HEM. The base levels are also better defined in the AeroTEM data. AeroTEM filtering is limited to spike removal and a 5-point smoothing filter. Clients are also given copies of the raw, unfiltered data.



**Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.**

Aeroquest Limited is grateful to the following companies for permission to publish some of the data from their respective surveys: Wolfden Resources, FNX Mining Company Inc, Canadian Royalties, Nova West Resources, Aurogin Resources, Spectrem Air. Permission does not imply an endorsement of the AeroTEM system by these companies.

## APPENDIX 6: AEROTEM INSTRUMENTATION SPECIFICATION SHEET

# AEROTEM Helicopter Electromagnetic System

### System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 150 Hz
- Tx On Time - 1,150 (150 Hz)  $\mu$ s
- Tx Off Time - 2,183 (150 Hz)  $\mu$ s
- Loop Diameter - 5 m
- Peak Current - 250 A
- Peak Moment - 38,800 NIA
- Typical Z Axis Noise at Survey Speed = 5 nT peak to peak
- Sling Weight: 270 Kg
- Length of Tow Cable: 40 m
- Bird Survey Height: 30 m nominal

### Receiver

- Two Axis Receiver Coils (x, z) positioned at centre of transmitter loop
- Selectable Time Delay to start of first channel 21.3 , 42.7, or 64.0 ms

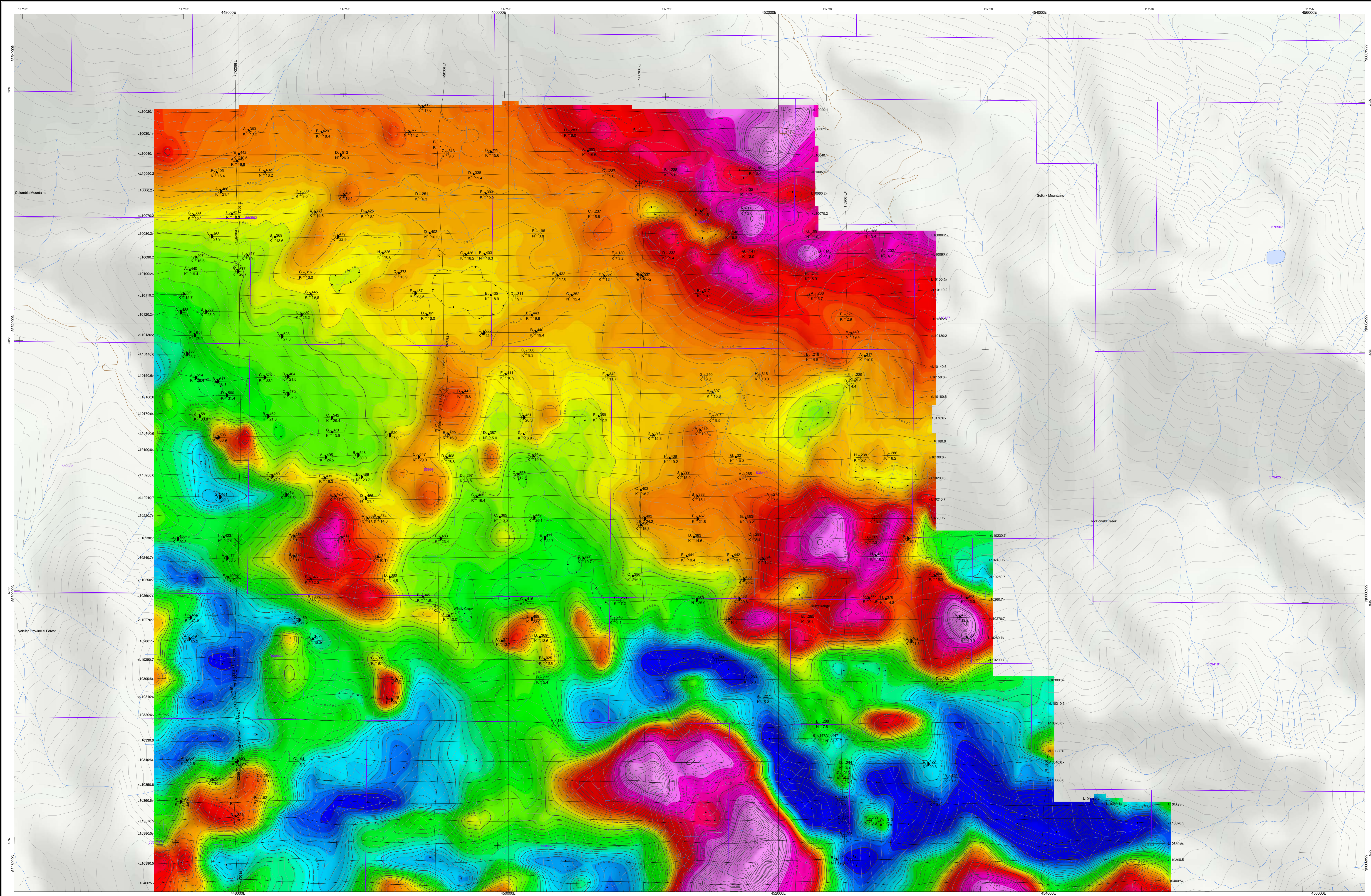
### Display & Acquisition

- AERODAS Digital recording at 120 samples per decay curve at a maximum of 300 curves per second (27.778 $\mu$ s channel width)
- RMS Channel Widths: 52.9, 132.3, 158.7, 158.7, 317.5, 634.9  $\mu$ s
- Recording & Display Rate = 10 readings per second.
- On-board display - six channels Z-component and 1 X-component

### System Considerations

Comparing a fixed-wing time domain transmitter with a typical moment of 500,000 NIA flying at an altitude of 120 m with a Helicopter TDEM at 30 m, notwithstanding the substantial moment loss in the airframe of the fixed wing, the same penetration by the lower flying helicopter system would only require a sixty-fourth of the moment. Clearly the AeroTEM system with nearly 40,000 NIA has more than sufficient moment. The airframe of the fixed wing presents a response to the towed bird, which requires dynamic compensation. This problem is non-existent for AeroTEM since transmitter and receiver positions are fixed. The AeroTEM system is completely portable, and can be assembled at the survey site within half a day.

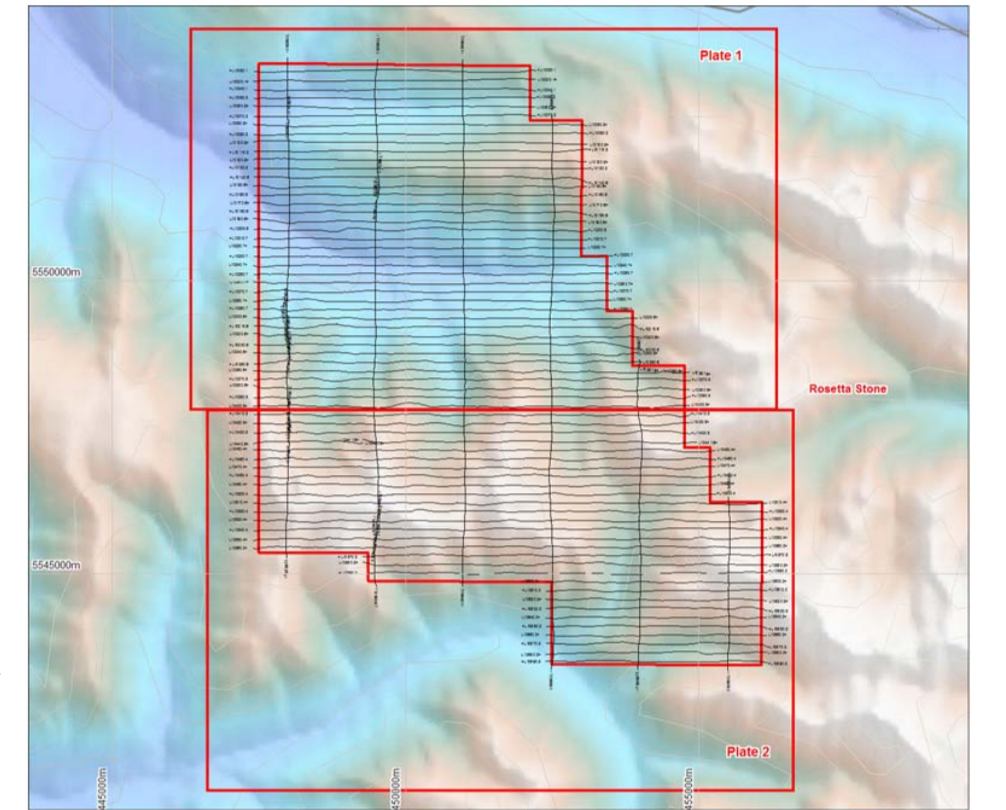




The topographic data base was derived from 1:50000 NRC Natural Resources Canada NTDS data.  
 Top contours derived from NASA SRTM (Shuttle Radar Topography Mission) data.  
 Inset data derived from Natural Resources Canada Atlas of Canada Base Maps.

