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Ministry of Energy and Mines
BC Geological Survey

ASSESSMENT REPORT
TITLE PAGE AND SUMMARY

TITLE OF REPORT [type of survey(s)]: Airborne Geophysical Survey on the Babine Property, Babine Lake Area, North-Central BC.

TOTAL COST: $54,580

AUTHOR(S): Gilles Dessureau

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): 2014

YEAR OF WORK: 2014

STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S): 5500885

PROPERTY NAME: Babine

CLAIM NAME(S) (on which work was done): Dee 2, Dorothy, Dorothy South 1, Dorothy South 3, Dorothy South 4, Lynn, NADO 1, NADO 2, NADO 4, NAK 1-2, NAK 4-12, NAK, NAK A, NAK B, NAK C, South 1, South 2, West 1, 564261

COMMODITIES SOUGHT: Copper, Gold

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: 093M 009, 093M 010,

MINING DIVISION: Omineca

NTS: 093M08E

LATITUDE: 55 ° 17 ' 10 " LONGITUDE: 126 ° 14 ' 17 " (at centre of work)

OWNER(S)

1) Redtail Metals Corp.

2)

MAILING ADDRESS

PO Box 36539, Mactaggart PO
Edmonton, Alberta T6R 0T4

OPERATOR(S) [who paid for the work]

1) Redtail Metals Corp

2)

MAILING ADDRESS

S.A.A.

PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):

Babine Intrusion, Porphyry Coppper, Gold

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS

(OVER)

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
GEOLOGICAL (scale, area)			
Ground, mapping			
Photo interpretation			
GEOPHYSICAL (line-kilometres)			
Ground			
Magnetic		As Above	$52,080.00
Electromagnetic			
Induced Polarization			
Radiometric			
Seismic			
Other			
Airborne			
GEOCHEMICAL (number of samples analysed for ...)			
Soil			
Silt			
Rock			
Other			
DRILLING (total metres; number of holes, size)			
Core			
Non-core			
RELATED TECHNICAL			
Sampling/assaying			
Petrographic			
Mineralographic			
Metallurgic			
PROSPECTING (scale, area)			
PREPARATORY/PHYSICAL			
Line/grid (kilometres)			
Topographic/Photogrammetric (scale, area)			
Legal surveys (scale, area)			
Road, local access (kilometres)/trail			
Trench (metres)			
Underground dev. (metres)			
Other		Report Writing	$2,500.00
		TOTAL COST	$54,580.00

Assessment Report

Airborne Geophysical Survey on the Babine Property

Babine Lake Area
North-Central British Columbia

55° 17' North 126° 14' West
NTS Map Sheets 93M/8E and 93M/8W

Grant Number	Claim Name	Claim Number
564261		
560184	Dee	2
548719	Dorothy	
599517	Dorothy South	1
599519	Dorothy South	3
599520	Dorothy South	4
548720	Lynn	
564259	NADO	1
564260	NADO	2
564262	NADO	4

Grant Number	Claim Name	Claim Number
552228	NAK	1
552233	NAK	2
552235	NAK	4
552240	NAK	5
552244	NAK	6
552248	NAK	7
552252	NAK	8
552254	NAK	9
552256	NAK	10
580483	NAK	11

Grant Number	Claim Name	Claim Number
580484	NAK	12
552226	NAK	
558524	NAK A	
558526	NAK B	
558528	NAK C	
598804	South	1
598805	South	2
598976	West	1

Prepared for
Redtail Metals Corp.
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By

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V.P. Exploration
Redtail Metals Corp.

July 4, 2014

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2 SUMMARY

The Babine Property consists of 28 contiguous mineral tenures and is located approximately 80 kilometers northeast of Smithers and approximately 2 kilometers east of Nakinilerak Lake in the Babine area of central British Columbia. Redtail Metals Corp. holds a 100% interest to the property subject to two separate underlying agreements. During the period of time between when the work was completed and the time of the report, Redtail Metals Corp. merged with Northern Tiger Resources Inc. and changed its name to Golden Predator Mining Corp. At the time of the report the merger and name change process were underway and for the purpose of this report the company name will remain Redtail Metals Corp.

The property covers two distinct zones (Nak and Dorothy) of porphyry style, copper-gold (±molybdenum) mineralization and is located in the well mineralized Babine copper-gold porphyry belt that includes the Bell and Granisle mines, the Morrison deposit and numerous other undeveloped prospects. The Bell and Granisle mines together produced 130 million tonnes of ore grading 0.4% copper (Cu), 0.15 g/t gold (Au) and 0.75 g/t silver. Morrison, with a combined measured and indicated resource of 206 million tonnes grading 0.39% Cu, 0.2 g/t Au and 0.005% Mo, is currently the subject of a feasibility study.

The Babine property was originally explored by Noranda in the 1960's and 1970's and more recently by a number of junior exploration companies through the mid 1990's. Copper-gold-molybdenum mineralization at the Nak and Dorothy prospects is associated with disseminated chalcopyrite, pyrite and local bornite, in and adjacent to quartz-sulphide veinlets within multiple phase porphyry intrusions and local breccia zones. Historical drilling has included 107 core holes, 29 holes on the Dorothy deposit and 98 holes on the Nak deposit, for a total of 15,629 m. Highlights from the 1995-96 Nak drilling include 70.7 m grading 0.248% Cu and 1.166 g/t Au in hole 96-55, 12.5 m grading 2.614% Cu and 0.143 g/t Au in hole 96-58, 18.0 m grading 1.318% Cu and 0.203 g/t Au in hole 96-65 and 21.3 m grading 0.295% Cu and 1.059 g/t Au in hole 96-70.

In 2014, an airborne geophysical survey was carried out by Precision GeoSurveys Inc. out of Vancouver. A total of 581 line kilometers were flown covering approximately 11.0km x 8.5km. The survey was started on April 1, and completed on April 3, 2014.

The airborne survey produced high quality magnetic data for the Babine property showing the relative lows of the intrusions surrounded by relatively high magnetic hornfels zone around the intrusions. Several north-northwest and northwest structures were also outlined by the survey.

At this point a drill program is recommended to test several structures for additional copper-gold mineralization.

3 INTRODUCTION

3.1 Terms of Reference and Participation Personnel

This report documents the results of the 2014 airborne survey completed on the property during the first week of April 2014. The survey was completed by Precision GeoSurveys Inc. out of Vancouver, B.C.

Redtail Metals personnel (Gilles Dessureau) supervised the survey and completed the final report. Between the time when the work was completed and the time when report was completed, Redtail Metals Corp. merged with an exploration company named Northern Tiger Resources Corp. and changed its name to Golden Predator Mining Corp. This report has been completed under the name Redtail Metals Corp. since all work was carried out under that entity. At the time of the report all claims were still registered to Redtail Metals Corp.

4 LOCATION, ACCESS AND PHYSIOGRAPHY

The Babine property is located approximately 80 kilometres northeast of the town of Smithers in central British Columbia and approximately 2 kilometres east of Nakinilerak Lake (Figure 1.). It is within the Omenica Mining Division and is centred at latitude 55°17' N, longitude 126°14'W on NTS map sheets 93M/8E and 93M/8W. Access to the property is from the Yellowhead Highway in the south to Topley Landing, thence by Canadian Forest Products barge across Babine Lake to Nose Bay, then via the Jinx, Hautete and Nakinilerak forestry roads to the Property. The property can also be accessed from the east through Fort St James via the paved Tachie Road, then the Grostete, Leo Creek, 300 and 900 forest service roads. Logistical support, supplies, fuel and medical services are readily available from Smithers. Recently constructed logging roads provide good access to the central part of the property. During the summer months adequate sources of water for a drill program and for a camp are available from small local creeks throughout the property, and several locations have year round water supplies.

The northern Babine Lake area is located within the Nechako Plateau, a physiographic subdivision of the Interior Plateau. The Nak property covers an area of moderate relief containing a central wide valley with average elevations of 1,000 metres above sea level. The central valley is flanked to the east and west by ridges with maximum elevations of 1,200 and 1,400 metres (above sea level) respectively. The region is covered with extensive glacial deposits of gravel, sand and clay, with outcrop limited to higher ridges and some creek valleys (Carter, 1994). Except for rare ridge-tops, the property is entirely below the tree line. Vegetation predominantly comprises white spruce and lodgepole pine, with significant stands of devil's club in low-lying swampy areas. Wetlands are extensive, and often do not appear on the 1:50,000 topographic sheets. Winters are relatively mild, with a minimum January average temperature of -12.7°C and approximately 50cm of precipitation, predominantly snow. Summers are cool and wet, with average temperatures for June and July around 20°C and approximately 50mm of rain per month.

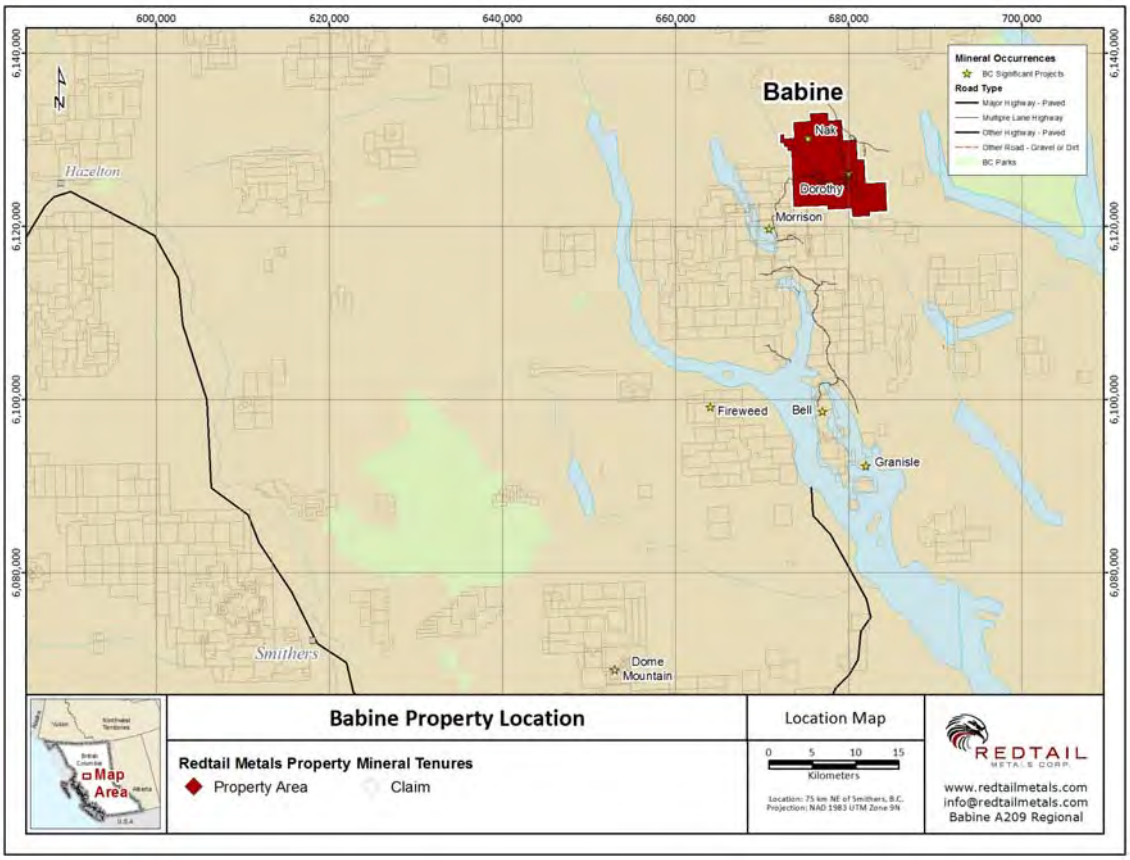

Figure 1. Babine Project Location Map.

5 CLAIM STATUS

The Property consists of 28 Mineral Titles Online (MTO) claims located in the Omenica Mining Division, centred at 55° 17' North latitude, 126° 14' West longitude, NTS Map Sheets 93M/8E and 93M/8W, as shown in Figure 2 and summarized in Table 1:

Table 1. Babine claim data

Grant Number	Claim Name	Claim Nbr	Claim Owner	Operation Recording Date	Claim Expiry Date	Status	NTS Map Number
564261			REDTAIL METALS CORP. - 100%	2007/aug/07	6/30/2015	GOOD	093M
560184	Dee	2	REDTAIL METALS CORP. - 100%	2007/jun/07	6/30/2015	GOOD	093M
548719	Dorothy		REDTAIL METALS CORP. - 100%	2007/jan/05	6/30/2015	GOOD	093M
599517	Dorothy South	1	REDTAIL METALS CORP. - 100%	2009/feb/17	6/30/2015	GOOD	093M
599519	Dorothy South	3	REDTAIL METALS CORP. - 100%	2009/feb/17	6/30/2015	GOOD	093M
599520	Dorothy South	4	REDTAIL METALS CORP. - 100%	2009/feb/17	6/30/2015	GOOD	093M

548720	Lynn		REDTAIL METALS CORP. - 100%	2007/jan/05	6/30/2015	GOOD	093M
564259	NADO	1	REDTAIL METALS CORP. - 100%	2007/aug/07	6/30/2015	GOOD	093M
564260	NADO	2	REDTAIL METALS CORP. - 100%	2007/aug/07	6/30/2015	GOOD	093M
564262	NADO	4	REDTAIL METALS CORP. - 100%	2007/aug/07	6/30/2015	GOOD	093M
552228	NAK	1	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552233	NAK	2	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552235	NAK	4	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552240	NAK	5	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552244	NAK	6	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552248	NAK	7	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552252	NAK	8	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552254	NAK	9	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
552256	NAK	10	REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
580483	NAK	11	REDTAIL METALS CORP. - 100%	2008/apr/04	6/30/2015	GOOD	093M
580484	NAK	12	REDTAIL METALS CORP. - 100%	2008/apr/04	6/30/2015	GOOD	093M
552226	NAK		REDTAIL METALS CORP. - 100%	2007/feb/18	6/30/2015	GOOD	093M
558524	NAK A		REDTAIL METALS CORP. - 100%	2007/may/10	6/30/2015	GOOD	093M
558526	NAK B		REDTAIL METALS CORP. - 100%	2007/may/10	6/30/2015	GOOD	093M
558528	NAK C		REDTAIL METALS CORP. - 100%	2007/may/10	6/30/2015	GOOD	093M
598804	South	1	REDTAIL METALS CORP. - 100%	2009/feb/06	6/30/2015	GOOD	093M
598805	South	2	REDTAIL METALS CORP. - 100%	2009/feb/06	6/30/2015	GOOD	093M
598976	West	1	REDTAIL METALS CORP. - 100%	2009/feb/09	6/30/2015	GOOD	093M

Fifteen of the 28 claims are owned 100% by Redtail Metals Corp., while the remaining 13 are subject to underlying option agreements.

5.1 Nak Option:

NAK, NAK 1, NAK 2 and NAK 4 through 10, collectively known as the "Nak" option, are subject to an agreement with an underlying owner whereby Redtail Metals can earn a 100% interest in the claims by making payments totalling $250,000 over 6.5 years and paying $125,000 upon certain exploration expenditures being met. The vendor retains a 3% NSR royalty, two-thirds of which can be purchased by Redtail Metals for $1 million. At the time of this report, Redtail Metals had one final payment to acquire a 100% interest in the Nak Option.

5.2 Dorothy Option:

The Dorothy, Lynn and Dee 2 claims, collectively known as the "Dorothy" option, are subject to an agreement whereby Redtail Metals can earn a 100% interest in the claims by making payments totalling $200,000, issuing 400,000 shares over 4 years and making additional

payments upon certain exploration expenditures being met. On August 22, 2011, Redtail Metals made the final payment to acquire a 100% interest in the Dorothy claims.

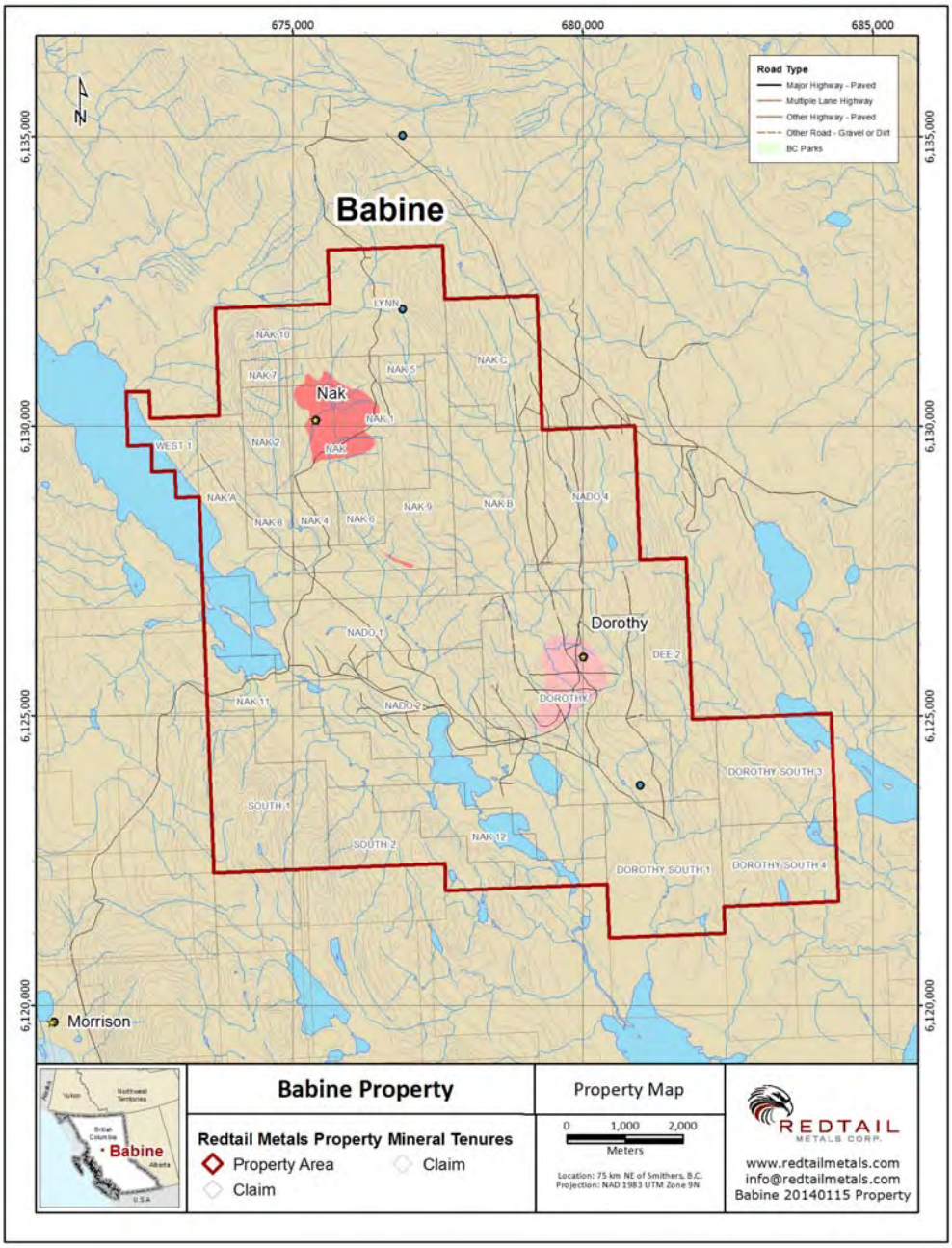

Figure 2. Babine project claim locations.

6 HISTORY

The following property history was taken from the 2010 Assessment report (Bourne, 2010) and expanded where necessary.

1964-1971: Following the discovery of anomalous copper values in stream sediments northeast of Nakinilerak Lake, Noranda Exploration Company Ltd. performed mineral exploration work on the ground covered by the Nak Property between 1964 and 1970. This included soil geochemical, surface geophysical and geological mapping surveys. As well, limited trenching and diamond drilling of 28 holes totalling 1,837 metres in length was performed.

In 1971 geological, geochemical and geophysical surveys were also conducted by Noranda on the Sno claim group southeast of the main Nak property. This area became the south-western part of the Nak claims.

Early 1970's: Ducanex Resources performed geophysical and geochemical surveys on the Lynn property, which was subsequently included into the northern part of the Nak claims. Ducanex also performed 480 metres of diamond drilling in 8 holes. (Note: This area is well north of the 1995 and 1996 drill programs of Hera Resources Inc.).

1970-76: Dorothy property was staked by Evergreen Exploration. Exploration by Evergreen included an airborne magnetic survey and a ground IP survey. In 1971 Twin Peak Mines Ltd. and Ducanex Resources Ltd. completed a bulldozer trenching program and drilled 2,973 m in 29 diamond drill holes.

1992: The Nak 1, 2, 3 and 4 claims were located by Lorne B. Warren.

1992-1993: Tri-Alpha Investments began a new grid on the ground but subsequently cancelled their exploration program and returned the property to owner Lorne B. Warren.

1993: An airborne geophysical survey (16 line km helicopter–borne magnetometer, electromagnetic and VLF-EM) was carried-out on behalf of Noranda Exploration Company Ltd. over the central portion of the Nak claims. Also, Teck Exploration Ltd. requested Jim Oliver, P.Geo. to carry-out petrographic and lithogeochemical studies on surface rock and drill-core samples collected from the Nak property. Results of these programs were summarized by Carter (1994).

1994: The property was re-staked and the claims optioned by Hera Resources Inc. In late 1994 a camp was established and an induced polarization (IP) and magnetic survey was conducted on the Nak 1 to 5 claims over a newly constructed grid. A total of 45.2 kilometres of grid line was cut. The IP survey outlined several anomalous zones worthy of further mineral exploration including a central zone of low chargeability surrounded by high chargeability

indicating a probable pyrite halo surrounding a mineralized porphyry core (Howell, 1995).

