## AIRBORNE GEOPHYSICAL SURVEY REPORT (Electromagnetic and Magnetometer Survey)

on the

## WASI CREEK PROPERTY

Tenure Nos. 503533, 511312, 511313, 511316, 512684, 512685 and 512686

**Omineca Mining Division** 

NTS: 94C/03E

BCGS Map Sheet: 094C.005, 094C.015

Latitude: 56° 6.5' N Longitude 125° 1.5' W

UTM: NAD 83, Zone 10; 6 220 000N; 374 000 E

Owner: Selkirk Metals Holdings Corp. Operator: Cross Lake Minerals Ltd. Geophysical Contractor: Aeroquest Limited

Author P.Geo. October 15 Gold Commissio VANCOUVER В

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#### SECTION A: REPORT

#### **INTRODUCTION:**

Selkirk Metals Holdings Corp. ("Selkirk" or "the Company") owns a 100% interest in the Wasi Creek Property. The property was initially acquired by Cross Lake Minerals Ltd. ("Cross Lake") in July 2000 following a review of prospective areas in British Columbia for carbonate-hosted zinc-lead-silver deposits. It was assigned to Selkirk in June 2005 as a result of a Plan of Arrangement. It was originally staked to cover the area previously known as the Par Property which Cominco Ltd. extensively explored from 1990 to 1995. The Wasi Creek Property is located 150 kilometres northwest of Mackenzie on the south side of the Osilinka River adjacent to Wasi Lake in the Omineca Mining Division. This report summarizes the results of a helicopter-borne electromagnetic and magnetometer survey that was carried out over the Wasi Creek Property in early May 2005 by Aeroquest Limited. The survey covered an area of 16 square km with the dimensions being 4000 m by 4000 m. 41 east-west lines on 100 m spacing and 5 north-south tie lines on 1000 m intervals were flown for a total of 186.8 line kilometres.

#### **PROPERTY:**

The Wasi Creek Property is comprised of seven cell claims containing an aggregate of 134 cells and covering 2417.457 hectares. These claims represent the conversion in January, April and May 2005 of 11 contiguous legacy mineral claims, three 4 post and eight 2 post, totaling 66 claim units and covering an area of 1650 hectares. The claims are all situated in the Omineca Mining Division. The Property is registered in the name of Selkirk Metals Holdings Corp. It was originally acquired by Cross Lake by staking on four occasions between July 2000 and October 2001 (see Plan Numbers WA-05-2 and WA-05-3). A Schedule of Mineral Claims is appended in Section B and lists the original legacy claims and the converted cell claims as well as the UTM coordinates of the exterior claim boundary. The expiry dates therein are based on the Statement of Work filed on July 26, 2005 (Event #4043345) and assume that the work contained in this report will be accepted for assessment purposes. None of the cell claims has been surveyed.

By agreement dated September 1, 2004 as amended, Cross Lake granted Bard Ventures Ltd. an option to carn a 50% interest in the Property by incurring aggregate exploration expenditures of \$800,000 on or before December 31, 2006. This agreement was assigned to Selkirk by Cross Lake in accordance with the aforementioned Plan of Arrangement.

#### LOCATION AND ACCESS:

The Property is located on the south side of the Osilinka River some 150 kilometres northwest of Mackenzie and 43 kilometres north-northwest of Germansen Landing. The claims are on BCGS map sheets 94C005 and 94C015 and NTS map sheet 94C/3E. Geographic co-ordinates at the centre of the property are 56° 6.5' North latitude; 125° 1.5' West longitude and UTM coordinates are 6220000N and 374000E in Zone 10, NAD 83.

Access to the property is excellent due to extensive logging operations that have been carried out around and on the claims. The easiest access is by using Highway #97 north of Prince George to a small community named Windy Point, 12 kilometres north of McLeod Lake. From Windy Point one drives on the main haulage logging road located on the west side of Williston Lake, north for 170 kilometres and then west for 22 kilometres to the junction of the Osilinka and Wasi Lake Forest Access roads. The Wasi Creek Property is reached by traveling another 18 kilometres along the south side of the Osilinka River on the Wasi Lake Forest access road. There are several secondary forest access roads crossing the claims all of which are navigable with a four wheel drive vehicle.

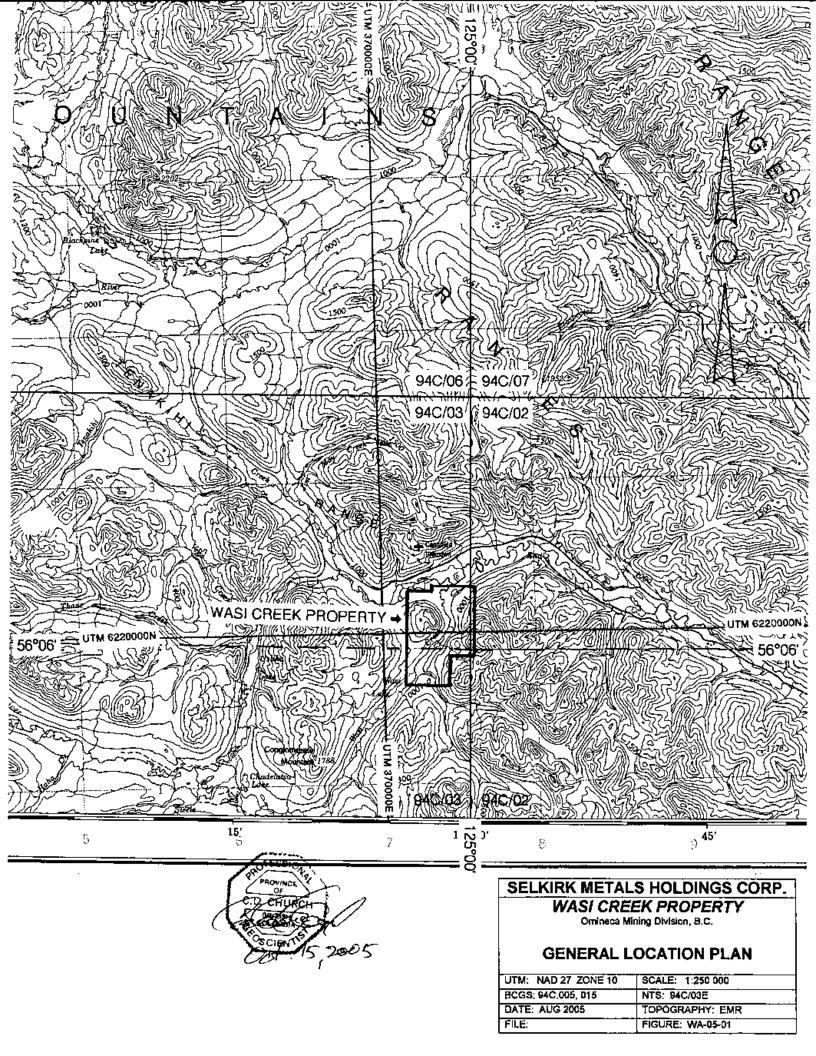
#### CLIMATE, TOPOGRAPHY AND VEGETATION:

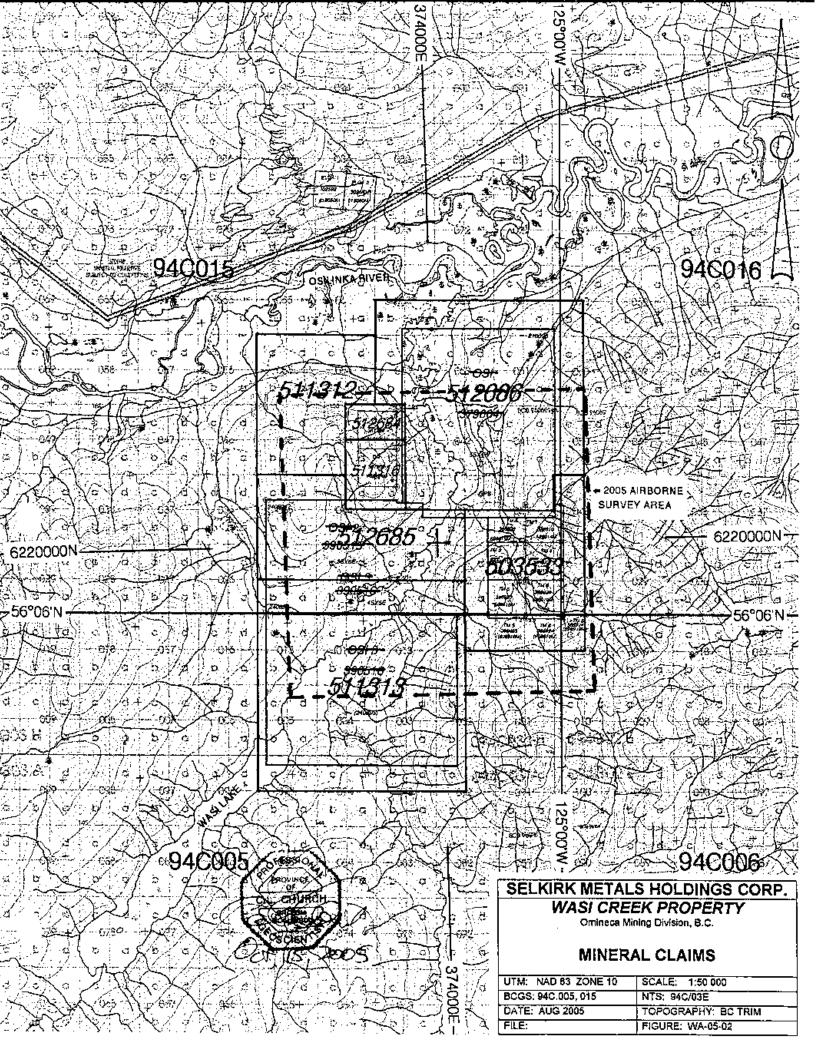
The Wasi Lake area has cold, high snowfall winters and warm, damp summers. The topography of the property is moderately steep. The lowest elevation is 830 metres on the northern boundary of the property along Wasi Creek near its confluence with the Osilinka River while the high point is 1460 metres on the ridge located along the eastern boundary of the claims. The slopes are heavily timbered by pine and spruce. In the clear cuts deciduous willows and poplars predominate.

#### HISTORY:

The earliest recorded work located in the area was in the Annual Report of the Minister of Mines in 1930 documenting the Weber Prospect, located near the northern edge of the present Wasi Creek Property. The report describes the Weber mineralization as disseminated galena, zinc and pyrite in siliceous dolomite of which a 5.18 metre channel sample assayed 3.6% zinc, 1.6% lead, loz/ton silver and 0.02oz/ton gold.

The Weber Prospect was restaked and worked at intermittent intervals with the next documented description occurring in the 1954 Geological Survey of Canada Memoir 274, by E.F. Roots entitled "Geology and Mineral Deposits of Aiken Lake Map-Area, British Columbia". He describes the showing as pyrite-galena-sphalerite-barite replacement body in limestone that strikes north 30 degrees west and





dips 80 degrees northeast. A grab sample assayed gold trace; silver 2.0oz/ton; lead 10.24% and barite 4.06%.

An inventory of the numerous carbonate-hosted stratabound zinc, lead, silver and barite showings in the Wasi Creek area is well described in British Columbia Department of Mines Open File Paper 1992-1. The paper is named "Geology of the Usilika Lake Area, Northern Quesnel Trough, B.C.", (94C/3, 4, 6) by F.Ferri, S. Dudka and C. Rees.

In 1990 Cominco Ltd. completed a reconnaissance silt and soil geochemical survey on the stratigraphic extensions of the Lower Cambrian to Middle Devonian carbonates that host the known mineral occurrences. The area around the Weber Prospect was highly anomalous so Cominco staked their first two claims covering this prospect and the anomalous areas. Cominco then completed contour and grid soil sampling and outlined a large, highly anomalous area 1.0 by 4.5 kilometres in size in lead, zinc, iron and silver and staked five additional claims.

