ASSESSMENT REPORT ON ROAD DEVELOPMENT/MAINTENANCE, AIRBORNE GEOPHYSICS, SURFACE SAMPLING AND BULK SAMPLE OF EMORY ZONE MAGNESIUM DEPOSIT

EMORY ZONE MINERAL PROPERTY
HOPE, BC, CANADA

CLAIM TENURES: 375290, 375291, 375292, 375293, 375294, 375295 and 507520

PERMIT NO. MX-7-148

NEW WESTMINSTER MINING DIVISION
MAP SHEETS: NTS 092H/05 & NTS 092H/12
LATITUDE 49.50 degrees, LONGITUDE 121.68 degrees

OWNERS:	**NORTH PACIFIC ALLOYS LIMITED (WHOLLY OWNED SUBSIDIARY OF LEADER MINING INTERNATIONAL INC.)**
OPERATOR:	**SAME**
AUTHORS:	**JOHN A. CHAPMAN, P.ENG.** **DAVID K. MAKEPEACE, P.ENG.**
DATE:	**DECEMBER 5, 2006**

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1.0 INTRODUCTION

1.1 Location and Access

The Emory Zone property is located at 49.50 degrees N latitude and 121.68 degrees W longitude, on NTS map sheets 092H05 and 092H12 in southwestern British Columbia, approximately 120 kilometres east of Vancouver. The claims are centered near the junction of Talc Creek and Daioff Creek, ~8 kilometres east of Harrison Lake. The claims can be accessed by logging road from Harrison Hot Springs, along the east side of Harrison Lake, Cogburn Creek and then Talc Creek, a total of 42 road kilometres. The claims may also be accessed via the Garnet Creek Forest Service road at the Ruby Creek exit from Highway #7. Traveling northerly on the road, it parallels the Ruby Creek, Garnet Creek and then Talc Creeks for ~25 kilometres to the Emory Zone mineral claims. The Fraser River is a major transportation corridor with road, rail, gas and oil pipelines and power transmission lines (Figures 1 and 2).

Most of the Emory Zone mineral property is on a large TFL managed by Lakeside Pacific Forest Products Ltd., Chilliwack, B.C. There is an extensive logging road network throughout the claim area.

1.2 Physiography and Climate

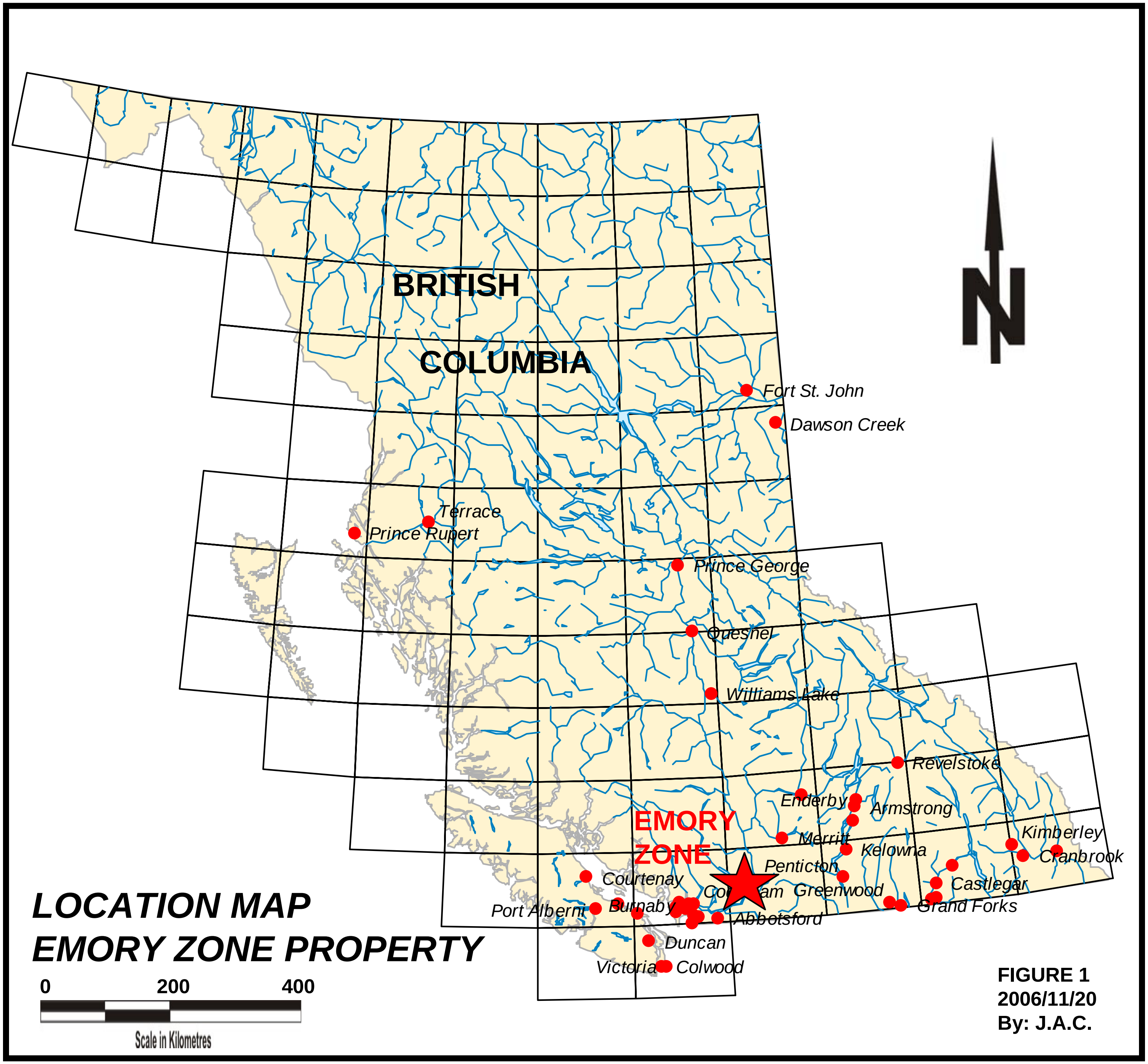
Climate in the region of the Emory Zone property is typical of the Harrison Lake area with cool summers and mild winters. Annual precipitation is approximately 300cm. Snow pack can reach 400 cm and remains on south slopes until April or May and on north slopes until June. Temperatures range from an average of -1^{o}C in winter to 15^{o}C in summer.

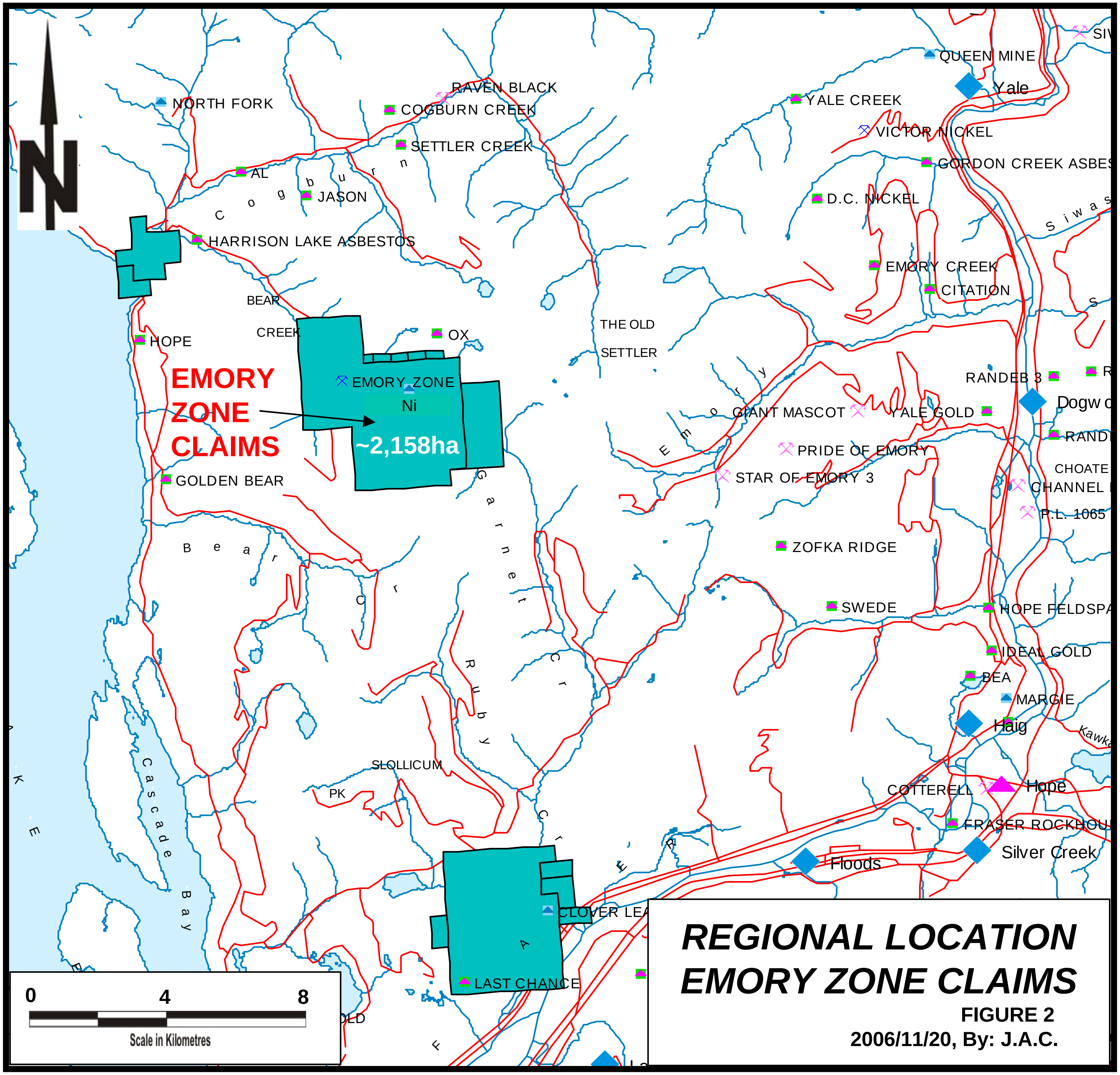
1.3 Claims and Ownership

The Emory Zone mineral claim group is composed of the following claims registered under the BC MTO system:

Tenure Number	Area (hectares)	Expiry Date
375290	25	September 30, 2011
375291	25	September 30, 2011
375292	25	September 30, 2011
375293	25	September 30, 2011
375294	25	September 30, 2011
375295	375	September 30, 2011
507520	1658	September 30, 2011
Total Area	**2,158**	

The beneficial owner of the Emory Zone claim group as at the date of this report is: North Pacific Alloys Limited (“NPAL”) a wholly owned subsidiary of Leader Mining International Inc. (“Leader”). Figure 2 is a map of the claims at the Cogburn, Emory Zone property.

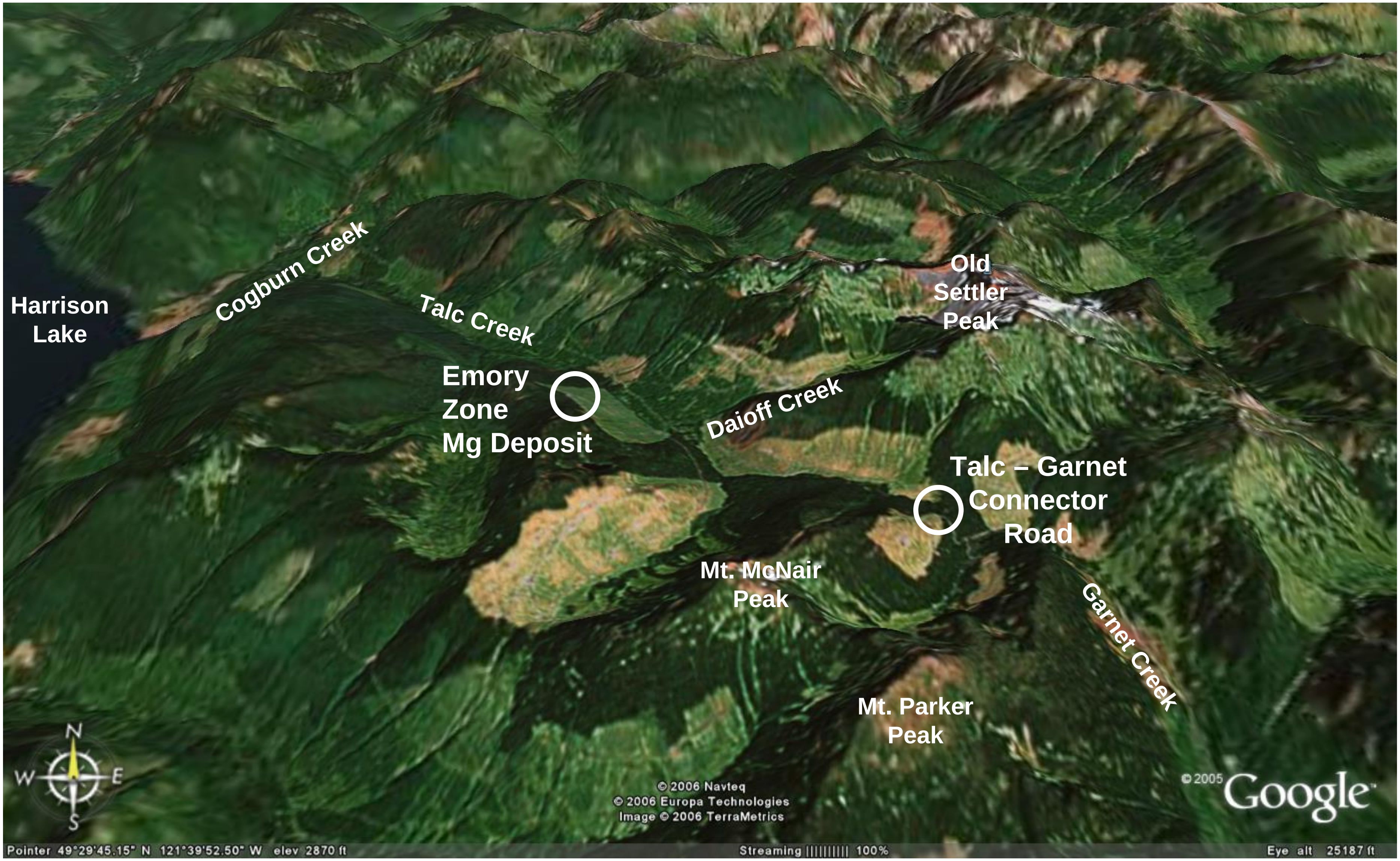

BRITISH
COLUMBIA
N
Fort St. John
Dawson Creek
Terrace
Prince Rupert
Prince George
Quesnel
Williams Lake
Revelstoke
Enderby
Armstrong
EMORY
ZONE
Merritt
Kelowna
Kimberley
Cranbrook
Penticton
Castlegar
Courtenay
Greenwood
Grand Forks
Port Alberni
Burnaby
Abbotsford
Duncan
Victoria
Colwood
LOCATION MAP
EMORY ZONE PROPERTY
0
200
400
Scale in Kilometres
FIGURE 1
2006/11/20
By: J.A.C.



REGIONAL LOCATION EMORY ZONE CLAIMS

FIGURE 2

2006/11/20, By: J.A.C.



EMORY ZONE PROPERTY

FIGURE 3
2006/11/20, By: J.A.C.

1.4 Previous Work (Exploration History)

Nickel-copper mineralization was discovered in 1923 at the Giant Mascot deposit (Pacific Nickel or Pride of Emory) on Stulkawhits Creek, 12km northwest of Hope and 6km east of the Cogburn claim group. From 1936 to 1974, Giant Mascot produced 26,573,090 kilograms of nickel and 13,212,770 kilograms of copper with silver, gold and cobalt credits by milling 4.2 million tonnes of ore from 26 individual ore bodies. PGE production was not recorded, but early sampling yielded values from 2.74 to 3.98 g/t platinum plus palladium.

Mineralization at Giant Mascot is hosted in what was interpreted as early ultramafic phases of the predominantly dioritic Spuzzum Pluton. Since that initial discovery most exploration in the region has focused on the Ni-Cu, and more recently the PGE potential of the ultramafic rocks, including those on the Emory Zone property.

Recorded exploration in the area of the Emory Zone claims started in 1969 when the Ni claims were staked by the Nickel Syndicate (Giant Explorations Limited and Giant Mascot Mines Limited). During 1969 to 1975, reconnaissance style exploration, including regional geological mapping, prospecting and stream sediment geochemistry was followed by a helicopter-borne magnetometer survey, detailed grid exploration (soil geochemistry, magnetic geophysics and rock sampling), IP geophysics and drilling.

The airborne magnetometer survey included 60 flight lines, for a total of 335 line miles, covering an area of approximately 85 square miles (220 km^2). The sensor was flown with a mean terrain clearance of 300 ft (91m).

The early work resulted in the definition of eight target areas for detailed exploration. Much of the work concentrated near the junctions of East Talc Creek and Daioff Creek. A grid was cut covering each target area and grid lines were used to control geological mapping, soil sampling, rock chip sampling where outcrop is exposed and ground magnetics. Soil and rock samples were analyzed for nickel and copper.

During the summer of 1971, IP surveys were carried out to define specific drill targets. These were followed by 20 drill holes for a total of 5,760 feet (1,756m). The holes tested anomalies defined on at least two of the grid areas. Details of the drill program were not reported. Core logs, assays and most hole locations are missing, as well as the drill core. However, the George Cross News Letter, September 1, 1971, reported, “Initial diamond drill holes and widespread surface sampling at the Nickel Syndicate Harrison Lake, B.C. joint venture exploration project of Giant Explorations Ltd. and Giant Mascot Mines Ltd. has discovered a major tonnage of low-grade nickel mineralization. Mineralization is over a length of 2,000 feet, a width of 800 feet and over a vertical surface range of 700 feet…Present indications are in the order of 200,000 tons per vertical foot, which gives 100,000,000 tons per 500 feet of depth”. In this area surface chip sampling by the Nickel Syndicate over a contiguous 80 acre area yielded an average of 0.22% nickel. BC government geologist Eastwood (1971) did some checking of nickel values in the Daioff nickel deposit area and generally confirmed the grade to be 0.19% to 0.22% sulphide nickel (plus ~0.02% silicate nickel) . There is little reported on subsequent work from 1972 through to 1975.

During the summer of 2001, a total of 35 rock samples were collected by Leader personnel in the general area of what are now called the Emory Zone and Daioff area (Payne, 2001 and 2002). Twelve samples were analysed for whole rock geochemistry and 30 samples were analysed for 30 trace elements by ICP techniques. Twenty-three samples were analysed for Pt, Pd, Rh, sulphide Ni%, Mg% and Bppm in both hot and cold acid leach. The twelve whole rock samples returned MgO values between 42.6% to 47.5%. Nineteen of the samples contained moderately anomalous nickel values ranging from 1,326ppm to 2,083ppm Ni. No significant values were returned for Pt or Pd. At the request of, and under the direction of Leader, further sampling of the Cogburn Creek and Talc Creek region was conducted in late summer 2001 by Crest Geological Consultants Ltd. personnel. Samples with elevated Ni (1,000ppm to 2,000ppm) and significant Mg% values (from 22.0% to 29.5%) were found in the ultramafic rocks. Three separate areas were sampled. Three samples were collected from the southeast extension of the north ultramafic body, six samples were collected from the northwestern end of the main ultramafic body (Teuton Resources Corporation area northwest of the Emory Zone) and two samples were collected from outcrop along the northern margin of the main ultramafic body. Three stream sediment samples were also collected and analyzed for trace elements. The results corroborated earlier sampling by Leader personnel in the Daioff Creek and the Emory Zone areas, which indicated the widespread distribution of Mg-rich ultramafic rocks and persistent low grade Ni sulphides throughout the study area.

To 2001, there was no record of magnesium exploration on any of the ultramafic bodies in the areas of the Giant Mascot mine or Cogburn/Talc Creeks. The 2001 and 2002 work programs, undertaken by Leader, aimed at identifying the magnesium potential of ultramafic silicates in the area was the first of its kind in the region and potentially, the first of its kind in the province of British Columbia. Upon discovery of high-grade magnesium over an extensive area, Leader redirected its exploration efforts from nickel to magnesium. At the request of Leader, Crest Geological Consultants Ltd. carried out two phases of magnesium exploration during the fall of 2001. Surface geological mapping and surface rock sampling of the two ultramafic bodies located on Leader's claims was carried out over a 13 day period from September 15th to September 27th, 2001. Also, Leader completed 26 core holes (1,360 meters) along a 7 km strike length of the ultramafic body (dunite) in the Talc Creek Valley in November and December 2001. The purpose of the drilling was to identify the areas highest in magnesium grade and least "contaminated" from elements such as calcium, iron, sulfur, boron and nickel. The area selected as the "best" was at the Emory Zone on the west side of East Talc Creek approximately 1.4km northwest of the junction of Daioff Creek. This successful property exploration resulted in Leader commissioning Hatch Limited to conduct a Scoping Study on the development of a magnesium reduction plant in the region. The Cogburn Project Scoping Study (February 2002) yielded a positive result and recommended that feasibility level activities be conducted in 2002 toward completion of a Production Feasibility Study.

Leader commenced deposit development core drilling April 26, 2002 in the Emory Zone and finished on June 3, 2002. A total of 34 core holes were drilled (ranging in depth from 50 meters to 80 meters) for a total of 1,904 meters. Five holes were stopped short of the target depth due to faulting. A total of 617 core samples were collected in 2002. All core samples were submitted to Acme Analytical Laboratories Ltd., Vancouver for whole rock and trace element (ICP) analyses.

The 2001 and 2002 core drilling by Leader in the Emory Zone defined a magnesium resource of 25.5 million metric tons grading 24.6% Mg using a specific gravity 2.85 tonnes/m3. In April 2003 Hatch Limited released the Production Feasibility Study and it showed that the Project was technically feasible and economically viable if developed as a quarry at the Emory Zone with ore transported to a magnesium reduction plant to be located at Ruby Creek near Highway 7. The capital cost of the 131,000 metric ton per annum plant (magnesium metal and alloys) was estimated to be US$1.24 billion.

1.5 Work Performed

Leader, through its wholly owned subsidiary NPAL continues to work on: (1) surface land acquisition in the proposed magnesium reduction plant area at Ruby Creek, and (2) Project development BCEA permitting ($1.3 billion project). In addition, in late 2005 management recommended to the Board of Directors that exploration for nickel, copper and PGEs be recommenced in parallel with the development of the Cogburn Magnesium Project. The recommendation was approved, resulting in an airborne geophysical survey (Aeroquest) over NPAL's entire Emory Zone claim holdings and some limited ground follow-up on one of the primary EM anomalies identified by the survey (see Figure 9).