1995: The 1994 grid was extended by Hera Resources Inc. and later covered by additional IP and magnetometer surveys. These surveys outlined a large, low chargeability response coincident with rare outcrops of a quartz diorite and other intrusive rocks containing up to 5% chalcopyrite (Bridge, 1996). The low chargeability response was rimmed by a strong but variable chargeability response which at the time was noted to coincide with known pyrite mineralization. Most of the anomalous areas were covered by glacial till.

Hera Resources Inc. carried-out a drill program on the Nak 95-1 and Nak 95-2 claims that consisted of 43 BQ diamond drill holes totalling 8,007.30 metres. This work resulted in the discovery of copper mineralization related to rhyodacite dykes along the western margin of a quartz diorite intrusion. Drilling to the south outlined copper-gold mineralization related to the quartz diorite and rhyodacite.

The eastern edge of the low chargeability area was also drilled and all but one drill hole encountered only trace amounts of copper and/or gold mineralization.

1996: Hera Resources Inc. drilled the north-trending highs in the center of the IP anomaly. In all, 28 BQ diamond drill holes were drilled totalling 5,304.10 metres; 1,600 core samples were assayed. The 1996 drilling program resulted in the identification of a zone of significant copper-gold mineralization in the south of the known mineralized area called the 'Southern Zone'. A study of copper-gold ratios in drill-core also suggested possible mineralized extensions of the Southern Zone elsewhere. As well, the Southern Zone was found to host localized high-grade copper veins (1.318% Cu and 0.203g/t Au over 18.28 metres) and associated disseminated mineralization in adjacent sedimentary units.

Geological mapping and sampling were performed on a 1:5,000 scale around the area of drilling on 34.3 kilometres of grid line.

Core from the 1995 drill program was re-examined and correlated with the 1996 drilling with the aim of developing consistency in the nomenclature of lithologic units, alteration and mineralization. Based on these results a review of geological modeling at the Nak deposit was undertaken.

2007: Copper Ridge Explorations Inc. undertook an IP and magnetic survey to extend coverage from the Nak deposit in the northwest to the Dorothy deposit in the southeast. A 90 km grid with a 9.5km long northwest-southeast trending baseline was established to facilitate the program, and surveying commenced on November 19th. Due to severe winter conditions the survey was terminated before completion on December 13th. This work, however, confirmed the IP

and magnetic results from earlier surveys and demonstrated that the pattern of a chargeability low flanked by a chargeability high continued to the southeast. Results of the magnetometer survey also confirmed that an area of increased magnetic susceptibility is associated with the known mineralization.

2008: The 2008 exploration program by Copper Ridge included a program prospecting, soil geochemical surveying, induced polarization surveying and of magnetometer geophysical surveying conducted between June 9th and July 13th 2008 This work was followed by 1,265 m of drilling in 5 holes completed between September 26th and October 19th 2008. Four of the five drill holes were in or around the Nak deposit, and one was drilled near the Dorothy deposit. The best results were obtained in drill hole BB08-04 (316.5 m of 0.115% copper and 0.257 gpt gold), with significant intervals of higher grade.

2009: Copper Ridge Explorations Inc. undertook a small till sampling program in 2009 following up on highly anomalous till samples collected by the BCGS in 1997. A total of 11 samples were collected, and although the basil till targets were not reached in each test pit, anomalous copper and gold values were obtained in 5 of the samples.

2010: Copper Ridge Explorations Inc. undertook an a soil sampeling program in 2010 in which 460 Ah soil horizon samples were collected on a northeast-southwest oriented grid. Samples were spaced at 50m intervals along 200m spaced lines. A helicopter-borne ZTEM survey was also flown in 2010. A total of 502 line-kilometers were flown covering an area of approximately 124km^2.

7 REGIONAL GEOLOGY

The following geology was taken from the 2010 Assessment report (Borne, 2010)

The Nak and Dorothy copper-gold-molybdenum porphyry occurrences are associated with the Babine Igneous Suite of Tertiary and possible Cretaceous age, located in north-central British Columbia (Maclntyre et al., 1997). The most important of these deposits are the Granisle and Bell Mines which together produced a combined total of 130 million tonnes of ore at 0.4% Cu, 0.15 g/t Au and 0.75 g/t Ag. The Morrison deposit, located southwest of the Nak property, contains measured and indicated resources of 206,869,000 tonnes grading 0.39% Cu, 0.2 gpt Au and 0.005% Mo (Pacific Booker Minerals Inc. web site). The deposits are known to occur within a narrow belt approximately 40 kilometres wide and extending more than 100 km north-northwesterly from the northern part of Babine Lake. The Nak and Dorothy deposits are situated on the on the eastern edge of this belt.

The Babine Igneous Suite intrudes Mesozoic volcanic and sedimentary rocks of the Stikine Terrane within the Intermontane Tectonic Belt. The Stikine Terrane is an ocean island arc that was accreted to the western margin of North America in Late-Jurassic to Early-Cretaceous time. The Property lies on the northern edge of a transverse tectonic feature known as Skeena Arch that separates the Bowser Basin in the north from the Nechako Trough in the south. The

Skeena Arch was uplifted during the Jurassic and the faults thus generated acted as controls for the emplacement of Cretaceous and Tertiary intrusions (Carter, 1981).

The Stikine Terrane consists primarily of an island arc assemblage of Late-Triassic (Takla Group) and Early-Jurassic (Hazelton Group) marine volcanic, volcaniclastic and sedimentary rocks. The Babine property is underlain by an irregularly dipping sequence of Mesozoic andesite flows, breccias and lapilli tuff in fault contact with volcaniclastic sandstone, siltstone, mudstone, volcanic-granitic cobble conglomerate, minor shale and argillaceous coal beds (Richards, 1973).

Marine and non-marine sedimentary rocks of the Mid- to Late-Jurassic Bowser Lake and Mid-Cretaceous Skeena groups overlie the older volcanic and sedimentary units, and are preserved in down-dropped basins bounded by north-northwest trending faults developed during extensional and trans-tensional tectonic activity in Late-Cretaceous and Early-Tertiary time (Carter et al, 1995).

Radiometric ages for mineralized and un-mineralized biotite-feldspar porphyries of the Babine suite have yielded an average age of 50 Ma (Carter et al, 1995), suggesting that these intrusive bodies were emplaced over a short period in Mid-Eocene time.

Intrusive rocks include six major intrusive suites including Topley (173-206 Ma), Omineca (121 – 181 Ma), Bulkley (70 – 84 Ma), Goosley Lake (49 – 53 Ma), Nanika (47 – 56 Ma) and Babine (49 – 55 Ma). All suites have related economic metal deposits, however the most important porphyry copper mineralization in the area is associated with the Babine Intrusive Suite. The Babine Igneous Suite has been characterized (from oldest to youngest) as equigranular, fine- to medium-grained quartz diorite and quartz monzonite, sub-porphyritic rhyolite and dacite and a distinctive 'crowded' (hornblende)-biotite-feldspar porphyry ("BFP") (Carter et al, 1995). These rocks occur as irregular dykes, dyke swarms and plugs generally not exceeding one kilometre in surface area. Multiple intrusive events are a common feature at some deposits, including Nak. It has also been reported that some of the better mineralized properties in the region contain pre-, inter- and post-mineral (hornblende) biotite-feldspar porphyries and intrusive breccias.

Alteration zones associated with mineralized porphyries of the Babine Igneous Suite include a central potassic zone (hydrothermal biotite ± K-spar), grading outward into a phyllic zone (quartz-sericite-pyrite), and finally an outer zone of propylitic alteration (chlorite-carbonate ± epidote).

Regionally, copper mineralization typically occurs within northeast and northwest striking, steeply-dipping quartz-chalcopyrite ± bornite veinlets less than 5 mm wide (Carter, 1994). Enhanced grades are locally developed at, or adjacent to contacts between intrusive phases and volcanic and sedimentary rocks of the Hazelton Group. Mineralized haloes containing 5 to 10% pyrite have been reported at some deposits and extend up to 300 metres outward from a central zone of copper mineralization.

8 LOCAL GEOLOGY

The following local geology description was taken from the 2010 Assessment Report (Borne 2010).

The Babine property is characterized by thick till cover and limited outcrop. Therefore, much of the geology of the area is based on diamond drill-logs and geophysical data (Spencer, 1996).

The Nak property is underlain by a northwest-trending, east-dipping sequence of andesite flows, volcaniclastics, and argillaceous and cherty sedimentary rocks of the Jurassic Hazelton Group. Sandstone and conglomerate bordering Nakinilerak Lake may belong to a younger sequence (Carter, 1994). Hazelton Group rocks at the Nak property are intruded by diorite to monzonite bodies of probable Early-Cretaceous age, and by stocks, sills and dykes of the Eocene age Babine igneous suite.

The centre of the Nak property contains an approximately 1.8 km^2 polyphase intrusive stock consisting of fine-grained quartz diorite and quartz monzonite, and numerous varieties of BFP (Carter, 1994). Similar intrusive bodies outcrop on ridges near the western claim boundaries. Due to poor outcrop in the area, intrusive contacts and spatial relationships are not well-defined. Several dykes and sills cut layered rocks hundreds of metres to the south and west of this main stock, as well as in the northern portion of the property. The central polyphase intrusive stock is thought to be situated at the intersection of northeast and northwest faults. This is structurally similar to other porphyry systems in the region (Carter, 1994).

At Dorothy, two intrusive bodies occur including a granodiorite/diorite body with affinity to Omenica Intrusive Suite and the Dorothy BFP with affinity to Babine Intrusive Suite. Both intrusions are elongated and oriented north – south to north – northwest south – southeast, conformably with general tectonic trend. The BFP is composed of biotite, feldspar and quartz phenocrysts measuring as much as 4 millimeters across, and much smaller amphibole grains and feldspar laths making up the matrix. Woolverton recognized a central potassic zone, a peripheral propylitic zone and a pyrite halo moderately developed outside of the potassic zone. The potassic zone is characterized by hydrothermal biotite, which may be to various degrees retrogressively altered to chlorite. The potassic zone is cut by dykes of younger generation BFP devoid of alteration and/or mineralization and characterized by breccia texture.

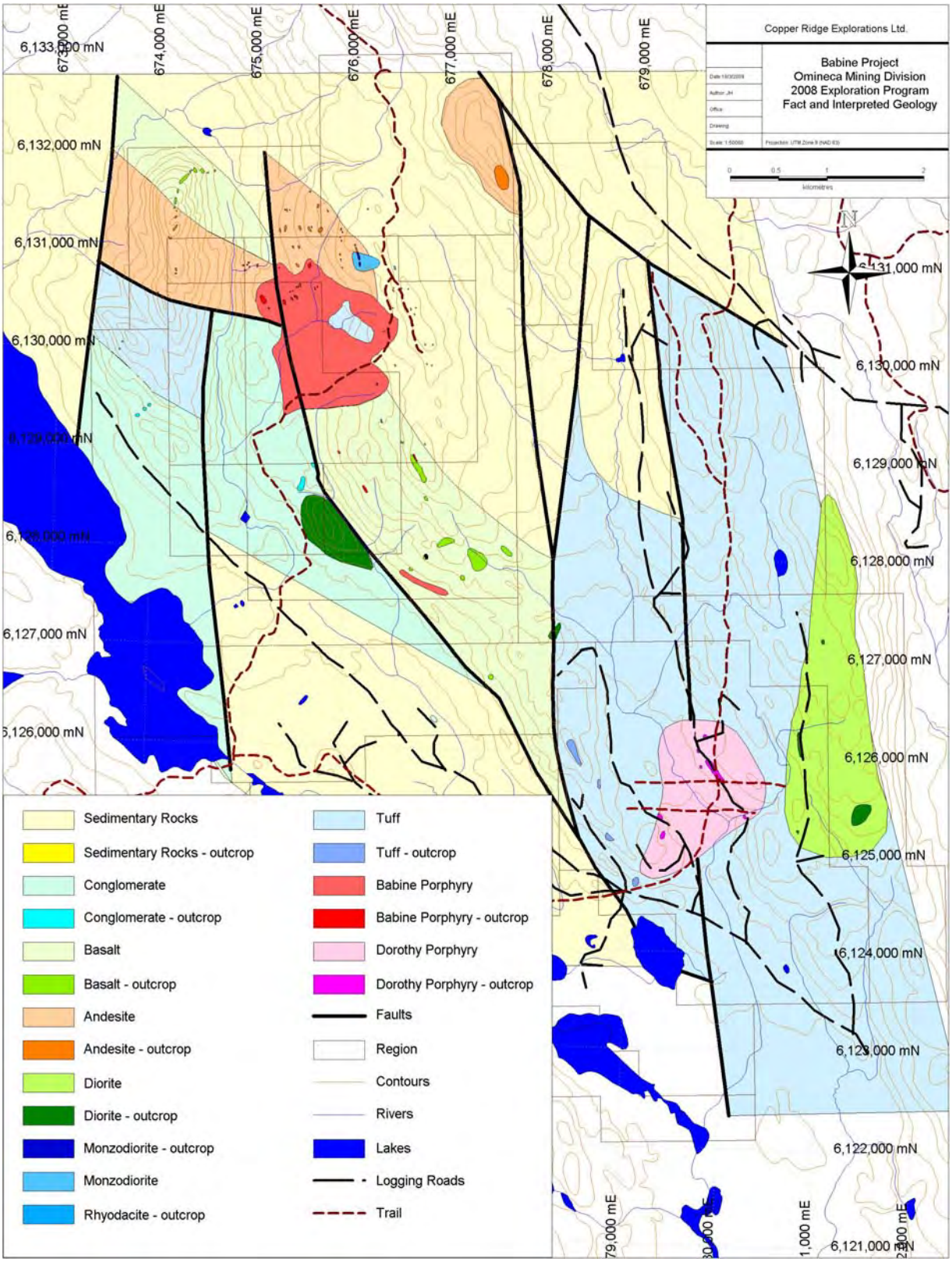

Figure 3. Babine property geology.

8.1 Structure

The quartz diorite intrusion is centered on a regional north-westerly trending fault which is intersected by a northerly trending fault in the northern part of the property. This northerly trending fault was intersected by drill holes in the ravine along the western part of the deposit. Numerous faults parallel to this northerly trend have been intersected by drilling west of the quartz diorite intrusion and across it. These faults host mineralization which indicates that movement either occurred during or before mineralization and they had to be active after the quartz diorite stock cooled. The most likely explanation is that they were active during the period of extensional tectonics from Late-Cretaceous to Early-Tertiary which also spans the period of mineralization. This long period of active tectonics is also supported by the presence of extensional veins in the sedimentary rocks.

9 ALTERATION AND MINERALIZATION

The following description of alteration and mineralization was taken from the 2010 Assessment Report (Borne, 2010)

9.1 Alteration

Bridge (1997) described three distinct hydrothermal alteration phases at the Nak property: (1) prograde potassic–advanced argillic alteration overprinted by (2) retrograde phyllic and argillic alteration, and (3) late carbonate and sulphate veins.

(1) The early potassic alteration forms a 1.2 km diameter circular feature with advanced argillic alteration forming a halo around the potassic core in elongate zones along northerly trending faults. The alteration types were differentiated on the basis of vein types and associated alteration envelopes. Potassic alteration can be divided into subtypes – mafic-potassic and potassic. Mafic-potassic alteration is characterized by biotite-K-feldspar-amphibole-magnetite-quartz-chalcopyrite-pyrite-bornite-molybdenite veins and occurs on the south-western contact of the intrusion in hornfelsed sedimentary rocks, and on the eastern side in drill hole N95-35. Magnetite is characteristic, and altered rocks become weakly to strongly magnetic due to its presence. Magnetometer surveys record a pronounced magnetic high along the south-eastern margin of the pluton. Potassic alteration consists of K-feldspar, quartz and carbonate veins and is recognized in quartz diorite and sedimentary rocks north of the mafic-potassic zone. Advanced argillic alteration, which consists of clay-quartz-tourmaline flooding or bluish quartz-tourmaline±chalcopyrite±pyrite±magnetite±sericite veins, occurs along the margin of the potassic alteration and to the north and south along northerly trending faults.

(2) Phyllic alteration includes sericite-quartz and carbonate-pyrite-chalcopyrite-bornite veins with sericite alteration haloes that overprint hornfelsed volcanic and sedimentary rocks. The carbonate veins are also observed in fault zones that cross-cut the quartz diorite intrusion. Widespread, pervasive argillic alteration occurs west of the intrusion in extensively faulted sedimentary rocks. The alteration assemblage consists of clay-carbonate alteration with rare arsenopyrite-pyrite-calcite±quartz veins.

(3) Propylitic alteration, which comprises chlorite-calcite-epidote-pyrite, occurs in volcanic rocks in the northern and eastern parts of the Nak prospect

At Dorothy, the potassic zone, which hosts the copper mineralization, is found within the core of the BFP and is defined mainly by hydrothermal biotite. Peripheral to this is a large propylitic zone which is present in the outer rim of the intrusive and in the host volcanics. A moderately developed pyrite halo exists along the rim of the intrusive, just outside the potassic zone. Much of the potassic alteration was overprinted by a lower grade alteration (propylitic), resulting in either rimming of the hydrothermal biotite with fine chlorite or complete replacement of the biotite.

After the main event of alteration and mineralization, a late phase of BFP was emplaced as a set of large dikes within the potassic zone. This later phase is notably fresher, showing no signs of potassic alteration or mineralization, and is texturally distinct due to its brecciated nature.

9.2 Mineralization

Bridge (1997) calculated the copper-gold ratios in drill core assays and identified two distinct populations separated by a Cu:Au ratio of 2:1 and four distinct mineralization types at the Nak prospect. They are: (1) Southern Zone Cu-Au, (2) Northern Zone Cu, (3) high grade Cu veins, and (4) arsenopyrite veins.

(1) Copper-gold mineralization with a Cu:Au ratio of <2.0 is restricted to the southwest corner of the quartz diorite intrusion and may extend along the southern margin to link up with known mineralization on the eastern side. Hornfelsed sedimentary rocks on the eastern margin host mineralization, which comprises chalcopyrite, bornite, molybdenite and magnetite, and is associated with mafic potassic alteration.

(2) Copper-only mineralization with a Cu:Au ratio of >2.0, occurs on the western side of the intrusion and is concentrated on the margins of rhyodacite porphyry dykes that cross-cut the copper-gold mineralization to the south. Copper mineralization occurs as quartz-carbonate-chalcopyrite-bornite-pyrite-molybdenite veins which contain increasing amounts of gypsum at depth and are associated with advanced argillic alteration assemblages. The dykes are intensely feldspar altered and locally contain minor disseminated chalcopyrite and bornite, which strongly elevates the copper tenor of the rock.

(3) High grade chalcopyrite veins (Cu:Au>2.0) occur on the south-southwest side of the quartz diorite intrusion and extend for up to 300 metres. They possibly occur along north-trending faults and are associated with phyllic alteration. Drill hole logs report that westerly oriented drill holes intersected numerous quartz veins at high angles to core axis whereas easterly oriented drill holes rarely encountered these veins. Based on these observations Bridge (1997) has postulated that the mineralized veins may strike in a northern direction and dip steeply to the east, and if so the copper tenor reported for intersections in units from easterly dipping holes may not completely reflect the metal content of these zones.

(4) Arsenopyrite veins, which contain minor gold, occur on the southwest side of the intrusion in faulted rocks and are associated with argillic alteration.

Less information is available concerning the mineralization at the Dorothy property. It is emplaced within and about the potassic alteration core of the BFP. The copper and scarce molybdenum mineralization occurs as disseminations and/or subordinate stringers. At surface, a 1 to 2 meter thick oxidation zone with limonite, minor cuprite and possibly supergene copper minerals overlies the primary porphyry mineralization. Breccia-related mineralization with elevated gold and copper has been reported from recent prospecting on the property (Harivel, 1997).

Chalcopyrite, pyrite, sparse molybdenite, sphalerite and galena and rare bornite, covellite, and pyrrhotite are weakly to moderately disseminated in the BFP. The chalcopyrite and other sulfides also form occasional stringers, which however do not contribute substantially to the overall grade of ore. The average grade of ore is 0.25 per cent copper and 0.01 per cent molybdenum (Minfile Inventory report 093M 009) and the average content of copper in the best four 1970 – 1971 drill holes (#s 2, 10, 14 and 19) is 0.28 percent. Gold is correlative with copper but the gold content in the mineralizing system is generally low (Robertson, 1992).

10 2014 EXPLORATION PROGRAM

The 2014 exploration program consisted of an airborne geophysical program flown by Precision GeoSurveys out of Vancouver B.C. The goal of the geophysical program was to obtain a detailed magnetic map of the property to aid in determining the orientation of major structures on the property that may host mineralization.

Radiometric data was collected simultaneously along with the acquisition of magnetic data. However, with significant snow cover over 80% - 100% or more of the property and of varying heights, the radiometric data are compromised. Therefore the radiometric data are not corrected and should be used with discretion.

The Babine survey block is approximately 11.0 km by 8.5 km (Figure 3). A total of 581 line kilometers of magnetic and radiometric data were flown for this survey; this total includes tie lines and survey lines. The Babine survey block survey lines were flown at 130 meter spacing at a $060^{o}/240^{o}$ heading; the tie lines were flown at 1300 meter spacing at a heading of $150^{o}/330^{o}$. Details of the survey and equipment are given in the geophysical report attached as appendix A.

11 DISCUSSION

Several features are visible in the magnetic data obtained in the 2014 survey. The most notable features are the relative magnetic lows associated with the Nak and Dorothy intrusions along with the relative magnetic highs associated with the hornfels halos surrounding each intrusion (Figure 4.). Secondly several northwest and north to north-northwest trending structures are visible as well around and within both the Nak and Dorothy

Intrusions. The mineralization at both Nak and Dorothy is associated with one or more of these interpreted structures (Figure 5 and 6.).