This map accompanies the technical report entitled Report on a Helicopter Borne Magnetic and Electromagnetic Survey, Nakusp, B.C. by Aeroquest Limited, November 2008.

Grid North  
 WGS84 Zone 11



**Off-Time Anomaly Symbols**

>50S	●	56260.3
35-50S	○	56228.2
20-35S	⊙	56203.7
10-20S	⊗	56182.7
5-10S	⊕	56175.6
1-5S	⊖	56164.4
<1S	⊗	56161.1
Cultural Sources	⊗	56149.0
anomaly label	⊗	56143.4
thickKHN source	⊗	56138.7
	⊗	56134.7
	⊗	56131.2
	⊗	56128.5
	⊗	56125.5
	⊗	56122.9
	⊗	56120.4
	⊗	56118.1
	⊗	56115.8
	⊗	56113.1
	⊗	56109.9
	⊗	56106.2
	⊗	56102.3
	⊗	56098.3
	⊗	56094.1
	⊗	56089.9
	⊗	56085.7
	⊗	56080.9
	⊗	56076.5
	⊗	56072.0
	⊗	56065.5
	⊗	56059.7
	⊗	56053.6
	⊗	56047.1
	⊗	56040.0
	⊗	56031.1
	⊗	56021.5
	⊗	56012.3
	⊗	56003.3

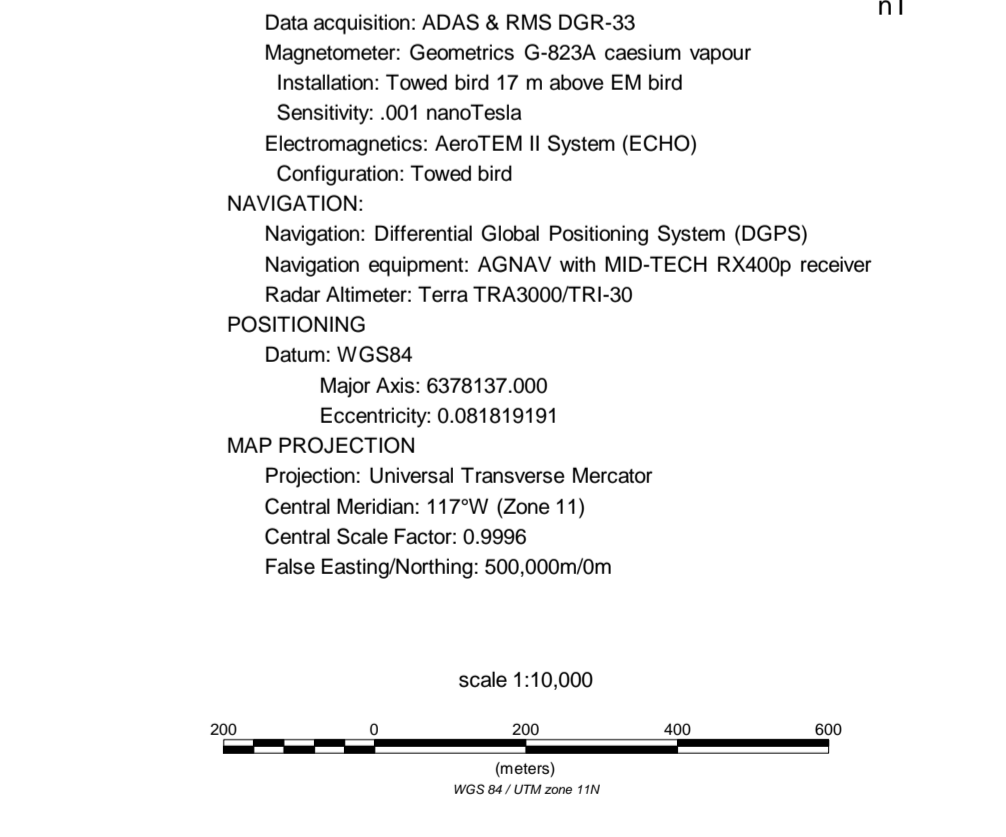
**TMI Contour Interval**

5mT	—
10mT	—
50mT	—
250mT	—

**Legend**

- Roads
- Sand
- Mining Claims
- Wetland
- Lake

**SURVEY SPECIFICATIONS:**  
 Survey flown: September 18-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 550B2-C(GLOV)  
**INSTRUMENTATION:**  
 Data acquisition: ADAS 8 RMS DGR-33  
 Magnetometer: Geometrics G-823A caesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroEM II System (ECHO)  
 Configuration: Towed bird  
**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MD-TECH RX400p receiver  
 Radar Altimeter: Terra TRA3000/TR-30  
**POSITIONING:**  
 Datum: WGS84  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191  
**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m



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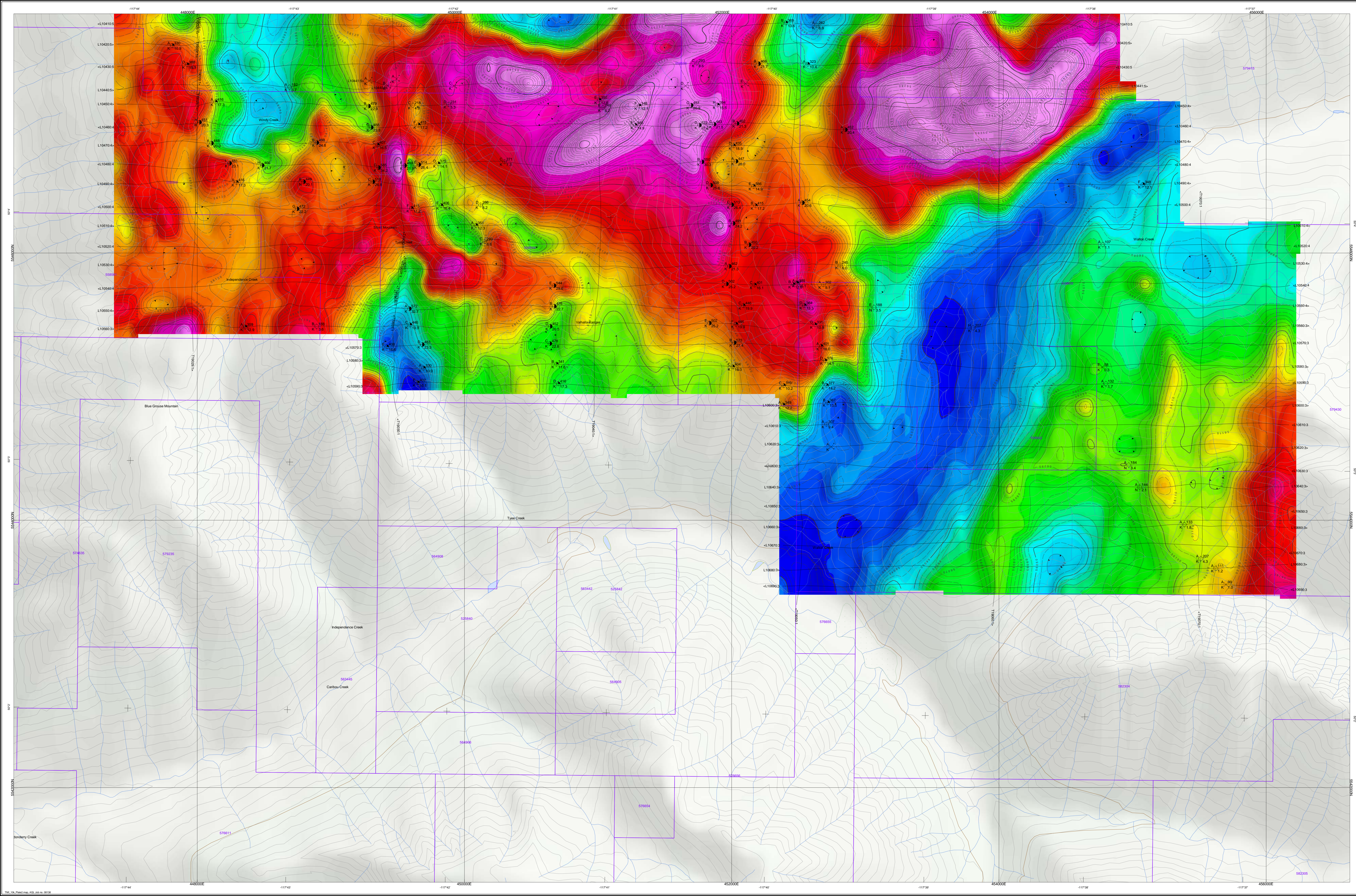
**TOTAL MAGNETIC INTENSITY**  
**Block Rosetta Stone, Plate1**  
 NTS 082K04