The 2005/2006 mineral exploration program included: (1) road development and maintenance, (2) airborne geophysics, (3) surface sampling, and (4) a three metric ton bulk sample of magnesium ore from the Emory Zone deposit.

This Report was assembled and edited by John A. Chapman, B.Sc., P.Eng. David K. Makepeace, M.Sc., P.Eng. provided technical support in completing Sections 3, 4 and 5. Appendix II was authored by Aeroquest Limited.

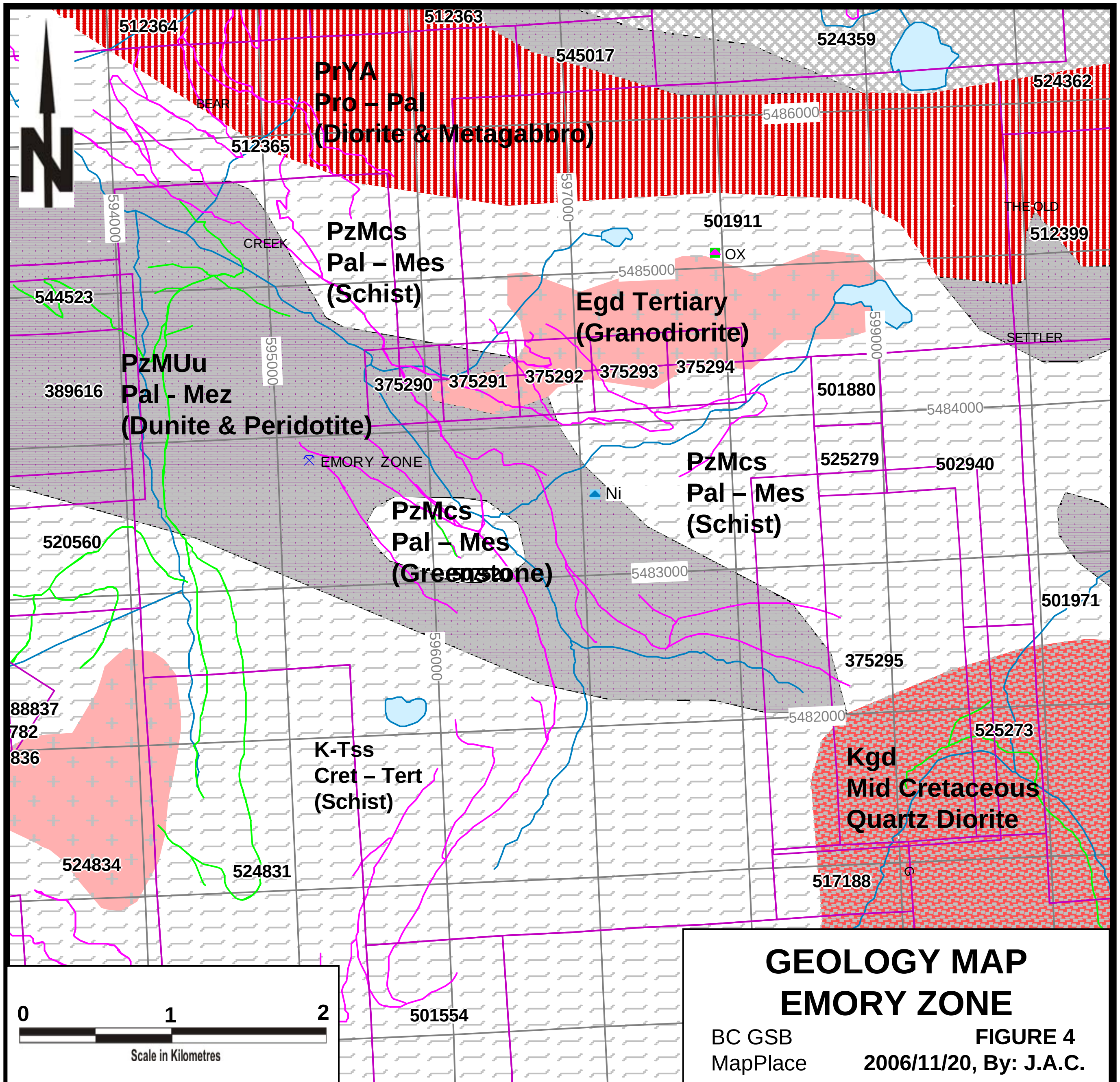
1.6 Personnel

Field work was carried out on the Emory Zone claims by John A. Chapman, B.Sc., P.Eng. (Mining Engineer), David K. Makepeace, M.Sc., P.Eng. (Geological Engineer and Environmental Engineer), Peters Contract Falling (contract labour and equipment), Grant Carlson (UBC Mining Student) and Jeremy Taylor (UBC Agriculture Student). In addition, Aeroquest provided full personnel support for their airborne geophysical survey work.

2.0 GEOLOGY

2.1 Regional Geology (after Payne, 2002)

The regional geology of the project area has traditionally been subdivided into three north to northwest-trending tectono-stratigraphic packages intruded by mid-Cretaceous age stocks and plutons of the Coast Plutonic Complex. Age relationships, litho logical associations and metamorphic grade distinguish the tectono-stratigraphic packages which are stacked from west to east along faulted, layer-parallel contacts and include: the Solicit Schist, the Cogburn Group and the Settler Schist. Regionally, the area is significant as these units mark the boundary between Juro-Cretacteous arc-related assemblages to the west and Palaeozoic oceanic rocks to the east.



GEOLOGY MAP
EMORY ZONE

BC GSB
MapPlace

FIGURE 4
2006/11/20, By: J.A.C.

The Slollicum Schist-Cogburn Group contact also has been suggested to be a remnant of the main suture between the Alexander/Wrangellia terraine and North America (McGroder, 1991; Journey and Friedman, 1993; see Figure 4).

The Slollicum schist is described as a mid-Jurassic to early Cretaceous age, greenschist facies volcanic-sedimentary succession of meta-phyllite, psammite and schists of mafic to felsic volcanic origin (Troost, 1999). Age dates from the unit include 102 Ma (Bennett, 1989) and 146 Ma (Parish and Monger, 1992). A sill from the unit is dated at 157 Ma and suggests that portions of this unit may be older than mid-Jurassic. The younger parts of this succession are correlated to the Gambier Group on the west side of Harrison Lake, and the older parts of the succession are correlated to calc-alkaline arc-related volcanic and sedimentary rocks of the Harrison Lake Terrain.

The Cogburn Group, which lies structurally above and to the northeast of the Slollicum schist, is an ophiolitic melange comprised of Triassic or older, chlorite-amphibole schist (mafic volcanic), grey meta-phyllite and metamorphosed ribboned chert. Gabites (1985) and Bennett (1989) include the Baird metadiorite with the Cogburn Group rocks. Mapping conducted by Payne in 2001 suggests that ultramafic rocks on the Cogburn property should be included with the Baird metadiorite in the Cogburn Group, and not with the Cretaceous intrusive suite. The upper age limit of the Cogburn Group is constrained by a 225 Ma orthogneiss (Monger, 1989) which intrudes the package. Metamorphism ranges from upper greenschist to amphibolite grade. Gabites (1985) correlates the Cogburn Group with oceanic rocks of the Bridge River-Hozameen Terraines to the east and north and the Yellow Aster complex of the North Cascades to the south.

The Settler Schist is a pellitic unit lying east and structurally above the Cogburn Group. Metamorphism is amphibolite facies and locally up to sillimanite grade. The age of the Settler Schist is unknown. Monger, 1991 correlated the Settler schist with the Darrington phyllite of the Shuksan Suite in northwest Washington.

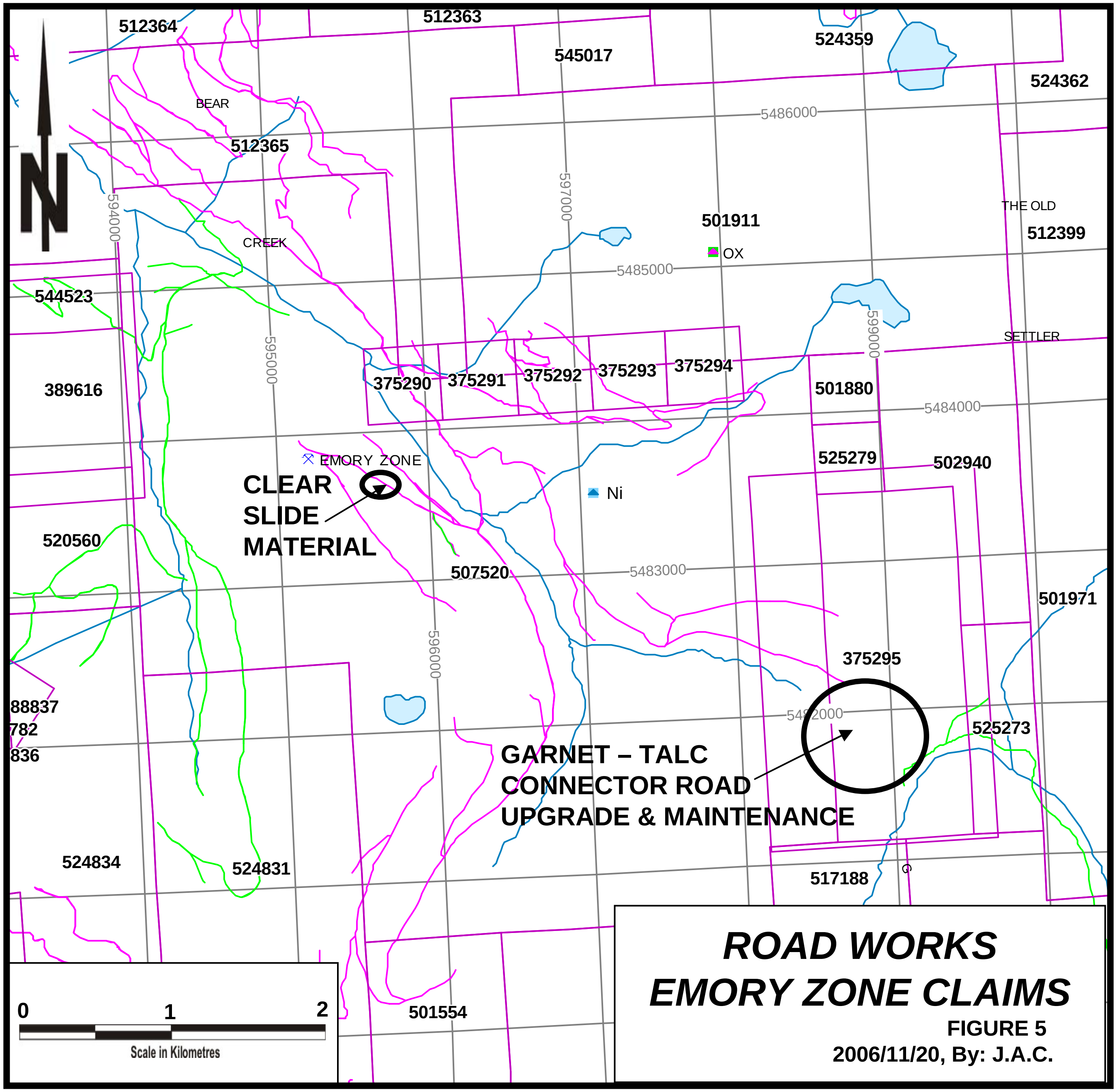
2.2 Property Geology

The Emory Zone geology is adequately described in the regional geology above – the reader should make specific reference to Figure 4 for detailed geological contacts within the Property. In addition, Payne 2002 describes the Property geology in extensive detail and no new geological knowledge has been gained since Payne’s work.

3.0 ROAD DEVELOPMENT AND MAINTENANCE

Road development and maintenance within the Emory Zone claims, under the supervision of David K. Makepeace (Geospectrum Engineering), was conducted during 2005 and 2006 in order to facilitate efficient access to: (1) the magnesium deposit for further geological and engineering work, and (2) the exploration areas (for surface prospecting) related to the 2006 airborne geophysical survey. See Figure 5.

Refer to Appendix I for a map and photographs of the road work.



ROAD WORKS EMORY ZONE CLAIMS

FIGURE 5

2006/11/20, By: J.A.C.

4.0 AIRBORNE GEOPHYSICS

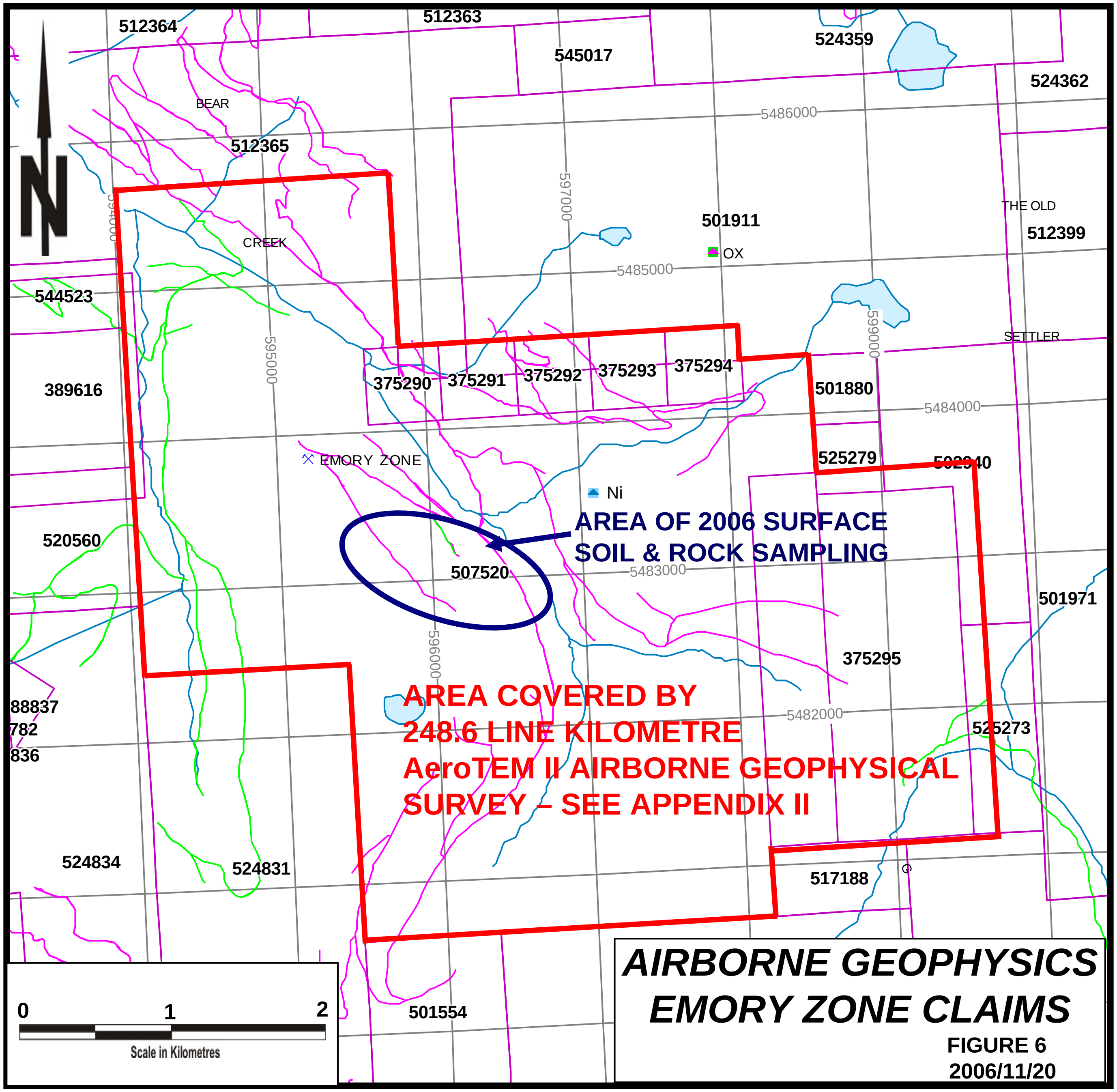
In order to further evaluate the economic potential for base metal and precious metal discovery in the highly mineralized (magnesium and nickel) area of the Emory Zone it was decided by NPAL management, in late 2005, to conduct further geosciences surveys. The opportunity arose in early 2006 to cooperate with other mineral companies working in the area to be part of a regional airborne geophysical program to be conducted by Aeroquest Limited. NPAL participated by having 234.2 line kilometres of low-level (~30 metre ground separation) helicopter borne AeroTEM II electromagnetic and magnetometer survey flown to cover the entire 2,158ha Emory Zone claims. The survey was conducted between June 28th and July 1st. See Figure 6.

Several electromagnetic ("EM") and magnetic anomalies were identified. The most striking is a strong and "thick" EM anomaly measuring ~1,500 metres east to west and ~500 metres north to south, centered at UTM NAD83 596,250mE/5,483,000mN (near the junction of East Talc Creek and Daioff Creek - see Figure 9). Some follow-up surface rock sampling was done on this anomaly in late 2006 (see Section 5.0). There are several smaller EM anomalies that occur at or near highs in the tilt derivative of total magnetic intensity. These targets require ground follow-up in 2007 once snow cover is gone. They include the anomalies at: (1) north flank of Mt. McNair near 596,200mE/5,481,250mN, (2) on West Talc Creek near 594,400mE/5,482,750mN, (3) south side of Daioff Creek near 597,300mE/5,484,250mN, and (4) on upper East Talc Creek near 598,100mE/5,482,700. The Mt. McNair area showed some elevated nickel in soils in work done by the Nickel Syndicate (see AR3442). Also, work done by the Nickel Syndicate in the West Talc Creek drainage indicated elevated nickel values in silts (AR2801). The EM anomaly on the south side of Daioff Creek coincides with a portion of the large low-grade nickel deposit defined by the Nickel Syndicate (Eastwood, 1971). The anomalies on upper Talc Creek have been partially tested by core drilling in 2001 (Payne, 2002). Drill hole CR01-21 returned 14.6m of core grading 0.233% nickel, from the bedrock surface to the hole bottom.

Refer to Appendix II to view the Report: "Helicopter-Borne AeroTEM II Electromagnetic & Magnetometer Survey", September 2006, Aeroquest Limited.

5.0 SURFACE ROCK & SOIL SAMPLING

The large EM anomaly near the junction of East Talc and Daioff Creeks, identified by Aeroquest, was prospected on the ground during late September and early October (see Figure 9). The anomaly essentially matches a mapped roof-pendent of metagabbro (mainly hornblende-plagioclase gabbro) surrounded by younger ultramafics (mainly dunite-peridotite). See Figure 4.



AIRBORNE GEOPHYSICS EMORY ZONE CLAIMS

FIGURE 6

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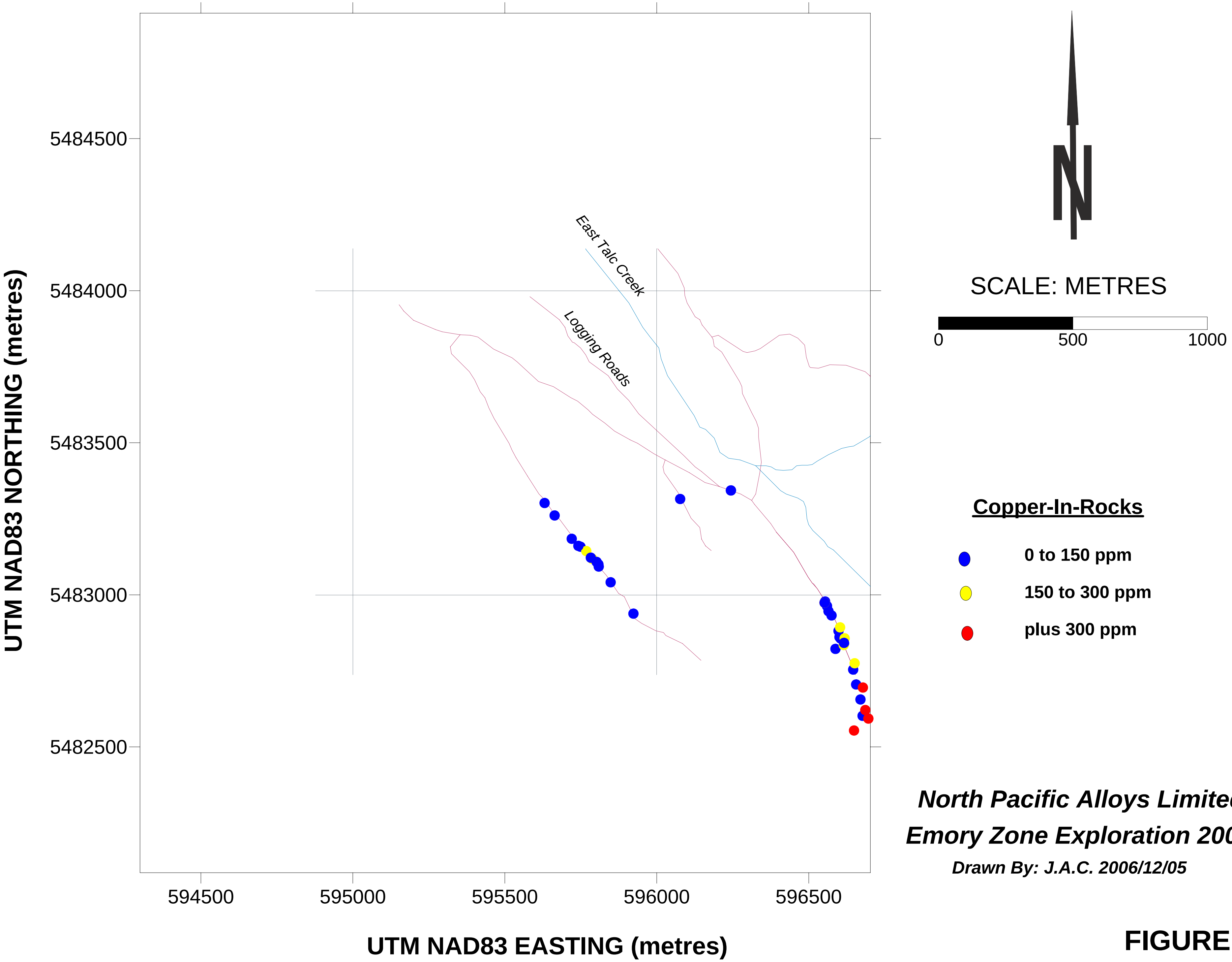
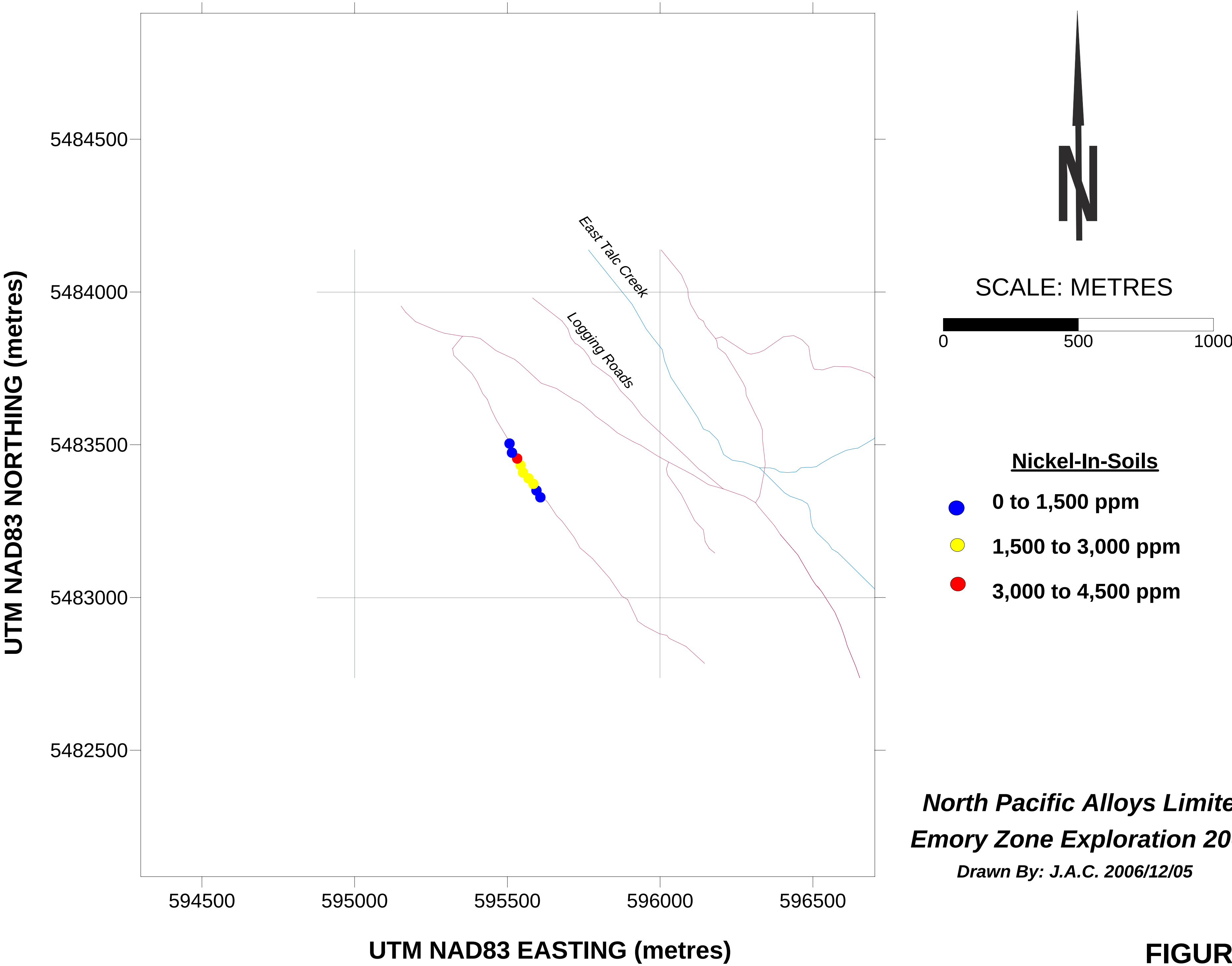