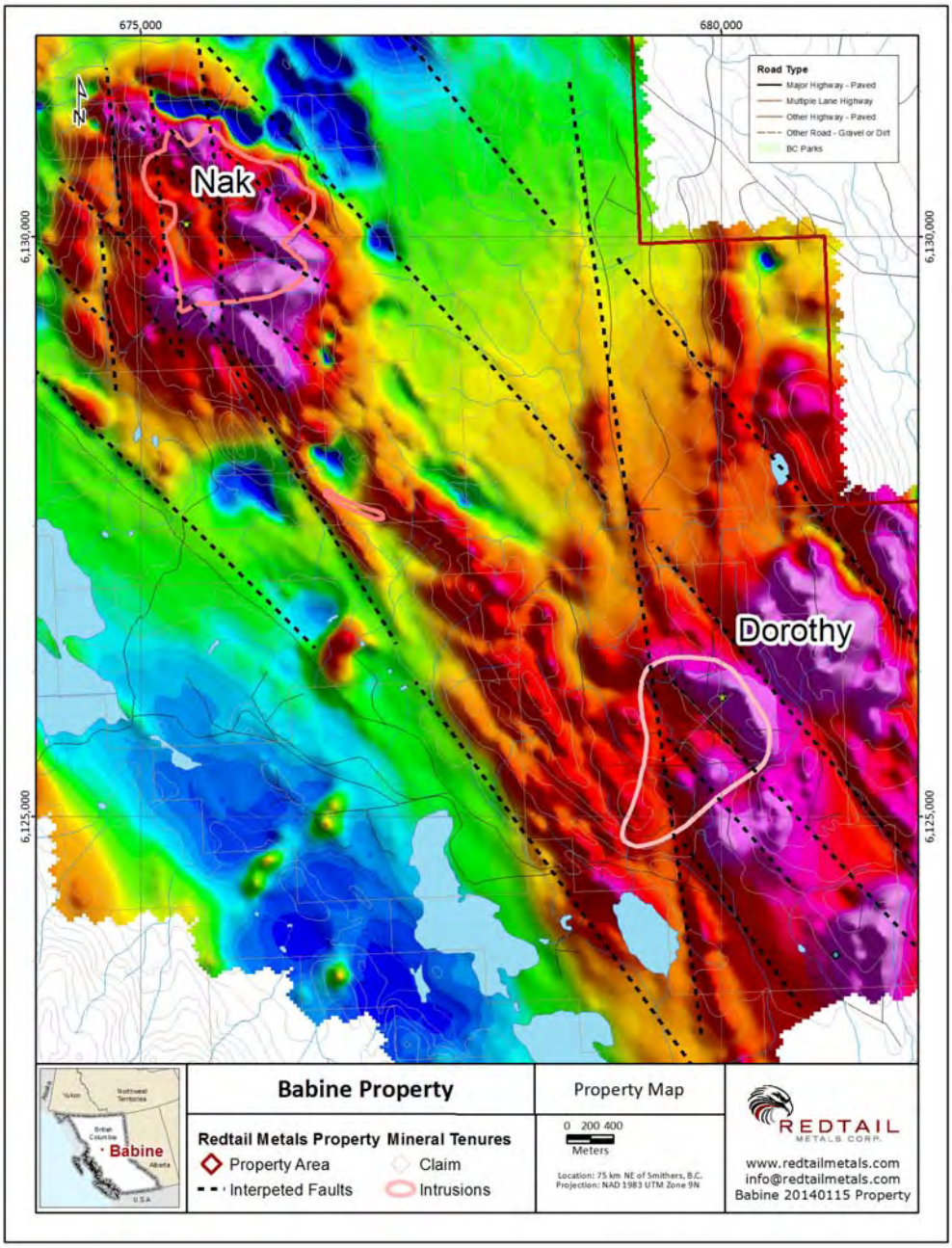

Figure 4. Total Magnetic Intensity (TMI) for the Babine Property.

11.1 Nak

Mineralization at Nak is associated with a large, interpreted, NNW structure at the western contact of the Nak intrusion (Figure 5). To the east of the main mineralized NNW structure a

second, NNW trending structure has been interpreted. This secondary NNW structure is a potential exploration target. East of the secondary structure are three NW trending interpreted structures. These structures could be potential targets for follow up.

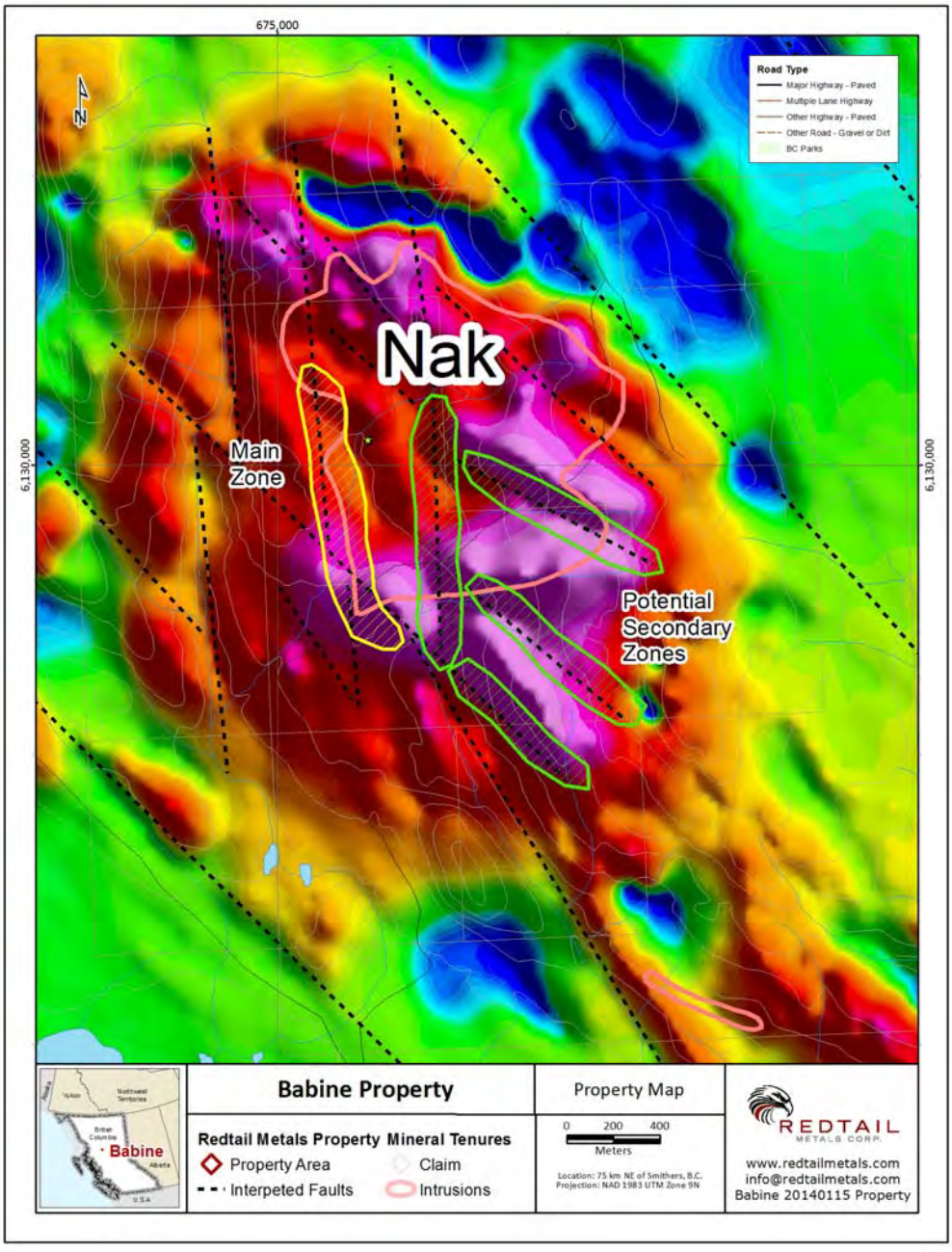

Figure 5. Total Magnetic Intensity (TMI) for the NAK intrusion, Babine Property.

11.2 Dorothy

Mineralization at Dorothy is associated with a large, interpreted, NW trending structure in the center of the Dorothy Intrusion (Figure 6.). The mineralization at Dorothy appears to be truncated by the large north-northwest structure on the west end of the intrusion. If this structure does cut mineralization, then the western portion of the Dorothy deposit has yet to be discovered. A second structure is interpreted to lie northeast of the main mineralization at Dorothy and is a potential expiration target.

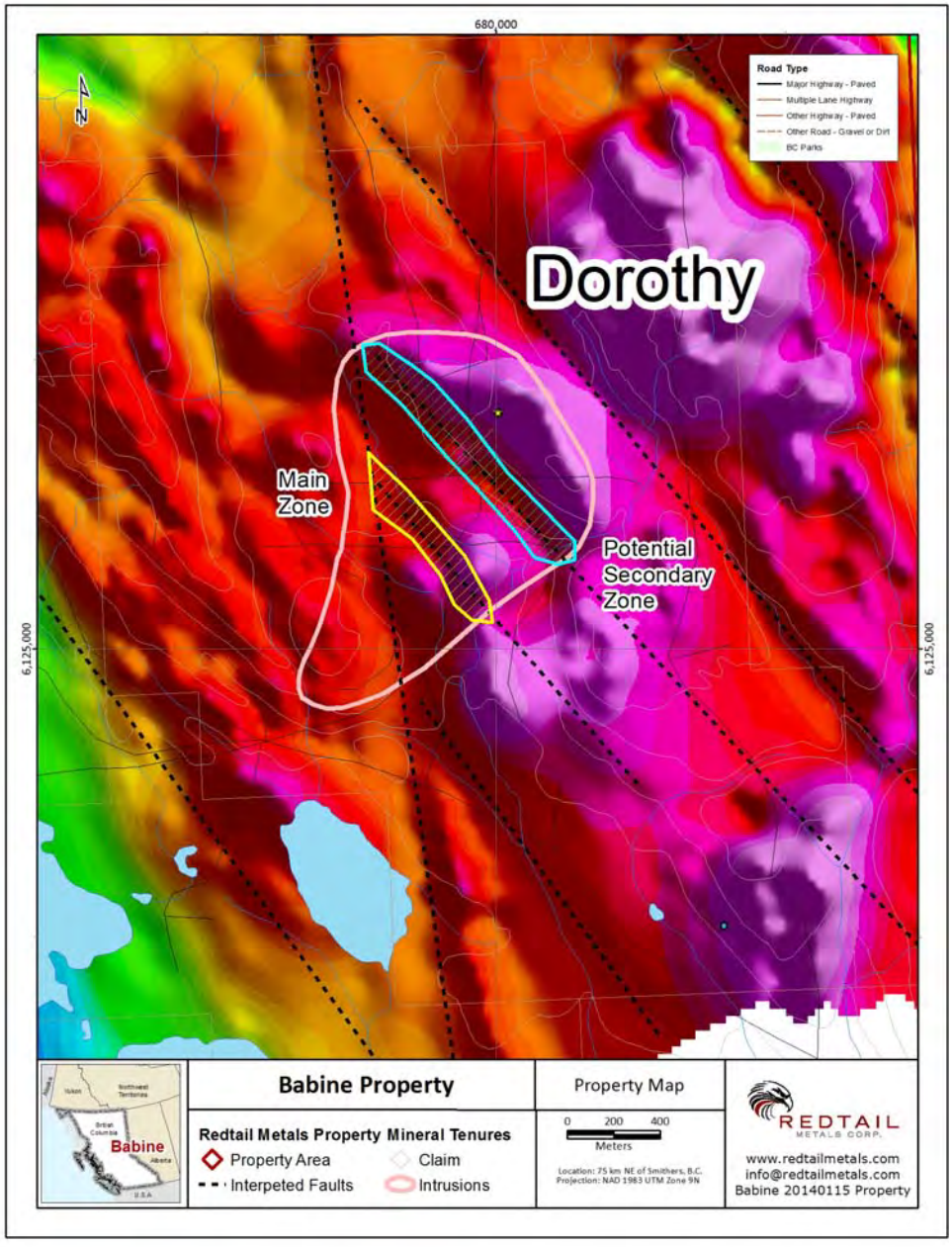

Figure 6. Total Magnetic Intensity (TMI) for the Dorothy intrusion, Babine Property.

12 CONCLUSIONS

The Babine Project, consisting of the Nak and Dorothy porphyry copper-gold-molybdenum prospects, is located within the Babine porphyry district, a 40 by 100 km northwesterly trending belt extending north from the central part of Babine Lake. The Babine porphyry belt includes the Bell and Granisle mines, the Morrison deposit and numerous other undeveloped prospects. The Bell and Granisle mines together produced 130 million tonnes of ore grading 0.4% copper, 0.15 g/t gold and 0.75 g/t silver. Morrison, with a combined measured and indicated resource of 206 million tonnes grading 0.39% Cu, 0.2 g/t Au and O.005% Mo, is currently the subject of a feasibility study.

The Property is road accessible and is located approximately 80 kilometres northeast of Smithers and approximately 2 kilometres east of Nakinilerak Lake. The property includes 28 contiguous claims, of which Redtail Metals owns a 100% interest in fifeteen of the claims; the remaining 13 are subject to two separate underlying option agreements.

Copper-gold-molybdenum mineralization at the Nak and Dorothy prospects is associated with disseminated chalcopyrite, pyrite and local bornite, in and adjacent to quartz-sulphide veinlets within multiple phase porphyry intrusions and local breccia zones. The prospects were originally explored by Noranda in the 1960's and 1970's and more recently by a number of junior exploration companies through the mid 1990's. Historical drilling at Nak has included 98 holes, for a total of 15,629 m. Highlights from the 1995-96 drilling include 70.7 m grading 0.248% Cu and 1.166 g/t Au in hole 96-55, 12.5 m grading 2.614% Cu and 0.143 g/t Au in hole 96-58, 18.0 m grading 1.318% Cu and 0.203 g/t Au in hole 96-65 and 21.3 m grading 0.295% Cu and 1.059 g/t Au in hole 96-70. In the 1970's, 29 holes were drilled on the Dorothy prospect.

The 2014 geophysical survey produced high quality magnetic data that outlined several northwest and north-northwest structures on the Babine Property. These structures may represent mineralization-controlling structures and should be investigated for copper-gold mineralization.

13 RECOMMENDATIONS

At this point a drill program is recommended for the Babine Property. Both NAK and Dorothy are valid targets for further exploration. The north-northwest structures at NAK should be tested by several drill holes to evaluate the potential for mineralization as well as the northwest secondary structures to the east of the main zone.

Drilling at Dorothy should target the secondary NW structure northeast of the main mineralized zone to test for the potential for similar mineralization at the secondary structure(s) at Dorothy.

14 ITEMIZED COST STATEMENT

Item	Cost	Total Cost
Geophysical Survey	$52,080.00	**$52,080.00**
Report Writing		
Gilles Dessureau (5 days at $500 per day)	$2,500.00	**$2,500.00**
Total		**$54,580.00**

15 STATEMENT OF QUALIFICATIONS

Date: July 5, 2014

Statement of Qualifications

I, Gilles Dessureau, M.Sc., P.Geo., do herby certify that:

1. I am a Professional Geologist, working for Solidus Geological Services, and reside at 308-3131 Main St., Vancouver, B.C., Canada, V5T 3G8. At the time the work was completed, I was employed as V.P. Exploration for Redtail Metals Corp.

2. I graduated from St. Mary's University in Halifax, Nova Scotia with a Bachelor of Science with Honors in Geology in 1998.

3. I graduated from Laurentian University in Sudbury, Ontario with a Masters of Science in Geology in 2003.

4. I have worked in the mineral exploration industry continuously since 2003, in Ontario, British Columbia, and The Yukon Territory, Canada, and intermittently since 1996 in Ontario and Nova Scotia during my education and training.

5. I am a registered member of the Association of Profession Engineers and Geoscientists of British Columbia, since August 2007. Membership number 31462.

6. I am a non-practicing member of the Association of Profession Geoscientists of Ontario, since May 2007. Membership number 1459.

7. I created Solidus Geological Services as a Sole Proprietor Business since 2007.

8. I have personally supervised and participated in the work described herein.

9. I am not aware of any material fact or material change with respect to the contents of this report that is not reflected in this report, the omission to disclose which makes this report misleading.

Respectfully Submitted,

Gilles Dessureau, M.Sc., P.Geo.

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APPENDIX I.

Airborne Geophysical Survey Report

Babine Survey Block, Prepared for Redtail Metals Corp.

By

Precision GeoSruveys Inc.

Vancouver, B.C.

Precision GeoSurveys Inc.

AIRBORNE GEOPHYSICAL SURVEY REPORT

Babine Survey Block
Prepared for Redtail Metals Corp.

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April 2014

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1.0 Introduction

This report outlines the geophysical survey operations and data processing procedures taken during the high resolution airborne magnetic and radiometric survey flown at the Babine survey block for Redtail Metals Corp. The survey area is located north east of Smithers, BC (Figure 1). The geophysical survey was started out on April 01, 2014 and completed on April 03, 2014.

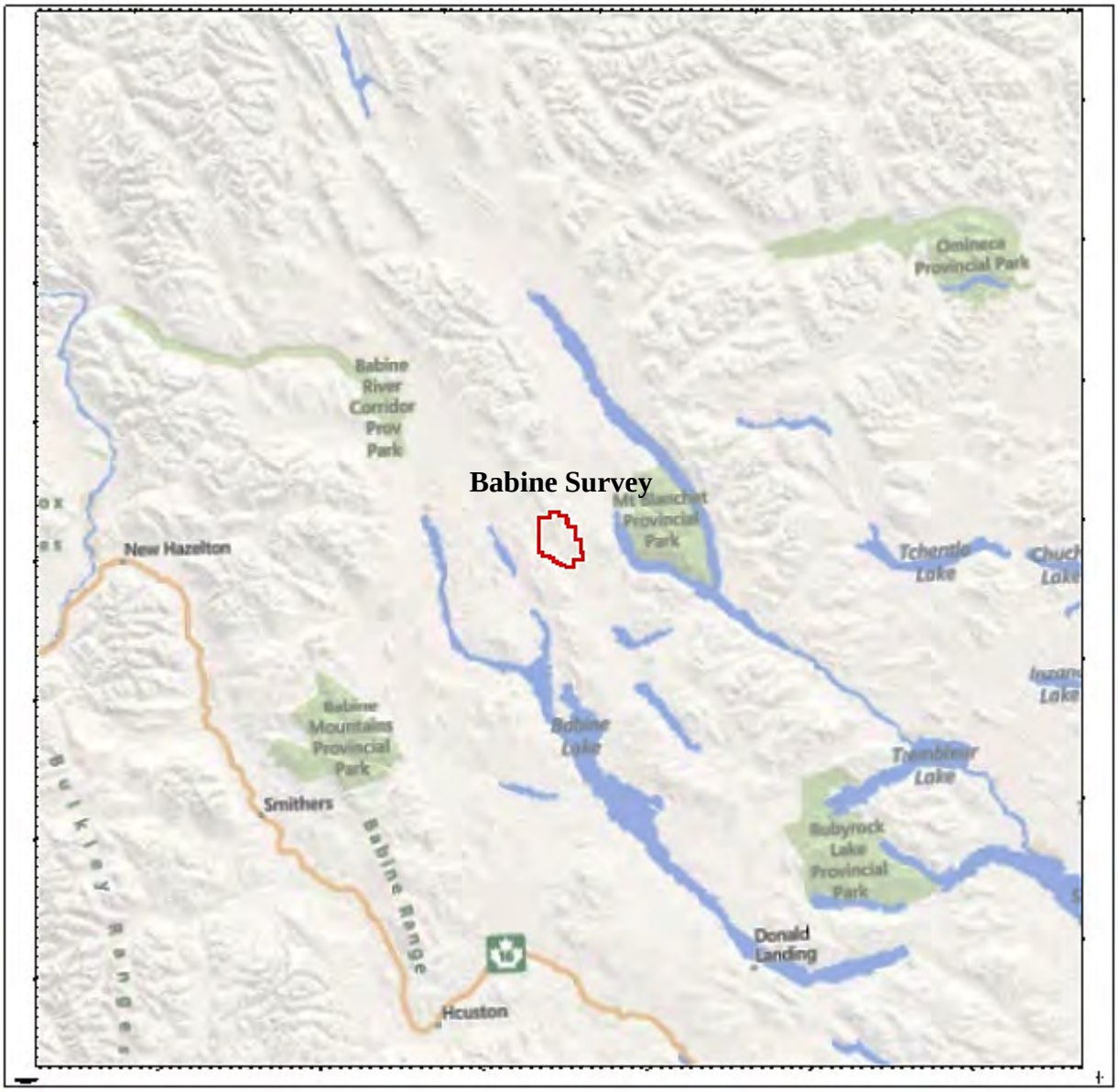


Figure 1: Block location map.

Precision GeoSurveys Inc.

1.1 Survey Area

The Babine survey block is located approximately 80 km west of Smithers, BC and north of Babine Lake (Figure 2).

