

# ASSESSMENT REPORT ON THE SURPRISE CREEK PROPERTY, STEWART AREA, BRITISH COLUMBIA, CANADA

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*Skeena Mining Division  
NTS Map Sheet 104A/4*

*Centered at  
Latitude: 56°12' N, Longitude: 129°40' W  
NAD 83, UTM Zone 9, 459373m E, 6226568 m N*

*Claim Numbers  
519010, 519011, 519017, 519018, 519019, 519020, 519021,  
519023, 519247, 519248, 519249, 519250, 519251, 519252,  
540452, 540453, 540454, 540455, 540456*

**BC Geological Survey  
Assessment Report  
32800a**

*Owner: **Jayden Resources***

*Operator: **Great Bear Resources***

*Prepared for:  
**Great Bear Resources**  
Suite 302, 750 West Pender Street  
Vancouver, British Columbia  
V6C 2T7*

*by  
**L. M. Theny, BSc, Hon., GIT**  
Preakness Management Group  
Suite 302, 750 West Pender Street, Vancouver, British  
Columbia, V6C 2T7*

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## Introduction

### Property geographic/physiographic location,

The Surprise Creek property is located 32 km northeast of Stewart, British Columbia. The property is just north of Bear Pass on highway 37A. Surprise Creek drains the east side, while Todd Creek drains the west side of the property. The property is proximal to the past producing silver lead Goat deposit.

The climate in the area is temperate with temperatures ranging from around -15 degrees Celsius in the winter to +10 degrees Celsius in the summer. The annual mean total precipitation ranges from 1,200 to 2,000 millimetres. Snowfall is common throughout the winter, with the median continuous snow cover running from late October to early June and an average maximum snow depth reaching 100 to 300 centimetres. The ideal exploration season runs from mid-June to mid-October with the late summer and early fall having the maximum rock exposure.

The property lies within the Coast Range Mountain Belt and encompasses moderate to steep mountain topography typical of the area. Elevations range from 600 metres at Surprise Creek in the eastern portion of the property to 2,733 metres at the summit of Mount Patullo. Approximately half of the claims are covered by glaciers of the Todd ice-field. Another 15 to 20% is covered by talus and glacial moraine. Outcrops comprise the remaining 30 to 35% of the property.

Vegetation at the lower elevations consists of spruce and hemlock trees and juniper bushes. Mid elevations are covered by alpine grass and heather, while higher elevations are essentially barren of vegetation.

Access to the claim group is best supported by helicopter from Stewart, BC (30 kilometres to the southwest).

### Claim Status

The property consists of nineteen contiguous claims and a total of 7,472 hectares, all within the Skeena Mining Division. Figure 3 shows the location of the claims. The claims information is tabulated in the following table:

Tenure Number	Claim Name	Owner	NTS	Area(ha)	Issue Date	Expiry Date
519010	ATAMAN3	B.C. Ltd.	NTS 104 A	431.67	13/08/2005	28/09/2016
519011	ATAMAN4	B.C. Ltd.	NTS 104 A	377.83	13/08/2005	28/09/2016
519017	ATAMAN5	B.C. Ltd.	NTS 104 A	377.95	13/08/2005	28/09/2016
519018	ATAMAN6	B.C. Ltd.	NTS 104 A	378.07	13/08/2005	28/09/2016
519019	ATAMAN7	B.C. Ltd.	NTS 104 A	378.19	13/08/2005	28/09/2016
519020	ATAMAN8	B.C. Ltd.	NTS 104 A	432.35	13/08/2005	28/09/2016

519021	ATAMAN9	B.C. Ltd.	NTS 104 A	288.31	13/08/2005	28/09/2016
519023	ATAMAN10	B.C. Ltd.	NTS 104 A	360.51	13/08/2005	28/09/2016
519247		B.C. Ltd.	NTS 104 A	377.85	22/08/2005	28/09/2016
519248		B.C. Ltd.	NTS 104 A	377.97	23/08/2005	28/09/2016
519249		B.C. Ltd.	NTS 104 A	378.1	23/08/2005	28/09/2016
519250		B.C. Ltd.	NTS 104 A	378.22	23/08/2005	28/09/2016
519251		B.C. Ltd.	NTS 104 A	378.33	23/08/2005	28/09/2016
519252		B.C. Ltd.	NTS 104 A	360.43	23/08/2005	28/09/2016
540452		B.C. Ltd.	NTS 104 A	449.73	05/09/2006	05/09/2017
540453		B.C. Ltd.	NTS 104 A	449.97	05/09/2006	05/09/2017
540454		B.C. Ltd.	NTS 104 A	432.05	05/09/2006	05/09/2017
540455		B.C. Ltd.	NTS 104 A	432.21	05/09/2006	05/09/2017
540456		B.C. Ltd.	NTS 104 A	432.35	05/09/2006	05/09/2016

On May 17, 2010, Great Bear Resources entered into an option agreement with Pinnacle Resources to acquire an undivided 100% interest in the Surprise Creek claims.

## History

The earliest recorded mining activity in the area was on the old Enterprise property (presently the Eldorado claims) in early 20 century. Considerable work was reported on this property prior to 1919, including 30 meters of drifting along an adit. From 1928-1931, numerous adits and trenches were completed on the property. The showings are located along a large copper bearing belt. The best surface result was obtained from a 1.5 metre long trench which assayed 27.4 grams per tonne gold, 68.6 grams per tonne silver and 2.3% copper. In an adit located 30 metres below and 15 metres to the east of this trench, a 1.4 m wide zone assayed 4.64 grams per tonne gold and 2.1% copper. In 1978, Tournigan Mining Explorations and recently in 2004 Pinnacle Mines carried out surface sampling on the former Enterprise group.

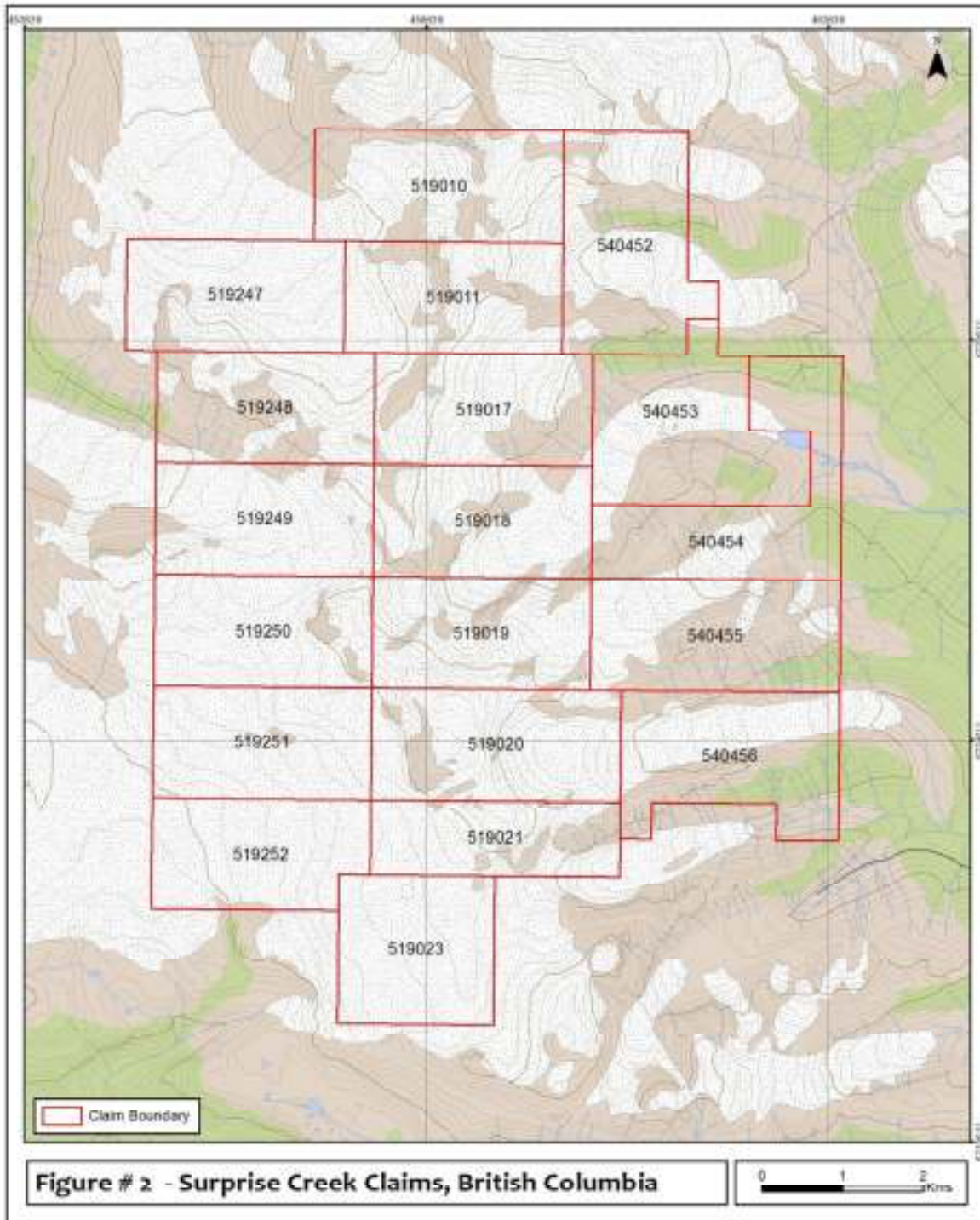
The former Nordore (Goat) mine is located approximately 1 kilometre from the south-eastern portion of the property. The showings were staked first in 1960 and then re-staked in 1963 by Newmont Mining and Granby Mining. Noradco acquired the claims in 1964 and completed a program of trenching, sampling and drilling program on the property. In 1965, 2 adits were driven on the F vein and 2 raises were driven to the G vein. In 1971, Abitibi acquired the property and incorporated Nordore Mining Co. In 1974, Nordore rehabilitated the workings now on the Ken 1-4 and Goat A-H claims. In 1974, the Remus claims were acquired as a mill site. About 1,770 tonnes of ore were stockpiled. In 1976, about 295 tonnes of ore was milled from a portable concentrator. Development work on the E vein recommenced in 1979 and “some” material was put through the concentrator. In 1980, underground development continued and the mill operated for several months. The mill was destroyed by fire in 1981 and all work ceased. Bond Gold carried out a geophysical survey over the property in 1990. In 1991, Cameco conducted geochemical surveys and sampling on the Ken and Hugh claims. Proven and