Cominco Ltd. completed an intense exploration program during 1991. The exploration program consisted of geological mapping, soil sampling, airborne electromagnetic and magnetometer surveys, ground geophysical surveys including HLEM, magnetometer, Induced Polarization and VLF surveys. A trenching program was completed on the target area of the large soil geochemical anomaly and the coincident conductors. There were seven trenches excavated with the best mineralization discovered in trench #3 that assayed 8.4% zinc, 3.5% lead and 14.2g/t silver over a width of 17.2 metres.

In 1992 Cominco Ltd. completed 16 diamond drill holes totalling 1,346 metres in the area of the trenching. The strike length explored is approximately 2.0 kilometres along a fault controlled base metal mineralized structure, on the east side of Wasi Creek. The work was not filed for assessment credit so there are no records of the results in the provincial data base.

In 1993 Cominco drilled four holes on the north side of the Osilinka River on a separate area and one hole in the Wasi Creek area in the vicinity of the 1992 drilling. The drill hole was collared near the Duncan Showing and was successful in intersecting two mineralized horizons that assayed 6.9% zinc, 1.6% lead and 18.4g/t silver over a width of 4.5 metres and 3.1% zinc, 3.2% lead and 32.0g/t silver over a width of 3.1 metres. In 1994 Cominco constructed more drill access roads and sites and completed four holes totalling 1,164 metres, including two vertical holes drilled possibly to complete stratigraphic sections on either side of the fault controlled mineralization.

Cross Lake Minerals Ltd. acquired a 20 unit mineral claim over the property when the ground came open in 2000 and in 2001 added an additional 46 units. The Company carried out a program of geological mapping, stream sediment sampling and trenching in 2001 and in 2002 completed a soil geochemical survey.

One of the main reasons that Cross Lake Minerals Ltd. staked the Wasi Creek Property was to explore for the source of high grade massive sulphide boulders which were discovered during Cominco's trenching program in 1991. The sulphide boulders, 70 cm in size and angular, consist of layered massive sulphides contain galena, sphalerite and pyrite. Cross Lake assayed two of these angular boulders with the following results:

Sample Number	Zn (%)	Pb (%)	Ag (g/t)
W-1	26.30	25.98	96.3
W-2	8.46	42.43	384.8

None of the drilling or trenching to date has intersected mineralization similar to the high grade boulders.

Stream sediments in the Wasi Creek area were sampled by the British Columbia Geological Survey in 1991 and the results are detailed in Open File 1992-11. Four samples were collected in the Wasi Creek Property area (SS-018, SS-130, SS-203, and SS-304) and had the highest in indicator and base metal elements minerals for the entire survey area. The base metal source for the three anomalous samples, SS-018, 130 and 203, are most likely the Duncan and Par mineralized horizons on the east side of Wasi Creek. Stream sediment sample SS-018, the highest in base metal elements of all of the stream sediment samples, was collected from a stream on the west side of Wasi Creek and south of any known mineralization. In July 2002, Cross Lake Minerals Ltd. sampled the same drainage in order to verify the earlier result. The new sample (WS-1) was taken approximately 750 metres upstream, and to the west, of the B.C. government sample site location SS-018 on the OSI 2 mineral claim at approximate NAD 27 UTM coordinates 6 219 053 N, 371 988 E at an elevation of 967 metres. The sample was lower in base metal values than the B.C. government sample.

The 2002 soil sampling program was designed to test both sides of an unnamed stream that was highly anomalous in base metal elements when sampled previously by the B.C. Geological Survey. Therefore, two east-west lines, designated Line #1 and #4, parallel to and approximately 100 metres on either side of the creek were sampled at 25 metre intervals. Two additional lines, designated Line #2 and #3 were sampled in a southerly and northerly direction from where the creek meets the main Wasi Creek drainage valley, again at 25 metre sample intervals. A total of 55 soil samples were collected and the total length of the grid line surveyed was 1350 metres.

The sampling program was successful in delineating two areas of anomalous base metal elements. The first area was located on the Line #2 with samples elevated in zinc, lead, copper, molybdenum, silver and cadmium. This anomaly remains open to the south. The second area, with the highest values in base metal signature, is located on the Line #3 with samples being highly anomalous in zinc, lead, copper, nickel, cadmium, calcium and boron. This anomaly remains open to the north. The details of this 2002 program were set out in the "Soil Geochemical Report on the Wasi Creek Property, OSI 2 and 3 Mineral Claims" by Jim Miller-Tait, P.Geo. dated January 10, 2003, B.C Assessment Report #27,032.

Additional soil sampling programs were carried out on the property in two phases during the summer of 2004. Details of the 2004 Phase 1 program completed in June was titled "Geochemical Sampling Report on the Wasi Creek Property" by Calvin Church, P.Geo. dated October 28, 2004, B.C. Assessment Report #27532. The program was regional in scope and consisted mainly of a series of road traverses transecting the boundaries of the property. A total of 137 soil samples were collected from road cuts at 100 metre intervals along roughly 13 km of logging road. Anomalous results from the Phase 1 program were located approximately one kilometer east of the main Par showings on the east half of the OSI claim.

The 2004 Phase 2 geochemical soil sampling program was carried out in September 2004 which reported results of 212 soil samples collected at 25 metre intervals along contour traverses above Wasi Creek. Consistently anomalous soil geochemical anomalies for lead and zinc were returned from traverses below Carrie Mountain where 48% of sample had values exceeding 1000ppm Zn and 28% had values between 400 – 1000ppm Zn. Results from the 2004 Phase 2 geochemical sampling program are summarized in the report titled "Geochemical Sampling Report (2004 Phase 2) on the Wasi Creek Property" by Calvin Church. Based on results from Phase 1 and Phase 2 of the 2004 geochemical sampling programs further work was recommended including an airborne electromagnetic survey (AEM) which is the subject of this report.

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#### **REGIONAL GEOLOGY:**

The following regional geological description has been compiled from papers in the British Columbia Geological Survey Branch Reports of Geological Fieldwork in 1989 and 1991. The Wasi Creek Property is located in an area that straddles the boundary between the Intermontane and Omineca tectostratigraphic belts of the Canadian Cordillera. The Western Intermontane Superterrane is represented by the Slide Mountain and Quesnel terranes. Together with the eastern autochthonous North American stratigraphy, these rocks form part of a southwest-dipping homoclinal sequence. This sequence has been cut by a series of normal faults, which trend northeasterly. With the exception of the eastern pericratonic strata all of the rocks have been weakly metamorphosed.

The Wasi Creek Property is underlain by the pericratonic North American rocks of primarily carbonates and siliciclastics of miogeoclinal origin. These rocks include the Upper Proterozoic Ingenika Group consisting of impure quartzite, schist, phyllite, limestone, feldspathic wacke and arkosic sandstone. Overlying this Group is the Lower Cambrian to Middle Devonian Atan, Razorback, Echo Lake and Otter Lake Groups. These Groups consist of limestone, dolomite, shale, quartzite, and argillaceous limestone. The Lower Cambrian to Middle Devonian limestone and dolomite host the zinc, lead and silver mineralization on the Wasi Creek Property.

#### **PROPERTY GEOLOGY:**

The Wasi Creek Property geology is a compilation from Cross Lake's 2001 exploration work, Cominco's 1990-1995 exploration programs and mapping completed by the British Columbia Geological Survey as described in File Paper 1992-1. The paper is named "Geology of the Usilika Lake Area, Northern Quesnel Trough, B.C.", (94C/3, 4, 6) by F.Ferri, S. Dudka and C. Rees. The geological stratigraphy underlying the property are all Paleozoic in age ranging from Lower Cambrian to Mississippian.

The oldest rock units exposed in the claim area are the Lower Cambrian to Middle Devonian carbonates. The oldest is the Lower Cambrian Mount Kison Formation of the Atan Group. Overlying this unit are the Cambrian and Ordovician Razorback, Middle Ordovician to Lower Devonian Echo Lake Group and Middle Devonian Otter Lakes Group. This entire carbonate package consists of limestone, dolomite, lesser shale, quartzite and argillaceous limestone. The Atan, Razorback, and Echo Lake Groups are host to the mineralization on the Wasi Creek Property. Overlying the carbonates is the Upper Devonian to Lower Mississippian aged Big Creek Group. This Group consists of dark grey to blue grey shales, argillites and minor siltstones and siltite. The next oldest unit, the only major volcanic rock unit observed on the claims, is the Lower Mississippian-aged Dacitic Tuff Unit of the Lay Range Assemblage. This

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thick unit is only exposed on the northwest side of a major geological structure which is postulated to occur in the valley bottom of Wasi Lake and Wasi Creek. The rest of the Lay Range Assemblage is absent in the Wasi Creek Area.

Across Wasi Creek Valley, on the southeast side of the northeast trending Wasi structure, is the youngest, Pennsylvanian-aged, Mount Howell Formation. This Formation consists of argillite, chert, gabbro and minor basalt, wacke and felsic tuff.

There are numerous carbonate-hosted zinc-lead-silver showings on the Wasi Creek Property but only the main showings, with the largest amount of exploration work will be discussed in this report. Three of the showings, the Duncan, Par and the Weber, that comprise the Par mineralization which was the main focus of Cominco Ltd. are located from south to north over a two kilometre strike length. These showings are located along a fault structure, which may be the conduit of the mineralizing solutions and which strikes at approximately 330 degrees and dips east at 70 degrees. The fault and the three showings are all located on the east side of a major northeast trending structural lineament located along the valley bottom of Wasi Creek and Lake. Cominco Ltd. completed the bulk of their exploration work in this area by completing the airborne and ground surveys, seven excavator trenches and 21 diamond drill holes exploring these mineralized structures. The mineralization is stratabound with most primary features obliterated by deformation. The sulphides consist of sphalerite, galena, pyrite and traces of tetrahedrite and grain size varies from fine grained at the Duncan showing to coarse-grained.

The Carrie 2 showing is located on the west side of the Wasi Valley structure near the northwest edge of the property. The showing was hand trenched, mapped and sampled by Cross Lake Minerals Ltd. during 2001. The mineralization consists of hydrozincite stained, oxidized, disseminated, fine-grained sphalerite, galena and pyrite hosted in brecciated dolomite and limestone with carbonate in-filling of fractures and open space.

#### SURVEY AREA:

The survey over the Wasi Creek Property covered an area of 16 square km. The survey dimensions were 4000 m by 4000 m with 41 east-west lines being flown on 100 m spacing and 5 north-south tie lines on 1000 m intervals. A total of 186.8 line kilometres was completed. Approximately 62% of the property was covered with a small portion of the survey extending off tenure. The exterior boundaries of the survey area are defined by the following UTM Zone 10 - NAD 83 coordinates:

North: 6222000N South: 6218000N East: 376000E West: 372000E

#### GEOPHYSICAL SURVEY:

Acroquest Limited of Milton, Ontario was engaged to conduct a helicopter-borne Acrotem II electromagnetic and magnetometer survey over the property. Their technical report with the results of the survey is appended in Section D.

#### CONCLUSIONS:

- The Wasi Creek Property, owned 100% by Selkirk Metals Holdings Corp., covers an extensive belt of Lower Cambrian to Middle Devonian limestone and dolomite which is the host to several base metal showings.
- There are three mineralized showings on the east side of Wasi Creek. The valley bottom of the creek hosts a major geological structure.
- The three showings from south to north, named Duncan, Par and Weber, are all on the same mineralized fault controlled structure which strikes at approximately 330 degrees and dips east at 70 degrees.
- This area was the focus of Cominco Ltd.'s extensive exploration programs from 1990 to 1995. The trenching and drilling intersected the favorable base metal horizon with promising results.
- The Cominco trenching discovered angular float boulders of exceptional grade in zinc, lead and silver of which the source has not been found.
- The British Columbia Geological Survey completed a stream sediment sampling program in the area and the four highest sediment values in base metal elements were collected from drainages in the Wasi Creek Property area.
- The source of three of the stream sediment samples is concluded to have been the known mineralized horizon on the east side of the Wasi Creek structure.
- One of the highest stream sediment samples was collected from a tributary on the west side of Wasi Creek, the opposite side of the Wasi Creek structure near a volcanic tuff unit contact, a favorable geological environment for base metal deposition.