**AEROQUEST**  
 7887 Bath Road, Mississauga, Ont., CANADA L4T 3T1  
 Tel: (905) 672-8128 Fax: (905) 672-4012  
 www.aeroquest.com

November 2008

TMI Plate 1

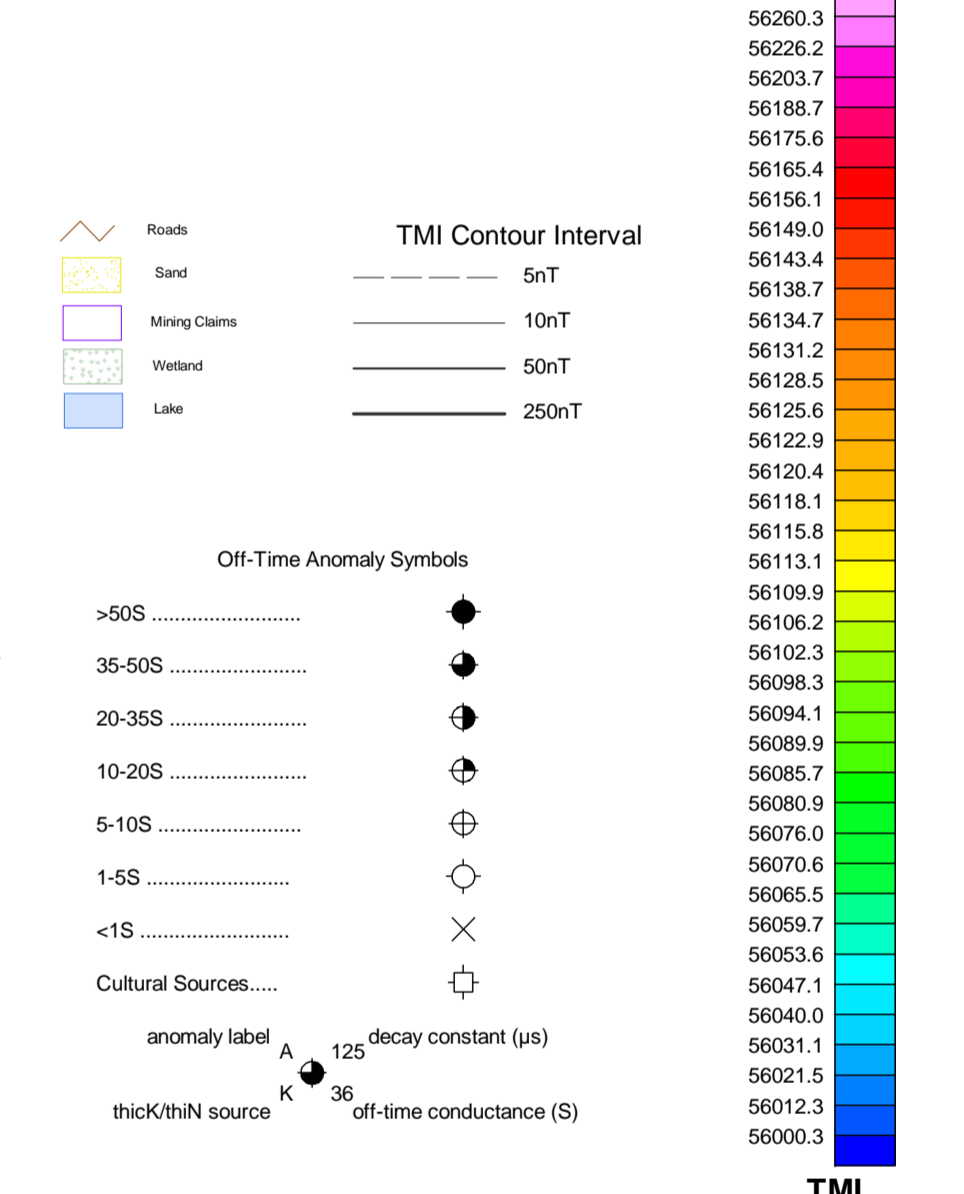
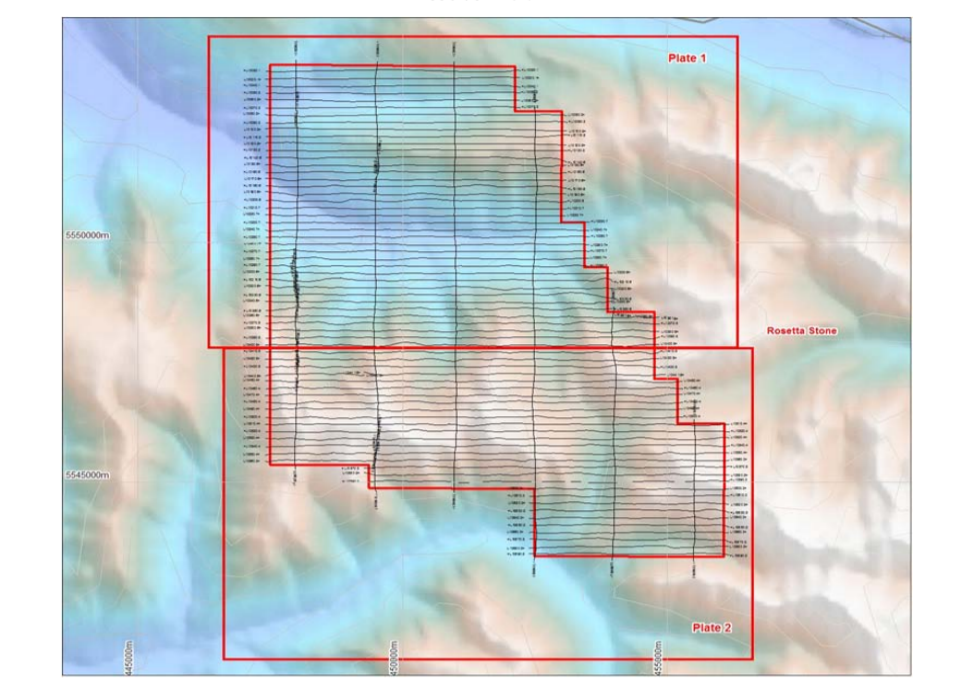




The topographic data base was derived from 1:50000 NRC/ Natural Resources Canada NTRM data.  
 Background shading derived from NASA SRTM data.  
 Inset data derived from Natural Resources Canada Atlas of Canada Base Map.