probable reserves in 1979 were 8,800 tonnes grading 4,782.9 grams per tonne silver and 10.6 grams per tonne gold. Recorded production during 1975 and 1979-81 was 1,794,049 grams of silver, 5,475 grams of gold, 52,641 kilograms of zinc, 4,071 kilograms of lead and 153 kilograms of copper.

Considerable exploration work was done in the 70's and 80's on a former Surprise (Prise) property located to the northeast of Surprise Creek claims. Initially the property was held by Falconbridge who optioned it to RioCanex in 1981. The two extensive gossans on the property are a result of the underlying pyrrhotite and pyrite bearing biotite hornfels and associated with a monzonite stock. These



*Figure 1 – Location Map*



*Figure 2 - Claim Map*

rocks host quartz-pyrite-pyrrhotite veins and pods which locally contain minor molybdenite and chalcopyrite as well as rare fluorite. RioCanex drilled three holes to test one of the two large gossanous

zones. All 3 holes intersected a section of quartz and feldspathic quartz arenite followed by a section of graphitic siltstone. Encountered mineralization consisted of 1-2 % combined pyrrhotite and pyrite; no assays were reported; one section was reported to contain 0.1% Molybdenite by visual estimate.

The southern boundary of the property covers an area formerly occupied by Barite and Von Claims. This area is underlined predominantly by andesitic tuffs, breccias and conglomerates. Mineralization includes numerous pyrite and quartz-pyrite veins and several narrow quartz-galena veins. Some prospecting and trenching was done in the 1970's and 1980's, but there are no records for the work done. The claims were acquired by Teuton Resources in 1989. Over the next few years, Teuton conducted soil, silt and rock geochemistry programs in conjunction with prospecting and geologic mapping. In 2003, Pinnacle Mines acquired the claims. Between 2003 and 2007, Pinnacle conducted numerous exploration programs consisting of rock, silt and pan concentrate geochemistry. A total of 668 rock samples, 124 silt samples and 74 pan concentrates were collected during this time. Assay results yielded highly anomalous values for gold, silver, lead, zinc, arsenic, copper and mercury. The highs for these metals were as follows: 13.02 ppm gold, 3,076.8 ppm silver, 9.1% lead, 7.61% zinc, >9,999 ppm for arsenic and 8.67% copper. Numerous styles of mineralization were recognized including a large zone of pervasive K-feldspar alteration which extends for at least 10 kilometres in a north-south and 4 to 5 kilometres in an east-west direction.

In 2007, a diamond drilling program was run on the property. A total of 1,995 meters of NQ sized core was drilled. The drill program intersected some zones of mineralization, the best being 1.52 meters of 84.2 grams per tonne silver, 0.36% copper, 0.07% lead, and 0.04% zinc; 2.59 meters of 45.9 grams per tonne silver, 0.095% copper, 0.14% lead, and 0.24% zinc; 1.07 meters of 75.7 grams per tonne silver, 0.069% copper, 1.09% lead, and 0.22% zinc.

### **Economic and general assessment**

According to A. Walus's 2005 Surprise Creek assessment report, there is a strong indication that the property may host Kuroko type VMS deposit, possibly with high precious metals content. This conclusion is based on the following facts:

- The presence of syngenetic zinc, lead and silver mineralization hosted in black chert, limestone and mudstone. Values of up to 7.61% zinc, 9.1% lead and 106 grams per tonne silver were obtained from these rocks.
- High mercury values, typically in the range of 40 to 100 times above background (with a high of 33,800 ppb).
- Syngenetic mineralization spatially associated with the felsic volcanic rocks of Mt. Dilworth Formation, the same stratigraphic horizon which hosts Eskay creek deposit. On the property, felsic volcanic rocks of this formation form a relatively thin horizon, 70 to 200 metres wide within volcanic rocks of intermediate to mafic composition.
- Presence of an eruption center located in the Surprise Creek area, indicated by outcrops of rhyolite (?) flow with distinct flow banding, as well as rhyolite (?) breccia.

- Presence of banded iron formation
- Nearby presence (Todd Creek) of a large copper-gold epithermal system comprised of numerous pyrite-chalcopyrite dominated veins and stringers. This system very likely represents the footwall-stringer zone of Kuroko type VMS system.

Numerous boulders of sedimentary rocks with syngenetic zinc, lead and silver mineralization occur in several glacial valleys which join the main Surprise Creek valley. These boulders are traceable over a distance of ten kilometers. They derive from an extensive horizon(s) hosting this type of mineralization, located at the headwaters of these valleys. A portion of this horizon (at least 30-40 m wide) is exposed at the head of one of the glaciers. This horizon(s) most likely represents a distal facies (halo) of Kuroko type VMS system as indicated by the lack of volcanic material and alteration, and the fact that zinc is by far the most abundant metal with much less lead and no copper.

A. Walus concludes that the gold bearing pyrite-chalcopyrite dominated veins and stringers of the Todd Creek area and the black chert, limestone and mudstone with syngenetic zinc, lead and silver mineralization of Surprise Creek area probably represent two different parts of the same Kuroko type VMS system. The former represents the footwall-stringer zone and the latter the distal zone (halo) of this system. This in turn implies that massive sulphides body of Kuroko type can be located somewhere between the two zones. Substantial amounts of gold in the presumed footwall-stringer zone and substantial silver in the distal zone implies a good potential for precious metals rich Kuroko type VMS deposits.

## 2010 Program

From April 29th to July 7th, 2010 Geotech was contracted to carry out a helicopter-borne geophysical survey over the BA and Surprise Creek claim blocks. Principal geophysical sensors included a versatile time domain electromagnetic (VTEM) system, and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 3327 line-kilometres was flown of which 1763.31 line-kilometres was flown over the Surprise Creek claim block. Appendix 1 is Geotech's report on the VTEM geophysical survey.

From September 6 to September 23, 2010, Coast Mountain Geological was contracted to perform a reconnaissance program of geological mapping, prospecting and lithogeochemical sampling over the Surprise Creek claims. Most of the claims are rugged and glaciated so crews with climbing experience is recommended. The far north of the claims around Mount Patullo was not mapped or prospected due to the extremely rugged and glaciated nature of the terrain.

