Airborne Geophysical Report for the

Iron River Project

British Columbia, Canada

Property Tenures: 538879, 558315, 558316, 558317,
558318, 558320, 558321 & 558322

Total Assessment Report Related Expenditures $73,479

NTS map area 092F14W
BCGS Map 092F.093, .084, .084
Latitude 49º 55' N Longitude 125º 25.5' W
UTM Zone 10 (NAD 83): 0326000E / 5532150N

Nanaimo Mining Division
British Columbia Minfile: 092F076

Property Owner
Madman Mining Co Ltd.
#314-800 West Pender Street
Vancouver, BC
V6C 2V6

Operator/Optioner
Crazy Horse Resources Inc.
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Vancouver BC
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Date: April 24, 2008

Author

"Signed & Sealed"
Michael Moore, P. Geo.

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1.0 SUMMARY

This assessment report summarizes information pertaining to the early stage Iron River mineral exploration venture. The report describes the underlying geology of the project area, summarizes the property's exploration history, reviews the nature of property iron-copper mineralization, details the 2007 airborne geophysical survey and makes recommendations for further exploration.

The Iron River property is located in east-central Vancouver Island, British Columbia, Canada; approximately 180 kilometres northwest of Vancouver. The iron-copper skarn property lies within the Nanaimo Mining Division and is centred approximately 15 km southwest of the community of Campbell River. The claims are 10 km northeast of the past producing Iron Hill skarn deposit which has a reported historical production of about 1.99 billion kilograms of iron from an estimated 3.73 million tonnes of ore.

The property consists of a single contiguous claim block of eight mineral claims, covering 3,370.3 hectares (8,327.9 acres) and are 100% owned by Madman Mining Co Ltd. In June 2007, Crazy Horse Resources Inc ("CHR") entered into an option agreement with Madman, securing the right to earn 100% of the property by making aggregate cash payments of $390,000 and issuing 415,000 common shares to Madman, as well as incurring $1.65 million in exploration expenditures. The property is best accessed by a combination of paved and gravel roads from Campbell River, which is also the closest full service community, providing extensive infrastructure and skilled manpower. The Gold River Highway provides convenient access to tidewater to both the west and east coasts of Vancouver Island.

Iron River can be worked year round; however some exploration may be hindered by the limited snow cover typical of the winter months. Two major electrical power lines loosely parallel highways 28 and 19, off the north and eastern sides of the property. The property is covered by a complex network of multi-generational forest access roads and logging harvest zones. Forest trees are mainly Douglas-fir, with lesser amounts of western hemlock, red alder, balsam and spruce. The claims lie along the north-eastern foothills of the Vancouver Island Ranges, where gently-rolling and hummocky hills are incised by stream and river channels. Property elevations vary from 160m in the low lying swamp land of the north to 640m on hill tops along the southeast eastern claim area. Overburden cover is extensive and commonly shallow at less then a few metres, but can be locally greater than five metres. Outcrop exposures are generally limited to hill tops, river valleys and rock-cut exposures along forest access roads.

Regionally, the Iron River property is located within the Vancouver Island Insular Belt, where lithologies are dominated by weakly metamorphosed rocks of the mid to upper Triassic Vancouver Group. The Vancouver Group includes thick volcanic flows of the mid to upper Triassic Karmutsen Formation tholeiitic basalts, which are overlain by shallow-water carbonates of the upper Triassic Quatsino Formation. The Quatsino Fm limestones grade upward into early to mid Jurassic rocks of the Bonanza Group, which includes deeper water argillites and mudstones of the Parsons Bay Formation and andesitic-rhyolitic volcanics of the Bonanza Formation. The middle Jurassic Quinsam Batholith quartz diorite (Island Plutonic Suite) intrudes all the above rock units. Overlying these units are mixed sediments and coal seams of the Upper Cretaceous Nanaimo Group (Comox and Trent River Formations).

BC Government local-scale geology maps indicate that the Iron River is roughly split on a northwest trending diagonal into two dominant halves by a steeply east dipping regional thrust fault. The east half is underlain by lower greenschist facies metamorphosed Karmutsen Formation basalts, while the west half dominantly contains undivided sediments of the Nanaimo Group, with lesser Bonanza Group calc-alkaline rocks and Quatsino Formation limestones. Intruding all of the above but the Nanaimo Group lithologies is the Quinsam Batholith. Other property structures include a series of northwest and northeast trending normal and extensional faults cut all property lithologies.

The Iron River Property hosts three areas of known Fe-Cu skarn mineralization; the developed West-East Zone and the two early stage Gal and Aurizon Zones. Historical exploration efforts have identified well developed iron-copper mineralization at the West-East Zone; where two segmented bodies of semi-massive to massive, fine grained magnetite and chalcopyrite mineralization are hosted in andesitic volcanics. To date, mineralization/alteration reported at the Gal and Aurizon zones have many similar characteristics of a Fe-Cu skarn target; although no large or massive iron (± copper) bodies have yet been identified. Recent historical rock samples collected from the West Zone showing report highly elevated values of iron (11.2 to 62.3%) and moderately elevated values of copper (0.1 to 9.85%) and silver (0.2 to 750 ppm). Gold values are generally sub-anomalous, with rare highs to 845 ppb.

Past Iron River property exploration efforts have dominantly focused on the West & East iron-copper skarn zones and to a lesser extent on adjacent areas extending a few kilometres north. The first recorded property exploration effort was in 1907-8, where work was dominated by creating a short adit at the West Zone. After a 40 year hiatus, the West-East Zone was explored intermittently from 1950 to the mid-1970s by two junior mining companies, who carried out various geological mapping and ground geophysical surveys, as well as a combined total of 52 drill holes. The two companies independently generated early ‘resource estimates’ for the West & East Zones. In 1995 and again in 2001, two separate exploration programs attempted, with some success, to identify new iron-copper mineralization in adjacent areas to the north of the West-East Zone.

Exploration efforts carried out by CHR in 2007 includes an airborne magnetic-TEM survey. The airborne survey covered the full extent of the property; a total of 387 line kilometres were flown. The total 2007 CHR exploration expenditures is $73,479. The results of the detailed heliborne aeromagnetic and AeroTem survey of the Iron River claims have provided considerable new insights into the complex geology and defined numerous conductive and magnetic features.

It is recommended herein that CHR carry out additional exploration efforts on the Iron River property. The Phase One program should focus on specifically on the historical ‘Grid 1’ area and also regionally on the areas underlying the numerous 2007 airborne anomalies. The first phase of exploration, at an estimated cost of $250,000, should include:

(1) Digital compilation and detailed review of all historical and recent exploration efforts.
(2) Geological mapping and rock sampling of ‘Grid 1’
(3) Prospecting & sampling of rock cuts and outcrops throughout the 2007 airborne anomalies
(4) GPS assisted grid line establishment and ground magnetic-VLF geophysical surveys
(5) Results dependent follow-up mechanized trenching and rock sampling program.

2.0 INTRODUCTION AND TERMS OF REFERENCE
2.1 Introduction

This assessment report summarizes the results of the 2007 airborne magnetic and AeroTEM survey completed on the early staged Iron River Project. The property is located in east-central Vancouver Island British Columbia, Canada, within the Nanaimo Mining Division; approximately 180 kilometres northwest of Vancouver. The Iron River Region hosts two past producing iron-copper skarns; these are the Iron River and Big G deposits. Past Iron River property exploration efforts have dominantly focused on the West and East iron-copper skarn zones. Crazy Horse Resources Inc. (“CHR”) believes that the Iron River property hosts under-explored iron-copper-gold skarn targets.

CHR has the right to earn 100% of the Iron River property. Recommendations contained herein are for a preliminary Stage One exploration program including: digital compilation of all historical exploration efforts, prospecting and sampling road cuts, re-sampling select historical showings/trenches, additional control grid lines and ground magnetic-VLF geophysical surveys, with a follow-up mechanized trenching and rock sampling program, with the main emphasis on the areas that are underlain by anomalies defined by the 2007 airborne survey.

2.2 Terms of Reference

Mr. Darrell Cardey, a director of CHR, on behalf of the board of company directors, requested the author compile the historical data and summarize the results of the 2007 Iron River airborne geophysical survey and prepare a British Columbia Government compliant assessment report for the property. Madman Mining Co Ltd (“Madman”) is a private British Columbia registered company with an office at #314-800 West Pender Street, Vancouver BC V6C 2V6. Lloyd Brewer, a Vancouver BC resident, is the sole registered owner of Madman. Crazy Horse Resources Inc is a private British Columbia registered company. All currencies are in Canadian dollar denominations and measurements are in metric units (unless noted otherwise). The report author did visit the property in September 2007.

3.0 PROPERTY DESCRIPTIONS AND LOCATION

3.1 Area and Location

The property is located in east-central Vancouver Island British Columbia, Canada; approximately 180 kilometres northwest of Vancouver. The property is situated within the Nanaimo Mining Division and is centred approximately 15 km southwest of the small community of Campbell River; at latitude 49^{o} 55' North and longitude 125^{o} 25.5' West (UTM Zone 10, NAD 83: 0326000E / 5532150N) on NTS map 092F14W or BCGS Maps 092F.093, .084, .084) (Figures 3.1 & 3.2). The property is approximately 130 km northwest of Nanaimo or approximately 45 kilometres northwest of the community of Comox.

The claims are 10 km northeast of the past producing Iron Hill skarn deposit; reported historical production of about 1.99 billion kilograms of iron from an estimated 3.73 million tonnes of ore (BC EMPR Minfile 092F 075).

3.2 Accessibility, Climate, Local Resources, Infrastructure, Physiography (Figures 3.1 & 3.2)

Accessibility
The Iron River property is located in east-central Vancouver Island, British Columbia, Canada; approximately 180 kilometres northwest of Vancouver. The property is approximately 130 km northwest of Nanaimo or approximately 45 kilometres northwest of the community of Comox.
The property is best accessed by a combination of paved and gravel logging roads from the community of Campbell River, about 15 kilometres northeast of the property. Access to the north end of the property is from Campbell River, by taking the paved Gold River highway #28 which passes north of the property, then by the well maintained gravel Argonaut Main road which passes to the west of the claims. Access to the West-East Zone area is best achieved by passing through the Quinsam coal mine lands, off the Argonaut Main road; however access to these private roads is restricted by Quinsam Coal Mines. In the recent past, Quinsam coal authorities have been very amenable to allow access to these private roads for the purpose of mineral exploration (L. Brewer pers. com. October 2007).
Access to the east, central and south portions of the property is first by the major paved Inland Highway #19 (only about 15 kilometres east of the property), then westward along numerous active and inactive logging roads, which are maintained by either TimberWest or the provincial Ministry of Forests. Most roads are two-wheel drive accessible, but only in ideal weather conditions, on the whole, a four wheel drive vehicle is recommended. Numerous ancient roads and paths criss-cross the property but are now over grown by young vegetation and are infrequently eroded.

The Gold River Highway provides access to tidewater on the west coast of Vancouver Island, at the village of Gold River (only 50 kilometres to the southwest), and on the east coast, at the city of Campbell River. From Campbell River southwards, the Inland Island Highway provides access to coastal ferry ports and airports. Northwards from Campbell River, the Middle Point coal-loading facility is presently serving Quinsam Mine (Cathyl-Bickford 2007). Clean coal is shipped by truck to the storage and loading facility at Middle Point.

Surface rights to the property are mostly held by an undetermined mix between Timber West Forest Limited, the Crown, or by Quinsam Coal. The exact location of the divisions of these surface rights is not known to the author, but it is unlikely that these parties would hinder any property exploration efforts. No First Nations reserves, nor parks, are situated within the property.

Climate (after Cathyl-Bickford 2007 & Government of Canada weather website)

Iron River can be worked year round, but some surface explorations will be hindered by the limited snow cover typical of the winter months. The property lies within the Coastal Western Hemlock very dry maritime variant (CWHxm1) biogeoclimatic subzone (Green and Klinka, 1994). Average rainfall within this zone is 134 cm/year. The climate within the CWHxm1 subzone is temperate Mediterranean type, characterized by cool, wet winters and warm, dry summers. Minimum temperatures are –10 to –15 Celsius, with the coldest temperatures confined to brief periods in mid-winter. Maximum daily temperatures are 30 to 38 Celsius, typically found during extended periods of clear weather in mid- to late-summer, with the highest temperatures generally occurring near the first week of August. Snowfalls or freezing rain may occur at any time between November and April, with the bulk of snow falling in January and early February. Snowfalls up to 90 cm are possible but rare. Snow seldom accumulates to depths greater than 35 cm and snow cover is usually gone by mid-March. The average annual snow fall for the area is 109 cm. Extended periods of dry weather often occur between mid-June and late September. The autumnal rainy season usually sets in during early October and continues into early April.

Local Resources

The property is covered numerous rivers, creeks and small lakes which can facilitate exploration efforts. Many of these rivers are salmon spawning habit and therefore will likely necessitate user permits and specialized attention.

Infrastructure

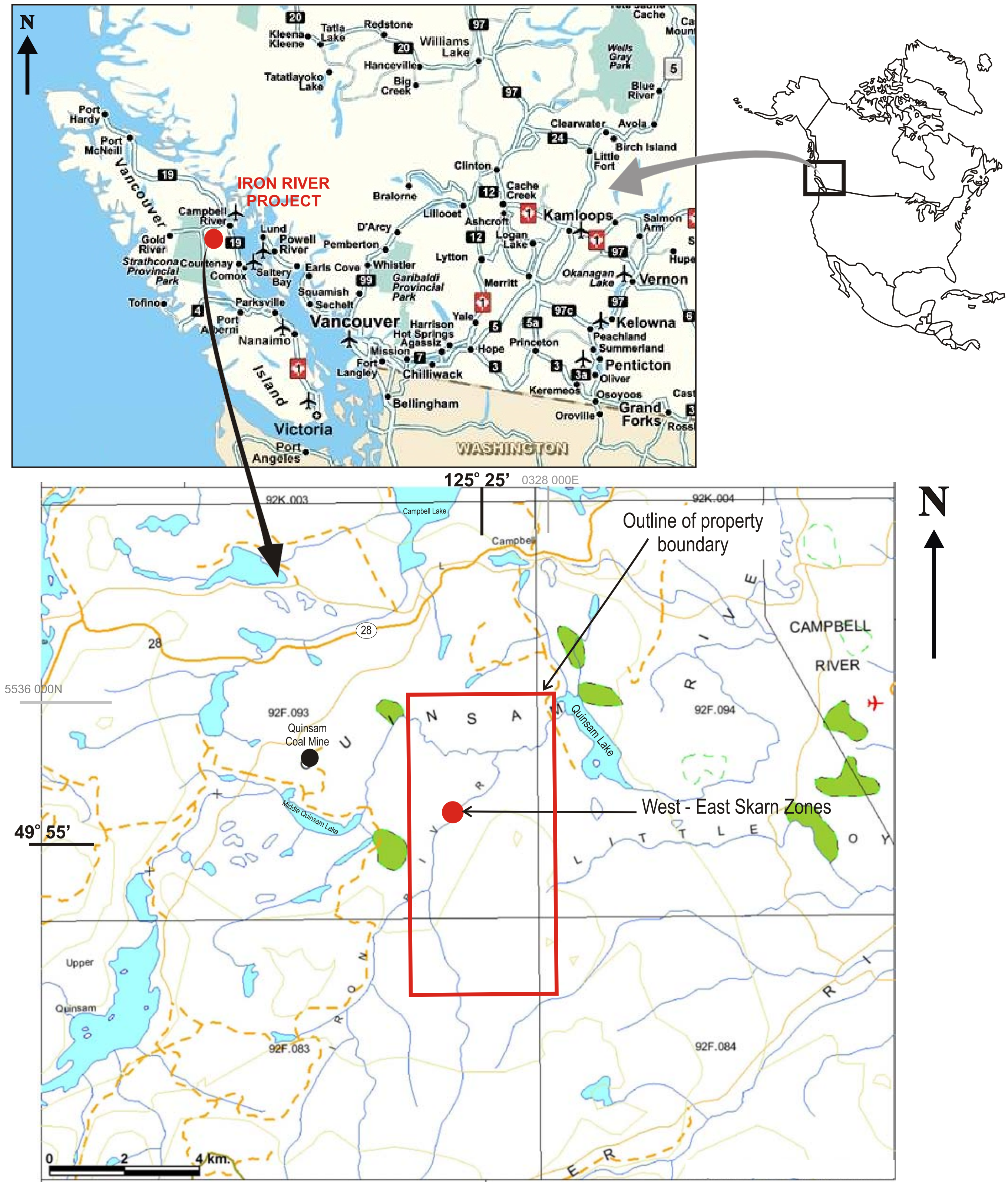
The closest full service community, providing extensive infrastructure and skilled manpower is Campbell River. There are public campsites located on many of the areas lakes and rivers in the vicinity, which could aid field logistics. Two major electrical power lines loosely parallel highways 28 and 19, off the north and eastern sides of the property. A sub-transmission line runs along the Argonaut Road to the Quinsam minesite, with a branch line further south to the satellite coal minesite at 4-South (south of Long Lake; west of the center of the claims) (Cathyl-Bickford 2007). Cellular telephone coverage is limited to hill tops and the east regions of the claims. The property is covered by a complex network of multi-generational forest access roads and logging harvest zones.

