ASSESSMENT REPORT
ON
GEOPHYSICAL WORK
ON THE FOLLOWING CLAIMS

#403691-2
#516043
#526820
#526825
#526828

COLLECTIVELY THE

"RUY" PROPERTY

STATEMENT OF EXPLORATION EVENT # 4091255

Located

54 KM NORTH OF
STEWART, BRITISH COLUMBIA
SKEENA MINING DIVISION

56 degrees 27 minutes latitude
129 degrees 57 minutes longitude

N.T.S. 10A041

PROJECT PERIOD
January 15-March 10 2006

ON BEHALF OF
TEUTON RESOURCES CORP.
VANCOUVER, B.C.

REPORT BY

D. Cremonese, P. Eng.
207-675 W. Hastings St.
Vancouver, B.C.

Date: December 10, 2006

BRITISH COLUMBIA

Ministry of Energy & Mines
Energy & Minerals Division
Geological Survey Branch

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]	TOTAL COST
GEOPHYSICAL	$41,143

AUTHOR(S) D. CREMONESE, P.ENG. SIGNATURE(S) [signature]

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S) ______ YEAR OF WORK 2006

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S) # 4091255

PROPERTY NAME RUY

CLAIM NAME(S) (on which work was done) 403691-2, 516043, 526820, 526825, 526828

COMMODITIES SOUGHT Au, Ag, Pb, Zn, Cu

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN ______

MINING DIVISION SKEENA NTS 104 A 041

LATITUDE 56 ° 27 ' ____ " LONGITUDE 129 ° 57 ' ____ " (at centre of work)

OWNER(S)
1) TEUTON RESOURCES CORP. 2) ______

MAILING ADDRESS
207 - 675 W. HASTINGS ST.
VANCOUVER, B.C. V6B 1N2

OPERATOR(S) [who paid for the work]
1) AS ABOVE 2) ______

MAILING ADDRESS
AS ABOVE

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):
THE PROPERTY IS UNDERLAIN BY A SUCCESSION OF LOWER TO UPPER JURASSIC SEDIMENTARY AND VOLCANOGENIC ROCKS OF THE HAZELTON GROUP. A LARGE, IRREGULAR FELDSPAR PORPHYRY STOCK INTRUDES THE CENTER OF THE PROPERTY. SOURCE FOR A PROMINENT FLOAT TRAIN OF Au-Ag-Pb-Zn-Cu BOULDERS REMAINS UNKNOWN.

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS
#19,550, 20556, 22074, 25,565

(OVER)

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			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic			
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne	292 LINE-KM	403691-2, 516043, 526820, 526825, 526828	$41,143
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other			
		TOTAL COST	$41,143

TABLE OF CONTENTS

1. INTRODUCTION

A. Property, Location, Access and Physiography

The Ruy property is located about 54km north of Stewart, British Columbia. Present access is by helicopter from the base at Stewart Prism Helicopters. The Granduc mining road running north from Stewart has its terminus approximately 18 km south of the property, and provides a closer staging point for helicopter access.

Elevations vary from about 450m near the Bowser River at the southern end of the property to 1,900 m at the height of land. Slopes range from moderate to precipitous. Glaciers and icefields lie on the eastern, western and northern extremities of the property. Lower elevations are covered by a moderately dense forest of balsam, hemlock and minor spruce thinning gradually up to treeline at about 1,500m. Higher elevations feature alpine grasses and heather interspersed with bare rock outcrop, glacial debris and occasional small thickets of scrub.

Climate is relatively severe, particularly at higher elevations.

B. Status of Property

Relevant claim information is summarized below:

Name	Tenure No.	Area in Hectares
Ruy 3	403691	450.0
Ruy 4	403692	450.0
*	516043	644.4
Bowser-1	526820	447.0
*	526825	1,252.2
*	526828	571.9

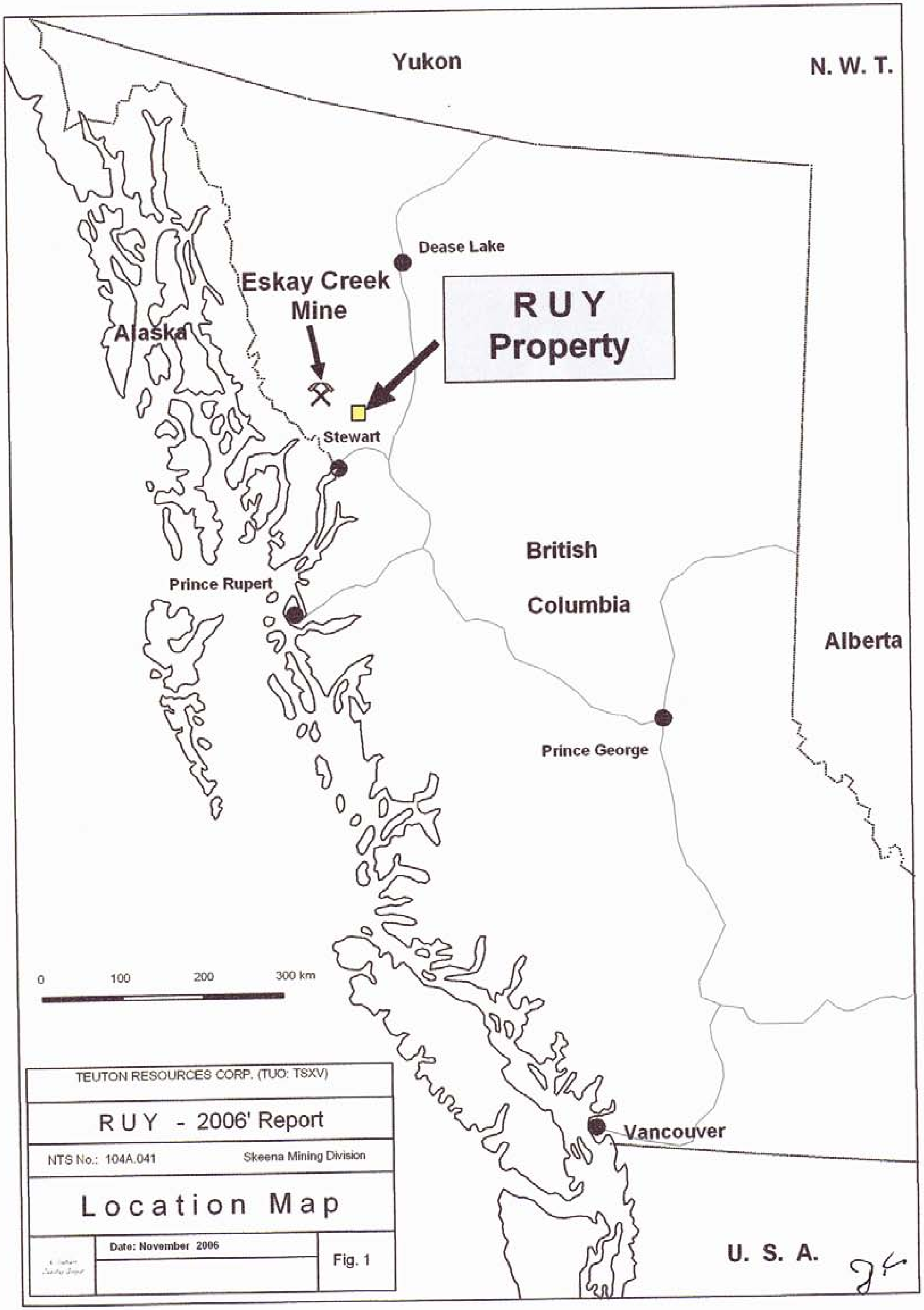
*These claims do not have a name

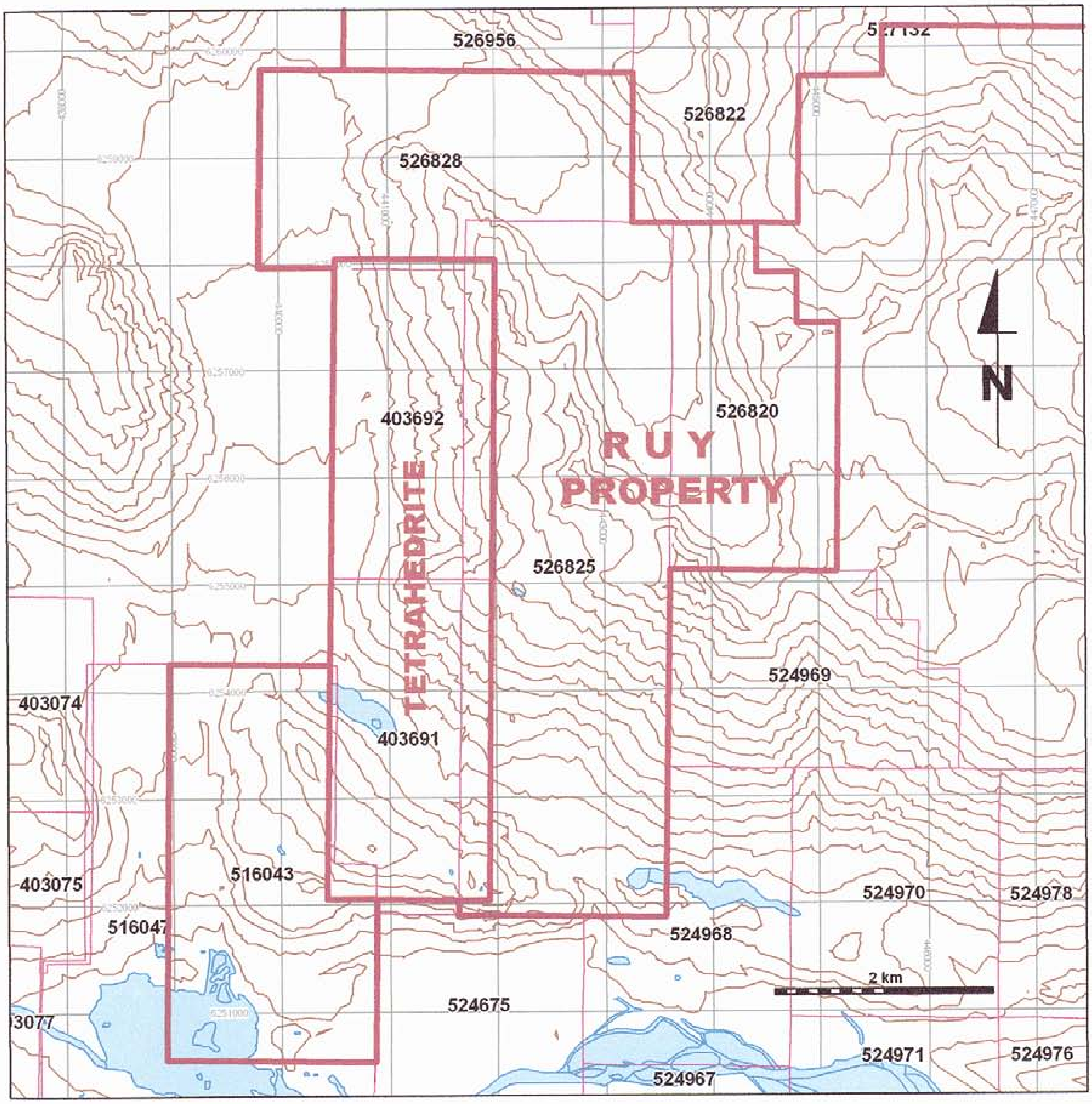
Claim locations are shown on Fig. 2a after government MTRM map 104A041. Fig. 2b shows the location of the 2006 Aeroquest airborne survey grid in relation to claim lines.

The claims are owned 100% by Teuton Resources Corp.