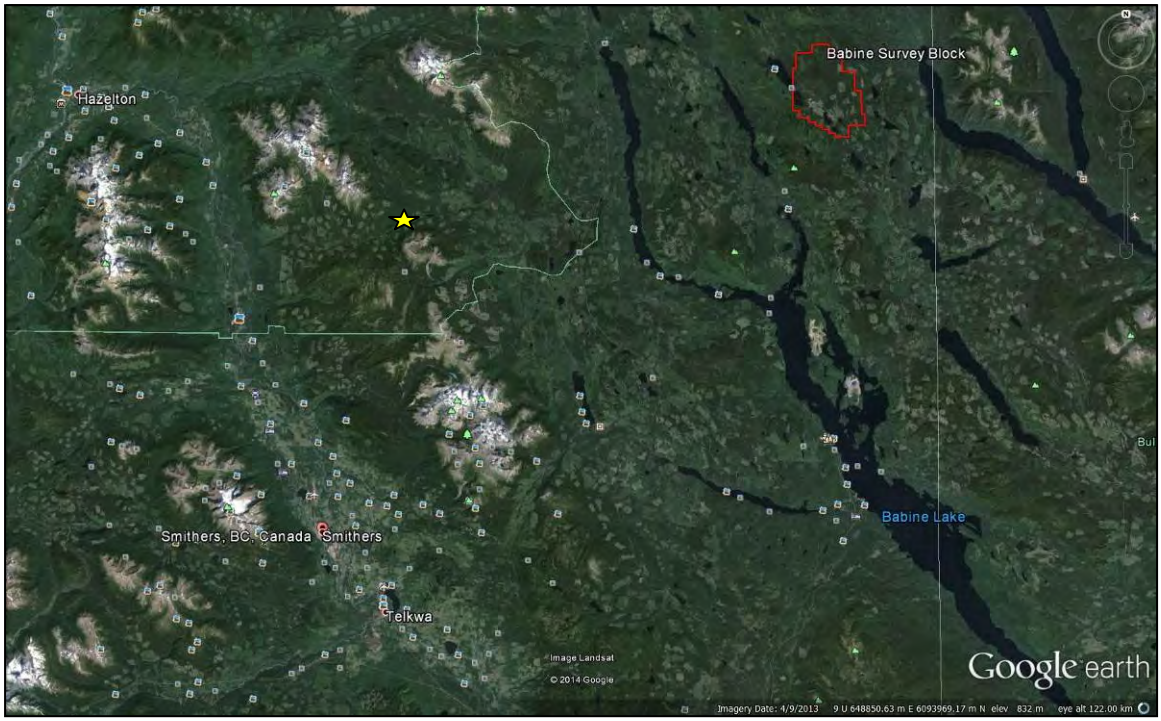


Figure 2: Babine survey block location relative to Smithers, BC on Google Earth.

The Babine survey block is approximately 11.0 km by 8.5 km (Figure 3). A total of 581 line kilometers of magnetic and radiometric data were flown for this survey; this total includes tie lines and survey lines.

Figure 3: Babine survey block boundary in red.

The Babine survey block survey lines were flown at 130 meter spacing at a 060°/240° heading; the tie lines were flown at 1300 meter spacing at a heading of 150°/330° (Figures 4 and 5).

Figure 4: Plane View – Babine survey block with actual survey and tie lines outlined in yellow, and the survey block boundary in red.

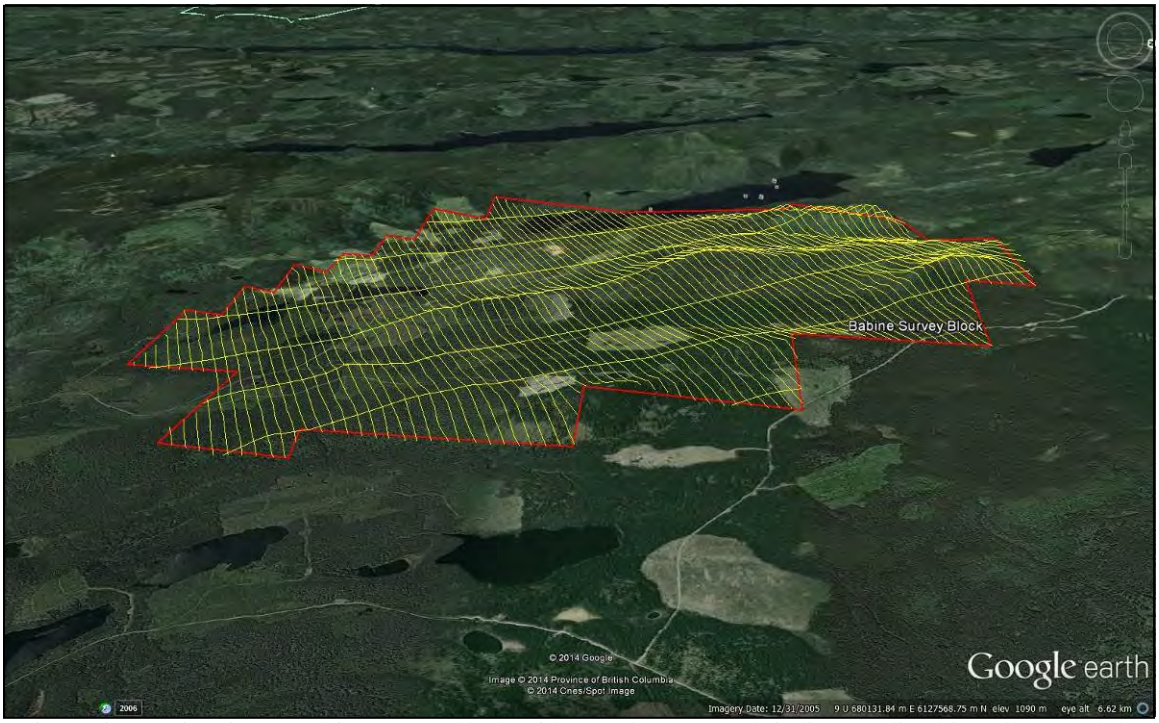


Figure 5: Terrain View – Babine survey block with actual survey and tie lines outlined in yellow, and the survey block boundary in red.

Radiometric data was collected simultaneously along with the acquisition of magnetic data. However, with significant snow cover over 80% - 100% or more of the property and of varying heights, the radiometric data are compromised. Therefore the radiometric data are not corrected and should be used with discretion.

1.2 Survey Specifications

The geodetic system used for this survey is WGS 84 and the area is contained in zone 9N (Figure 6). A total of 581 line km was flown. The survey data acquisition specifications and coordinates for the survey are specified as follows (Tables 1 to 2).

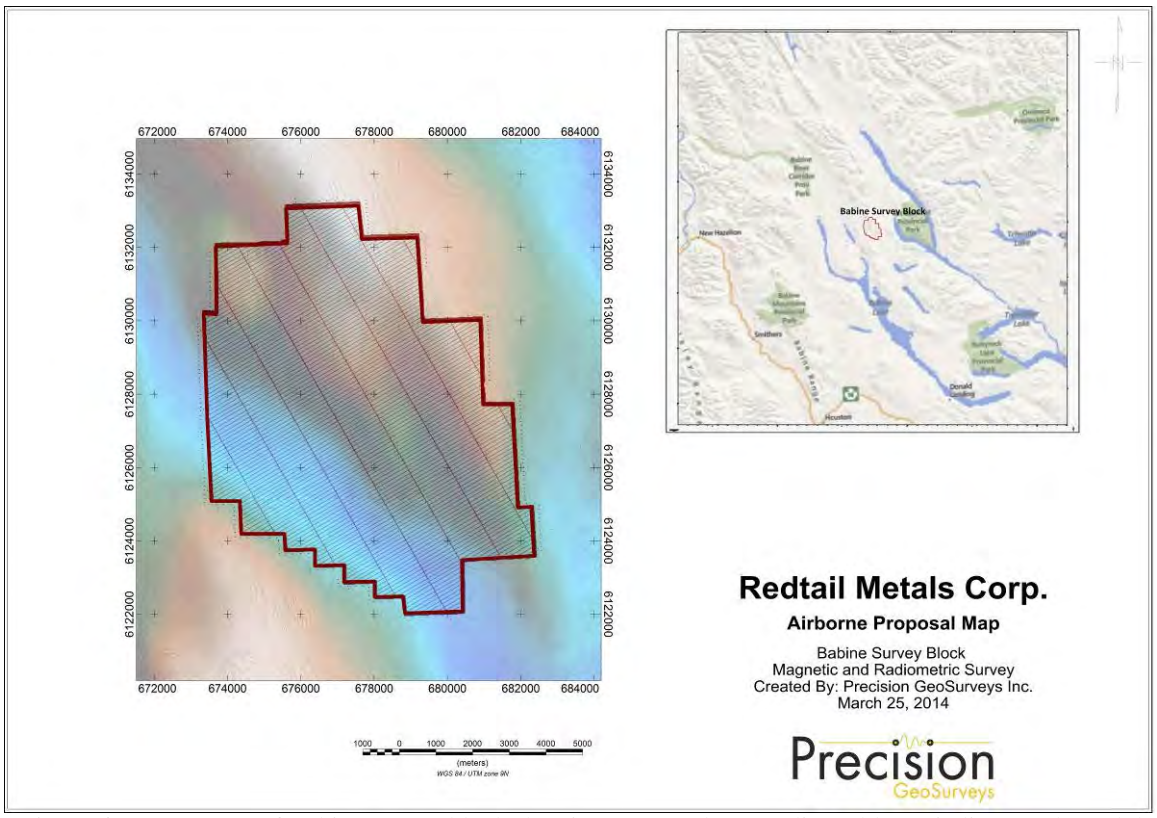


Figure 6: Survey map of Babine survey block showing proposed survey lines (blue), tie lines (red), and the survey boundary (brown).

Survey Block	Line Spacing m	Planned Survey Line km	Planned Tie Line km	Survey Line Orientation	Nominal Survey Height m	Actual Survey Height	Total Planned Line km	Total Actual Flown km
Babine	130	526	54	060°/240°	40	44	580	581
Total							580	581

Table 1: Babine survey block acquisition specifications.

Longitude	Latitude	Easting	Northing	N/S	E/W
126.27043332	55.26241104	673442	6127389	N	W
126.27002829	55.24169888	673558	6125086	N	W
126.25785352	55.24142576	674333	6125086	N	W
126.25780733	55.23341493	674371	6124195	N	W
126.23925869	55.23299643	675552	6124195	N	W
126.23923713	55.22899552	675571	6123750	N	W
126.22645732	55.22888531	676384	6123770	N	W
126.22673600	55.22488221	676384	6123324	N	W
126.21425593	55.22477753	677178	6123344	N	W
126.21454772	55.22060394	677178	6122879	N	W
126.20147244	55.22048433	678010	6122899	N	W
126.20174095	55.21666082	678010	6122473	N	W
126.18957820	55.21655187	678784	6122492	N	W
126.18896143	55.21236634	678842	6122028	N	W
126.16431213	55.21231691	680410	6122086	N	W
126.16372064	55.22482614	680391	6123479	N	W
126.13265176	55.22514231	682365	6123595	N	W
126.13301349	55.23716147	682287	6124931	N	W
126.13878983	55.23712633	681920	6124912	N	W
126.13941487	55.26236686	681765	6127718	N	W
126.15189341	55.26265883	680971	6127718	N	W
126.15162350	55.28335630	680894	6130021	N	W
126.17631672	55.28340879	679326	6129963	N	W
126.17728618	55.30413477	679171	6132266	N	W
126.20105162	55.30434043	677662	6132228	N	W
126.20200304	55.31253392	677565	6133137	N	W
126.23311592	55.31255085	675591	6133060	N	W
126.23311137	55.30401957	675629	6132111	N	W
126.26391491	55.30385092	673675	6132015	N	W
126.26475242	55.28733784	673694	6130176	N	W
126.27022961	55.28763128	673345	6130195	N	W

Table 2: Babine block survey polygon coordinates using WGS 84 in zone 9N.

2.0 Geophysical Data

Geophysical data are collected in a variety of ways and are used to aid in exploration and determination of geology, mineral deposits, oil and gas deposits, contaminated land sites and UXO detection.

For the purposes of this survey, airborne magnetic and radiometric were collected to serve in the exploration of the Babine survey block for potential porphyry copper-gold-molybdenum deposit.

2.1 Magnetic Data

Magnetic surveying is probably the most common airborne survey type to be conducted for both mineral and hydrocarbon exploration. The type of survey specifications, instrumentation, and interpretation procedures, depend on the objectives of the survey. Typically magnetic surveys are performed for:

1. Geological Mapping to aid in mapping lithology, structure and alteration. Mapping basement lithology, structure and alteration in sedimentary basins or for regional tectonic studies.
2. Depth to Basement mapping for exploration in sedimentary basins or mineralization associated with the basement surface.

2.2 Radiometric Data

Radiometric surveys detect and map natural radioactive emanations, called gamma rays, from rocks and soils. All detectable gamma radiation from earth materials come from the natural decay products of three primary elements; uranium (U), thorium (Th), and potassium (K). The purpose of radiometric surveys is to determine either the absolute or relative amounts of U, Th, and K in surface rocks and soils which can assist in mapping lithology, structure, and alteration.

In this case, the counts for U, Th, and K have been affected as the ground is covered with snow. With over 80% - 100% of the property covered in packed and condensed snow and of varying height, radiation from the ground is significantly attenuated and thus the counts measured are reduced. For example, 2 cm of snow cover can reduce the penetration of gamma ray radiation by 35 % (*IAEA, 2003*).

3.0 Survey Operations

Precision GeoSurveys flew the survey out of Smithers, BC. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying. Field processing and quality control checks were done daily.

3.1 Operations Base and Crew

The base of operation for this survey was at an active logging road west of Babine Lake with an accessible helicopter landing site. The road is approximately 25 km west of the Babine survey block (Figure 7).

Figure 7: Base of operation west of Babine survey block.

The Precision crew consisted of three members:

Harmen Keyser– Pilot
Dave Hayward– Ground Support
Jenny Poon – On-site Geophysicist / Operator

The survey was started on April 01, 2014 and completed on April 03, 2014. The survey did not encounter any delays.

3.2 Base Station Specifications

Two magnetic base stations were set up before the survey to ensure that diurnal magnetic activity was recorded during the survey flight. In this case, two GEM GSM 19T base stations (Figure 8) GEM 3 (Serial # 5081669) and GEM 4 (Serial # 2065370) were located west of the Babine survey block (see Table 3).

Station name	Easting/ Northing	Longitude/ Latitude	Datum/ Projection
GEM 3 (Serial # 5081669)	0616373E, 6076412N	135° 47' 52.980" W 54° 38' 37.860" N	WGS 84, Zone 9N
GEM 4 (Serial # 2065370)	0649381E, 6126279N	135° 47' 52.980" W 54° 38' 37.860" N	WGS 84, Zone 9N

Table 3: Base station specifications.

Base station readings were reviewed at regular intervals to ensure that no data were collected during periods with high diurnal activity (greater than 5 nT per minute). The magnetic base stations were installed at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines that could affect the survey data.

Figure 8: GEM 3 (left) and GEM 4 (right) magnetic base station locations.

The diurnal magnetic variations recorded from the stationary base station was removed from the magnetic data recorded in flight to ensure that the anomalies seen were real and not due to solar activity.

3.3 Field Processing and Quality Control

On a flight-by-flight basis, the survey data were transferred from the helicopter's data acquisition system onto a USB flash drive and copied onto a field data processing laptop. The raw data files were in PEI binary data format and were converted into Geosoft GDB database format. Using Geosoft Oasis Montaj 8.0.1, the quality of the data was inspected to see if it met the contract specifications (see Table 4). If survey and tie lines exhibit excessive navigational deviation (left/right or up/down) from the contract specifications, or were considered to be inferior quality, the lines were re-flown. All suspect anomalies, especially those found on a single flight line, were re-flown. Any re-flight lines were a minimum of 1000 m long, survey line re-flights crossed at least two tie lines, and tie line re-flights crossed at least 10 survey lines where applicable. All data were confirmed and verified by a geophysicist before the survey helicopter and crew demobilized on April 03, 2014.

Specification	Technology	Details
Line Spacing	Position	Flight line deviation from flight path by more than +/- 10 m left/ right for 1 km or more.
Height		Flight line deviation from height by more than +/- 10 up/down with a nominal flight height of 40 m above ground for 1 km or more.
GPS		Any flight lines where 3 or less GPS satellites received for distances of greater than 1 km, provided signal loss is not due to topography
Diurnal Variations	Magnetics	Non-linear magnetic diurnal variations exceed 10nT from a linear chord of length one (1) minute
Normalized 4th Difference		Magnetic data exceeding 0.30 nT peak to peak for distances greater than 1 km or more (provided noise is not due to geological or cultural features).

Table 4: Contract re-flight specifications.

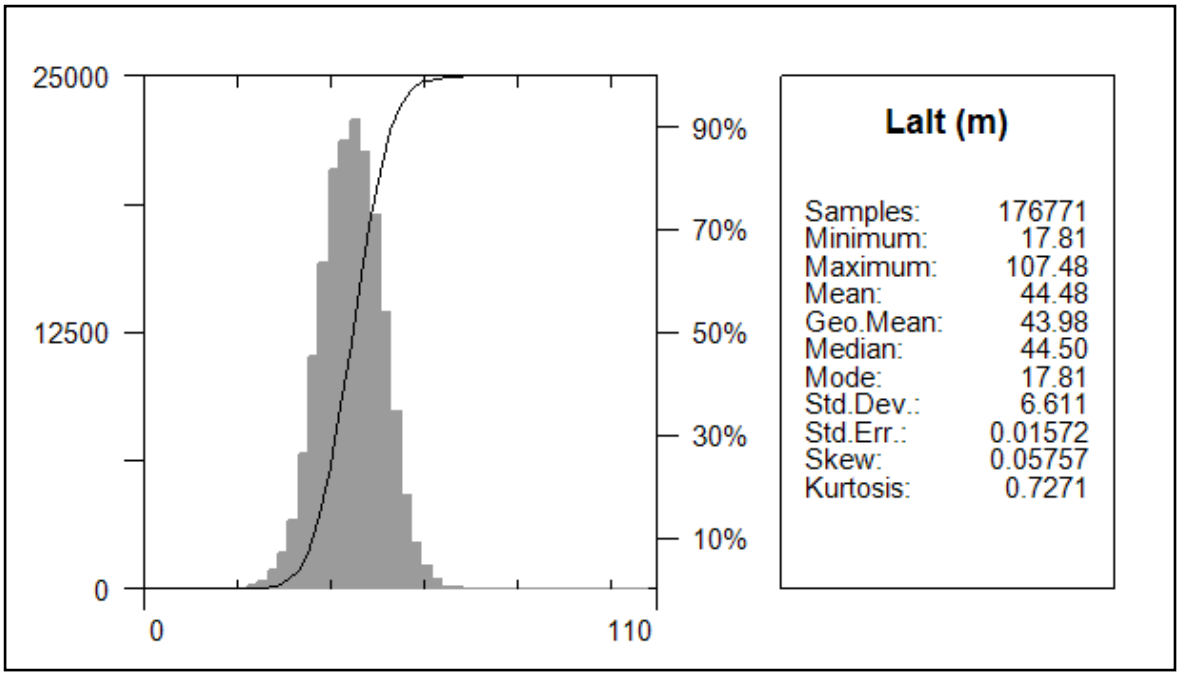


Figure 9: Survey elevation vertically above ground summary.

4.0 Aircraft and Equipment

All geophysical and subsidiary equipment are carefully installed on Precision GeoSurvey's aircraft. For this survey, a magnetometer, spectrometer, a data acquisition system, base stations, laser altimeter, and a pilot guidance unit (PGU) were required to carry out the survey and collect quality, high resolution data. The survey magnetometer was carried in an approved "stinger" configuration to enhance flight safety and improve data quality in this mountainous terrain.

4.1 Aircraft

Precision GeoSurveys flew the Babine survey block using a Eurocopter AS350 helicopter (Figure 10), registration C-GOHK. The survey lines were flown at a nominal line spacing of one hundred and thirty (130) meters and the tie lines were flown at one thousand and three hundred (1300) meters spacing for the magnetometer.

Figure 10: Eurocopter AS350 equipped with mag stinger for magnetic data acquisition.

4.2 Equipment

4.2.1 AGIS

The Airborne Geophysical Information System, AGIS, (Figure 11), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and the generation of navigation information for the pilot and operator display system. Information such as magnetic field, temperature, cosmic radiation, barometric pressure, atmospheric humidity and survey altitude can all be monitored on the AGIS monitor for immediate QC.

Figure 11: AGIS operator display installed in the Eurocopter AS350B2.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sensors are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post real time magnetic compensation and survey quality control procedures.

4.2.2 Magnetometer

The airborne magnetic sensor used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted "stinger" (Figure 12). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS monitor the operator can view the raw magnetic response, the magnetic fourth difference, compensated and uncompensated data, aircraft position, and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth's geomagnetic field.

Figure 12: View of the mag stinger.

4.2.3 Spectrometer

The IRIS, or Integrated Radiometric Information System, is a fully integrated, gamma radiation detection system containing 8.4 litres of NaI (T1) synthetic downward looking crystals (Figure 13) with 256 channel output at 1 Hz sampling rate. The downward-looking crystals are designed to measure gamma rays from beow the aircraft and are equipped with upward-shielding high density RayShield® gamma-attenuating blankets to minimize cosmic and solar gamma noise. Real time data acquisition, navigation and communication tasks are integrated into a single unit that is installed in the rear of the aircraft as indicated below.