Physiography

The Iron River property lies along the north-eastern foothills of the Vancouver Island Ranges, with gently-rolling and hummocky hills being incised by stream and river channels. Property elevations vary from 160m (525 feet) in the low lying swamp land of the north to 640m (2,100 feet) at the hill tops along the southeast eastern claim area. The Quinsam River cuts through the north of the property. The south to north flowing Iron River passes through the centre west of the claims and feeds into the Quinsam River. Forest trees are mainly Douglas-fir, with lesser amounts of western hemlock, red alder, balsam, western white pine, broadleaf maple and spruce, with cottonwood and western red-cedar in wetter sites. Undergrowth consists of salal, willow and moss, with a noteworthy component of red huckleberry which is often found growing from the tops of large stumps left over from initial old-growth timber harvesting. Skunk-cabbage and devil's club form undergrowths in wetter sites. Mushrooms are common in shaded areas.

Overburden cover is extensive and commonly shallow at less then a few metres, but can be locally greater than five metres (Cathyl-Bickford 2007). Soils contain a well-developed red-brown coloured B-horizon (Gal 2001). Outcrop exposures are generally sparse, being limited to hill tops, river valleys and rock-cut exposures along forest access roads.

The Iron River region contains an abundance of wildlife, including Roosevelt elk, black tailed deer, black bear, cougar, numerous bird species, plus smaller mammals and reptiles including garter snakes and bull snakes. Ravens, eagles, hawks, ducks and geese are present, either year-round or seasonally.



Map Source BC Minfile Website (http://webmaps.gov.bc.ca)

Contour interval 100 metres

Crazy Horse Resources Inc.

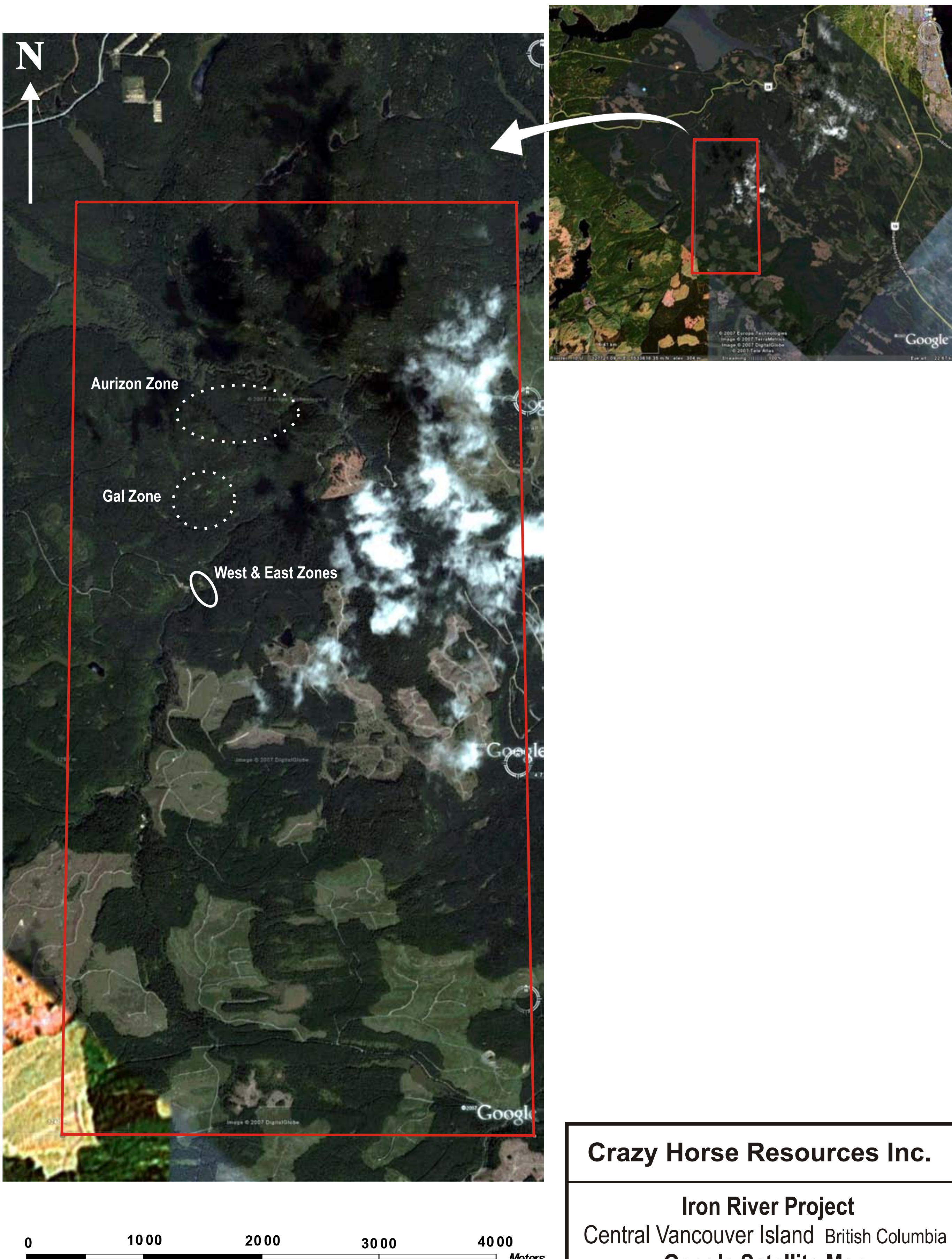
Iron River Project

Central Vancouver Island British Columbia

LOCATION MAP

Date: April 2008

FIGURE 3.1



Map Source Google Earth Website (http://earth.google.com)

Crazy Horse Resources Inc.

Iron River Project
Central Vancouver Island British Columbia
Google Satellite Map

Date: April 2008

FIGURE 3.2

4.0 Claims and Title

The Iron River property consists of a single contiguous claim block of eight mineral cell title claims, covering 3,370.2992 hectares or 8,327.8952 acres (Figure 4.0). The claim statistics are summarized in Table 4.0; note that the claim information is not a legal title opinion but is a compilation of claims data based on the author's review of the government of the British Columbia Mineral Rights inquiry website (BC Mineral Titles April 18, 2008). The claims do not have to be legally surveyed; since they are BC Government established mineral cell title claims.

The sole registered owner of the Iron River property claims is Madman Mining Co Ltd, of Vancouver BC. On June 01, 2007, CHR entered into an option agreement with Madman to earn 100% of the Iron River property (Brewer 2007). CHR has the right to earn 100% of the Iron River property by making aggregate cash payments of $390,000 and issuing 415,000 common shares to Madman, plus incurring $1.65 million in exploration expenditures.

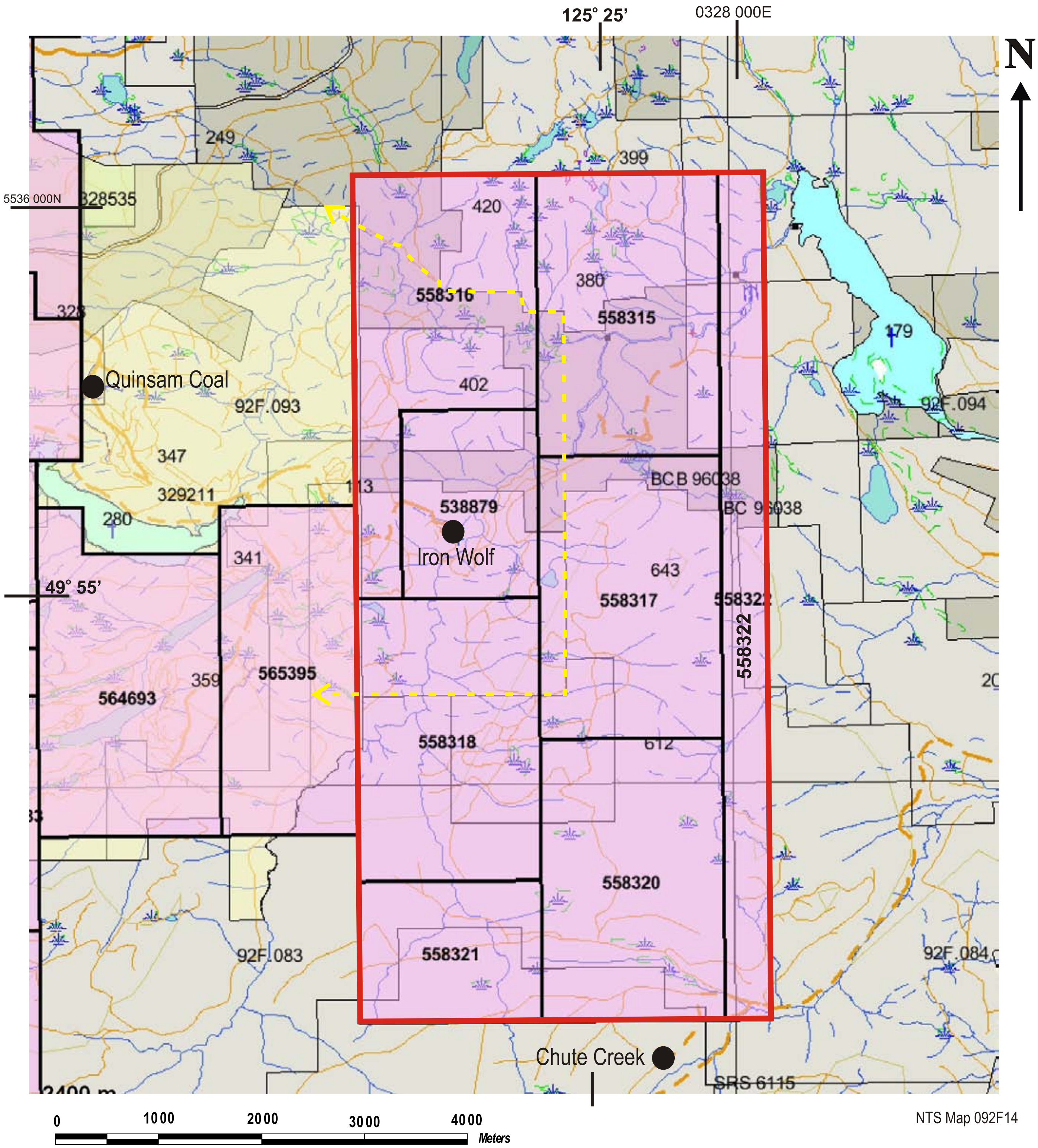
Table 4.0: Iron River Property Claim Statistics

TENURE#	Name	Area hectares	Issue Date	Expiry**	Owner
538879	IRON RIVER *	249.6074	Aug. 08, 2006	May 09, 2008	Madman Mining Co Ltd. 100%
558315	MAG NE	499.0450	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558316	MAG NW	499.0627	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558317	MAG CE	499.2952	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558318	MAG CW	499.4454	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558320	MAG SE	499.5582	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558321	MAG SW	249.8188	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
558322	MAG EAST	374.4665	May 09, 2007	May 09, 2008	Madman Mining Co Ltd. 100%
	TOTAL	**3,370.2992**			

* Working Name – Mineral Titles Online Claim is not named
** **NOTE**: Madman has filed for a minimum two year extension on the claims. This work expenditure filing had yet to be reviewed and approved by BC government representatives at the time of the completion of this report.

All claims are located in the Nanaimo Mining Division on BCGS maps 092F.083, 092F.084, 092F.093 & 092F.094 or NTS maps 092F14W.

NOTE: The claim information of Table 4.0 is not a legal title opinion but is a compilation of claims data based on the author's review of the government of the British Columbia Mineral rights inquiry web site on April 18, 2008.



NTS Map 092F14

Iron River Property Boundary

Quinsam fee simple coal lands

BCDM Minfile Occurrence

Map Source: British Columbia Mineral Titles website (www.mtonline.gov.bc.ca) date April 2008)

Crazy Horse Resources Inc

Iron River Project

Vancouver Island British Columbia

CLAIM MAP

Date: April 2008	**FIGURE 4.0**

5.0 EXPLORATION TARGETS & MINERALIZATION

At Iron River, the main style of mineralization is classified as contact metasomatic iron-copper skarn mineralization (calcic?); however *exploration efforts should also consider other mineral targets* which are reported in similar geological environments found elsewhere on Vancouver Island. These additional mineral targets include shear vein systems, porphyry-diatreme related systems, quartz-carbonate vein systems and Karmutsen flow top – interflow sediment copper-vanadium systems.

The property claims host the Iron River iron-copper (± silver & gold) skarn developed prospect (BC EMPR Minfile 092F 076); where magnetite and chalcopyrite mineralization are typically hosted within volcanic rocks of the mid to upper Triassic Karmutsen formation related to the emplacement of early Jurassic granodiorites.

The Iron River developed prospect is located on the centre-west part of the property, on mineral claim 538879. The mineralization is divided into the West and East zones, the two being offset by normal faults. The ‘Gal Zone’, identified in 2001 by Madman Mining, is centred about 1.1 kilometres north of the West Zone showing. The Gal area includes both soil and rock geochemical anomalies, which coincide with a geophysical magnetic high anomaly. The Aurizon Zone is adjacent to the north of the Gal Zone and extends perhaps an additional kilometre northward to the Quinsam River. This under explored area has three reported mineralized zones.

The Iron River property is 10 km northeast of the past producing Iron Hill skarn deposit, with reported historical production of about 1.99 billion kilograms of iron from an estimated 3.73 million tonnes of ore (BC EMPR Minfile 092F 075). The Big G skarn past producer is located about 16 kilometres northwest of the West-East Zones and has a reported limited production of 4,074 grams silver, 31 grams gold and 14,018 kilograms copper from 83 tonnes of ore (BC EMPR Minfile 092F 237).

The currently producing underground Quinsam Coal Mine is located approximately 4.0 kilometres northwest of the West-East Zones. The developed coal prospect Chute Creek is found only about 500m south of the property’s south limit (BC EMPR Minfile 092F 316).

6.0 EXPLORATION HISTORY

(Adapted from Brownlee 1985, Loiselle 1995 & 1996, Gal 2001, plus BC EMPR Mining Annual Reports)

6.1 Pre-Crazy Horse Exploration

The following is a brief summary of the historical exploration efforts carried out on the Iron River property. The author has endeavoured to compile a complete summary of all property exploration, but unfortunately, comprehensive reports for the many very early exploration programs are incomplete, unavailable or lost. As such, the author makes no representation as to whether the following historical information is complete or wholly accurate, but overall believe the information presented herein to be reliable. Figures 3.2 & 4.0 illustrate the locations of select historical exploration zones. All property historical exploration efforts have been limited to an area within a few kilometres of the West and East Skarn Zone showings.

Pre-1950

The first mention of the property is in the Geological Survey of Canada Summary Report for 1907-08. At this time general prospecting, minor geology and the development of a 60 foot (18 metre) adit had been carried out on the West Zone skarn zone. This small West Zone adit is collapsed and no longer evident.

1950 to 1958 Argonaut Mining Company Ltd

After the 1907-8 exploration endeavours, the property laid dormant until the early 1950's, when the Argonaut Mining Company Ltd (a subsidiary of the Utah Company of the Americas) leased the property from Canadian Collieries (Dunsmuir) Ltd. Over an eight year period, Argonaut focused on the West-East Zones area; their efforts included ground and airborne magnetometer surveys, surface geological mapping, overburden stripping, thirty two diamond drill holes. In addition, a few hundred pounds of iron-copper mineralization was test processed at the neighbouring Iron Hill processing facility. The culmination of the Argonaut efforts resulted in the first resource estimate (non NI 43-101 compliant) for the West and East zones.

1965 to 1974 Texada Mines Ltd. (Gilleys Bay BC)

The property was again dormant from 1958 until 1965 when Texada Mines Ltd, of Gilleys Bay BC, optioned the property from Canadian Colliers Ltd. In 1965, Texada geologically mapped and drilled 2,308 metres (7,575 feet) of EX-diameter core in 20 holes in the West-East zones. In 1971, a program of geological mapping, along with a geochemical and ground magnetometer survey, was completed on the property. Another ground magnetometer survey was carried out in 1974-5. Texada reported a second larger resource estimate (non NI 43-101 compliant) for the West and East zones.

1985 Brownlee

The West and East skarn zone area was staked by independent geologist D.J. Brownlee in 1984. During a company property examination in 1984, Brownlee and Falconbridge Copper Ltd tested the West zone for its gold, silver, zinc, as well as the known iron and copper content. At total of 36 rock samples were collected from the outcropping West zone skarn showing. Analyses of these rocks yielded a favourable historical vs. 1985 comparison of average iron and copper concentrations: 36% vs. 45.5% Fe and 0.35% vs. 0.35% Cu, respectively. The analyses reported high iron and copper values of 62.3% and 12.4%, respectively. The collective average of all rocks for gold was 106 ppb and 1.7 ppm for silver, although each element did yield a notable high of 845 ppb gold and 1.78 opt silver. The author assumes the claims were allowed to lapse shortly there after.