North Pacific Alloys Limited

Emory Zone Exploration 2006

Drawn By: J.A.C. 2006/12/05

FIGURE 7



North Pacific Alloys Limited

Emory Zone Exploration 2006

Drawn By: J.A.C. 2006/12/05

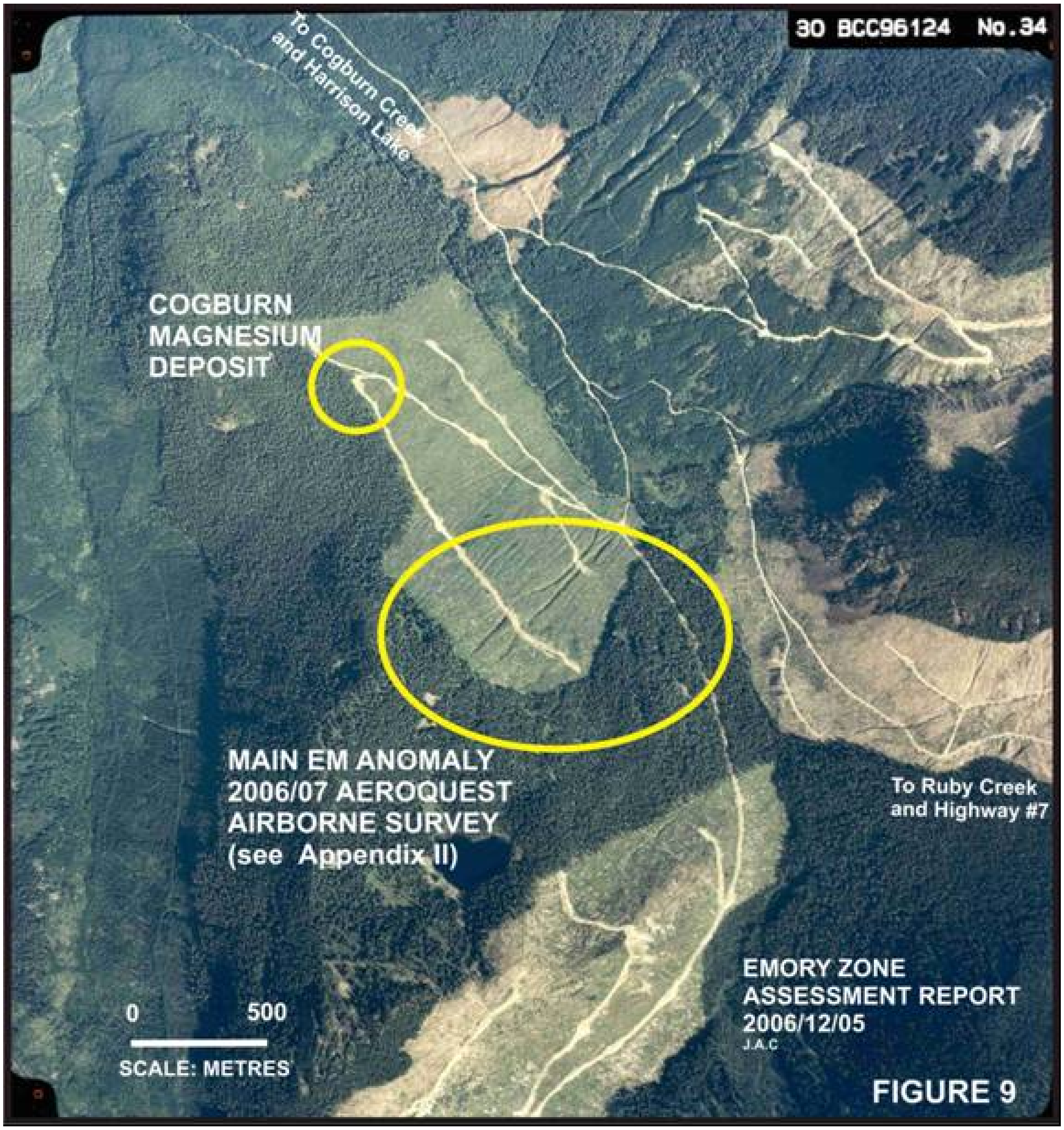
FIGURE 8

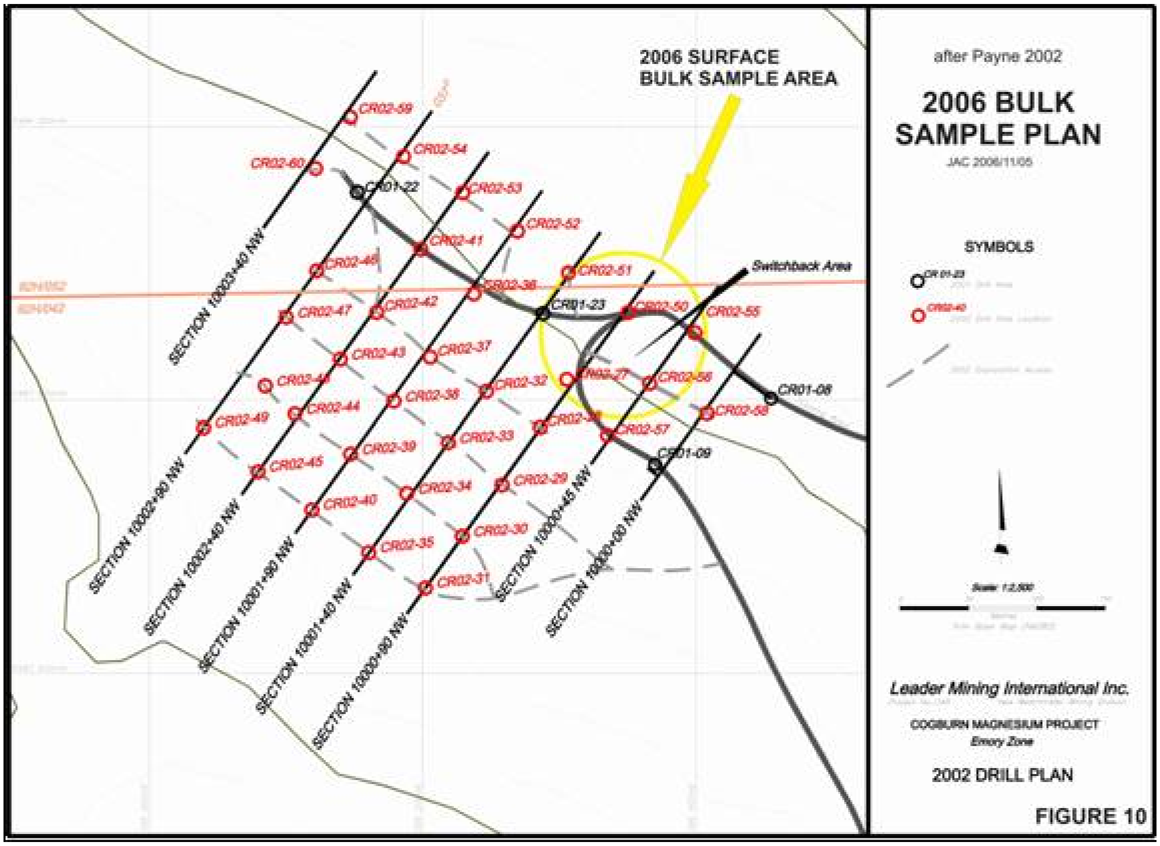
Two Photos of Surface Sampling on Logging Roads within EM Anomaly:

Two parallel logging roads that cross the EM anomaly in a southeast to northwest direction have several rock cuts that facilitate easy assessment of the geology and mineralization (see Figures 7, 8 and 9). Preliminary sampling has revealed pervasive fracture filling pyrrhotite (~4% iron) mineralization in a "net" like texture within the roof-pendent metagabbros. It appears that this iron sulfide is connected sufficiently to make the rock conductive and thereby explains the strong EM anomaly detected. However, in an unrelated discovery, there are elevated levels of copper, zinc, silver and gold in some late stage narrow quartz veins that form an apparent silica rich stock-work in the southeastern portion of the EM anomaly (see Figure 6 and sample assay results and methods in Appendix III). This mineralization was also reported by Payne (2002). The mineralization may emanate from a buried felsic Tertiary intrusive similar to others along the east shore of Harrison, Lake (see MinFile for: Harrison Gold, 092HSW092; Ox, 092HNW041; Golden Bear, 092HSW138; Gem, 092HNW001). The Golden Bear porphyry copper-molybdenum-gold showing is only 5.6km west of the Emory Zone EM anomaly and the Ox skarn iron-copper-gold-silver showing is only 2.5km to the northeast. As part of this work, on follow-up of the EM anomaly, nine soil samples were taken in overburden covered dunites between the northern edge of the anomaly and the south end of the Emory Zone magnesium deposit. Nickel values were ~0.20%, typical of dunites in the area. See Appendix III for assay methods and results.

6.0 MAGNESIUM DEPOSIT BULK SAMPLE

A three metric ton bulk sample of minus 15cm diameter dunite rock was extracted (by hand tools) from the Emory Zone magnesium deposit (See Figures 9 and 10, plus 4 photos). The sample was derived by surface sampling in an area considered to be of "average" tenor and therefore representative of the deposit. The sample has been delivered to the Hope, B.C. drill core storage facility for safe keeping prior to shipment to Ontario for further leaching, precipitation (contaminants), filtration, crystallization, dehydration and electrolysis testing. This work is to further the fine tuning of the process steps for the proposed Cogburn plant (refer to Feasibility Study - Hatch, 2003). The crystallization, dehydration and electrolysis testing will be conducted in Europe (STI/VAMI portions of process). All of the laboratory bench and pilot testing continues to be managed on behalf of NPAL by Hatch Limited, Light Metals Group located in Montreal. Geospectrum Engineering (David K. Makepeace, P.Eng.) of Abbotsford, B.C. handles the geological component of the work including quality assurance and quality control.





Four Photos of 2006 Surface Bulk Sampling at Emory Zone Magnesium Deposit:

7.0 CONCLUSIONS

The Aeroquest airborne geophysical survey identified some interesting anomalies that warrant further ground investigation in 2007.

8.0 RECOMMENDATIONS (for further base and precious metals exploration)

(1) Once 2007 conditions permit (snow is gone) conduct prospecting of the four prospective areas outlined in Section 6. Nickel, Copper and PGEs mineralization is the principal target.

(2) More prospecting work should be done in checking the quartz "stock-work" in the area at and near 596,650mE/5,482,550mN and its possible Tertiary source. Porphyry copper-molybdenum-gold and typical peripheral hydrothermal systems are the principal targets.

(3) Hand trenching should be conducted at adjacent soil samples 924GJ15S and 924GJ16S near 595,530mE/5,483,450mN as they show elevated nickel (and, in one sample, gold). Nickel, Copper and PGEs mineralization is the target here.

9.0 ITEMIZED COST STATEMENT

ACTIVITY	$
Access Road Development & Maintenance	16,000
Airborne Geophysics	39,000
Bulk Sample Emory Zone Magnesium	5,000
Ground Prospecting of Airborne Anomaly	3,800
Technical Support and Reporting	3,000
TOTAL	**$66,800**

10.0 STATEMENT OF QUALIFICATIONS

John Arthur Chapman, Principal
J.A. Chapman Mining Services
18 – 1480 Foster Street
White Rock, BC, Canada V4B 3X7
Ph: 604.536.8356, Fx: 604.536.8351, E-mail: jacms1@telus.net

I, John Arthur Chapman of the City of Surrey, Province of British Columbia, Canada, do hereby certify as follows:

(1) I am a mining engineer residing at 43 - 1725 Southmere Cr., Surrey, British Columbia, Canada V4A 7A7;

(2) I graduated with honours in Mining Technology from the British Columbia Institute of Technology, June 1967;

(3) I graduated with honours in Mining Engineering (B.Sc.) from the Colorado School of Mines, January 1971;

(4) I am a Professional Engineer registered in the Province of British Columbia, Canada, since 1973;

(5) I am a Fellow of the Canadian Institute of Mining and Metallurgy;

(6) I have practised my profession continuously since 1973 in Canada and abroad;

(7) Since 1983 I have provided services to the mining industry as the Principal of J.A. Chapman Mining Services;

(8) I have personal knowledge of the Cogburn Emory Zone property having visited the site more than twenty times since 2001, and as recent as October 2006;

(9) I am not independent of the Cogburn Emory Zone property as I directly own a 1.5% NSR interest in any mineral production from the Property, and I am Project Manager of the Cogburn Magnesium Project;

(10) I am a co-author of the Report entitled, "Assessment Report on Road Development/Maintenance, Airborne Geophysics, Surface Sampling and Bulk Sample of Emory Zone Magnesium Deposit, Emory Zone Mineral Property", dated December 5, 2006.

Dated at White Rock, British Columbia this 5th day of December 2006.

John Arthur Chapman, B.Sc., P.Eng., FCIM

David Kent Makepeace, M.Eng., P.Eng., Principal
Geospectrum Engineering
2588 Birch Street
Abbotsford, BC, Canada V2S 4H8
Ph: 604-853-9226, Fax: 604-853-9226, E-mail: dmakepeace@telus.net

I, David Kent Makepeace of the City of Abbotsford, Province of British Columbia, Canada, do hereby certify as follows:

1. I am a geological engineer residing at 2588 Birch Street, Abbotsford, British Columbia, Canada V2S 4H8;

2. I graduated with a Bachelor of Applied Science honours degree in Geological Engineering from Queen's University at Kingston, Ontario in 1976. In addition, I have obtained a Master of Engineering degree in Environmental Engineering from the University of Alberta in 1994;

3. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia and the Association of Professional Engineers, Geologists and Geophysicists of Alberta;

4. I have worked as a geological engineer for a total of 28 years since my graduation from university;

5. Since 1998 I have provided services to the mining industry as the Principal of Geospectrum Engineering;

6. I have personal knowledge of the Cogburn Emory Zone property having visited the site numerous times since 2001, and as recent as October 2006. I have completed several internal reports and NI 43-101 technical reports on the Cogburn Emory Zone property;

7. I am independent of the Cogburn Emory Zone property owners and North Pacific Alloys Limited (leader Mining International Inc., however I am Senior project Engineer of the Cogburn Magnesium Project;

8. I am a co-author of the Report entitled, "Assessment Report on Road Development/Maintenance, Airborne Geophysics, Surface Sampling and Bulk Sample of Emory Zone Magnesium Deposit, Emory Zone Mineral Property", dated December 5, 2006.

Dated at Abbotsford, British Columbia this 5th day of December 2006.

David Kent Makepeace, M.Eng., P.Eng.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
D. K. MAKEPEACE

11.0 REFERENCES

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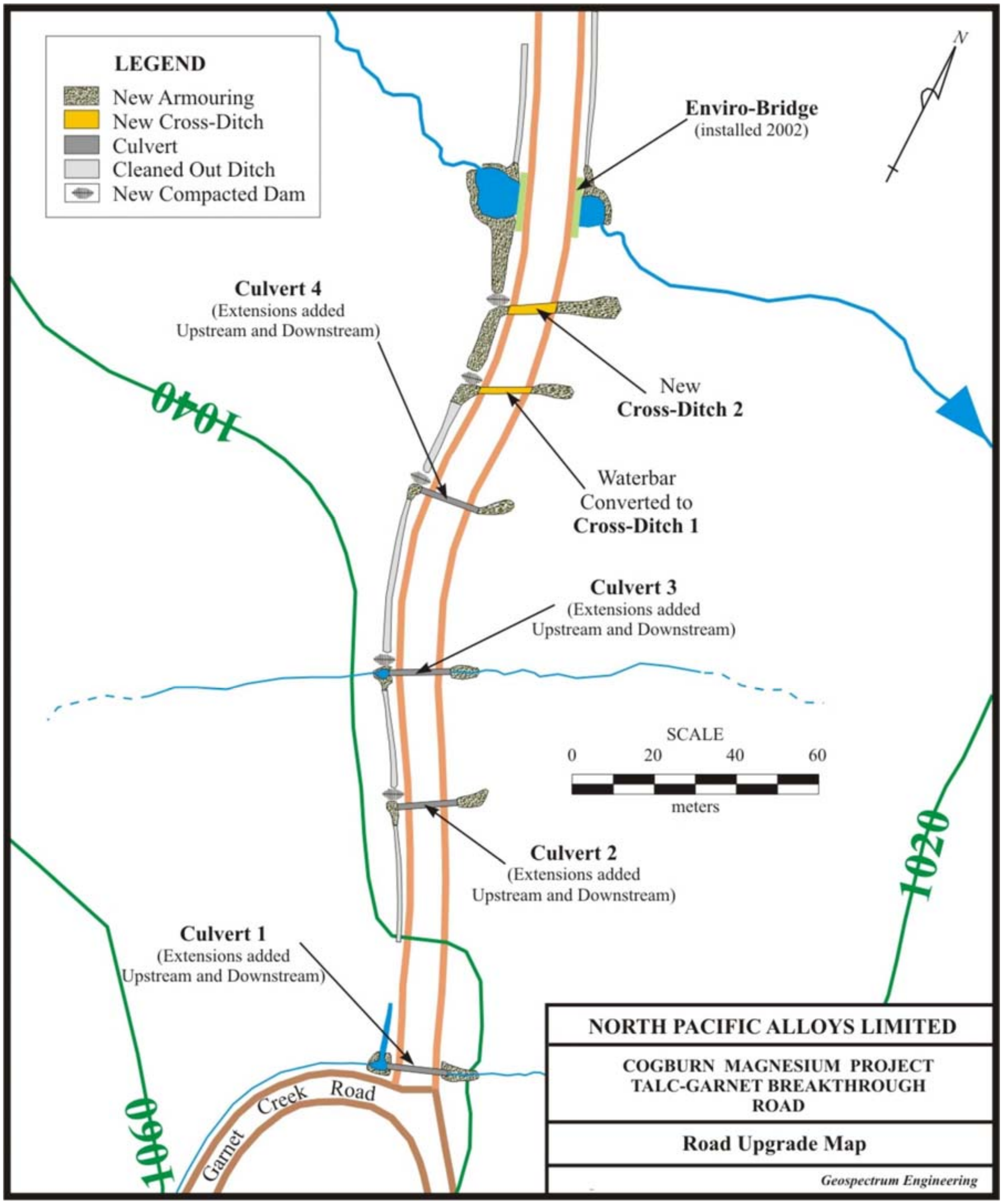
APPENDIX I

PHOTOS OF ROAD DEVELOPMENT & MAINTENANCE FALL 2005 AND SUMMER 2006


LEGEND
New Armouring
New Cross-Ditch
Culvert
Cleaned Out Ditch
New Compacted Dam
N
Enviro-Bridge
(installed 2002)
Culvert 4
(Extensions added
Upstream and Downstream)
New
Cross-Ditch 2
1040
Waterbar
Converted to
Cross-Ditch 1
Culvert 3
(Extensions added
Upstream and Downstream)
SCALE
0 20 40 60
meters
Culvert 2
(Extensions added
Upstream and Downstream)
1020
Culvert 1
(Extensions added
Upstream and Downstream)
Garnet Creek Road
1060
NORTH PACIFIC ALLOYS LIMITED
COGBURN MAGNESIUM PROJECT
TALC-GARNET BREAKTHROUGH
ROAD
Road Upgrade Map
Geospectrum Engineering

Culvert No. 1

Culvert Inlet Extension

Culvert Outlet Extension

Culvert Inlet Armouring

Culvert Outlet Armouring

Culvert Inlet Armouring

Culvert Outlet Armouring

Breakthrough Road

Ditch Clean-out Slope Contouring

Ditch Clean-out Slope Contouring

Culvert No. 2


Culvert Inlet Sediment Trap and Armouring


Culvert Outlet Armouring


Culvert Inlet Ditch Block and Armouring


Culvert Outlet Armouring

Culvert No. 3


Culvert Inlet Sediment Trap and Armouring


Culvert Outlet Armouring


Culvert Inlet Ditch Block and Armouring


Culvert Outlet Armouring

Culvert No. 4

Culvert Inlet Sediment Trap and Armouring

Culvert Outlet Armouring

Culvert Inlet Ditch Block and Armouring

Culvert Outlet Armouring

Cross-Ditch No. 1

Ditch Inlet Armouring

Ditch Outlet Armouring

Ditch Inlet Ditch Block and Armouring

Ditch Outlet Armouring

Cross-Ditch No. 2

Inlet Ditch Block and Armouring

Ditch Outlet Armouring

Inlet Ditch Block and Armouring

Enviro-Bridge

Ditch Armouring

Ditch Armouring

Ditch Armouring

Ditch Armouring

Enviro-Bridge

Stream Inlet Sediment Trap and Armouring

Stream Outlet Sediment Trap and Armouring

Stream Inlet Sediment Trap and Armouring

Ditch Clean-out and Armouring

Revegetation

Gary Peters Seeding Contoured Slope

Gary Peters Seeding

CLEARING SLIDE AREA NEAR EMORY ZONE MG DEPOSIT

APPENDIX II

AEROQUEST LIMITED
EMORY ZONE PROPERTY
AEROTEM II GEOPHYSICAL REPORT

Report on a Helicopter-Borne AeroTEM II Electromagnetic & Magnetometer Survey

Aeroquest Job # 07019

Emory Property

Southern British Columbia

NTS 92H05, 12

for

Leader Mining International Inc.

by

AEROQUEST LIMITED

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

Report Date: September, 2006

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

Aeroquest Job # 07019

Emory Property

Southern British Columbia

NTS 92H05, 12

For

Leader Mining International Inc.