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- The source of the stream sediment anomaly has not been discovered and it is upstream and up-ice of the extremely high grade angular massive sulphide boulders discovered in Cominco's trenching program of which the source has yet to be found.
- The soil sampling completed in 2004 Phase 2 program has confirmed anomalous areas west of Wasi Creek below Carrie Mountain. Geochemical soil anomalies indicate the mineralization could be a stratabound mineralized horizon or brecciated unit within Rosella Fm carbonates. The source of the anomaly is from nearby mineralized bedrock or from transported talus directly upslope.
- Airborne EM conductors identified in this survey are clearly coincident with mapped argillaceous carbonates and carbonaceous shales making it a valuable mapping tool in thick overburden. Conductive sediments make identifying EM conductor targets difficult especially where graphitic shearing occurs and where carbonaceous sediments are in contact prospective carbonate breccias.
- Several weak EM conductors appear to "float" in areas underlain by carbonate breccias far from known contacts and may represent better targets than stronger conductors. One such conductor is located on the south face of Carrie Mountain and is identified as conductor E on lines 10160, 10170 and 10180. Coincident soil geochemical anomalies in the same area further strengthen the case for follow up.
- Given that flat lying conductors can exhibit limited or no response and carbonaceous sediments or graphitic structures give strong responses it is advisable to use detailed geological maps (assuming sufficient outcrop/subcrop exists) as part of target any evaluation.

#### **RECOMMENDATIONS:**

The Wasi Creek Property covers a favorable geological environment for the possibility of a discovery of a significant carbonate-hosted zinc-lead-silver deposit. The property covers a large area with targets at different stages of exploration.

The Carrie 2 showing should have a road constructed to it and the showing extensively trenched up and down the slope. Once the geometry of the mineralization is verified the base metal target should be diamond drilled.

The main two kilometre long Duncan, Par and Weber horizon should be explored on its west side, closer to the structure along the bottom of Wasi Creek valley. A grid should be constructed across the valley and geophysical survey completed to determine hidden mineralization that may occur beneath the valley

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fill. There should be drilling completed in a westerly direction under Wasi Creek to test if this Wasi Creek structure is mineralized as is the fault controlling the Duncan, Par and Weber mineralization.

Several EM conductors have been identified in the Helicopter-Borne AeroTem II Electromagnetic and Magnetic survey. These targets were picked in consultation with a qualified geophysicist, Syd Visser of SJD Gephysics Ltd, and with the aid of reasonable geological mapping and recent soil geochemical data. The EM targets on the south slopes of Carrie Mountain (L10150E, L10160E, and L10170E) represent good drill targets. Second order drill targets are located near the faulted geological contact between Rosella Fm carbonate breccias and Road River Gp shales south of Carrie Mountain (L10180D, 10200D).

Respectfully submitted,



Calvin Church, P.Geo.

#### LIST OF REFERENCES:

Church, C., (2004): Geochemical Sampling Report on the Wasi Creek Property, OSI, OSI 2, OSI 3, TM 2 and TM 3 Mineral Claims, for Cross Lake Minerals Ltd.; NTS 94C/03E; B.C. Assessment Report #27532

Church, C., (2005): Geochemical Sampling Report (2004 Phase 2) on the Wasi Creek Property, Tenure Nos. 511313, 512685 and 512686, for Selkirk Metals Holdings Corp.; NTS 94C/03E; B.C. Assessment Report #\_\_\_\_\_

Ferri F., Dudka S., Rees C., (1992): Geology of the Usilika Lake Area, Northern Quesnel Trough, B.C. (94C/3, 4, 6). British Columbia Geological Survey Geological Fieldwork 1991, Paper 1992-1.

Ferri F., Dudka S., Rees C., Meldrum D., Willson M., (1992): Geology, Geochemistry and Mineral Occurrences of the Usilika Lake Area, B.C. (94C/3, 4 and 6). British Columbia Geological Survey Open File 1992-11.

Gabrielse, H.: Unpublished GSC Map of the Mesilinka Map Area, 94C.

Mansy, J.L. and Gabrielse, H., (1978): Stratigraphic Terminology and Correlation of Upper Proterozoic Rocks in Omineca and Cassiar Mountains, North-Central B.C., GSC Paper 77-19.

Melville D.M. (1990): Carbonate-Hosted Lead-Zinc Occurrences in the Germansen Landing and End Lake Areas (94C/2, 93N/15). British Columbia Geological Fieldwork Exploration in British Columbia 1989, Pages 193 to 196.

Miller-Tait, J. (January 2002): Geological Report on the Wasi Creek Property, OSI Mineral Claim, for Cross Lake Minerals Ltd.; NTS 94C/3E; B.C. Assessment Report #26,827

Miller-Tait, J. (January 2003): Soil Geochemical Report on the Wasi Creek Property, OSI 2 and 3 Mineral Claims, for Cross Lake Minerals Ltd.; NTS 94C/3E; B.C. Assessment Report #27,032

Roots, E.F., (1954): Geology and Mineral Deposits of the Aiken Lake Map Area, B.C., GSC Memoir 274.

#### STATEMENT OF QUALIFICATIONS:

For: Calvin Church, 1733 Napier Street, Vancouver, B.C. V5L 2N1.

I graduated from the University of British Columbia with a Bachelor of Sciences Degree in Geology (1987);

I have been practicing my profession as a geologist in mineral exploration and mining intermittently since 1987;

I am a registered member in good standing as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia;

The observations, conclusions and recommendations contained in the report are based on field examinations, personal sampling, and the evaluation of results of the exploration programs completed by past operators.

ESSIC Of 15, 2005

Calvin Church, P.Geo.

## SECTION B: PROPERTY

WASI	I CREEK		SCHEDULE OF MINERAL CLAIMS					
PROVINCE: British Columbia			CLAIMS: 7	CLAIMS: 7 CELLS: 13		4 AREA: 2417.457 ha		
MININ	<b>G DIVISION</b>	: Omineca	NTS: 94C/03E		BCC	GS: 094C.00	05,015	
LOCAT	<b>FION:</b> on the	south side of the Osilinka	LATITUDE: 56°	6.5'	LON	GITUDE:	125° 1.5'	
River n	ear Wasi Lak	e some 150 km northwest of	UTM NAD 83	ZONE 10	62	220 000N	374 000E	
		ortheast of Smithers and est of Germansen Landing 94C Mesilinka River 94C/03 Uslika Lake 94C005 Conglomerate Mtn. 94C006 Mount Howell 94C015 Tenakihi Range 94C016 End Lake	PROPERTY INTEREST: Selkirk Metals Holdings Corp. – 100% Bard Ventures Ltd. – 0%					
AGREI	EMENT SUM	IMARY:						
		Letter Option Agreement between C est in the Property by incurring aggr						

November 19, 2004: Letter amendment whereby first and second work periods combined. June 16, 2005: Assignment Agreement between Cross Lake Minerals Ltd. and Selkirk Metals Holdings Corp. whereby Cross Lake assigned a 100% interest in the Wasi Creek Property to Selkirk.

CLAIM NAME	TENURE NUMBER	CELLS/ UNITS	GROSS AREA (hectares)	RECORD DATE (yyyy-mm-dd)	GOOD TO DATE (yyyy-mm-dd)	ANNUAL WORK \$	RECORDED OWNER / REMARKS
Legacy C	laims:	Units					
OSI	379604	20	500.000	2000-07-25	2005-08-01	4000.00	Converted to 512686
TM I	386919	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
TM 2	386920	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
TM 3	386921	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
TM 4	386922	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
TM 5	386923	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
TM 6	386924	1	25.000	2001-05-28	2006-08-01	200.00	Converted to 503533
CI	387799	1	25.000	2001-07-01	2006-08-01	200.00	Converted to 512684
C2	387800	1	25.000	2001-07-01	2006-08-01	200.00	Converted to 511316
OSI 2	390515	18	450.000	2001-10-19	2005-08-01	3600.00	Converted to 516685
OSI 3	390516	20	500.000	2001-10-19	2005-08-01	4000.00	Converted to 511313
MT Onlin	ne:	Cells				_	
-	503533	17	306.732	2005-01-14	2007-11-01	1226.93	Selkirk Metals Holdings Corp.
W 1A	511312	14	252.471	2005-04-21	2007-11-01	1009.88	
-	511313	42	758.063	2005-04-21	2007-11-01	3032.25	"
-	511316	4	72.151	2005-04-21	2007-11-01	288.60	
-	512684	2	36.070	2005-05-16	2007-11-01	144.28	"
-	512685	17	306.698	2005-05-16	2007-11-01	1226.79	
-	512686	38	685.272	2005-05-16	2007-11-01	2741.09	н
7		134	2417.457			9669,83	

CLAIM BOUNDAR	Y COORDINATES	UTM: NAD 83, ZON	E 10	
Corner No.	Cell ID	Cell Corner	Easting	Northing
1	094C02E070B	NE	376 003.631	6 223 164.687
2	094C02E020C	SE	375 869,890	6 218 528.222
3	094C03H012D	SW	374 314.861	6 218 573.307
4	094C03A092C	SE	374 260,697	6 216 718.756
5	094C03A095C	SW	371 538.227	6 216 799.039
6	094C03H055C	NW	371 718.036	6 222 826.295
7	094C03H054D	NE	373 271.567	6 222 780,246
8	094C03H063B	NW	373 285.236	6 223 243.888

Property corners are numbered in a sequence starting at the NE corner of the property and proceeding in a clockwise direction.

Date of Filing (yyyy-mm-dd)	Work Filed S	New Work Applied S	PAC Credits Applied	PAC Credits Saved	Total PAC Credits	Date of Approval (yyyy-mm-dd)	Event Number
2001-01-24	2000.00	2000.00	0	0	-	2001-01-24	3159811
2002-03-26	Notice to G	oup: 11 claims		•		2002-03-26	3177258
2002-03-26	9539.53	9500.00	0	39.53	-	2002-07-31	3177259
2002-09-23	6500.00	5086.76	1413.24	-	-	2003-08-12	3184393
2003-09-09	Notice to G	roup: 11 claims	for Common Ar	miversary Date	•	2003-09-09	3199038
2003-09-09	0	0	1506.41	0	-	2003-09-09	3199038
2004-07-29	6402.09	5400.00	-	1002.09	-	2005-04-15	3214539
2005-07-26	52843.00	14073.79	-	38769.21	-		4043345

Item	Work Performed	Quantities / Rates	Amount	
Project Geologist: Jim Miller-Tait, P.Geo. Sikanni Mine Development Ltd.	Project Supervision, Data Analysis May-June 2005	3 days @ \$450.00	\$1,350.00	
Project Geologist: Calvin Church, P.Geo. Caledonia Geological Inc.	Data Analysis and Report Preparation October 2005	3 days @ \$375.00	\$1,125.00	
Airborne Survey: Aeroquest Limited, Milton, ON	Mobilization/Demobilization Airborne survey charges for flying on May 5 and 6, 2005. Total: 186.8 line km.	2 days flying @ \$19000.00/day	\$4,000.00 <u>\$38,000.00</u> \$42,000.00	
Total	10421. 100.0 mic km.		\$44,475.00	

# SECTION C: EXPENDITURES - Wasi Creek Property-2005 Airborne Geophysical Survey

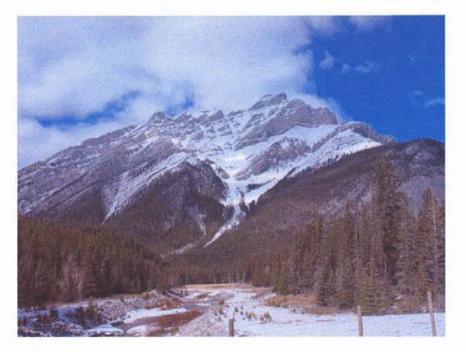
# Expenditure Apportionment:

.