1995-6 Aurizon Mines Ltd. (Vancouver BC)
(after Loiselle 1995 & 1996)
In 1995 and in 1996, Aurizon Mines Ltd. carried out two limited geochemical/prospecting and ground EM geophysical surveys on and around the West-East zone area. Rock samples collected during prospecting of the West-East Zones region yielded generally poor results, with only a few samples having reported anomalous copper, iron or other indicator element values. Reports do not indicate the locations of these anomalous rock samples. The two limited EM geophysical surveys used a BM-IV miniaturized electromagnetic instrument which is designed to measure conductive zones within overburden to a maximum depth of 1.5 metres. The surveys identified a cluster of three small conductive zones (or 'magnetite highs') about three kilometres north of the West zone.

2001+ Madman Mining Ltd. (Vancouver BC)
(after Gal 2001)
After staking the property in 2001, Madman Mining completed a small prospecting, geological mapping, rock and soil sampling survey over an area centred about one kilometre north of the West Zone; dubbed the 'Gal Zone'. A total 238 soils and 13 rock samples were collected over a flagged control grid, comprised of 11 east-west tending lines. Results of this survey identified a possible deep-seated iron – copper skarn zone which maybe masked by overburden and overlaying volcanic rocks. Within the Gal Zone, reports indicate that there are zones of massive epidote alteration which somewhat resembles the epidote-diposide-garnet skarn of the West zone. In addition, fracture controlled magnetite mineralization (± chalcopyrite and pyrite) was noted as disseminated grains, fracture coatings and local clots, within the ubiquitously chlorite altered volcanic host lithologies. Madman then allowed the claims to lapse.

The property was re-staked in 2006 and 2007 by Madman Mining, to the current property configuration.

6.2 Crazy Horse 2007 Airborne Geophysical Survey & Related costs

The helicopter-borne AeroTEM Electromagnetic & Magnetic survey was completed by Aeroquest International of Mississauga Ontario. It was completed over the period of October 29 to November 1, 2007. The total survey coverage is 387.3 line-km covering a single block of 34.2 km².

Survey Supervision (J. Roth P Eng Stratagex) ………………………..….…	$ 2,158
Assessment Report compilation, drafting and printing……………………	$ 2,500
Aeroquest Airborne Survey ………………………………………………	$ 68,821
Total expenditures	***$73,479***

Note: Mr. Darrell Cardey, a director of CHR, on behalf of the CHR board of directors, has provided and approved the CHR related exploration expenditures statement. The author has not verified these expenditures.

7.0 GEOLOGIC SETTING

7.1 Regional Geology

(Modified after BC EMPR Minfile Reports and Monger 1994)
(See Figure 7.1)

Vancouver Island is an allochthonous terrain representing a large piece of Wrangellia, a dismembered block of Paleozoic to Mesozoic volcanic and sedimentary rocks which docked with North America in the Jurassic to Cretaceous Periods to produce the Insular Belt of the Canadian Cordillera. After amalgamation with North America the allochthonous rocks of Vancouver Island were unconformably overlain by sandstone, shale conglomerate and coal measures of the Cretaceous Nanaimo Group deposited in Graben controlled successor basins.

The Iron River property is situated in the Insular Belt (Vancouver Island). The area is dominantly underlain by weakly metamorphosed rocks of the mid to upper Triassic Vancouver Group. The Vancouver Group includes thick volcanic flows of the mid to upper Triassic Karmutsen Formation tholeiitic basalts, which are overlain by shallow-water carbonates of the upper Triassic Quatsino Formation. The Quatsino Formation limestones grade upward into early to mid Jurassic rocks of the Bonanza Group, which includes deeper water argillites and mudstones of the Parsons Bay formation and andesitic-rhyolitic volcanics of the Bonanza Formation. These rocks are intruded by middle Jurassic Quinsam Batholith quartz diorite of the Island Plutonic Suite. Overlying these units are mixed sediments and coal seams of the Upper Cretaceous Nanaimo Group (Comox and Trent River Formations). The stratigraphic thickness of the Wrangellia Terrain is thought to exceed ten kilometers. A series of northwest and northeast trending normal and thrust faults cut the whole sequence.

Table 7.1 Geochronology of the Iron River Region (after Cathyl-Bickford 2007)

AGE (EPOCH OR STAGE)	UNIT (FORMATION OR MEMBER)			SYMBOL	TYPICAL LITHOLOGY AND THICKNESS RANGE
QUATERNARY	***Drift (undivided)***				Stony silty sand over stony to bouldery till over gravelly sand, silt and clay. Thickness up to 74 m.
LATE CRETACEOUS *Middle Santonian*	Nanaimo Group	TRENT RIVER FORMATION	Browns Member		Cherty to sublithic sandstone and siltstone; locally pebbly or glauconitic; locally contains inoceramid bivalve fossils. Thickness at least 21 m.
Early to Middle Santonian	Nanaimo Group	TRENT RIVER FORMATION	Puntledge Member		Siltstone, shale and sandstone. Thickness 1.8 to 12 metres.
Early to Middle Santonian	Nanaimo Group	COMOX FORMATION	Dunsmuir Member		Sublithic to lithic sandstone, locally glauconitic, carbonaceous siltstone and mudstone; coal. *Includes Quinsam No 5, No.4, No.4B and No.3 coal zones*. Thickness 125 to 151 metres.
Cenomanian? to Early Santonian	Nanaimo Group	COMOX FORMATION	Cumberland Member		Lithic and feldspathic ("granitic") sandstone, sandy and carbonaceous siltstone; canneloid to carbonaceous mudstone; coal. *Includes Quinsam No.2 and No.1 coal zones*. Thickness 1.5 to 55 metres.
Cenomanian to Turonian?	Nanaimo Group	COMOX FORMATION	Benson Member		Conglomerate, pebbly sandstone, red shale and siltstone. Thickness highly variable: over 34 metres in paleovalleys.
MIDDLE JURASSIC *Aalenian to Bajocian?*	***Island Plutonic Suite***		Quinsam Batholith		Quartz-diorite, diorite and granodiorite; light to medium grey, medium to coarse-grained; may be co-magmatic with Bonanza Formation. Deeply weathered at top.
EARLY TO MIDDLE JURASSIC *Late Rhaetian to Bajocian*	Bonanza Group		***Bonanza Formation***		Green to brown andesitic, dacitic and rhyolitic lava, breccia and tuff. Thickness at least several hundred metres?
Latest Carnian to Hettangian	Bonanza Group		***Parson Bay Formation***		Dark grey argillite, calc-argillite and mudstone; locally organic-rich and bituminous. Thickness 230 metres.
UPPER TRIASSIC *Late Carnian to Earliest Norian*	Vancouver Group		***Quatsino Formation***		Light grey crystalline, locally-cavernous limestone and black, locally-bituminous limestone. Thickness 500 metres.
Early to Early Late Carnian	Vancouver Group	KARMUTSEN FORMATION	Upper Member		Massive green amygdaloidal basalt flows; interbeds of dark green to black shale near top. Thickness ca. 2450 to 2750 metres.
Early Carnian?	Vancouver Group	KARMUTSEN FORMATION	Middle Member		Green basaltic pillow breccia and aquagene tuff. Thickness 600 to 1100 metres.
MIDDLE TRIASSIC *Early Late Ladinian*	Vancouver Group	KARMUTSEN FORMATION	Lower Member		Pillowed green porphyritic basalt; minor gabbro dikes. Thickness ca. 2750 to 3050 metres.

7.2 Local Geology

(Modified after Gal 2001, Brownlee 1985, BC EMPR Minfile Report 092F 076) (See Figure 7.1)

The Iron River property is roughly split on a northwest trending diagonal into two dominant halves by a steep east dipping regional thrust fault. The east half is underlain by weakly metamorphosed mid to upper Triassic Karmutsen Formation tholeiitic basalts (Vancouver Group), while the west half dominantly contains undivided sediments of the upper Cretaceous Nanaimo Group, with lesser early to mid Jurassic Bonanza Group calc-alkaline rocks and upper Triassic Quatsino Formation (?) limestones. Intruding all of the above but the Nanaimo Group lithologies, is the mid Jurassic Quinsam Batholith (Island Plutonic Suite); mapped in the centre of the claim block, on the west side of the northwest trending thrust fault.

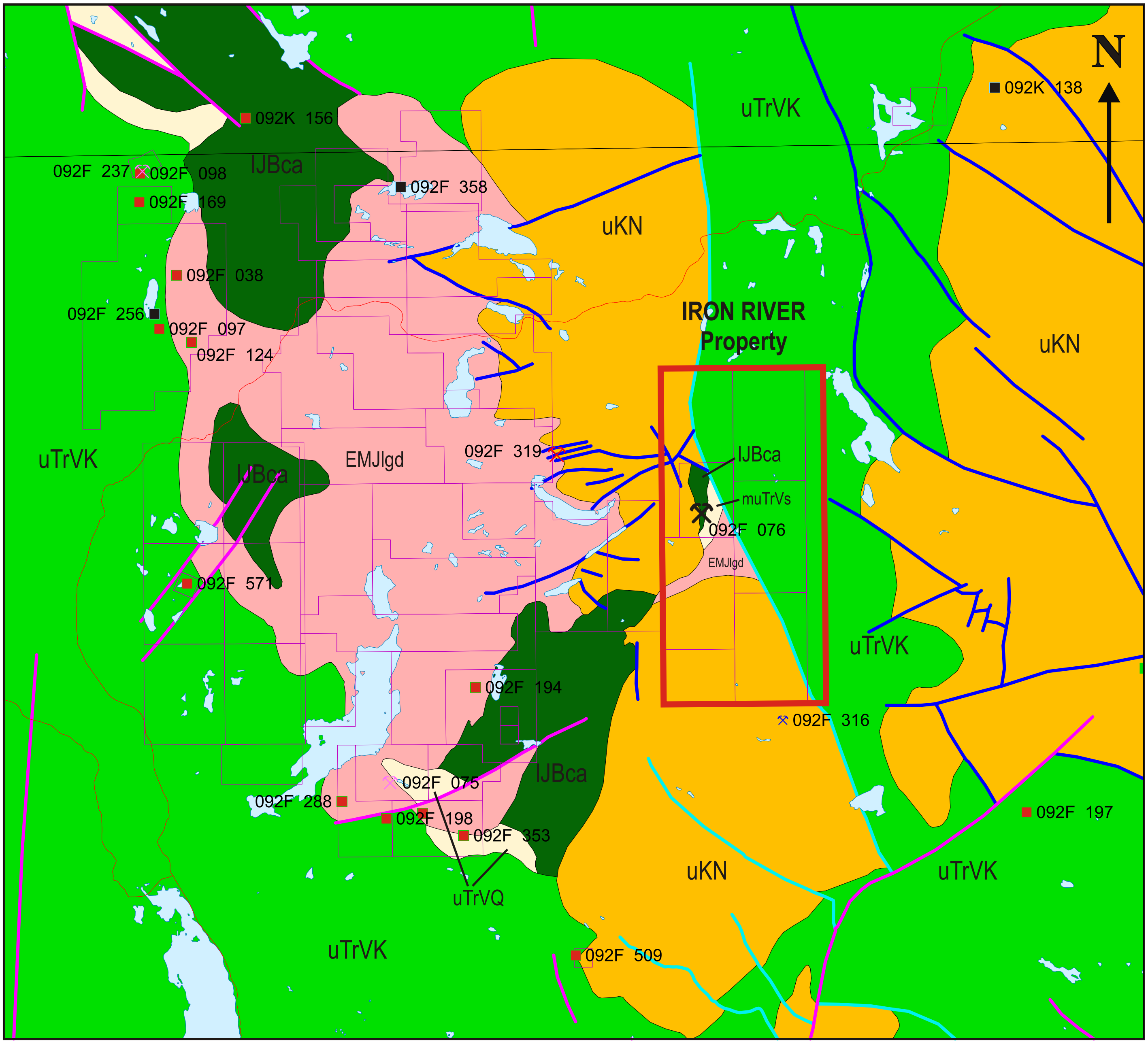
Upper Cretaceous Nanaimo Group (uKN)
(Comox and Trent River Formations)
The undivided Nanaimo Group rocks include a mix of conglomerate, sandstone, siltstone, red shale, as well as numerous coal seams. These coal seams are unique to the late Cretaceous Comox Formation.

Mid Jurassic Quinsam Batholith (EMJIgd)
(Island Plutonic Suite)
The intrusive Quinsam Batholith lithologies are dominated by light to medium grey, medium to coarse grained, quartz diorite, diorite and granodiorite. The Island Plutonic Suite intrusives are commonly deeply weathered and may be co-magmatic to the Bonanza Formation felsic volcanics.

Early to mid Jurassic Bonanza Group (lJBca)
(Parsons Bay and Bonanza Formations)
The Parsons Bay formation units include dark grey argillite, calc-argillite and mudstone; locally organic rich and bituminous. The Bonanza Formation rocks are comprised of green to brown sub-aerial andesitic, dacitic and rhyolitic lava, breccia and tuff.

Mid to upper Triassic Vancouver Group
Upper Triassic Quatsino Formation (uTrVQ & muTRVs)
The Quatsino Formation rocks are dominated by light grey crystalline locally cavernous limestone and black, locally bituminous limestone.
Mid to upper Triassic Karmutsen Formation (uTrVK)
The Karmutsen Formation is a thick submarine basaltic volcanic pile (“greenstones”) comprised of massive green amygdaloidal, hornblende phyric, pillowed basalt flows, pillow breccias and agglomerates, with inter-beds of dark green to black shale (argillites) and minor cross-cutting gabbroic dikes. Chlorite alteration, the result of regional lower greenschist facies metamorphism, is generally ubiquitous, with epidote commonly found on fractures, joints and faults.

Structures
As mentioned above, the Iron River property is roughly split on a northwest trending diagonal into two dominant halves by a steeply dipping regional thrust fault. In addition, a series of northwest and northeast trending normal and extensional faults cut all property lithologies. The exact orientation and offsets for most property structures is unknown. All property lithologies have a gentle dip or are near to flat lying.



(Map from http://webmap.em.gov.bc.ca)

Upper Cretaceous - Nanaimo Group

uKN Undivided sediments

Early-mid Jurassic - Bonanza Group

IJBca Calc-alkaline rocks

Mid to Upper Triassic - Vancouver Group

uTrVQ Quastino Fm. limstone, marble

muTrVs Undivided sediments

uTrVK Karmusten Fm. Basaltic volcanics

Early to Mid Jurassic - Island Plutonic Suite

EMJlgd Granodiorite

Extension Fault

Thrust Fault

Normal Fault

0 4.0 8.0 12.0

Meters

Minfile #	Name	Status	Commodities	Mineralization Type
092F038	Rock	Showing	Fe, Cu, Co, Ag, Zn	Skarn
092F075	Iron Hill	Past Producer	Fe, limestone, garnet, mt	Skarn
092F076	Iron River	Developed Prospect	mt, Fe, Cu, Ag, Au	Skarn
092F097	Upper Campbell	Showing	Limestone	Limestone
092F098	Campbell River	Showing	Limestone	Limestone
092F124	Sumpter	Showing	Cu, Ag, Fe, Au	Skarn
092F169	Stellar	Showing	Cu, Zn	epithermal shear hosted
092F194	Jentin	Showing	Ag, Cu, Au, Pb, Zn	epithermal shear-fault hosted
092F197	Eagle Gorge	Showing	Cu, Ag, Fe, Au	epithermal shear hosted
092F198	Sihun Creek	Showing	Cu, Fe	Skarn
092F234	Bold	Showing	Cu, Fe, Ag, Zn	Skarn
092F237	Big G	Past Producer	Cu, Ag, Fe, Au	Skarn
092F256	Bacon Lake	Prospect	Au, mt, Fe, Co, Cu	Skarn
092F288	Moore	Showing	Cu, Fe, Co	Shear-Skarn?
092F316	Chute Creek	Developed Prospect	Coal	Coal Seams
092F319	Quinsam	Producer	Coal	Coal Seams
092F353	Quinsam lake	Showing	Limestone	Limestone
092F358	Blue Grouse	Prospect	C, Ag, Pb	unknown
092F571	Camp Lake	Showing	Cu, Au, mt	Skarn
092F509	Moon	Showing	Cu, Ag	epithermal shear hosted
092K156	Greenstone Creek	Showing	Zn, Cu, Pb	unknown

Crazy Horse Resources Inc.

Iron River Project

Central Vancouver Island British Columbia

REGIONAL GEOLOGY

+

MINFILE OCCURENCES

April 2008

Figure 7.1

8.0 MINERALIZATION

8.1 Regional Mineralization

Mineral occurrences within the immediate Iron River region occur mainly within a rough donut shaped corridor defined by the BC Government regional first derivative airborne magnetic map; where magnetic highs are commonly found in association with established skarn or epithermal shear-hosted mineralization (see Figure 8.1).

Table 8.1 itemizes the twenty-one Minfile occurrences found within the Iron River Region; these are illustrated on Figure 8.1. The classification of these Minfile showings are as follows: 10 Fe-Cu (± Ag, Au) skarns, four base metal (± Au, Ag) epithermal shear hosted showings, two unknown base metal-magnetite showings, one active coal mine, one coal developed prospect and three industrial limestone showings.

