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NEW Airborne Gamma-Ray Spectrometric and Magnetic Surveys in the Bonaparte Lake area (NTS 92 P): New Models, Targets, Discoveries!

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LE NOUVEAU levés géophysiques aéroporté du champ magnétique total et de la spectrométrie des rayons gamma - Bonaparte Lake (NTS 92P): Les nouveaux Modèles, les Cibles, les Découvertes !

Ministry of Energy and Mines

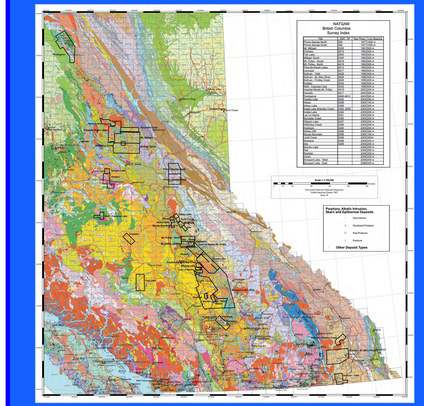
Geoscience BC

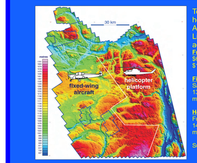
Introduction

The Geological Survey of Canada has completed 40 airborne gamma ray spectrometric - magnetic surveys in BCYT, supported by federal, provincial and industrial partnerships (*Bc surveys location map, right*). Results include improved regional geoscientific framework (geochemical, geophysical and geological) and significant direct or indirect vectoring to epithermal, porphyry, skarn and other deposit types. Examples are briefly summarized in the panels on the right side of this poster, derived from surveys in the Tondoggone, Mount Milligan and Alton areas. The success of these surveys has generated growing acceptance. Non traditional constituencies such as First Nations and towns supported largely by forest-driven economies hard-hit by the Pine Beetle devastation, are requesting new airborne coverage to promote discovery of new mines, jobs and improved economy.

The most recent of these surveys was flown in 2006 in the Bonaparte Lake area, within the highly prospective Quesnel Trough, partly in response to a request by the Whispering Pines Band. Funds totalling **~$1,419,612.20 were provided by Natural Resources Canada's Target Geoscience Initiative 3 (TGI3), Geoscience BC, Candorado Operating Company Ltd., GWR Resources Ltd. and Amarc Resources Ltd.** The new data extend from the Mount Polley, Horsefly, Tsidale, Canim and Lac La Hache surveys, resulting in more than 200Km-Northsouth coverage along the Trough.

This poster presents various views of the new Bonaparte survey data, with some preliminary observations relating to mapped geology and known mineral occurrences. For reference, claims and mineral occurrences depicted on BC MapPlace on March 29, 2007 are overlain on some of the images. Please also see the companion poster by Mike Thomas, emphasizing features apparent in the new aeromagnetic data.





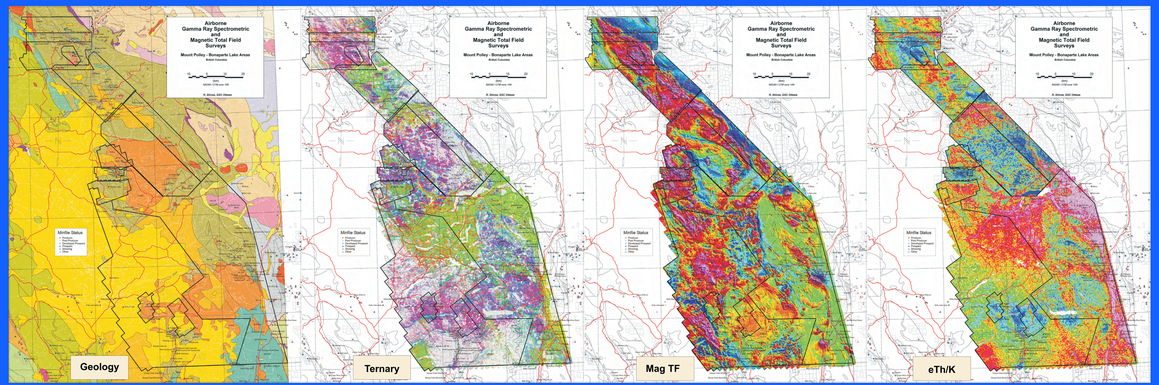
Terrain variation across the survey required use of both fixed wing and helicopter platforms, (left) flown under separate contracts by Fugro Airborne Services of Toronto (helicopter) and Sander Geophysics Limited of Ottawa (fixed wing). Industry partners received exclusive access to their data, prior to publication.