Claim Tenure No.	Area (hectares)	% of Total	Expenditure
503533	306.73	19,17	8525.86
511312	94.55	5.91	2628.47
511313	350.70	21.92	9748.92
511316	72,15	4.51	2005,82
512684	36.07	2,25	1000.69
512685	256.70	16.04	7133.79
512686	380.51	23.78	10576.15
Off Tenure	102.59	6.42	2855,30
Total	1600.00	100.00	\$44,475.00

## SECTION D: GEOPHYSICAL REPORT

Report on a Helicopter-Borne AeroTEM II Electromagnetic and Magnetometer Survey on the Wasi Creek Project by Aeroquest Limited dated June 2005. Report on a Helicopter-Borne AeroTEM© II Electromagnetic & Magnetometer Survey



Aeroquest Job # 05012 Wasi Creek Project Wasi Creek Area, British Columbia 94C/2,3

for

### Cross Lake Minerals Ltd. 1255 West Pender Street Vancouver, B.C.

V6E 2V1

by

# **EAEROQUEST LIMITED**

4-845 Main Street East Milton, Ontario, L9T 3Z3 Tel: (905) 693-9129 Fax: (905) 693-9128 www.aeroquestsurveys.com June, 2005

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

# Aeroquest Job # 05012 Wasi Creek Project

Wasi Creek Area, British Columbia 94C/2,3

for

# Cross Lake Minerals Ltd.

1255 West Pender Street Vancouver, B.C. V6E 2V1

by

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## 1.2. Appendices

Appendix 1: Survey Block Co-ordinates Appendix 2: Description of Database Fields Appendix 3: Technical Paper: "Mineral Exploration with the AeroTEM System" Appendix 4: Instrumentation Specification Sheet

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

- Map 1: Total Magnetic Intensity
- Map 2: EM Profiles and Anomalies
- Map 3: ZOff1 Amplitude with EM Anomalies

# 2. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Cross Lake Minerals Ltd. on the Wasi Creek Project, in the Wasi Creek area, British Columbia. The 100% held Wasi Creek Property consists of 11 mineral claims totalling 66 units, covering 1,650 hectares. The property, located on the south side of the Osilinka River some 150 kilometres northwest of Mackenzie, B.C., covers areas of historic trenching of zinc, lead and silver mineralization in the Cambrian Atan Group dolomite and limestone.

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.

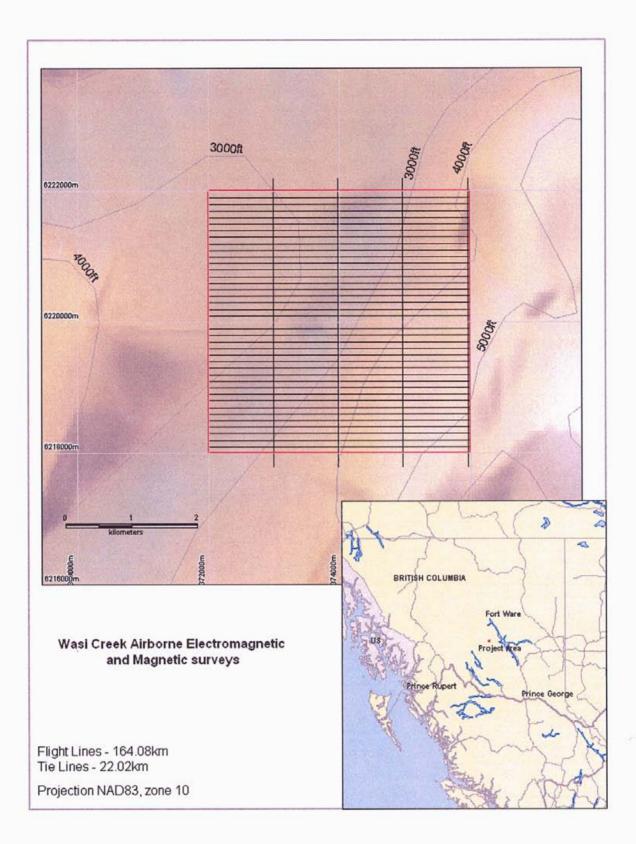
The total line kilometres flown is totaled at 186.8 km. The survey flying described in this report took place on May 5 and May 6, 2005.

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

# 3. SURVEY AREA

The Wasi Creek Property consists of 11 mineral claims totaling 66 units, covering 1,650 hectares. The property is located on the south side of the Osilinka River some 150 kilometres northwest of Mackenzie, B.C. The property is accessed via the Kemess Mine road, a gravel road which extends northwest from Mackenzie. A logging road provides access from the Kemess Mine Road to the survey area. The field crew were based at the Omineka logging camp, north west of Mackenzie on the Kemess Mine road. The helicopter was provided by HiWood helicopters, Calgary, Alberta.

The Cross Lake Minerals Ltd. Mineral Dispositions for the area may be located on NTS 1:50,000 map sheets 094C/02,03.



# Figure 1. Regional location map of the project area

AeroQuest Limited - Report on an AeroTEM II Airborne Geophysical Survey

## 4. REGIONAL GEOLOGY and EXPLORATION (from Cross Lake Minerals web site)

The Wasi Creek Property covers areas of historic trenching of zinc, lead and silver mineralization in the Cambrian Atan Group dolomite and limestone. In spring 2001, the Company identified old hand trenches during a reconnaissance prospecting program. One of these trenches was re-excavated exposing sphalerite, galena and pyrite mineralization hosted by light grey dolomite and breccia. The weighted average of a 5.0 metre rock chip channel sample was 5.05% zinc, 0.75% lead and 21.7g/t silver. During the summer, the Company expanded the area of old hand trenching, which had been reopened earlier in the year, from 5 to 10 metres exposing sphalerite, pyrite and galena mineralization hosted by light grey dolomite and breccia. The weighted average of rock chip channel samples was 5.01% zinc, 0.89% lead and 18.0 g/t silver over a 10 metre width. The base metal mineralization is still open at both ends of the trench.

As follow-up, the Company completed a geological review on and around the property using B.C. government regional mapping and stream sediment sampling programs and reports. As a result of this compilation, the Company staked an additional 10 claims, covering 46 units, adjoining the original claim on the south side. This area covers the drainages that are highly anomalous in base metals and an important volcanic-carbonate horizon for possible base metal deposition.

In July 2002, a reconnaissance soil sampling program was completed in one of the drainage basins that was identified as being highly anomalous in base metal elements during a regional stream program completed by provincial government geologists. The soil sampling identified several areas which are highly anomalous in zinc, lead, silver and barium. The data has been reviewed and the next phase of exploration is being planned.

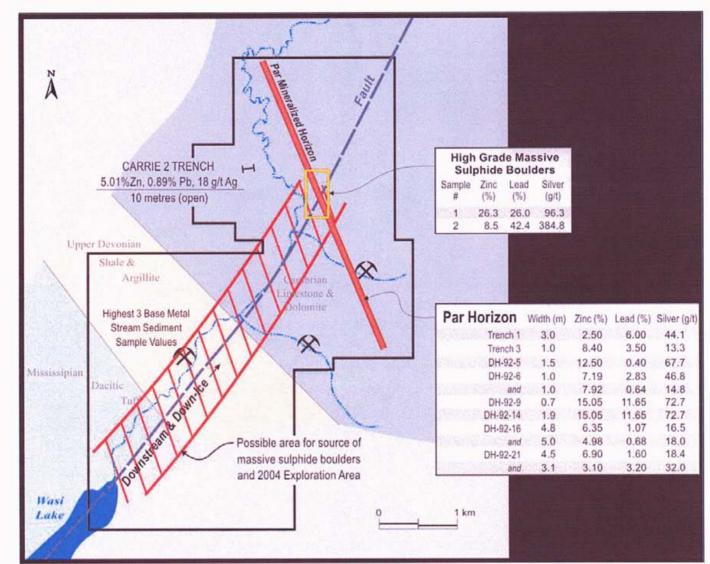


Figure 2. Exploration Compilation (taken from Cross Lake Minerals Website).

# 5. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarised in the following table:

Project Name	Line Spacing (m)	Line direction	Survey Coverage (line-km)	Dates Flown
Wasi Creek	100	E-W (090°)	186.8	May 5 – May 6, 2005

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines in the final Geosoft database. The database was windowed to the survey block outline prior to this calculation. 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.

6

The nominal EM bird terrain clearance is 30m (98 ft). The magnetometer sensor is mounted in a smaller bird connected to the tow rope 21 metres above the EM bird and 17 metres below the helicopter (Error! Reference source not found.). 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.

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.

Unlike frequency domain electromagnetic systems, the AeroTEM© II system has negligible drift due to thermal expansion. The system static offset is removed by high altitude zero calibration lines and employing local leveling corrections where necessary.

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.

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

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

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

# 6. AIRCRAFT AND EQUIPMENT

## 6.1. Aircraft

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-GPTG used as survey platform. The helicopter was owned and operated by HiWood Helicopters, Calgary, Alberta. Installation of the geophysical and ancillary equipment was carried out by AeroQuest Limited in La

Ronge and ferried to the survey area. The survey aircraft was flown at a nominal terrain clearance of 220 ft (70 m).



Figure 3. Survey helicopter C-GPTG

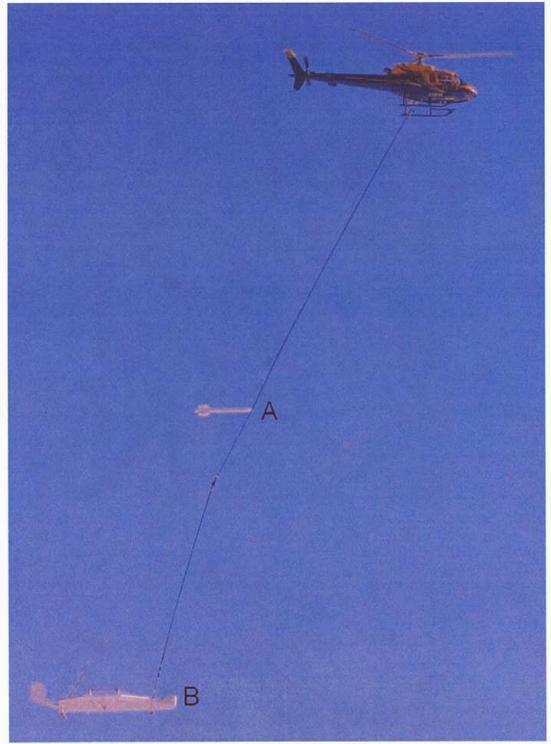


Figure 4. The magnetometer bird (A) and AeroTEM II EM bird (B)

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



Figure 5. The AeroTEM II Instrument Rack

## 6.4. PROTODAS Acquisition System

The 128 channels of raw streaming data are recorded by the AERODAS acquisition system onto a removable hard drive. The streaming data are processed post-survey to yield 33 stacked and binned on-time and off-time channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:

Channel	Width	Gate	Start(µs)	Stop(µs)	Mid(µs)	Width(µs)	Noise Tolerance (nT)
1 ON	1	25	651.0	677.1	664.1	26.04	N/A
2 ON	1	26	677.1	703.1	690.1	26.04	N/A
3 ON	1	27	703.1	729.2	716.1	26.04	10
4 ON	1	28	729.2	755.2	742.2	26.04	10
5 ON	1	29	755.2	781.3	768.2	26.04	10
6 ON	1	30	781.3	807.3	794.3	26.04	10
7 ON	1	31	807.3	833.3	820.3	26.04	10
8 ON	1	32	833.3	859.4	846.4	26.04	10
9 ON	1	33	859.4	885.4	872.4	26.04	10
10 ON	1	34	885.4	911.5	898.4	26.04	10
11 ON	1	35	911.5	937.5	924.5	26.04	10
12 ON	1	36	937.5	963.5	950.5	26.04	10
13 ON	1	37	963.5	989.6	976.6	26.04	10
14 ON	1	38	989.6	1015.6	1002.6	26.04	10
15 ON	1	39	1015.6	1041.7	1028.6	26.04	N/A
16 ON	1	40	1041.7	1067.7	1054.7	26.04	N/A
0 OFF	1	44	1145.8	1171.9	1158.9	26.04	N/A
1 OFF	1	45	1171.9	1197.9	1184.9	26.04	10
2 OFF	1	46	1197.9	1224.0	1210.9	26.04	10
3 OFF	1	47	1224.0	1250.0	1237.0	26.04	10
4 OFF	1	48	1250.0	1276.0	1263.0	26.04	10
5 OFF	1	49	1276.0	1302.1	1289.1	26.04	10
6 OFF	1	50	1302.1	1328.1	1315.1	26.04	10
7 OFF	1	51	1328.1	1354.2	1341.1	26.04	10
8 OFF	1	52	1354.2	1380.2	1367.2	26.04	10
9 OFF	1	53	1380.2	1406.3	1393.2	26.04	10
10 OFF	1	54	1406.3	1432.3	1419.3	26.04	10
11 OFF	1	55	1432.3	1458.3	1445.3	26.04	10
12 OFF	1	56	1458.3	1484.4	1471.4	26.04	10
13 OFF	4	57	1484.4	1588.5	1536.5	104.17	10
14 OFF	8	61	1588.5	1796.9	1692.7	208.33	10
15 OFF	16	69	1796.9	2213.5	2005.2	416.67	10
16 OFF	32	<b>8</b> 5	2213.5	3046.9	2630.2	833.33	10