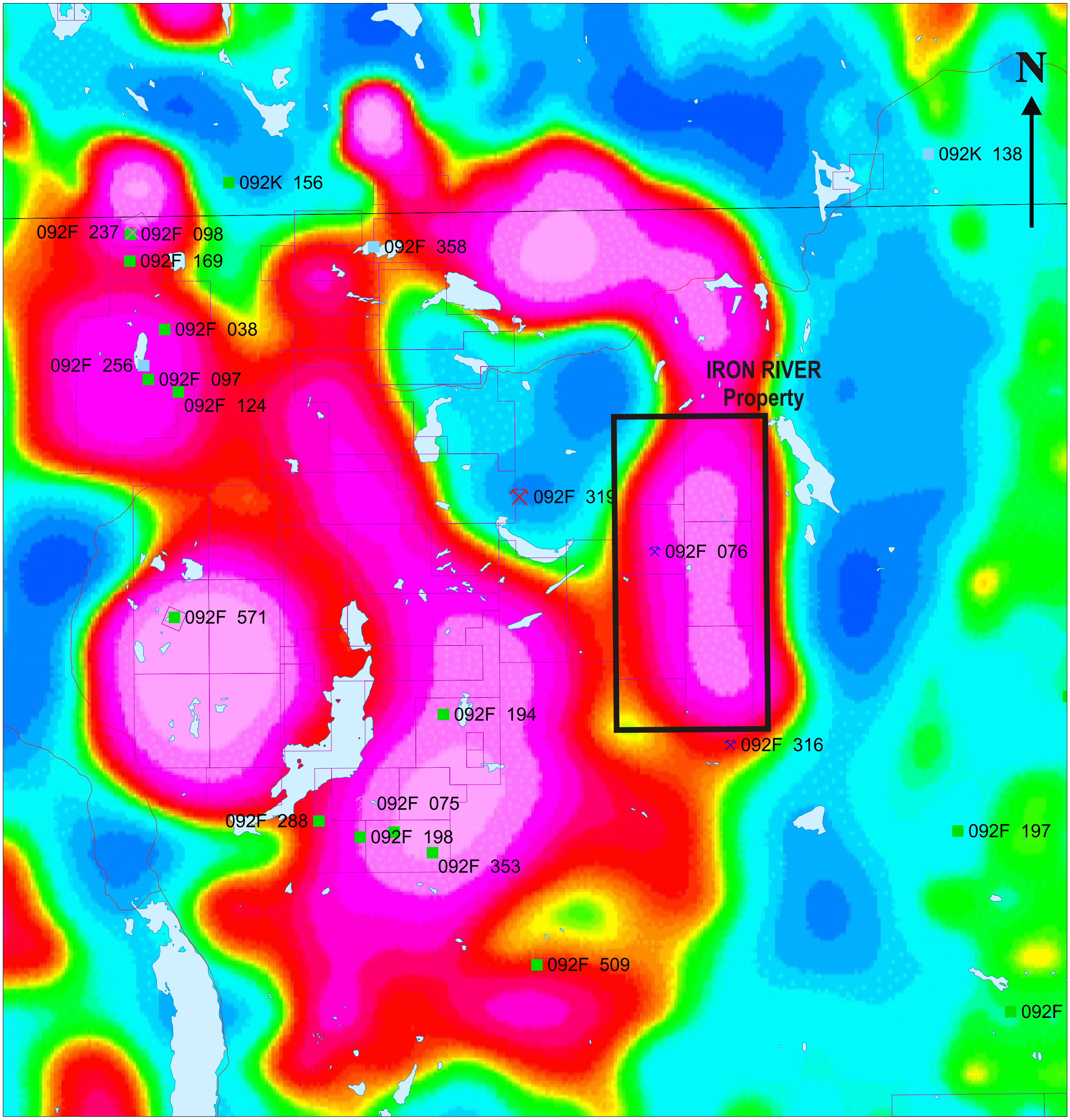
The property is 10 km northeast of the past producing Iron Hill skarn deposit (BC EMPR Minfile 092F 075) which has a reported historical production of about 1.99 billion kilograms of iron from an estimated 3.73 million tonnes of ore. The Big G skarn past producer is located about 16 kilometres to the northwest and has a reported limited production of 4,074 grams silver, 31 grams gold and 14,018 kilograms copper from 83 tonnes of ore (BC EMPR Minfile 092F 237). The currently producing underground Quinsam Coal Mine is located approximately 4.0 kilometres northwest of the West-East Zones. The developed coal prospect Chute Creek is found only about 500m south of the property's south limit (BC EMPR Minfile 092F 316).

The British Columbia Minfile mineral occurrence database designates the Iron River West-East Zones with the number 092F 076 and describes it as a developed Fe-Cu skarn prospect.

Table 8.1 Regional Minfile Occurrences

Minfile #	Name	Status	Commodities	Mineralization Type
092F038	Rock	Showing	Fe, Cu, Co, Ag, Zn	Skarn
092F075	Iron Hill	Past Producer	Fe, limestone, garnet, mt	Skarn
092F076	Iron River	Developed Prospect	mt, Fe, Cu, Ag, Au	Skarn
092F097	Upper Campbell	Showing	Limestone	Limestone
092F098	Campbell River	Showing	Limestone	Limestone
092F124	Sumpter	Showing	Cu, Ag, Fe, Au	Skarn
092F169	Stellar	Showing	Cu, Zn	epithermal shear hosted
092F194	Jentin	Showing	Ag, Cu, Au, Pb, Zn	epithermal shear-fault hosted
092F197	Eagle Gorge	Showing	Cu, Ag, Fe, Au	epithermal shear hosted
092F198	Sihun Creek	Showing	Cu, Fe	Skarn
092F234	Bold	Showing	Cu, Fe, Ag, Zn	Skarn
092F237	Big G	Past Producer	Cu, Ag, Fe, Au	Skarn
092F256	Bacon Lake	Prospect	Au, mt, Fe, Co, Cu	Skarn
092F288	Moore	Showing	Cu, Fe, Co	Shear-Skarn?
092F316	Chute Creek	Developed Prospect	Coal	Coal Seams
092F319	Quinsam	Producer	Coal	Coal Seams
092F353	Quinsam lake	Showing	Limestone	Limestone
092F358	Blue Grouse	Prospect	C, Ag, Pb	unknown
092F571	Camp Lake	Showing	Cu, Au, mt	Skarn
092F509	Moon	Showing	Cu, Ag	epithermal shear hosted
092K156	Greenstone Creek	Showing	Zn, Cu, Pb	unknown

After BC EMPR Minfile Website



(Map from http://webmap.em.gov.bc.ca)

KILOMETERS
0 5 10 15

Minfile #	Name	Status	Commodities	Mineralization Type
092F038	Rock	Showing	Fe, Cu, Co, Ag, Zn	Skarn
092F075	Iron Hill	Past Producer	Fe, limestone, garnet, mt	Skarn
092F076	Iron River	Developed Prospect	mt, Fe, Cu, Ag, Au	Skarn
092F097	Upper Campbell	Showing	Limestone	Limestone
092F098	Campbell River	Showing	Limestone	Limestone
092F124	Sumpter	Showing	Cu, Ag, Fe, Au	Skarn
092F169	Stellar	Showing	Cu, Zn	epithermal shear hosted
092F194	Jentin	Showing	Ag, Cu, Au, Pb, Zn	epithermal shear-fault hosted
092F197	Eagle Gorge	Showing	Cu, Ag, Fe, Au	epithermal shear hosted
092F198	Sihun Creek	Showing	Cu, Fe	Skarn
092F234	Bold	Showing	Cu, Fe, Ag, Zn	Skarn
092F237	Big G	Past Producer	Cu, Ag, Fe, Au	Skarn
092F256	Bacon Lake	Prospect	Au, mt, Fe, Co, Cu	Skarn
092F288	Moore	Showing	Cu, Fe, Co	Shear-Skarn?
092F316	Chute Creek	Developed Prospect	Coal	Coal Seams
092F319	Quinsam	Producer	Coal	Coal Seams
092F353	Quinsam lake	Showing	Limestone	Limestone
092F358	Blue Grouse	Prospect	C, Ag, Pb	unknown
092F571	Camp Lake	Showing	Cu, Au, mt	Skarn
092F509	Moon	Showing	Cu, Ag	epithermal shear hosted
092K156	Greenstone Creek	Showing	Zn, Cu, Pb	unknown

Crazy Horse Reources Inc.

Iron River Project
Central Vancouver Island British Columbia
Regional 1st Vertical D. Magnetics
+ Minfile Occurrences Map

April 2008 | Figure 8.1

8.2 Local Mineralization

The Iron River Property hosts three areas of known Fe-Cu skarn mineralization; the developed West-East Zone and the early stage Gal and Aurizon Zones. Historical exploration efforts have identified well developed iron-copper mineralization at the West-East Zone; where two segmented bodies of semi-massive to massive, fine grained magnetite and chalcopyrite mineralization are hosted in andesitic volcanics. To date, mineralization/alteration reported at the Gal and Aurizon zones have many similar characteristics of a Fe-Cu skarn target; although no large or massive iron (± copper) bodies have yet been identified. The following is a brief account of these occurrences.

West-East Zone
(After BC EMPR Minfile 092F 076 and Hancock 1988)
The West-East Zone is located near the west-centre portion of the Iron River property, where normal faults offset the mineralization into east and west bodies. The West zone outcrops on a small hill located on the west side of the Iron River, while the poorly exposed, soil covered, East zone is located to the southeast on the opposite side of the Iron River. This small area has been the subject of the majority of the property's historical exploration, which has included a short adit (West Zone), surface trenching/stripping, soil sampling, geological mapping, numerous ground geophysical programs, diamond drilling and non 43-101 compliant resource calculations.

Semi-massive to massive, fine grained magnetite and chalcopyrite mineralization is hosted in pervasively chloritic Karmutsen volcanics, which have common calcite infilled vugs and locally strong epidote alteration on fractures, faults and shears. At the West Zone, a Coast Intrusive quartz diorite outcrops just east of the 'main hill' showing. Magnetite and chalcopyrite mineralization is reported to be concentrated at the north end of a northeast trending skarn zone adjacent to the quartz diorite. Exoskarn mineralization consists of garnet, diopside, calcite, epidote, pyrite and actinolite, with common secondary minerals malachite, azurite and hematite/limonite. The West Zone plunges northeast at about 30° and persists to reported a maximum depth of 50 metres. The East Zone also strikes northeast, with a dip 45° to the northwest. Historical records, while generally sparse, indicate that the full extent of the two iron-copper bodies is not fully known. Recent historical rock samples collected from the West Zone showing by Brownlee (1985) and Gal (2001) report highly elevated values of iron (11.2 to 62.3%) and moderately elevated values of copper (0.1 to 9.85%) and silver (0.2 to 750 ppm). Gold values are generally sub-anomalous, with rare highs to 845 ppb.

Gal Zone
(After Gal 2001)
The Gal Zone is centred about one kilometre north-northeast of the West-East Zone and lies within a large cluster of airborne magnetic high 2007 anomalies. The extents of this zone are not fully known. Geological mapping and prospecting conducted by Gal in 2001 describes an area that is dominantly underlain by mixed 'greenstones' of the Karmutsen volcanics, where chlorite alteration is ubiquitous and epidote alteration was noted principally on fractures and joint sets (?). An area of 'massive epidotization', which somewhat resembles the epidote-diopside-garnet exoskarn of the West zone, was reported. Magnetite was reported as disseminated grains, fracture coatings and local masses, which have replaced volcanic fragments. Pyrite and chalcopyrite mineralization was also noted in several areas; occurring principally as fillings of vesicles associated with calcite. Rock samples collected in 2001 reported elevated iron and copper values ranging (1.81% to 8.71%) and (15 ppm to 2.61%) respectively.

Aurizon Zone
(After Loiselle 1995 & 1996)
The Aurizon Zone is adjacent to the north of the Gal Zone and extends perhaps an additional kilometre northward to the east-west trending Quinsam River. Details of the geology and nature of mineralization discovered in this area are sparse. Three mineralized zones ('magnetite highs') have been identified; two of which are reported have surface exposures of greater than 100 metres. The volcanic hosted mineralization and alteration is described as patchy and irregular, containing variable epidotization with fine to medium grained magnetite and visible garnet, malachite and pyrite. Loiselle suggests that these prospective areas may be high level expressions of deeper seated iron skarn mineralization. Rock samples collected from the Aurizon Zone yielded elevated values of iron (0.12 to 12.9%) and moderately elevated values of copper (sub-anomalous to >1%). Silver and gold values were generally sub-anomalous, with rare highs to 12 ppm and 230 ppb, respectively.

Iron River Soil Surveys
Two soil sampling surveys have been carried out on the property. The first in 1971 by Texada Mines on the West-East Zone and the second in 2001 Madman Mining at the Gal Zone. There are no reports which account the details or results of the 1971 survey. The 2001 soil survey focused on the Gal Zone (ten short lines), plus a single test line just north of the West-East Zone. The results of the 2001 survey indicates that iron and copper, plus pathfinder elements such as cobalt and nickel form roughly co-incident anomalies in close proximity to surface mineralized occurrences. Base metal and silver values tend to be sub-anomalous with erratic highs.

Iron River Historical Geophysical Surveys
During the 1950 to 1970 explorations, numerous ground magnetic surveys where carried out over the West-East zone area. There are no detailed results of these surveys, but the authors surmise that the ground magnetic surveys where the primary and most effective tool used to guide historical drill testing efforts. In 1995 and again in 1996, Aurizon Mines conducted two small test electromagnetic surveys within the Aurizon Zone. The geophysical tool used was a miniaturized electromagnetic instrument (BM-IV) with a reported ability to detect conductive zones through a depth of 1.5 metres of overburden. Loiselle (1995) reported that the tool effectively identified the three areas of 'magnetite highs' mentioned above.

9.0 Crazy Horse 2007 Aeroquest Airborne Magnetics and AeroTEM Survey

During the period from October 29 to November 1, 2007, Aeroquest International of Mississauga Ontario completed a helicopter-borne AeroTEM Electromagnetic & Magnetic over the Iron River property. The survey was flown over a single rectangular block approximately of 34.2 km², with the flight lines flown at 100m spacing and oriented east-west (Plastow et al 2007). A total of 387.3 kilometres of line were surveyed. In mid 2007, CHR hired the geophysical consultant Jerry Roth of Stratagex Ltd (Toronto ON) to oversee the Aeroquest 2007 airborne survey and to quality control and review of their results. **All three final survey maps are in Appendix A.**

Airborne Survey Description (modified after Roth 2008)

The combined AEM and aeromagnetic survey was flown by Aeroquest using their AeroTem II time-domain EM system towed by an Aerospatiale A-Star helicopter. The survey was flown on E-W lines at 100m spacing, complemented by three N-S tie lines at 1.5 km intervals, with a mean terrain clearance (of the EM bird) of 50m, which was generally maintained except for areas with particularly rugged local terrain,. Initial data processing was carried out in the field, providing both crew and client with preliminary plots and data quality checks as the survey progressed

The advanced heliborne AeroTem AEM system was selected as appropriate in view of the rugged terrain, the indicated geologic objectives and characteristics, its good depth of exploration for conductive mineralization (at least 100m), the requirement for a detailed survey, the anticipated limited overburden thickness, and its availability and cost.

This time-domain EM system records, at a series of time windows, the primary (on-time) and secondary (off-time) voltages generated in a two–axis (X and Z) coil receiver by a triangular current flowing in a large horizontal coil housed in a rigid bird towed 30m below the helicopter. The AeroTem system typically samples the on-time EM signal at 12 time-varying windows and the off-time decay voltages at 16 time-varying windows, as described in Aeroquest's literature and operations report.

The survey also acquired high-resolution aeromagnetic data, using a cesium magnetometer located 15m above the AeroTEM bird. Highly accurate navigation was achieved by standard differential GPS, supplemented by radar and barometric altimeters and video camera. All data was captured by a suitable digital data acquisition system referenced by time fiducials.

Full details of the AeroTem system and other instrumentation, as well as survey specifications and procedures, may be found in the operations report provided by Aeroquest.

The survey utilized the corrected differential GPS data to achieve a very accurate flight path map and, in conjunction with the radar altimeter output, a derived contoured terrain map. For the plotted geophysical maps, the DGPS survey flight path has been superimposed on the published topographic map for this sector, whose detail has been derived from a variety of imagery, with generally excellent agreement. However, for greatest accuracy, ground follow-up should be based on the indicated DGPS positions of the geophysical features or anomalies as indicated by the airborne survey data.

Final data processing of the EM and magnetic data, including EM anomaly selection and characterization in terms of indicated source geometry and conductance, was completed at Aeroquest's main office in Mississauga, Ontario, under the direction of Gordon Smith with supervision by Jonathan Rudd, Data Processing Manager.

The data processing included standard diurnal correction, leveling and micro-leveling of the magnetic data, and adjustment of the EM profiles for long-period drift. The selection of AEM anomalies with characteristics consistent with bedrock sources was initially performed by a machine algorithm, and then reviewed and revised by an experienced geophysicist. The selected EM anomalies, with the measured and derived parameters, are shown on all the geophysical plans, and are tabulated in the Aerodat report. It should be noted, however, that although the orthogonal receiver coils provide important evidence generally enabling conductor source discrimination, there is inevitably some overlap between the responses of weak bedrock conductors and those of restricted patches of overburden , likely resulting in some conductive zones being selected which may reflect overburden or the edges of flat-dipping conductive lithologic units.