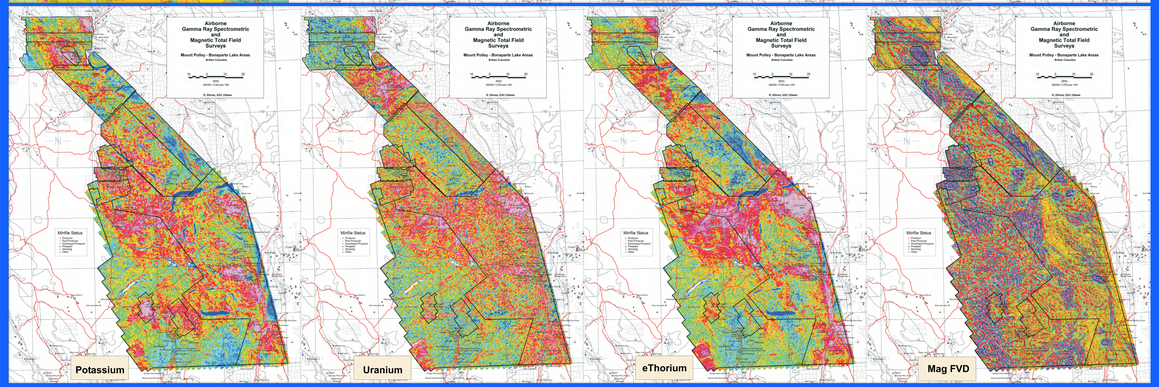
Funding
$650,000 Geoscience BC; $650,000 TGI3
$180,435.45 Candorado; Cdn$

Fixed Wing Survey
Sander Geophysics Limited, British Norman Islander
13,868 line km; 400 m/1.5 (200m detail areas)
mean terrain clearance of 125 m; 50.5 litres/hat, mag stinger

Helicopter Survey
Fugro Airborne Surveys, Eurocopter AS350B2
14,150 line km; 625 m/1.5, (Rail 210m; Murphy 250 m)
mean terrain clearance of 125 m, 33.8 litres/hat, mag stinger

Surveying began on September 15, completed Oct 24, 2006





Results

The new surveys have already had an impact on activity in the area, with new claims staked in many areas, in anticipation of the results. Industry partners have used the new data to guide future exploration.

Application of the new data will result in significant improvements to the geological framework of the Bonaparte Lake area. The magnetic data provide unprecedented detail of bedrock geology underlying an extensive veneer of Quaternary glacial cover, confirming existing geological mapping in many places but also revealing areas where revision is required. Bedrock contacts and faults are defined with precision, internal structural fabrics within several units are well defined, diagnostic (see companion poster by Thomas et al).

Geochemical information provided by the corresponding gamma ray spectrometric data (the surface concentrations of potassium, equivalent uranium and equivalent thorium) also delineate known and new bedrock and surficial geological units. Tertiary basalts in the Spout Lake area can be mapped using ternary radioelement patterns. Northernmost portions of the Thuya batholith appear radiometrically different than the main body, suggesting different phases. Local "windows" through the OB and younger cover volcanics in several areas suggest the latter are less continuous than previously indicated. These include several anomalies in the NE corner of the survey which may relate to Cretaceous intrusions. These and many other anomalous results will be investigated during cooperative (GSC-GBC-Industry) geological and geophysical, summer-2007 field follow-up.

Relative potassium enrichment associated with several known deposits or showings in the area produces thorium/potassium ratio anomalies. Similar patterns elsewhere within the survey area offer new exploration vectoring, especially in combination with the aeromagnetic patterns. These areas will also be investigated during summer 2007, and will focus industry exploration in the Lac La Hache, Murphy Lake, Rail Lake, Rayfield River and many other areas.

The 2006 surveys extend southerly from recent 2004-2006 coverage (Rocks to Riches-Industry funded) in the Mount Polley-Canim Lake areas (shown) where significant new discoveries have recently been announced. In the Lac La Hache area, GWR Resources has discovered new native Cu and hypogene Cu-Au mineralization in a K-altered porphyry, within a broad airborne eTh/K low associated with magnetic total field features. Interpretation of the airborne data supports conclusion of two decades of exploration results (soil and bedrock geochemical anomalies, trenched and drilled zones) into a new, coherent exploration model. The company is currently trenching and drill-testing this exciting new zone; published assays are shown below.