C. History

Exploration for metals began in the Stewart region about 1898


Yukon
N. W. T.
Dease Lake
Eskay Creek Mine
RUY Property
Alaska
Stewart
British Columbia
Prince Rupert
Alberta
Prince George
0 100 200 300 km
Vancouver
U. S. A.
TEUTON RESOURCES CORP. (TUO: TSXV)
R U Y - 2006' Report
NTS No.: 104A.041
Skeena Mining Division
Location Map
Date: November 2006
Fig. 1



LEGEND

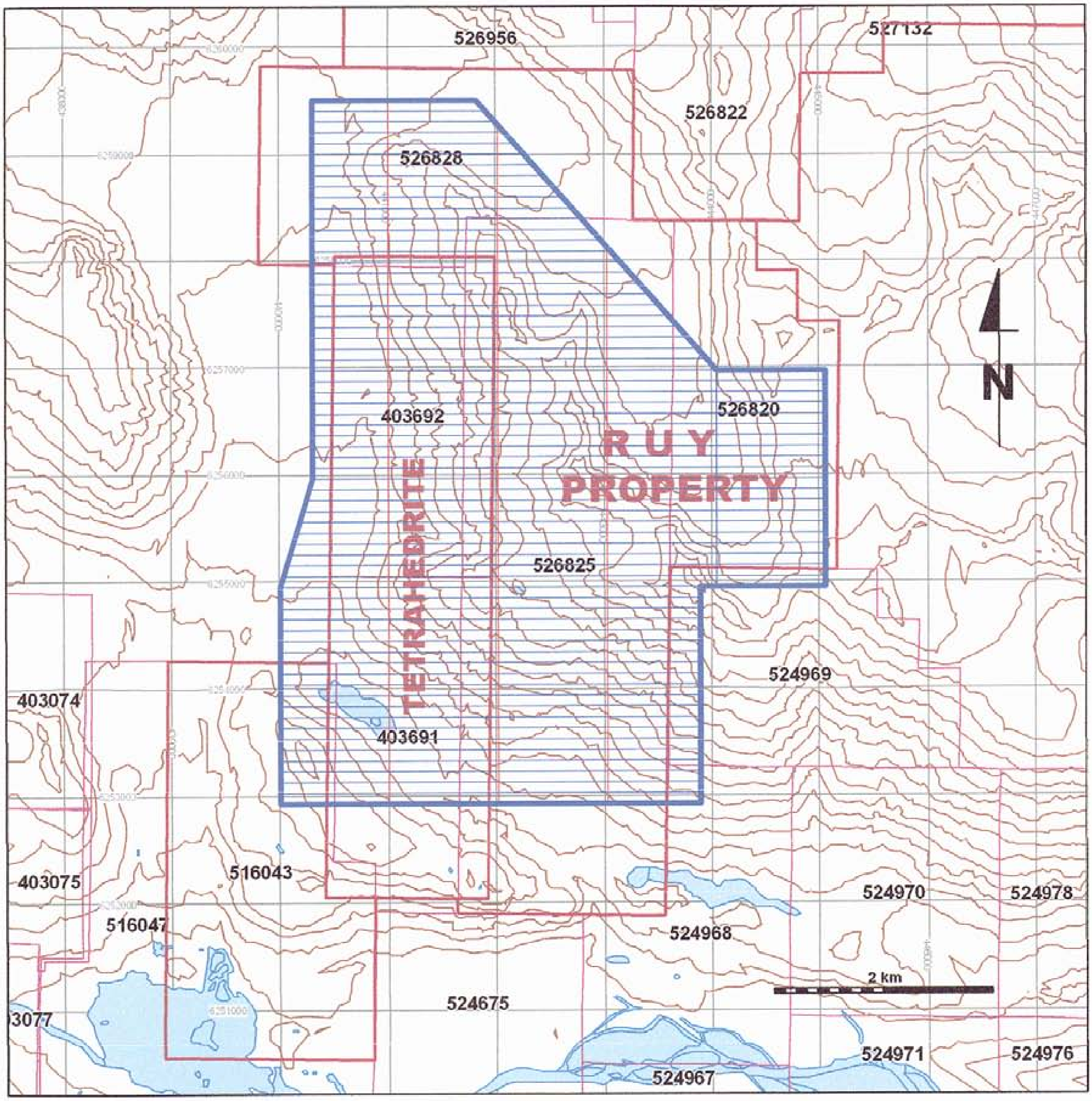
526825	TEUTON Properties
513020	Other tenures
	Contour lines (100 m)

TEUTON RESOURCES CORP. (TUO: TSXV)

RUY PROPERTY

Claim Location Map

NTS No.: 104A.041 Skeena Mining Division	Date: Nov 2006 *K. Mastalerz*	Fig. 2a



LEGEND

513826	TEUTON Properties
	2006 Aeroquest Airborne Survey Grid
	Contour lines (100 m)

TEUTON RESOURCES CORP. (TUO: TSXV)		
RUY PROPERTY		
Aeroquest Survey Grid Relative to Claim Boundaries		
NTS No.: 104A.041 **Skeena Mining Division**	**Date: Nov 2006** *K. Mastalerz*	Fig. 2b

after the discovery of mineralized float by a party of placer miners. The first boom period for exploration peaked in 1910 when both Stewart and the neighbouring town of Hyder, Alaska boasted a population of around 10,000. The discovery and subsequent exploitation of the famous Premier gold-silver mine beginning around 1918 ushered in a second phase of heightened exploration which slowly petered out during the Depression years.

From 1940 to 1979 there was little activity in the region due to lacklustre precious metal prices. However when silver and gold prices skyrocketed in the early 1980's, many of the old properties in the area were re-examined. This ultimately led to new mines at Snip (Iskut River) and at Eskay Creek, the latter still in production. The large copper deposits at Granduc also saw production during this period, before low copper prices forced a shutdown.

Very recently the area has again seen record exploration activity spurred by both high precious and base metal prices.

The main interest in the Ruy property area began in 1989-91 when Noranda Exploration staked and explored what was then known as the KL1-4 and Treaty 12 mineral claims. Discovery in 1989 of float material composed of quartz-calcite-sulfide vein and breccia material mineralized with galena, sphalerite, chalcopyrite and pyrite, many of which boulders carried high gold and silver values, led to a search for the source in subsequent years. Noranda carried out extensive mapping and sampling and even drilled one hole, but was unable to isolate the provenance of the float material.

After the property was dropped, Westpine Metals Ltd. acquired the claim area (1996-7) and carried out some additional prospecting and geophysical surveys. This work also failed to detect the source of the prominent float boulder train.

In 2004, Teuton acquired the claims area by staking and did some limited prospecting. Investigation of the area surrounding the float boulders suggested that the source might lie at a considerable distance to the north and/or east.

D. References

1. ALLDRICK, D.J.(1984); Geological Setting of the Precious Metals Deposits in the Stewart Area, Paper 84-1, Geological Fieldwork 1983", B.C.M.E.M.P.R.

2. ALLDRICK, D.J.(1985); "Stratigraphy and Petrology of the Stewart Mining Camp (104B/1E)", p. 316, Paper 85-1, Geological Fieldwork 1984, B.C.M.E.M.P.R.

3. GROVE, E.W. (1971): Bulletin 58, Geology and Mineral Deposits of the Stewart Area. B.C.M.E.M.P.R.

4. GROVE, E.W. (1982): Unuk River, Salmon River, Anyox Map Areas. Ministry of Energy, Mines and Petroleum Resources, B.C.

5. PEZZOT, E., P.GEO. (1988): Geophysical Survey, Assessment Report on the Ringer 1&2 Claims, Golden Opportunity Project; Assessment Report #25,565 on file with BCMEMPR

6. ROCKEL, E.R. (1997): Geophysical Survey, Assessment Report on the Ringer 1 & 2 Claims; Assessment Report #25,058 on file with BCMEMPR.

7. SAVELL, MIKE (1989): Geochemical Report on the KL Claims, Noranda Mining and Exploration; Assessment Report #19,550 on file with BCMEMPR.

8. SAVELL, MIKE (1990): Geological, Geochemical Report on the Knipple Lake Property, Noranda Mining & Exploration; Assessment Report #20,556 on file with BCMEMPR.

9. SAVELL, MIKE, & STEWART, F. (1991): Drilling Report on the KL and Treaty Claims, Noranda Mining & Exploration; Assessment Report #22,074 on file with BCMEMPR.

E. Summary of Work Done.

A helicopter borne geophysical survey was carried out over the Ruy property by Aeroquest Limited on behalf of Teuton Resources Corp. between Feb. 28 and March 5, 2006. One of the primary objectives of the program was to employ modern geophysical technology in a search for the source of high-grade float boulders found previously in the area by Noranda Mining & Exploration. This work was part of a regional effort which saw over ten Teuton, Stewart region properties flown by Aeroquest.

A total of 292 line-kms was flown over a survey grid as delineated in Fig. 2b, with 100m line spacings.

The geophysical crew was stationed out of Stewart, BC and, during the second phase of work, used a contract helicopter supplied by Hi-Wood Helicopters from Oakachoke, Alberta.

Full particulars of the survey are attached to this report as Appendix III, entitled "Report on a Helicopter-Borne AerotTEM II Electromagentic and Magnetic Survey", by Aeroquest Limited of Milton, Ontario.

2. TECHNICAL DATA AND INTERPRETATION

A. Geology

The Stewart district is near the western margin of Stikinia, the largest and metallogenically most prolific terrane in the Canadian Cordillera. Stikinia generally comprises three stratigraphic groups, all of which are recognized in the Stewart region: (1) Middle and Upper Triassic mafic volcanics and clastic rocks and cherts of the Stuhini Group; (2) Lower and Middle Jurassic volcanic and clastic rocks of the Hazelton group; and (3) Upper Jurassic mudstones and sandstones of the Bowser Lake group. The stratigraphic sequence has been deformed into non-cylindrical northwesterly trending syncline-anticline pairs, the axials planes of which have been cut by easterly dipping thrusts (Greig et al, 1994).

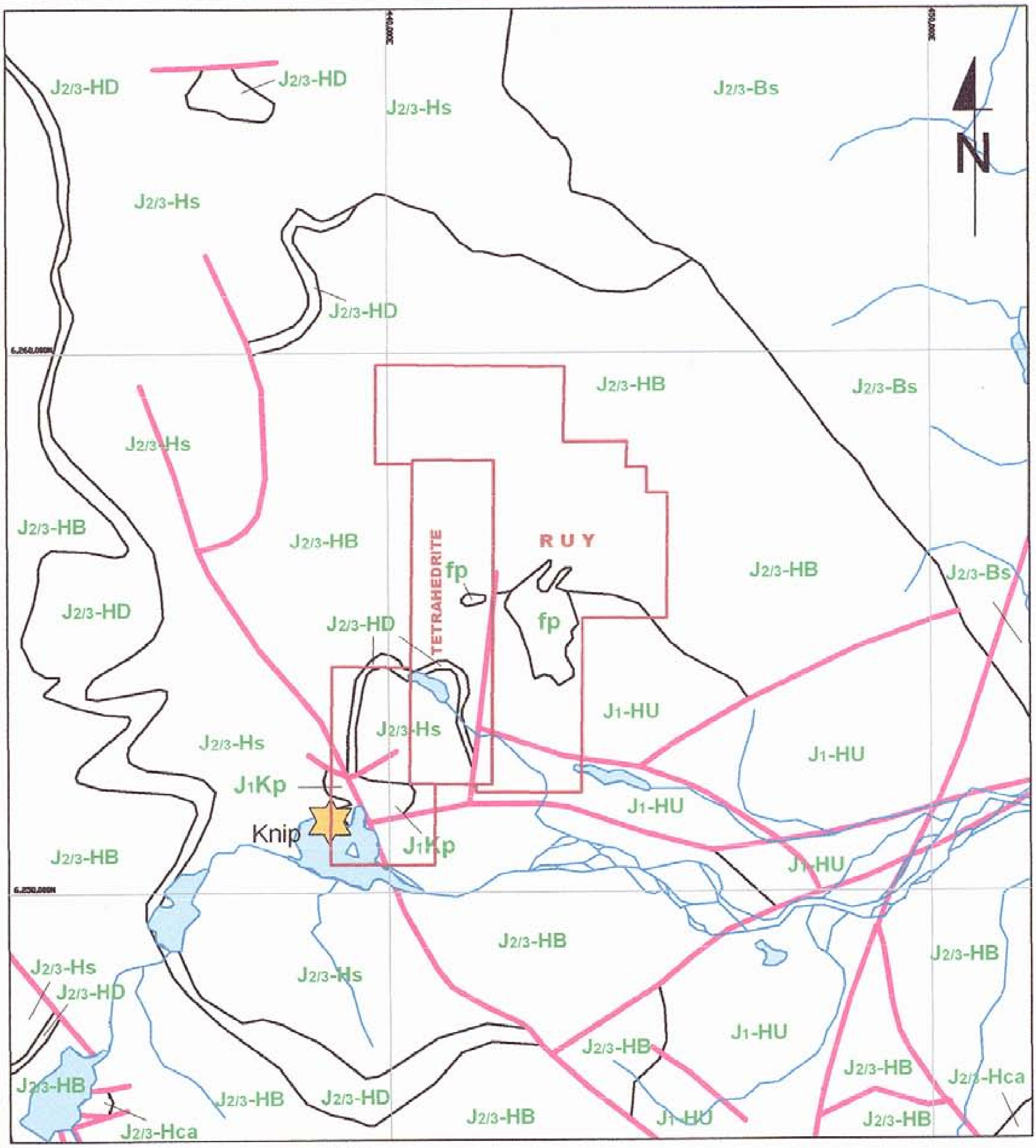
Intrusive phases in the region include Late Triassic calc-alkaline intrusives, coeval with Stuhini volcanic rocks, Early to Middle Jurassic intrusives that are variable in composition and roughly coeval with the Hazelton group volcanics. Also present are Eocene age intrusives, part of the Coast Plutonic suite.

More than 600 mineral deposits, at least 70 of which have shown some production, have been discovered within the boundaries of this region. Famous historical producers include the Premier, Granduc and Anyox mines. The Eskay Creek mine currently owned by Barrick Corp. is successfully in production and is one of North America's highest grade gold-silver mines.

The Ruy Property is underlain by a succession of Lower to Upper Jurassic sedimentary and volcanogenic rocks of the Hazelton Group. Diversified epiclastic rocks with subordinate volcaniclastics of the Unuk River Formation (J1-HU; Fig 3) predominate in the southern part of the property. The northern part, in turn, is underlain by a series of volcanogenic rocks, predominantly volcaniclastics, of the Betty Creek Formation (J2/3-HB; Fig. 3). An irregular intrusive body comprised of feldspar porphyritic rocks (fp) and of unknown age occupies the central portion of the property. The strata from a broad anticlinorial unit is elongated slightly in NNW-SSE direction (Fig. 3).