Suite 810-400 5th Ave. S.W., Calgary, Alberta - T2P 0L6

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September, 2006

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1.3. List of Maps (1:10,000)

- **MAG -** Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- **TDR –** Tilt Derivative of TMI with line contours and EM anomaly symbols.
- **ZOFF –** AeroTEM Z3 Off-Time with line contours and EM anomaly symbols.
- **EM** – EM profiles channels 5-15 with EM anomaly symbols.

2. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Leader Mining International Inc. (hereafter Leader Mining) on the Emory property , Southern 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, video recorder, 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 kms presented in the maps and data totalled 248.6, of which 237.2 km fell within the project area. The survey flying described in this report took place on June 28th and July 1st, 2006.

3. SURVEY AREA

The project area is located approximately 20km northwest of Hope, BC and 120 kms east of Vancouver (92H05, 12) (Figure 1. Regional location map of the project area. Harrison Lake lies 10km to the west of the area. There is good accessibility to the property with Highway 1 (the Trans-Canada Highway) running to the east and south of the area through Hope. Highway 7 is also closeby as are a number of smaller roads.

The survey consisted of one block, the Cogburn Enory property, with an area of just over 20km² (Figure 2). The survey terrain is mountainous with elevations ranging from approximately 500 to 2000 m. There are 10 mining claims either wholly or partly within the project area. They are outlined in Table 1.

The field crew was based at the town of Hope, British Columbia. The base of operations was at the Company Helicopter hangar in Hope and the base magnetometer was located a few hundred metres from here.

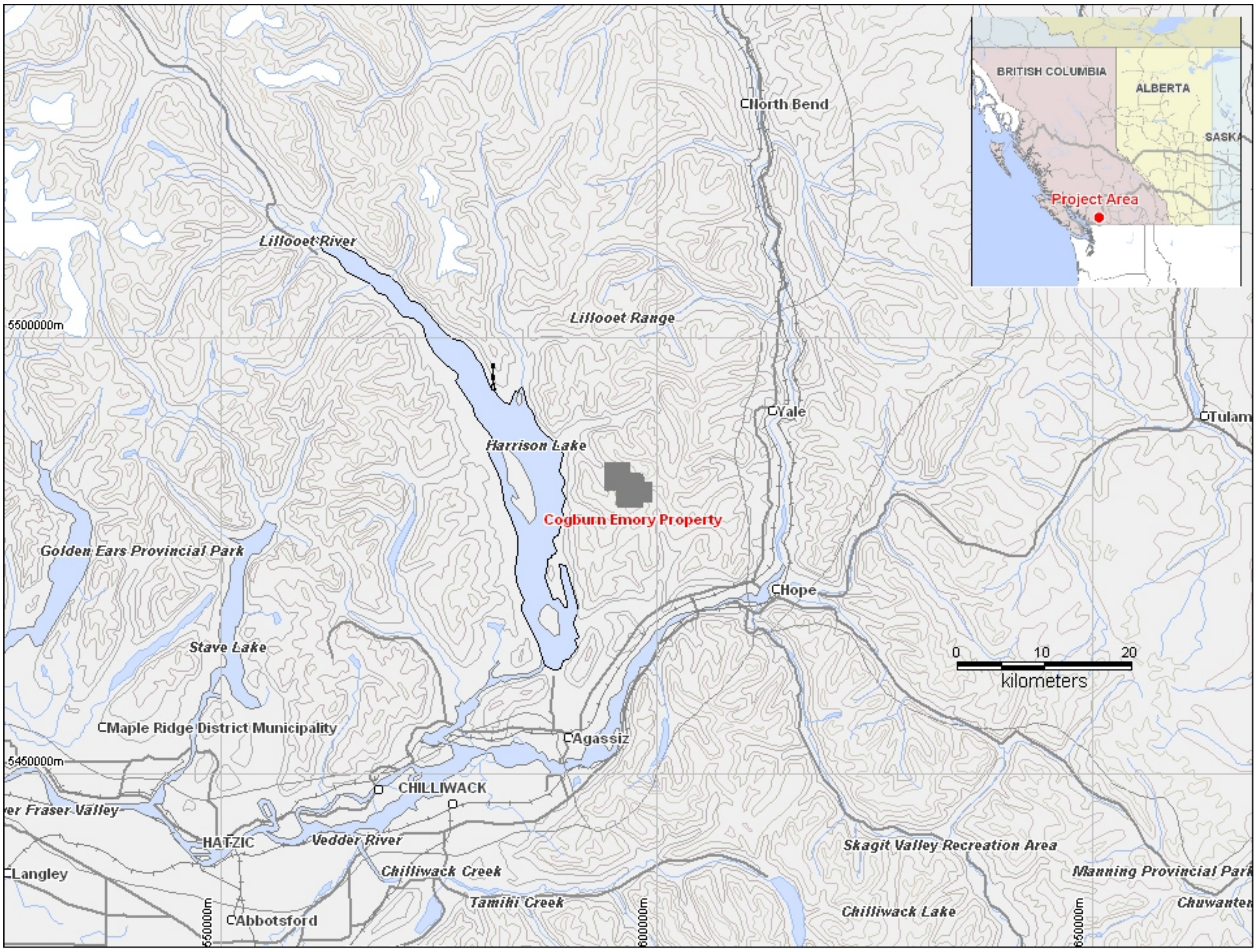


Figure 1. Regional location map of the project area.

Tenure Number	Claim Name	Owner	Good To Date	Mining Division	Area (ha)
375290	COG 11	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	25.0
375291	COG 12	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	25.0
375292	COG 13	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	25.0
375293	COG 14	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	25.0
375294	COG 15	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	25.0
375295	COG 3	JOHN ARTHUR CHAPMAN	2006/SEP/30	NEW WESTMINSTER	375.0
507520		JOHN ARTHUR CHAPMAN	2006/SEP/30		1657.64
517188	BIG NIC NW	PACIFIC COAST NICKEL CORP.	2007/JUL/12		41.984
501911		606896 BC LTD	2006/OCT/28		671.205
512365		606896 BC LTD	2006/OCT/28		545.247

Table 1. Mining Claims in the area

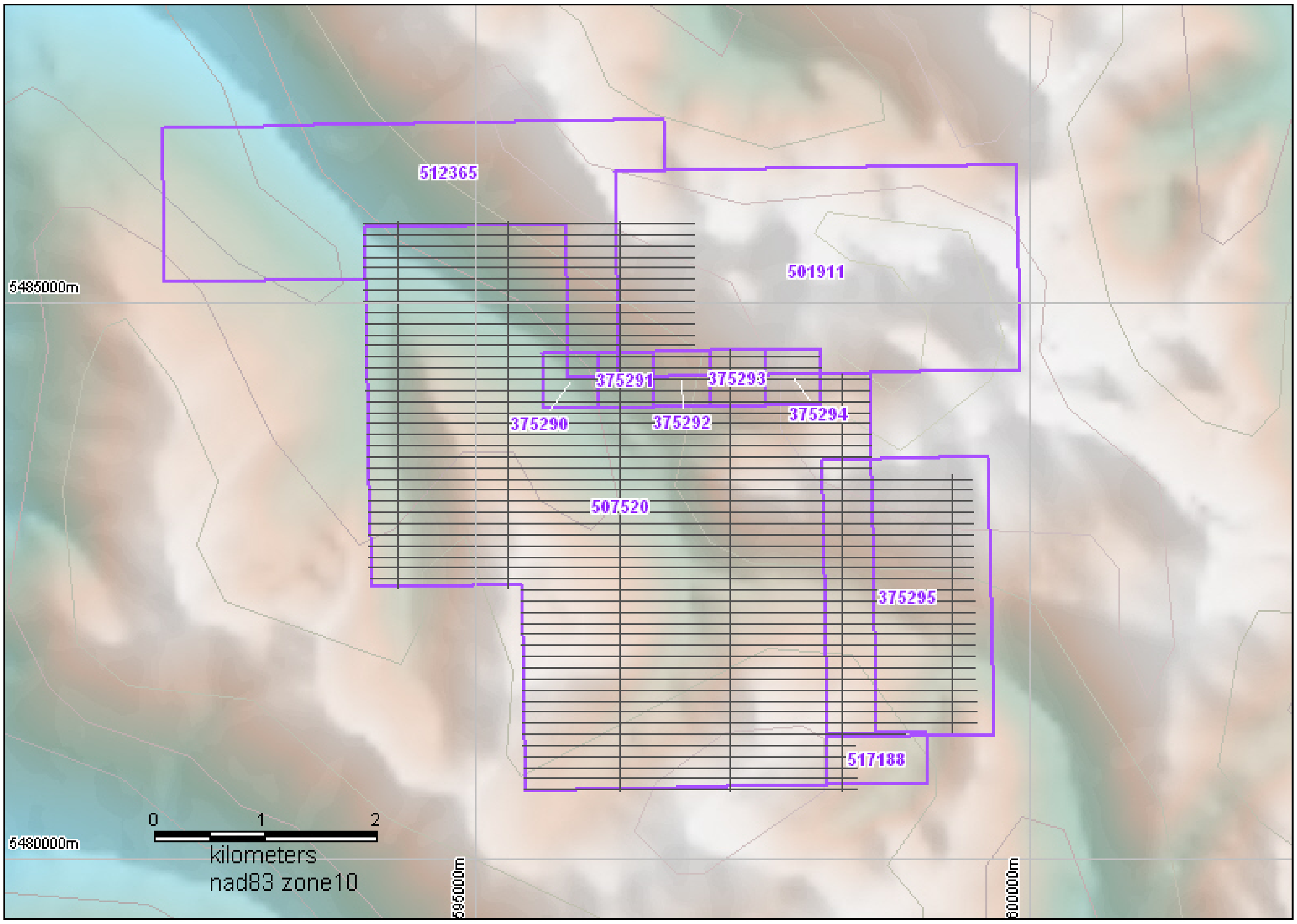


Figure 2. Project Flight Paths and mining claims

4. LOCAL GEOLOGY & PREVIOUS WORK

(Source: Leader Mining Web site - http://www.leadermining.com/Cogburn_technical_report_20041215.pdf , August, 2006)

History

In 1971, Giant Explorations Ltd. (a subsidiary of Giant Mascot Mines Ltd.) discovered a nickel deposit in the Talc Creek area while conducting a wide area airborne geophysical and stream silt geochemistry program (MINFILE No. 092HSW081). The survey area identified a number of ultramafic intrusions covering a 12 kilometre wide swath from theGiant Mascot nickel-copper-cobalt mine north of Hope to Harrison Lake to the northwest. This preliminary work was followed by grid surveys over the present Cogburn deposit area including soil geochemistry, magnetics and rock chip sampling and then core drilling between 1971 and 1975. No further work was carried out due to the low grade of the nickel deposit.

The area was staked by Mr. J. A. Chapman and KGE Management Ltd. (Mr. G. G.Carlson) in 2000 in the hope that platinum group elements (PGE) were present within the ultramafic rocks encompassed by the claims. Leader Mining International Inc. signed an option agreement with Mr. Chapman and KGE Management Ltd. to explore and develop the Cogburn Magnesium Project. It was subsequently discovered that the ultramafic rocks contained a very high-grade magnesium content. Initial drilling in 2001 identified a high-grade and high purity magnesium area within the ultramafic rocks which was subsequently named the Emory Zone (MINFILE No. 092HNE307). The drilled portion of the Emory Zone is approximately 350 metres by 250 metres at an elevation of 1000 metres. Hatch Limited, the world's leading light metals consulting engineering firm completed a Scoping Study in October 2001, culminating in a Feasibility Study in May 2003. The results of the test work and engineering studies indicated that "the Cogburn Project is technically feasible and economically viable".

Regional Geology

The regional geology of the Cogburn area is subdivided into three north to northwest trending tectonic and stratigraphic packages. These packages (Slollicum Schist, the Cogburn Group and the Settler Schist) are intruded by mid-Cretaceous age intrusive stocks of Coast Plutonic Complex. These units are separated from each other by faulted, layer-parallel contacts and are distinguished by age, lithological associations and metamorphic grade. This area is significant because these units mark the boundary between Jurassic/Cretacteous island arc rocks to the west and Palaeozoic oceanic rocks to the east. The Slollicum Schist-Cogburn Group contact has also been suggested to be a remnant of the main suture between the Alexander/Wrangellia terraine and North America (McGroder, 1991; Journey and Friedman, 1993).

The Slollicum schist is described as a mid-Jurassic to early Cretaceous age, greenschist facies volcanic-sedimentary succession of meta-phyllite, psammite and schists of mafic to felsic volcanic origin (Troost, 1999). Age dates from the unit include 102 Ma (Bennett, 1989) and 146 Ma (Parish and Monger, 1992).

The Cogburn Group, which lies structurally above and to the northeast of the Slollicum schist, is an ophiolitic mixture comprised of Triassic or older, chlorite-amphibole schist (mafic volcanic), grey meta-phyllite and metamorphosed ribboned chert. The Baird metadiorite is sometimes included in Cogburn Group (Gabites, 1985 and Bennett ,1989).

The upper age limit of the Cogburn Group is constrained by a 225 Ma orthogneiss (Monger, 1989) which intrudes the package. Metamorphism ranges from upper greenschist to amphibolite grade. Mapping indicates that the ultramafic rocks which comprise the Cogburn Magnesium Project (Emory Zone) should be included with the Baird metadiorite in the Cogburn Group, and not with the Cretaceous Slollicum intrusive suite (Payne, 2001).

The Settler Schist is a pellitic unit lying east and structurally above the Cogburn Group. Metamorphism is amphibolite facies and locally up to sillimanite grade. The age of the Settler Schist is unknown.

5. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarized in the following table:

Survey Block	Line Spacing (m)	Line direction	Survey Coverage (line-km)	Dates Flown
Emory	100	E-W (90º)	248.6	June 30th - July 1st, 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, 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 sensor is mounted in a compartment located on the tail of the AeroTEM II system, 37 metres below the helicopter (Figure 5). 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.

5.1. 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 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.

5.2. 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.

5.3. 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.

6. AIRCRAFT AND EQUIPMENT

6.1. Aircraft

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-GPTY was used as survey platform (Figure 3). The helicopter was owned and operated by Hi-Wood Helicopters, Okotose, Alberta. The survey aircraft was flown at a nominal terrain clearance of 220 ft (70 m).

Figure 3. Survey helicopter C-GPTY.

6.2. Magnetometer

The Aeroquest airborne survey system employs the Geometrics G-823A cesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 17 metres below the helicopter (Figure 4A). 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 10Hz by the RMS DGR-33.

6.3. Electromagnetic System

The electromagnetic system is an AeroQuest AeroTEM© II time domain towed-bird system (Figure 4B). The current AeroTEM© transmitter dipole moment is 38.8 kNIA. The AeroTEM© bird is towed 38 m (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), 128 contiguous channels of raw x and z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 26.04 microseconds starting at the beginning of the transmitter pulse. This 128 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.

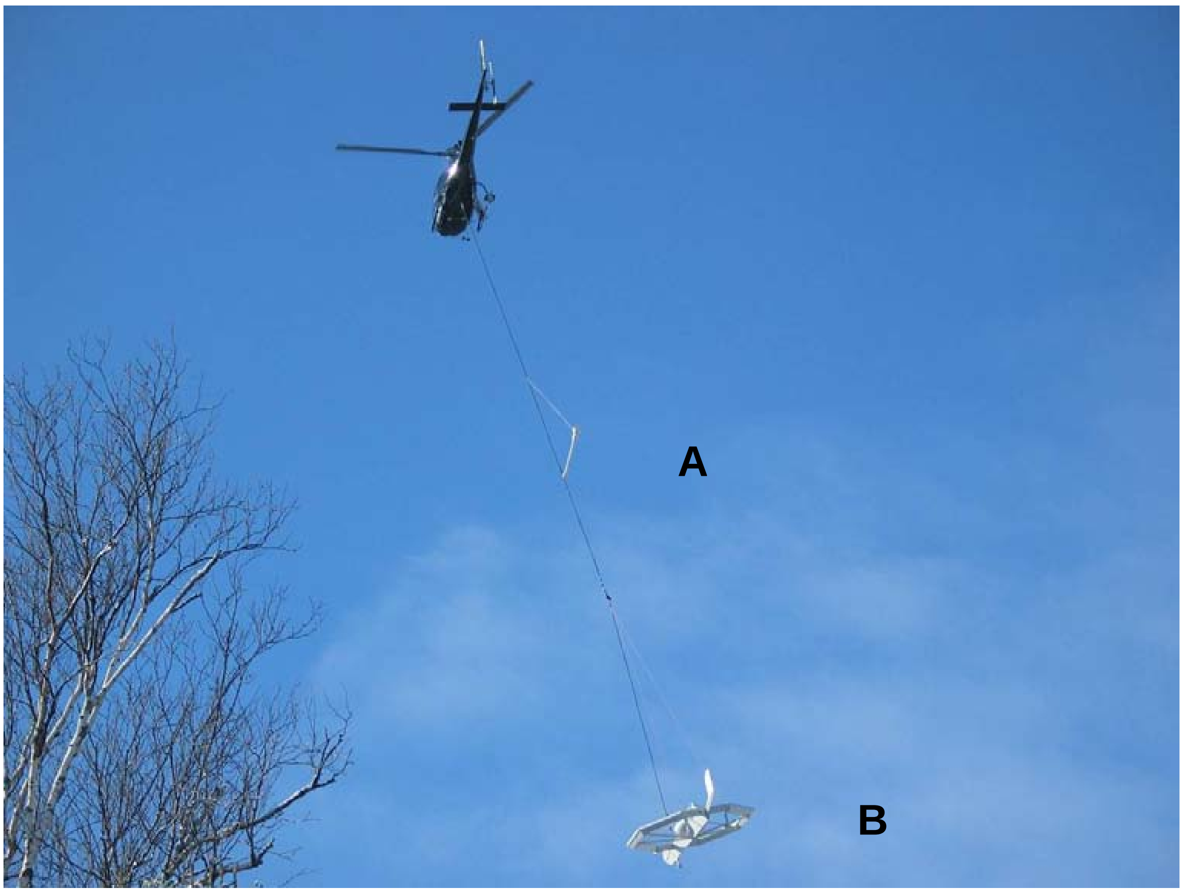


Figure 4. The magnetometer bird (A) and AeroTEM II EM bird (B)

Figure 5. The magnetometer (A) located on the tail of the AeroTEM II EM bird

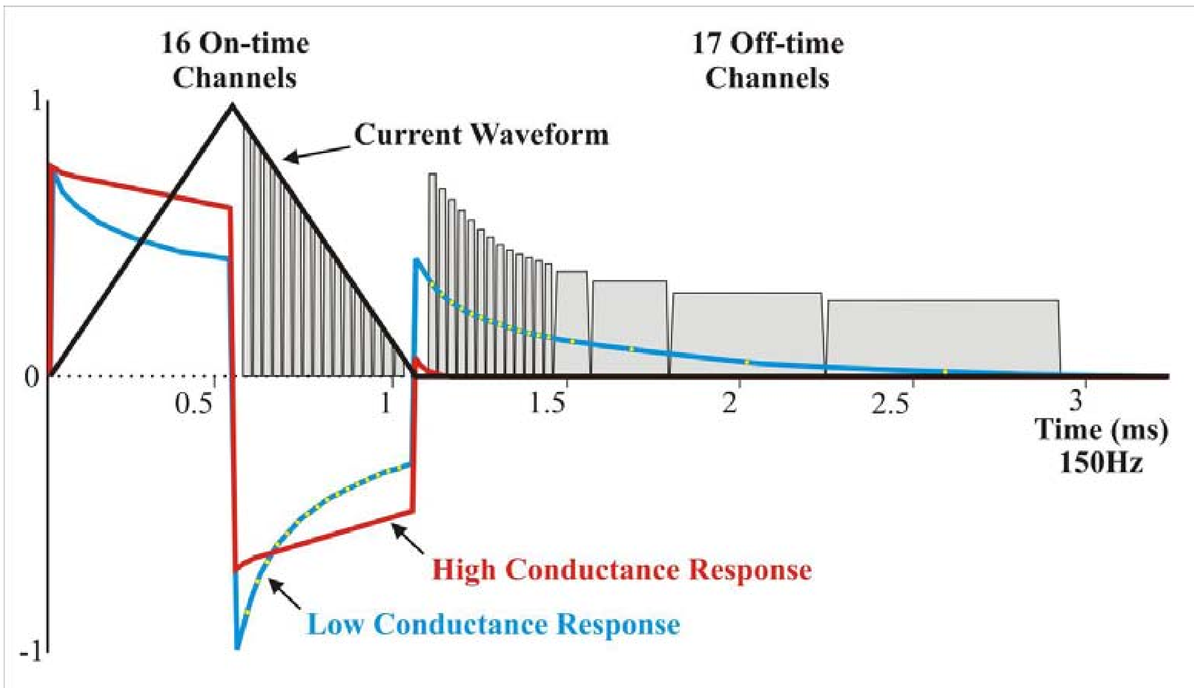


Figure 6. Schematic of Transmitter and Receiver waveforms

6.4. AERODAS Acquisition System

The 128 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:

Channel:	Start Gate	End Gate	Start (us)	Stop (us)	Mid (us)	Width (us)
1 ON	25	25	651.0	677.0	664.0	26.0
2 ON	26	26	677.0	703.1	690.1	26.0

3 ON	27	27	703.1	729.1	716.1	26.0
4 ON	28	28	729.1	755.2	742.1	26.0
5 ON	29	29	755.2	781.2	768.2	26.0
6 ON	30	30	781.2	807.2	794.2	26.0
7 ON	31	31	807.2	833.3	820.3	26.0
8 ON	32	32	833.3	859.3	846.3	26.0
9 ON	33	33	859.3	885.4	872.3	26.0
10 ON	34	34	885.4	911.4	898.4	26.0
11 ON	35	35	911.4	937.4	924.4	26.0
12 ON	36	36	937.4	963.5	950.5	26.0
13 ON	37	37	963.5	989.5	976.5	26.0
14 ON	38	38	989.5	1015.6	1002.5	26.0
15 ON	39	39	1015.6	1041.6	1028.6	26.0
16 ON	40	40	1041.6	1067.6	1054.6	26.0
0 OFF	44	44	1145.8	1171.8	1158.8	26.0
1 OFF	45	45	1171.8	1197.8	1184.8	26.0
2 OFF	46	46	1197.8	1223.9	1210.9	26.0
3 OFF	47	47	1223.9	1249.9	1236.9	26.0
4 OFF	48	48	1249.9	1276.0	1262.9	26.0
5 OFF	49	49	1276.0	1302.0	1289.0	26.0
6 OFF	50	50	1302.0	1328.0	1315.0	26.0
7 OFF	51	51	1328.0	1354.1	1341.1	26.0
8 OFF	52	52	1354.1	1380.1	1367.1	26.0
9 OFF	53	53	1380.1	1406.2	1393.1	26.0
10 OFF	54	54	1406.2	1432.2	1419.2	26.0
11 OFF	55	55	1432.2	1458.2	1445.2	26.0
12 OFF	56	56	1458.2	1484.3	1471.3	26.0
13 OFF	57	60	1484.3	1588.4	1536.4	104.2
14 OFF	61	68	1588.4	1796.8	1692.6	208.3
15 OFF	69	84	1796.8	2213.4	2005.1	416.6
16 OFF	85	110	2213.4	2890.4	2551.9	677.0

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 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 (microsec)	End time (microsec)	Width (microsec)	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. Includes (AeroDAS system and RMS DGR-33 and AeroTEM power supply, data acquisition computer and AG-NAV2 navigation)

6.6. Magnetometer Base Station

The base magnetometer was a Geometerics G-858 cesium vapour magnetometer. Data logging and UTC time syncronisation was carried out within an external data logging computer, with an external GPS providing the timing signal. That data logging was configured to measure at 0.1 second intervals (10Hz). Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area 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 levels.