		From	To	Core Length	Au (gpt)	Cu (%)
DDH AZ06-01	40	35.3	115.7	80.4	0.165	0.280
		140.0	148.7	8.7	0.342	0.277
		161.6	208.5	45.7	0.365	0.184
		229.5	272.2	42.7	0.403	0.227
		272.2	292.3	20.1	0.821	0.476
		(0.563 Au and 0.285 Cu over 80m)				
DDH AZ06-03	90	From	To	Core Length	Au (gpt)	Cu (%)
		44.0	89.5	45.5	0.466	0.292
		191.0	181.0	30.0	0.669	0.288
		221.0	301.0	80.0	0.242	0.228
DDH AZ06-06	40	From	To	Core Length	Au (gpt)	Cu (%)
		77.0	147.0	70.0	0.617	0.220
		223.0	264.0	41.0	0.373	0.217
		274.0	302.0	28.0	0.664	0.361
DDH AZ06-08	40	From	To	Core Length	Au (gpt)	Cu (%)
		35.3	237.3	202.0	0.490	0.200
		35.3	85.3	50.0	0.700	0.250

Source: http://www.gwrresources.com/news.htm

Trench SH-A, located approximately 250 metres northeast of DDH AZ-06-01, returned values averaging 0.27 per cent copper and 0.38 gram per tonne gold over 65 metres.
Trench SH-B, located an additional 300 metres northeast of trench SH-A, returned values as high as 2.13 per cent copper and 14.9 g/t gold, with an average of 0.59 per cent copper and 3.64 g/t gold over 23 metres.
GWR News Release March 21/07

Airborne digital profile and gridded data available FREE on-line at GSC Geoscience Data Repository:
Aeromagnetic survey data **http://gdr.nrcan.gc.ca/aeromag/index_e.php**
Radiometric survey data **http://gdr.nrcan.gc.ca/gamma/index_e.php**

Bitmap images and PDF versions of printed maps are available on-line and at no cost via the Geoscience Data Repository's MAPASE application: **http://gdr.nrcan.gc.ca/mirage/index_e.php**

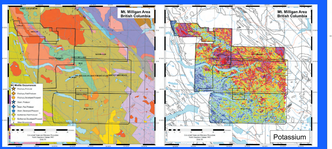
Bitmap images also available on BC MapPlace: **http://www.em.gov.bc.ca/Mining/Geolsurv/MapPlace/default.htm**

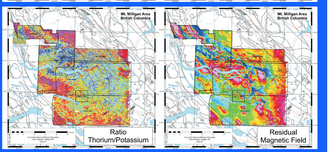
Mt. Milligan Radiometric - Magnetic Survey

Here, K-feldspar alteration associated with Cu-Au porphyry deposits produces well defined airborne K anomalies despite few outcrops. The radiometric anomalies provide significantly better targeting of blind deposits than aeromagnetic data alone. An exploration model developed using the airborne radiometric data was applied to an area east of the Mount Milligan property, leading to discovery of new, blind Cu-Au mineralization, buried under tens of meters of glacial till and subtravel. At regional or property mapping scales, bedrock geological contacts can be delineated via their expression in the radioactive element signatures of commonly very thick overburden.

Serengeti Resources Inc has incorporated airborne data with ground geochemical, geophysical information over their Keanika Cu-Au-Mo property (left) to define larger and stronger alteration systems than had previously been discovered on the property. Drilling announced Jan. 9, 2007 confirms discovery of a new Cu-Au zone.....
(DDH K-06-09: 0.69 %Cu, 0.54 g/t Au over 111.13 m, incl. 1.40% copper and 1.90 g/t gold over 22.15 m) overlain by ≥ 34 m thick native copper bearing oxidized zone.

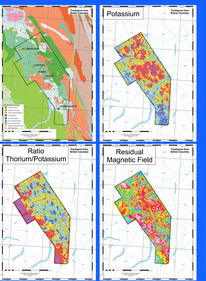
Source: serengetiresources.com





Tondogone Survey

Potassium alteration associated with mineralized (Au-Ag and Cu-Au) epithermal and porphyry systems in the Tondogone area produce strong airborne high-K and low eTh/K anomalies. Areas with low K, U and Th define carbonate-hosted, intrusion-related skarn deposits. In combination with the magnetic data these features can be used to detect and distinguish between the three different deposit types.



Ironmask Survey

In the Iron Mask batholith area (Alton) virtually all known porphyry-related mineralization produces diagnostic airborne survey signatures, appearing as equivalent thorium/potassium ratio lows combined with relative magnetic lows located along the flanks of broader magnetic total field positive anomalies. Separately, neither technique alone is diagnostic.