Further SW, the Tetrahedrite claims and Tenure #516043 are underlain by a strongly faulted succession of felsic volcanic rocks of the Mt Dilworth Formation (J2/3-HD) and of the overlying sedimentary rocks of the Salmon River Formation (J2/3-Hs). Another intrusive body, the Knipple Porphyry (J1Kp) of presumably Jurassic age crops out along the north-eastern shore of the Knipple Lake.

Geology of the property in relation to the immediately surrounding



Legend:

- geological contacts
- faults

Intrusive Rocks:

fp	Feldspar porphyry (Jurassic?-Tertiary?)
J1Kp	Knipple Porphyry (Early Jurassic?)

Knip — mineral prospects

Layered Rocks:

J2/3-Bs	Bowser Lake Group: undivided sediments
J2/3-Hs	Hazelton Group: sediments & minor volcanics (undivided)
J2/3-HD	Hazelton Group; Mt Dilworth Fm (felsic volcanic rocks)
J2/3-HB	Hazelton Group; Betty Creek Fm (mainly volcaniclastics)
J2/3-Hca	Hazelton Group: calc-alcaline volcanics
J1-HU	Hazelton Group; Unuk River Fm (andesitic volcanics)

Scale

1 km 0 5 km

TEUTON RESOURCES CORP. (TUO: TSXV)

RUY PROPERTY

NTS Nos.: 104A.041 Skeena Mining Division

REGIONAL GEOLOGY MAP

K. Mastalerz	Claims: 403691-2, 516043, 526820, 526825, 526828	Date: Nov 2006	Fig. 3

Source: BCGS Geology Map (http://webmap.em.gov.bc.ca/mapplace); modified area is shown in this report in Fig. 3, taken from the BC government geological maps available online at Mapplace--http://webmap.em.gov.bc.ca/mapplace.

B. Geophysics

Geophysical data related to the 2006 helicopter-borne EM and Mag survey over the Ruy property is presented herein in Appendix III: "Report on a Helicopter-Borne AerotTEM II Electromagentic and Magnetic Survey", by Aeroquest Limited of Milton, Ontario.

Prior to the completion of the Aeroquest report, Aeroquest chief geophysicist Jonathan Rudd met with the author and Teuton geologist K. Mastalerz, Ph.D., in Teuton's Vancouver office to review data from previous work on the property so as to provide the proper context for interpretation of survey data.

C. Discussion

The author concurs with the interpretation of results by Aeroquest geophysicist Gord Smith as detailed in the Aeroquest report in Appendix III.

D. Conclusions

Almost all of the surveyed grid area showed little EM response. In particular, hypothesized potential source areas for the Noranda float boulder train discovered in 1989 did not reflect any strong conductivity. If within the hypothesized area, the source of the boulders is therefore either very limited in scope or only weakly conductive. However, if the source is conductive, the possibility still remains that it lies beyond the area surveyed in 2006.

A number of strong EM responses were detected in the southwestern corner of the survey area. According to the in-office interpretation given by Aeroquest geophysicist Dr. Jonathan Rudd, these are very likely caused by surficial conductive sources and not by sulfide mineralization

Although the survey was unsuccessful in its primary objective--establishing a source for the mineralized float boulders--the Magnetic data obtained and its derivative products may yet prove useful in future exploration of the property area.

Respectfully submitted,

D. Cremonese, P.Eng.
December 10, 2006

APPENDIX I - WORK COST STATEMENT

Aeroquest Limited Geophysical Survey: Feb. 17-26, 2006		
292 line-km & $117.70/line-km	$	34,368
Additional charges:		
Food/Accommodation, Fuel & Fuel Positioning	$	6,135
Report and map preparation, compilation and research		
D. Cremonese, P.Eng., 1.0 days @ $400/day	$	400
Draughting–	$	240
TOTAL	**$**	**41,143**

Allocation:

Amount filed per Event# 4091255	$	39,000

Please adjust PAC withdrawals accordingly, applying any balance remaining to the PAC Account of Teuton Resources Corp.

APPENDIX II -CERTIFICATE OF AUTHOR

I, Dino M. Cremonese, do hereby certify that:

1. I am a mineral property consultant with an office at Suite 207-675 W. Hastings, Vancouver, B.C.

2. I am a graduate of the University of British Columbia (B.A.Sc. in metallurgical engineering, 1972, and L.L.B., 1979).

3. I am a Professional Engineer registered with the Association of Professional Engineers of the Province of British Columbia as a resident member, #13876.

4. I have practiced my profession since 1979.

5. This report is based primarily upon the 2006 Aeroquest airborne survey over the Ruy property. Additional information comes from an extensive review of literature concerning the property.

6. I am a principal of Teuton Resources Corp. owner of the Ruy property. This report is for assessment purposes only and does not purport to be an independent evaluation of the merits of the property.

Dated at Vancouver, B.C. this 10th of December, 2006.

D. Cremonese, P.Eng.

APPENDIX III

REPORT ON A HELICOPTER-BORNE AEROTEM II ELECTROMAGENETIC AND MAGNETIC SURVEY

by

Aeroquest Limited of Milton, Ontario.

April, 2006

Report on a Helicopter-Borne AeroTEM© II Electromagnetic and Magnetic Survey

Aeroquest Job # 05057

Ruy Property

Stewart, British Columbia
NTS 104A05.

for

Teuton Resources Corporation

207-675 West Hastings Street.
VANCOUVER
British Columbia
CANADA, V6B 1N2

by

AEROQUEST LIMITED

4-845 Main Street East
Milton, Ontario, L9T 3Z3
Tel: (905) 693-9129 Fax: (905) 693-9128
www.aeroquestsurveys.com

March, 2006

1. TABLE OF CONTENTS

1.1. List of Figures

1.2. Appendices

1.3. Maps (1:10,000)

The report includes a set of three (3) geophysical maps plotted at a scale of 1:10,000. The survey area is covered by one (1) map plate. Three (3) geophysical data products are presented for each Plate (listed below).

- Map 1: Coloured Total Magnetic Intensity (TMI) with line contours and EM anomalies
- Map 2: Coloured Tilt Derivative of the TMI with line contours and EM anomalies
- Map 3: AeroTEM Off-Time Profiles (Z5-Z15) and EM anomalies

2. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Teuton Resources Corp. on theRuy Property, British Columbia. The principal geophysical sensor is Aeroquest's exclusive AeroTEM II time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity cesium vapour magnetometer. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, digital video acquisition system, and a base station magnetometer. Full-waveform streaming EM data is recorded at 38,400 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 line kilometre flown is totaled at 292 km. The survey flying described in this report took place from February 28th to March 5th, 2006.

Bedrock EM anomalies were auto-picked from the Z-component on-time data and graded according to the 'off-time' conductance. These anomalies were then review by hand and classified for presentation on the maps. This report describes the survey logistics, the data processing, presentation, and provides a brief interpretation of the results.

3. SURVEY AREA

The Ruy Property of Teuton Resources Corp. is located approx. 35Km northeast of Stewart, BC. Figure 2. Access to the property is available exclusively by helicopter. The helicopter was provided by Hi-Wood helicopters, Oakachoke, Alberta. The field crew were based in Stewart at the King Edward Hotel. The helicopter and geophysical equipment were staged out of Stewart Airport, Stewart, B.C.

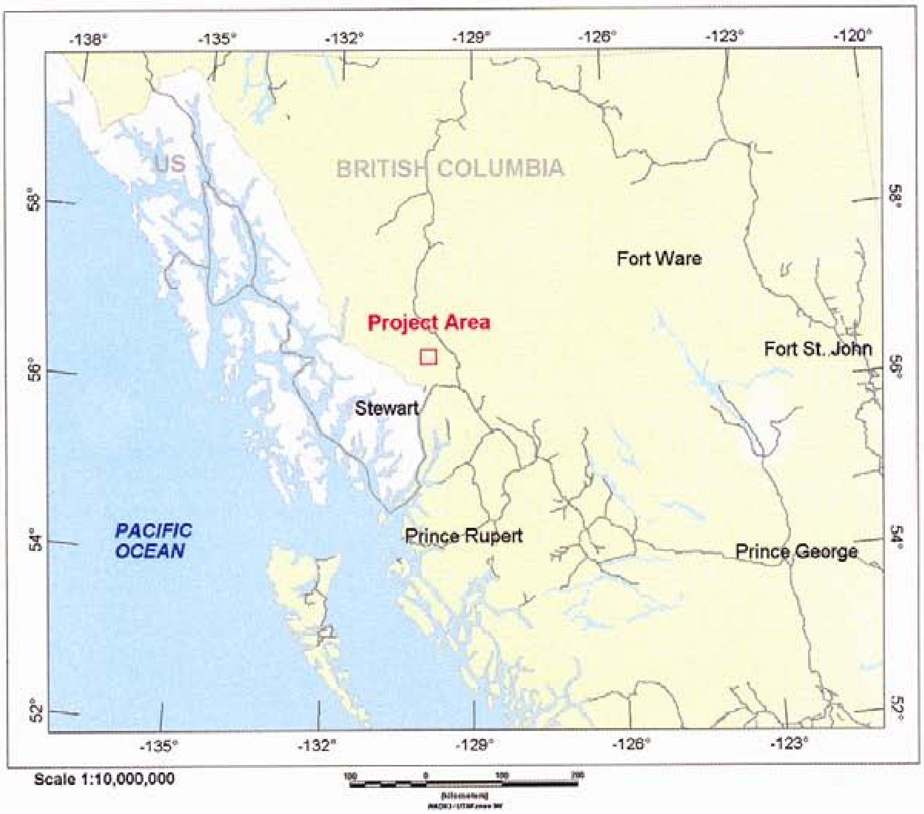


Figure 1. Regional location map of the Property area

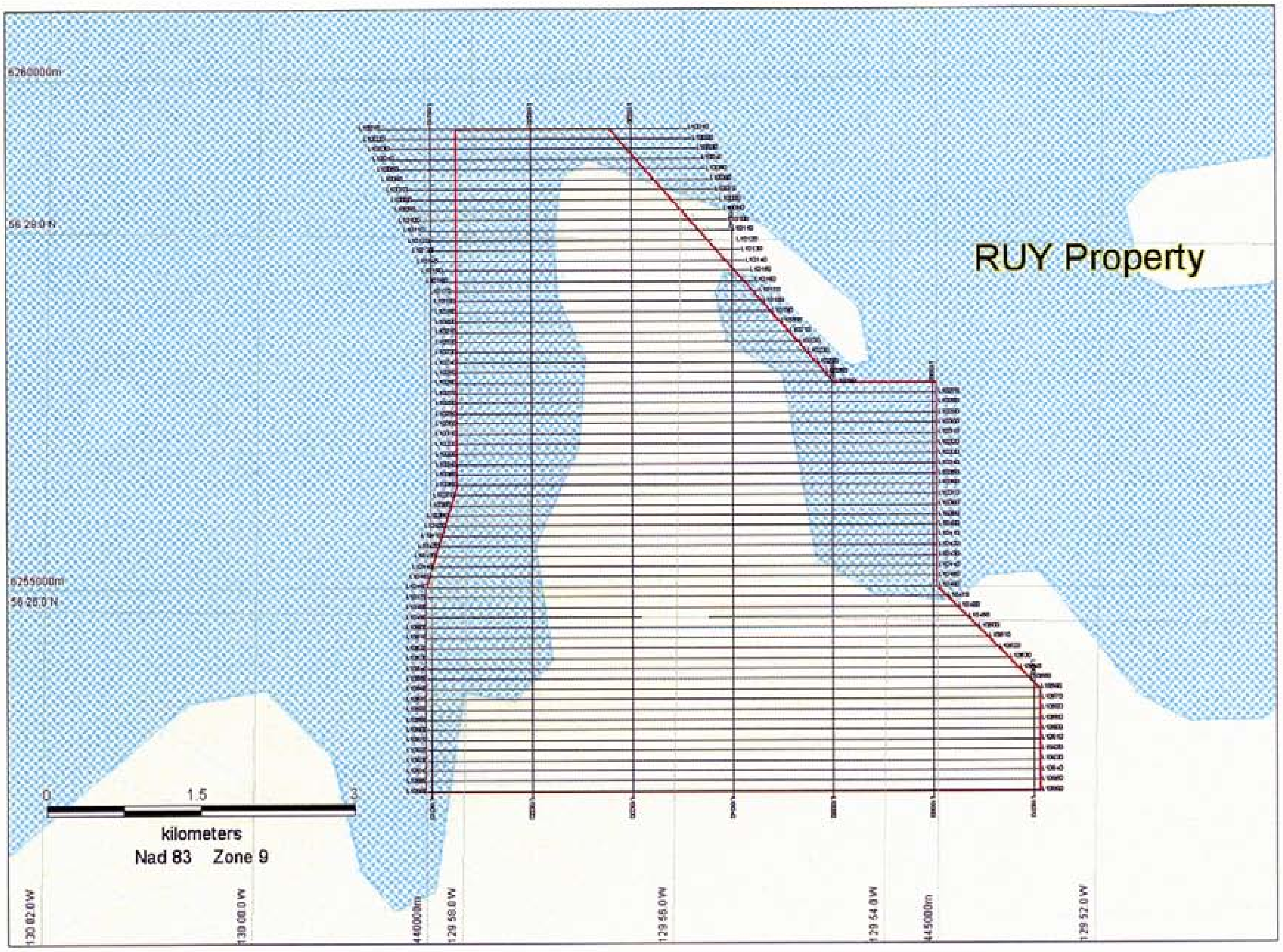


Figure 2. Location of theRuy Property.