Note that in the geophysical maps the identified EM conductive zones are differentiated between those which exhibit an indicated narrow source (designated N) and those which display significant width (designated K), accompanied by the annotated computed conductance (siemens), which characterizes source conductivity.

More complete characterization of data processing and plotting and tabulation of selected EM anomalies may be found in the cited Aeroquest operations report.

The resulting processed geophysical data have been presented in a variety of coloured map formats comprising principally the three maps, which also show the local topographic features and CHR claims:

- Contoured total field magnetics w/ flight lines and selected AEM conductors
- Contoured Hz off-time amplitude (early time) (w/ flight lines and selected AEM conductors)
- Profiles of the off-time EM channels for the vertical (Z) receiver coil (w/ flight lines and selected EM conductors)

All maps are in Appendix A

In addition, the processed data have been provided as a digital Geosoft-compatible database for individual lines and digital grid and map files

10.0 INTERPRETATION AND CONCLUSIONS

The Iron River property is an early stage iron-copper exploration venture, located in the historic Iron Hill iron skarn mining camp. It is situated in the politically stable and mineral exploration affable province of British Columbia, Canada. The property is located in the east central region of Vancouver Island, where access and logistics are relatively simple and inexpensive. Property terrain is typical of the Vancouver Island Ranges, with gently-rolling and hummocky hills being incised by stream and river channels and covered by varying thicknesses of Quaternary overburden. Overall, property overburden depths will not greatly hamper most future exploration efforts. The areas intermittent winter snow will not restrict most exploration efforts.

The results of the detailed heliborne aeromagnetic and AeroTem survey of CHR's Iron River claims has provided considerable new insights into the complex geology and defined numerous conductive and magnetic features.

Based on these favourable results, additional detailed exploration is clearly warranted to evaluate identified targets or target areas, including delineating EM conductors and establishing geologic origin and possible economic mineralization.

11.0 RECOMMENDATIONS

It is recommended herein that CHR carry out additional exploration efforts on the Iron River property. An initial $250,000 exploration program is recommended.

Only a very small portion of the property has been explored in detail, thus the first phase of exploration should have two foci (a) detailed work on the "Grid 1" historical area and (b) regional prospecting of the areas underlying the extensive 2007 airborne anomalies. In the short term, the most obvious and promising site for future exploration is the "Grid 1 area" (West-East & Gal Zones) and its' immediate on trend zones.

The Phase One Exploration program should be carried out in the following consecutive stages:

- Digital compilation and detailed review of all historical and recent exploration efforts
- Geological mapping and rock sampling of Grid 1, plus prospecting & sampling of rock cuts and outcrops throughout the 2007 airborne anomalies
- GPS assisted grid line establishment and ground magnetic-VLF geophysical surveys over any newly identified target areas resulting from regional prospecting and/or historical work.
- Results dependent follow-up mechanized trenching and rock sampling program.

The size and scope of the Phase two program, consisting primarily of diamond drilling priority targets, would be contingent on the results of Phase One explorations.

12.0 REFERENCES

Brewer, L., 2007: Iron River Property Option Agreement, dated June 01, 2007.

Brownlee, D. J., 1985: Report on the Preliminary Rock geochemistry Survey of the Iron River Claims. British Columbia EMPR Assessment Report 13,574.

Cathyl-Bickford, C.G. 2007: Geological Report on Quinsam Mine (Vancouver Island, British Columbia) including assessments of coal reserves and resources as of 31 December 2006, For Hillsborough Resources Limited. NI 43-101 report March 29, 2007.

Deleen, J and McCullough, P.T., 1974: Geophysical Report on the Iron River Property (92F/14W). British Columbia EMPR Assessment Report 5,300.

Gal, L., 2001: June 2001 Exploration Summary; internal memo for Madman Mining Inc.

GSC, 1907: Geological Survey of Canada Summary Report for 1907-08.

Government of British Columbia Department of Mines Annual Reports

Government of British Columbia Minfile web site (http://webmaps.gov.bc.ca))

Government of British Columbia EMPR Geological Map 65 (1989)

Government of British Columbia mineral deposit profiles web site ("BC EMPR Minfile") (http://www.em.gov.bc.ca/Mining/Geolsurv/MetallicMinerals/MineralDepositProfiles)

Government of British Columbia Map Place web site (http://www.em.gov.bc.ca/Mining/Geolsurv/MapPlace/default.htm)

Government of Canada Weather website: www.climate.weatheroffice.ec.gc.ca

Green, R.N. and Klinka, K. 1994: A field guide to site identification and interpretation for the Vancouver Forest Region; *British Columbia Ministry of Forests*, Land Management Handbook 28, 285 pages.

Hancock, K. D. 1988: Magnetite Occurrences in British Columbia, BC EMPR Open File 1988-28.

Loiselle, J. P. 1995: Geophysical Report Electromagnetic survey over Wolf Claims, June 1995. British Columbia EMPR Assessment Report 24,089.

Loiselle, J. P. 1996: Assessment work over Wolf II and Wolf III Claims, May 1996. British Columbia EMPR Assessment Report 24,440.

Monger, J.W.H. & Journeay, J.M 1994: Basement Geology and Tectonic Evolution of Vancouver Region. Geological Survey of Canada Bulletin 481, 1994.

Plastow, G and Garrie, D. 2007: Report on a Helicopter-Borne AeroTEM System Electromagnetic & Magnetic Survey Iron Wolf Property December 2007. (Aeroquest Job # 08039)

Ray, G. E. 1995: Fe Skarns, in Selected British Columbia Mineral Deposit Profiles, Volume 1 - Metallics and Coal, BC EMPR Open File 1995-20, pages 63-65.

Roth, J. 2008: Summary Report Interpretation and Evaluation of an Airborne Geophysical Survey Iron River Vancouver Island BC. Stratagex, April 15, 2008.

13.0 AUTHOR'S CERTIFICATE, SIGNATURE AND CONSENT

MICHAEL MOORE, P. GEO
STATEMENT OF QUALIFICATIONS

I, Michael P. Moore, P. Geo., HEREBY CERTIFY THAT:

1) I am an independent consulting geologist with a business address at Suite 520 – 470 Granville Street, Vancouver, British Columbia V6C 1V5.

2) I am a graduate of Carleton University, Ottawa Ontario, with a B.Sc. (Honours) in Geology (1989).

3) I am a registered Professional Geologist in good standing with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) with member number 21586.

4) I have worked as a geologist for a total of 19 years since my graduation from university.

6) I am responsible for the preparation of all sections of the technical report titled "Airborne Geophysical Report for the Iron River Project British Columbia, Canada" prepared for Crazy Horse Resources Inc. dated April 24, 2008 (the "Technical Report").

7) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

__"Signed & Sealed"__
Michael Moore, B.Sc. P. Geo.
Dated at Vancouver, B.C.
April 24, 2008

Appendix A

Aeroquest Airborne Maps (x3)

Contoured total field magnetics w/ flight lines and selected AEM conductors

Contoured Hz off-time amplitude (early time) (w/ flight lines and selected AEM conductors)

Profiles of the off-time EM channels for the vertical (Z) receiver coil (w/ flight lines and selected EM conductors)

The topographic data base was derived from 1:50000 Natural Resources Canada NTDB data.

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

This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Iron Wolf Property Campbell River Area, British Columbia, by Aeroquest Limited, December 2007.

Grid North
NAD83-Zone10

Scale 1:10,000,000

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

Z[0]OFF nT/s
4050.2
1779.5
1343.9
1109.0
953.7
824.1
647.8
510.5
442.5
378.1
314.4
262.0
195.4
125.5
72.9
55.5
44.2
35.7
29.4
25.0
21.7
19.1
16.9
14.8
12.7
10.7
8.6
6.6
3.9
0.0

ZOFF Contour Interval

100 nT/s
500 nT/s
1000 nT/s

Off-Time Anomaly Symbols

>50S ....
35-50S ....
20-35S ....
10-20S ....
5-10S ....
1-5S ....
<1S ....
Cultural Sources.....

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

SURVEY SPECIFICATIONS:
Survey flown: October 30 & Novemeber 1, 2007
Traverse line spacing: 100 metres
Traverse line direction: 90° Azimuth (E-W)
Nominal EM bird height: 30 metres
Aircraft: Aerospatiale A-Star 350B2 (C-FPTG)
INSTRUMENTATION:
Data acquisition: ADAS & RMS DGR-33
Magnetometer: Geometrics G-823A cesium vapour
Installation: On EM bird
Sensitivity: .001 nanoTesla
Electromagnetics: AeroTEM II System (BRAVO)
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
(meters)
NAD83 / UTM zone 10N

Crazy Horse Resources
Campbell River Area, British Columbia

AEROTEM Z0 OFF-TIME

Iron Wolf Block

NTS 092F14

AEROQUEST INTERNATIONAL
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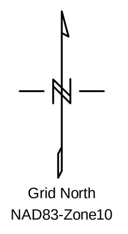
December 2007

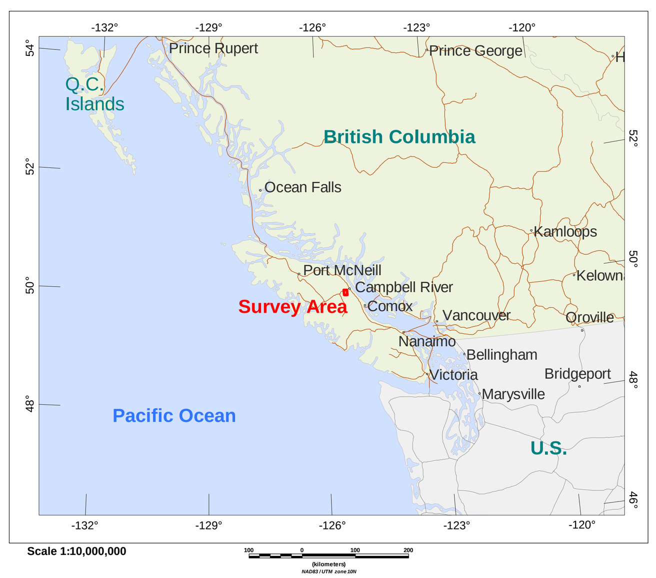
ZOFF Iron Wolf

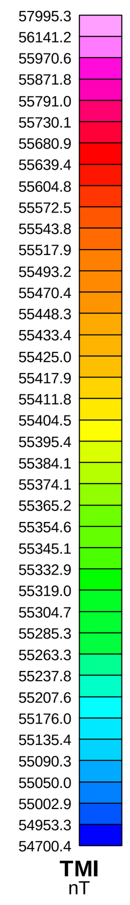


The topographic data base was derived from 1:50000 Natural Resources Canada NTDB data.

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

This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Iron Wolf Property Campbell River Area, British Columbia, by Aeroquest Limited, December 2007.





TMI Contour Interval

50 & 100 nT

500nT

1000nT

Off-Time Anomaly Symbols

>50S ....

35-50S ....

20-35S ....

10-20S ....

5-10S ....

1-5S ....

<1S ....

Cultural Sources.....

anomaly label A 125 decay constant (μs)

thicK/thiN source K 36 off-time conductance (S)

SURVEY SPECIFICATIONS:
- Survey flown: October 30 & November 1, 2007
- Traverse line spacing: 100 metres
- Traverse line direction: 90° Azimuth (E-W)
- Nominal EM bird height: 30 metres
- Aircraft: Aerospatiale A-Star 350B2 (C-FPTG)

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

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- Datum: NAD83
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- Central Scale Factor: 0.9996
- False Easting/Northing: 500,000m/0m

scale 1:10,000

200 0 200 400 600

(meters)

NAD83 / UTM zone 10N

Crazy Horse Resources

Campbell River Area, British Columbia

TOTAL MAGNETIC INTENSITY

Iron Wolf Block

NTS 092F14

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December 2007

TMI Iron Wolf

Grid North
NAD83-Zone10

The topographic data base was derived from 1:50000 Natural Resources Canada NTDB data.

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

This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Iron Wolf Property Campbell River Area, British Columbia, by Aeroquest Limited, December 2007.

AeroTEM Profiles

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

Z1 Off-Time Channel
Z2 Off-Time Channel
Z3 Off-Time Channel
Z4 Off-Time Channel
Z5 Off-Time Channel
Z6 Off-Time Channel
Z7 Off-Time Channel
Z8 Off-Time Channel
Z9 Off-Time Channel
Z10 Off-Time Channel
Z11 Off-Time Channel

Off-Time Anomaly Symbols

>50S ....
35-50S ....
20-35S ....
10-20S ....
5-10S ....
1-5S ....
<1S ....
Cultural Sources.....

anomaly label A 125 decay constant (μs)
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Nominal EM bird height: 30 metres
Aircraft: Aerospatiale A-Star 350B2 (C-FPTG)
INSTRUMENTATION:
Data acquisition: ADAS & RMS DGR-33
Magnetometer: Geometrics G-823A cesium vapour
Installation: On EM bird
Sensitivity: .001 nanoTesla
Electromagnetics: AeroTEM II System (BRAVO)
Configuration: Towed bird
NAVIGATION:
Navigation: Differential Global Positioning System (DGPS)
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scale 1:10,000
200 0 200 400 600
(meters)
NAD83 / UTM zone 10N

Crazy Horse Resources
Campbell River Area, British Columbia

AEROTEM OFF-TIME PROFILES

Iron Wolf Block

NTS 092F14

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December 2007

EM Iron Wolf

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

Aeroquest Job # 08039

Iron Wolf Property

Campbell River Area, British Columbia
NTS 092F14

for

Crazy Horse Resources

by

AEROQUEST INTERNATIONAL
ADVANCED AIRBORNE GEOPHYSICS

7687 Bath Road,
Mississauga, ON, L4T 3T1
Tel: (905) 672-9129
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Report date: December 2007

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

Aeroquest Job # 08039

Iron Wolf Property

Campbell River Area, British Columbia
NTS 092F14

For

Crazy Horse Resources

750-999 Canada Place
Vancouver, BC
Canada V6E 3E1
Tel: 604-377-5890

by

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Tel: (905) 672-9129
Fax: (905) 672-7083
www.aeroquest.ca

Report date: December 2007

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LIST OF MAPS (1:10,000)

- TMI – Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- ZOFF – AeroTEM Z0 Off-time with line contours and EM anomaly symbols .
- EM – AeroTEM off-time profiles Z1 – Z11 and EM anomaly symbols.

1. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Crazy Horse Resources, for their Iron Wolf project, Campbell River area, Vancouver Island, British Columbia.

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

The total survey coverage is 387.3 line-km, of which 369.5 line-km fell within the defined project area (Appendix 1). The survey was flown at 100 metre line spacing and in a North-South survey flight direction. The survey flying described in this report took place on October 30th and November 1st, 2007. This report describes the survey logistics, the data processing, presentation, and provides the specifications of the survey.

2. SURVEY AREA

The Project area (Figure 1) is located on Vancouver Island, British Columbia approximately 15 km southwest of Campbell River. The project is made up of a single block of 34.2 km^2 which falls in NTS sheet area 092F/14. Terrain was rugged and elevations ranged from 170 m above sea level in the Quinsam River Valley to 650 m in the eastern and southern sections of the block. Property accessibility was good with numerous local access roads in the vicinity of the block.

There are 12 mining claims either partially or fully covered by the survey (Figure 2). Details are outlined in Appendix 2.

The base of survey operations was at Gold River and crew were accommodated in the Anchor Inn and Suites. The base for refuelling was at Campbell River airport.

Figure 1. Project Area

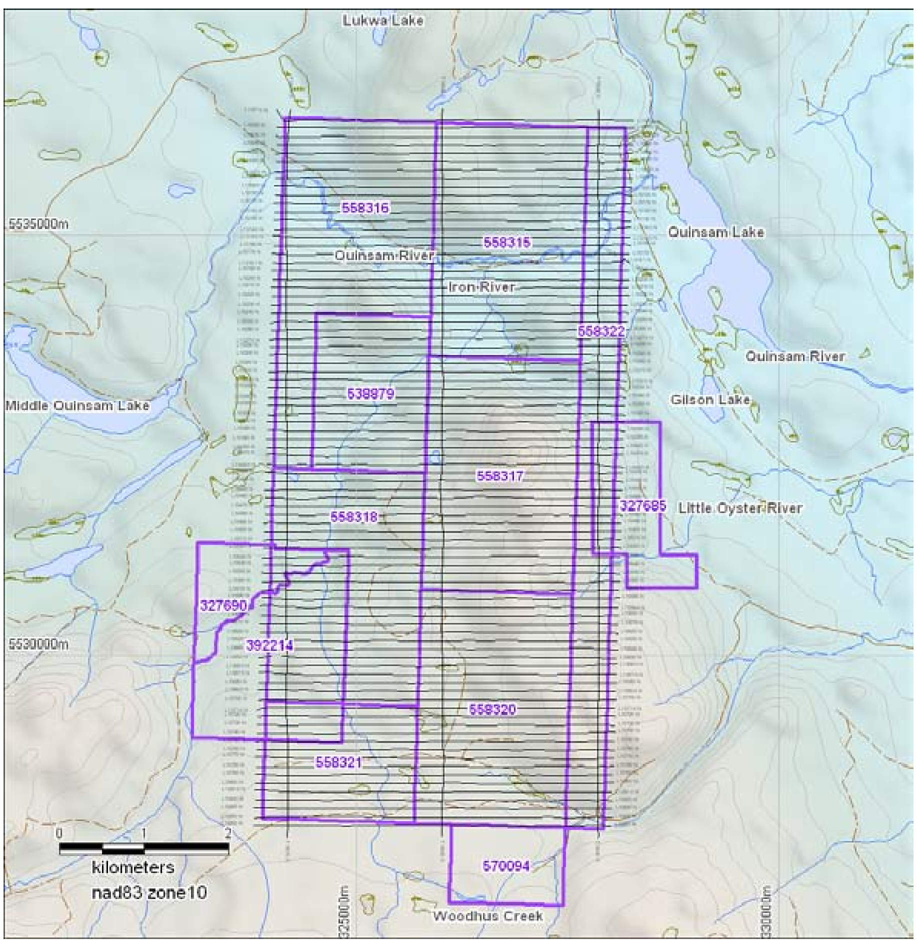


Figure 2. Project flight path and mining claims and shaded topography

3. SURVEY SPECIFICATIONS AND PROCEDURES

The survey specifications are summarised in the following table:

Project Name	Line Spacing (metres)	Line Direction	Survey Coverage (line-km)	Date flown
Iron Wolf	100	E-W (90º)	387.3	October 20 – November 1, 2007

Table 1. Survey specifications summary

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 100 metres. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1000 metres.