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Grid North  
 WGS84 Zone 11



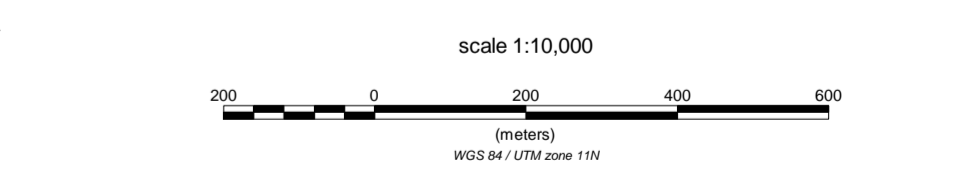
**SURVEY SPECIFICATIONS:**  
 Survey flown: September 18-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 550B2 (C-GLOV)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RMS DOR-33  
 Magnetometer: Geometrics G-823A caesium vapour  
 Installation: Towed bar 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroEM II System (ECHO)  
 Configuration: Towed bar

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MD-TECH RX400p receiver  
 Radar Altimeter: Terra TRA3000/TRI-30

**POSITIONING**  
 Datum: WGS84  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

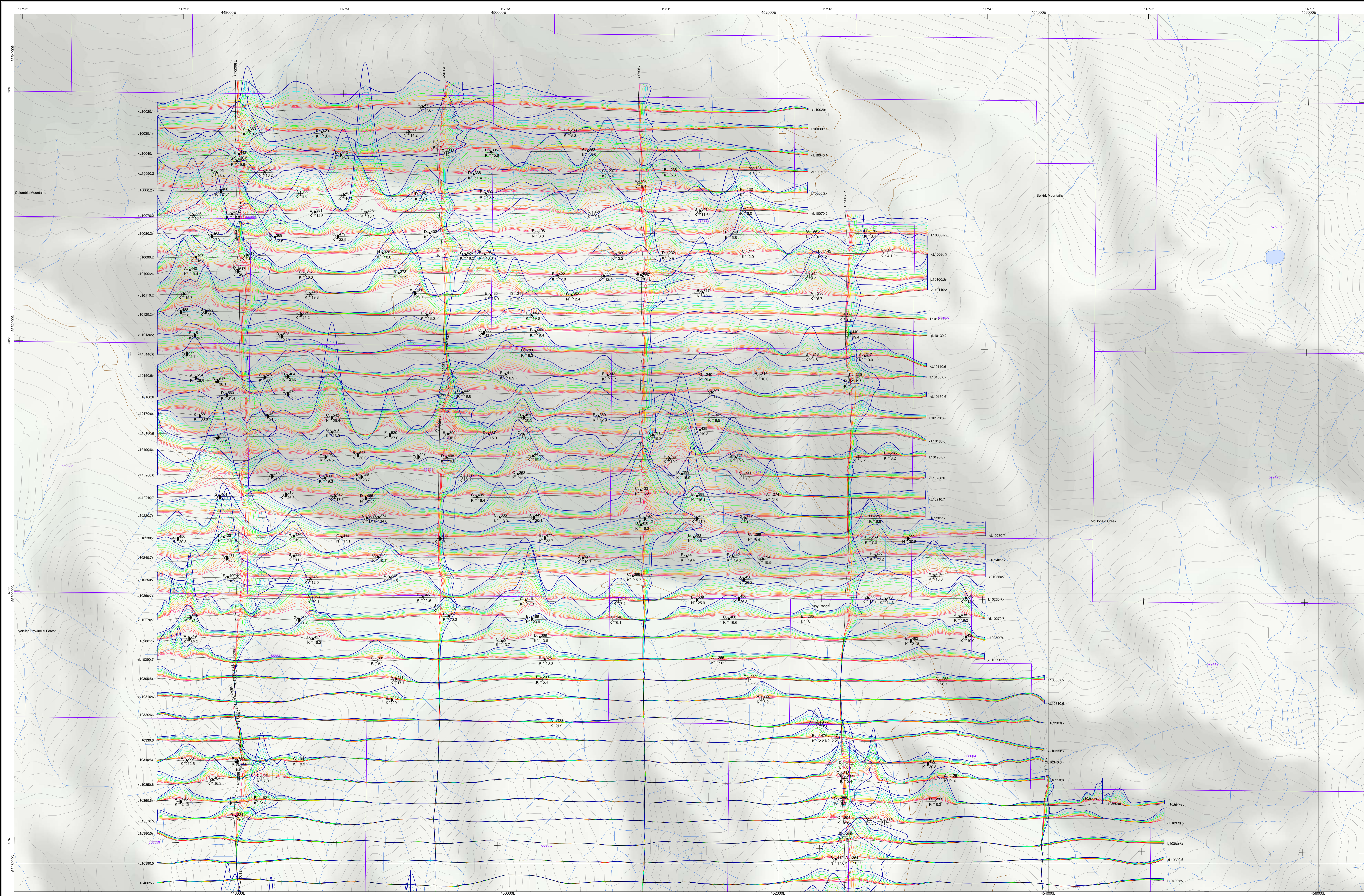
**MAP PROJECTION**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m



Kootenay Gold Inc.  
 Nakusp, B.C.

**TOTAL MAGNETIC INTENSITY**  
**Rosetta Stone Block, Plate 2**  
 NTS 082K04

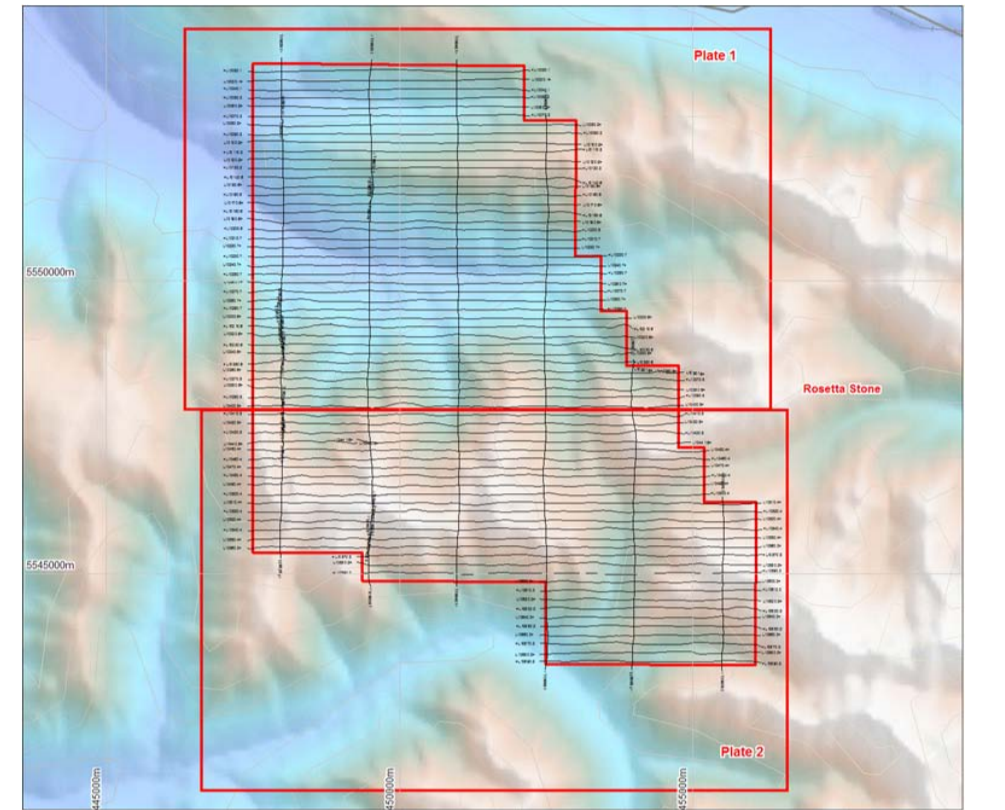




The topographic data base was derived from 1:50000 NRC (Natural Resources Canada) NTDR data.  
 Background shading derived from NASA SRTM (Shuttle Radar Topography Mission) data.  
 Inset data derived from Natural Resources Canada Atlas of Canada Base Maps.

This map accompanies the technical report entitled "Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Nakusp, B.C. by Aeroquest Limited, November 2008".