## Objective and Scope of Present Work

Work was focused on gaining a general geological understanding of the overall claim geology and following up on preliminary sampling of glacial float by Pinnacle Mines, as well as further evaluating the claims for the potential for an underlying VMS deposit.



Coast Mountain Geological's geologist Marcus Van Wermeskerken managed and performed most of the field mapping program. The following is derived mostly from his internal report for Great Bear Resources and Coast Mountain Geological. All geology and sample locations have been compiled and entered into a GIS database.

Previous mineralized material sampled on the property from the earlier programs consisted of the following styles (Walus, A., 2005):

1. *Extremely fine grained syngenetic pyrite, sphalerite and galena with high silver, mercury, and magnesium hosted in black chert, limestone and mudstone.*
2. *Banded iron formation*
3. *Chalcopyrite and molybdenite bearing quartz-pyrite-pyrrhotite veins and pods related to intrusion of quartz monzonite.*
4. *Very strongly silicified trachyte/latite with pyrite, sphalerite, galena, and chalcopyrite.*
5. *Precious metals bearing quartz with pyrite, arsenopyrite, chalcopyrite, galena, sphalerite and tetrahedrite.*
6. *Quartz with sphalerite and galena.*

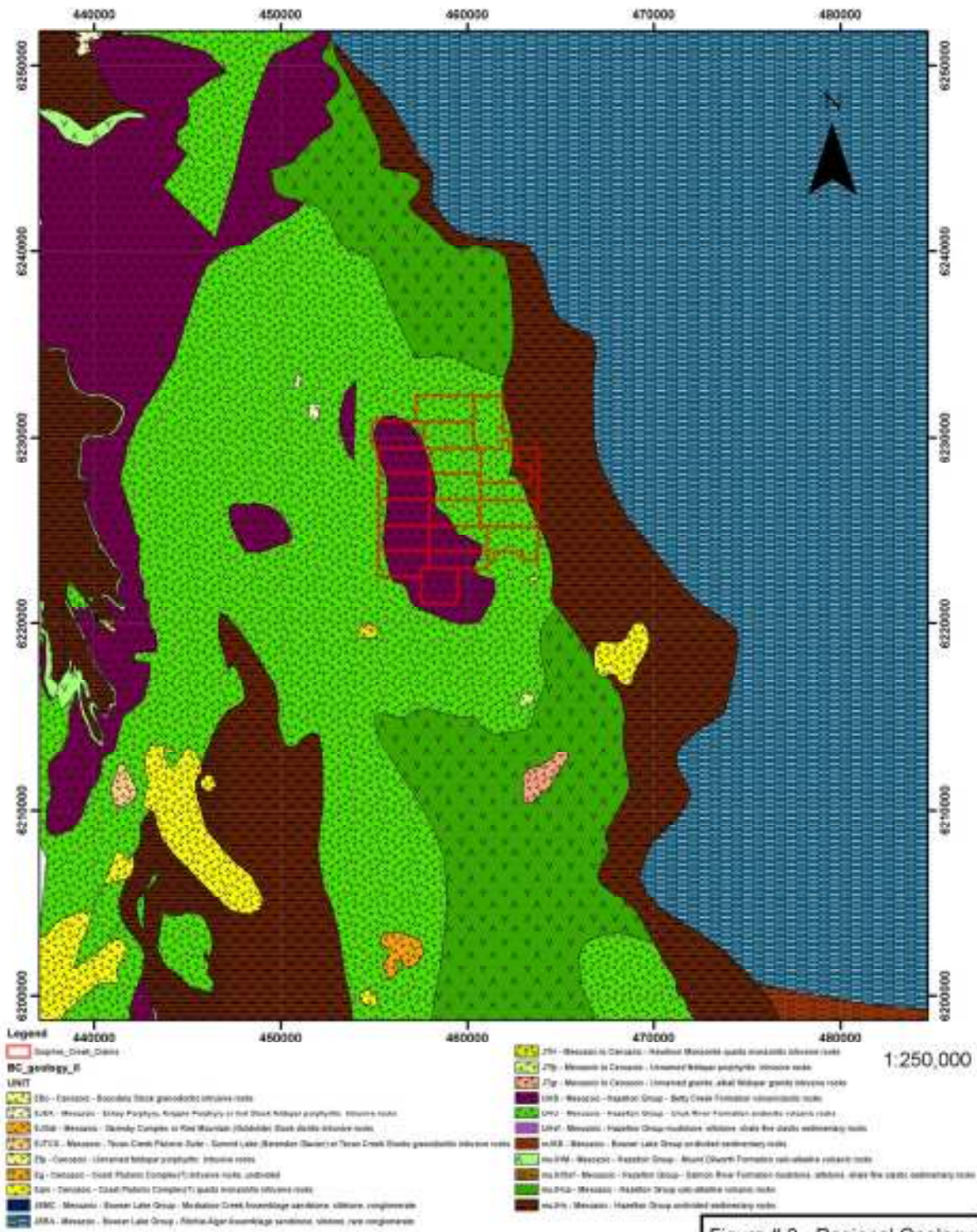
The 2010 mapping and sampling program followed up on the above-mentioned mineralization and the results can be summarized as follows:

1. *Two more outcrop areas with this type of lithology have been located, but with very little mineralization. The best material was found in a large area of rockfall debris from cliffs above, with well mineralized (sphalerite-galena) laminated barite rich exhalite (?).*
2. *No further such zones have been found.*
3. *This area is not included in the current mineral claim and was not followed up.*
4. *Not located*
5. *Found in glacial float only, but could not be followed to its source.*
6. *The source area for this float has been located and sampled.*

A new type of mineralization has been located in the area of the mineralized (galena) quartz veins. Many barite boulders in the talus slopes are mineralized with sphalerite and galena, but the source has not yet been located.

## **Regional Geology**

The Surprise Creek property lies in the Stewart area, east of the Coast Crystalline Complex and within the western boundary of the Bowser Basin. Rocks in the area belong to the Mesozoic Stuhini Group, Hazelton Group and Bowser Lake Group that have been intruded by plutons of both Cenozoic and Mesozoic age. According to C.F. Greig, in Geological Survey of Canada Open File #2931, portions of the general Stewart area are underlain by Triassic age Stuhini Group. The Stuhini Group rocks either underlie or are in fault contact with the rocks of Hazelton Group. These Triassic age rocks consist of dark gray, laminated to thickly bedded silty mudstone, and fine to coarse-grained sandstone. Local



*Figure 3 - Regional Geology*

heterolithic pebble to cobble conglomerate, massive tuffaceous mudstone and thick-bedded sedimentary breccia and conglomerate also form part of the Stuhini Group.

The large exposure of Hazelton Group rocks on the west side of Bowser Basin has been named the Stewart Complex. It forms a north-northwesterly trending belt extending from Alice Arm to the Iskut River. At the base of the Hazelton Group is the lower Jurassic volcanoclastic Unuk River Formation. This is overlain at steep discordant angles by a second, lithologically similar, middle Lower Jurassic volcanic package (Betty Creek Formation), which in turn is overlain by an upper Lower Jurassic thin felsic tuff horizon (Mt. Dilworth Formation). Middle Jurassic non-marine sediments with minor volcanics of the Salmon River Formation unconformably overlie the above volcanoclastic sequence. The Unuk River Formation is at least 4500 metres thick and is a monotonous package of green andesitic rocks which include ash and crystal tuff, lapilli-tuff, pyroclastic breccia and lava flows. The Betty Creek Formation represents another cycle of trough filling with a sequence of distinctively coloured red to green epiclastic rocks with interbedded tuffs and flows which range in composition from andesitic to dacitic. The upper Lower Jurassic Mt. Dilworth Formation consists of a 20 to 120m thick sequence composed of variably welded dacite tuffs. Hard, resistant, often pyritic rocks of this formation commonly form gossanous cliffs. The Mt. Dilworth Formation is an important stratigraphic marker in the Stewart area. The Middle Jurassic Salmon River Formation is a thick package of complexly folded sedimentary rocks which include banded, predominantly dark coloured silt stone, greywacke, and sandstone with intercalated calcarenite rocks, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and minor flows. Overlying the above sequences are the Upper Jurassic Bowser Lake Group rocks. These rocks are exposed along the western edge of the Bowser Basin. They also occur as remnants on mountaintops in the Stewart area. These rocks consist of dark grey to black clastic rocks dominated by silty mudstone and thick beds of massive, dark green to dark grey, fine to medium grained arkosic sandstone. A variety of intrusive rocks formed in the area during Early Jurassic and Tertiary periods. The granodiorites of the Coast Plutonic Complex largely engulf the Mesozoic volcanic terrain to the west. To the east, there are numerous smaller intrusions which range in composition from monzonite to granite. Some of them probably represent apophysis of the Coast plutonism, others are synvolcanic.