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

3.1. NAVIGATION

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The x-y-z position of the aircraft, as reported by the GPS, is recorded at 0.2 second intervals. The system has a published accuracy of 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.

3.2. SYSTEM DRIFT

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

3.3. FIELD QA/QC PROCEDURES

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

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

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

4. AIRCRAFT AND EQUIPMENT

4.1. AIRCRAFT

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-FPTG was used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters, Calgary, Alberta. Installation of the geophysical and ancillary equipment was carried out by Aeroquest Limited personnel in conjunction with a licensed aircraft. The survey aircraft was flown at a nominal terrain clearance of 220 ft (65 metres).

Figure 3. Helicopter registration number C-FPTG

4.2. MAGNETOMETER

The AeroTEM II 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, 21 metres below the helicopter (Figure 4). The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird is 51 metres (170 ft.). The magnetic data is recorded at 10 Hz by the RMS DGR-33.

4.3. MAGNETOMETER II

In addition to the main magnetometer bird on the main tow line, the AeroTEM II system includes an additional G-828A magnetometer installed on the tail of the EM bird (Figure 4).

The sensor is located 37 metres below the helicopter and has a superior nominal terrain clearance of 31 m. Data is recorded at 300 samples a second and down sampled to 10 Hz by the AeroDAS acquisition system.

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

4.4. ELECTROMAGNETIC SYSTEM

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

The wave-form is triangular with a symmetric transmitter on-time pulse of 1.10 ms and a base frequency of 150 Hz (Figure 5). The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 120 contiguous channels of raw X and Z component (and a transmitter current monitor, itx) of the received waveform are measured. Each channel width is 27.78 microseconds starting at the beginning of the transmitter pulse. This 120 channel data is referred to as the raw streaming data. The AeroTEM system has two separate EM data recording streams, the conventional RMS DGR-33 and the AeroDAS system which records the full waveform (Figure 6).

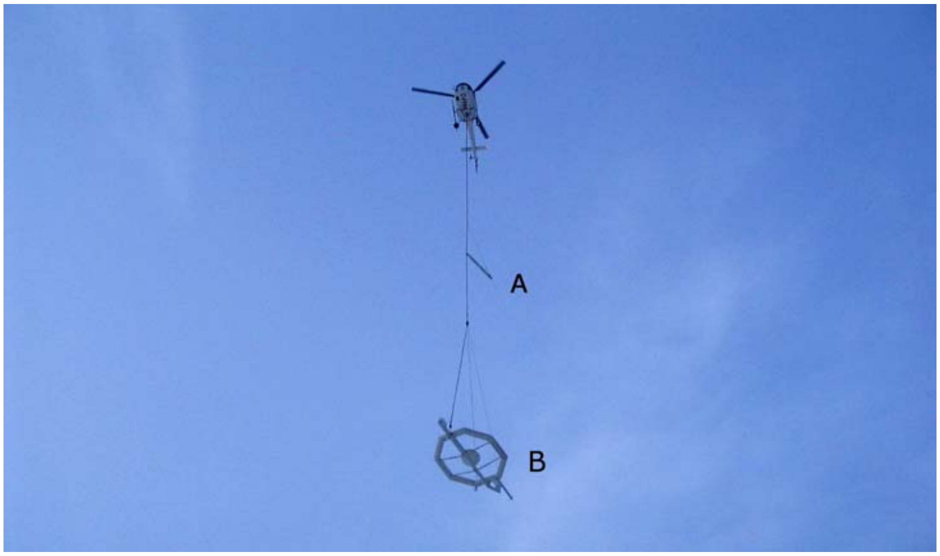


Figure 5. The magnetometer bird (A) and AeroTEM II EM bird (B)

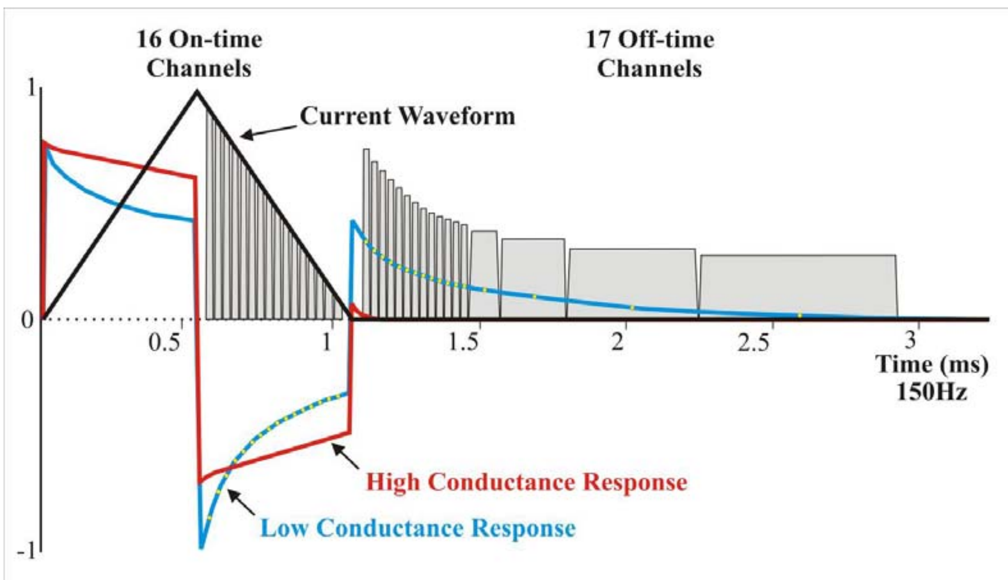


Figure 6. Schematic of Transmitter and Receiver waveforms

4.5. AERODAS ACQUISITION SYSTEM

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

```
Average TxOn       -0.1263 us
Average TxSwitch  586.4183 us
Average TxOff     1130.3931 us
Average TxPeak    68.2037 A
```

Channel	Sample Range	Time Width (us)	Time Center (us)	Time After TxOn (us)
On1	4 - 4	27.778	97.222	97.349
On2	5 - 5	27.778	125.000	125.126
On3	6 - 6	27.778	152.778	152.904
On4	7 - 7	27.778	180.556	180.682
On5	8 - 8	27.778	208.333	208.460
On6	9 - 9	27.778	236.111	236.237
On7	10 - 10	27.778	263.889	264.015
On8	11 - 11	27.778	291.667	291.793
On9	12 - 12	27.778	319.444	319.571
On10	13 - 13	27.778	347.222	347.349
On11	14 - 14	27.778	375.000	375.126
On12	15 - 15	27.778	402.778	402.904
On13	16 - 16	27.778	430.556	430.682
On14	17 - 17	27.778	458.333	458.460
On15	18 - 18	27.778	486.111	486.237
On16	19 - 19	27.778	513.889	514.015

Channel	Sample Range	Time Width (us)	Time Center (us)	Time After TxOff (us)
Off0	44 - 44	27.778	1208.333	77.940
Off1	45 - 45	27.778	1236.111	105.718
Off2	46 - 46	27.778	1263.889	133.496
Off3	47 - 47	27.778	1291.667	161.274
Off4	48 - 48	27.778	1319.444	189.051
Off5	49 - 49	27.778	1347.222	216.829
Off6	50 - 51	55.556	1388.889	258.496
Off7	52 - 53	55.556	1444.444	314.051
Off8	54 - 55	55.556	1500.000	369.607
Off9	56 - 57	55.556	1555.556	425.162
Off10	58 - 60	83.333	1625.000	494.607
Off11	61 - 63	83.333	1708.333	577.940
Off12	64 - 67	111.111	1805.556	675.162
Off13	68 - 72	138.889	1930.556	800.162
Off14	73 - 80	222.222	2111.111	980.718
Off15	81 - 93	361.111	2402.778	1272.385
Off16	94 - 113	555.556	2861.111	1730.718

4.6. RMS DGR-33 Acquisition System

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

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

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

Figure 7. AeroTEM II Instrument Rack., including AeroDAS and RMS DGR-33 systems, AeroTEM power supply, data acquisition computer and AG-NAV2 navigation system.

4.7. MAGNETOMETER BASE STATION

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

4.8. RADAR ALTIMETER

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

4.9. VIDEO TRACKING AND RECORDING SYSTEM

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


Figure 8. Digital video camera typical mounting location.

4.10. GPS Navigation System

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

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 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.

4.11. Digital Acquisition System

The AeroTEM received waveform sampled during on and off-time at 120 channels per decay, 300 times per second, was logged by the proprietary AeroDAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is 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 128 Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder.

5. PERSONNEL

The following Aeroquest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Manager of Data Processing: Gord Smith
- Field Data Processor: Dary Ly
- Field Operator: John Douglas
- Data Interpretation, Map Preparation and Reporting: Geoff Plastow, Marion Bishop, Eric Steffler

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

6. DELIVERABLES

6.1. HARDCOPY DELIVERABLES

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

- TMI – Coloured Total Magnetic Intensity (TMI) with line contours and EM anomaly symbols.
- ZOFF – AeroTEM Z0 Off-time with line contours and EM anomaly symbols.
- EM – AeroTEM off-time profiles Z1 – Z11 and EM anomaly symbols.

The coordinate/projection system for the maps is NAD83 – UTM Zone 10N. For reference, the latitude and longitude in WGS84 are also noted on the maps.

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

6.2. DIGITAL DELIVERABLES

6.2.1. Final Database of Survey Data (.GDB, .XYZ)

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

6.2.2. Geosoft Grid files (.GRD)

Levelled Grid products used to generate the geophysical map images. Cell size for all grid files is 20 metres.

- Total Magnetic Intensity from Mag sensor on EM bird (Iron_wolf_MagLf.grd)
- Total Magnetic Intensity from Upper Mag sensor (Iron_wolf_MagUf.grd)
- AeroTEM Z Offtime Channel 0 (Iron_wolf_ZOFF[0].grd)
- Digital Terrain Model (Iron_wolf_DTM.grd)

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

Map files in Geosoft .map and Adobe PDF format.

6.2.4. Google Earth Survey Navigation Files (.KML)

Flight navigation lines in Google earth KML format. Double click to view flight lines in Google Earth.

6.2.5. Free Viewing Software (.EXE)

- Geosoft Oasis Montaj Viewing Software
- Adobe Acrobat Reader
- Google Earth Viewer

6.2.6. Digital Copy of this Document (.PDF)

Adobe PDF format of this document.

7. DATA PROCESSING AND PRESENTATION

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

7.1. Base Map

The geophysical maps accompanying this report are based on positioning in the NAD83 datum. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 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 10 (central meridian – 123ºW)
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

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

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

7.2. Flight Path & Terrain Clearance

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

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

7.3. ELECTROMAGNETIC DATA

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

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

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

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

7.4. MAGNETIC DATA

Prior to any levelling the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a bi-directional grid technique with a grid cell size of 20 metres. The final levelled grid provided the basis for threading the presented contours which have a minimum contour interval of 50 nT.

8. GENERAL COMMENTS

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

8.1. Magnetic Response

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

8.2. EM Anomalies

The EM anomalies on the maps are classified by conductance (as described earlier in the report) and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response (Figure 8). For a vertically orientated thick source (say, greater than 10 metres), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 9). 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 10). In these cases both possible source types may be indicated by picking both thick and thin response styles. For shallow dipping conductors the 'thin' pick will be located over the edge of the source, whereas the 'thick' pick will fall over the downdip 'heart' of the anomaly.

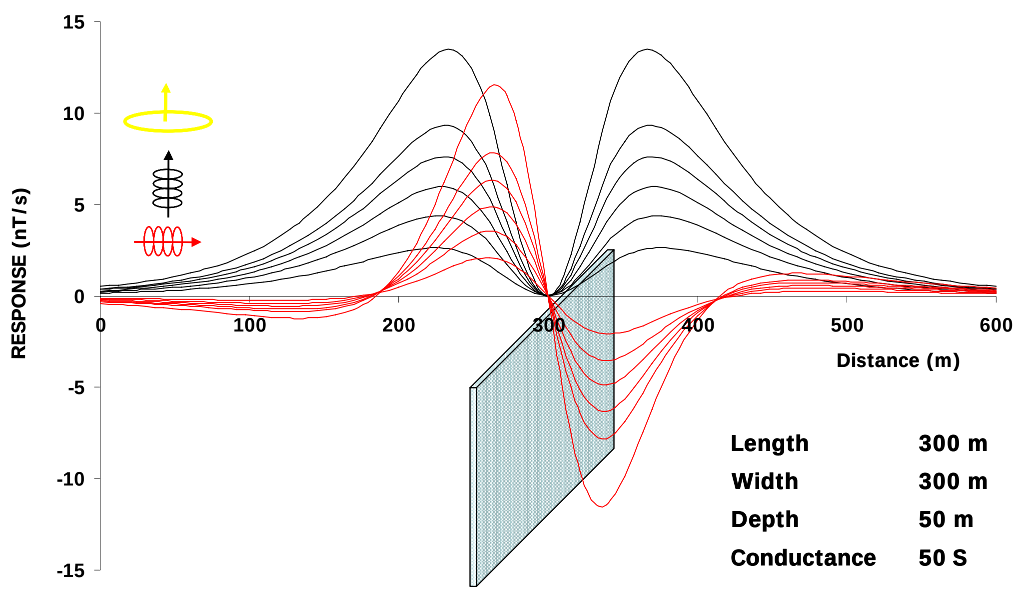


Figure 9. AeroTEM response to a 'thin' vertical conductor.

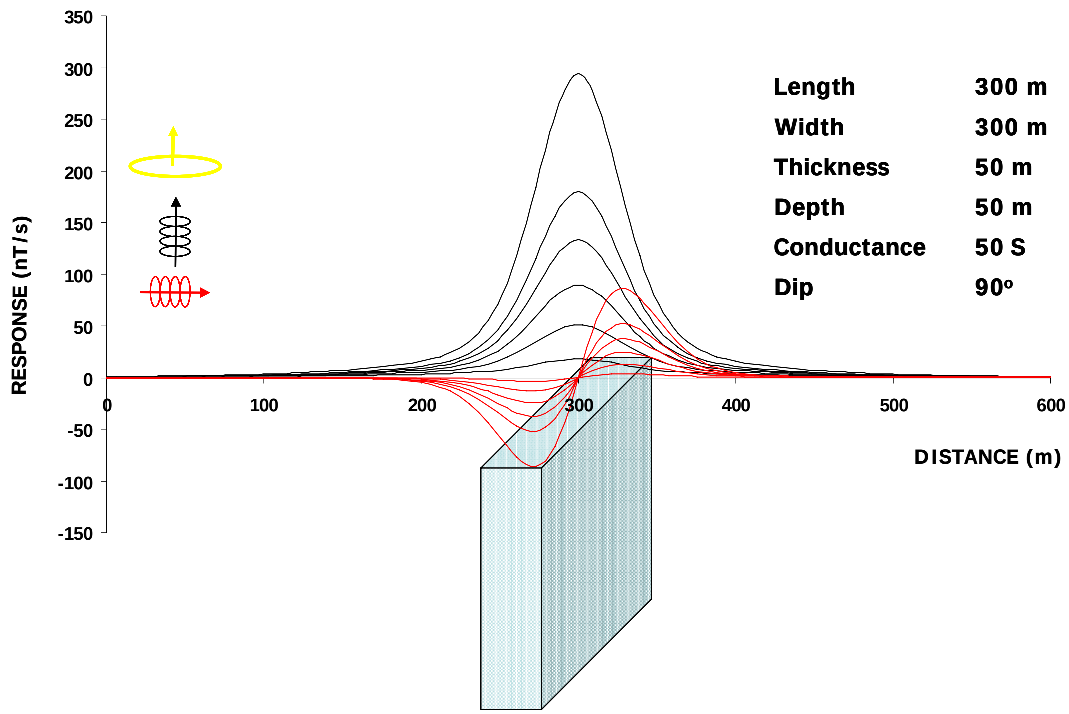


Figure 10. AeroTEM response for a ‘thick’ vertical conductor.