Scale 1:10,000,000



**Off-Time Anomaly Symbols**

- >50S: ●
- 35-50S: ○
- 20-35S: ⊕
- 10-20S: ⊗
- 5-10S: ⊙
- 1-5S: ⊘
- <1S: ⊚
- Cultural Sources: ⊛

anomaly label  $A_{12}$  decay constant (us)  
 thick/N source  $K_{16}$  off-time conductance (S)

**AeroTEM Profiles**

- 22 Off-Time Channel
- 23 Off-Time Channel
- 24 Off-Time Channel
- 25 Off-Time Channel
- 26 Off-Time Channel
- 27 Off-Time Channel
- 28 Off-Time Channel
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- 109 Off-Time Channel
- 110 Off-Time Channel
- 111 Off-Time Channel
- 112 Off-Time Channel

**SURVEY SPECIFICATIONS:**  
 Survey from: September 16-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 3600A (C-GLOV)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RMS DGR-33  
 Magnetometer: Geometrics G-823A caesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MID-TECH RX400p receiver  
 Radar altimeter: Terra TRA3000TR1-30

**POSITIONING**  
 Datum: WGS84  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

**MAP PROJECTION**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m

scale 1:10,000

Kootenay Gold Inc.  
 Nakusp, B.C.

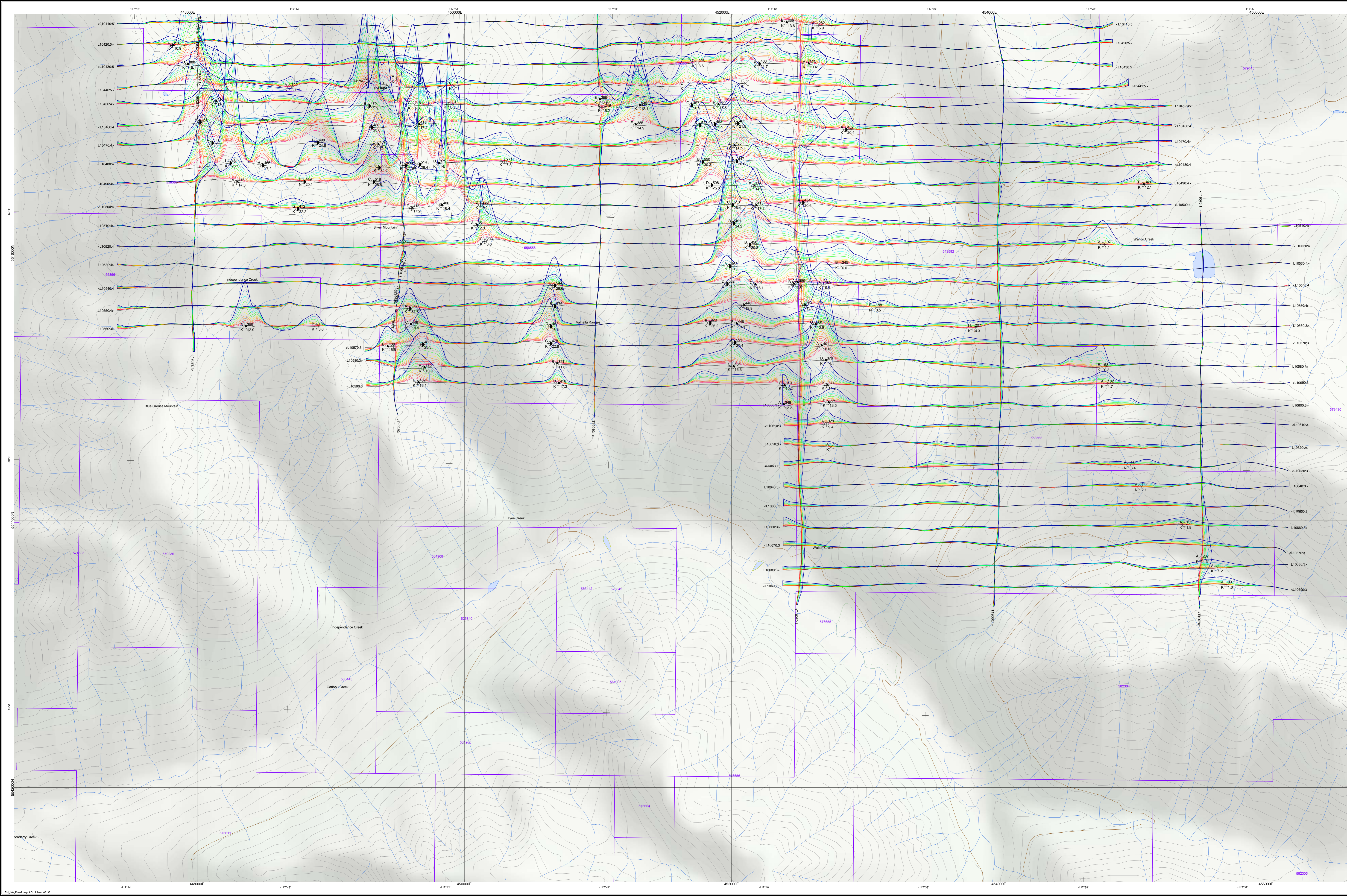
**AEROTEM**  
**OFF-TIME PROFILES**  
**Rosetta Stone Block, Plate 1**  
 NTS 082K04

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November 2008

EM Plate 1

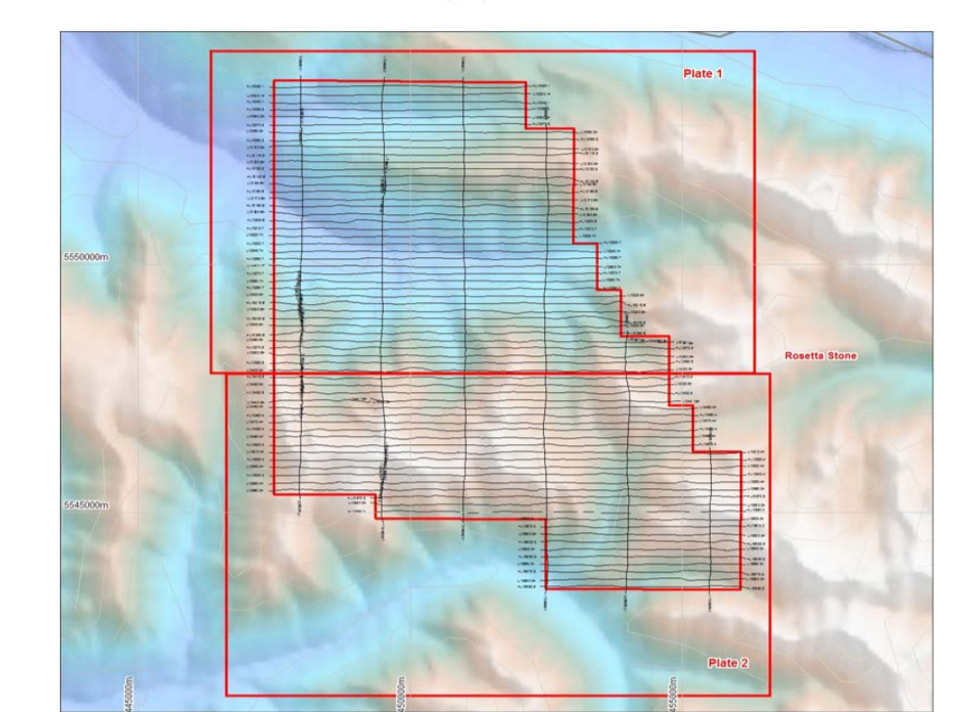




The topographic data base was derived from 1:50000 NRC (Natural Resources Canada) NTDB data  
 Background shading derived from NASA SRTM data  
 Inset data derived from Natural Resources Canada Atlas of Canada Base Maps

This map accompanies the technical report entitled Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Nakusp, B.C. by Aeroquest Limited, November 2008