Double plunging, northwesterly trending folds of the Salmon River and underlying the Betty Creek Formations dominate the structural setting of the area.

## **Property Geology**

The Surprise Creek claims was mapped at 1:10,000 scale. A Garmin GPS 60 (WGS84 datum) was used for location control. The Geology Map is located in the back of the report.

### *Lithology*

The geology of the Surprise Creek claims can be summarized as a sequence of Jurassic volcanic and lesser volcanoclastic rocks, forming a broad, NNW trending anticline, flanked by felsic volcanic rocks of the Mount Dilworth formation. Up sequence towards the East, these rocks are overlain by East dipping sedimentary rocks of the Salmon River formation. Towards the West, the area is underlain by more basic volcanic rocks containing pyroxenes and vesicular basalts.

A more detailed description of the rocks is as follows, going up stratigraphy:

### Jurassic volcanic rocks of the Betty Creek Formation

#### *Basic volcanic rocks and flows*

These rocks occupy mostly the western part of the claims. These rocks are generally pyroxene rich and are variably magnetic. They occur with a wide variety of textures and types, ranging from coarse volcanic breccia, to pyroclastic rocks, to basaltic, often vesicular flows. The volcanic rocks contain beds of limestone and chert, with variable amounts of hematite, jasper and magnetite. The northwest of the claims contain green and purple intermediate pyroclastic and volcanic breccia. The rocks are highly fragmental, with very well defined textures, as opposed to the central part of the claims, where the fragmental nature of the volcanics are more diffuse, with variable amounts of feldspar phenocrysts and are interlayered with feldspar-phyric flows and latites.

#### *Intermediate volcanic rocks*

A thick sequence of intermediate volcanic rocks occupies the main part of the claims, forming the core of the broad anticline. This sequence varies widely, with textures ranging from tuffs to volcanic breccias, to feldspar-phyric flows. These rocks are variably hematitic (appearing as maroon zones in outcrop) and variably magnetic. They include beds of volcanoclastic rocks, conglomerates, shales, limestone and highly deformed laminated beds which appear as exhalative horizons. These horizons contain abundant hematite, jasper, manganese oxides, magnetite and specularite. As indicated by float material on the glaciers, these beds are also locally mineralized with sphalerite and galena, but this mineralization has not been found in significant amounts in outcrop. These mineralized beds appear to occur at the upper parts of the Betty Creek formation, near the Mount Dilworth formation.

### Jurassic Mount Dilworth Formation

The Betty Creek rocks are overlain by rocks of the Mount Dilworth formation. These rocks are generally felsic, siliceous flows and fragmental volcanics, but the primary texture is usually masked by intense sericite or potassic alteration, further silicification, as well as high amounts of pyrite. They are locally well banded, assumed to be flow banding. These rocks discontinuously flank the main anticline both East and West.

### Jurassic Salmon River Formation clastic sedimentary rocks

The Mount Dilworth Formation is unconformably overlain by clastic sedimentary rocks of the Salmon River Formation. Not a lot of time has been spent on these rocks and they are located only at the far Eastern limits of the claim group. Rocks of this formation include conglomerate and sandstone, generally with a non-calcareous matrix, as well as laminated siltstone. They are exposed only on the Eastern limb of the main anticline.

### Rhyolitic dykes

A few flow banded rhyolitic dykes have been observed. Texture is poorly defined, but ghosts of feldspars and occasionally quartz can be seen. These dykes range to several metres width and are generally very irregular in shape and width. They trend roughly NNW, steep.

A roughly 50 m wide felsic intrusion in the North of the claim may be part of this same dyke system. This intrusion has a pale green colour, is generally fine grained, but with a somewhat fragmental appearance, and is flooded with quartz veins. It trends northward towards the Eastern flanks of Mount Patullo.

### *Alteration*

Alteration on the claims varies widely, but can be generally grouped as three separate domains, which appear to be preferential to lithology.

The strongest alteration zones observed are Quartz-sericite-pyrite zones, which are typical for the Stewart Region. These zones occur in both the Betty Creek rocks and the Mount Dilworth formation. Rocks are strong sericite altered and silicified, and mineralized with up to 30% pyrite. This pyrite ranges from disseminated, to aggregates and clots to massive pyrite stringers and veins up to several centimeters width. In some areas, these QSP zones have been intensely leached out, leaving a sinter-like bluish grey highly siliceous remnant. These zones are generally highly gossanous, with an abundance of limonite and jarosite on weathered surfaces. The strongest of these occurs South of the Jagiello glacier tongue, referred to as the Rumble Zone, where the QSP zone has been flooded with a sheeted quartz vein stockwork containing minor mineralization. This zone will be discussed in detail later.

Zones of strong silicification and potassic (pers. comm. A. Walus) are limited to the Mount Dilworth Formation West of the Jagiello Glacier. The alteration has mostly masked the primary texture of the protolith, and there is sufficient silica to display devitrification in several areas. Potassic alteration was verified by staining done by A. Walus in 2007. Up to 5% fine disseminated pyrite occurs in these zones.

Propylitic alteration is widespread, but patchy, ranging from weak to moderate. This alteration was observed in the Betty Creek Formation volcanics only. Alteration minerals include chlorite, calcite, epidote, pyrite and hematite.

Strong sericite alteration was noted in the felsic intrusion in the North of the claim. This alteration is accompanied by quartz vein flooding.

### *Mineralization*

The numerous types of mineralization found on the property have been described in detail by A. Walus (2005), which was found mostly in glacial float. Mineralization observed in outcrop and newly discovered boulders in float will be discussed only below:

Four types of mineralization have been located in outcrop during the 2010 program. These are: lead-zinc mineralization in micritic limestone and highly deformed mudstones, galena in quartz veins, banded jasper-quartz-magnetite, and sphalerite-galena in barite veins.

#### *Lead-zinc mineralization in micritic limestone and mudstones*

Although mineral content is significantly lower than that in the material found on the glaciers, these mineralized beds have been located at several locations on the claims. The host rocks are typically highly deformed and disjointed, laminated sedimentary rocks, ranging from calcareous mudstone to micritic limestone. Although the beds can be followed along strike, individual layers within it have been intensely folded, disjointed and truncated. Variable amounts of jasper have been noted, as well as quartz. Mineral content in known outcrop areas does not exceed 1% combined sphalerite and galena. Weathered surfaces are coated with manganese oxide. Similar material in a large pile of rockfall debris at the base of the Rumble Zone, contains significant barite and is well laminated, with abundant sphalerite laminae (<5%) and 1-2% millimetric clots of galena. The approximate location of the source of this material is known, but cannot be accessed, due to the steepness and extreme instability of the source area. This material was found on the last day of the field program, so the area above the main cliffs should still be investigated during the 2011 program.

#### *Galena in quartz veins (Rumble Zone)*

The galena bearing quartz veins have been found at the Rumble Zone only. This zone is an area of approximately 150 by 200 metres of strong sericite alteration. Pyrite is very abundant, up to 30% in some areas, which occurs as disseminations, clots, stringers and veins up to 5 cm in width. This strong QSP zone has been flooded with a sheeted stockwork of quartz veins dipping shallow (25-30 degrees) towards the Southwest. These veins range to 15 cm width, and contain up to 2% clots of galena. It appears that the veins steepen towards the South (upslope), but this could be a mechanical steepening across a fault zone trending 124 vertical (see detailed map of the Rumble Zone). Towards the end of the field program, work was focused on this area, and approximately one third of all samples have been collected from this area. The entire zone is essentially a 200 metre high cliff, so detailed work and systematic sampling are a complicated task.

More intense QSP with quartz veins and traces of galena towards the Southwest of the main Rumble zone are a SW extension of this mineralized zone, so the overall Rumble zone could have a total SW trending area of 750 by 300 metres. Much work still has to be done to better understand this area.