4. REGIONAL GEOLOGY and EXPLORATION (from Teuton Resources web site)

(no information found)

5. SURVEY SPECIFICATIONS AND PROCEDURES

5.1. Flight Specifications

The survey specifications are summarised in the following table:

Block Name	Line Spacing (m)	Line direction	Survey Coverage (line-km)	Dates Flown
Ruy	100	E-W (090) EW (090)	292	February 28th to March 5th, 2006

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 100 m. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1 km.

The nominal EM bird terrain clearance is 30m (98 ft), but can be higher in more rugged terrain. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 15 metres above the EM bird and 18.5 metres below the helicopter (Figure 4). 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 38,400 samples per second and is processed to generate final data at 10 samples per second. The 10 samples per second translates to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

5.2. 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 under 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.

5.3. 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.

5.4. Field QA/QC Procedures

On return of the pilot and operator to the base, usually after each flight, the ProtoDAS 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.

6. AIRCRAFT AND EQUIPMENT

6.1. Aircraft

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-GPTY used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters, Oakachoke, Alberta.. Installation of the geophysical and ancillary equipment was carried out by Aeroquest Limited in Stewart and ferried to the survey area. The survey aircraft was flown at a nominal terrain clearance of 180 feet (55 m).

Figure 3. Survey Helicopter C-GPTY

Figure 4. The magnetometer bird (A) and AeroTEM II EM bird (B)

6.2. Magnetometer

The Aeroquest airborne survey system employs the Geometrics G-828 cesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 15 metres below the helicopter. 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 48.5 metres (170 ft.). The magnetic data is recorded at 10Hz by the RMS DGR-33.

6.3. Electromagnetic System

The electromagnetic system is an Aeroquest AeroTEM II time domain towed-bird system. The current AeroTEM© transmitter dipole moment is 38.8 kNIA. The AeroTEM© bird is towed 33.5 m (110 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 approximately1.1 ms and a base frequency of 150 Hz. The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 128 contiguous channels of raw x and z component (and a transmitter current monitor) of the received waveform are measured. Each channel width is 26.06 microseconds starting at the beginning of the transmitter pulse. This 128 channel data is referred to as the raw streaming data.

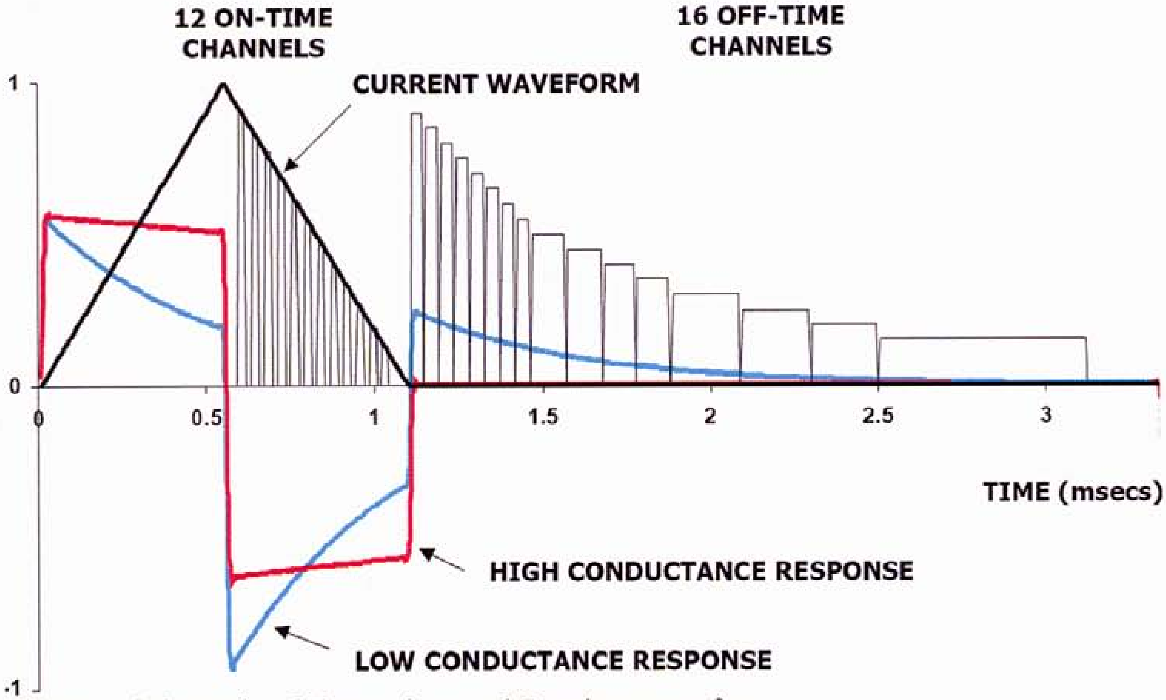


Figure 5. Schematic of Transmitter and Receiver waveforms

6.4. PROTODAS Acquisition System

The 128 channels of raw streaming data are recorded by the AERODAS acquisition system 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:

Channel	Width	Gate	Start(μs)	Stop(μs)	Mid(μs)	Width(μs)
1 ON	1	25	651.0	677.1	664.1	26.04
2 ON	1	26	677.1	703.1	690.1	26.04
3 ON	1	27	703.1	729.2	716.1	26.04

4 ON	1	28	729.2	755.2	742.2	26.04
5 ON	1	29	755.2	781.3	768.2	26.04
6 ON	1	30	781.3	807.3	794.3	26.04
7 ON	1	31	807.3	833.3	820.3	26.04
8 ON	1	32	833.3	859.4	846.4	26.04
9 ON	1	33	859.4	885.4	872.4	26.04
10 ON	1	34	885.4	911.5	898.4	26.04
11 ON	1	35	911.5	937.5	924.5	26.04
12 ON	1	36	937.5	963.5	950.5	26.04
13 ON	1	37	963.5	989.6	976.6	26.04
14 ON	1	38	989.6	1015.6	1002.6	26.04
15 ON	1	39	1015.6	1041.7	1028.6	26.04
16 ON	1	40	1041.7	1067.7	1054.7	26.04
0 OFF	1	44	1145.8	1171.9	1158.9	26.04
1 OFF	1	45	1171.9	1197.9	1184.9	26.04
2 OFF	1	46	1197.9	1224.0	1210.9	26.04
3 OFF	1	47	1224.0	1250.0	1237.0	26.04
4 OFF	1	48	1250.0	1276.0	1263.0	26.04
5 OFF	1	49	1276.0	1302.1	1289.1	26.04
6 OFF	1	50	1302.1	1328.1	1315.1	26.04
7 OFF	1	51	1328.1	1354.2	1341.1	26.04
8 OFF	1	52	1354.2	1380.2	1367.2	26.04
9 OFF	1	53	1380.2	1406.3	1393.2	26.04
10 OFF	1	54	1406.3	1432.3	1419.3	26.04
11 OFF	1	55	1432.3	1458.3	1445.3	26.04
12 OFF	1	56	1458.3	1484.4	1471.4	26.04
13 OFF	4	57	1484.4	1588.5	1536.5	104.17
14 OFF	8	61	1588.5	1796.9	1692.7	208.33
15 OFF	16	69	1796.9	2213.5	2005.2	416.67
16 OFF	32	85	2213.5	3046.9	2630.2	833.33

6.5. RMS DGR-33 Acquisition System

In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM data 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 (microsec)	End time (microsec)	Width (microsec)	Streaming Channels	Noise tolerance
Z1, X1	1269.8	1322.8	52.9	48-50	20 ppb
Z2	1322.8	1455.0	132.2	50-54	20 ppb

Z3	1428.6	1587.3	158.7	54-59	15 ppb
Z4	1587.3	1746.0	158.7	60-65	15 ppb
Z5	1746.0	2063.5	317.5	66-77	10 ppb
Z6	2063.5	2698.4	634.9	78-101	10 ppb

6.6. Magnetometer Base Station

The base magnetometer was a Geometrics G858 magnetometer with a built in GPS receiver and external GPS antenna. Data logging and UTC time syncronistation 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.

6.7. 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.

6.8. Video Tracking and Recording System

A high resolution digital colour 8mm 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.

6.9. 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 under 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.

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 10N 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.

6.10. Digital Acquisition System

The AeroTEM© received waveform (Figure 5) sampled during on and off-time at 128 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 26.04 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 DGR-33A 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 128Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder for on-board real-time QA/QC.

Figure 6. The AeroTEM II Instrument Rack

7. PERSONNEL

The following Aeroquest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Manager of Processing and Interpretation: Jonathan Rudd
- Field Data Processors: Sean Scrivens, Rory Kutluoglu
- Field Operators: Marcus Watson, Victor Shevchenko
- Data Interpretation and Reporting: Jonathan Rudd, Gord Smith

The survey pilot, Paul Kendal was employed directly by the helicopter operator – Hi-Wood Helicopters Ltd.

8. DELIVERABLES

The report includes a set of three (3) geophysical maps plotted at a scale of 1:10,000. The survey area is covered by one (1) map plate. Three (3) geophysical data products are presented for each Plate (listed below).

- Map 1: Coloured Total Magnetic Intensity (TMI) with line contours and EM anomalies
- Map 2: Coloured Tilt Derivative of the TMI with line contours and EM anomalies
- Map 3: AeroTEM Off-Time Profiles (Z5-Z15) and EM anomalies

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 is given in the margin of the maps. The magnetic field data is presented as superimposed line contours with a minimum contour interval of 5nT. Bold contour lines are separated by 250nT.

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 3. A copy of this digital data is archived at the Aeroquest head office in Milton.

9. 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 a 42-inch wide Hewlett Packard ink-jet plotter.

9.1. 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 9 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 9
- Central Scale Factor: 0.9996

- False Easting, Northing: 500,000m, 0m

For reference, the latitude and longitude in NAD83 are also noted on the maps. The skeletal topography was derived from the Federal Government's 1: 50,000 NTS map series.

9.2. 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 (5Hz) 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. 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.

9.3. Electromagnetic Data

The raw streaming data, sampled at a rate of 46,080 Hz (256 channels, 180 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, leveled and split up into the individual line segments. The filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology. Further base level adjustments may be carried out at this stage.

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 presented in a Geosoft "array" channel format in the final GDB (Appendix 2) and are labeled in the 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 on-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 bedrock and conductive overburden sources as well as to determine the source type response (thin vs. thick – discussed later). 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 on-time and off-time conductance have been generated based on calculation of the decay constant (tau) of the EM decay curves for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Only channels that had a minimum response of 15 nT/s were included in the tau calculation. A minimum of three channels responding above the 15 nT/s threshold were required to produce an acceptable tau estimate. The tau values were then windowed to exclude any values that had a correlation-coefficient less than 97%. Conductance values (in Siemens) were then directly calculated from tau values at each conductor pick. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values as indicated on the map legends (Figure 7). 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 were assigned a 'null' conductance value of "0.01", thus plotting as a low conductance source on the maps.

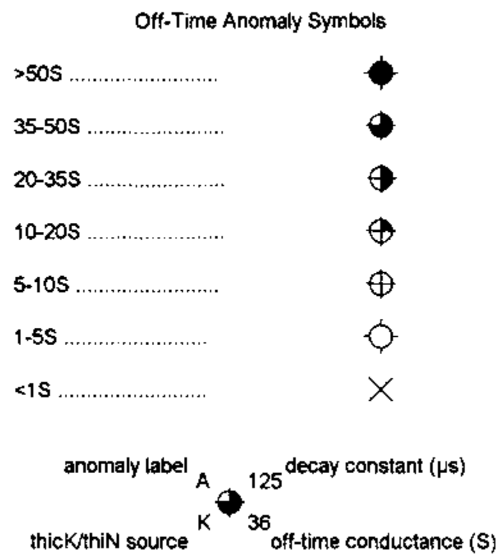


Figure 7. AeroTEM classified anomaly symbols.

9.4. Magnetic Data

Prior to any leveling 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 random grid technique with a grid cell size of 20 metres. The final leveled TMI grid provided the basis for threading the presented contours which have a minimum contour interval of 5 nT.

In order to map shallow basement response a 'tilt' derivative product was calculated from the TMI grid. The Tilt Derivative (TDR) of the TMI enhances smaller wavelength magnetic features which define shallow basement structures as well as potential mineral exploration targets.

The TDR is defined as:

TDR = arctan (VDR/THDR)

where VDR and THDR are first vertical and total horizontal derivatives, respectively, of the total magnetic intensity T.

VDR = dT/dz
THDR = sqrt ($(dT/dx)^2 + (dT/dy)^2$)

Due to the nature of the arctan trigonometric function in the filter, all amplitudes are restricted to $+\pi/2$ and $-\pi/2$ radians. This gives the Tilt derivative the added advantage of acting like an automatic gain control (AGC) filter. The calculated TDR grid is presented a colour sun-shaded image (illumination from the north-northeast). Line contours are also overlain which have a minimum contour interval of 0.5 radians.