Grid North  
 WGS84 Zone 11



- Off-Time Anomaly Symbols**
- >50S ..... ●
  - 35-50S ..... ●
  - 20-35S ..... ●
  - 10-20S ..... ●
  - 5-10S ..... ●
  - 1-5S ..... ●
  - <1S ..... ●
- Cultural Sources**
- anomaly label A  $\frac{1}{25}$  decay constant ( $\mu\text{s}$ )
  - thick/thin source K  $\frac{1}{36}$  off-time conductance (S)
- AeroTEM Profiles**  
 positive excursion to top and right, 1mm=20nT/s
- Z2 Off-Time Channel
  - Z3 Off-Time Channel
  - Z4 Off-Time Channel
  - Z5 Off-Time Channel
  - Z6 Off-Time Channel
  - Z7 Off-Time Channel
  - Z8 Off-Time Channel
  - Z9 Off-Time Channel
  - Z10 Off-Time Channel
  - Z11 Off-Time Channel
  - Z12 Off-Time Channel

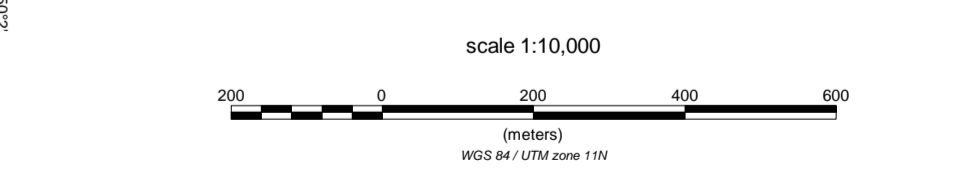
**SURVEY SPECIFICATIONS:**  
 Survey flown: September 18-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 550B2+ (G-GLDV)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RMS DGR-33  
 Magnetometer: Geometrics G-623A caesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MID-TECH RX400p receiver  
 Radar Altimeter: Terra TRA3000TRU-30

**POSITIONING:**  
 Datum: WGS84  
 Map Axis: 6376137.000  
 Eccentricity: 0.081819191

**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m



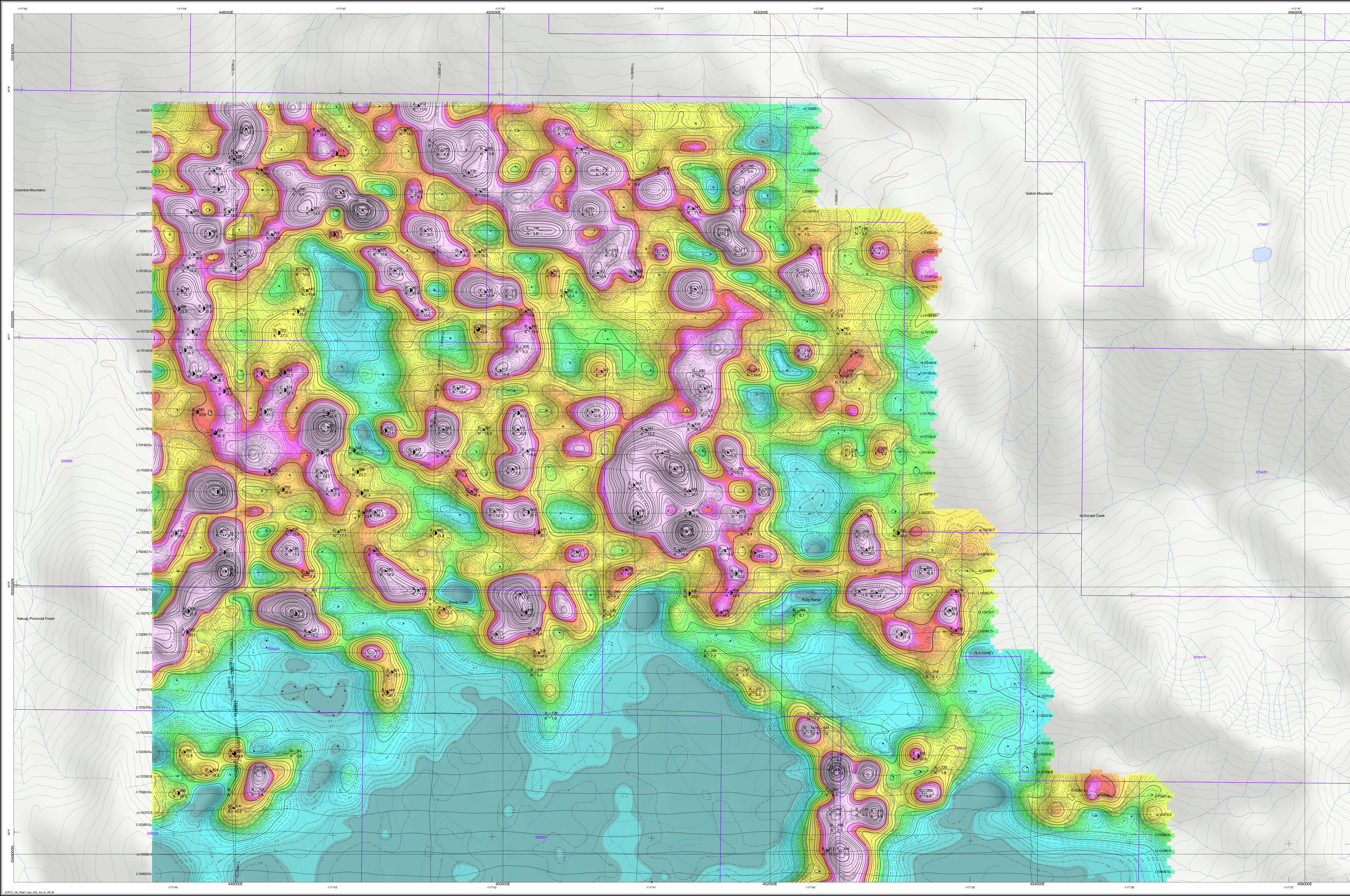
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 Nakusp, B.C.