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. The recorded data represents the height of the antenna, i.e. 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 colour digital 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.

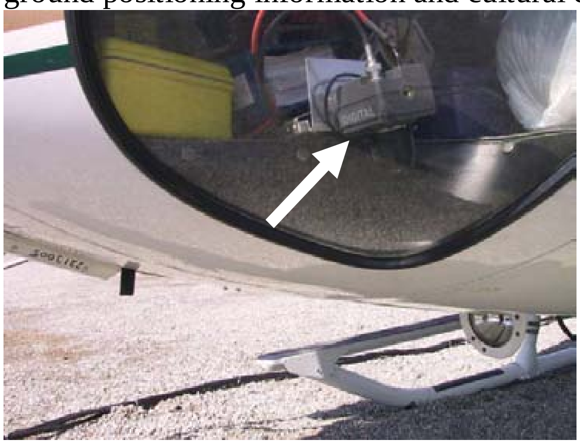


Figure 8. Digital video camera typical mounting location.

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 second intervals.

6.10. Digital Acquisition System

The AeroTEM received waveform 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 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 128Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder.

7. PERSONNEL

The following AeroQuest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Field Data Processors: Emilio Schein
- Field Operator: Michael Blondin
- Data Interpretation and Reporting: Sean Walker, Emilio Schein, Marion Bishop

The survey pilot Remi Fashanu was employed directly by the helicopter operator – Hi-Wood Helicopters, Okotose, Alberta.

8. DELIVERABLES

8.1. Hardcopy Map Products

The report includes a set of two (4) 1:10,000 maps sheets. The survey area is covered by one map plate. Four geophysical data products are delivered as listed below:

- **MAG -** Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- **TDR –** Tilt Derivative of TMI with line contours and EM anomaly symbols.
- **ZOFF** – AeroTEM Z3 Off-Time with line contours and EM anomaly symbols.
- **EM Profiles** – EM profiles channels 5-15 with EM anomaly symbols.

The coordinate/projection system for the maps is NAD83 Universal Transverse Mercator Zone 10 (for Canada; Central America; Mexico; USA (ex Hawaii Aleutian Islands). 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 on-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 10 nT. Bold contour lines are separated by 1000 nT.

8.2. Digital Deliverables

Final Database of Survey Data

The geophysical profile data is archived digitally in Geosoft GDB binary format database(s). The databases has also been exported into Geosoft XYZ format, which is text file format offering greater compatibility with other viewing software. 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.

Geosoft Grid files (GRD)

Leveled Grid products used to generate the geophysical map images. Cell size for all grid files is 25 meters.

- Total Magnetic Intensity (Mag)
- Tilt Derivative (TDR)
- Z3 Off-time (ZOFF)

Digital Versions of Final Maps

Map files in Geosoft .map and Adobe PDF format

Free Viewing Software

Geosoft Oasis Montaj Viewing Software
Adobe Acrobat Reader

Digital Copy of this Document

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 36-inch wide Hewlett Packard ink-jet plotters.

9.1. Base Map

The geophysical maps accompanying this report are based on positioning in the datum of NAD83. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 10N. A summary of the map datum and projection specifications are as follows:

- 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 10 (Central Meridian 123ºW)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

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 to WGS84 (GPS) altitude 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 38,400 Hz (128 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, leveled and split up into the individual line segments. 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 mergered into 'array format; channels in the final Geosoft database as Zon, Zoff, Xon, and Xoff

The filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology. 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 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.

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 25 metres. The final leveled grid provided the basis for threading the presented contours which have a minimum contour interval of 10 nT.

In order to enhance subtle magnetic trends a ‘tilt’ derivative grid was calculated from the total magnetic intensity (TMI) grid. The Tilt Derivative (TDR) of the TMI enhances low amplitude and small wavelength magnetic features which define shallow basement structures as well as potential mineral exploration targets. The TILT derivative can be though of as a combination of the first vertical derivative and the total horizontal derivative of the total magnetic intensity.

Mathematically, the TDR is defined as:

$$TDR = \arctan\left(\frac{dT}{dz}\right)$$

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

$$VDR = \frac{dT}{dz}$$

$$THDR = \sqrt{\left(\frac{dT}{dx}\right)^2 + \left(\frac{dT}{dy}\right)^2}$$

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 0.05 radians.

10. 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.

10.1. 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.

10.2. 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 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 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.

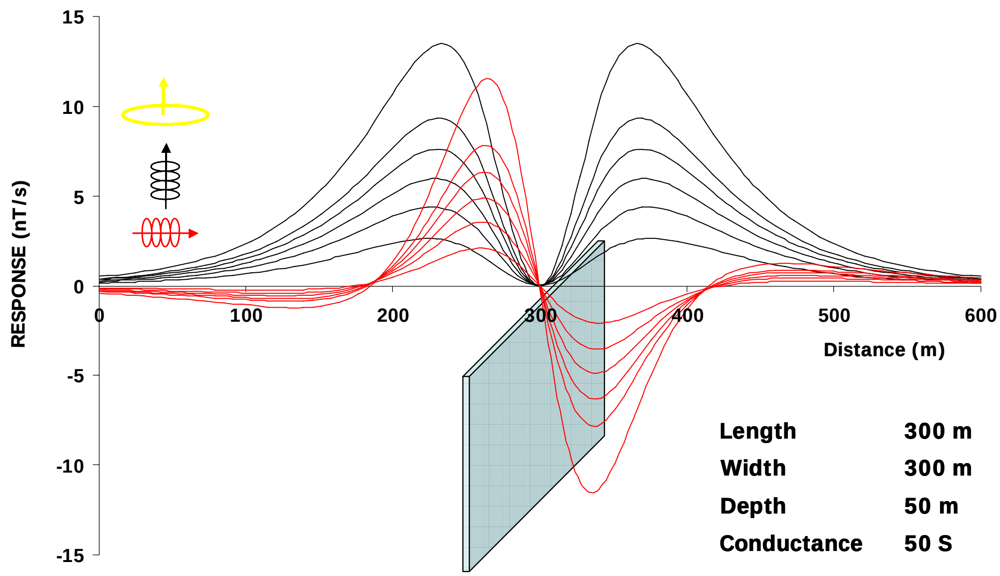


Figure 9. AeroTEM response to a 'thin' vertical conductor.

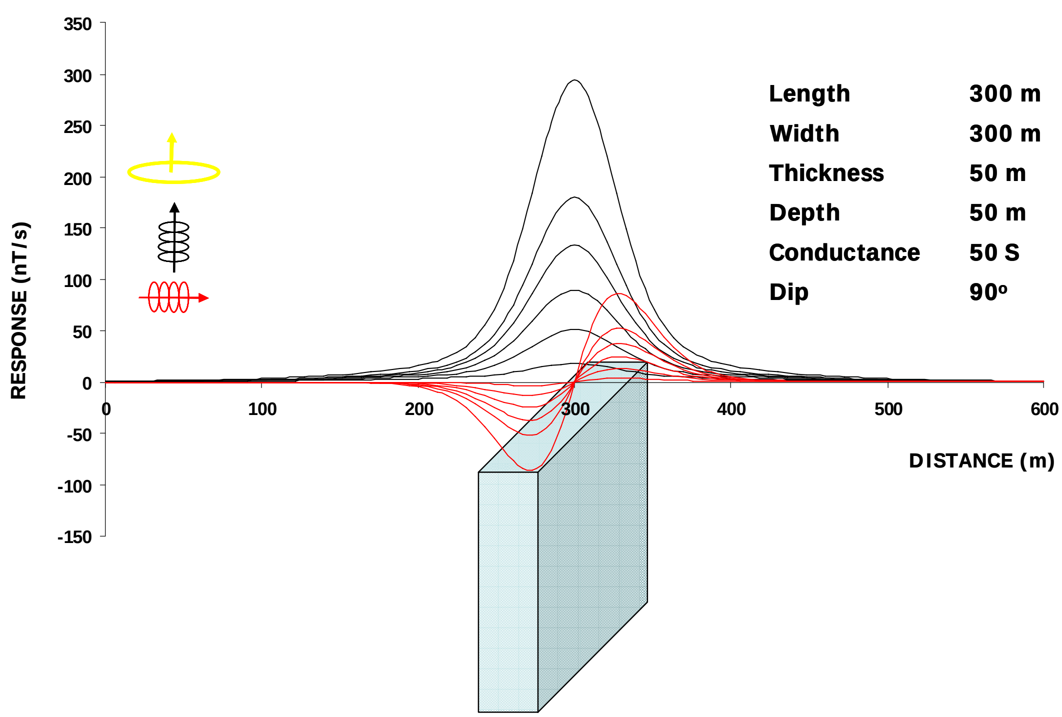


Figure 10. AeroTEM response for a ‘thick’ vertical conductor.

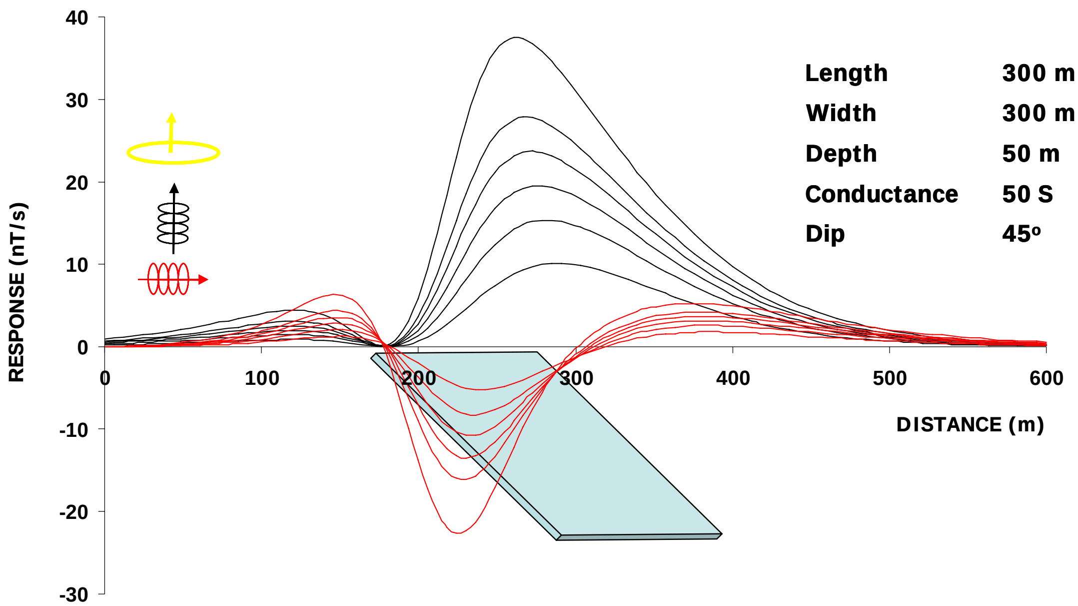


Figure 11. AeroTEM response over a ‘thick’ dipping conductor.

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,

Marion Bishop

Aeroquest Limited
September, 2006

APPENDIX 1 – PROJECT CORNER COORDINATES

The Project consists of an irregular shaped block with boundaries as defined in the following table. Positions are in UTM Zone 10 – NAD83.

X	Y
593987.0	5485750.0
596987.0	5485750.0
596985.9	5484593.5
598115.7	5484601.8
598123.2	5484378.9
598562.0	5484387.0
598577.0	5483457.0
599485.5	5483477.4
599528.1	5481140.9
598438.5	5481105.4
598439.6	5480605.8
595441.1	5480605.0
595408.7	5482434.3
594049.5	5482435.0

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 (07019_ emory_final.gdb):

Column	Units	Description
Line		Line number
Flight		Flight #
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
x	m	UTM Easting (NAD83, zone 10N)
y	m	UTM Northing (NAD83, zone 10N)
bheight	m	Terrain clearance of EM bird
dtm	m	Digital Terrain Model
magf	nT	Final leveled total magnetic intensity
magonbirdf	nT	Total magnetic field from sensor on EM bird
Basemagf	nT	Base station total magnetic intensity
Zon	nT/s	Processed Streaming On-Time Z component Channels 1-16
Zoff	nT/s	Processed Streaming Off-Time Z component Channels 0-16
Xon	nT/s	Processed Streaming On-Time X component Channels 1-16
Xoff	nT/s	Processed Streaming Off-Time X component Channels 0-16
Anom_labels		Alphanumeric label of conductor pick
Off_Con	S	Off-time conductance at conductor pick
Off_Tau	S	Off-time decay constant at conductor pick
Anom_ID	S	Anomaly Character (K= thicK, N = thiN)
grade		Classification from 1-7 based on conductance of conductor pick
pwrline		powrline monitor data channel
Off_allcon	S	Off-time conductance
Off_AllTau	S	Off-time decay constant

APPENDIX 3: AEROTEM ANOMALY LISTING

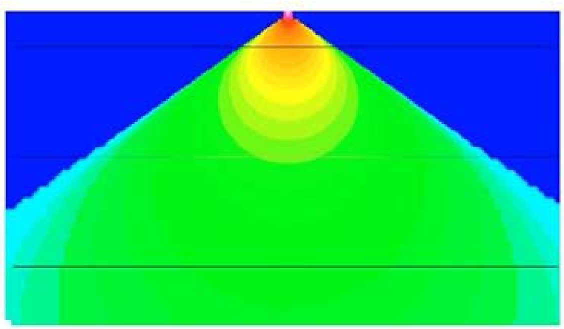
FLIGHT	LINE	ANOM ID	ANOM LABELS	GRADE	OFF CON	OFF TAU	X	Y	BHEIGHT	DTM	UTCTIME
6	20083.00	N	A	1.00	0.63	79.49	595873.71	5485016.58	45.47	995.56	16:28:13.70
6	20100.00	K	A	1.00	0.38	61.86	595976.57	5484813.97	58.71	935.53	16:36:36.10
7	20210.00	K	A	3.00	6.91	262.82	597310.05	5483707.68	51.64	1089.91	18:11:16.80
7	20220.00	K	A	2.00	1.08	103.84	597274.93	5483626.37	64.47	1120.87	18:15:24.10
7	20250.00	K	A	4.00	13.59	368.17	595456.48	5483302.20	55.52	1148.71	18:32:48.50
7	20260.00	K	A	4.00	15.47	393.35	596073.49	5483225.92	41.55	968.71	18:40:55.20
7	20260.00	K	B	5.00	25.20	502.02	595692.56	5483220.00	54.10	1105.26	18:41:17.20
7	20260.00	K	C	4.00	13.99	373.97	595481.56	5483212.55	59.21	1193.61	18:41:28.60
7	20270.00	K	A	7.00	54.85	740.62	595685.28	5483128.58	66.21	1149.98	18:45:23.20
7	20270.00	K	B	4.00	15.59	394.83	595948.74	5483137.56	54.91	1031.56	18:45:36.00
7	20270.00		C	1.00	0.00	0.00	596044.50	5483130.45	51.02	1003.37	18:45:40.80
7	20270.00	K	D	4.00	17.72	421.00	596119.57	5483127.13	56.16	976.58	18:45:44.40
7	20270.00		E	1.00	0.00	0.00	596180.84	5483121.87	55.14	961.16	18:45:47.30
7	20270.00	K	F	4.00	16.48	405.93	596244.47	5483115.84	52.68	948.37	18:45:50.30
7	20270.00	K	G	6.00	48.88	699.14	596418.24	5483113.06	44.22	933.48	18:45:58.00
7	20280.00	K	A	6.00	36.76	606.26	596516.92	5483019.25	54.73	929.06	18:52:48.10
7	20280.00	K	B	5.00	27.41	523.59	595792.24	5483028.99	54.79	1159.35	18:53:23.80
10	20291.00	K	A	2.00	4.55	213.29	594220.24	5482928.28	53.86	970.55	20:21:32.60
10	20291.00	N	B	2.00	4.55	213.29	594314.24	5482919.66	39.17	947.92	20:21:41.40
10	20291.00	K	C	5.00	27.28	522.32	595799.78	5482929.90	56.56	1191.08	20:23:30.60
10	20291.00	K	D	6.00	38.58	621.10	596042.04	5482933.70	60.36	1085.98	20:23:44.70
10	20291.00	K	E	5.00	31.43	560.62	596302.99	5482930.05	60.11	1002.84	20:23:59.10
10	20291.00	K	F	7.00	59.64	772.26	596623.97	5482924.10	56.91	917.30	20:24:16.00
10	20300.00	N	A	2.00	1.55	124.65	597948.27	5482811.51	49.09	1101.13	20:16:07.60
10	20300.00	K	B	2.00	1.55	124.65	597892.38	5482812.08	48.16	1096.00	20:16:10.60
10	20300.00		C	5.00	21.18	460.20	596472.78	5482819.89	53.40	1025.07	20:17:28.10
10	20300.00	N	D	1.00	0.00	0.00	596255.75	5482802.49	48.40	1088.06	20:17:39.70
10	20300.00	K	E	4.00	15.01	387.45	596088.61	5482811.36	39.98	1132.83	20:17:47.60
10	20300.00	K	F	1.00	*	*	595863.10	5482822.88	53.85	1209.95	20:17:59.30
10	20300.00	N	G	1.00	0.00	0.00	594425.85	5482834.41	51.70	950.71	20:19:50.10
10	20300.00	K	H	1.00	0.90	94.71	594240.41	5482823.34	55.20	977.18	20:19:59.10
10	20310.00	N	A	1.00	0.00	0.00	594530.12	5482720.76	38.19	978.87	20:08:57.90
10	20310.00	K	B	7.00	92.08	959.57	596007.32	5482730.16	52.94	1179.53	20:10:56.00
10	20310.00		C	5.00	27.04	519.99	596100.56	5482737.13	54.57	1160.10	20:11:01.00
10	20310.00	K	D	7.00	55.01	741.70	596693.63	5482720.87	69.49	940.33	20:11:35.50
10	20310.00	N	E	1.00	0.00	0.00	598036.19	5482715.69	42.17	1080.89	20:12:42.60
10	20320.00	N	A	1.00	0.00	0.00	598271.18	5482613.56	50.41	1069.21	20:03:15.20
10	20320.00	N	B	2.00	4.53	212.79	594714.55	5482616.24	49.93	1060.99	20:06:45.60
10	20320.00	K	C	2.00	4.53	212.79	594607.67	5482612.15	47.75	1011.61	20:06:51.90
9	20330.00	N	A	1.00	0.00	0.00	594742.96	5482521.09	50.30	1087.91	18:59:22.80
9	20440.00	K	A	2.00	1.16	107.80	596214.13	5481420.01	45.31	1148.68	18:09:47.20
9	20450.00	N	A	1.00	0.00	0.00	596286.98	5481317.01	53.55	1084.52	18:01:51.30
9	20480.00	K	A	2.00	3.57	188.95	595853.84	5481018.42	44.43	1153.18	17:49:20.70
9	20500.00	N	A	2.00	1.97	140.34	596598.03	5480820.11	65.16	1229.71	17:39:01.10
9	20500.00	K	B	2.00	1.97	140.34	596555.01	5480823.96	59.90	1203.51	17:39:04.10
8	20510.00	N	A	1.00	0.00	0.00	596405.62	5480736.87	59.15	1180.67	16:44:43.30
8	20520.00	N	A	1.00	0.00	0.00	597834.45	5480622.03	55.86	1345.90	16:41:03.20
8	20520.00	K	B	1.00	0.14	37.50	597543.88	5480623.54	45.57	1475.63	16:41:21.40
8	20520.00	N	C	2.00	2.38	154.25	596622.51	5480630.18	54.18	1376.11	16:42:21.90
8	20520.00	K	D	2.00	2.38	154.25	596537.95	5480633.19	68.51	1301.25	16:42:27.60
6	29020.00	K	A	4.00	10.06	317.14	595297.77	5483257.17	53.76	1213.32	15:51:29.47
6	29020.00	N	B	4.00	10.06	317.14	595301.54	5483222.60	52.66	1238.73	15:51:33.20
6	29030.00	N	A	2.00	3.76	193.90	596304.00	5481318.86	50.41	1080.26	15:42:37.90
6	29030.00	K	B	2.00	3.76	193.90	596305.94	5481380.28	48.31	1101.25	15:42:40.93
6	29030.00		C	5.00	22.74	476.90	596303.14	5482868.52	52.82	1054.45	15:44:14.60
6	29040.00	N	A	1.00	0.69	82.92	597272.37	5483689.52	66.83	1087.10	15:30:03.50
6	29040.00	K	B	1.00	0.69	82.92	597277.75	5483647.94	64.38	1114.34	15:30:07.30
6	29050.00	N	A	3.00	6.17	248.45	598299.60	5482560.33	48.77	1062.97	15:23:21.90
6	29050.00	K	B	3.00	6.17	248.45	598298.79	5482626.87	49.71	1078.67	15:23:25.30
6	29050.00	K	C	2.00	1.69	129.87	598297.49	5484238.17	57.23	1210.80	15:26:26.20

APPENDIX 4: AEROTEM DESIGN CONSIDERATIONS

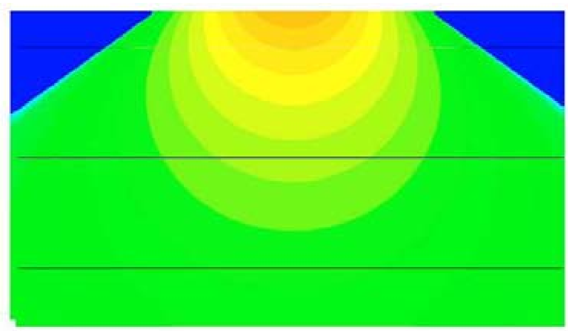
Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at slower speed and collect data with high spatial resolution, and with great accuracy, means the helicopter EM systems provide more detail than any other EM configuration, airborne or 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 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.