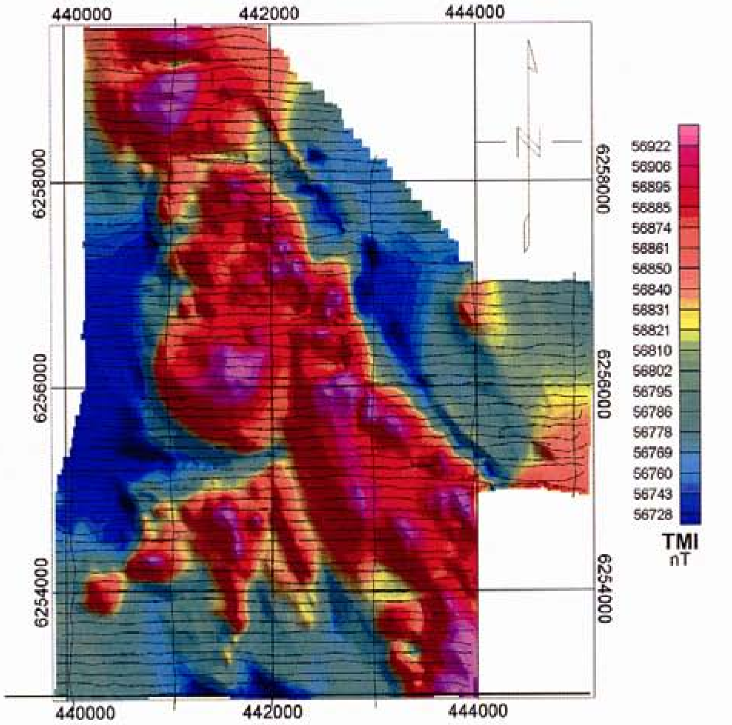
10. Results and Interpretation

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

10.1. Magnetic Response

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area.

The magnetic data ranges from lows of 56728 nT to highs of up to 56922 nT with an average background of 56820 nT. Total Magnetic Field and Tilt Derivative features are illustrated in Figures 8 (a) and (b).



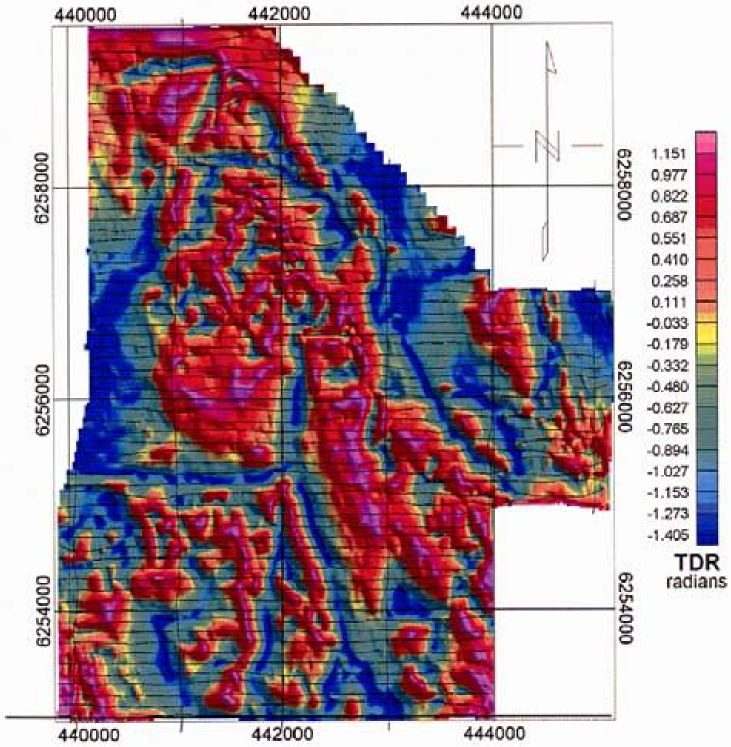


Figure 8. A. Shaded TMI colour map. B. Shaded TILT derivative magnetics.

10.2. EM Anomalies – General Comments

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 10m), 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

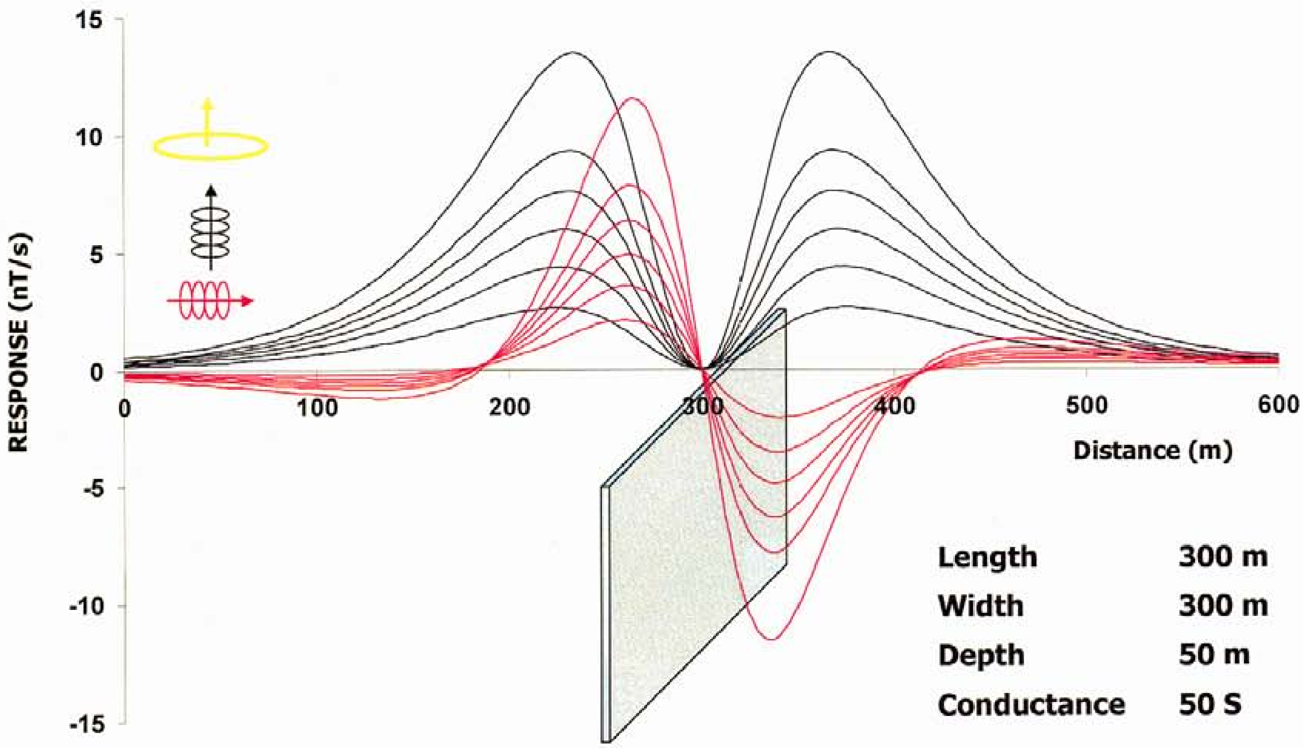


Figure 9. AeroTEM response to a 'thin' vertical conductor.

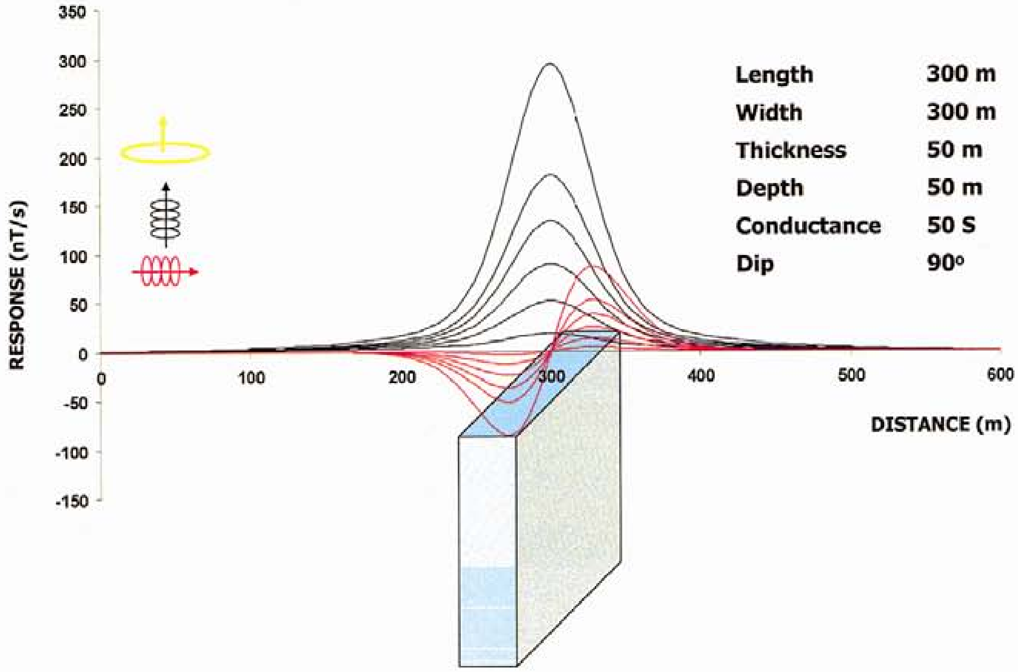


Figure 10. AeroTEM response for a 'thick' vertical conductor.

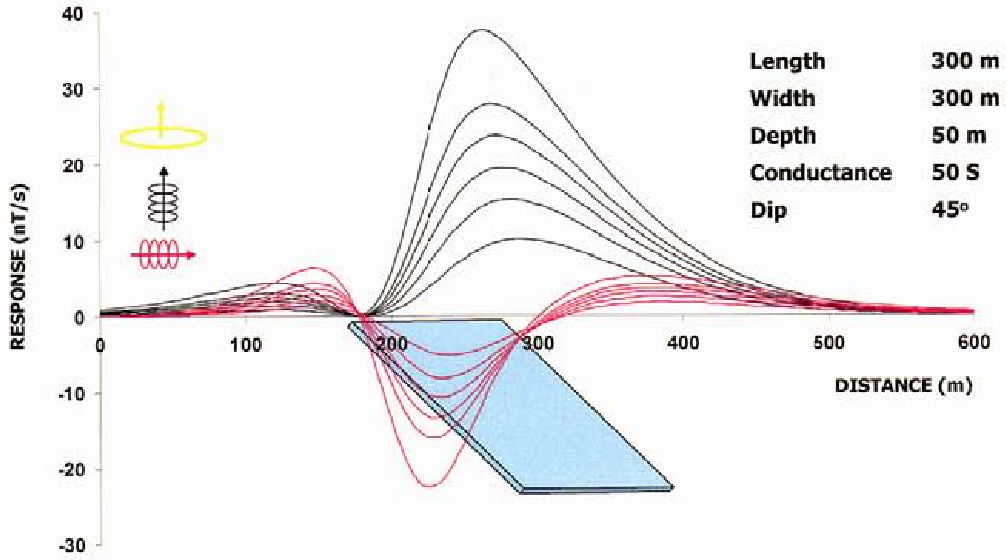


Figure 11. AeroTEM response over a 'thick' dipping conductor.

(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' (N) pick will be located over the top edge of the source, whereas the 'thick' (K) pick will fall over the downdip 'heart' of the anomaly.

10.3. EM Response

All anomalies indicated on the maps and should be reviewed in conjunction with available geological or geochemical information. The 'thick' and 'thin' response styles must also be considered when analyzing the interpreted picks and prioritizing for follow-up. The highest priority EM targets should then be subjected to quantitative modeling prior to drill testing to determine the azimuth and dip of the source. Figure 12 illustrates the Z coil response (off-time) from channels 5 through 15 for this area.

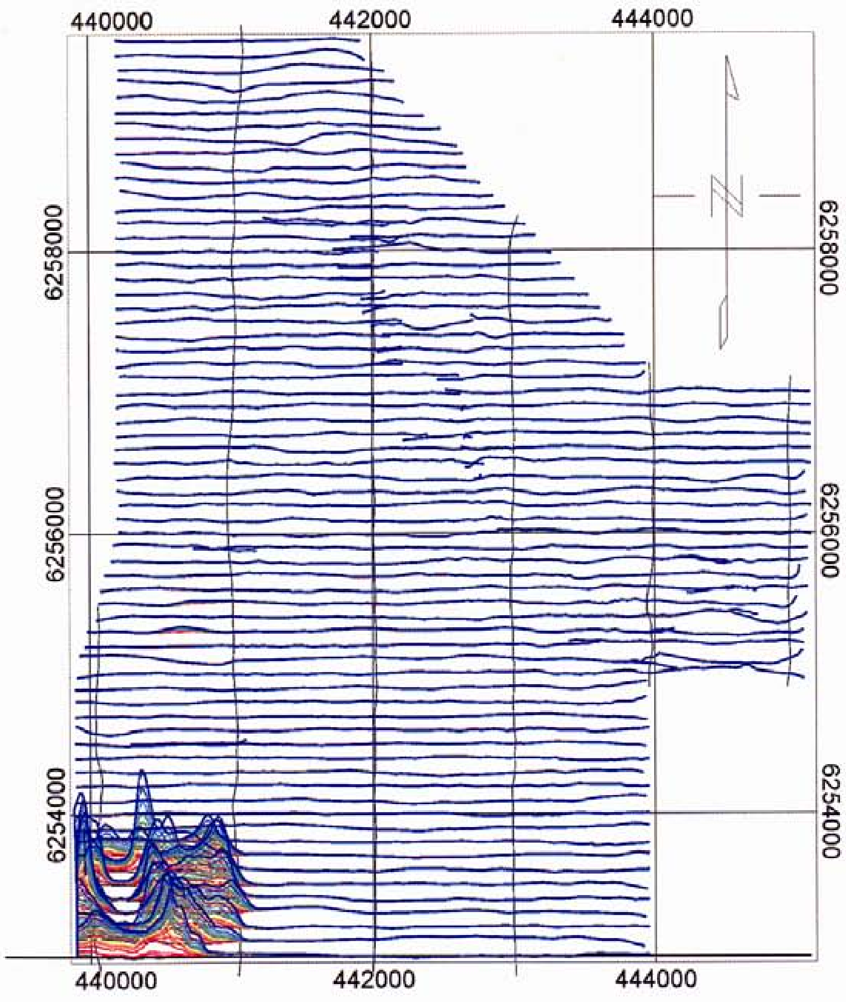


Figure 12 Off-time EM response over the survey area (Z coil, channels 5 through 15).