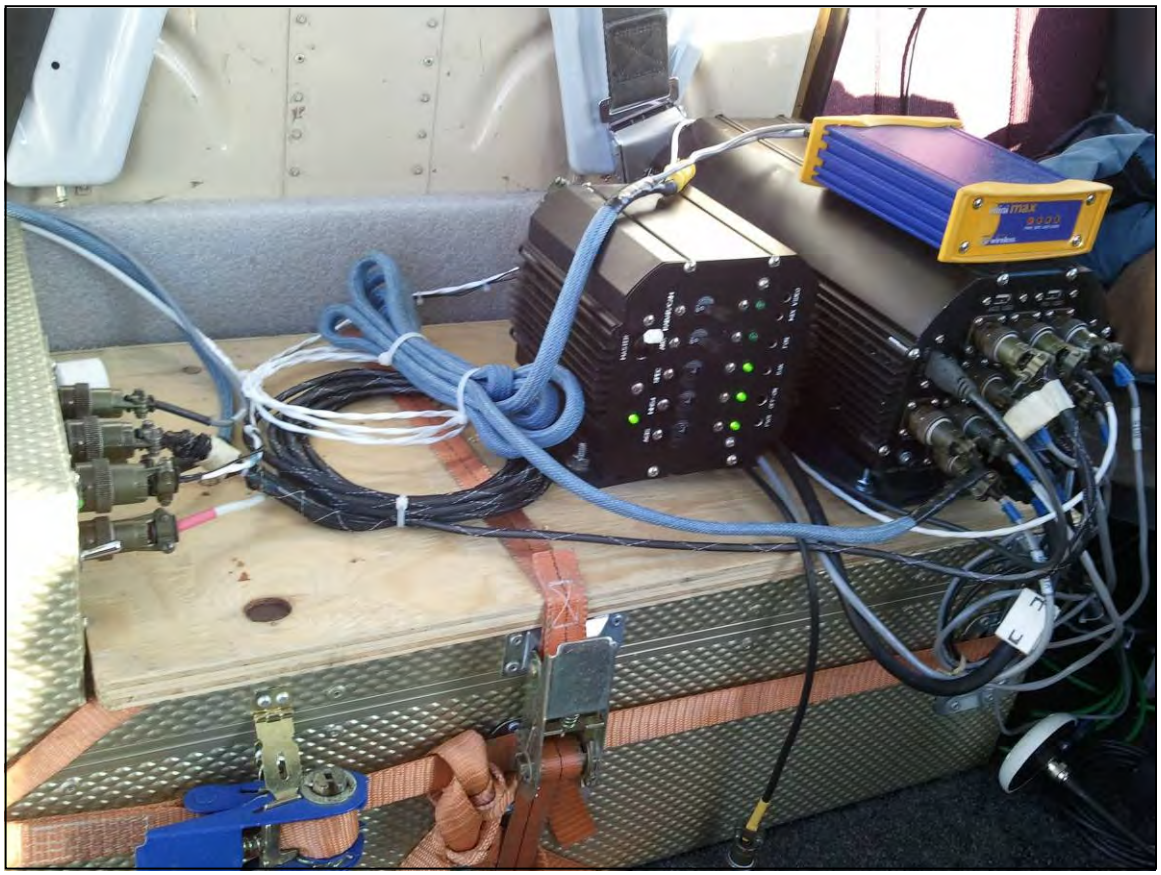


Figure 13: IRIS strapped in the back seat of the Eurocopter AS350.

4.2.4 Base Station

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys operates two magnetometer base stations continuously throughout the airborne data acquisition operation. Precision GeoSurveys operates a GEM GSM-19T magnetometer base station. The base stations were positioned west of the survey block, in an area with low magnetic gradient, to give accurate magnetic field data for the survey area. The base stations were located in an area away from electric transmission power lines and moving ferrous objects, such as aircraft and motor vehicles that could affect the survey data integrity.

The GEM GSM-19T magnetometer with integrated GPS (Figure 14) or time synchronization uses the proton precession technology sampling at a rate of 0.5 Hz. The GSM-19T has an accuracy of +/- 0.2 nT at 1 Hz. Base station data are recorded on the solid-state memory of the base station, and downloaded onto a field laptop computer using a serial cable and GEMLink 5.0 software. Profile plots of the base station readings are generated and updated at the end of each survey day.

Figure 14: GEM GSM-19T proton precession magnetometer.

4.2.5 Laser Altimeter

The pilot is provided with terrain guidance and clearance information from an Opti-Logic RS800 laser altimeter (Figure 15). This is attached at the aft end of the magnetometer boom. The RS800 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 700 m off of natural surfaces with an accuracy of +/- 1 meter on 1 x 1 m^2 diffuse target with 50% (+/- 20%) reflectivity. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and digital outputs, the ground clearance data are transmitted to an RS-232 compatible port and recorded and displayed by the AGIS and PGU at 10 Hz.

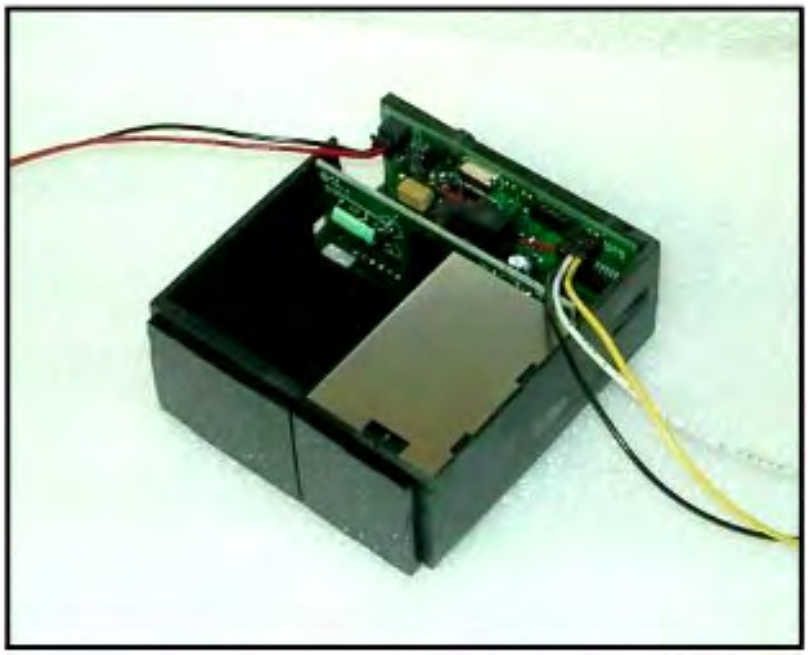


Figure 15: Opti-Logic RS800 laser altimeter.

4.2.6 Pilot Guidance Unit

The PGU (Pilot Guidance Unit) is a graphical display type unit that provides continuous steering and elevation information to the pilot (Figure 16). It is mounted remotely from the data system on top of the instrument panel. The PGU assists the pilot to keep the helicopter on the flight path and at the desired ground clearance.

Figure 16: Pilot Guidance Unit.

The LCD monitor measures 7 inches, with a full VGA 800 x 600 pixel display. The CPU for the PGU is housed in the PC-104 console and uses Windows XP Embedded operating system control, with input from the GPS antenna, laser altimeter, and AGIS.

4.2.7 GPS Navigation System

A Hemisphere GPS Mini Max navigation system integrated with the pilot display (PGU) and AGIS provided navigational information and control. The Hemisphere GPS Mini Max is composed of a receiver with an MGL-3 antenna (Figure 17). It has a position accuracy to within 1 meter and supports SBAS (WAAS, EGNS, and others), Beacon, and Satloc's patented e-Dif.

Figure 17: Hemisphere GPS – Mini Max

A differential correction signal (DGPS –Differential GPS) is applied to the GPS signal received through the MGL-3 antenna and can be applied up to 5 times per second (5 Hz). Therefore, the high- performance Mini Max differential correction provides positional accuracy on the order of 1 meter or less.

5.0 Data Acquisition Equipment Checks and Calibration

Airborne equipment tests were conducted at the start of the survey. There are three tests conducted for the airborne magnetometer: compensation flight, lag test, and the heading error test (clover leaf test).

5.1 Magnetometer Checks

5.1.1 Compensation Flight Test

During aeromagnetic surveying a small but significant amount of noise is introduced to the magnetic data by the aircraft itself, as the magnetometer is within the helicopter's magnetic field. Movement of the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey (060°/240° and 150°/330° in the case of this survey) at an altitude (typically > 1,500 m AGL) where there is no ground effect in the magnetic data. In each heading, three specified roll, pitch, and yaw maneuvers are performed by the pilot at constant elevation so that any magnetic variation recorded by the airborne magnetometer can be attributed to the aircraft movement. The variations recorded by these maneuvers provide the data that are required to calculate the necessary parameters for compensating the magnetic data and removing the aircraft noise.

5.1.2 Lag Test

A lag test was performed to determine the relationship between the time the digital reading was recorded by the instrument magnetic sensor and the time for the position fix that the fiducial of the reading was obtained by the GPS system.

The test was flown in the four orthogonal headings over an identifiable magnetic anomaly (ie. Truck, Trailer, etc.) at survey speed and height. A lag of 10 fiducials (1.0 seconds) was determined from the lag test.

5.1.3 Heading Error Test

To determine the magnetic heading effect a cloverleaf pattern flight test was conducted. The cloverleaf test was flown in the same orthogonal headings as the survey and tie lines at >1000 m AGL in area with low magnetic gradient. For all four directions the survey helicopter must pass over the same mid-point all four times at the same elevation.

Line Number	Fiducials	Heading	Mag (nT)	Average (nT)
L60	665.3	NE - 060°	55938.1798	
L150	878.2	SE - 150°	55947.3718	
L240	576.5	SW - 240°	55914.8848	
L330	817.6	NW - 330°	55907.0258	
				55926.86555

Table 5: Heading error test data format flown on April 01, 2014.

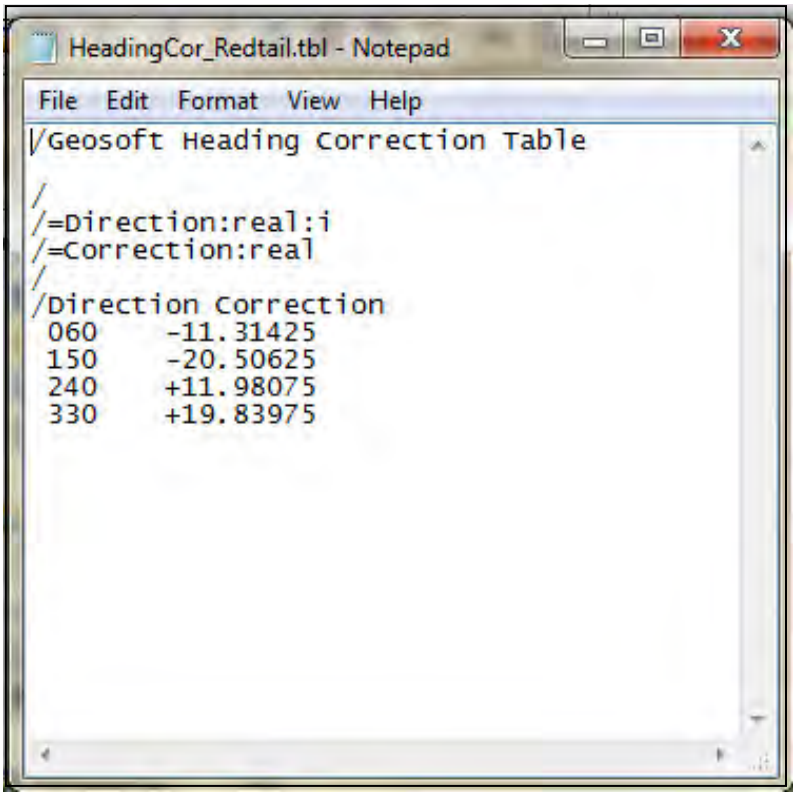


Figure 18: Heading data results in .tbl format in Geosoft table.

6.0 Data Processing

After all the data were collected from a survey flight several procedures were undertaken to ensure that the data met a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj 8.0.1 geophysical processing software along with proprietary processing algorithms.

6.1 Magnetic Processing

The data obtained from the compensation flight test was applied to the raw magnetic data before any further processing and editing. The computer program called PEIComp was used to create a model from the compensation flight test for each survey to remove the noise induced by aircraft movement; this model was applied to each survey flight so the data can be further processed.

Over water or fog, the laser altimeter is unable to record a valid reading and a zero is recorded; therefore all data points recorded at zero were replaced with a nominal height of 40 m. Filtering was then applied to the laser altimeter data to remove vegetation clutter and to show the actual ground clearance. To remove vegetation clutter a Rolling Statistic filter was applied to the laser altimeter data and a low pass filter was used to smooth out the laser altimeter profile to eliminate isolated noise. As a result, filtering the data will yield a more uniform surface in close conformance with the actual terrain. A digital

terrain model channel was calculated by subtracting the filtered laser altimeter data from the filtered GPS altimeter data defined by the WGS 84 ellipsoidal height.

The processing of the magnetic data first involved the correction for diurnal variations. Out of the two base stations that were set up, GEM 4 was chosen and used for diurnal corrections. The base station data were edited, plotted and merged into a Geosoft (.gdb) database on a daily basis. The airborne magnetic data were corrected for diurnal variations by subtracting the observed magnetic base station deviations. Following the diurnal correction, a lag correction was applied. A lag correction of 1.0 seconds was applied to the total magnetic field data to compensate for the combination of lag in the recording system and the magnetometer sensor flying 5.70 m ahead of the GPS antenna. Lastly, a heading correction was applied to the data. As a result, after all corrections have been applied the initial Total Magnetic Intensity (TMI) data was generated.

The initial Total Magnetic Intensity (TMI) data from the survey and tie lines were used to level the entire survey dataset. Two forms of leveling were applied to the corrected data: conventional leveling and micro-leveling. There were two components to conventional leveling; the first involved statistical leveling of magnetic data to correct miss ties (intersection errors) followed by specific patterns or trends. For the second component, tie lines were brought to a common regional base value using the mean value of the cross-level error. To obtain the best possible leveled data, individual corrections were edited at selected intersections. Lastly, micro-leveling was applied to the corrected conventional leveled data. This will remove any residual noise related to flight line direction, and any low amplitude component of flight line noise, that still remained in the data after tie line leveling.

6.1.1 IGRF Removal and Calculation of the First Vertical Derivative

The International Geomagnetic Reference Field (IGRF) model is the empirical representation of the Earth's magnetic field (main core field without external sources) collected and disseminated from satellites and from observatories around the world. The IGRF is generally revised and updated every five years by a group of modelers associated with the International Association of Geomagnetism and Aeronomy (IAGA). In this case, the IGRF values were calculated from model year 2010 and the actual survey dates were obtained from the "Date" channel.

With the removal of the IGRF from the observed Total Magnetic Intensity (TMI) a Residual Magnetic Intensity (RMI) was generated. This created a more valid model of individual near surface anomalies and the data will not be referenced to a time which can be easily incorporated into databases of magnetic data acquired in the past or in the future.

The first vertical derivative was computed from the Total Magnetic Intensity (TMI) data. Long wavelengths and vertical rate of change were suppressed in the magnetic field. Therefore, the edges of magnetic anomalies were highlighted and spatial resolution was increased.

7.0 Deliverables

All digital data are presented on a compact disc (CD) and USB stick with the logistic report. The survey data are presented as digital databases, maps, and a report.

7.1 Digital Data

The file format will be provided in two (2) formats, the first will be a .GDB file for use in Geosoft Oasis Montaj, the second format will be a .XYZ file, this is text file. A complete file provided in each format will contain magnetic data. Full description of the digital data and contents are included in the report (Appendix B).

The digital data are represented into grids. The following grids are prepared for the Babine survey block at 32 m cell size listed below:

- Digital terrain model (DTM)
- Total magnetic intensity (TMI)
- Residual magnetic intensity (RMI) – removal of IGRF from TMI
- Calculated vertical gradient (CVG) - first vertical derivative of TMI
- Raw Potassium (rawK) – uncorrected counts per second
- Raw Thorium (rawTh) – uncorrected counts per second
- Raw Uranium (rawUr) – uncorrected counts per second
- Raw Total Count (rawTC) – uncorrected counts per second

7.2 KMZ Grids

The digital data represented into grids were exported into kmz files which can be displayed using Google Earth. The grids can be draped onto topography and rendered to give a 3D view.

7.3 Maps

Digital maps were created for the Babine survey block. The following map products were prepared:

Survey Overview Maps (colour images with elevation contour lines):

- Flight lines
- Digital terrain model

Magnetic Maps (colour images with elevation contour lines):

- Total magnetic intensity
- Total magnetic intensity with plotted flight lines

- Residual magnetic intensity
- Calculated vertical gradient of the total magnetic intensity

Uncorrected Radiometric Maps (colour images with elevation contour lines)

- Raw Potassium
- Raw Thorium
- Raw Uranium
- Raw Total Count

All maps were prepared in World (WGS 84) and UTM zone 9N.

7.4 Report

The report provides information about the acquisition procedures and magnetic processing, and presentation of the Babine survey block data. A pdf copy of the report is included along with the digital data and maps that are provided on the CD and USB stick.

Appendix A

Equipment Specifications

- GEM GSM-19T Proton Precession Magnetometer (Base Station)
- Hemisphere GPS – Mini Max
- Opti-Logic RS800 Laser Altimeter
- Scintrex CS-3 Survey Magnetometer
- Bartington Mag-03 three-axis fluxgate magnetic field sensor
- Pico Envirotec GRS-10 Gamma Spectrometer
- Pico Envirotec AGIS data recorder system (for Navigation, Gamma spectrometer, VLF-EM and Magnetometer Data Acquisition)

GEM GSM-19T Proton Precession Magnetometer (Base Station)

Configuration Options	15
Cycle Time	999 to 0.5 sec
Environmental	-40 to +60 ° Celsius
Gradient Tolerance	7,000 nT/m
Magnetic Readings	299,593
Operating Range	10, 000 to 120,000 nT
Power	12 V @ 0.62 A
Sensitivity	0.1 nT @ 1 sec
Weight (Console/ Sensor)	3.2 Kg
Integrated GPS	Yes

Hemisphere GPS – Mini Max

GPS Sensor Specifications	Receiver Type	LI, C/A code, with carrier phase smoothing
	Channels	I2-channel, parallel tracking (10-channel when tracking SBAS)
	WAAS Tracking	2-channel, parallel tracking
	Update Rate	1 Hz default, 5 Hz max
	Horizontal Accuracy	< 1 m 95% confidence (DGPS) < 5 m 95% confidence (autonomous, no SA)
	Cold Start	1 min typical
	Antenna Input Impedance	50 Ω
Beacon Sensor Specifications	Channels	2-channel, parallel tracking
	Frequency Range	283.5 to 325 kHz
	Channel Spacing	500 Hz
	MSK Bit Rates	50, 100, and 200 bps
	Operating Modes	Manual, automatic, semi-automatic
	Cold Start Time	< 1 minute typical
	Reacquisition Time	< 2 seconds typical
	Demodulation	Minimum shift keying (MSK)
	Sensitivity	2.5µV for 6dB SNR @ 200 bps
	Dynamic Range	100dB
	Frequency Offset	±8 Hz (~ 27 ppm)
	Adjacent Channel Rejection	61 dB ± 1dB @ fo ± 400 Hz
Communications	Serial ports	2 full duplex
	Interface Level	RS-232C
	Baud Rates	4800, 9600, 19200
	Correction Input/ Output Protocol	RTCM SC-104
	Raw Measurement Data	Proprietary binary (RINEX utility available)
	Timing Output	1 PPS (HCMOS, active high, rising edge sync, 10kΩ, 10pF load)
Environmental	Operating Temperature	-32^{0}C to +74°C
	Storage Temperature	-40^{0}C to +85°C
	Humidity	95% non-condensing
	EMC	FCC Part I 5, Subpart B, Class B CISPR 22
Power	Input Voltage Range	9 to 32 VDC
	Reverse Polarity Protection	Yes
	Power Consumption	3W
	Current Consumption	<250 mA @ 12 VDC
	Antenna Short Circuit Protection	Yes

Opti-Logic RS800 Laser Altimeter

Accuracy	+/- 1 yard
Com. Protocol	RS232-8,N,1
Baud Rate	19200
Raw Data Rate	~200 Hz
Calibrated Data Rate	~10 Hz
Laser	Class I (eye-safe) 905nm +/- 10nm
Power	7-to-9 Vdc
Typical Range	400 yards
Laser Wavelength	905 nm +/- 10 nm
Laser Divergence	Vertical axis -- 3.5 mrad half- angle divergence Horizontal axis -- 1 mrad half- angle divergence (Approximate beam footprint at 100 m is 5 cm x 5 cm)
Data Rate	~200 Hz raw counts for un-calibrated operation ~10 Hz for calibrated operation (averaging algorithm seeks 8 good readings)
Dimensions	32 x 78 x 84 mm (lens face cross section is 32 x 78 mm)
Casing	RS100/RS400/RS800 units are supplied as OEM modules consisting of an open chassis containing optics and circuit boards. Custom housings can be designed and built on request.