## 6.5. RMS DGR-33 Acquisition System

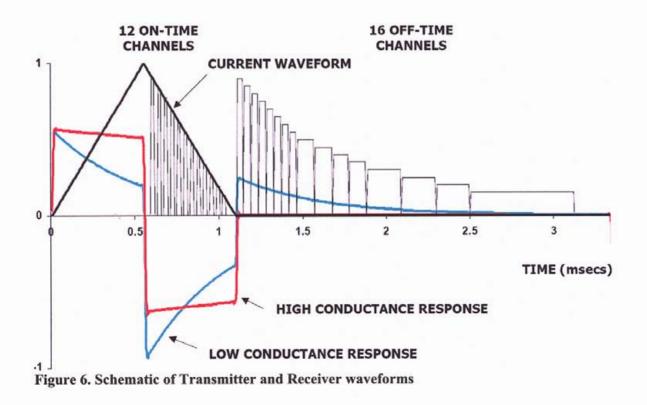
In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM data in the Z direction and one in the X direction are recorded by the RMS DGR-33 acquisition system at 10 samples per second and plotted real-time on the analogue chart recorder. These channels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

RMS Channel	Start time (microsec)	End time (microsec)	Width (microsec)	Streaming Channels	Noise tolerance
Z1, X1	1269.8	1322.8	52.9	48-50	20 ppb
Z2	1322.8	1455.0	132.2	50-54	20 ppb
Z3	1428.6	1587.3	158.7	54-59	15 ppb
Z4	1587.3	1746.0	158.7	60-65	15 ppb
Z5	1746.0	2063.5	317.5	66-77	10 ppb
Z6	2063.5	2698.4	634.9	78-101	10 ppb

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

#### 6.6. Magnetometer Base Station

The base magnetometer was a GEM Systems GSM-19 overhauser magnetometer with a built in GPS receiver and external GPS antenna. Data logging and UTC time syncronistation was carried out within the magnetometer, with the GPS providing the timing signal. The data logging was configured to measure at 1.0 second intervals. Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area of low magnetic gradient and free of cultural noise sources. A continuously updated display of the base station values was available for viewing and regularly monitored to ensure acceptable data quality and diurnal variation.



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## 6.7. Radar Altimeter

A Terra TRA 3500/TRI-30 radar altimeter is used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. Therefore, the recorded data reflect the height of the helicopter above the ground. The Terra altimeter has an altitude accuracy of  $\pm 1.5$  metres.

## 6.8. Video Tracking and Recording System

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

## 6.9. GPS Navigation System

The navigation system consists of an Ag-Nav Incorporated AG-NAV2 GPS navigation system comprising a PC-based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, a Mid-Tech RX400p WAAS-enabled GPS receiver mounted on the instrument rack and an antenna mounted on the magnetometer bird. WAAS (Wide Area Augmentation System) consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations, located on the east and west coasts, collect data from the reference stations and create a GPS correction message. This correction accounts for GPS satellite orbit and clock drift plus signal delays caused by the atmosphere and ionosphere. The corrected differential message is then broadcast through one of two geostationary satellites, or satellites with a fixed position over the equator. The corrected position has a published accuracy of under 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 10N projection. The real-time differentially corrected GPS positional data was recorded by the RMS DGR-33 in geodetic coordinates (latitude and longitude using WGS84) at 0.2 s intervals.

## 6.10. Digital Acquisition System

The AeroTEM© received waveform sampled during on and off-time at 128 channels per decay, 300 times per second, was logged by the proprietary AERODAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is 26.04 microseconds. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field processing computer.

The RMS Instruments DGR-33A data acquisition system was used to collect and record the analogue data stream, i.e. the positional and secondary geophysical data, including processed 6 channel EM, magnetics, radar altimeter, GPS position, and time. The data was recorded on 128Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder for on-board real-time QA/QC.

# 7. PERSONNEL

The following AeroQuest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Field Data Processors: Matt Holden, Nick Venter
- Field Operator: Marc Fortier
- Data Interpretation and Reporting: Jonathan Rudd, Matthew Pozza, Marion Bishop

The survey pilot was employed directly by the helicopter operator - HiWood Helicopters Ltd.

# 8. DELIVERABLES

The report includes a set of four geophysical maps plotted at a scale of 1:10,000.

- Map 1: Coloured Total Magnetic Intensity with contours and EM anomalies
- Map 2: AeroTEM Off-Time Profiles (Z5-Z15) with EM anomalies
- Map 3: Z1 Off-Time EM colour grid with line contours and EM anomalies

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 on-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 100 nT.

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. A description of the contents of the individual channels in the database can be found in Appendix 3. A copy of this digital data is archived at the Aeroquest head office in Milton.

# 9. DATA PROCESSING AND PRESENTATION

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

## 9.1. Base Map

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

- Ellipse: GRS 1980
- Ellipse major axis: 6378137m eccentricity: 0.081819191
- Datum: North American 1983 Canada Mean
- Datum Shifts (x,y,z): 0, 0, 0 metres
- Map Projection: Universal Transverse Mercator Zone 13 (Central Meridian 105°W)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

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

#### 9.2. Flight Path & Terrain Clearance

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

Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

#### 9.3. Electromagnetic Data

The raw streaming data, sampled at a rate of 38,400 Hz (126 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 filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology. An overburden stripped response was generated by subtracting the off-time response from the on-time response for the X1 to X16 and Z1 to Z16 channels. New RMS emulation channel windows, Z1New to Z6New and X1New, were calculated based on the original 6 z-component and 1 x-component channels that the AeroTEM I system recorded in order to provide for compatibility and comparisons with earlier AeroTEM surveys.

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 labeled in the "streaming" database as Zon1 to Zon16, Zoff0 to Zoff16, Xon1 to Xon16, and Xoff0 to Xoff16.

Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peak excursions in the on-time Z channel responses. The auto-pick algorithm was based on two criteria, 1) a minimum Zon4 threshold of 30 nT/s and 2) a peak in Zon4 channel as defined by two leading values that are increasing, and two trailing values that are decreasing with a minimum amplitude of 8 nT/s. 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 ensure the optimal representation of the conductor centres on the maps.

At each conductor pick, estimates of the on-time and off-time conductance have been generated based on a horizontal plate source model for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Each conductor pick was then classified according to a set of seven ranges of calculated on-time conductance values, since the on-time data provide a more accurate measure of the conductance 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 ontime conductance were classified as a low conductance source.

#### 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 18 metres. The final leveled grid provided the basis for threading the presented contours which have a minimum contour interval of 5 nT.

#### 10. Results and Interpretation

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area.

#### 10.1. Magnetic Response

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. The sources for anomalous magnetic responses are 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.

The magnetic data have a dynamic range of only 121 nT across the survey block with lows of approximately 57307 nT to highs of up to 57428 nT. This suggests that the bedrock in the area has

relatively uniform magnetic mineral content. Most of the broad magnetic highs are interpreted to define intrusive bodies, where the magnetite concentrations are slightly higher than the host rock. Higher frequency magnetic response (such as in the northwest portion of the survey block) may identify local increases of magnetic mineral content along a horizon due to alteration or intrusion. The dominant magnetic trends are north-northwest and northeast. A relatively quiescent, low amplitude magnetic response in the western portion of the survey area is interpreted to reflect sedimentary units.

#### 10.2. EM Anomalies – General comments

The AeroTEM II system penetrates to depths of up to 250m for large conductive bedrock sources. The survey area shows several conductive bedrock sources. These bedrock sources are identified on the maps as symbols. The vast majority of these sources correlate with sedimentary units and are not of interest under the current exploration target of Ni-Cu-PGE. The anomalies that occur within or near the edge of the elevated magnetic response related to the intrusions are of higher priority.

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 (see Figure 6a). 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 (see Figure 6b). 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 it can be difficult to uniquely determine the type (thick vs. thin) of the source, so in these cases all possible sources are indicated by picking both thick and thin response styles. It is also possible where the source has a shallow dip, that the characteristics of both thick and thin sources are evident. In these cases both thick and thin sources may be indicated – the 'thin' pick will be located over the edge of the source near the surface, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly.

When analyzing the interpreted anomalies and prioritizing them for follow-up, all of these cases should be considered. 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.

The EM data is dominated by the responses from interpreted conductive sedimentary units which strike north-northwest across the edges of the survey area. This response is seen as a high amplitude response in the early on- and off-time Z component responses. The response decays relatively rapidly indicating a low to moderate conductance typical of geology of this type. The areas where the response persists to the later channels likely indicates the presence of thicker or more conductive units within the sedimentary packages. The central portion of the survey area in the vicinity of the magnetic highs is relatively devoid of conductive response. However, there are several sources which occur at or near the margins of the magnetic features and may be considered prospective for follow-up.

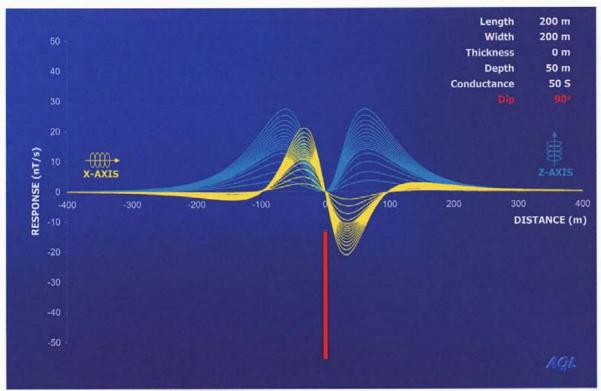
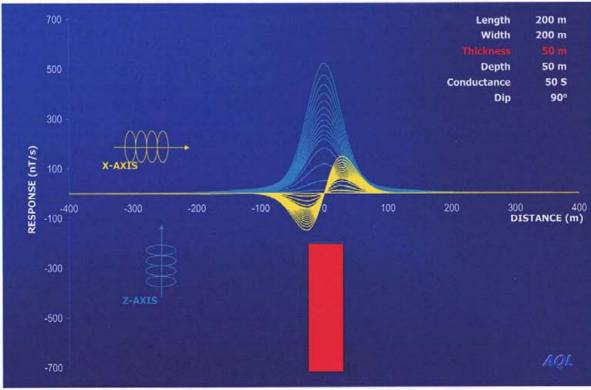


Figure 7. An Inductively Thin Source



**Figure 8. An Inductively Thick Source** 

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 (i.e. on the southern margin of the central magnetic high). 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.

When analyzing the interpreted picks and prioritizing for follow-up, all of the cases should be considered. 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,

Matt Pozza, M.Sc. Aeroquest Limited June, 2005

#### **APPENDIX 1 -- PROJECT CORNER COORDINATES**

The Wasi Creek Project has a boundary which is defined in the following table. All geophysical data presented in this report have been windowed to this outline. Positions are in UTM Zone 10 - NAD83.