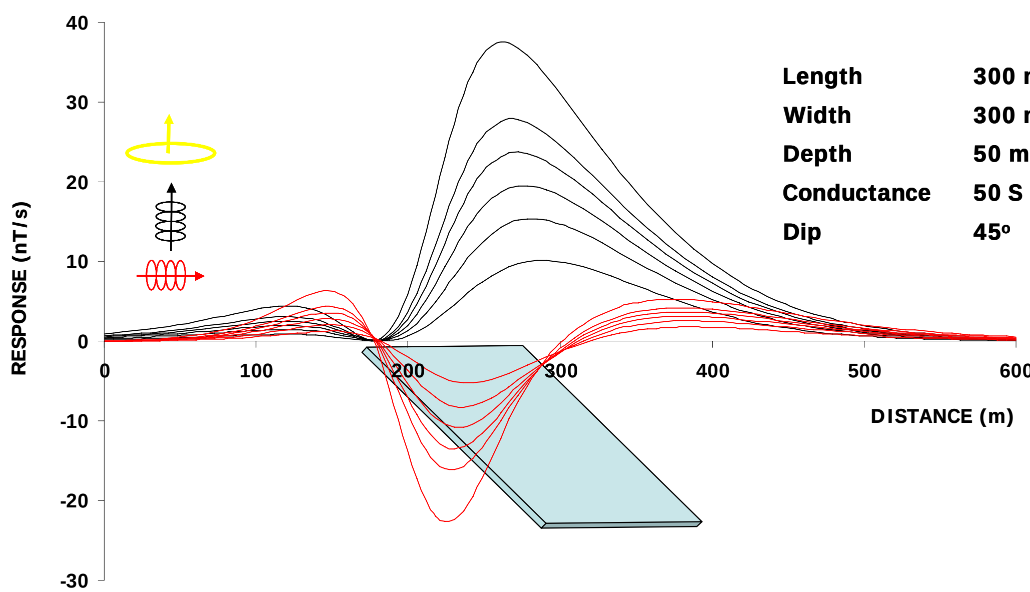


Figure 11. AeroTEM response over a ‘thin’ dipping conductor.

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

Respectfully submitted,

Geoff Plastow
Geophysicist
Aeroquest Limited
December, 2007

Reviewed By:

Doug Garrie
QA/QC Geophysicist
Aeroquest Limited
December, 2007

APPENDIX 1: SURVEY BOUNDARIES

The following table presents the Iron Wolf block boundaries. All geophysical data presented in this report have been windowed to 100m outside these outlines. X and Y positions are in metres: NAD83 UTM Zone 10N.

Easting (m)	Northing (m)
324151.00	5536396.00
328194.84	5536398.89
327924.00	5527924.00
323871.07	5527927.01

APPENDIX 2: MINING CLAIMS

From Government of British Columbia, Mineral Titles Online, December 2007

Tenure Number	Claim Name	Owner	Good To Date	Mining Division	Area (Ha)
327685		Quinsam Coal Corporation	2007/jan/31	NANAIMO	162
327690		Quinsam Coal Corporation	2007/jan/31	NANAIMO	102
392214		Briden Holdings Inc	2007/mar/20	NANAIMO	309
538879		Madman Mining Co Ltd	2008/may/09		249.607
558315	MAG NE	Madman Mining Co Ltd	2008/may/09		499.045
558316	MAG NW	Madman Mining Co Ltd	2008/may/09		499.063
558317	MAG CE	Madman Mining Co Ltd	2008/may/09		499.295
558318	MAG CW	Madman Mining Co Ltd	2008/may/09		499.445
558320	MAG SE	Madman Mining Co Ltd	2008/may/09		499.558
558321	MAG SW	Madman Mining Co Ltd	2008/may/09		249.819
558322	MAG EAST	Madman Mining Co Ltd	2008/may/09		374.467
570094	COAL 1	New Livingstone Minerals Inc.	2008/nov/14		124.932

APPENDIX 3: DESCRIPTION OF DATABASE FIELDS

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

COLUMN	UNITS	DESCRIPTOR
Line		Line number
Flight		Flight #
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
x	m	UTM Easting (NAD83, Zone 10N)
y	m	UTM Northing (NAD83, Zone 10N)
Galtf	M	GPS altitude of Mag bird
raltf	m	Radar altimeter
bheight	m	Terrain clearance of EM bird
dtm	m	Digital Terrain Model
magUf	nT	Final levelled total magnetic intensity from upper mag sensor installed in a bird 17 m above the EM bird.
magLf	nT	Final levelled total magnetic intensity from lower mag sensor installed on the 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
pwrline		power line monitor data channel
Grade		Classification from 1-7 based on conductance of conductor pick
Anom_ID		Anomaly Character (K= thicK, N = thiN)
Anom_labels		Alphanumeric label of conductor pick
Off_Tau	µs	Off-time decay constant at conductor pick
Off_Con	S	Off-time conductance at conductor pick
Off_AllTau	µs	Off-time decay constant
Off_allcon	S	Off-time conductance

APPENDIX 4: AEROTEM ANOMALY LISTING

line	Anom_Labels	Anom_ID	Off_Con	Off_Tau	flight	utctime	bheight	x	y
10130	A	K	8.65	294.08	1	18:58:56	73.26	324359.6	5535177
10140	A	K	8.16	285.6	1	19:05:22	39.05	324290.2	5535069
10150	A	K	4.98	223.15	1	19:06:20	42.87	324404.4	5534964
10160	A	N	6.54	255.67	1	19:12:32	45.56	324485.6	5534866
10170	A	N	7.05	265.46	1	19:13:46	68.89	324598.8	5534768
10170	B	K	*	*	1	19:14:50	80.72	325837.1	5534771
10181	A	K	0.07	26.04	1	19:19:40	78.53	325886.5	5534660
10181	B	N	6.63	257.45	1	19:20:35	54.41	324583	5534670
10191	A	N	7.67	277.03	1	19:21:49	58.14	324618.3	5534567
10201	A	N	7.96	282.04	1	19:27:58	51.33	324613.1	5534469
10210	A	N	7.63	276.21	1	19:29:17	54.33	324651.7	5534367
10220	A	N	7.25	269.24	1	19:35:27	66.16	324634	5534268
10230	A	N	6.23	249.57	1	19:36:48	46.53	324672.8	5534169
10240	A	N	6.46	254.18	1	19:43:01	55.62	324610.5	5534065
10250	A	N	7.69	277.31	1	19:44:18	47.99	324665.5	5533969
10260	A	K	5.6	236.56	1	19:50:35	47.83	324491.2	5533865
10270	A	K	6.55	256.01	1	19:51:42	62.34	324504	5533770
10280	A	K	7.8	279.26	2	20:24:22	66.25	324464.8	5533662
10290	A	K	9.3	304.96	2	20:25:26	82.35	324524.4	5533570
10300	A	K	7.52	274.24	2	20:31:37	60.07	324493.4	5533464
10310	A	K	7.48	273.42	2	20:32:42	64.28	324510.6	5533366
10320	A	K	9.32	305.28	2	20:38:48	70.02	324530	5533279
10330	A	K	9.55	309.11	2	20:39:59	72.73	324574.3	5533169
10340	A	K	9.31	305.07	2	20:45:59	69.13	324567.9	5533066
10350	A	K	6	245.02	2	20:47:18	76.61	324721.3	5532967
10350	B	K	4.52	212.71	2	20:47:46	69.73	325341.3	5532969
10360	A	K	0.67	82.03	2	20:52:35	70.57	325561.5	5532862
10360	B	K	4.42	210.28	2	20:52:46	79.83	325334.7	5532867
10380	A	K	3.46	186.03	2	21:00:38	50.78	324766.5	5532661
10420	A	K	4.86	220.46	2	21:16:13	66.32	324459.8	5532263
10460	A	K	0.25	49.88	2	21:29:17	45.95	326481.7	5531883
10460	B	K	0.33	57.77	2	21:29:30	66.59	326260.6	5531872
10460	C	K	15.61	395.05	2	21:30:40	86.71	324680.4	5531872
10470	A	K	0.18	42.84	2	21:33:32	87.31	326536.5	5531766
10480	A	K	0.25	49.94	2	21:36:27	75.08	326484	5531669
10490	A	K	5.5	234.51	2	21:39:42	57.79	324935.2	5531567
10490	B	K	0.79	89.07	2	21:40:44	86.21	326449.7	5531562
10500	A	K	0.8	89.5	2	21:43:55	67.97	326465.4	5531471
10500	B	K	12.41	352.23	2	21:45:02	57.42	325095.4	5531470
10500	C	K	3.93	198.27	2	21:45:21	128.3	324681.3	5531477
10510	A	K	2.55	159.69	2	21:47:02	63.17	324931.6	5531369
10530	A	K	16.84	410.42	2	21:54:43	49.82	325038.4	5531170
10530	B	K	7.9	281.02	2	21:54:53	59.66	325273.3	5531165
10540	A	N	2.31	152	2	21:58:43	98.3	326591.9	5531065
10540	B	K	2.23	149.38	2	22:00:26	85.54	324439.8	5531062

line	Anom_Labels	Anom_ID	Off_Con	Off_Tau	flight	utctime	bheight	x	y
10550	A	N	2.19	148.03	2	22:03:12	55.08	326455.6	5530968
10560	A	N	3.05	174.57	2	22:06:11	81.94	326400.7	5530863
10570	A	K	4.07	201.71	2	22:08:57	86.09	324582.3	5530766
10570	B	K	5.05	224.62	2	22:09:04	75.56	324731	5530767
10570	C	N	4.49	211.79	2	22:10:16	73.74	326380.8	5530764
10580	A	N	5.83	241.55	2	22:13:33	93.1	326294.6	5530659
10580	B	N	7.24	269.12	2	22:14:59	75.95	324487.4	5530653
10590	A	K	6.24	249.83	2	22:17:30	67.44	325901	5530563
10590	B	N	6.24	249.83	2	22:17:47	68.64	326288.7	5530566
10600	A	K	5.56	235.82	2	22:21:26	68.63	325815.1	5530463
10610	A	K	4.22	205.52	2	22:23:36	73.63	324249.3	5530365
10610	B	K	9.96	315.67	2	22:23:47	88.8	324519.6	5530379
10610	C	K	5.06	224.94	2	22:24:44	58.26	325825	5530368
10620	A	K	8.91	298.49	2	22:28:30	61.32	325863.2	5530267
10620	B	K	4.87	220.74	2	22:28:38	57.7	325666.3	5530265
10620	C	K	5.52	234.88	2	22:29:40	65.87	324295.9	5530266
10630	A	K	5.25	229.06	2	22:30:32	67.38	324238.5	5530178
10630	B	K	7.24	269.08	2	22:30:59	81.41	324853.4	5530154
10630	C	K	7.68	277.21	2	22:31:34	60.88	325719.6	5530166
10630	D	K	10.11	317.94	2	22:31:43	64.02	325936.2	5530165
10640	A	N	2.76	166.09	2	22:35:13	59.19	326262.2	5530065
10640	B	K	2.76	166.09	2	22:35:18	63.02	326157.4	5530069
10640	C	K	9.9	314.63	2	22:35:27	72.9	325933.9	5530068
10640	D	K	8.15	285.49	2	22:35:39	76.7	325684.6	5530069
10640	E	K	12.25	350.03	2	22:36:18	62.47	324830.8	5530063
10650	A	K	5.05	224.63	2	22:38:29	49.43	325519.5	5529970
10650	B	K	10.02	316.54	2	22:38:43	79.33	325779	5529967
10650	C	K	7.17	267.79	2	22:38:52	67.8	326011.7	5529965
10650	D	N	2.43	155.75	2	22:39:09	43.78	326423.2	5529966
10660	A	K	3.39	184.01	2	22:42:04	50.1	326240.3	5529881
10660	B	K	9.76	312.4	2	22:42:16	59.72	325981.5	5529864
10660	C	K	9.2	303.25	2	22:42:35	69.23	325585.9	5529863
10670	A	K	8.35	288.94	2	22:45:26	51.75	325507.7	5529763
10670	B	K	7.53	274.31	2	22:45:46	41.49	326026	5529758
10680	A	N	9.49	308.1	3	23:39:23	73.12	326135.2	5529667
10690	A	K	7.91	281.26	3	23:43:05	44.69	325490.6	5529569
10690	B	K	8.17	285.82	3	23:43:28	59.58	326114.5	5529571
10690	C	N	1.06	102.76	3	23:43:56	43.47	326814.7	5529562
10700	A	N	1.82	134.96	3	23:46:14	51.73	326831.5	5529465
10700	B	K	8.69	294.7	3	23:47:17	55.17	325447.7	5529464
10700	C	K	8.99	299.91	3	23:48:07	52.56	324315.8	5529464
10710	A	K	8.93	298.8	3	23:49:05	49.42	324185.9	5529376
10710	B	K	7.62	276	3	23:49:54	46.99	325389.3	5529373
10710	C	K	10.6	325.63	3	23:50:12	48.84	325806.1	5529369
10710	D	N	2.61	161.63	3	23:51:01	45.15	326934.5	5529362
10720	A	N	1.8	134.33	3	23:53:04	46.07	326971.3	5529266
10720	B	K	9.88	314.24	3	23:55:06	45.84	324225.4	5529278
10730	A	N	1.89	137.55	3	23:57:56	34.9	327088.2	5529167

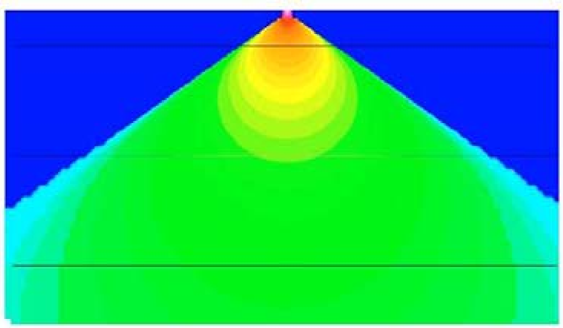
line	Anom_Labels	Anom_ID	Off_Con	Off_Tau	flight	utctime	bheight	x	y
10740	A	N	4.25	206.07	3	23:59:52	44.13	327111.2	5529061
10750	A	N	2.59	160.88	3	0:05:00	52.78	327199.6	5528971
10760	A	N	2.29	151.3	3	0:06:43	44.3	327232.9	5528866
10770	A	N	10.55	324.8	3	0:09:56	60.08	324074.8	5528777
10770	B	N	2.73	165.35	3	0:12:11	47.98	327337.1	5528761
10780	A	N	1.33	115.33	3	0:13:39	50.32	327342.1	5528674
10780	B	K	3.52	187.73	3	0:14:02	70.42	326925.8	5528665
10780	C	N	9.62	310.1	3	0:15:29	68.11	325105.4	5528666
10780	D	K	9.62	310.1	3	0:15:35	55.33	324976.5	5528667
10780	E	N	8.25	287.2	3	0:16:15	59.83	324149.9	5528664
10790	A	K	11.71	342.21	3	0:16:48	45.87	323830.9	5528580
10790	B	K	11.13	333.58	3	0:17:38	51.4	324980	5528581
10790	C	K	11.14	333.82	3	0:17:47	56.96	325217.3	5528576
10790	D	K	7.51	274.07	3	0:18:51	56.63	326830.9	5528565
10790	E	N	4.73	217.56	3	0:19:00	52.46	327054	5528566
10790	F	N	2.29	151.48	3	0:19:13	49.36	327380	5528560
10800	A	N	3.24	179.89	3	0:20:36	40.94	327375.9	5528469
10800	B	K	8.24	287.09	3	0:21:03	53.85	326839.2	5528460
10800	C	K	11.49	338.94	3	0:22:24	44.86	325025.3	5528467
10800	D	K	12.89	358.96	3	0:23:07	53.23	324035.3	5528471
10810	A	K	23.5	484.79	3	0:23:43	61.46	323993.9	5528388
10810	B	K	10.1	317.82	3	0:24:26	53.01	325033.6	5528371
10810	C	K	9.33	305.46	3	0:25:38	62.25	326850.9	5528368
10810	D	N	1.83	135.18	3	0:26:01	46.57	327406.9	5528366
10820	A	N	2.92	170.74	3	0:27:22	50.32	327416.1	5528266
10820	B	K	9.11	301.74	3	0:27:51	54.92	326850.1	5528265
10820	C	K	10.58	325.27	3	0:29:10	70.18	325081.3	5528268
10820	D	K	10.2	319.44	3	0:29:19	44.18	324876.7	5528268
10830	A	N	15.6	394.95	3	0:30:37	58.35	324080.1	5528173
10830	B	K	11.43	338.14	3	0:31:15	52.77	325036.9	5528170
10830	C	N	2.83	168.07	3	0:32:48	72.35	327483.1	5528168
10840	A	N	2.21	148.83	3	0:34:03	76.22	327466.9	5528058
10850	A	K	15.36	391.95	3	0:37:15	46.5	323988.2	5527972
10860	B	N	1.82	134.75	3	0:39:38	106.13	327620.3	5527964