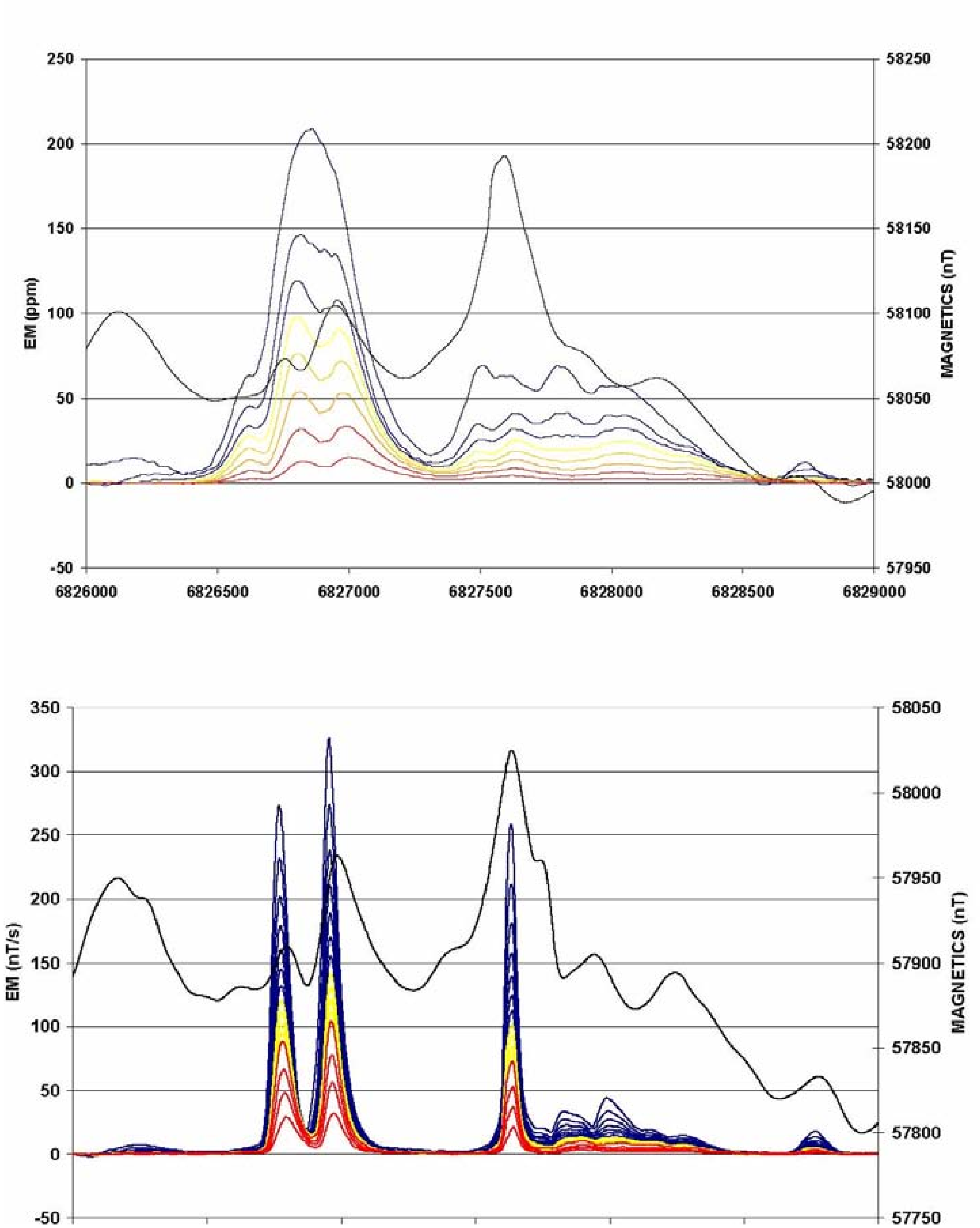


Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.

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.

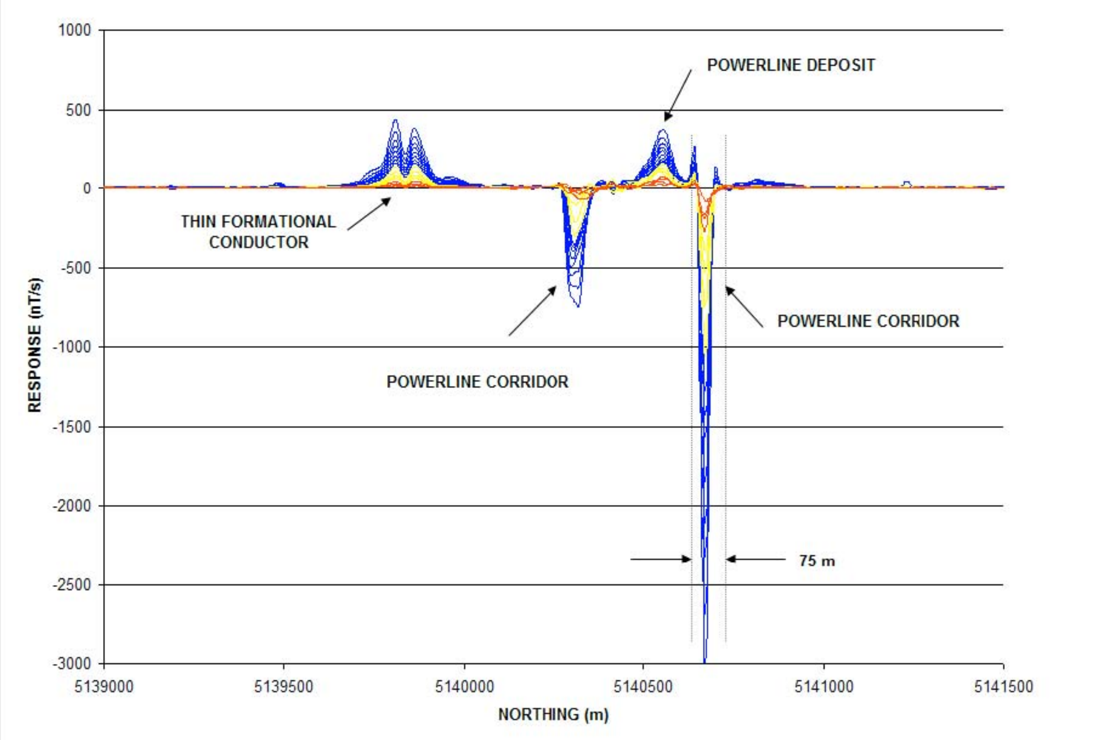


Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish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

Advantage 2 – Conductance Discrimination

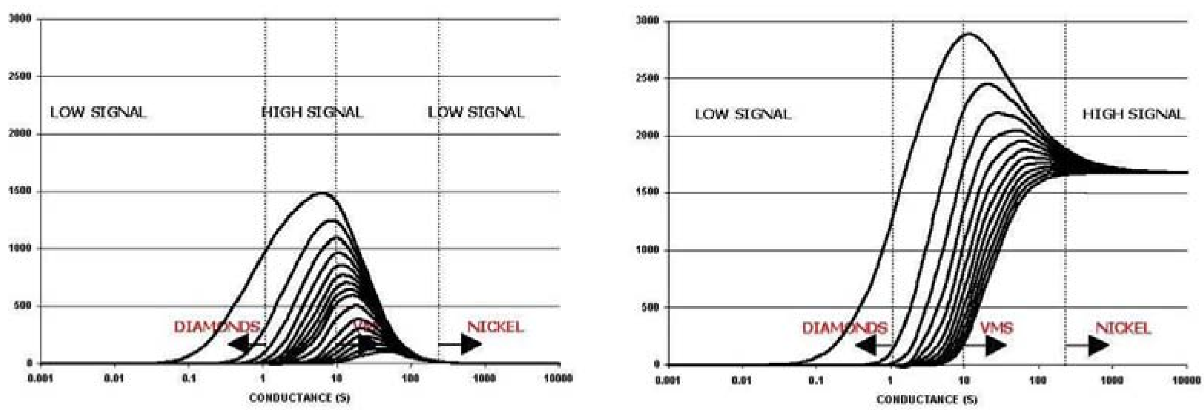
The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still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

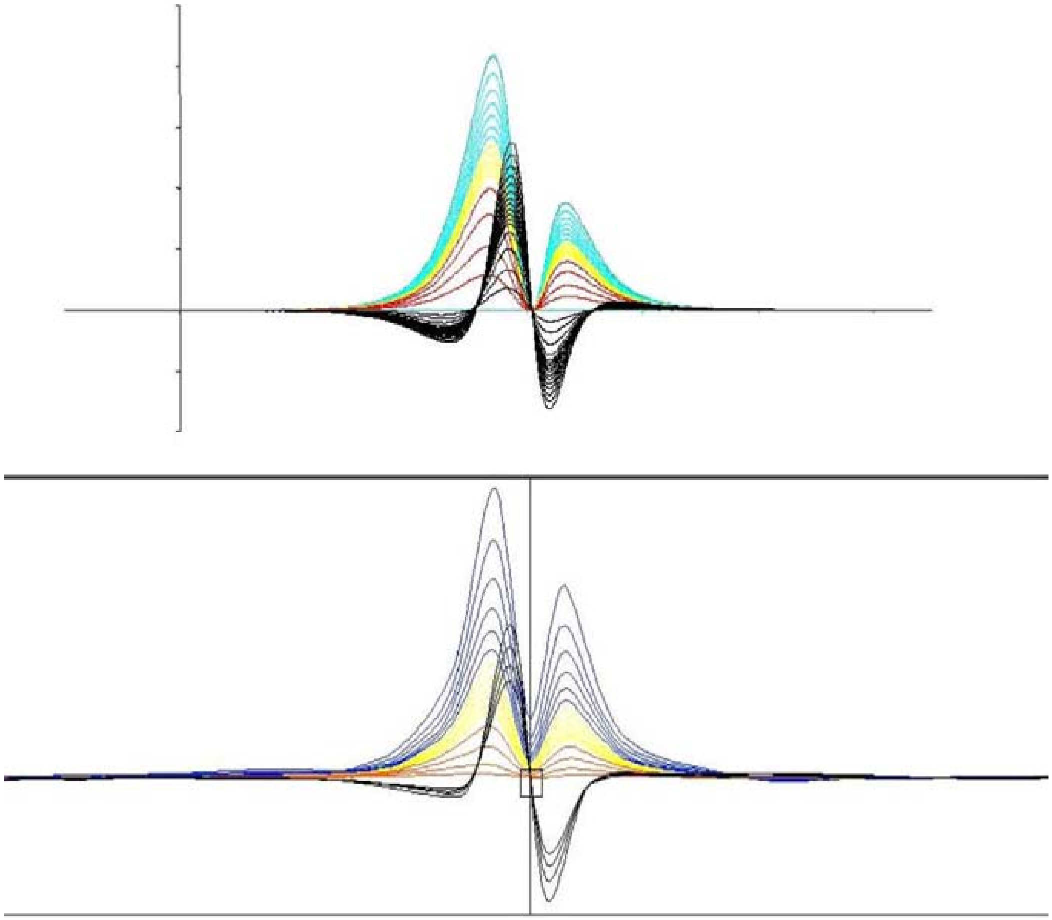


Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude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

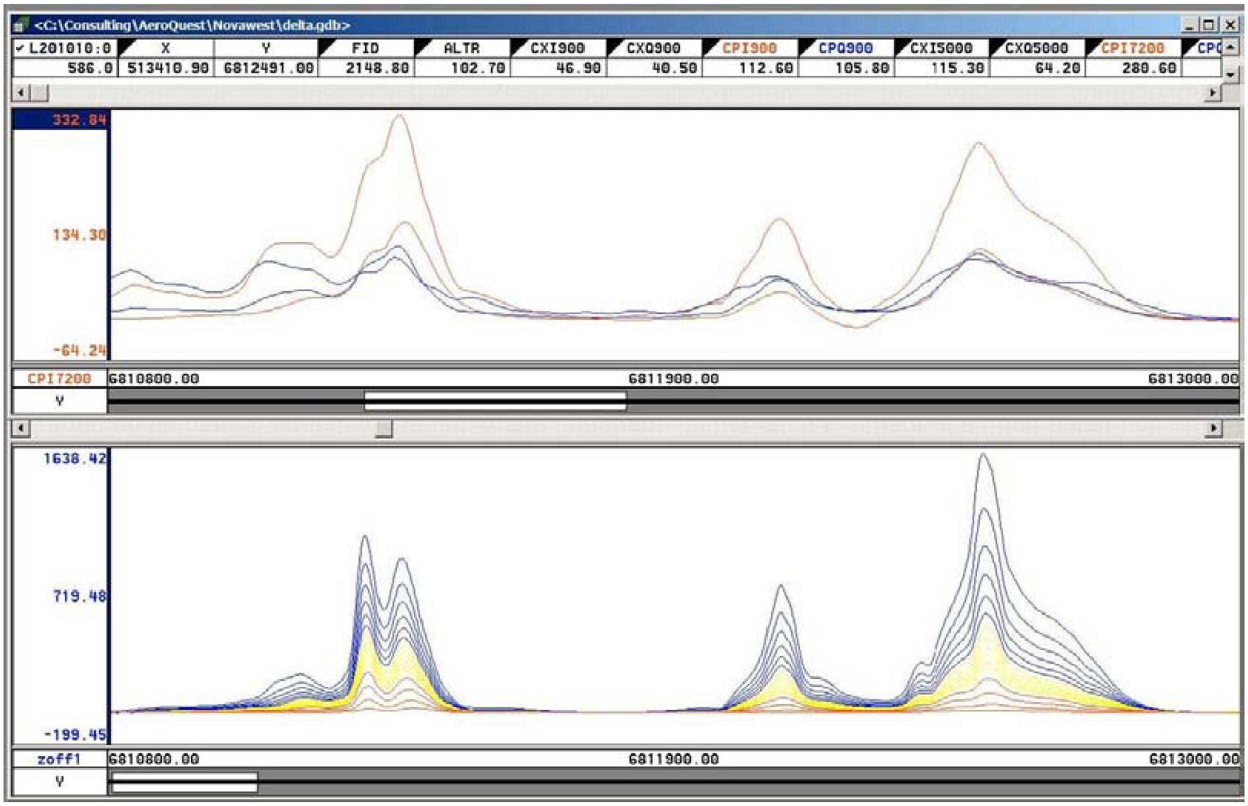


Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

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 5: AeroTEM Instrumentation Specification Sheet

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 150 Hz
- Tx On Time - 1,150 (150Hz) µs
- Tx Off Time - 2,183 (150Hz) µs
- 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

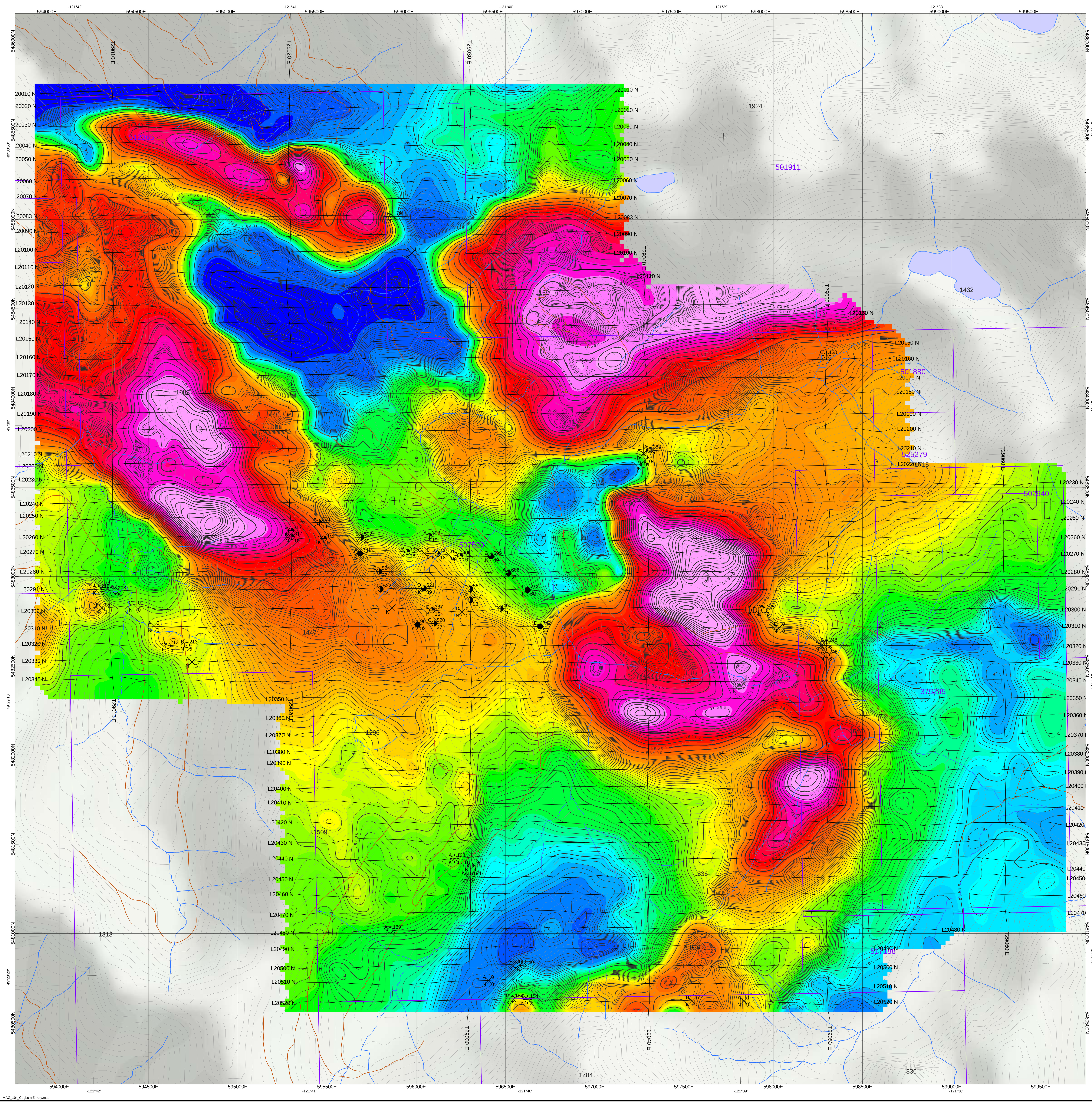
Display & Acquisition

- AERODAS Digital recording at 128 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: +1 905 693-9129. Fax: +1 905 693-9128
Email: sales@aeroquestsurveys.com



Grid North
NAD83-Zone10

The topographic data base was based on TRIM 1:20000 data for British Columbia.

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, Cogburn Emory Project British Columbia', by Aeroquest Limited, Septemeber 2006.