372000.06222000.0376000.06222000.0

- 376000.0 6218000.0
- 372000.0 6218000.0

#### **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".

Column	Units	Description
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
Х	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
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		Letter label of conductor pick
on_con	S	On-time conductance
off_con	S	Off-time conductance
grade		Classification from 1-7 based on conductance of conductor pick

Database (05012\_ final.gdb):

## **APPENDIX 3: AeroTEM Design Considerations**

#### **APPENDIX 4: AeroTEM Instrumentation Specification Sheet**

**EAEROQUEST LIMITED** 

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

### **AEROTEM Helicopter Electromagnetic System**

#### System Characteristics

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

#### Receiver

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

#### **Display & Acquisition**

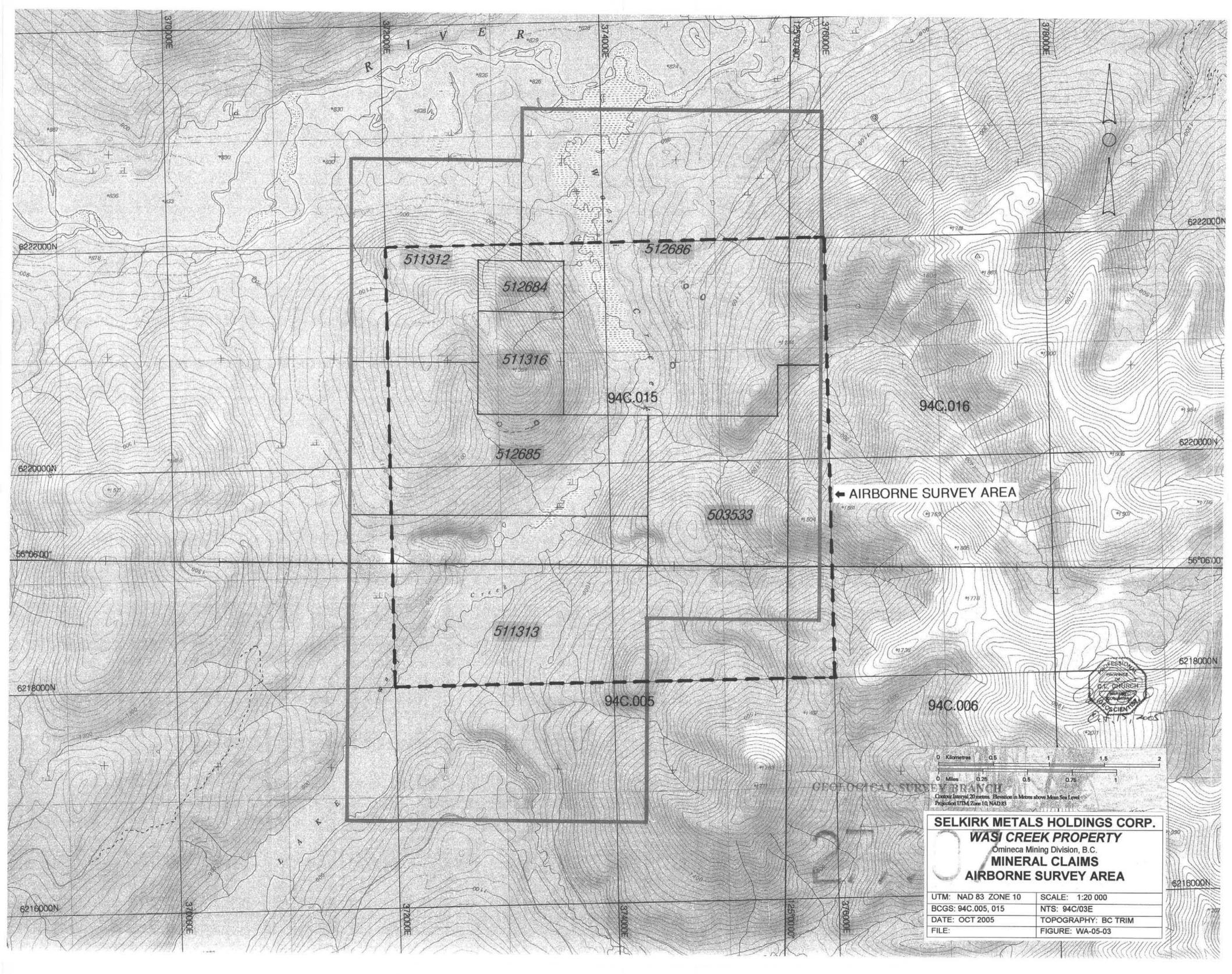
- PROTODAS Digital recording at 126 samples per decay curve at a maximum of 300 curves per second (26.455 µs channel width)
- RMS Channel Widths: 52.9,132.3, 158.7, 158.7, 317.5, 634.9 μs
- Recording & Display Rate = 10 readings per second.
- On-board display six channels Z-component and 1 X-component

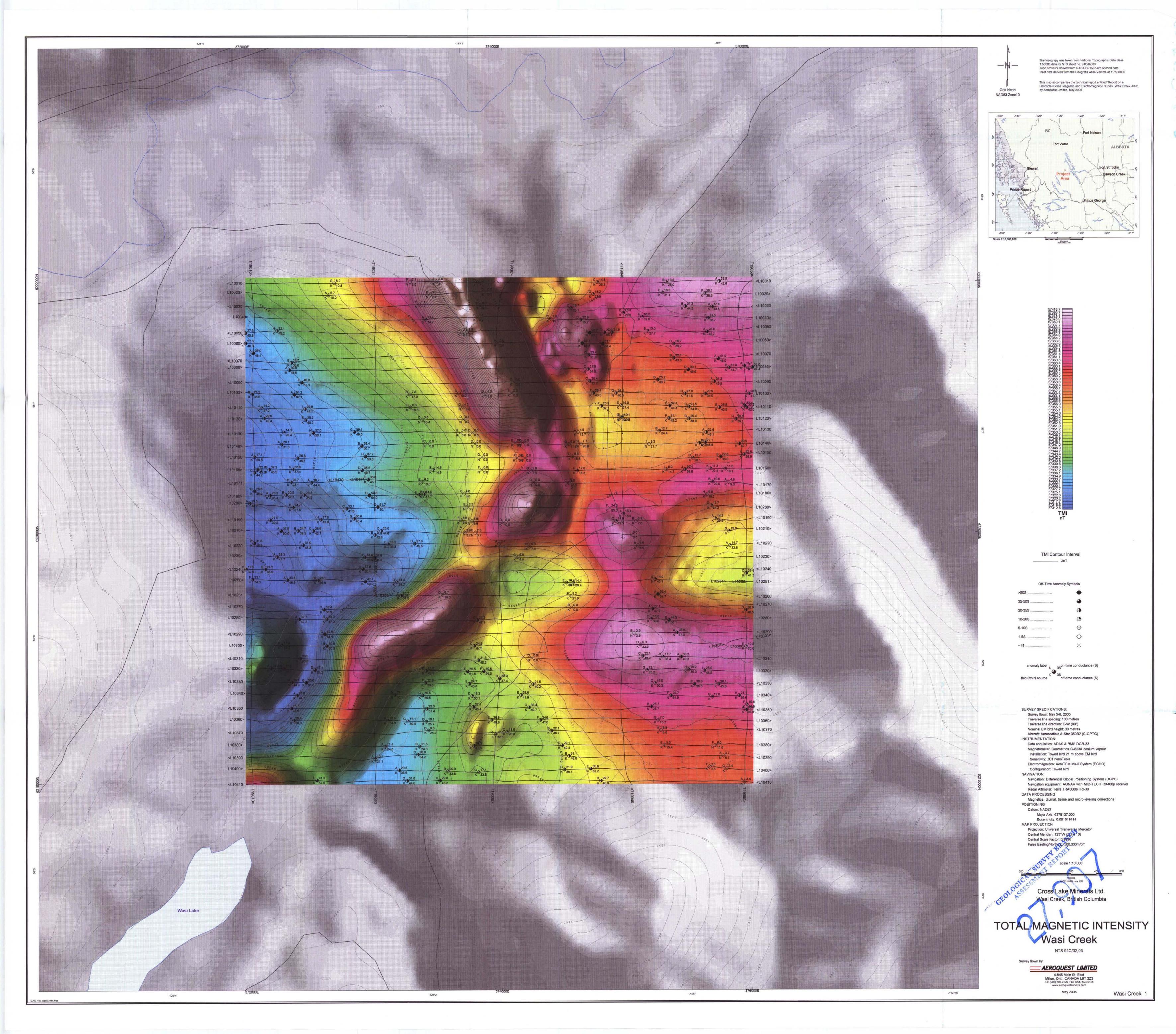
#### System Considerations

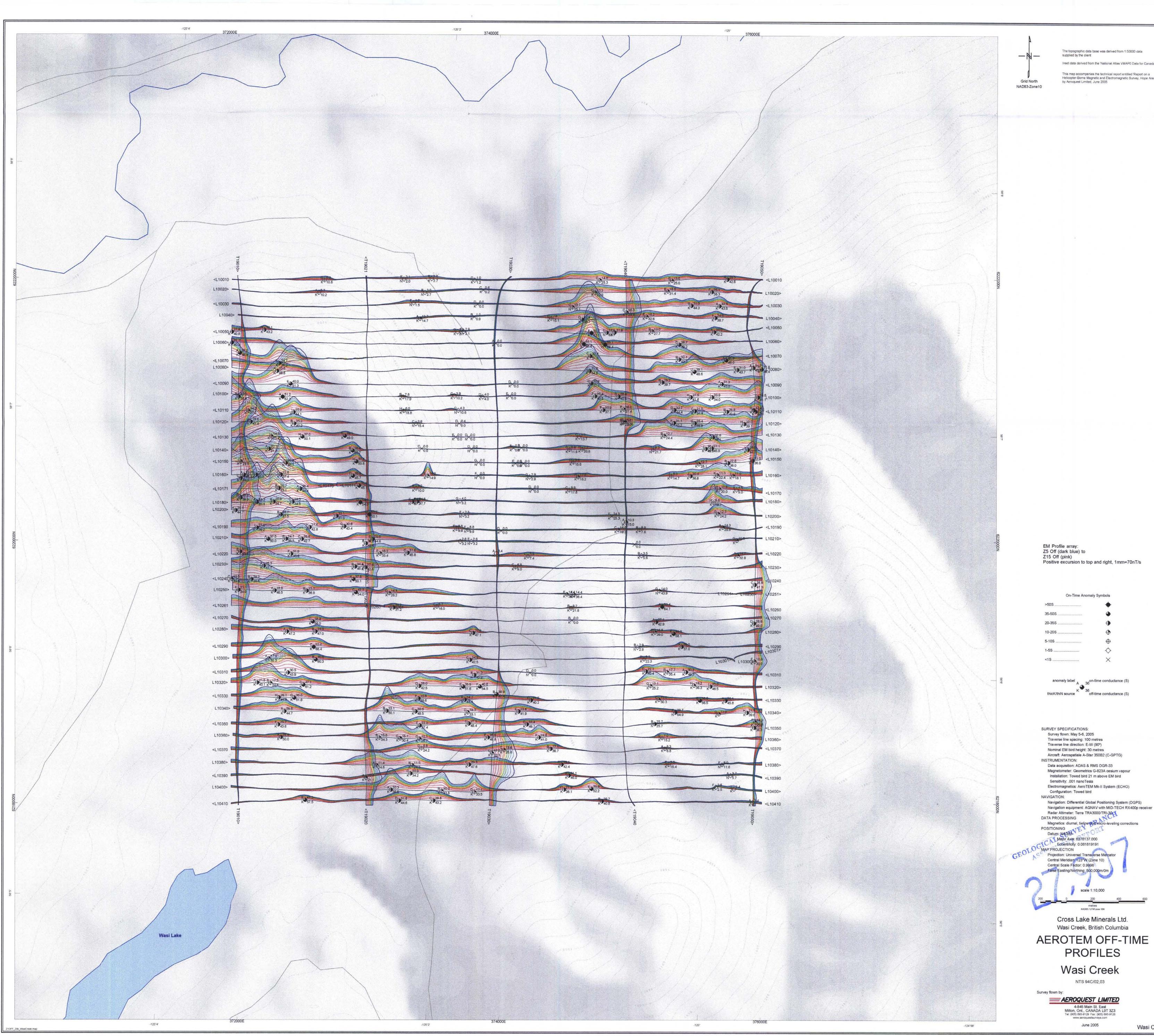
Comparing a fixed-wing time domain transmitter with a typical moment of 500,000 NIA flying at an altitude of 120 m with a Helicopter TDEM at 30 m, notwithstanding the substantial moment loss in the airframe of the fixed wing, the same penetration by the lower flying helicopter system would only require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