Scintrex CS-3 Survey Magnetometer

Operating Principal	Self-oscillation split-beam Cesium Vapor (non-radioactive Cs-133)
Operating Rage	15,000 to 105,000 nT
Gradient Tolerance	40,000 nT/metre
Operating Zones	10° to 85° and 95° to 170°
Hemisphere Switching	a) Automatic b) Electronic control actuated by the control voltage levels (TTL/CMOS) c) Manual
Sensitivity	0.0006 nT √Hz rms.
Noise Envelope	Typically 0.002 nT P-P, 0.1 to 1 Hz bandwidth
Heading Error	+/- 0.25 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) continuous signal at the Larmor frequency which is proportional to the magnetic field (proportionality constant 3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5”) Length: 160 mm (6.3”) Weight: 1.15 kg (2.6 lb)
Sensor Electronics	Diameter: 63 mm (2.5”) Length: 350 mm (13.8”) Weight: 1.5 kg (3.3 lb)
Cable, Sensor to Sensor Electronics	3m (9’ 8”), lengths up to 5m (16’ 4”) available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 Volts DC
Supply Current	Approx. 1.5A at start up, decreasing to 0.5A at 20°C
Power Up Time	Less than 15 minutes at -30°C

Bartington Mag-03 three-axis fluxgate magnetic field sensor

Number of Axes	3
Bandwidth	0 to 3kHz at 50µT peak
Internal Noise: **Basic version** **Standard version** **Low Noise version**	 >10 to 20pTrms/√Hz at 1Hz 6 to ≤10pTrms/√Hz at 1Hz <6pTrms/√Hz at 1Hz
Scaling error (DC)	<±0.5%
Orthogonality error	<0.1°
Alignment error (Z axis to reference face)	<0.1°
Linearity error	<0.0015%
Frequency response	0 to 1kHz maximally flat, ±5% maximum at 1kHz
Input voltage	±12V to ±17V
Supply current	+30mA, -10mA (+1.4mA per 100µT for each axis)
Power supply rejection ratio	5µV/V (-106dB)
Analog output	±10V (±12V supply) swings to within 0.5V of supply voltage
Output impedance	10 Ω
Operating temperature range	-40°C to +70°C
Environmental protection	IP51
Dimensions (W x H x L)	32 x 32 x 152mm
Weight	160g
Enclosure material	Reinforced epoxy
Connector	ITT Cannon DEM-9P-NMB
Mating connector	ITT Cannon DEM-9S-NMB
Mounting	2 x M5 fixing holes

Pico Envirotec GRS-10 Gamma Spectrometer

Crystal volume	**8.4 litres of NaI (T1) downward crystals**
Resolution	**256/512 channels**
Tuning	**Automatic using peak determination algorithm**
Detector	**Digital Peak**
Calibration	**Fully automated detector**
Real Time	**Linearization and gain stabilization**
Communication	**RS232**
Detectors	**Expandable to 10 detectors and digital peak**
Count Rate	**Up to 60,000 cps per detector**
Count Capacity per channel	**65545**
Energy detection range:	**36 KeV to 3 MeV**
Cosmic channel	**Above 3 MeV**
Upward Shielding	**RayShield® non-radioactive shielding on downward looking crystals**
Spectra	**Collected spectra of 256/512 channels, internal spectrum resolution 1024**
Software	**Calibration: High voltage adjustment, linearity correction coefficients calculation, and communication test support Real Time Data Collection: Automatic Gain real time control on natural isotopes, and PC based test and calibration software suite**
Sensor	**Each box containing two (2) gamma detection NaI(Tl) crystals – each 4.2 liters. (256 cu in.) (approx. 100 x 100 x 650 mm) Total volume of approx 8.4 litres or 512 cu in with detector electronics**
Spectra Stabilization	**Real time automatic corrections on radio nuclei: Th, Ur, K. No implanted sources.**

Pico Envirotec AGIS data recorder system
(for Navigation, Gamma spectrometer, VLF-EM and Magnetometer Data Acquisition)

Functions	Airborne Geophysical Information System (AGIS) with integrated Global Positioning System Receiver (GPS) and all necessary navigation guidance software. Inputs for geophysical sensors - portable gamma ray spectrometer GRS-10, MMS4 Magnetometer, Totem 2A EM, A/D converter, temperature probe, humidity probe, barometric pressure probe, and laser altimeter. Output for the 2 line Pilot Indicator
Display	Touch screen with display of 800 x 600 pixels; customized keypad and operator keyboard. Multi-screen options for real-time viewing of all data inputs, fiducial points, flight line tracking, and GPS channels by operator.
GPS Navigation	Garmin 12-channel, WAAS-enabled
Data Sampling	Sensor dependent
Data Synchronization	Synchronized to GPS position
Data File	PEI Binary data format
Storage	80 GB
Supplied Software	PEIView: Allows fast data Quality Control (QC) Data Format: Geosoft GBN and ASCII output PEIConv: For survey preparation and survey plot after data acquisition
Software	Calibration: High voltage adjustment, linearity correction coefficients calculation, and communication test support Real Time Data Collection: Automatic Gain real time control on natural isotopes and PC based test and calibration software suite
Power Requirements	24 to 32 VDC
Temperature	Operating:-10 to +55 deg C; storage:-20 to +70 deg C

Appendix B

Digital File Descriptions

- Magnetic database description
- Radiometric database description
- Grids
- Maps

Magnetic Database:

Abbreviations used in the GDB files listed below:

Channel	Units	Description
X_WGS84	m	UTM Easting – WGS 84 Zone 9 North
Y_WGS84	m	UTM Northing – WGS 84 Zone 9 North
Lon_deg	deg	Longitude
Lat_deg	deg	Latitude
Date	yyyy/mm/dd	Dates of the survey flight(s)
FLT		Flight Line numbers
STL		Number of satellite(s)
Line		Line numbers
GPSfix		GPS fix
GPStime	Hours:min:secs	GPS time (UTC)
Geos_m	m	Geoidal separation
Galt	m	GPS height – WGS 84 Zone 9 North
Lalt	m	Laser Altimeter readings
DTM	m	Digital Terrain Model
basemag	nT	Base station diurnal data
IGRF		International Geomagnetic Reference Field 2010
Declin	Decimal deg	Calculated declination of magnetic field
Inclin	Decimal deg	Calculated inclination of magnetic field
TMI	nT	Total Magnetic Intensity
RMI	nT	Residual Magnetic Intensity

Radiometric Database:

Abbreviations used in the GDB files listed below:

Channel	Units	Description
X_WGS84	m	UTM Easting – WGS 84 Zone 9 North
Y_WGS84	m	UTM Northing – WGS 84 Zone 9 North
Lon_deg	deg	Longitude
Lat_deg	deg	Latitude
Date	yyyy/mm/dd	Dates of the survey flight(s)
FLT		Flight Line numbers
STL		Number of satellite(s)
Line		Line numbers
GPSfix		GPS fix
GPStime	Hours:min:secs	GPS time (UTC)
Geos_m	m	Geoidal separation
Galt	m	GPS height – WGS 84 Zone 9 North
Lalt	m	Laser Altimeter readings
DTM	m	Digital Terrain Model
BAROmg_kP	kP	Barometric Pressure
BARsp_kP	kP	Barometric Pressure
TMPsp_deg	deg	Temperature
rawCos_cps	cps	Uncorrected Raw Cosmic
rawK_cps	cps	Uncorrected Raw Potassium
rawTh_cps	cps	Uncorrected Raw Thorium
rawUr_cps	cps	Uncorrected Raw Uranium
rawTC_cps	cps	Uncorrected Raw Total Count

Grids: Babine survey block, WGS 84 Datum, Zone 9N

FILE NAME	DESCRIPTION
Babine_DTM_32m.grd	Babine survey block digital terrain model gridded at 32 m cell size
Babine_TMI_32m.grd	Babine survey block total magnetic intensity gridded at 32 m cell size
Babine_RMI_32m.grd	Babine survey block residual magnetic intensity gridded at 32 m cell size
Babine_CVG_32m.grd	Babine survey block calculated vertical gradient gridded at 32 m cell size
Babine_rawK_cps_32m	Babine survey block uncorrected raw potassium gridded at 32 m cell size
Babine_rawTh_cps_32m	Babine survey block uncorrected raw thorium gridded at 32 m cell size
Babine_rawUr_cps_32m	Babine survey block uncorrected raw uranium gridded at 32 m cell size
Babine_rawTC_cps_32m	Babine survey block uncorrected raw total count gridded at 32 m cell size

Maps: Babine survey block, WGS 84 Datum, Zone 9N (jpegs and pdfs)

FILE NAME	DESCRIPTION
Babine_FlightLines	Babine survey block plotted actual flight lines
Babine_DTM_32m	Babine survey block digital terrain model
Babine_TMI_32m	Babine survey block total magnetic intensity
Babine_TMI_with_FlightLines_32m	Babine survey block total magnetic intensity with plotted actual flight lines
Babine_RMI_32m	Babine survey block residual magnetic intensity
Babine_CVG_32m	Babine survey block calculated vertical gradient
Babine_rawK_cps_32m	Babine survey block raw potassium
Babine_rawTh_cps_32m	Babine survey block raw thorium
Babine_rawUr_cps_32m	Babine survey block raw uranium
Babine_rawTC_cps_32m	Babine survey block raw total count

Appendix C

Babine survey block Maps

Survey Overview Maps (colour image with elevation contour lines):

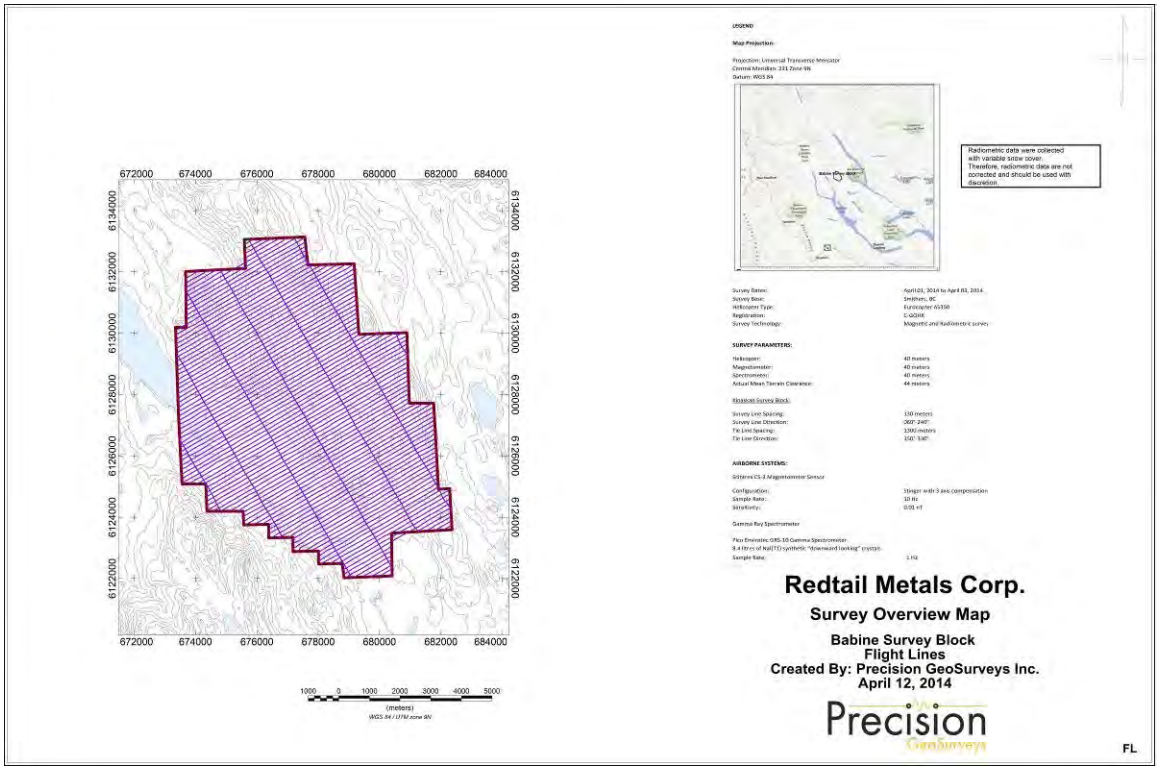
- Flight Lines (FL)
- Digital Terrain Model (DTM)

Magnetic Maps (colour image with elevation contour lines):

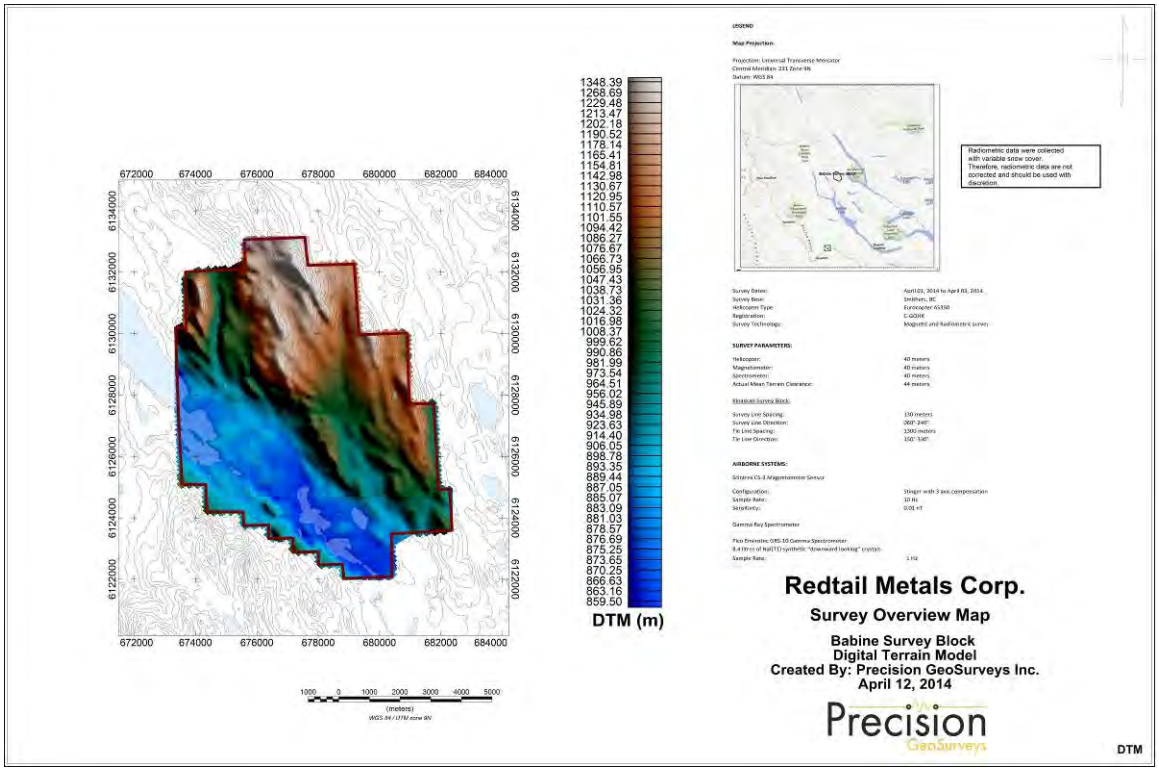
- Total Magnetic Intensity (TMI)
- Total Magnetic Intensity (TMI_wFL) with flight lines
- Residual Magnetic Intensity (RMI)
- Calculated Vertical Gradient (CVG)

Uncorrected Radiometric Maps (colour images with elevation contour lines):

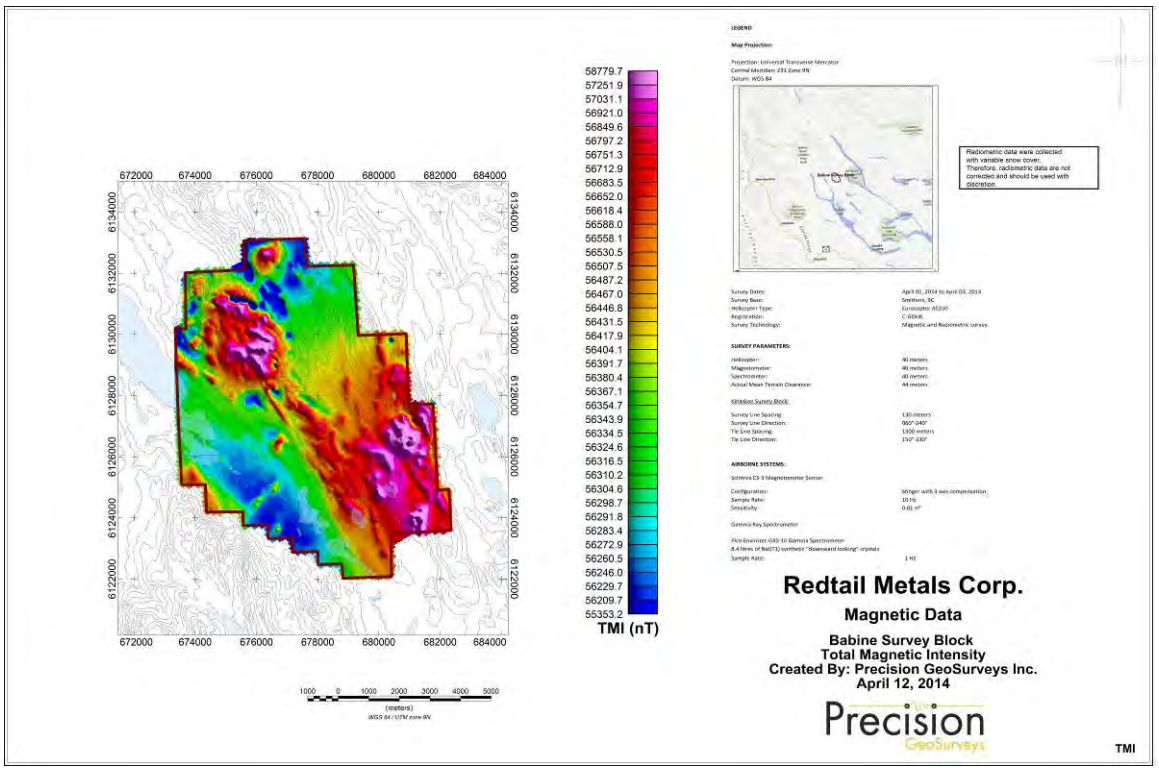
- Raw Potassium (rawK)
- Raw Thorium (rawTh)
- Raw Uranium (rawUr)
- Raw Total Count (rawTC)



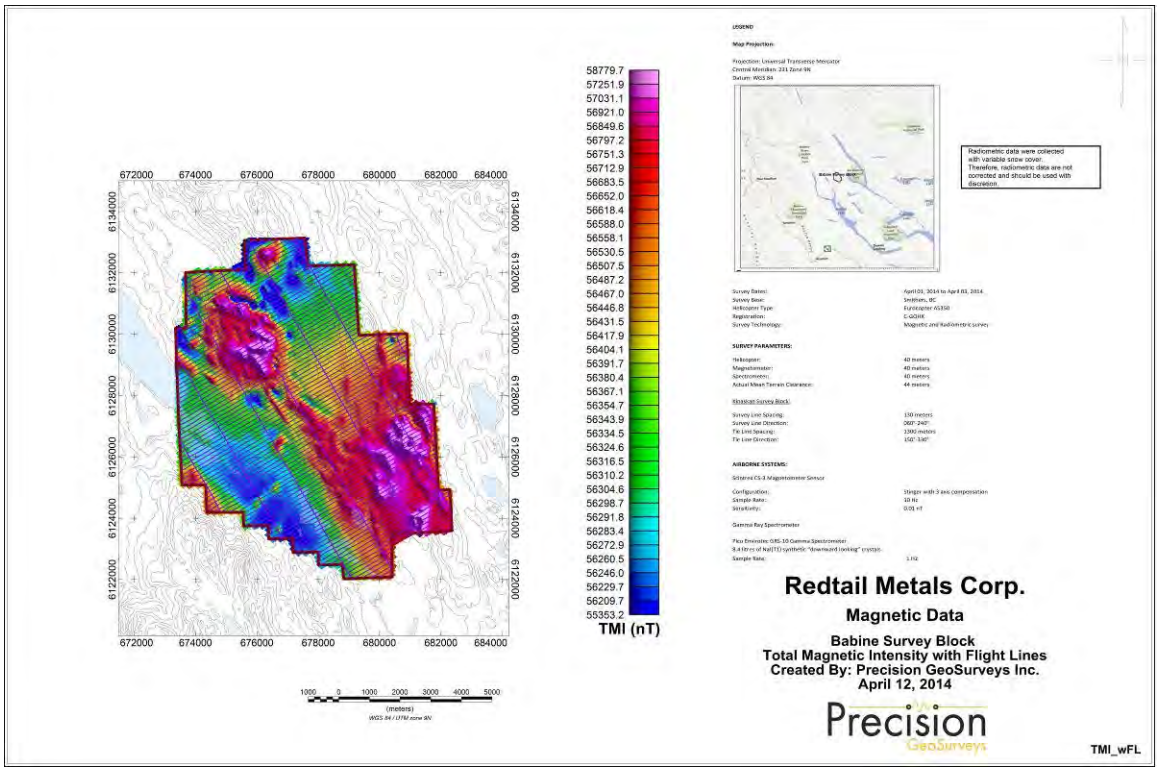
Map 1: Babine survey block actual flight lines.



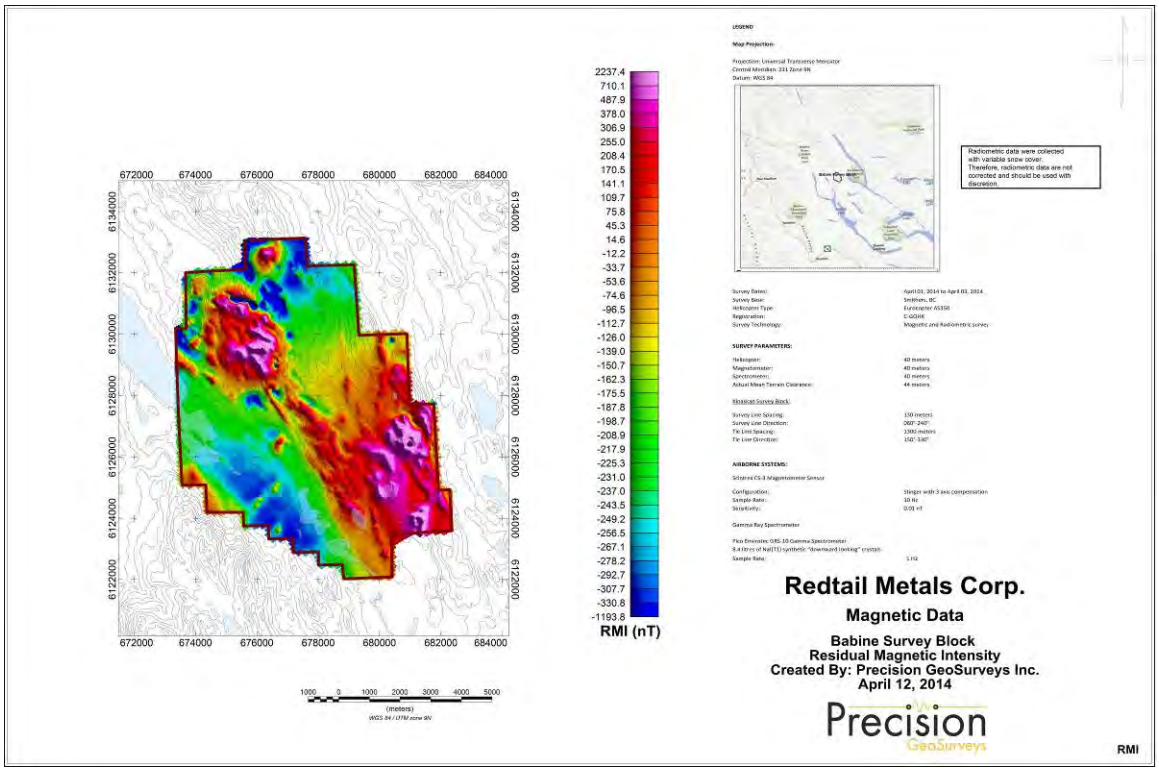
Map 2: Babine survey block digital terrain model.