**AEROTEM**  
**OFFTIME PROFILES**  
**Rosetta Stone Block, Plate2**  
 NTS 082K04

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November 2008

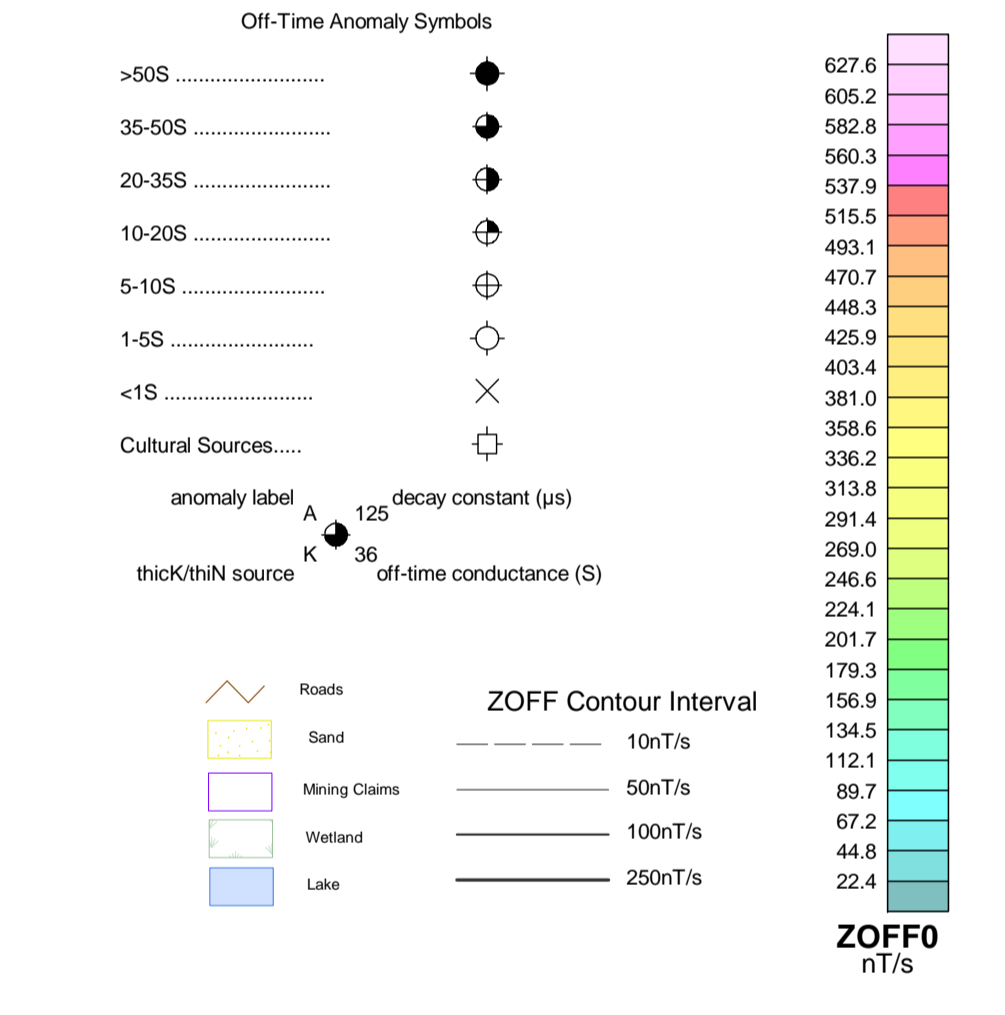
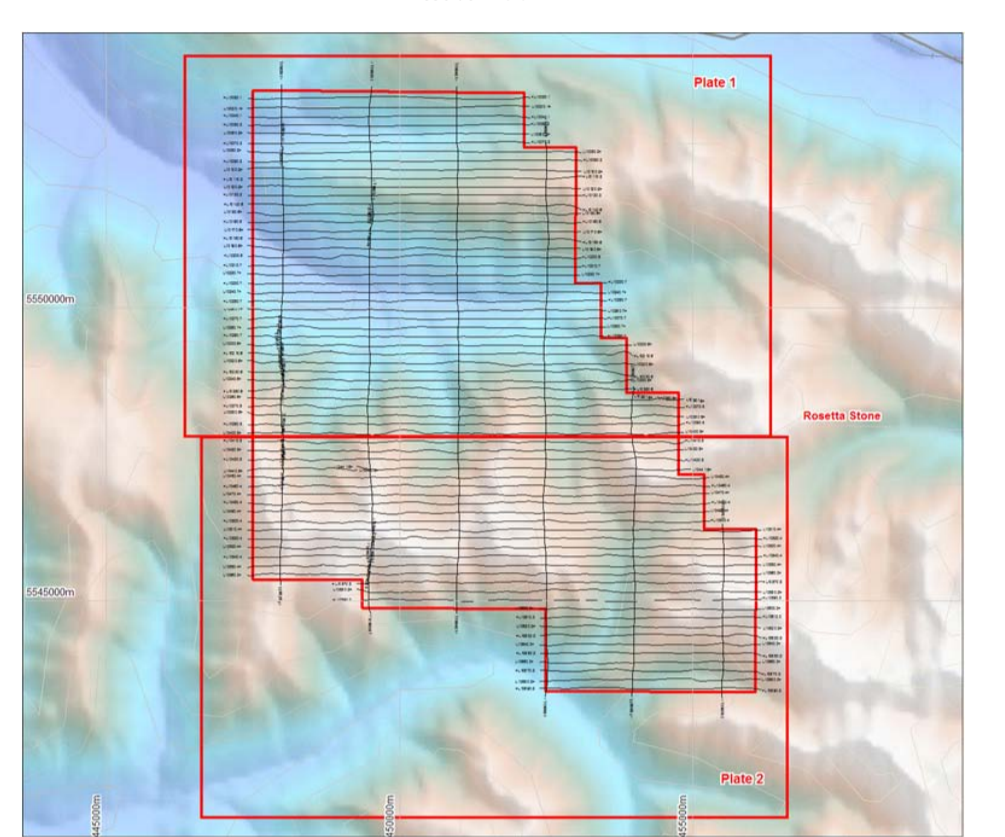




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 Inset data derived from Natural Resources Canada Atlas of Canada Base Maps.

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Grid North  
 WGS84 Zone 11



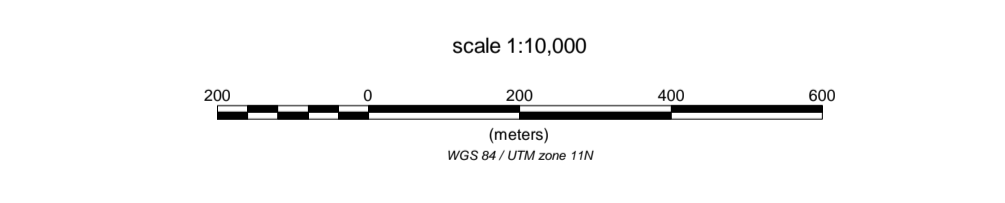
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 Survey flown: September 19-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 3600A+ (C-GL0V)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RMS DGR-33  
 Magnetometer: Geometrics G-823A caesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MID-TECH RX400 receiver  
 Radar Altimeter: Terra TRA3000TR1-30

**POSITIONING:**  
 Datum: WGS84  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m



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 Nakusp, B.C.

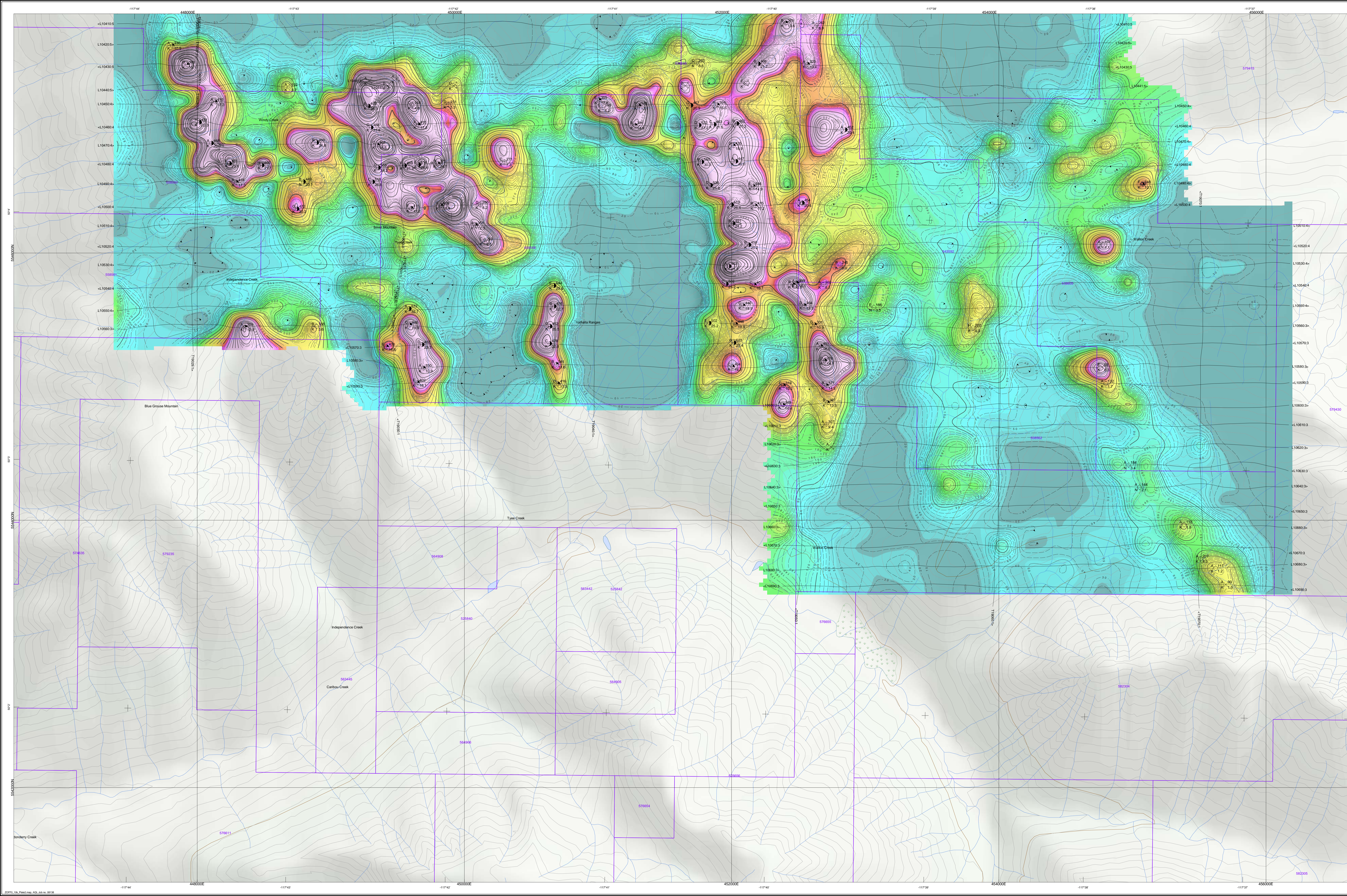
**AEROTEM OFFTIME**  
**CHANNEL Z0**  
**Rosetta Stone Block, Plate1**  
 NTS 082K04