TMI nT

57081, 56877, 56675, 56509, 56375, 56247, 56134, 56049, 55977, 55906, 55848, 55807, 55774, 55749, 55729, 55710, 55687, 55668, 55649, 55633, 55621, 55609, 55596, 55583, 55570, 55556, 55538, 55514, 55488, 55464, 55444, 55425, 55408, 55395, 55380, 55351, 55304, 55171

TMI Contour Interval
- Minimum 10nT
- 100 & 500nT
- 1000nT

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)

SURVEY SPECIFICATIONS:
- Survey flown: June 30, July 1, 2006
- Traverse line spacing: 100 metres
- Traverse line direction: 90° (E-W)
- Nominal EM bird height: 30 metres
- Aircraft: Aerospatiale A-Star 350B2 (C-GPTY)

INSTRUMENTATION:
- Data acquisition: ADAS & RMS DGR-33
- Magnetometer: Geometrics G-823A cesium vapour
  - Installation: On 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: 123°W (Zone 10)
- Central Scale Factor: 0.9996
- False Easting/Northing: 500,000m/0m

scale 1:10,000

200 0 200 400 600 metres

NAD83 / UTM zone 10N

Leader Mining International Inc.
Harrison Lake area, British Columbia

TOTAL MAGNETIC INTENSITY
Cogburn Emory Block

NTS 092H12, 092H05

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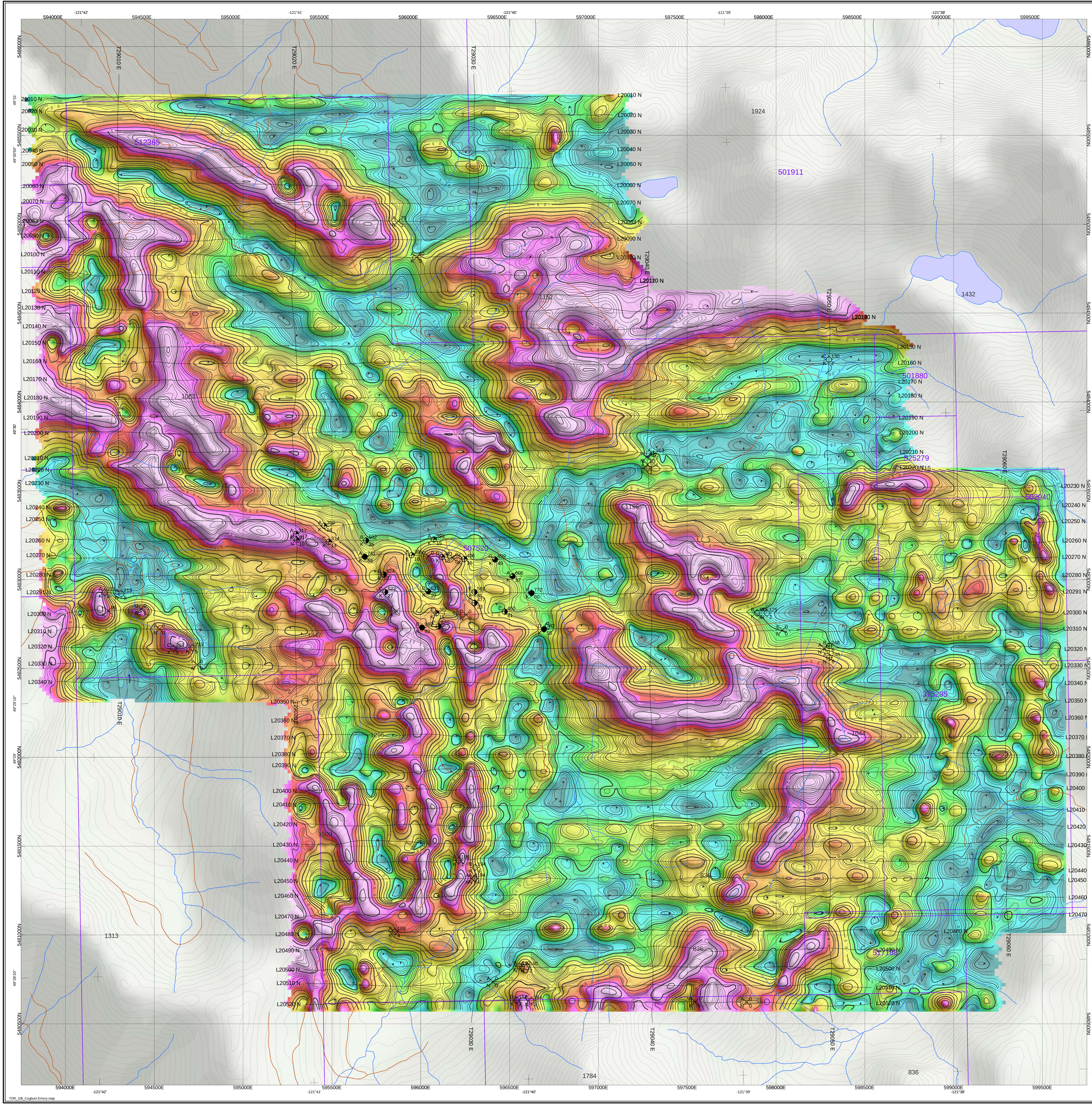
www.aeroquestsurveys.com

September 2005

MAG Cogburn Emory

MAG_10k_Cogburn Emory.map



Grid North
NAD83-Zone10

The topographic data base was based on TRIM 1:20000 data for British Columbia.

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

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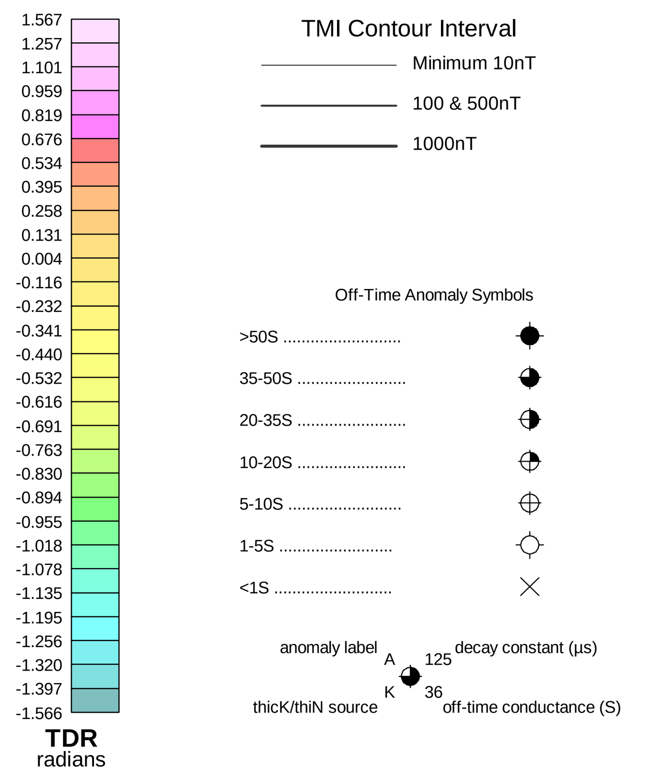

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scale 1:10,000

200 0 200 400 600
metres
NAD83 / UTM zone 10N

Leader Mining International Inc.
Harrison Lake area, British Columbia

TILT DERIVATIVE OF TOTAL MAGNETIC INTENSITY

Cogburn Emory Block

NTS 092H12, 092H05

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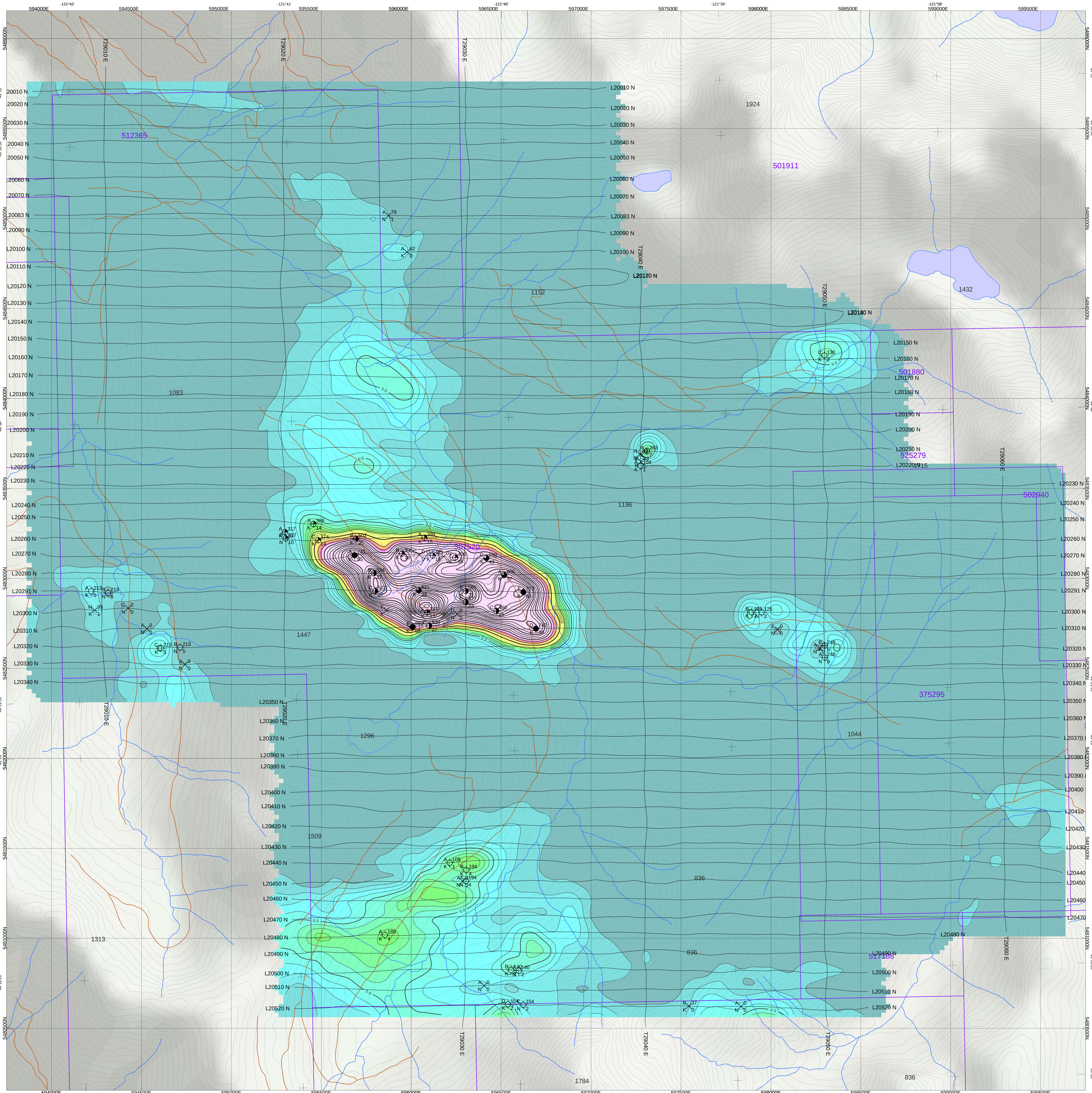
September 2005

TDR Cogburn Emory

TDR_10k_Cogburn Emory.map



Grid North
NAD83-Zone10

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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, Cogburn Emory Project British Columbia', by Aeroquest Limited, Septemeber 2006.

ZOFF
nT/s

1424.4, 290.0, 270.0, 260.0, 250.0, 240.0, 230.0, 220.0, 210.0, 200.0, 190.0, 180.0, 170.0, 160.0, 150.0, 140.0, 130.0, 120.0, 110.0, 100.0, 90.0, 80.0, 70.0, 60.0, 50.0, 40.0, 30.0, 20.0, 10.0, -9.7

ZOFF Contour Interval
10nT/s
50nT/s
150nT/s

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:
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Traverse line direction: 90° (E-W)
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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: 123°W (Zone 10)
Central Scale Factor: 0.9996
False Easting/Northing: 500,000m/0m

scale 1:10,000
200 0 200 400 600
metres
NAD83 / UTM zone 10N

Leader Mining International Inc.
Harrison Lake area, British Columbia

AEROTEM Z3 OFF-TIME
Cogburn Emory Block

NTS 092H12, 092H05

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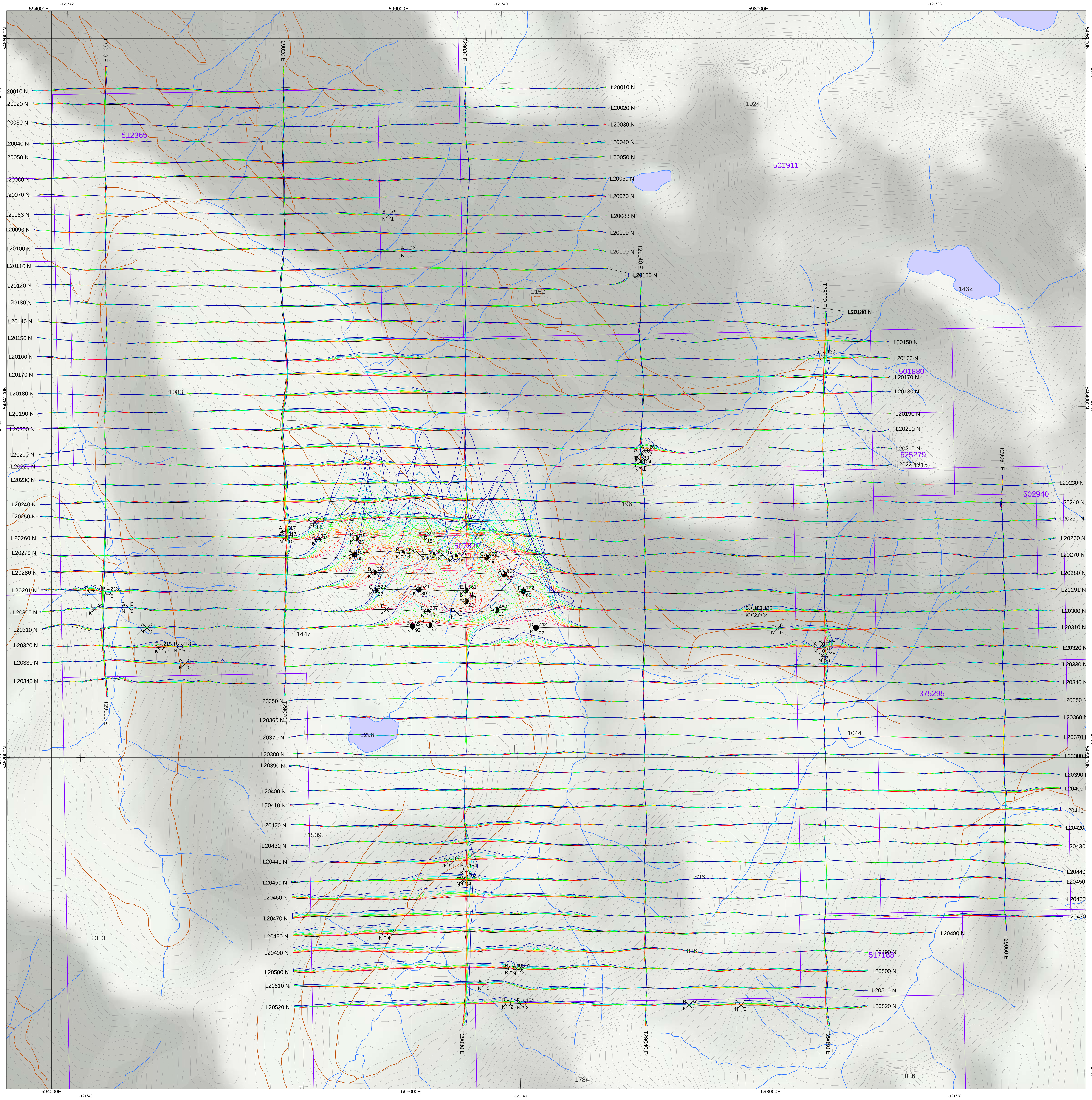
September 2005

ZOFF Cogburn Emory

ZOFF_10k_Cogburn Emory.map



Grid North
NAD83-Zone10

The topographic data base was based on TRIM 1:20000 data for British Columbia.

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, Cogburn Emory Project British Columbia', by Aeroquest Limited, Septemeber 2006.

Scale 1:10,000,000

100 0 100 200
(kilometers)
NAD83 / UTM zone 10N

AeroTEM Profiles

positive excursion to top and right, 1mm=10nT/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)

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scale 1:10,000

200 0 200 400 600
metres
NAD83 / UTM zone 10N

Leader Mining International Inc.
Harrison Lake area, British Columbia

AEROTEM OFF-TIME PROFILES

Cogburn Emory Block

NTS 092H12, 092H05

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September 2005

EM Cogburn Emory

EM_10k_Cogburn Emory.map

APPENDIX III

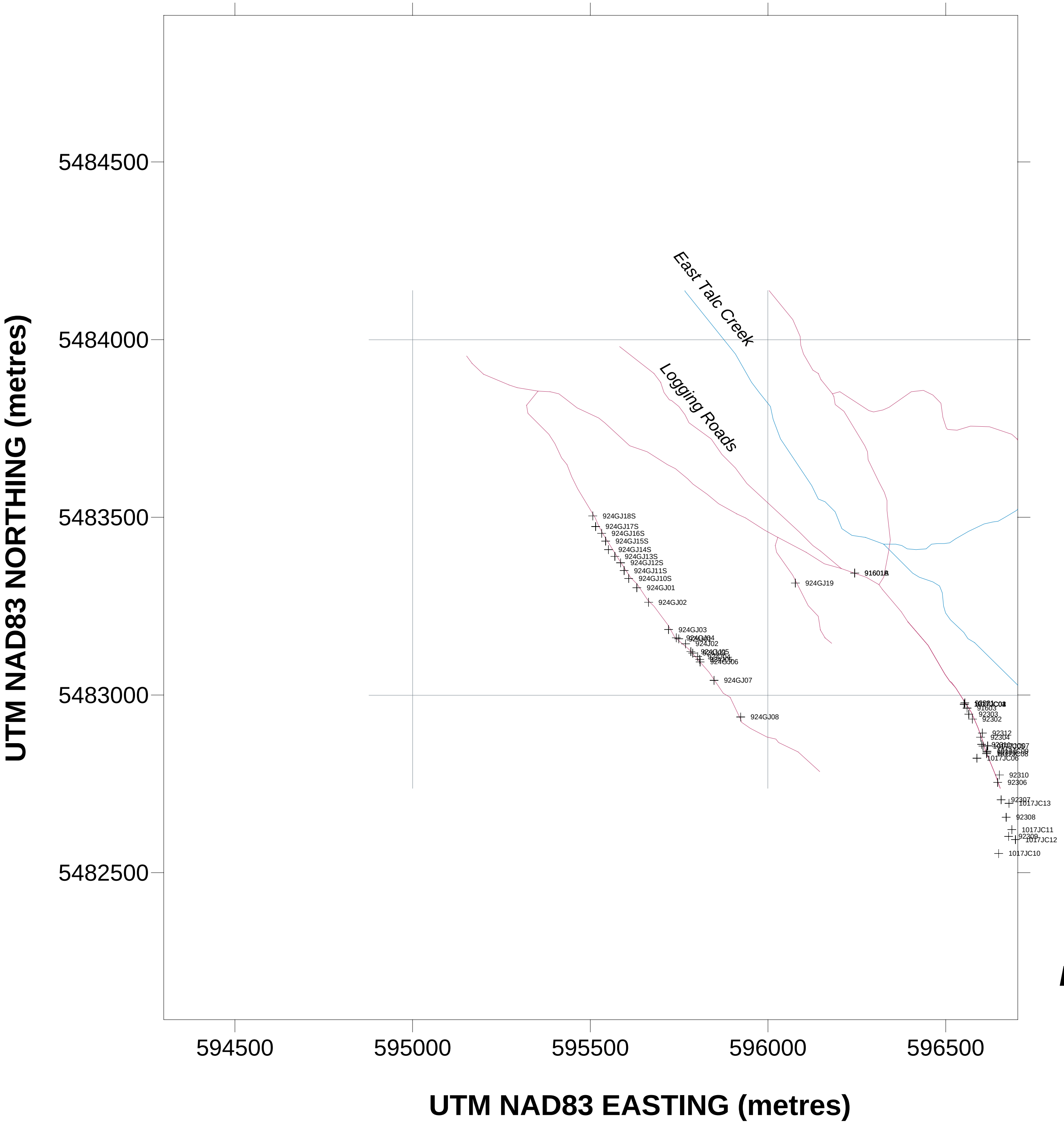
SAMPLING DETAILS
& CERTIFICATES OF ANALYSES

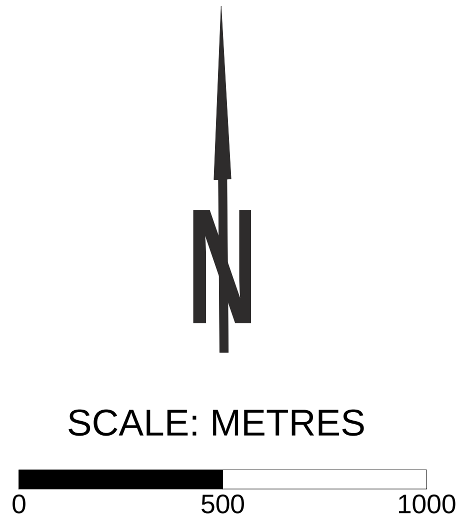
Emory Zone Rock Sampling 2006

UTM NAD83		Cog 2006	Sample			Copper	Lead	Zinc	Silver	Gold
Easting	Northing	Sample #	Type	Material	Description	(ppm)	(ppm)	(ppm)	(ppm)	(ppb)
596244	5483343	91601A	grab	float	metagabbro	55.1	17.4	62	0.2	4.9
596244	5483343	91601B	grab	float	metagabbro	69.1	12.0	63	0.2	8.0
596560	5482963	91603	grab	rock	metagabbro	104.6	3.7	51	0.3	4.1
596554	5482978	92301	grab	rock	metagabbro	37.5	1.2	68	0.1	4.1
596575	5482932	92302	grab	rock	metagabbro	39.7	0.5	37	<.1	1.7
596565	5482946	92303	grab	rock	metagabbro	78.7	0.8	29	0.1	5.7
596598	5482881	92304	grab	rock	metagabbro	27.7	0.9	77	<.1	4.1
596616	5482839	92305	grab	rock	metagabbro	29.5	0.6	41	<.1	1.6
596646	5482754	92306	grab	rock	metagabbro	78.0	0.8	36	0.2	4.0
596656	5482705	92307	grab	rock	metagabbro	99.8	2.3	95	0.3	1.9
596670	5482656	92308	grab	rock	metagabbro	132.5	3.7	77	0.3	2.6
596677	5482602	92309	grab	rock	metagabbro	87.8	1.9	773	0.1	2.3
596651	5482775	92310	grab	rock	metagabbro	155.7	1.6	1529	0.9	77.9
596601	5482861	92311	grab	rock	metagabbro	108.2	1.4	75	0.2	12.3
596603	5482893	92312	grab	rock	metagabbro	186.1	0.6	33	0.5	7.4
595749	5483158	924J01	grab	rock	quartz feldspar porphyry	35.8	1.6	25	<.1	1.1
595768	5483144	924J02	grab	rock	quartz feldspar porphyry	190.5	1.6	31	0.3	9.2
595788	5483118	924J03	grab	rock	metagabbro	251.6	1.6	45	0.4	7.8
595802	5483108	924J04	grab	rock	metagabbro	99.9	2.3	37	0.1	2.4
595808	5483100	924J05	grab	rock	metagabbro	77.1	1.5	39	0.1	5.1
595631	5483302	924GJ01	grab	rock	metagabbro	3.7	4.3	28	<.1	1.3
595664	5483261	924GJ02	grab	rock	metagabbro	2.7	6.2	29	<.1	0.7
595720	5483184	924GJ03	grab	rock	metagabbro	24.2	1.5	43	<.1	6.2
595742	5483161	924GJ04	grab	rock	metagabbro	104.3	2.0	41	0.1	1.8
595783	5483122	924GJ05	grab	rock	metagabbro	104.6	0.9	24	0.2	2.4
595809	5483093	924GJ06	grab	rock	metagabbro	45.1	1.7	28	<.1	1.1
595848	5483041	924GJ07	grab	rock	metagabbro	44.5	0.9	109	<.1	1.2
595923	5482938	924GJ08	grab	rock	metagabbro	53.2	0.7	34	<.1	0.9
596077	5483315	924GJ19	grab	rock	metagabbro	143.2	1.0	25	0.3	3.6
596552	5482974	1017JC01	grab	rock	metagabbro	58.1	1.2	55	0.3	1.6
596552	5482974	1017JC02	grab	rock	metagabbro	319.4	1.5	48	1.1	13.5
596552	5482974	1017JC03	grab	rock	metagabbro	197.4	2.2	87	0.4	26.4
596552	5482974	1017JC04	grab	rock	metagabbro	53.6	1.9	48	0.1	5.0
596605	5482856	1017JC05	grab	rock	metagabbro	109.7	1.3	80	0.3	13.1
596588	5482822	1017JC06	grab	rock	metagabbro	124.1	1.3	83	0.2	93.1
596618	5482857	1017JC07	grab	rock	metagabbro	226.9	4.3	2968	0.8	10.3
596615	5482835	1017JC08	grab	rock	metagabbro	170.5	2.2	515	0.5	2.3
596616	5482842	1017JC09	grab	rock	metagabbro	105.3	0.7	61	0.2	0.6
596649	5482554	1017JC10	grab	rock	metagabbro + quartz in shear	6637.7	31.0	>10000	53.5	384.3
596686	5482621	1017JC11	grab	rock	metagabbro with quartz veinlets	420.6	7.9	>10000	1.3	8.3
596696	5482593	1017JC12	grab	rock	metagabbro + quartz in shear	372.2	16.8	1799	1.5	9.7
596678	5482695	1017JC13	grab	rock	metagabbro with quartz veinlets	386.1	7.4	190	1.0	6.0