Besides the mineralized quartz veins, the area of the Rumble Zone is also littered with barite boulders, containing up to 15% galena and 5% sphalerite, which come from a steep area above the Rumble Zone. A small (1.1 m wide) mineralized barite stockwork zone was located and sampled in outcrop (sample X07564). These veins trend 240/82 SE, but had only minor amounts of (<0.5%) galena and traces of sphalerite. The size of some of the boulders indicates a minimum vein (exhalite?) thickness of 40 cm.

### *Banded jasper-quartz-magnetite*

These zones appear to be exhalative, but at the best known location, this unit is directly overlain by a high energy tuffaceous unit, indicating a more shallow water or terrestrial environment. The rocks are banded, well laminated and folded, into generally open folds. The main components are quartz, jasper and magnetite, with minor specularite. This type of mineralized rock has not returned encouraging assays in previous sampling. However, trace of sphalerite was noted in the main outcrop of this unit, so more complete sampling should be considered for 2011.

A North trending fault at the Western limb of the main anticline has the same mineralogy as these 'exhalative' beds, other than the fault-brecciated texture as opposed to the banded folded nature of these BIFs. This suggests that there is a possibility of a secondary emplacement of these minerals into a more permeable layer, rather than a primary deposition. However, it could also be deduced that mineral from these 'exhalite' layers have been remobilized into nearby fault zones.

### *Sphalerite-galena in barite veins (Rumble zone)*

Although the best mineralization of this type was found in talus in the Rumble zone, as large boulders (<40 cm width), it was only noted as minor veins in outcrop, in the same general area as the boulders. The mineralized boulders consist of massive mineralized barite +/- quartz or calcite vein, with stringers and lenses <3 mm of galena (<15%) and clots <1 mm of sphalerite (<5%). They are common in the talus, locally making up as much as 1 or 2% of the overall talus volume.

The veins of this type observed in outcrop range to 5cm width, and do not form a strong structural fabric. It appears that the 230/80NW trend is favourable, but more of these veins need to be located to properly study the structural preference.

### *Structure*

The structural pattern of the Surprise Creek property is only partly understood due to incomplete exposure from beneath an ice sheet and widespread K-feldspar alteration obliterating earlier structures. The dominant structural feature of the Surprise Creek rocks is the NNW trending anticline, with a shallow dipping Western limb, and a moderately steep dipping Eastern limb. The Betty Creek volcanic rocks dominating most of the central claim area forms the core of the anticline as expressed at surface. This sequence of rocks is flanked both at the Western and Eastern limb with discontinuous exposures of Mount Dilworth felsic volcanic rocks.

Further east, overlying the Mount Dilworth rocks on the eastern limb, are clastic sedimentary rocks of the Salmon River Formation. However, towards the West of the Mount Dilworth volcanics on the Western limb, more rocks of the Betty Creek (?) volcanics, containing pyroxenes and including more basic flows indicate the presence of an assumed fault immediately West of the Mount Dilworth rocks. Due to heavy glacier cover, this fault cannot be verified. This assumed fault is thought to run subparallel to the NNW trending (steep SW dipping) axial plane of the anticline.

A penetrative foliation locally developed into intense shear zones and schistosity, trends oblique to the axial plane of the anticline. This foliation trends consistently 310 to 340 degrees with a 60 to 85 degree Easterly dip. Numerous parallel faults and shears occur throughout the claim, variable filled with quartz +/- minor sulphides.

The orientation of bedding planes is variable across the property with the majority of planes oriented NW-SE with NE dip. The bedding is reoriented on limbs of the folds with hinges trending NW-SE to NNW-SSE. The folds axes are plunging gently to the NNW (340/35) or locally to the SE (140/20). In nearly all lithologies except for the massive andesites, there is a well-developed axial cleavage of folds. The cleavages planes dip steeply to the NNE or NE. The attitude of cleavage together with the geometry of outcrop-scale folds indicates the SWward vergency of map-scale fold structures. The majority of exposures represent normal NEdipping limbs of these folds. Locally, in particular directly east of the main ridge, a very steep overturned limb is exposed. The K-feldspar altered rocks bear fairly consistent foliation inclined to the W or SSE at a moderate angle. The orientation of the foliation seems to be unrelated to the position of bedding and axial cleavage of folds. The outcrops of K-feldspars altered rocks are at least partly bounded by faults (255/65 NW; 146/78 SW). A number of meso- to map-scale faults occur in the area. They strike mostly NW-SE and NE-SW and form two conjugate sets developed under a N-S compression regime. In one case, a thrust was observed having the SW-ward polarity (150/40 NE oriented plane) and the amplitude exceeding a few dozen meters.

## Geochemical Sampling

Sampling on the property consisted of rock geochemical sampling only. A total of 61 rock samples have been collected during the program.

Because of the regional nature of the program, even some of the outcrop exposures were sampled as composites, as to get a general representation of metallic content, to be followed with more detailed chip sampling at a later time, for those samples returning encouraging assays. No control samples have been inserted due to the reconnaissance nature of the program.

The types of rock samples taken are as follows:

- Chip sample: A continuous chip sample over a defined width.
- Composite chip: Chips collected representatively, but not continuously from larger outcrops over a defined width, usually several metres across.
- Composite sample: Composite samples from different rocks in sub-crop areas.
- Grab sample: Non-select grabs of sub-crop or talus randomly collected.
- Select grab: Samples collected selectively from mineralized or altered rock.
- Float: Samples from float, usually single pieces or limited amounts.

## Assaying

Samples were taken to Actlabs in Stewart for processing. In the Stewart prep lab, the entire sample is crushed to a nominal minus 10 mesh (1.7 mm), mechanically split (riffle) to obtain a representative



sample and then pulverized to at least 95% minus 150 mesh (106 microns). A split is then sent to Actlabs in Ontario. A 0.5 g of sample is digested with aqua regia for 2 hours at 95 ° C. The sample is cooled then diluted with deionized water. The samples are then analyzed on a Perkin Elmer ICP for the 35 element suite (Ag, Cd, Cu, Mn, Mo, Ni, Pb, Zn, Al, As, B, Ba, Be, Bi, Ca, Co, Cr, Fe, Ga, Hg, K, La, Mg, Na, P, S, Sb, Sc, Sr, Ti, Te, Tl, U, V, W, Y and Zr). A matrix standard and blank are run every 13 samples. The aqua regia digestion is near total for base metals however will only be partial for silicates and oxides. For gold and silver, a 30 gram sample is mixed with fire assay fluxes (borax, soda ash, silica, litharge) and with Ag added as a collector and the mixture is placed in a fire clay crucible, the mixture is preheated at 850°C, intermediate 950 °C and finish 1060 °C, the entire fusion process should last 60 minutes. The crucibles are then removed from the assay furnace and the molten slag (lighter material) is carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button is then placed in a preheated cupel which absorbs the lead when cupelled at 950°C to recover the Ag (doré bead) + Au. Au is separated from the Ag in the doré bead by parting with nitric acid. The resulting gold flake is annealed using a torch. The gold flake remaining is weighed gravimetrically on a microbalance.

The Geology and sample locations are presented in Figure 4.

## Discussion and Interpretation of Results

The Surprise Creek claims are underlain by rocks of predominantly Betty Creek and Mount Dilworth formations. Hence, the stratigraphy of the Surprise Creek claims is favourable for hosting a possible Kuroko type VMS deposit. Good indicators for the possible presence of such a deposit type include the presence of an acid volcanic system, i.e: the felsic volcanics of the Mt. Dilworth formation and the presence of jasper and magnetite in submarine sedimentary (-exhalative?) rocks, as well as the presence of syngenetic lead-zinc mineralization and barite horizons, all observed at Surprise Creek.