APPENDIX 5: AEROTEM DESIGN CONSIDERATIONS

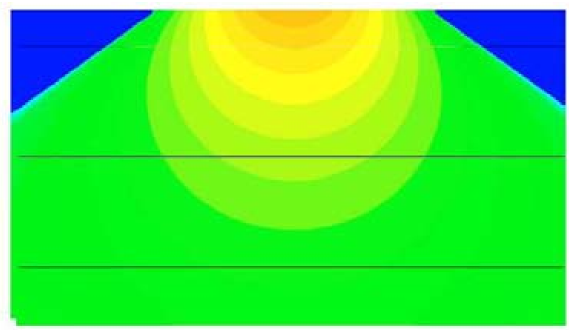
Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly at slower speed and collect data with high spatial resolution, and with great accuracy, means the helicopter EM systems provide more detail than any other EM configuration, airborne or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

Advantage 1 – Spatial Resolution

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



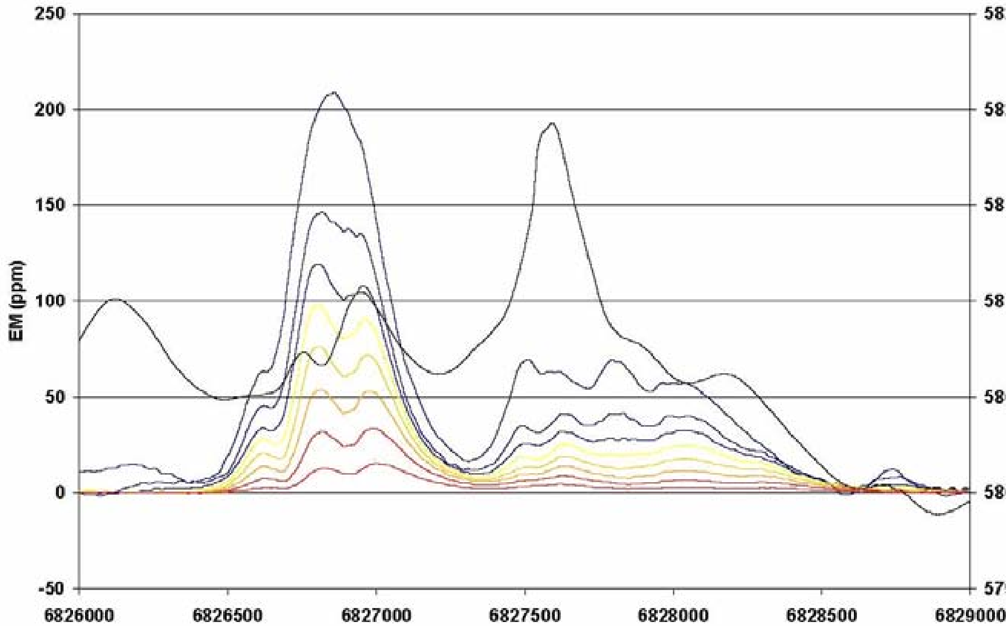
The footprint of AeroTEM at the earth’s surface is roughly 50m on either side of transmitter



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

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

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



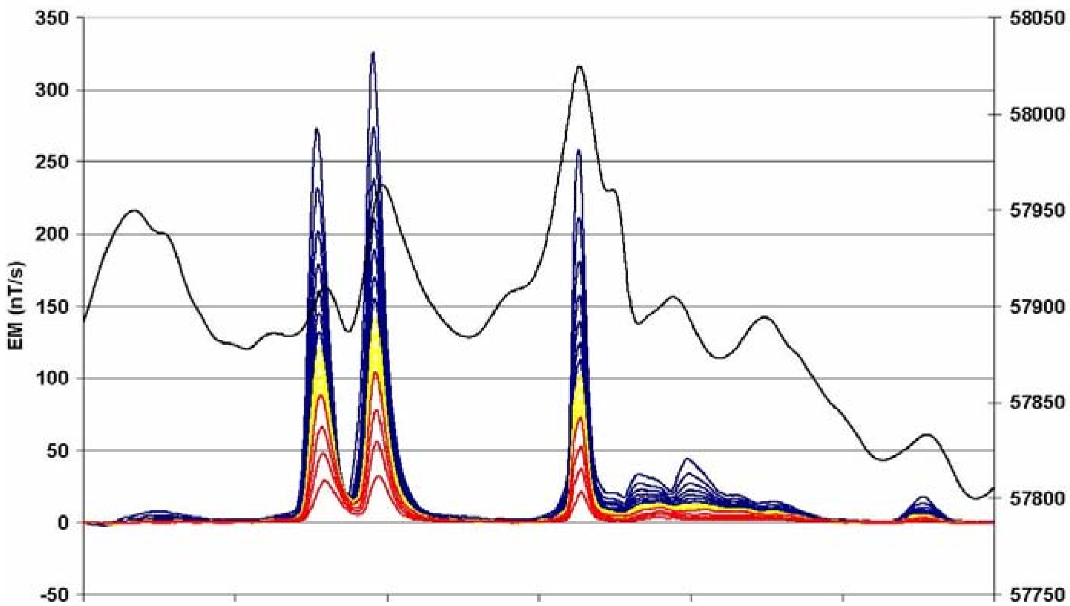


Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.

The small footprint of AeroTEM combined with the high signal to noise ratio (S/N) makes the system more suitable to surveying in areas where local infrastructure produces electromagnetic noise, such as power lines and railways. In 2002 Aeroquest flew four exploration properties in the Sudbury Basin that were under option by FNX Mining Company Inc. from Inco Limited. One such property, the Victoria Property, contained three major power line corridors.

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

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

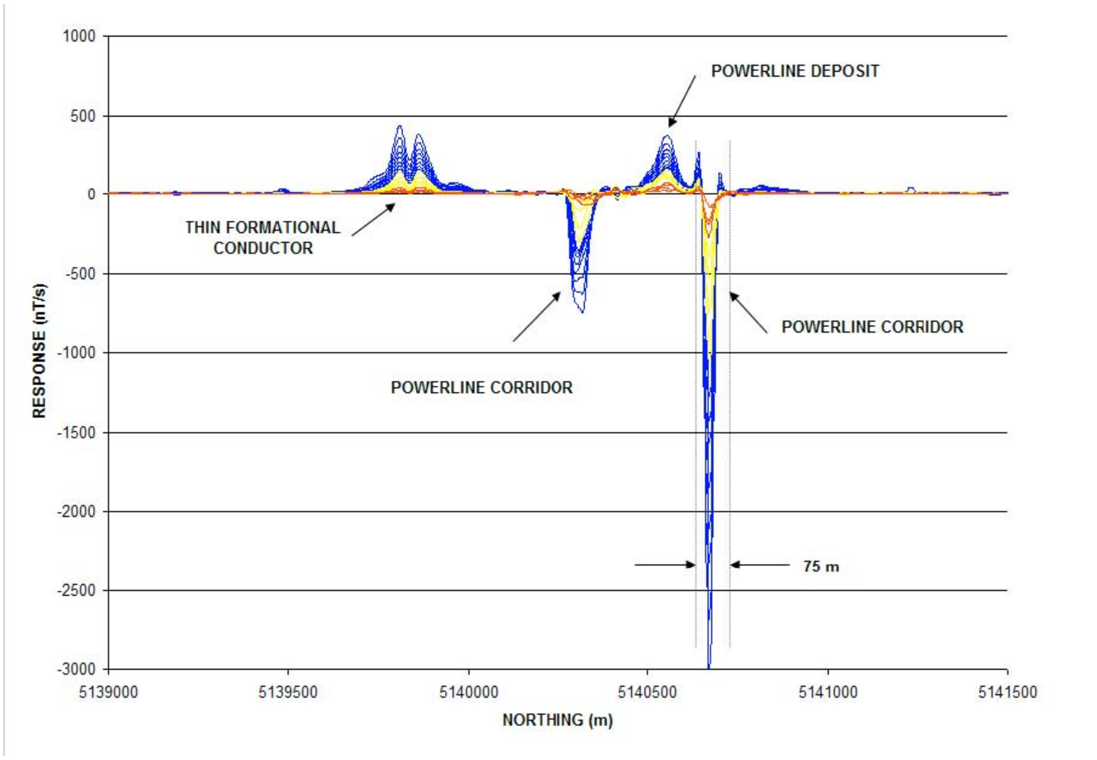


Figure 3. The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish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

Advantage 2 – Conductance Discrimination

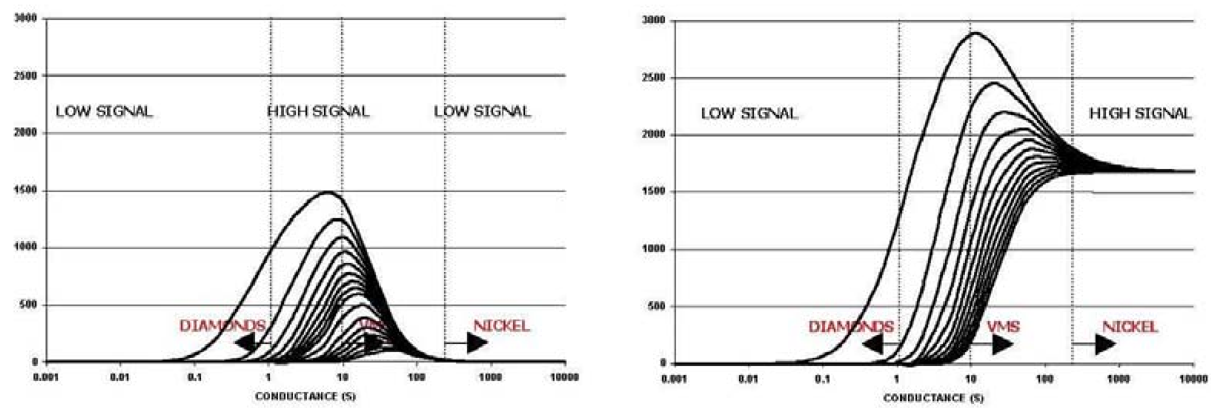
The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still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

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

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

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

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



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

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

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

Advantage 3 – Multiple Receiver Coils

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

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

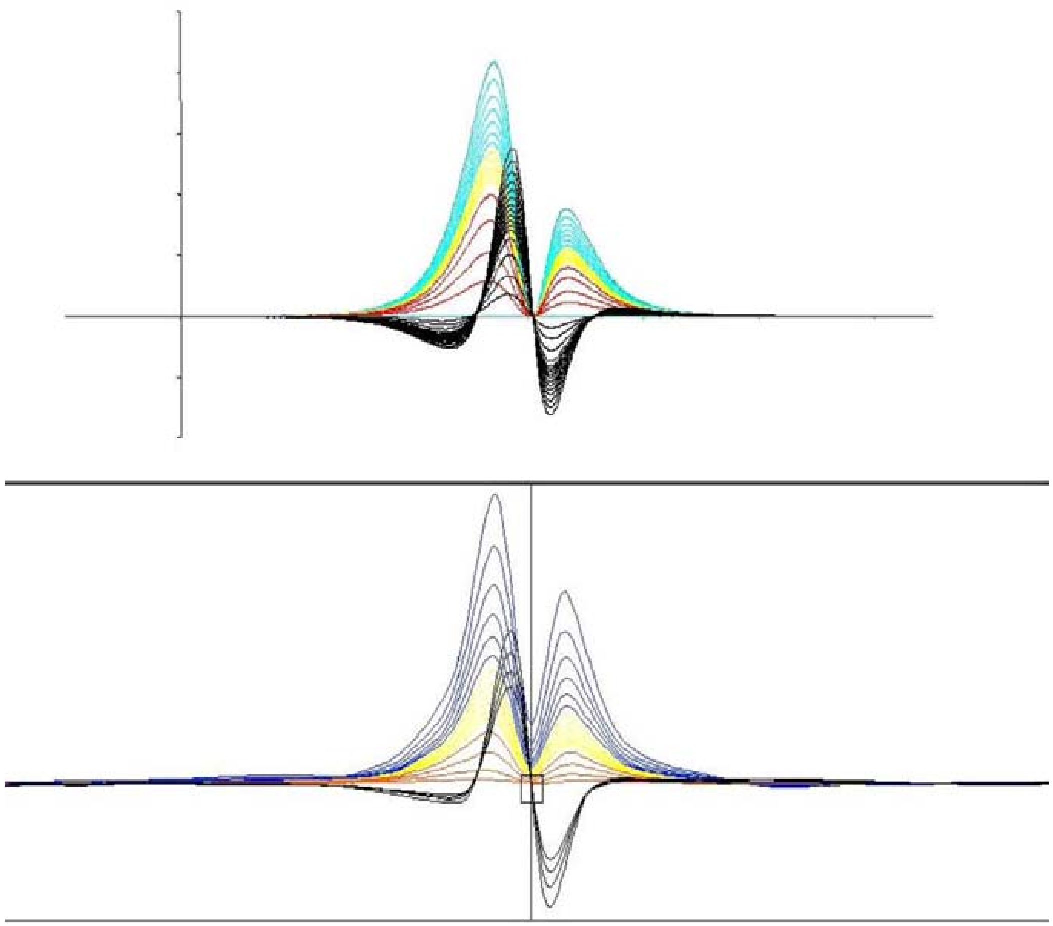


Figure 5. Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude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

HEM versus AeroTEM

Traditional helicopter EM systems operate in the frequency domain and benefit from the fact that they use narrowband as opposed to wide-band transmitters. Thus all of the energy from the transmitter is concentrated in a few discrete frequencies. This allows the systems to achieve excellent depth penetration (up to 100 m) from a transmitter of modest power. The Aeroquest Impulse system is one implementation of this technology.

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

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

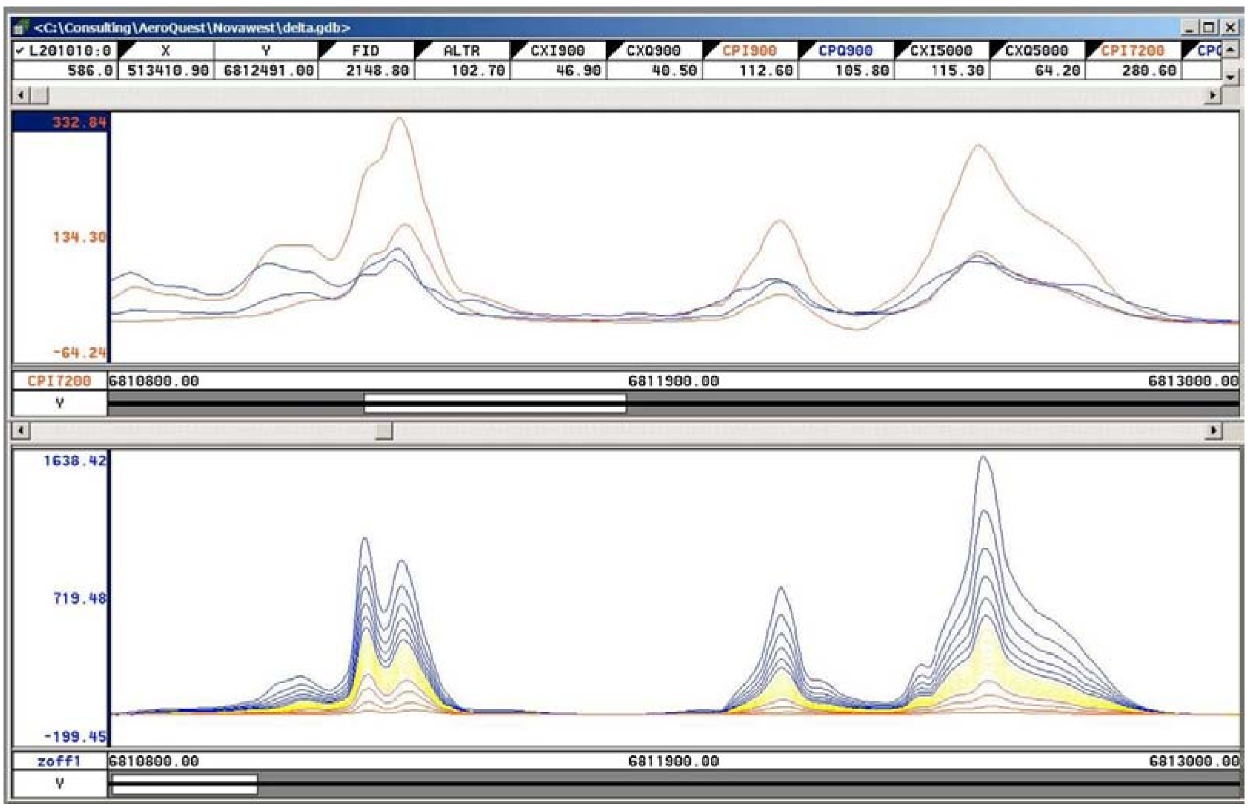


Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

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

APPENDIX 6: AEROTEM INSTRUMENTATION SPECIFICATION SHEET

AEROTEM Helicopter Electromagnetic System

System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 150 Hz
- Tx On Time - 1,150 (150 Hz) µs
- Tx Off Time - 2,183 (150 Hz) 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 120 samples per decay curve at a maximum of 300 curves per second (27.778µs 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.