**AEROQUEST**  
 7687 Bath Road, Mississauga, Ont., CANADA L4T 3T1  
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November 2008

ZOFF0 Plate 1

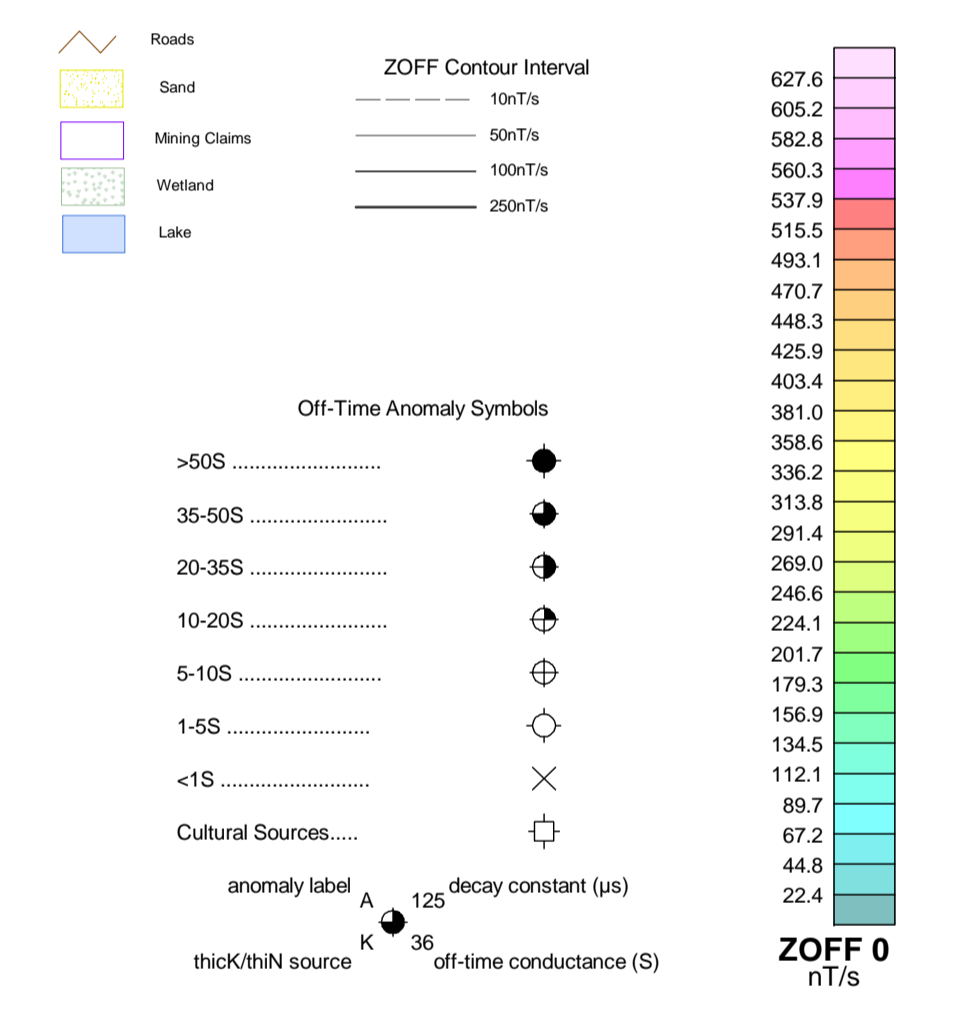
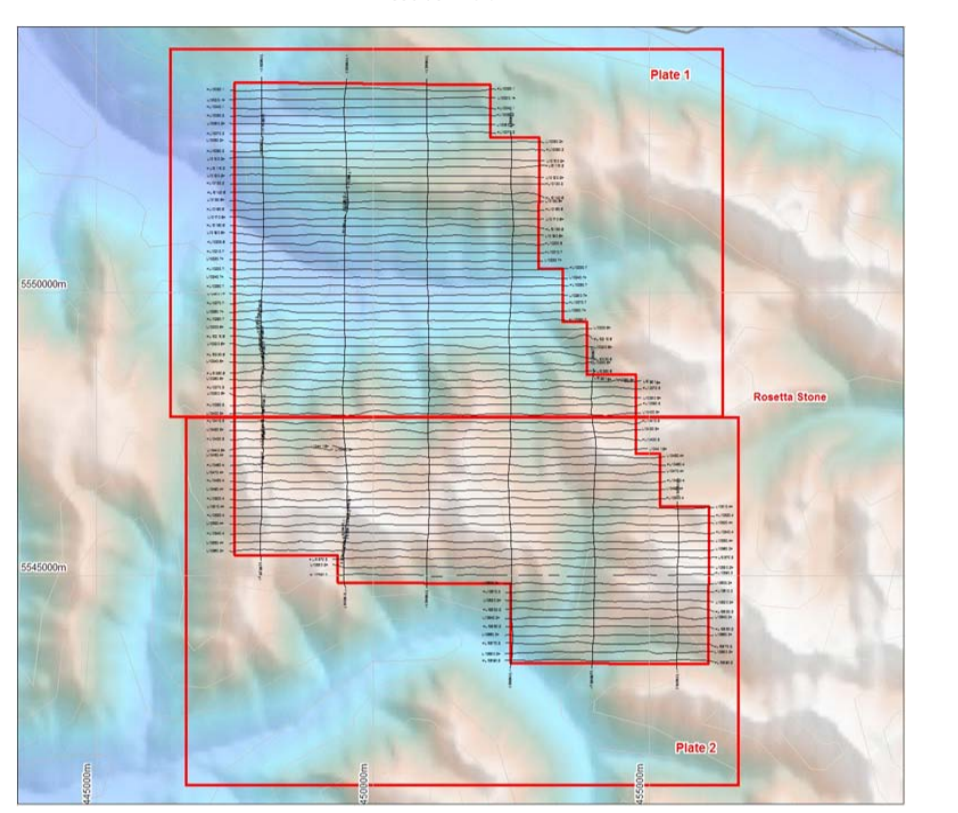




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 Background shading derived from NASA SRTM data  
 Inset data derived from Natural Resources Canada Atlas of Canada Base Maps

This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Nakusp, B.C.' by Aeroquest Limited, November 2008

Grid North  
 WGS84 Zone 11



**SURVEY SPECIFICATIONS:**  
 Survey flown: September 18-20, 2008  
 Traverse line spacing: 150 metres  
 Traverse line direction: 90°/270°  
 Nominal EM bird height: 30 metres  
 Aircraft: A-Star 350B2+ (C-GLOW)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RMS DGR-33  
 Magnetometer: Geometrics G-623A caesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: .001 nanoTesla  
 Electromagnetics: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MID-TECH RX400 receiver  
 Radar Altimeter: Terra TRA3000/TRU-30

**POSITIONING:**  
 Datum: WGS84  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 117°W (Zone 11)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m

scale 1:10,000  
 200 0 200 400 (metres)  
 WGS 84 (UTM zone 11E)

Kootenay Gold Inc.  
 Nakusp, B.C.

**AEROTEM OFFTIME**  
**CHANNEL Z0**  
 Rosetta Stone Block, Plate2  
 NTS 082K04

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