Respectfully submitted,

Gord Smith
Aeroquest Limited
April, 2006

APPENDIX 1 – PROJECT CORNER COORDINATES

The Ruy Survey Block has a boundary which is defined in the following table. All geophysical data presented in this report have been windowed to this outline. Positions are in UTM Zone 9 – NAD83.

Easting (m)	Northing (m)
439550.0	6259549.3
442550.0	6259549.3
443299.7	6257796.6
444000.0	6257000.0
445000.0	6257000.0
445000.0	6255000.0
446000.0	6254000.0
446000.0	6252950.0
440000.0	6252950.0
440000.0	6255000.0
440300.0	6256000.0
440299.7	6257796.6

APPENDIX 2 - 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".

Database (4J's_Final_Client.gdb):

Column	Units	Description
Emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
X	m	UTM Easting (NAD83, zone 9N)
Y	m	UTM Northing (NAD83, zone 9N)
Lat_wgs84	dd.dddddd	Raw WGS84 Latitude
Long_wgs84	dd.dddddd	Raw WGS84 Longitude
bheight	m	Terrain clearance of EM bird
Galtf	m	GPS altitude (WGS 84)
Dtmf	m	Digital Terrain Model
Magf	nT	Final leveled total magnetic intensity
basemagf	nT	Base station total magnetic intensity
Pwrline		Powerline monitor
Flight		Flight number
ZOn	nT/s	Processed Streaming On-Time Z component Channels 1-15
Zoff	nT/s	Processed Streaming Off-Time Z component Channels 1-16
XOn	nT/s	Processed Streaming On-Time X component Channels 1-15
XOff	nT/s	Processed Streaming Off-Time X component Channels 1-16
Anom_ID		Thick (K) or Thin (T) identifier
Anom_labels		Letter label of conductor pick (A,B,C, etc.)
On_tau	microseconds	On-time Decay constant at conductor pick
Off_tau	microseconds	Off-time Decay constant at conductor pick
On_con	S	On-time conductance
off_con	S	Off-time conductance
Grade		Classification from 1-7 based on conductance of conductor pick

APPENDIX 3: AeroTEM Design Considerations

Design Considerations

Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at a slower speed and collect data with high spatial resolution, and with great accuracy, means that 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 The footprint of a fixed-wing system is roughly 150 m roughly 50 m on either side of transmitter. on either side of the transmitter.

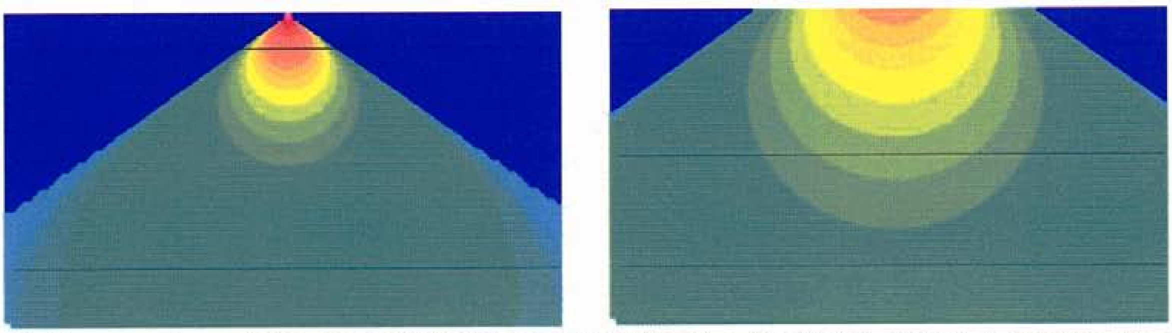


Figure 1. A comparison of the footprint between AeroTEM and a fixed-wing system, highlights the greater resolution that is achievable with a transmitter located closer to the earth's surface. The AeroTEM footprint is one third that of a fixed-wing system and is symmetric, while the fixed-wing system 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 favor 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.

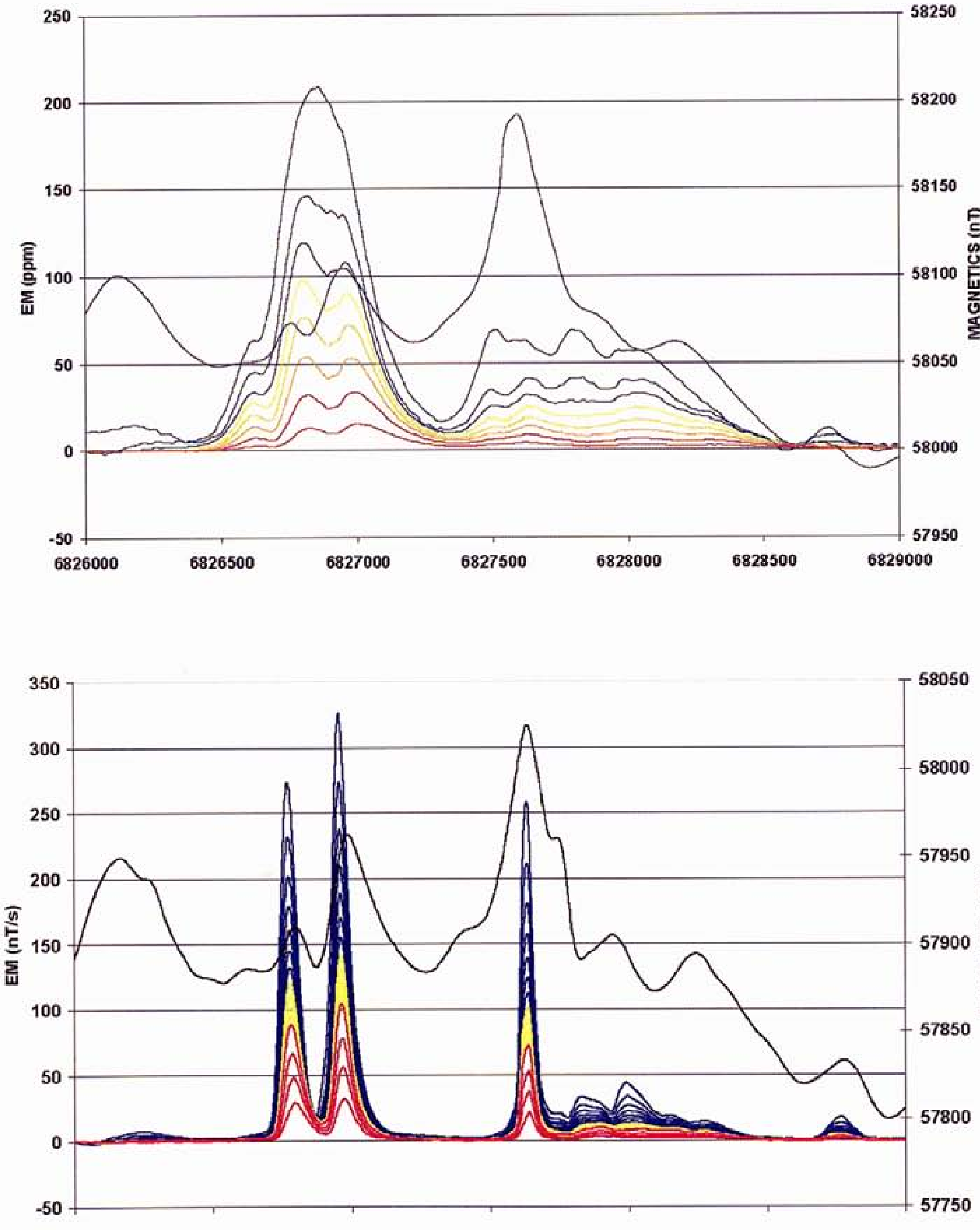


Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.

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 favorable 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.

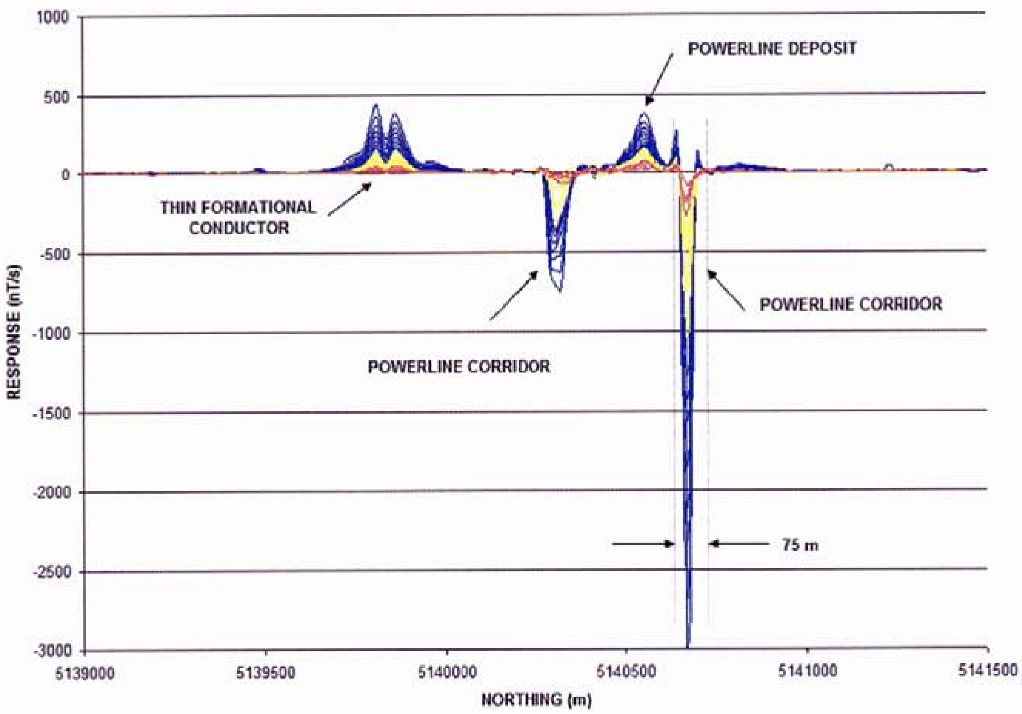


Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish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

Advantage 2 – Conductance Discrimination

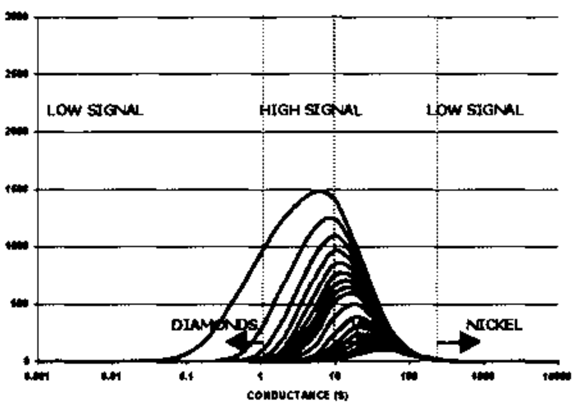
The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still 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.