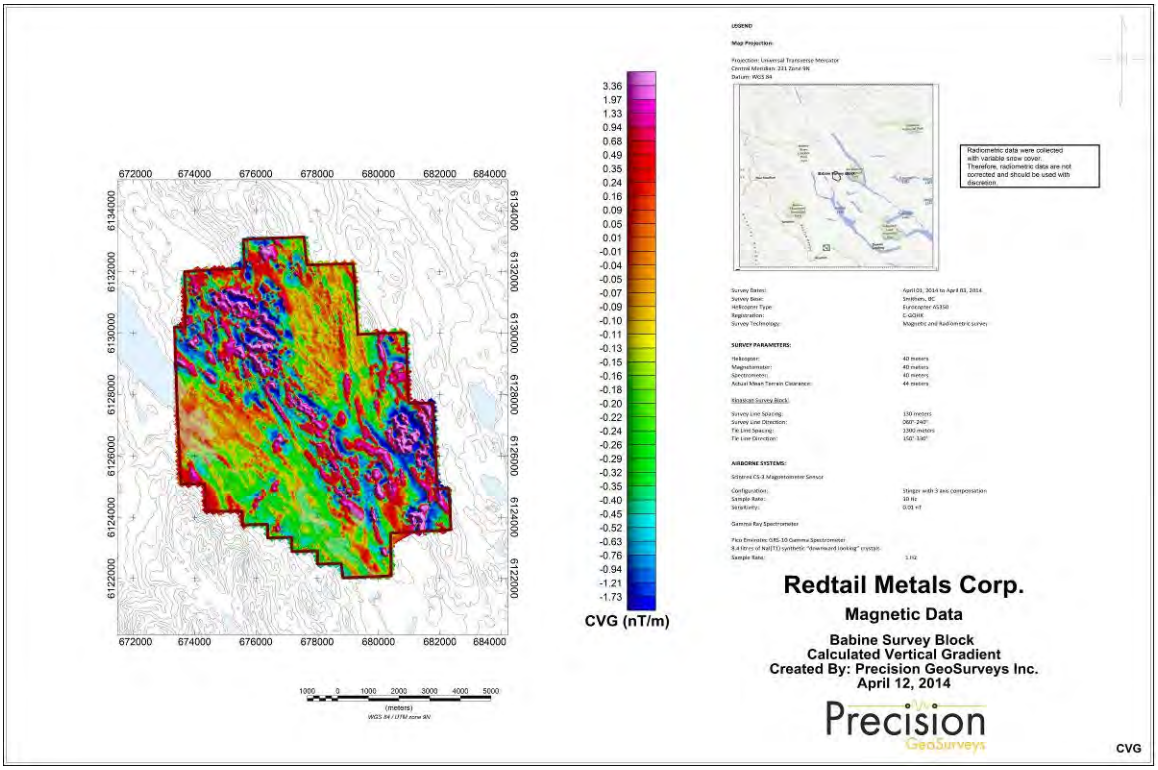
Map 3: Babine survey block total magnetic intensity.



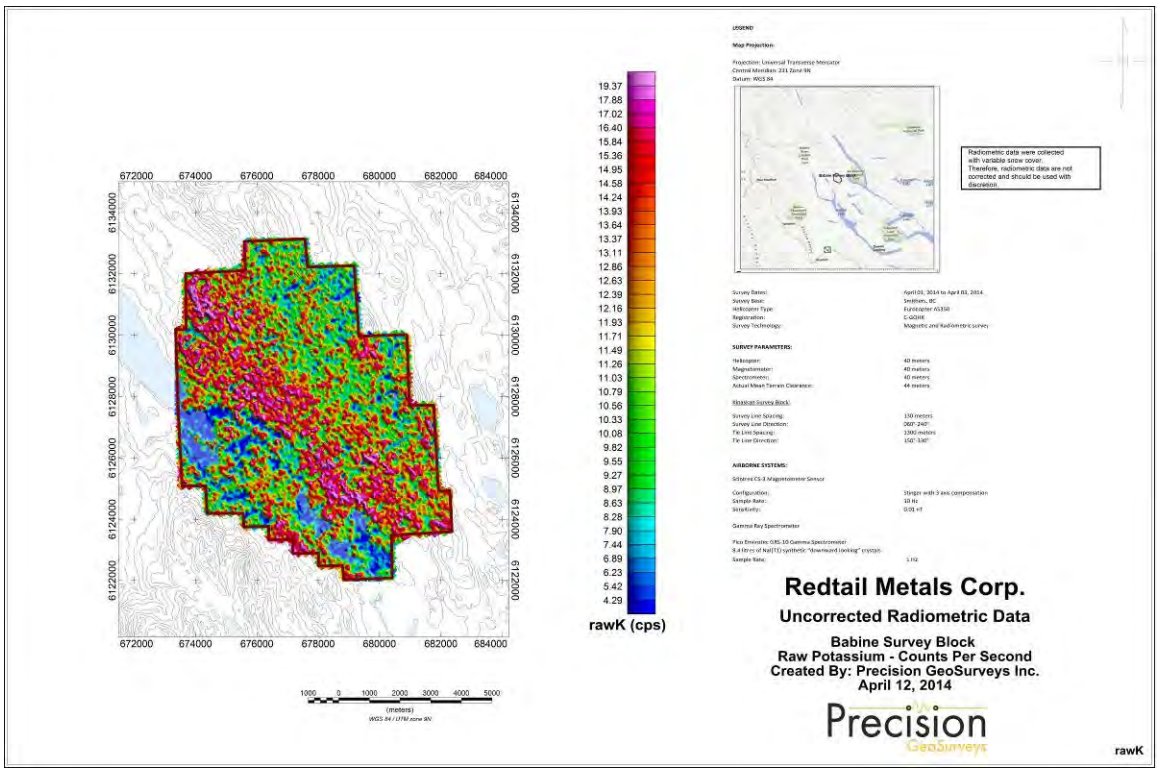
Map 4: Babine survey block total magnetic intensity with plotted actual flight lines.



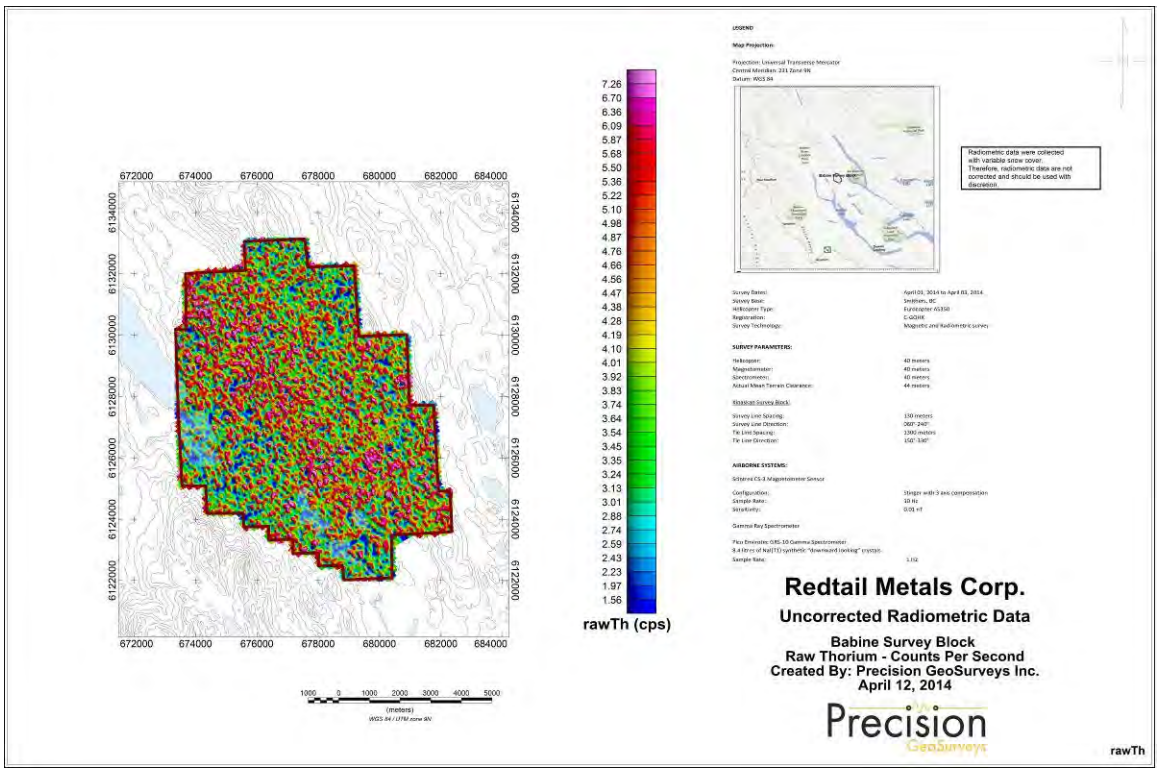
Map 5: Babine survey block residual magnetic intensity.



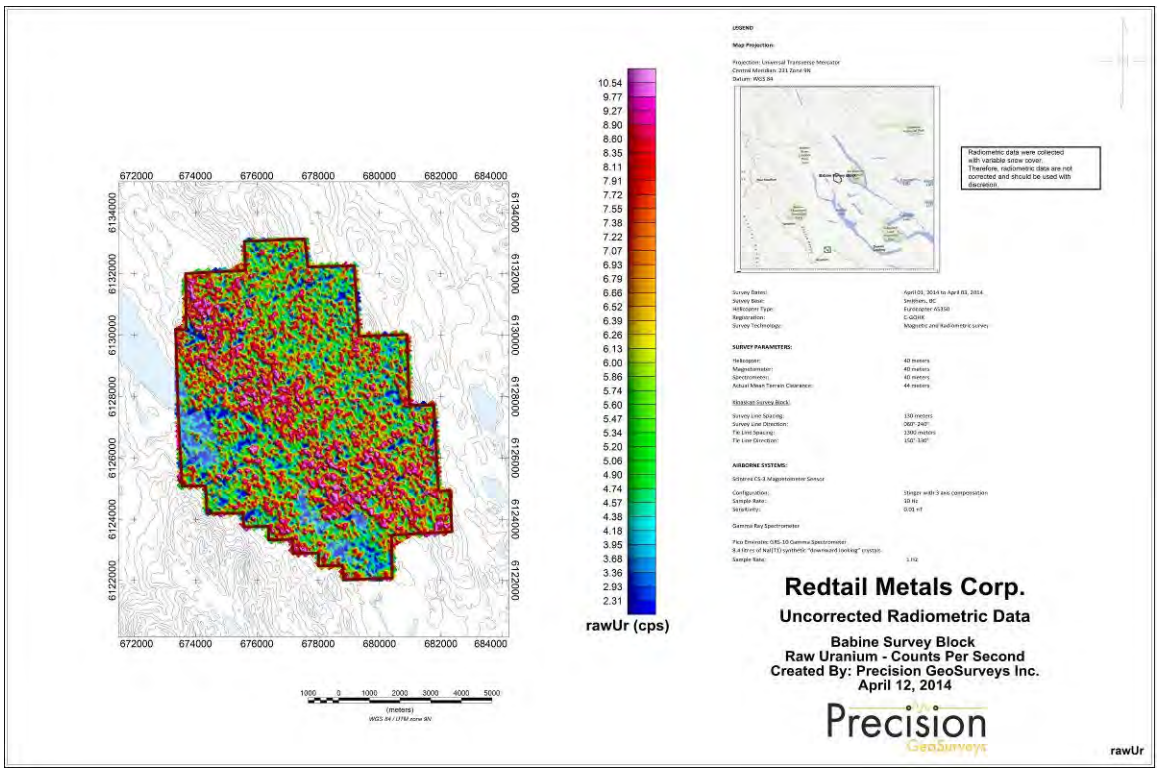
Map 6: Babine survey block calculated vertical gradient of the total magnetic intensity.



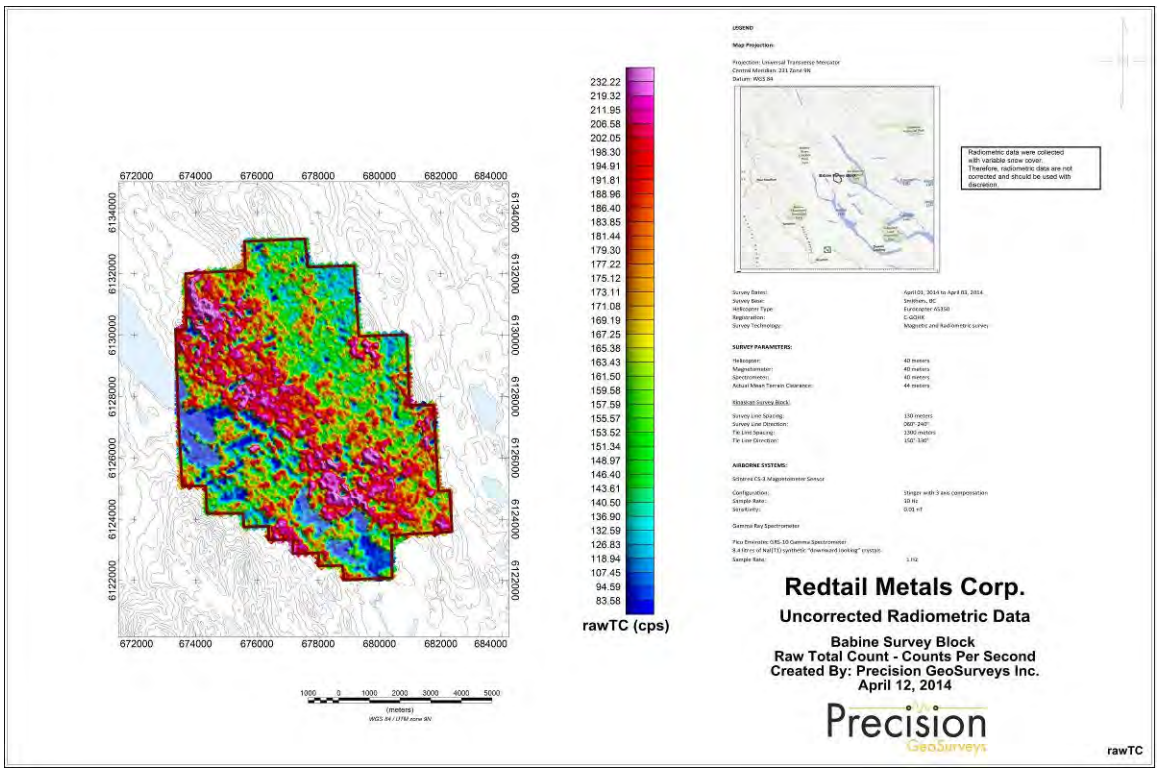
Map 7: Babine survey block uncorrected raw potassium.



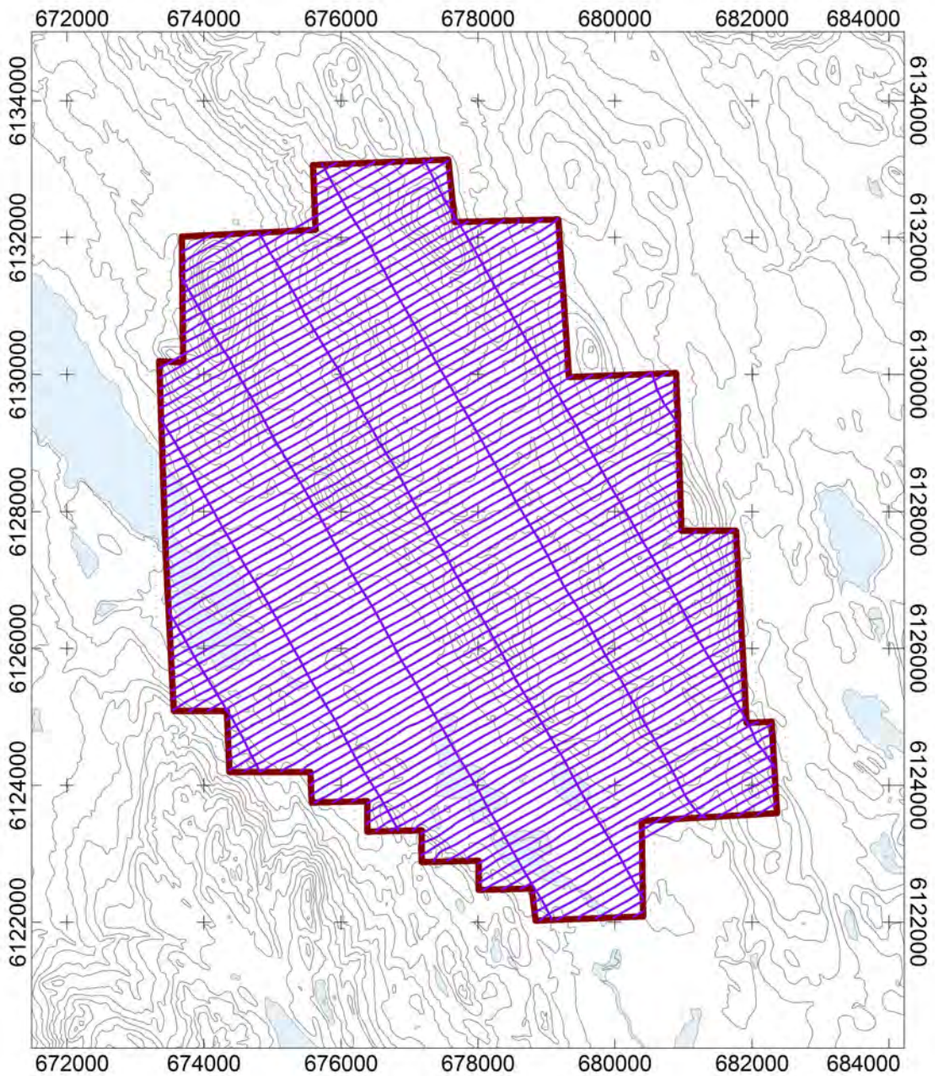
Map 8: Babine survey block uncorrected raw thorium.



Map 9: Babine survey block uncorrected raw uranium.



Map 10: Babine survey block uncorrected raw total count.



1000 0 1000 2000 3000 4000 5000

(meters)

WGS 84 / UTM zone 9N

LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

Radiometric data were collected with variable snow cover. Therefore, radiometric data are not corrected and should be used with discretion.

Survey Dates:	April 01, 2014 to April 03, 2014
Survey Base:	Smithers, BC
Helicopter Type:	Eurocopter AS350
Registration:	C-GOHK
Survey Technology:	Magnetic and Radiometric survey.

SURVEY PARAMETERS:

Helicopter:	40 meters
Magnetometer:	40 meters
Spectrometer:	40 meters
Actual Mean Terrain Clearance:	44 meters

Kinaskan Survey Block:

Survey Line Spacing:	130 meters
Survey Line Direction:	060°-240°
Tie Line Spacing:	1300 meters
Tie Line Direction:	150°-330°

AIRBORNE SYSTEMS:

Scintrex CS-3 Magnetometer Sensor

Configuration:	Stinger with 3 axis compensation
Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals
Sample Rate: 1 Hz

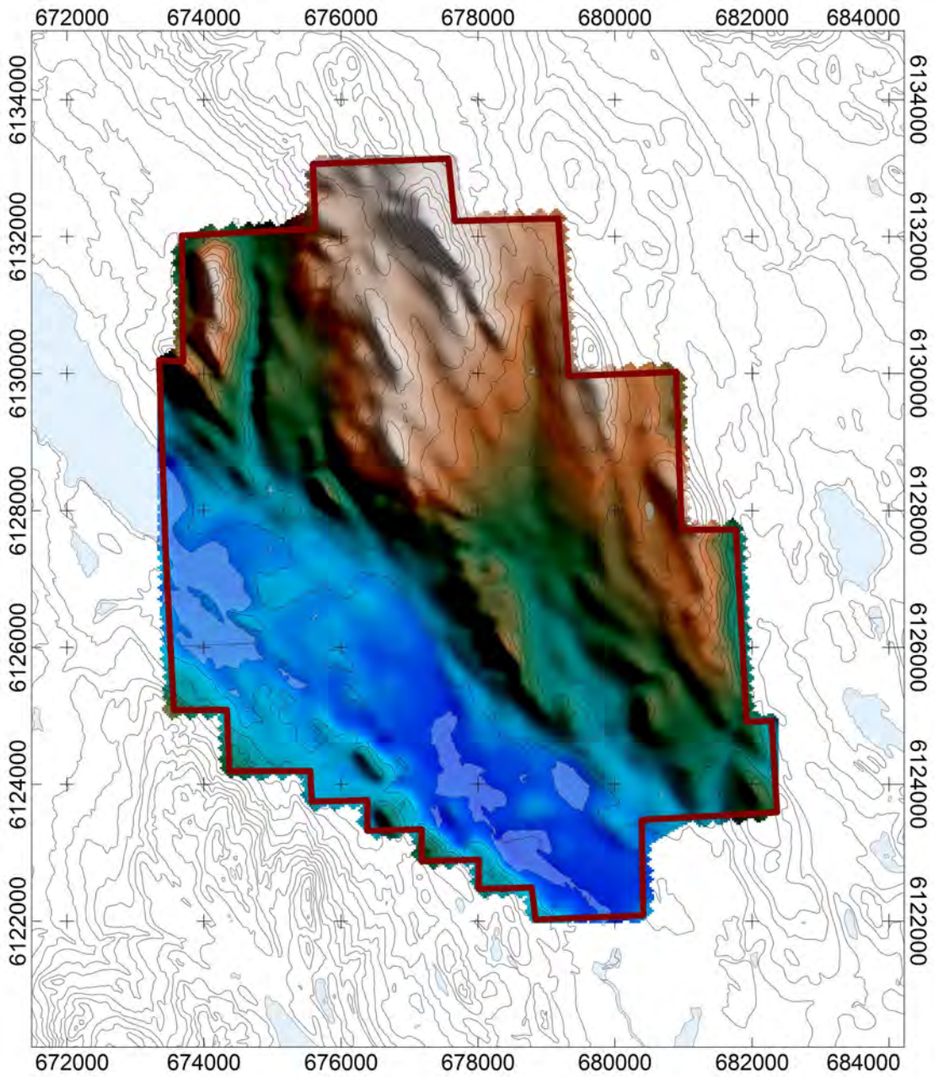
Redtail Metals Corp.