#### SECTION E: ILLUSTRATIONS

Plan Number	Title	Scale	
WA-05-1 (after p.4)	General Location Plan	1:250 000	
WA-05-2 (after p.4)	Mineral Claims	1:50 000	
WA-05-3 (in pocket)	Mineral Claims / Survey Area	1:20 000	
	Geophysical Report:		
Wasi Creek 1 (in pocket)	Total Magnetic Intensity	I:10 000	
Wasi Creek 2 (in pocket)	Aerotem Off-Time Profiles	I:10 000	
Wasi Creek 3 (in pocket)	Aerotem Z1 Off-Time Colour Grid	1:10 000	
CD-ROM	AeroTEM II Airborne Geophysical Data		
	Aeroquest Job #05012		







The topographic data base was derived from 1:50000 data supplied by the client

Inset data derived from the 'National Alias VMAP0 Data for Canada' This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Hope Area', by Aeroquest Limited, June 2005

#### EM Profile array: Z5 Off (dark blue) to Z15 Off (pink)

Positive excursion to top and right, 1mm=70nT/s

n-Time Anomaly Symbols	
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anomaly label on-time conductance (S) thicK/thiN source K 36 off-time conductance (S)

#### SURVEY SPECIFICATIONS: Survey flown: May 5-6, 2005 Traverse line spacing: 100 metres Traverse line direction: E-W (90°) Nominal EM bird height: 30 metres Aircraft: Aerospatiale A-Star 350B2 (C-GPTG) INSTRUMENTATION: Data acquisition: ADAS & RMS DGR-33 Magnetometer: Geometrics G-823A cesium vapour Installation: Towed bird 21 m above EM bird Sensitivity: .001 nanoTesla

Electromagnetics: AeroTEM Mk-II System (ECHO) Configuration: Towed bird NAVIGATION: Navigation: Differential Global Positioning System (DGPS)

Navigation equipment: AGNAV with MID-TECH RX400p receiver

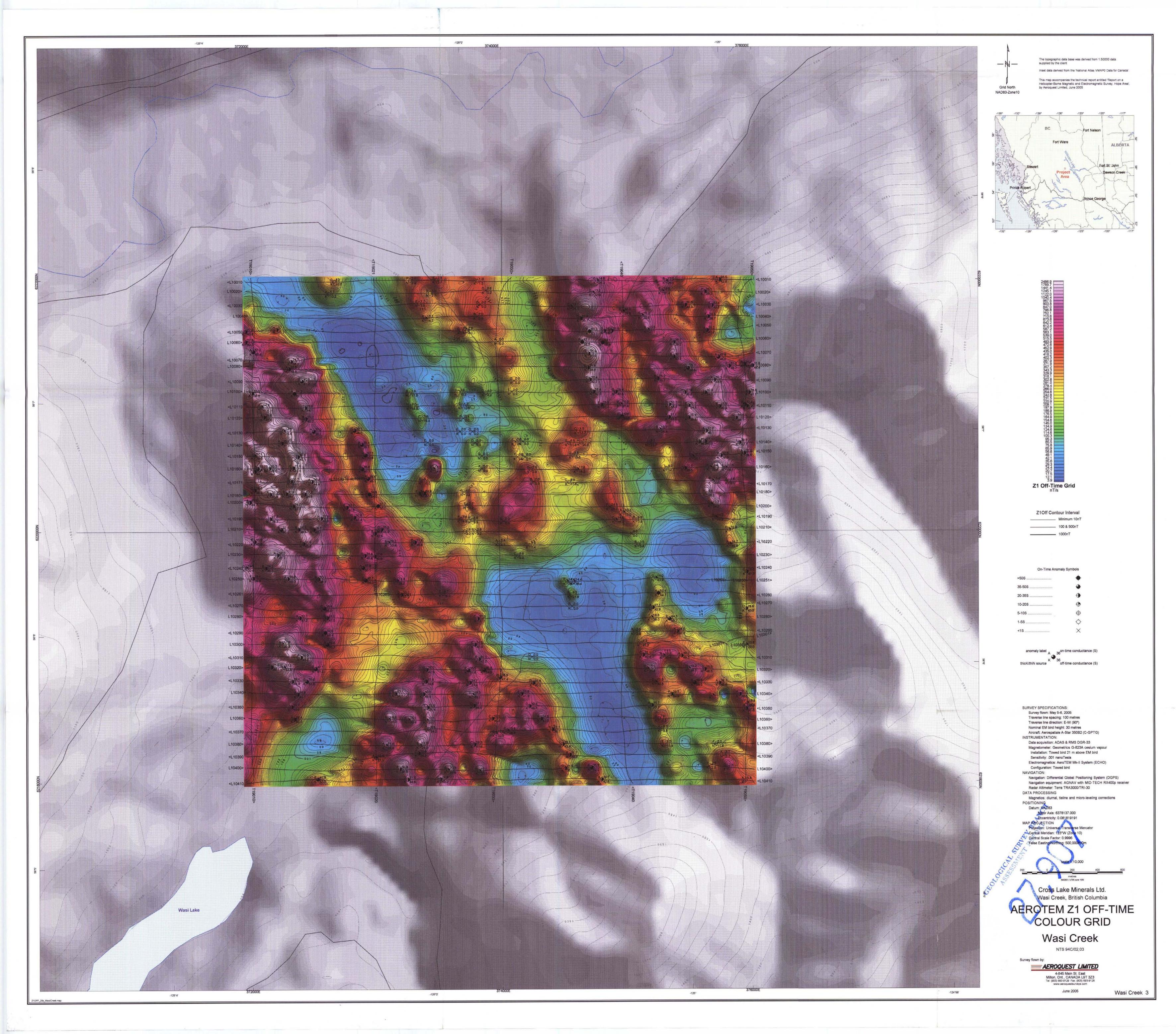
# MAR PROJECTION Projection: Universal Transverse Mercator Central Meridian: 123°W (Zone 10) Central Scale Factor: 0.9996 False Easting/Northing: 500,000m/0m

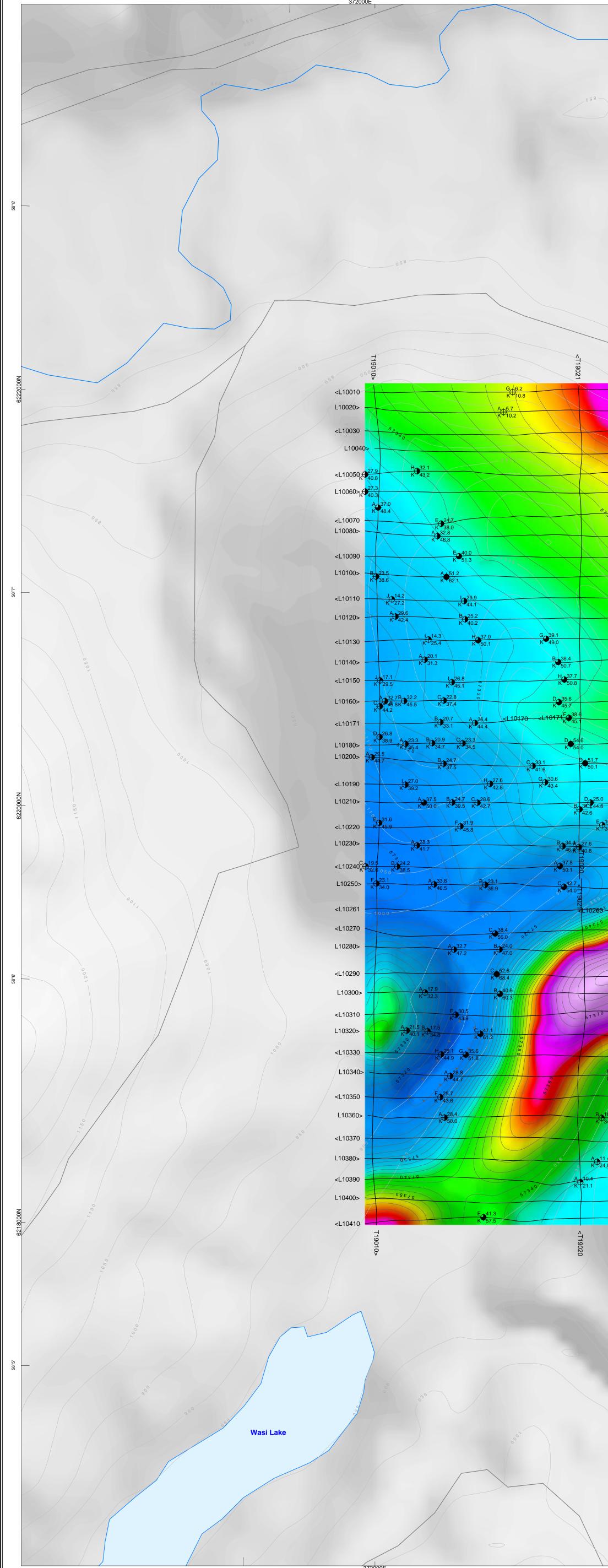
scale 1:10,000

## metres NAD83 / UTM zone 10N Cross Lake Minerals Ltd. Wasi Creek, British Columbia AEROTEM OFF-TIME PROFILES

Wasi Creek NTS 94C/02,03

AEROQUEST LIMITED 4-845 Main St. East Milton, Ont., CANADA L9T 3Z3 Tet: (905) 693-9129 Fax: (905) 693-9128 www.aeroguestsurveys.com June 2005





-125°4'

MAG\_10k\_WasiCreek.map

-125°4'