The best results were returned for samples collected in the newly located “Rumble Zone”. With 30 of the 35 samples collected here returning anomalous results, this zone warrants significant follow-up work. All of the highest returns for the property (other than Au) came from Rumble Zone samples. Samples collected from mineralized barite boulders and veins averaged 22.9 ppm silver, 14,368 ppm lead and 7,947 ppm zinc. Samples collected from the strong quartz-sericite alteration/quartz stockwork zone averaged 29.3 ppm silver, 1,819 ppm lead and 3,054 ppm zinc. The best results are listed below:

Sample#	Rock type	Width(m)	Ag (ppm)	Pb (ppm)	Zn (ppm)
X07560	QSP + quartz veins	Grab	18.3	452	9070
X07566	QSP + quartz veins	1.3	64.4	585	369
X07567	QSP + quartz veins	1.5	33.6	2080	1610

X07568	QSP + quartz veins	1.2	51.8	2.48%	1370
X07587	QSP + quartz veins	Grab	65.7	872	451
X07588	QSP + quartz veins	1	32.6	2490	1440
X07589	QSP + quartz veins	Grab	10.2	2170	9390
X07599	QSP + quartz veins	1.2	50.6	370	117
X07600	QSP + quartz veins	1.2	68.5	2390	8490
X07503	QSP + quartz veins	0.8	35.7	1420	8340
X07506	QSP + quartz veins	0.6	97	1220	8140
X07509	QSP + quartz veins	1.6	13.6	957	9580
X07563	Mineralized barite	Float	62.7	3.85%	1.90%
X07564	Mineralized barite	1.1	3.8	3900	1640
X07511	Exhalative barite	Float	2.8	313	2.28%

There appears to be silver-lead-zinc enrichment in the Rumble Zone area. Mineralization occurs in quartz veins and quartz-sericite altered rocks throughout the area, barite veins in the area and in exhalative barite found at the base of the cliffs. Of note, the best zinc mineralization was found in laminated barite (2.28% in sample X07511), however this material contains zinc only; no lead. Exhalative beds elsewhere did not generally return encouraging results, but values as high as 831 ppm lead and 9,620 ppm zinc were returned from an exhalative horizon high up on the main divide immediately West of the head of the Jagiello glacier.

## Conclusion and Recommendations

Rocks with encouraging looking mineralization have been located at several places on the claims, and should be further followed up, notably the highly mineralized barite rich boulders in the vicinity of the Rumble Zone, high above the toe of the Jagiello glacier. The approximate source of these boulders has been determined, but a team of experienced climbers will be needed to follow this material up to its exact source. Encouraging litho-geochemistry for samples from the Rumble Zone further supports the presence of a mineralized system below. Rock sample results include up to 866 ppb gold, 68.5 ppm silver, 3.85% lead and 2.28% zinc. This area should be the focus for follow-up exploration. The follow-up program should be mostly systematic sampling and detailed geological mapping of the ridge between the lower Jagiello and Grunwald Glaciers.

Alternatively, rather than working the steep terrain, a drill could be set up on top of the main ridge, and the zone could be drilled perpendicular to bedding direction, considering the target mineralization is a stratiform unit.

Other areas to be targeted for exploration should be in the vicinity of the Mount Dilworth felsic rocks, especially where mineralized sedimentary and exhalative rocks have been located, such as the head of the Jagiello Glacier. These areas should be further mapped and sampled.

Recommendations for the property consist of a two phase approach. Phase 1: A two week mapping / prospecting / sampling program is recommended for the complete claim block, focusing on the newly discovered Rumble Zone and targets identified in the current VTEM geophysics survey. The program would be a helicopter supported with a team of 2 geologists and 2 geo-technicians. The crew should have some mountaineering skills as the terrain is rugged and in places, heavily glaciated. Phase 2: Initial drilling and evaluation of the Rumble zone and surrounding zones.

## Statement of costs

Exploration Work type					Totals
PERSONNEL		Days	Rate	Subtotal	\$40,067.71
<b>CMG Personnel</b>	<b>Position</b>				
Andrew Wilkins	Senior Geologist	2.0	\$775.00	\$1,550.00	
Willie Kushner	Project Geologist	2.0	\$625.00	\$1,250.00	
Tobias Schoettler	Geologist	2.0	\$625.00	\$1,250.00	
Marko Van Wermeskerken	Climbing Geologist	20.0	\$775.00	\$15,500.00	
Alex Walus	Consulting Geologist	1.0	\$775.00	\$775.00	
Kevin Patterson	Jr Geologist	1.0	\$625.00	\$625.00	
Kyle Oak	Jr Geologist	20.0	\$625.00	\$12,500.00	
Lucas Parada	GeoTechnician	1.0	\$450.00	\$450.00	
<b>GBR Personnel</b>					
Chris Taylor	Senior Geologist	1.0	\$862.17	\$862.17	

Lucia Theny	Jr Geologist	2.0	\$178.04	\$356.08	
Dr. Dan Gibson	Consulting Geologist	5.0	\$855.00	\$4,275.00	
Afsar Gulsen	GeoTechnician	3.0	\$224.82	\$674.46	
<b>OFFICE STUDIES</b>					<b>\$25,212.50</b>
<b>Project Preparation and Report</b>					
Andrew Wilkins	Senior Geologist	1.0	\$775.00	\$775.00	
Marko Van Wermeskerken	Climbing Geologist	22.5	\$775.00	\$17,437.50	
Report Prep	Wilkins, Theny, Kratchet, Kushner, Bing-Hall			\$7,000.00	
<b>AIRBORNE EXPLORATION SURVEY</b>					<b>\$215,169.4</b>
V-TEM Survey	1763.31 Line Kilometres			\$ 215,169.40	
<b>GEOCHEMICAL SURVEYING</b>		<b>Nbr.</b>	<b>Rate</b>	<b>Subtotal</b>	<b>\$1,832.72</b>
<b>Acme Labs / Actlabs</b>					
Samples (Rocks, core etc)		62	\$ 29.56	\$1,832.72	
<b>CAMP EXPENDABLES</b>					<b>\$1,087.20</b>
Field Expendables	Bags, Tags, Flagging, climbing gear			\$1,087.20	
<b>TRANSPORTATION</b>					<b>\$22,523.61</b>
Truck rental		20.00	\$93.65	\$1,872.90	
<b>HELICOPTER</b>					
Helicopter	10.6 hrs, includes fuel and crew accommodation	10.6	\$1,948.18	\$20,650.71	
<b>FOOD and ACCOMMODATION</b>					<b>\$7,762.80</b>

Accommodation		60	\$81.81	\$4,908.60	
Food		60	\$47.57	\$2,854.20	
<b>COMMUNICATIONS</b>					<b>\$647.00</b>
Field & Camp Communications	Satellite Internet, radio rental, base station and repeater	20	\$32.35	\$647.00	
<b>SHIPPING</b>					<b>\$500.00</b>
Freight	Sample shipments and supply shipping			\$500.00	
				<i>TOTAL Expenditures</i>	<b>\$314,802.94</b>

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## Statement of Qualifications

I, Lucia Maria Theny do hereby certify that:

I graduated with a Bachelor of Science degree in Earth and Environmental Sciences from the University of British Columbia, Kelowna, British Columbia in 2010.


I have been practicing my profession as an Exploration Geologist continuously since my graduation in 2010.

I am employed by Preakness Management Group who managed the Surprise Creek Exploration Project for Great Bear Resources.

The information contained in this report is based largely on the reports from A. Walus, D. Dunn and C. Davis, and M. Van Wermeskerken, 2005, 2007, 2010 respectively.

I wrote the report and believe it accurately depicts the information available at the time of the report.

Dated this 18<sup>th</sup> day of October, 2010

A handwritten signature in black ink, appearing to read 'Lucia Maria Theny', written in a cursive style.