Emory Zone Soil Sampling 2006

UTM NAD83		Cog 2006	Sample			Copper	Lead	Zinc	Silver	Gold	Nickel
Easting	Northing	Sample #	Type	Material	Description	(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppm)
595608	5483328	924GJ10S	B horizon	soil	from top side road cut	31.1	6.0	100	0.2	8.8	620
595595	5483350	924GJ11S	B horizon	soil	from top side road cut	13.9	6.5	90	0.1	3.5	532
595585	5483372	924GJ12S	B horizon	soil	from top side road cut	44.7	1.7	70	<.1	3.2	2699
595569	5483390	924GJ13S	B horizon	soil	from top side road cut	41.2	2.2	90	<.1	5.6	1836
595551	5483409	924GJ14S	B horizon	soil	from top side road cut	52.4	1.8	85	<.1	8.5	1839
595543	5483433	924GJ15S	B horizon	soil	from top side road cut	91.2	1.6	74	<.1	2.2	2459
595532	5483455	924GJ16S	B horizon	soil	from top side road cut	59.3	2.7	61	0.2	17.9	3292
595515	5483474	924GJ17S	B horizon	soil	from top side road cut	33.5	2.5	52	<.1	6.3	1335
595507	5483504	924GJ18S	B horizon	soil	from top side road cut	32.6	3.5	95	<.1	1.2	1243





ROCK & SOIL SAMPLE NUMBER & LOCATION

North Pacific Alloys Limited

Emory Zone Exploration 2006

Drawn By: J.A.C. 2006/12/05

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9001 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

J.A. Chapman Mining Services File # A606079

18 - 1480 Foster St., White Rock BC V4B 3X7 Submitted by: N / A

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.6	2.7	3.6	44	<.1	5.3	4.3	559	1.92	4.2	3.3	<.5	4.7	77	<.1	<.1	.1	35	.56	.074	9	15	.58	199	.131	3	1.02	.086	.52	.2	<.01	2.0	.3	<.05	5	<.5
CoG-20060916-01A	2.9	55.1	17.4	62	.2	35.7	18.3	212	2.42	4.0	.1	4.9	.3	156	.5	1.2	.2	66	2.79	.045	1	60	.46	14	.200	2	3.90	.505	.06	.1	.23	5.6	.1	1.42	9	<.5
CoG-20060916-01B	3.1	69.1	12.0	63	.2	4.7	27.9	492	4.54	2.0	<.1	8.0	<.1	266	.3	.3	.1	188	5.10	.042	1	9	1.24	13	.181	1	6.90	.321	.13	.3	.15	13.9	.1	1.18	12	<.5
CoG-20060916-03	1.7	104.6	3.7	51	.3	52.7	37.0	336	4.90	3.3	.1	4.1	.2	110	.2	.3	1.3	71	2.89	.046	1	92	1.20	22	.181	2	4.78	.428	.35	.3	.05	4.6	.3	2.10	9	<.5
STANDARD DS7	19.9	104.8	68.3	409	.9	54.9	9.6	633	2.42	49.6	5.1	50.2	4.4	81	6.6	5.3	4.5	85	.95	.081	13	164	1.08	374	.121	40	.98	.084	.46	3.9	.19	2.6	4.1	.19	5	3.6

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.
- SAMPLE TYPE: ROCK R150

Data ✓ FA ____ DATE RECEIVED: SEP 19 2006 DATE REPORT MAILED: 10-13-06 A08:01 OUT

BRITISH COLUMBIA CERTIFIED ASSAYER
Raymond Chan

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9001 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

North Pacific Alloys Limited File # A607621 Page 1

2806 - 505 - 6th St. S.W., Calgary AB T2P 1X5 Submitted by: CHRIS GOLKA

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
COG2006092301	.5	37.5	1.2	68	.1	8.6	18.3	278	2.86	8.6	.1	4.1	.1	129	.6	.3	.4	61	2.51	.047	1	17	1.16	24	.140	2	4.42	.338	.21	.9	<.01	5.4	.2	.70	9	.5
COG2006092302	.2	39.7	.5	37	<.1	31.8	19.2	312	2.40	5.3	.1	1.7	.2	37	<.1	.3	.1	76	1.56	.079	1	28	.84	10	.240	1	1.94	.193	.06	.5	<.01	5.3	.1	.34	6	.5
COG2006092303	.3	78.7	.8	29	.1	19.7	17.0	275	2.59	8.7	.1	5.7	.2	80	.1	.4	2.3	60	2.25	.054	1	24	.65	8	.209	<1	3.28	.439	.05	.2	<.01	4.7	<.1	.79	8	<.5
COG2006092304	.2	27.7	.9	77	<.1	27.9	14.8	265	2.22	5.5	.1	4.1	.2	58	1.4	.3	.2	58	1.78	.053	1	56	.84	18	.202	2	2.71	.322	.08	.4	<.01	3.9	.1	.42	6	<.5
COG2006092305	.2	29.5	.6	41	<.1	36.0	13.4	261	2.24	3.5	.1	1.6	.2	62	.3	.2	.2	57	1.77	.048	1	75	.97	12	.176	2	2.93	.307	.03	.2	<.01	3.2	<.1	.37	6	<.5
COG2006092306	.2	78.0	.8	36	.2	27.4	23.9	267	3.43	4.5	.1	4.0	.1	84	.2	.4	.3	62	2.39	.061	1	28	.86	10	.183	2	3.76	.304	.05	.7	<.01	4.2	<.1	1.37	8	.5
COG2006092307	.2	99.8	2.3	95	.3	15.4	27.1	391	4.98	2.0	<.1	1.9	<.1	87	.6	.2	.5	104	2.69	.030	<1	35	1.80	13	.167	2	4.80	.322	.08	1.1	<.01	5.2	.1	1.67	10	.7
COG2006092308	.3	132.5	3.7	77	.3	8.4	23.9	538	4.17	2.3	.1	2.6	.2	32	.4	.9	.9	137	1.67	.063	1	13	1.23	18	.270	2	2.70	.266	.11	.8	<.01	5.8	.1	1.52	7	.6
COG2006092309	3.1	87.8	1.9	773	.1	42.8	25.5	744	3.96	7.9	.1	2.3	.1	14	14.2	.9	1.4	129	.87	.031	1	64	2.38	10	.194	1	2.55	.090	.02	1.1	<.01	8.9	<.1	.68	6	<.5
COG2006092310	.3	155.7	1.6	1529	.9	34.7	156.2	316	7.23	>10000	<.1	77.9	.4	102	40.1	10.1	23.3	115	2.88	.008	<1	26	1.57	14	.045	2	5.79	.436	.09	3.0	<.01	5.3	.1	3.62	13	2.6
COG2006092311	.3	108.2	1.4	75	.2	28.0	20.6	605	4.28	78.9	.1	12.3	.1	68	.2	.5	.5	135	2.43	.078	1	26	1.26	11	.291	1	4.07	.477	.04	.3	<.01	5.8	<.1	1.07	10	.5
COG2006092312	.6	186.1	.6	33	.5	19.7	55.7	208	6.69	137.3	<.1	7.4	.1	8	.4	.3	1.2	110	.98	.078	<1	4	.57	3	.420	<1	.74	.048	.01	.9	<.01	4.0	<.1	2.96	2	2.4
COG20060924J01	.9	35.8	1.6	25	<.1	19.1	15.3	245	1.88	11.9	.1	1.1	.2	63	.2	.3	<.1	74	1.88	.065	2	16	.56	17	.115	2	2.57	.335	.08	.2	<.01	5.5	.1	.29	6	<.5
COG20060924J02	3.2	190.5	1.6	31	.3	24.7	28.5	166	3.91	8.6	.1	9.2	.2	104	.2	.2	.2	100	3.16	.065	1	29	1.13	49	.140	1	5.57	.427	.60	.3	<.01	3.8	.3	2.47	13	1.1
COG20060924J03	13.9	251.6	1.6	45	.4	38.6	45.2	181	5.03	2.8	.4	7.8	.4	115	.1	.3	.3	115	3.56	.075	2	39	1.51	85	.208	2	7.18	.575	1.03	.8	<.01	5.1	.4	3.10	15	1.9
COG20060924J04	.5	99.9	2.3	37	.1	12.0	23.9	342	3.46	2.8	.1	2.4	.2	37	.4	.2	<.1	128	1.65	.076	1	9	.67	14	.141	2	1.97	.234	.09	.4	<.01	7.5	<.1	1.01	7	1.0
COG20060924J05	.6	77.1	1.5	39	.1	6.5	23.3	323	3.06	2.6	.1	5.1	<.1	206	.3	.2	<.1	107	4.16	.033	1	4	1.05	22	.118	2	6.22	.353	.25	.2	<.01	8.8	.1	.77	11	.7
RE COG20060924J05	.6	75.8	1.6	35	<.1	7.0	23.5	310	2.98	4.2	<.1	3.7	<.1	199	.3	.1	<.1	102	4.03	.032	1	4	1.01	22	.113	1	6.14	.339	.25	.1	<.01	8.3	.1	.78	11	.6
COG20060924GJ01	.2	3.7	4.3	28	<.1	30.4	2.7	107	.78	3.6	.6	1.3	3.2	4	.4	.1	<.1	3	.06	.014	6	25	.43	40	.032	1	.59	.049	.26	.2	<.01	1.4	.1	<.05	3	<.5
COG20060924GJ02	.3	2.7	6.2	29	<.1	33.7	1.9	60	.50	3.0	1.0	.7	3.3	4	.4	.2	<.1	1	.04	.011	6	14	.24	41	.018	1	.51	.049	.13	.1	<.01	1.2	<.1	<.05	2	<.5
COG20060924GJ03	.9	24.2	1.5	43	<.1	49.3	10.5	341	2.08	60.7	.1	6.2	.2	59	.4	.5	.1	84	1.79	.038	1	58	1.19	20	.094	1	3.23	.302	.05	3.2	<.01	5.9	.2	.14	7	<.5
COG20060924GJ04	14.6	104.3	2.0	41	.1	6.8	23.0	338	3.62	1.1	.1	1.8	.1	180	.2	.2	.1	143	4.29	.021	1	3	1.14	48	.161	1	6.71	.318	.41	.4	<.01	8.1	.2	.92	14	.6
COG20060924GJ05	2.3	104.6	.9	24	.2	33.6	20.6	219	2.40	1.1	.1	2.4	.3	38	.1	.2	<.1	78	1.32	.053	1	22	.56	12	.098	1	1.97	.241	.08	.6	<.01	4.2	<.1	.91	5	1.1
COG20060924GJ06	4.8	45.1	1.7	28	<.1	9.8	14.9	230	2.03	1.1	.1	1.1	<.1	177	.4	.2	<.1	65	3.57	.017	1	8	.63	22	.078	1	5.37	.388	.14	.4	<.01	6.7	.1	.40	10	<.5
COG20060924GJ07	1.8	44.5	.9	109	<.1	21.8	13.5	299	3.63	1.3	.4	1.2	.9	10	<.1	.1	.1	160	.17	.069	3	42	.99	176	.315	2	2.51	.043	.94	.4	<.01	15.8	.2	.37	8	1.3
COG20060924GJ08	.4	53.2	.7	34	<.1	16.0	21.4	385	2.90	1.1	.1	.9	.2	20	.2	.3	<.1	106	1.51	.096	1	7	.68	33	.224	1	1.53	.179	.16	.1	<.01	6.7	.1	.49	6	.5
COG20060924GJ19	.3	143.2	1.0	25	.3	43.8	35.4	221	3.89	5.5	.1	3.6	.2	115	.1	.7	.1	72	2.54	.065	1	13	.67	16	.131	1	4.16	.549	.04	.8	.01	4.6	<.1	2.25	10	.9
COG20061017JC01	1.7	58.1	1.2	55	.3	26.7	37.2	255	4.29	3.0	.1	1.6	.1	138	.3	.3	3.0	56	3.37	.053	<1	22	1.05	18	.171	1	5.76	.440	.14	6.2	<.01	4.1	.1	2.36	12	.9
COG20061017JC02	.2	319.4	1.5	48	1.1	65.4	80.2	258	15.13	2.5	<.1	13.5	.1	123	.2	.5	4.9	87	3.35	.046	1	24	.87	19	.139	1	5.59	.428	.18	37.4	<.01	3.8	.1	5.22	14	1.3
COG20061017JC03	.6	197.4	2.2	87	.4	35.1	77.3	314	10.65	2.6	.1	26.4	.2	101	.3	.4	15.3	186	2.88	.081	1	13	1.92	72	.279	1	5.75	.572	1.06	1.1	<.01	4.2	.8	4.23	14	1.2
COG20061017JC04	.1	53.6	1.9	48	.1	5.0	15.0	199	3.06	407.7	.1	5.0	.1	152	.1	.3	4.8	77	3.78	.087	1	10	1.00	15	.084	3	6.42	.767	.08	2.5	<.01	3.3	.1	1.15	15	<.5
COG20061017JC05	9.4	109.7	1.3	80	.3	17.9	30.3	417	5.35	720.8	.1	13.1	.1	89	.4	.3	3.2	148	2.48	.050	1	19	1.82	19	.153	1	4.95	.414	.05	3.5	<.01	7.4	.1	1.65	11	.6
COG20061017JC06	.4	124.1	1.3	83	.2	26.4	57.8	430	6.52	7203.7	.1	93.1	.1	64	.4	1.6	4.8	154	2.27	.067	1	18	1.75	15	.101	2	4.45	.296	.07	12.6	<.01	10.1	.1	1.74	12	1.2
COG20061017JC07	.4	226.9	4.3	2968	.8	29.4	47.4	421	7.83	33.5	.1	10.3	.1	126	84.0	.3	10.3	217	4.20	.017	<1	9	2.05	19	.170	<1	8.12	.587	.07	4.9	.01	3.9	.1	4.10	19	.9
STANDARD DS7	20.5	105.9	68.8	404	.7	54.9	9.5	625	2.38	45.2	4.8	49.7	4.5	69	6.2	4.7	4.4	82	.93	.074	12	173	1.05	361	.121	37	.98	.074	.43	3.7	.17	2.6	4.0	.20	4	4.0

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.
- SAMPLE TYPE: ROCK R150 Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data / FA ____ DATE RECEIVED: OCT 20 2006 DATE REPORT MAILED:................ 11-22-06 P01:19 OUT

BRITISH COLUMBIA CERTIFIED ASSAYER
Jacky Wang

ACME ANALYTICAL

North Pacific Alloys Limited FILE # A607621

ACME ANALYTICAL

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm
COG20061017JC08	.4	170.5	2.2	515	.5	28.0	38.2	373	5.39	11.5	<.1	2.3	.1	82	10.7	.4	1.9	189
COG20061017JC09	.2	105.3	.7	61	.2	29.7	32.2	451	4.36	7.0	.1	.6	.3	67	.5	.2	.5	148
COG20061017JC10	.7	6637.7	31.0	>10000	53.5	32.9	148.8	858	30.61	37.0	3.0	384.3	.1	2	770.5	3.2	12.6	74
COG20061017JC11	.7	420.6	7.9	>10000	1.3	16.4	61.7	1037	10.93	16.3	.2	8.3	<.1	62	200.8	1.6	19.6	270
COG20061017JC12	.9	372.2	16.8	1799	1.5	81.5	56.0	1171	9.33	41.1	.3	9.7	.5	23	45.2	6.9	4.2	347
COG20061017JC13	.2	386.1	7.4	190	1.0	19.7	46.8	496	12.48	11.3	.1	6.0	<.1	87	1.8	.5	2.2	408
* REID01	1.3	3.5	.7	17	<.1	1.0	.6	55	.11	<.5	.9	<.5	.1	162	.2	.1	<.1	4
STANDARD DS7	21.3	108.3	71.2	413	.9	56.1	9.6	638	2.42	48.4	4.9	83.3	4.6	74	6.4	5.8	4.6	86

SAMPLE#	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
COG20061017JC08	3.65	.069	1	35	1.60	45	.332	1	6.00	.483	.48	.5	.01	7.1	.3	3.27	14	.8
COG20061017JC09	2.72	.065	1	17	1.34	12	.360	1	3.77	.346	.07	.2	<.01	8.5	<.1	1.35	9	.6
COG20061017JC10	.20	.097	<1	4	1.26	5	.037	<1	.84	.008	.02	9.6	.66	3.0	.1	>10	25	2.0
COG20061017JC11	2.32	.025	<1	11	2.83	36	.174	<1	5.83	.282	.12	3.5	.13	17.0	.1	4.77	16	1.5
COG20061017JC12	.57	.076	2	43	3.68	56	.103	2	4.74	.115	.19	.3	.05	17.4	.1	1.96	13	.5
COG20061017JC13	3.78	.041	<1	10	3.75	52	.165	1	8.12	.484	1.90	.8	<.01	38.4	.9	5.14	18	.8
* REID01	29.72	.002	<1	<1	7.90	70	.003	<1	.06	.005	.02	<.1	.01	.4	.1	.06	<1	<.5
STANDARD DS7	.95	.082	13	176	1.06	393	.128	39	.99	.079	.47	3.8	.21	2.6	4.3	.21	5	3.6

Sample type: ROCK R150.

* NOTE: SAMPLE REID01 NOT FROM EMORY ZONE CLAIMS.

Data ✓ FA ____

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716
(ISO 9001 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

North Pacific Alloys Limited File # A607622
2806 - 505 - 6th St. S.W., Calgary AB T2P 1X5 Submitted by: CHRIS GOLKA

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm
G-1	.8	2.0	2.7	43	<.1	5.2	4.1	482	1.72	<.5	2.0	<.5	3.6	47	<.1	<.1	.1
COG20060924GJ09S	1.4	31.1	6.0	100	.2	620.0	49.0	439	4.72	34.7	.4	8.8	1.3	4	.6	.7	.3
COG20060924GJ10S	.3	13.9	6.5	90	.1	532.0	45.3	503	4.21	46.0	.3	3.5	1.5	2	.5	.6	.2
COG20060924GJ11S	.1	44.7	1.7	70	<.1	2699.2	144.9	1511	5.86	30.0	.2	3.2	.1	1	.3	.4	.1
COG20060924GJ12S	.2	41.2	2.2	90	<.1	1836.4	126.3	1474	6.90	52.3	.2	5.6	.2	1	.2	.5	.2
COG20060924GJ13S	2.1	52.4	1.8	85	<.1	1838.8	121.9	1264	5.90	51.2	.2	8.5	.2	1	.4	.6	.1
COG20060924GJ14S	.3	91.2	1.6	74	<.1	2459.1	159.9	1486	8.47	199.6	.5	2.2	.2	1	.4	.8	.2
COG20060924GJ15S	.7	59.3	2.7	61	.2	3291.9	231.9	1621	12.80	73.2	.4	17.9	.3	2	.3	1.0	.4
COG20060924GJ16S	2.4	33.5	2.5	52	<.1	1334.8	137.2	1009	11.17	82.9	.4	6.3	.2	1	.2	.8	.4
COG20060924GJ17S	.7	32.6	3.5	95	<.1	1242.8	105.0	1059	9.22	78.5	.2	1.2	.3	2	.3	.9	.4
COG20060924GJ18S	2.2	37.9	3.5	65	.1	1717.5	130.2	1388	9.02	63.6	.4	7.8	.2	1	.8	.6	.2
STANDARD DS7	20.7	114.6	70.8	414	.8	54.9	9.3	664	2.50	51.5	4.9	57.4	4.3	73	6.7	6.1	4.7

SAMPLE#	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	32	.41	.078	6	34	.57	192	.109	1	.83	.049	.47	1.3	<.01	2.1	.4	<.05	5	<.5
COG20060924GJ09S	58	.06	.034	3	234	3.27	41	.099	3	3.61	.008	.11	.5	.09	5.6	.1	<.05	8	.7
COG20060924GJ10S	32	.04	.024	4	198	4.14	38	.070	3	2.04	.006	.04	.5	.04	2.8	.1	<.05	9	<.5
COG20060924GJ11S	11	.01	.015	<1	437	18.77	6	.006	9	.51	.001	.01	.8	.01	4.6	.2	<.05	2	<.5
COG20060924GJ12S	17	.02	.020	<1	337	16.64	10	.016	11	.60	.002	.01	.5	.01	4.3	.1	<.05	2	<.5
COG20060924GJ13S	21	.02	.016	1	424	12.85	11	.014	10	.95	.003	.01	.6	.01	4.0	.2	<.05	3	<.5
COG20060924GJ14S	16	.01	.035	1	311	14.30	14	.014	7	.55	.001	.01	1.5	.02	7.3	.1	<.05	2	<.5
COG20060924GJ15S	26	.02	.033	1	446	6.64	17	.028	4	.60	.002	.01	1.8	.03	6.1	.1	.07	4	.6
COG20060924GJ16S	30	.01	.029	1	456	6.90	10	.030	8	.62	.002	.01	1.5	.02	4.6	<.1	<.05	4	<.5
COG20060924GJ17S	36	.03	.033	1	541	8.49	13	.044	4	1.06	.003	.01	.9	.02	4.1	<.1	<.05	4	<.5
COG20060924GJ18S	10	.01	.022	1	218	17.60	12	.010	6	.37	.001	<.01	.9	.01	6.0	<.1	<.05	1	.5
STANDARD DS7	84	.97	.081	13	172	1.07	385	.124	40	1.00	.079	.47	3.9	.20	2.6	4.4	.20	5	3.8

GROUP 1DX - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-MS.
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.
- SAMPLE TYPE: SOIL SS80 60C

Data ✓ FA ____ **DATE RECEIVED:** OCT 20 2006 **DATE REPORT MAILED:**................ 11-09-06 P05:15 OUT

BRITISH COLUMBIA CERTIFIED ASSAYER
Jacky Wang