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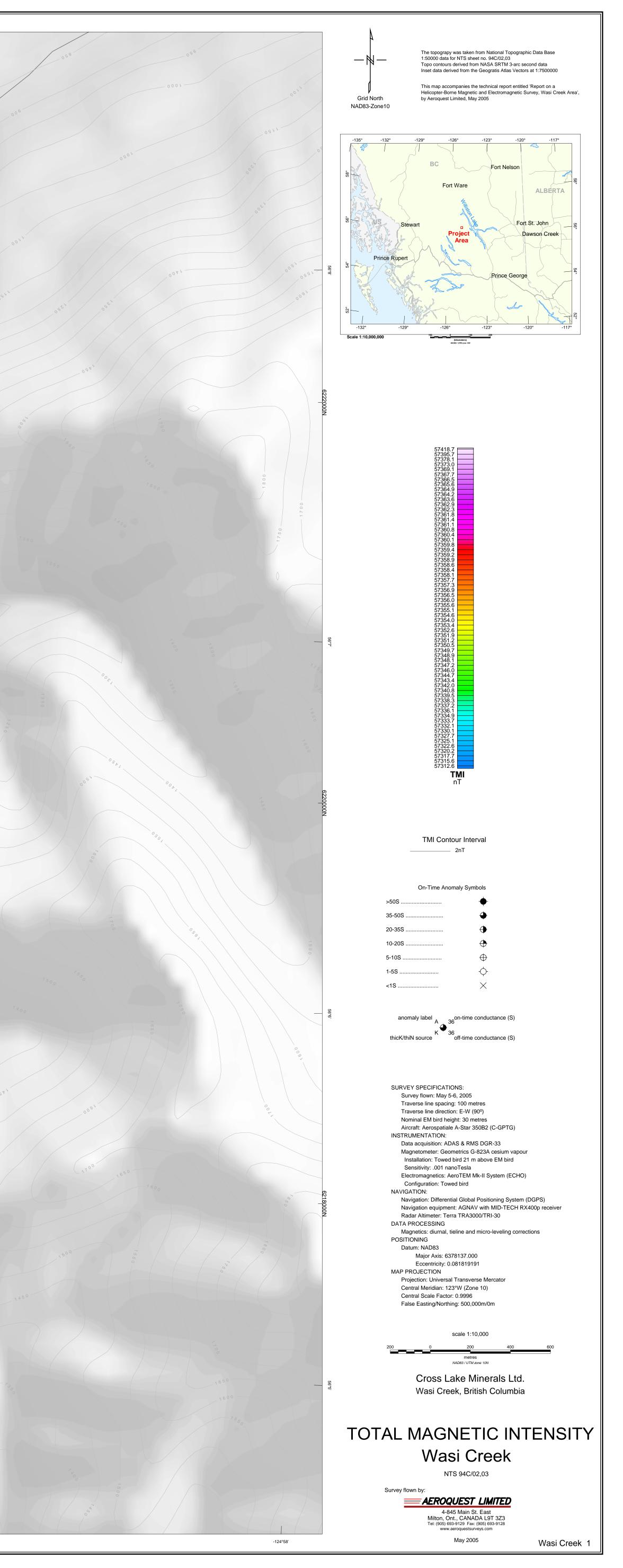
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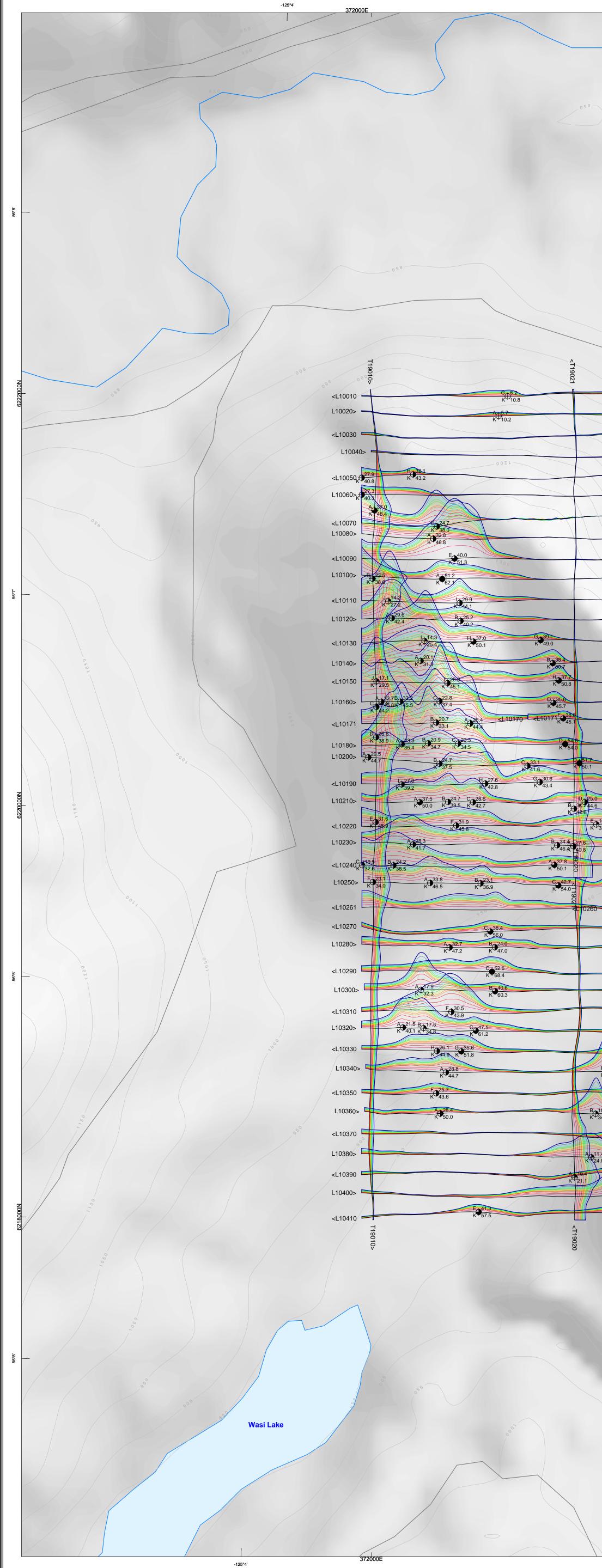
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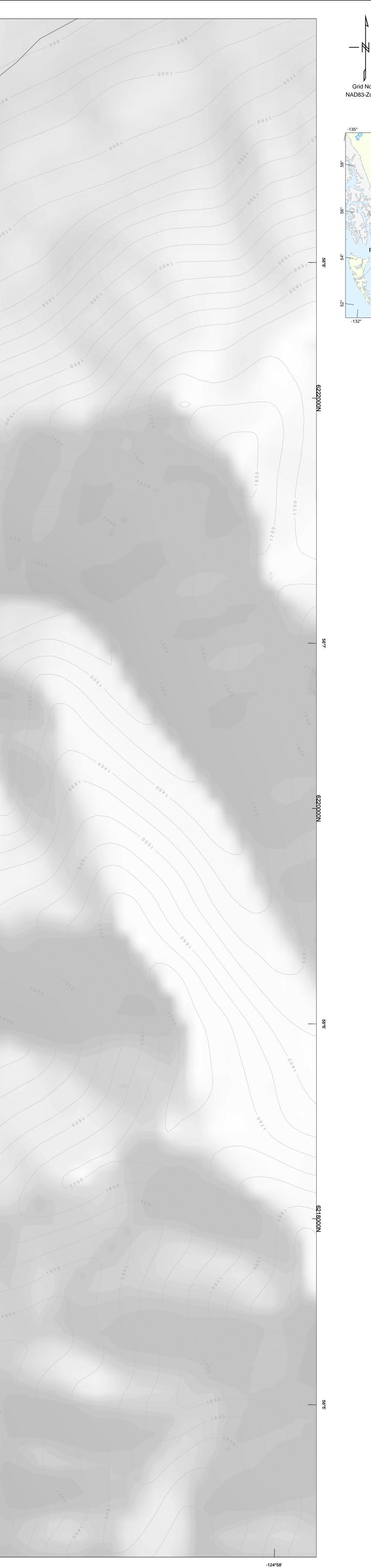
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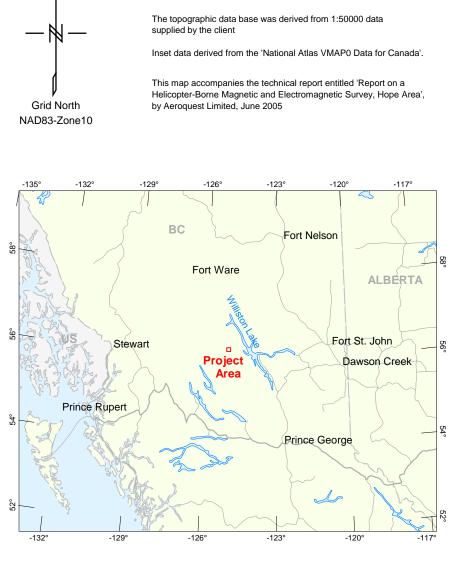
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	K+42.5 E_31.3 K-45.2	D_0.0 N 0.0		6,922.1 Bp 17.7 K 40.4 K 35.4	A 30.2 K 49:3	<l10< td=""></l10<>
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1 C 30.5 1 K 49.5	D 18.3 K 33.1	E 23.6 K 41.9		N	$\begin{array}{c} & & & & & & \\ & & & & \\$	H-21.1 K-39.6
E+220	D 27:1 K 48.4	C 33.4 K 49.7		B 25.7 N 25.7		K 36.8 <l10< td=""></l10<>
$ \begin{array}{c} E 22.0 \\ K 37.4 \\ \hline C 15.1 \\ K 930.4 \\ \hline K 9257 \\ \hline \end{array} $	E 261 K 49.	8 F 24.6 8 K 41.0	0 0 0	G_7.0 K <sup>-15.2</sup>		L103
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2	e e e		22.1 36.7	<u>А 8.3</u> К <sup>Ф</sup> 8.8		<l10< td=""></l10<>
С. 15.1 D. 10.1 К <sup>Ф</sup> 30.4 К <sup>Ф</sup> 25.7			22.1 36.7 D 29.1 K 42.4 K 46.0	A 8.3 K 8.8 E 5.5 K 15.4	E 6.0 N <sup>0</sup> 11.6 A 3.7 N <sup>-5.7</sup>	
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.2 B 24.3 C 20.3 S 4.2 B 34.2 B 36.5 B 11.5 K 24.2 B 11.5 K 24.2 B 11.5 K 24.2 B 10.1 B	20.0 C 17.1 3.2 20.0 C 17.1 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	<u>А 8.3</u> К <sup>Ф</sup> 8.8		<l10 L103 <l10 L104</l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 36.5 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		<b>D</b> 29.1 K 42.4 <b>D</b> 41.1 K 46.0	A 8.3 K 8.8 F 5.5 K 15.4	A-3.7 N 95.7	<l10 L103 <l10 L104 L104 K <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 26.5 B	20.0 C 17.1 3.2 20.0 C 17.1 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 8.8 E 5.5 K 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104</l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 26.5 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 48.8 F 5.5 K 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 K <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 36.5 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 48.8 F 5.5 K 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 K <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.2 B 24.3 C 20.3 S 4.2 B 34.2 B 36.5 B 11.5 K 24.2 B 11.5 K 24.2 B 11.5 K 24.2 B 10.1 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.2 C 20.9 K 34.2 20.3 36.5	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.2 B 24.3 C 20.3 S 4.2 B 34.2 B 36.5 B 11.5 K 24.2 B 10.5 K 24.2 B 11.5 K 24.2 B 10.5 K 24.5 B 10.5 K 24.5 K	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 3.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 36.5 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		B 29.1 K 42.4 B 46.0 B 21.9 K 38.1 E 36.6 K 52.2	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.2 B 24.3 C 20.3 S 4.2 B 34.2 B 36.5 B 11.5 K 24.2 B 11.5 K 24.2 B 11.5 K 24.2 B 10.1 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		P       191         K       46.0         P       38.1         K       52.2         K       40.9	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 
C 15.1 D 10.1 K 30.4 K 25.7 D 9.8 K 24.2 B 11.5 K 24.3 C 20.9 K 34.2 20.3 36.5 B	C 29.3 K 47.6 32000 C 17.1 S 33.8 K 33.5 8.2		P       191         K       46.0         P       38.1         K       52.2         K       40.9	A 8.3 K 8.8 F 5.5 K 0 15.4	A+3.7 N-5.7 F-2-5 K-2.5 K-2.5 K-2.5	<l10 L103 <l10 L104 L104 KC <l10< td=""></l10<></l10 </l10 

-125°2'

374000E

-125° 376000E





EM Profile array: Z5 Off (dark blue) t Z15 Off (pink) Positive excursion t	o o top and right, 1mm=70nT/s
On-Time A	Anomaly Symbols
>50S	
35-50S	$\bullet$

35-50S	÷
20-35S	$\bullet$
10-20S	$\oplus$
5-10S	$\oplus$
1-5S	-\$-
<1S	$\times$

anomaly label A 36 on-time conductance (S) thicK/thiN source (S)

- SURVEY SPECIFICATIONS: Survey flown: May 5-6, 2005 Traverse line spacing: 100 metres Traverse line direction: E-W (90°) Nominal EM bird height: 30 metres Aircraft: Aerospatiale A-Star 350B2 (C-GPTG) INSTRUMENTATION: Data acquisition: ADAS & RMS DGR-33 Magnetometer: Geometrics G-823A cesium vapour Installation: Towed bird 21 m above EM bird Sensitivity: .001 nanoTesla Electromagnetics: AeroTEM Mk-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

Cross Lake Minerals Ltd. Wasi Creek, British Columbia

# PROFILES Wasi Creek

NTS 94C/02,03 Survey flown by:

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

June 2005

Wasi Creek 2