Lucia Maria Theny, B.Sc., Hons, GIT

# Appendix A – Sample Locations and Descriptions



Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07551	Sep-7-10	459731	6228603	1820	Outcrop	Chip	3.4	Fault	Quartz-jasper-ankerite			Fault zone with abundant quartz-jasper, as lenses <10 cm wide, some banded. Intermediate tuff hangingwall, intermediate breccia footwall, ankeritic, with rounded, flattened fragments <10 cm and calcite-manganese microbreccia zones.	Ridgetop location
X 07552	Sep-7-10	459921	6227943	1347	Morraine	Composite		Andesite	Propylitic (chlorite-epidote-carbonate)	Up to 60% quartz-calcite veins and breccia zones up to 50 cm wide with epidote halos and minor chlorite.	Minor pyrite (<1%) as clots in small quartz stringers and in wallrocks	Chloritic, fine grained, dark green, massive andesite with up to 60% quartz-calcite veins and breccia zones up to 50 cm wide with epidote halos and minor chlorite. Very large slickensides on some surfaces.	Boulder field at base of glacier and base of cliffs. Material appears to come from the cliffs directly above.
X 07553	Sep-8-10	458046	6228421	2240	Outcrop	Composite		Intermediate ash tuff	Silica-sericite	25% quartz stringers (various directions) up to 3 mm	2-3% fine disseminated pyrite in sericite altered wallrock	Pale grey ash tuff with a few lapilli sized fragments. Very hard, with patchy limonite stain. Sericite altered. Weathers grey-brown. Angular clots and fragments <1mm of jasper in a siliceous pale green groundmass.	Ridgetop location
X 07554	Sep-8-10	458083	6228499	2251	Outcrop	Chip	3.8	Intermediate ash tuff	Silica-sericite	Carbonate +/- quartz veins and stringers and breccia zones up to 20 cm wide, partially leached out, with abundant limonite. Various directions.	5% disseminated and aggregates of fine pyrite as vein halos, locally massive	Pale grey to grey-green ash tuff, cracked with carbonate +/- quartz veins and stringers and breccia zones up to 20 cm wide, partially leached out, with abundant limonite. Veins in various directions. Manganese stain. Pyrite zones as vein halos.	Base of bluffs near top of ridge

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07555	Sep-8-10	458045	6228350	2254	Subcrop	Composite	6.0	Exhalite (?)	Carbonate	10% calcite veins parallel to banding.	1-2% fine disseminated pyrite in the breccia zones.	Banded, very fine grained limy mudstone (exhalite?), mixed with breccia zones. Dark weathering (ankerite-manganese oxide). Minor fine disseminated pyrite.	Overall bed approximately 20 m wide, as observed in subcrop.
X 07556	Sep-8-10	458003	6228317	2270	Outcrop	Chip	3.0	Shear	Silica, chlorite, sericite	Quartz-specularite stringers <2 mm in jasperoid footwall part, quartz-calcite stringers <2 cm	Trace of pyrite	Sheared volcanics with parallel quartz-calcite stringers <2 cm. FeOx. Footwall 80 cm is a quartz-jasper zone with quartz and specularite stringers <2 mm.	
X 07557	Sep-8-10	458130	6226775	1979	Outcrop	Chip	0.8	Quartz-Jasper breccia	Silica	Clear glassy quartz infill, and a mineralized chalcedony vein.	1% chalcopyrite and minor malachite in a 5 cm chalcedonic vein	Angular jasper fragments <5 cm and some solid jasper bands <15 cm, with clear glassy quartz infill, vuggy. Includes a chalcedonic vein with trace of chalcopyrite and minor malachite. Hosted in maroon coarse lithic tuff with subangular polymict blocks <20 cm and abundant angular jasperoid fragments <2 mm, weakly bedded.	Zone pinches and swells from 10 cm to 80 cm. Barite increases towards the North within this zone
X 07558	Sep-8-10	458180	6226876	2036	Outcrop	Chip	0.7	Quartz-Jasper breccia	Silica	Clear glassy quartz crackle infill.		Angular jasper fragments <5 cm and some solid jasper bands <15 cm, with clear glassy quartz infill, vuggy. Hosted in maroon coarse lithic tuff with subangular polymict blocks <20 cm and abundant angular jasperoid fragments <2 mm, weakly bedded.	On strike with X07557

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07559	Sep-8-10	458180	6226876	2036	Outcrop	Composite	2.4	Quartz-Jasper-chalcedony breccia	Silica	Irregular quartz-jasper veins <2 cm and many crackle quartz stringers <2mm		Quartz-Jasper-chalcedony breccia with abundant pyrite boxwork in quartz rich zones. Numerous irregular quartz-jasper veins <2 cm parallel to the main zone. Many quartz stringers <2mm various directions. Dark grey groundmass with euhedral augite (?) phenocrysts <1mm in tuffaceous wallrock.	Hangingwall to X07558
X 07560	Sep-9-10	462490	6228332	900	Outcrop	Composite grab		Intermediate flows (?)	Strong quartz-sericite-pyrite	Sheeted quartz veins <3 cm, with minor galena.	<2% galena in quartz veins (<0.5% total) and 5% disseminated pyrite.	Strong QSP zone in intermediate volcanics with abundant sheeted quartz and quartz-calcite veins <3cm, mineralized with <2% galena (aggregates <2 mm). Few quartz-calcite breccia zones with quartz fragments <3mm.	At bottom of rappel sampling line.
X 07561	Sep-10-1	462514	6227850	1370	Subcrop	Composite		Intermediate volcanics	Strong quartz-sericite-pyrite	Few quartz stringers <2mm	1-2% fine disseminated pyrite and trace of sphalerite (1mm clot) in one of a few quartz stringers	QSP zone in intermediate volcanics with abundant quartz stringers <2mm, mineralized with trace of sphalerite (1 mmm clot). Limonitic weathering.	Subcrop on top of steep spur
X 07562	Sep-11-1	462417	6228221	1069	Outcrop	Chip	4.4	Intermediate volcanics		Irregular and sheeted quartz veins <3 mm, ranging from pure quartz to massive pyrite, with clots <2mm of galena (<1% overall).	Sheeted veins, ranging from pure quartz to massive pyrite, with clots <2mm of galena (<1% overall).	Quartz vein stockwork in sericitic volcanics, with 1ry texture masked by alteration. Limonite stained. Dark grey-green fine grained volcanics with ghosts of euhedral feldspars. Irregular and sheeted quartz veins <3 mm, ranging from pure quartz to massive pyrite, with clots <2mm of galena (<1% overall). Few galena clots outside the veins as well. Weakly foliated.	Above rappel sampling traverse

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07563	Sep-11-1	462417	6228221	1069	Float	Grab		Quartz-barite-sulphide breccia		Massive quartz-barite-sulphide vein	Up to 15% galena and 5% sphalerite as clots and stringers (galena) and 5% disseminated pyrite.	Quartz-barite-sulphide breccia. Boulders up to 30 cm of quartz-barite with clots and stringers of galena, and clots of sphalerite, <3 mm	Abundant mineralized boulders in the talus field above the rappel traverse
X 07564	Sep-11-1	462295	6228237	1094	Outcrop	Chip	1.1	Fine grained magnetic andesite	Chlorite-carbonate	Approximately 30% quartz-barite-sulphide veins <10 cm	3-5% fine disseminated pyrite. <0.5% galena.	Mineralized quartz-barite vein stockwork in intermediate volcanics (fine grained, dark green magnetic andesite). Approximately 30% vein material (irregular <10cm).	Base of cliffband at top of talus slope
X 07565	Sep-11-1	462295	6228237	1094	Outcrop	Composite	2.0	Fine grained magnetic andesite	Chlorite-carbonate	Few quartz-barite-sulphide veins	Trace of galena and pyrite in veins	Mineralized quartz-barite vein stockwork in intermediate volcanics (fine grained, dark green magnetic andesite).	Hangingwall to X07564
X 07566	Sep-11-1	462389	6228264	1036	Outcrop	Chip	1.3	Intermediate volcanics	Quartz-sericite-pyrite	10% irregular quartz crackle	15% fine disseminated pyrite and pyrite stringers	QSP zone, part of a shear zone. Highly irregular quartz stringers throughout, appearing like a breccia crackle matrix. 10% quartz vein. 15% fine disseminated pyrite and as stringers.	
X 07567	Sep-11-1	462389	6228264	1036	Outcrop	Chip	1.5	Intermediate volcanics	Quartz-sericite-pyrite	10% irregular quartz crackle	15% fine disseminated pyrite and pyrite stringers. <0.5% galena	QSP zone, part of a shear zone. Highly irregular quartz stringers throughout, appearing like a breccia crackle matrix. 10% quartz vein. 15% fine disseminated pyrite and as stringers. Minor galena.	Footwall to X07566