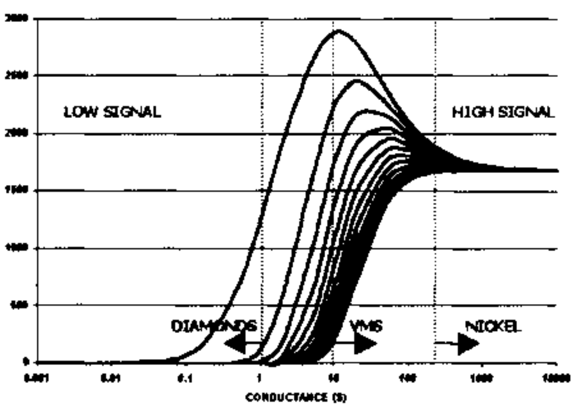
However, in the search for highly conductive targets, such as pyrrhotite-related Ni-Cu-PGM deposits, a fivefold increase in conductance range is a high price to pay because the signal level to lower conductance targets is reduced by the same factor of five. For this reason, EM systems that operate with 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 inphase 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:

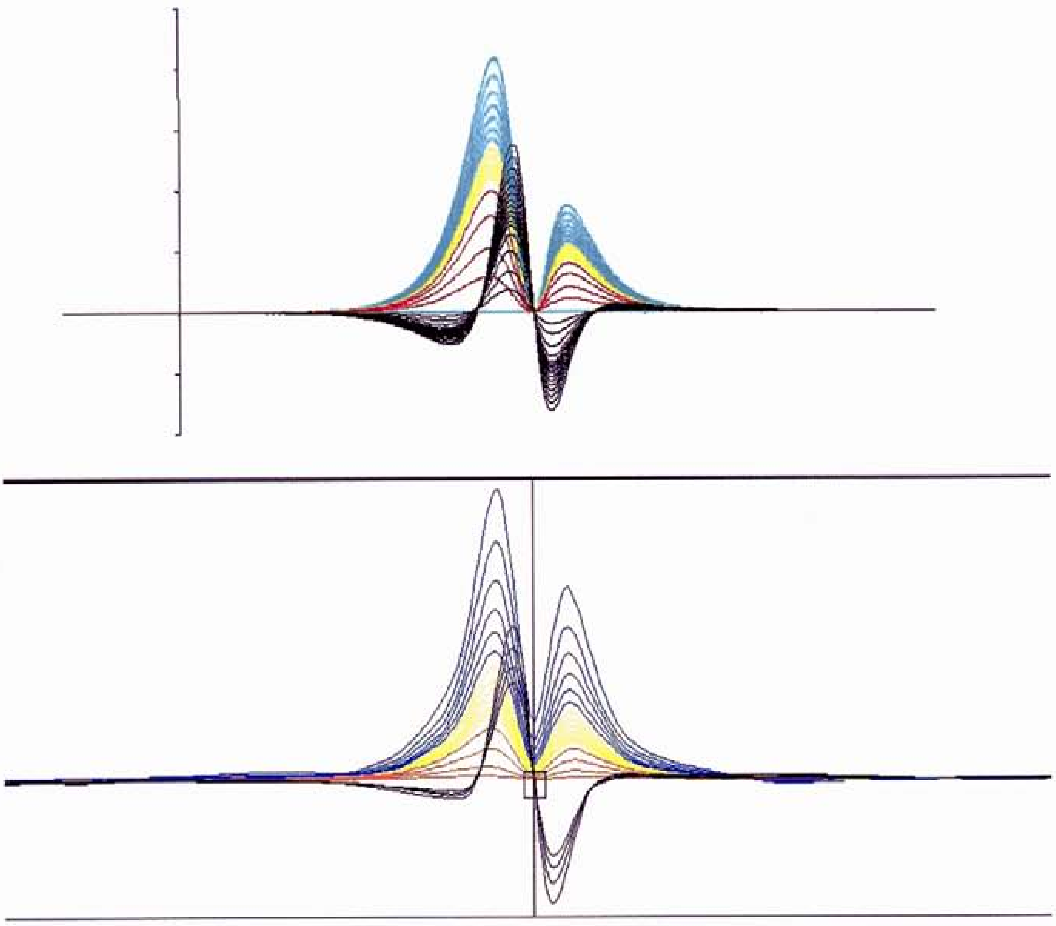


Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude 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 (Zaxis) 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.

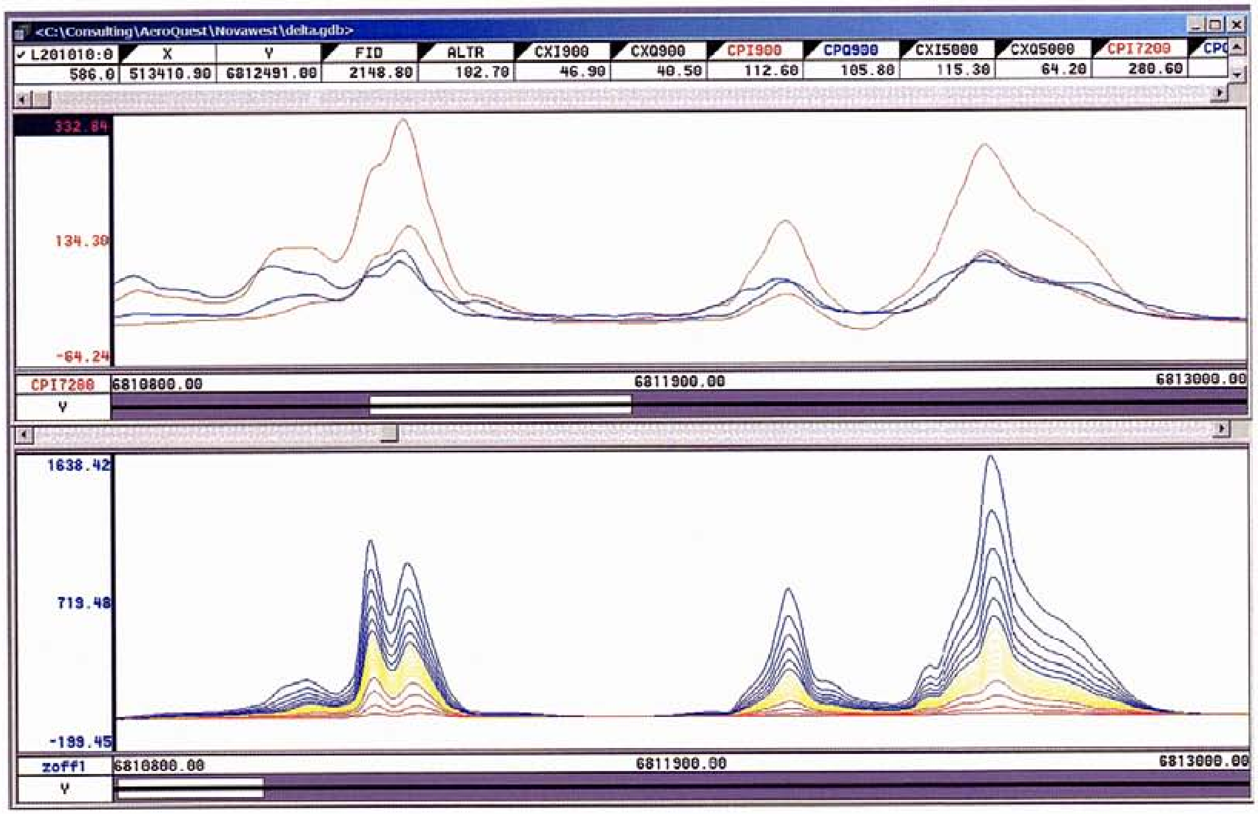


Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

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 4: AeroTEM Instrumentation Specification Sheet

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 30 or 150 Hz
- Tx On Time - 5,750 (30Hz) or 1,150 (150Hz) μs
- Tx Off Time - 10,915 (30Hz) or 2,183 (150Hz) μs
- Loop Diameter - 5 m
- Peak Current - 250 A
- Peak Moment - 38,800 NIA
- Typical Z Axis Noise at Survey Speed = 8 ppb peak
- Sling Weight: 270 Kg
- Length of Tow Cable: 40 m
- Bird Survey Height: 30 m or less nominal

Receiver

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

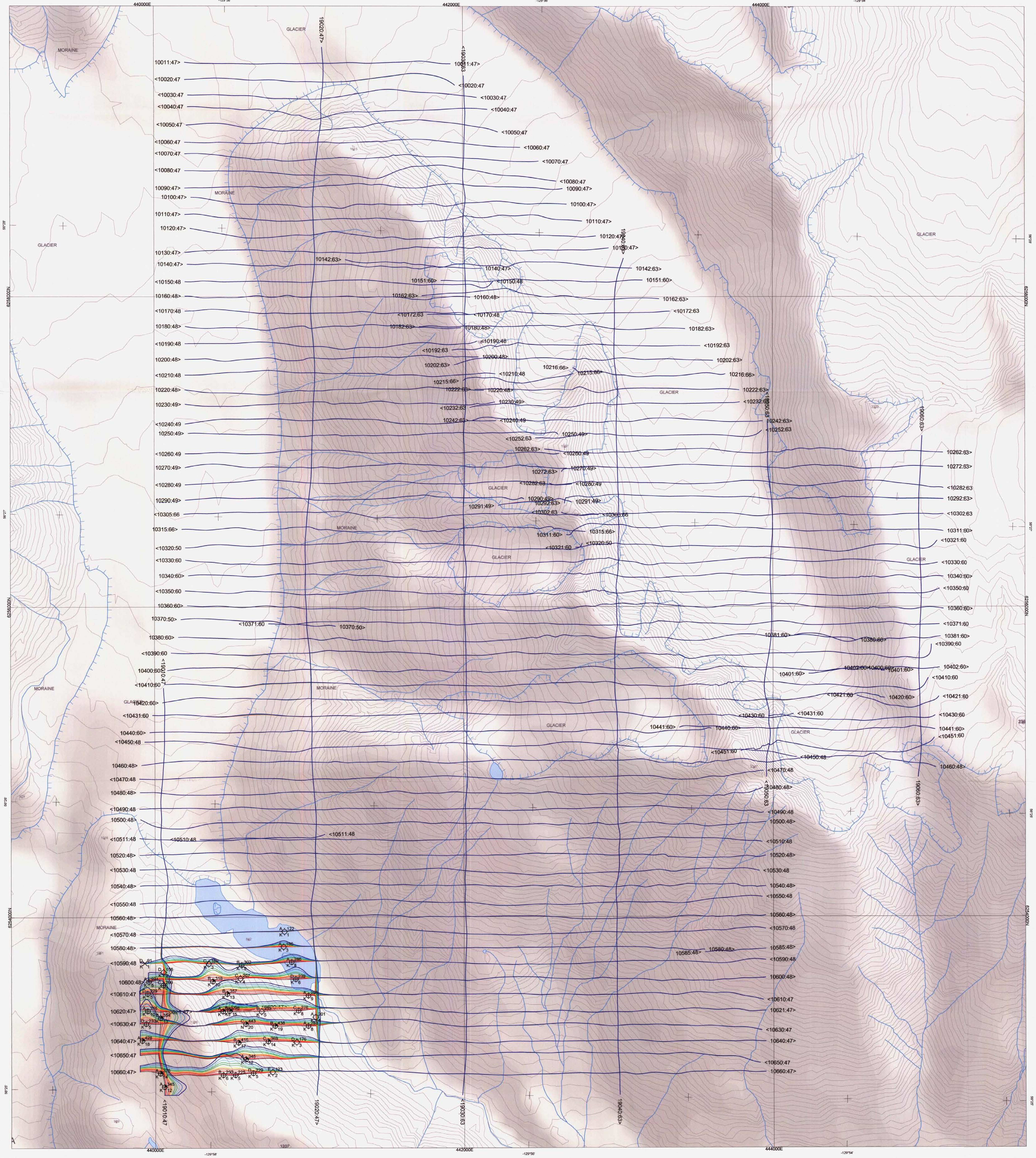
Display & Acquisition

- PROTODAS Digital recording at 126 samples per decay curve at a maximum of 300 curves per second (26.455 μs channel width)
- RMS Channel Widths: 52.9,132.3, 158.7, 158.7, 317.5, 634.9 μs
- 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.

Tel: +1 905 878-5616. Fax: +1 905 876-0193.
Email: sales@aeroquestsurveys.com

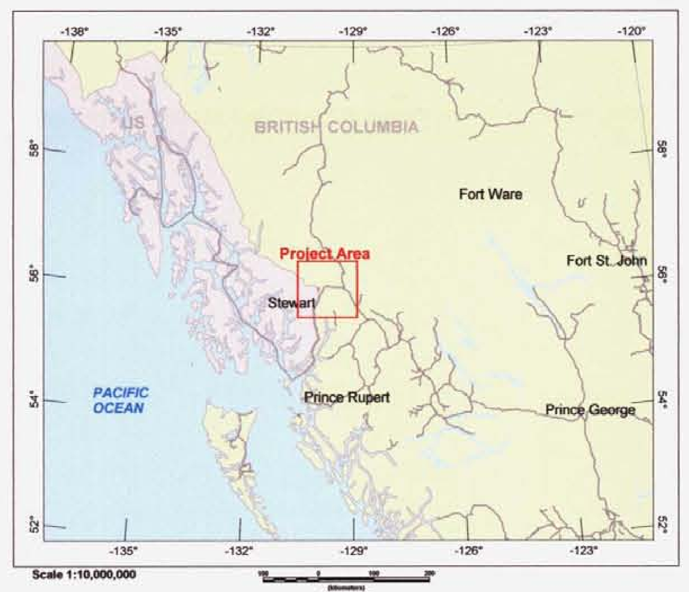


Grid North
NAD83-Zone9

The topographic data base was based on 1:20000 BC TRIM data supplied by the client.