Survey Overview Map

Babine Survey Block
Flight Lines
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

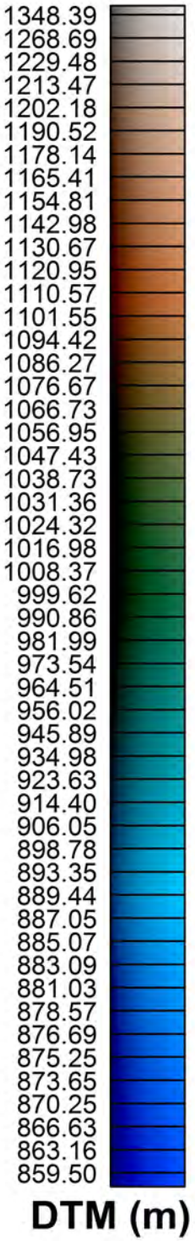
FL



1000 0 1000 2000 3000 4000 5000

(meters)

WGS 84 / UTM zone 9N



DTM (m)

LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

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Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals
Sample Rate: 1 Hz

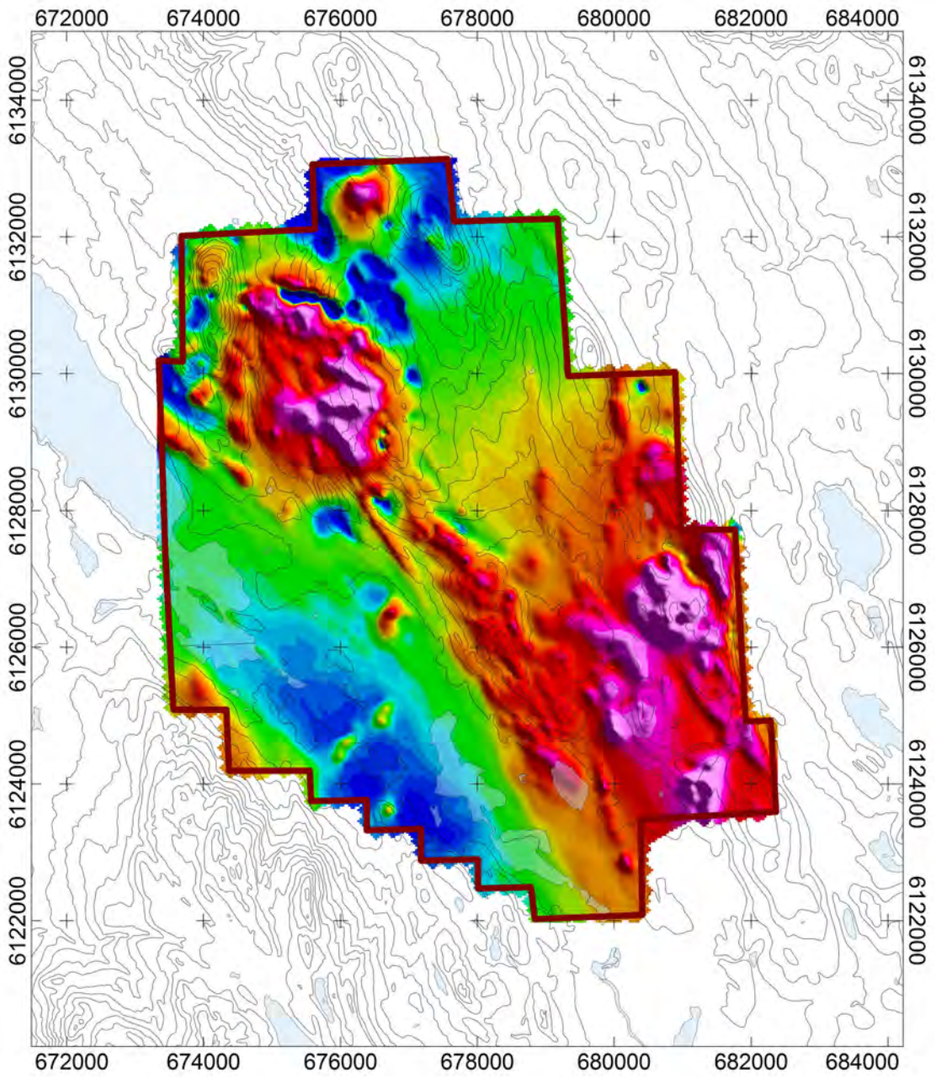
Redtail Metals Corp.

Survey Overview Map

Babine Survey Block
Digital Terrain Model
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

DTM



1000 0 1000 2000 3000 4000 5000

(meters)

WGS 84 / UTM zone 9N

58779.7
57251.9
57031.1
56921.0
56849.6
56797.2
56751.3
56712.9
56683.5
56652.0
56618.4
56588.0
56558.1
56530.5
56507.5
56487.2
56467.0
56446.8
56431.5
56417.9
56404.1
56391.7
56380.4
56367.1
56354.7
56343.9
56334.5
56324.6
56316.5
56310.2
56304.6
56298.7
56291.8
56283.4
56272.9
56260.5
56246.0
56229.7
56209.7
55353.2

TMI (nT)

LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

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Tie Line Spacing:	1300 meters
Tie Line Direction:	150°-330°

AIRBORNE SYSTEMS:

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Configuration:	Stinger with 3 axis compensation
Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals
Sample Rate: 1 Hz

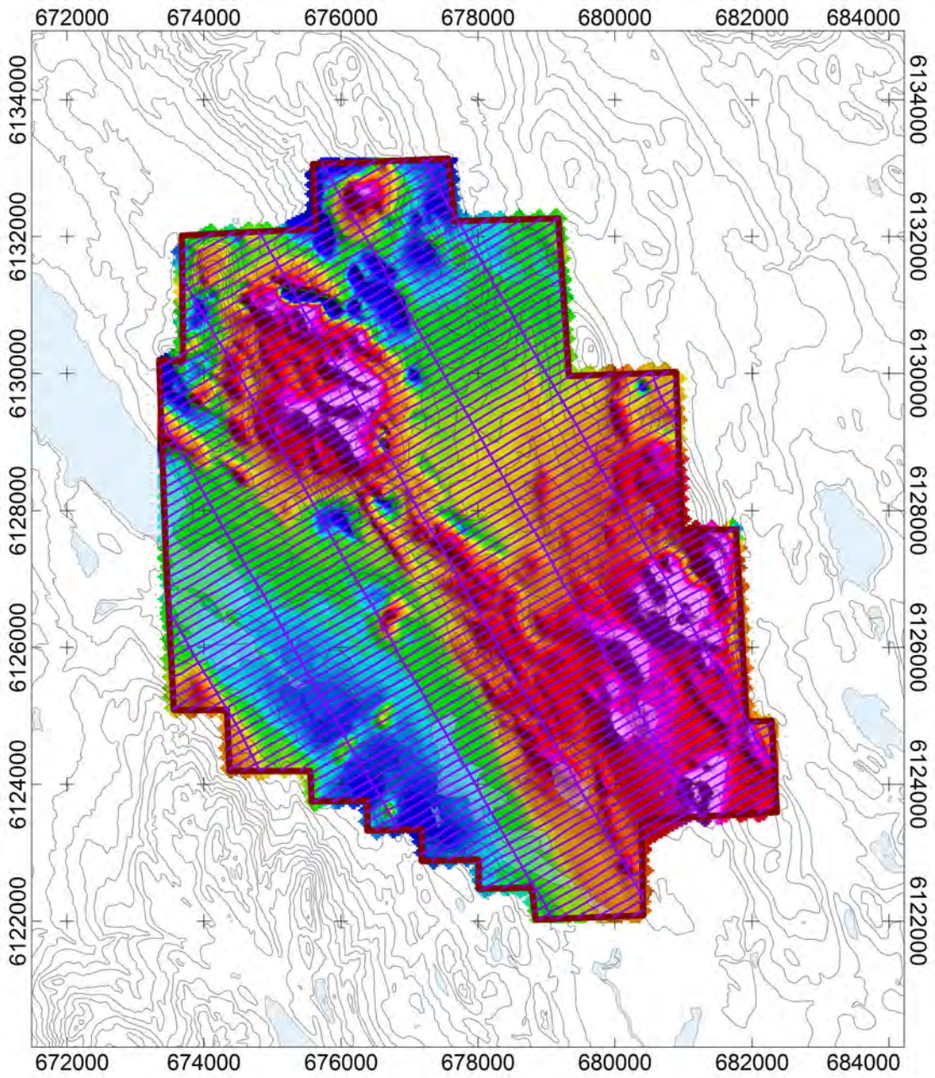
Redtail Metals Corp.

Magnetic Data

Babine Survey Block
Total Magnetic Intensity
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

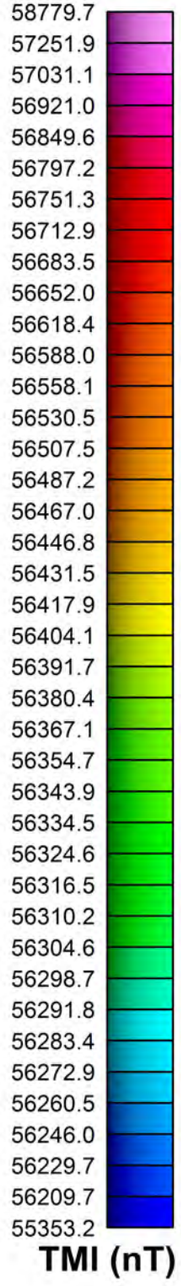
TMI



1000 0 1000 2000 3000 4000 5000

(meters)

WGS 84 / UTM zone 9N



LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

Radiometric data were collected with variable snow cover. Therefore, radiometric data are not corrected and should be used with discretion.

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Magnetometer:	40 meters
Spectrometer:	40 meters
Actual Mean Terrain Clearance:	44 meters

Kinaskan Survey Block:

Survey Line Spacing:	130 meters
Survey Line Direction:	060°-240°
Tie Line Spacing:	1300 meters
Tie Line Direction:	150°-330°

AIRBORNE SYSTEMS:

Scintrex CS-3 Magnetometer Sensor

Configuration:	Stinger with 3 axis compensation
Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals

Sample Rate:	1 Hz

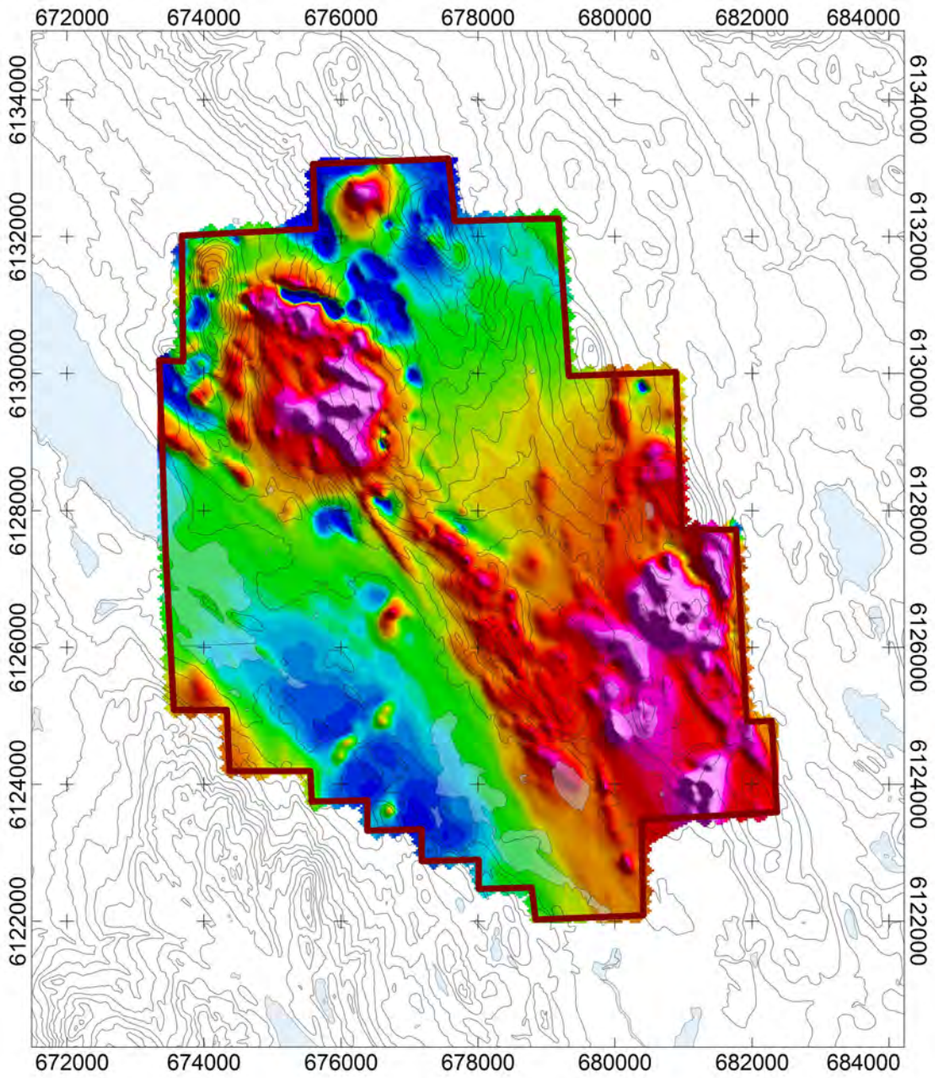
Redtail Metals Corp.

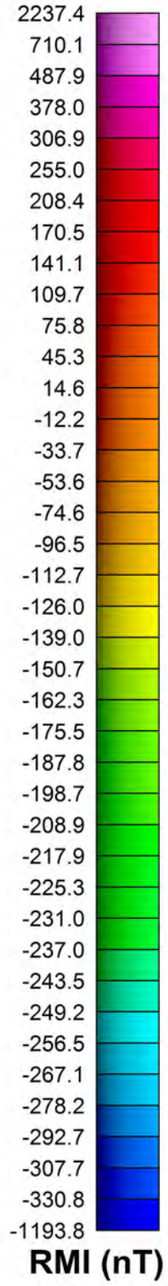
Magnetic Data

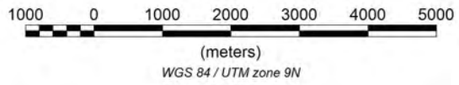
Babine Survey Block
Total Magnetic Intensity with Flight Lines
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

TMI_wFL







LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

Radiometric data were collected with variable snow cover. Therefore, radiometric data are not corrected and should be used with discretion.

Survey Dates:	April 01, 2014 to April 03, 2014
Survey Base:	Smithers, BC
Helicopter Type:	Eurocopter AS350
Registration:	C-GOHK
Survey Technology:	Magnetic and Radiometric survey.

SURVEY PARAMETERS:

Helicopter:	40 meters
Magnetometer:	40 meters
Spectrometer:	40 meters
Actual Mean Terrain Clearance:	44 meters

Kinaskan Survey Block:

Survey Line Spacing:	130 meters
Survey Line Direction:	060°-240°
Tie Line Spacing:	1300 meters
Tie Line Direction:	150°-330°

AIRBORNE SYSTEMS:

Scintrex CS-3 Magnetometer Sensor

Configuration:	Stinger with 3 axis compensation
Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals
Sample Rate: 1 Hz

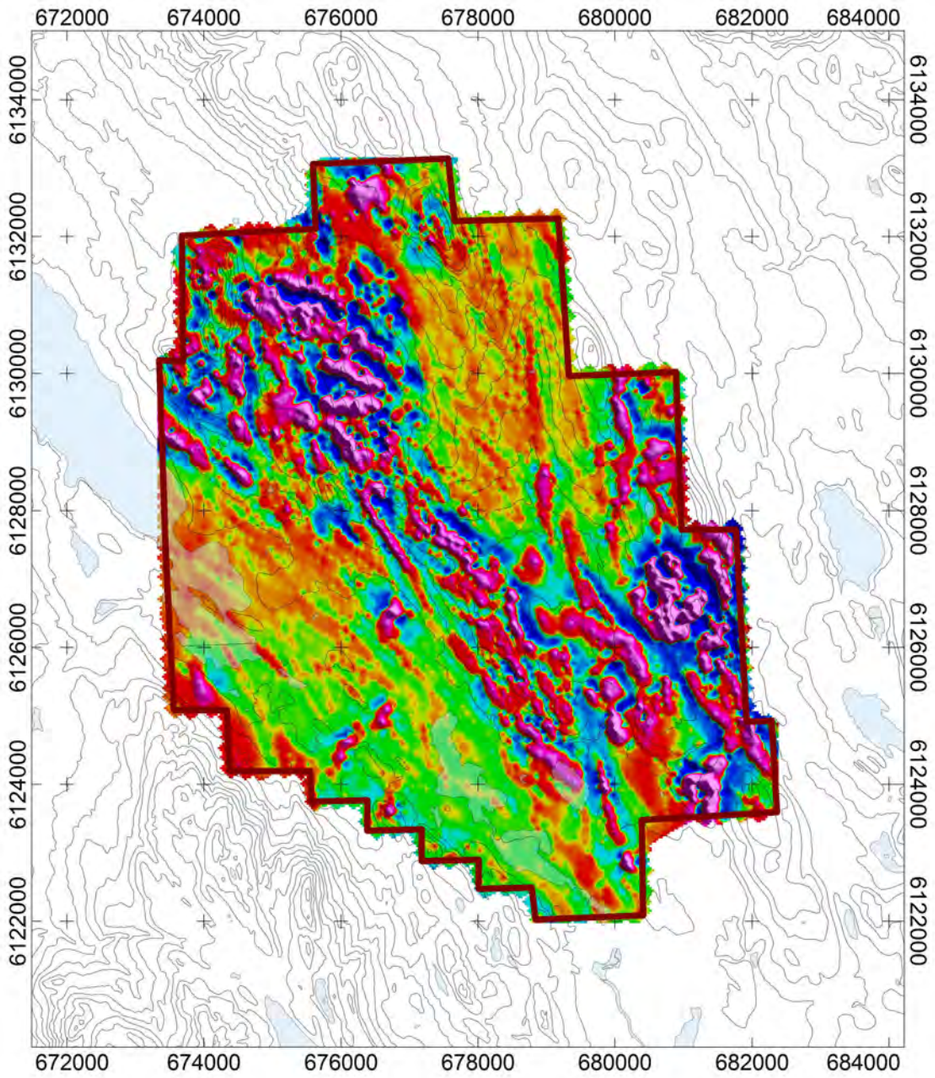
Redtail Metals Corp.

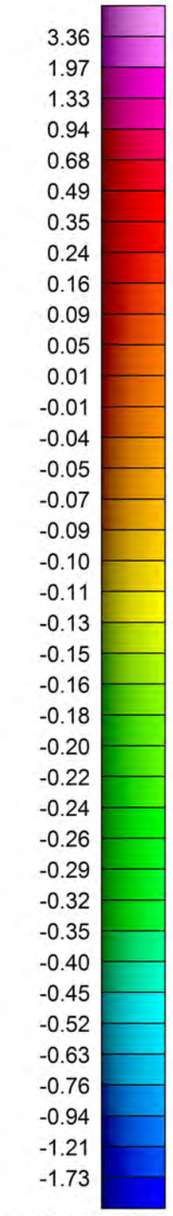
Magnetic Data

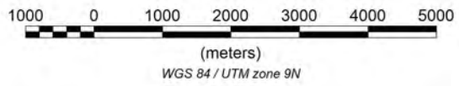
Babine Survey Block
Residual Magnetic Intensity
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

RMI







LEGEND

Map Projection:

Projection: Universal Transverse Mercator
Central Meridian: 231 Zone 9N
Datum: WGS 84

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AIRBORNE SYSTEMS:

Scintrex CS-3 Magnetometer Sensor

Configuration:	Stinger with 3 axis compensation
Sample Rate:	10 Hz
Sensitivity:	0.01 nT

Gamma Ray Spectrometer

Pico Envirotec GRS-10 Gamma Spectrometer
8.4 litres of NaI(T1) synthetic "downward looking" crystals
Sample Rate: 1 Hz

Redtail Metals Corp.

Magnetic Data

Babine Survey Block
Calculated Vertical Gradient
Created By: Precision GeoSurveys Inc.
April 12, 2014

Precision GeoSurveys

CVG