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, Stewart Area, British Columbia', by Aeroquest Limited, March 2006



AeroTEM Profiles

positive excursion to top and right, 1mm=100 nT/s

- 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
- Z13 Off-Time Channel
- Z14 Off-Time Channel
- Z15 Off-Time Channel

Off-Time Anomaly Symbols

- >50S
- 35-50S
- 20-35S
- 10-20S
- 5-10S
- 1-5S
- <1S

anomaly label A, 125 decay constant (μs)
thicK/thiN source K, 36 off-time conductance (S)

SURVEY SPECIFICATIONS:
- Survey flown: March 12, 2006
- Traverse line spacing: 100 metres
- Traverse line direction: E-W (90º)
- Nominal EM bird height: 30 metres
- Aircraft: Aerospatiale A-Star 350BA (C-GMBC)

INSTRUMENTATION:
- Data acquisition: ADAS & RMS DGR-33
- Magnetometer: Geometrics G-823A cesium 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 TRA3000/TRI-30

DATA PROCESSING
- Magnetics: diurnal, tieline and micro-leveling corrections

POSITIONING
- Datum: NAD83
  - Major Axis: 6378137.000
  - Eccentricity: 0.081819191

MAP PROJECTION
- Projection: Universal Transverse Mercator
- Central Meridian: 129°W (Zone 9)
- Central Scale Factor: 0.9996
- False Easting/Northing: 500,000m/0m

scale 1:10,000

200 0 200 400 600
metres
NAD83 / UTM zone 9N

Teuton Resources Corporation
Stewart Area, British Columbia

AEROTEM OFF-TIME PROFILES

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NTS 104A05

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www.aeroquestsurveys.com

March 2006

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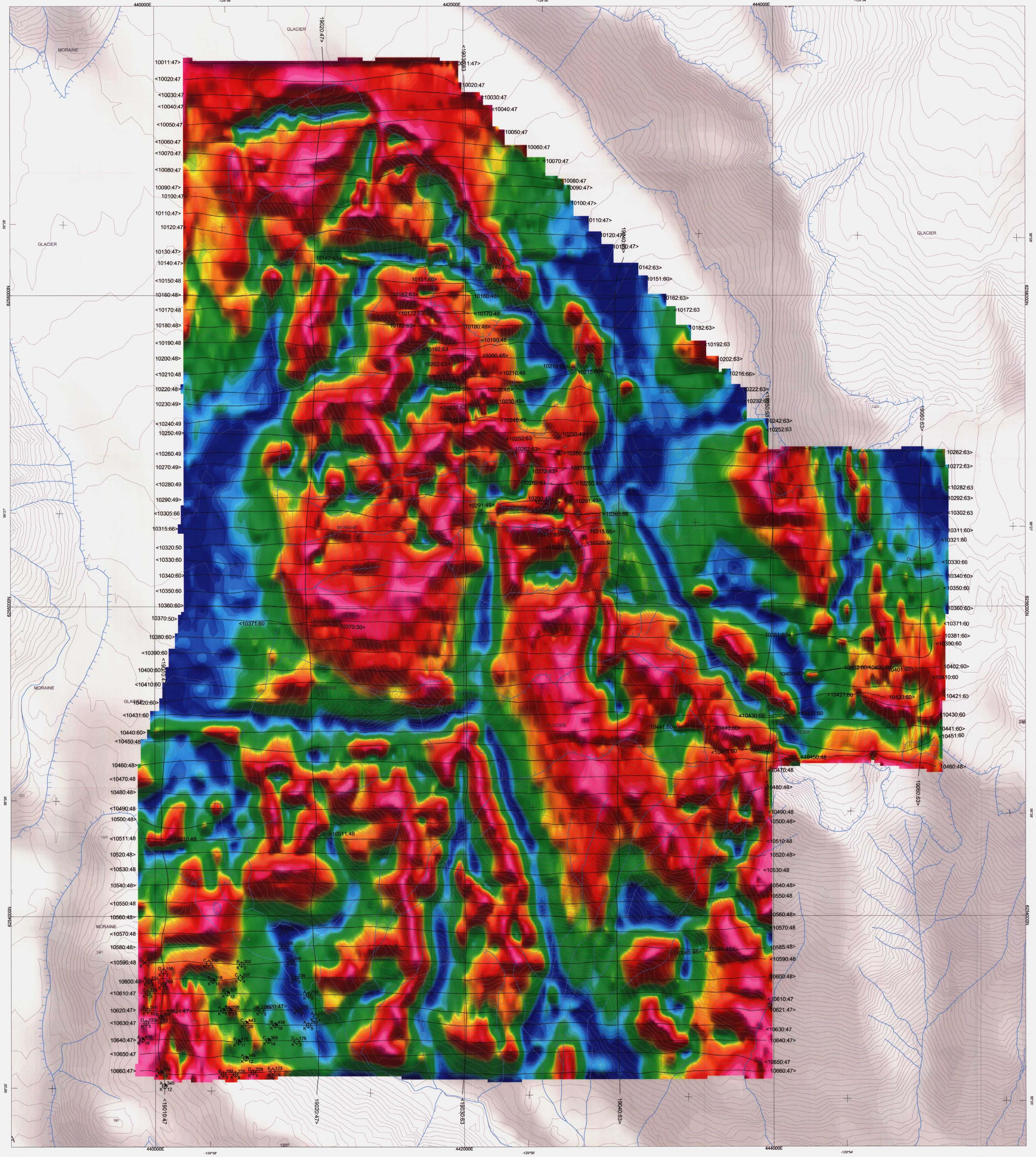

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NAD83-Zone9

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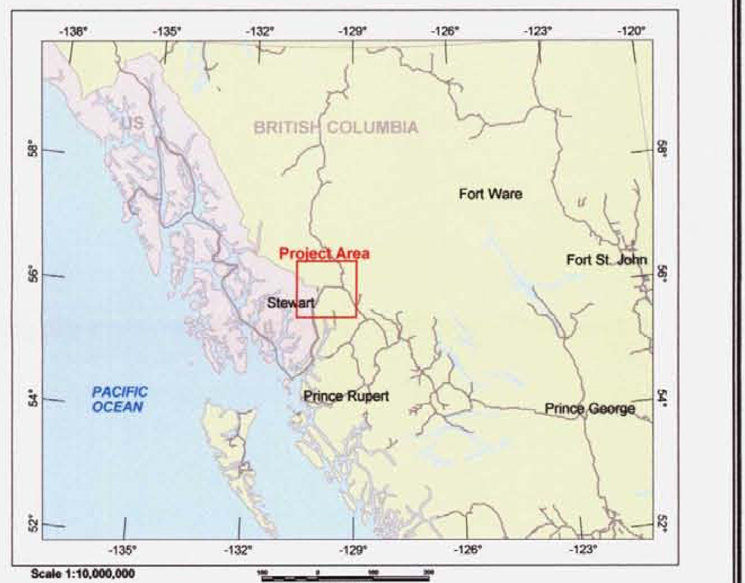

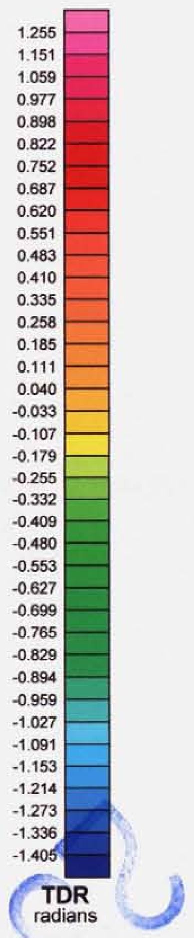

Off-Time Anomaly Symbols

- >50S
- 35-50S
- 20-35S
- 10-20S
- 5-10S
- 1-5S
- <1S

anomaly label A, 125 decay constant (μs)
thicK/thiN source K, 36 off-time conductance (S)

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scale 1:10,000

200 0 200 400 600
metres
NAD83 / UTM zone 9N

Teuton Resources Corporation
Stewart Area, British Columbia

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March 2006

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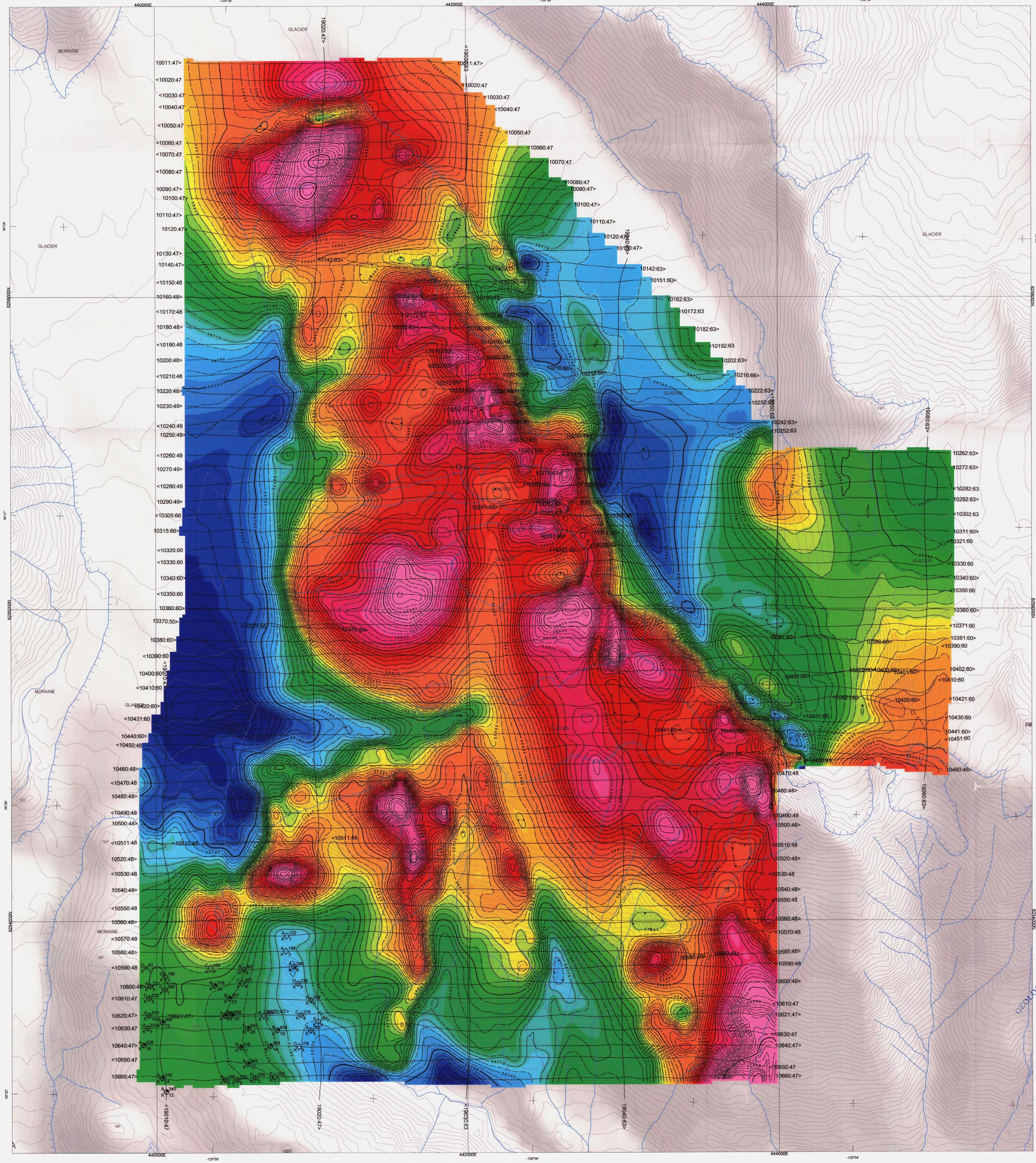

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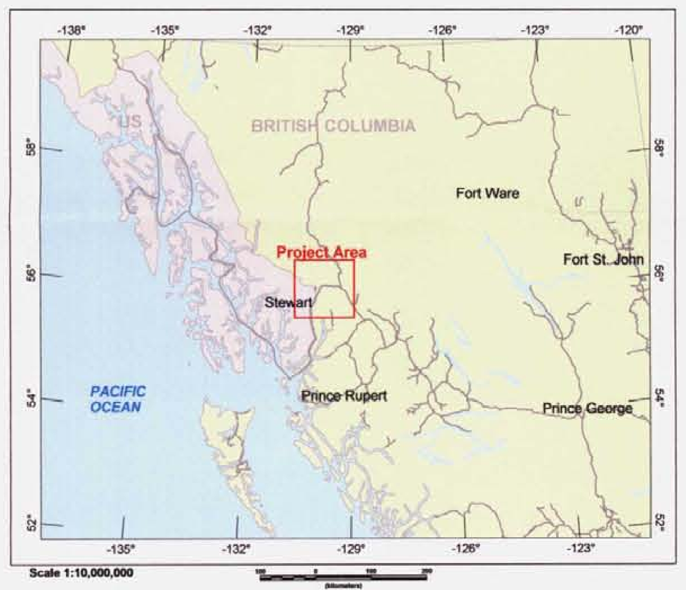

TMI nT (56728 – 56943)

TMI Contour Interval

- 5 nT
- 10 nT
- 50 nT
- 250 nT

Off-Time Anomaly Symbols

- >50S
- 35-50S
- 20-35S
- 10-20S
- 5-10S
- 1-5S
- <1S

anomaly label A; decay constant (μs) 125; thicK/thiN source K; off-time conductance (S) 36

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scale 1:10,000
metres
NAD83 / UTM zone 9N

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Stewart Area, British Columbia

TOTAL MAGNETIC INTENSITY
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