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07568	Sep-11-1	462389	6228264	1036	Outcrop	Chip	1.2	Intermediate volcanics	Quartz-sericite-pyrite	10% irregular quartz crackle and quartz-pyrite veins <3 cm, highly leached. 2 cm quartz-galena (15%) and 10% pyrite at contact with main shear.	15% fine disseminated pyrite and pyrite stringers, <0.5% galena	QSP zone, part of a shear zone. Highly irregular quartz stringers throughout, appearing like a breccia crackle matrix. 10% quartz vein. 15% fine disseminated pyrite and as stringers. Includes a 2 cm quartz-galena (15%) vein with 10% pyrite at contact with main shear.	Hangingwall to X07566
X 07569	Sep-13-1	458884	6228992	2006	Outcrop	Chip	2.0	Intermediate, magnetic ash tuff (?)	Carbonate	Carbonate stringers <2 cm in various directions as crackle, some with coarse pyrite stringers, one with minor galena.	3-5% pyrite and <0.5% galena in carbonate stringers	Dark grey-green very fine magnetic massive volcanics (ash tuff?) with carbonate stringers <2 cm in various directions as crackle, some with coarse pyrite stringers, one with minor galena. Hematitic weathering.	
X 07570	Sep-13-1	462017	6227896	1497	Outcrop	Chip	2.0	Intermediate volcanics (lapilli tuff?)	Quartz-sericite-pyrite	Leached out, irregular, bluish grey quartz-sulphide veins crosscut by sheeted glassy quartz vein stockwork <1cm, 10/m	30% sulphide boxwork (mostly pyrite) in veins, with 5-7% disseminated (leached out) in host rocks	Highly leached out quartz-sericite-pyrite altered volcanics (lapilli tuff?), with leached out, irregular, bluish grey quartz-sulphide veins abundant limonite-jarosite.	Upper Rumble zone
X 07571	Sep-13-1	462029	6227892	1495	Talus	Grab		Quartz-sulphide vein		Quartz sulphide vein	45-50% leached out sulphides	Leached out quartz-sulphide vein material	Grab from talus, select, over a 2m by 5m area in upper Rumble zone

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07572	Sep-13-1	462058	6227905	1485	Outcrop	Chip	0.4	Quartz-sulphide vein		Quartz sulphide vein	5% disseminated pyrite + 10% sulphide boxwork	Chip across blue-grey quartz lens 0.35 m by 2.0 m with 5% disseminated pyrite and 10% sulphide boxwork. Limonite halos.	chip across 2 metre long lens (0.35 cm wide) in upper Rumble zone
X 07573	Sep-14-1	455763	6228591	1740	Outcrop	Chip	1.2	Felsic tuff	Silica	Few quartz veins <2 cm parallel to bedding	1% euhedral pyrite boxwork	Felsic tuff with abundant manganese oxide coating. Very fine, cherty	
X 07574	Sep-15-1	456967	6224981	1875	Outcrop	Composite		Felsic volcanics	Silica (Potassic?)		3-5% fine disseminated pyrite	Felsic volcanics with diffuse feldspar phenocrysts. 3-5% fine disseminated pyrite. Limonitic weathering. White oxide precipitate	Sample in large gossanous nunatak
X 07575	Sep-15-1	456915	6224781	1851	Outcrop	Chip	1.1	Fault	Quartz, pyrite	Quartz-pyrite stringers parallel to fault with 10% leached out pyrite.	10% leached out pyrite	Quartz-pyrite stringers parallel to fault with 10% leached out pyrite. Abundant FeOx, hosted in siliceous feldspar porphyry. Euhedral feldspar phenocrysts <2 mm in a dark to medium grey fine grained very siliceous groundmass.	
X 07576	Sep-15-1	456636	6224719	1742	Float	Grab		Siliceous tuff	Silica		7-10% fine euhedral pyrite boxwork	Highly leached siliceous tuff with leached out fragments, leaving a blue-grey fine granular quartz groundmass. 7-10% pyrite boxwork with abundant limonite.	Close to source
X 07577	Sep-15-1	456777	6224582	1726	Outcrop	Chip	1.0	Felsic/intermediate volcanics		Few quartz stringers <3mm	Pyrite and traces of black metallic mineral (black-jack?) in quartz stringers	0.95 metres across fracture set. Appears to be a contact between amphibole bearing unit and felsic tuff. Few quartz stringers <3mm with pyrite and traces of black metallic mineral (black-jack?)	Contact between an intermediate amphibole rich unit and felsic tuff
X 07578	Sep-15-1	456806	6224589	1726	Outcrop	Chip	0.2	Fault	Argillic			Argillically altered lapilli tuff with fragments leached out. Abundant limonite.	

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07579	Sep-15-1	456021	6224168	1564	Outcrop	Composite	8.0	Breccia		Carbonate breccia matrix		Quartz (chert?) carbonate breccia zone forming an approximately 25 to 30 m long lens. Angular fragments of quartz and chalcedony or chert in a carbonate fill. Patchy hematite 'bleeds'. Brown weathering (siderite?)	
X 07580	Sep-16-1	458719	6226770	1749	Outcrop	Chip	2.0	Volcaniclastic (siltstone)	Carbonate-silica	Calcite veins		Very fine grained, laminated volcaniclastic (siltstone). Very hard with abundant MnO. Calcareous bands and irregular calcite veins <2 cm parallel to bedding. Folded (open folds). Jasperoid pods and beds near hangingwall.	
X 07581	Sep-16-1	458764	6226736	1763	Outcrop	Chip	1.5	Siltstone-exhalite(?)	Carbonate-silica			Very fine, folded sedimentary rock with laminated quartz-jasper-specularite-siltstone beds, FeOx rich. Very irregular bedding.	
X 07582	Sep-16-1	458796	6224128	2154	Outcrop	Chip	3.0	Cherty volcanics	Silica, sericite, pyrite	Quartz stringers <3 mm and quartz-pyrite pods <5 cm with up to 40% pyrite	<40% pyrite in qtz-py pods, but only 3% overall	Very siliceous, locally cherty volcanics, crackled with white quartz stringers <3 mm. Quartz-pyrite veins and pods <5 cm wide, parallel to zone with up to 40% pyrite, mostly leached out. Hosted in intermediate feldspar porphyry. Limonitic.	
X 07583	Sep-16-1	458659	6224173	2179	Outcrop	Composite	4.2	Volcaniclastic (?)	Quartz-sericite-pyrite	Quartz-pyrite breccia matrix	<30% pyrite as disseminations and aggregates, with up to 40% pyrite in breccia zones	Composite across a very strong QSP zone in siliceous, aphanitic (volcaniclastic?) sedimentary rocks with <30% disseminated and aggregates of pyrite. Includes local breccia zones with very siliceous wallrock fragments in a quartz-pyrite matrix (matrix supported), with up to 40% pyrite.	Overall zone approximately 15m wide

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07584	Sep-17-1	460339	6223612	1866	Outcrop	Composite	3.0	Volcaniclastic				Composite across nose of parasitic fold in fine deformed siltstone including a quartz-jasper band, hosted in fine volcaniclastic sedimentary rocks.	
X 07585	Sep-17-1	460348	6223626	1874	Outcrop	Grab		Hornblende-feldspar porphyry				Limonitic dark green hornblende-feldspar porphyry with abundant manganese oxide. Euhedral feldspar and hornblende phenocrysts in a fine grained dark green groundmass. Partially leached.	
X 07586	Sep-17-1	462041	6224144	1580	Outcrop	Chip	1.1	Andesitic flow		10 cm quartz-limonite vein with trace of galena at footwall	Traces of galena in footwall quartz vein	Laminated, flowbanded andesitic flow with a 10 cm quartz-limonite vein at footwall, containing traces of galena. Abundant Fe and Mn oxides.	
X 07587	Sep-18-1	462354	6227819	1434	Outcrop	Grab		Andesite (?)	Quartz-pyrite	Massive pyrite stringers (30%) and quartz stringers <1 mm with traces of sphalerite (?)	Massive pyrite stringers (30%) and traces of sphalerite (?) in millimetric quartz stringers.	Strong quartz-pyrite zone within highly silicified andesite (?). Up to 30% pyrite as stringers and locally as breccia matrix (with subangular highly siliceous fragments). Crosscut by greyish quartz stringers <1mm, with traces of black, metallic, highly reflective mineral (black sphalerite?). Abundant limonite-jarosite.	Upper Rumble Zone
X 07588	Sep-18-1	462354	6227800	1434	Outcrop	Chip	1.0	Andesitic flow	Carbonate	Quartz veins (<3 cm, 4/m) with <1% galena .	<1% galena in quartz veins, <0.1% total.	Quartz vein stockwork with minor galena in carbonate altered fine andesitic flow.	Small 1m by 2m exposure only in Upper Rumble Zone.
X 07589	Sep-18-1	461860	6227746	1499	Float	Grab		Volcaniclastic siltstone	Carbonate	Barren calcite veins.	<1% sphalerite.	Banded grey calcareous very fine grained sedimentary rock (volcaniclastic siltstone?) with <1% very fine sphalerite, crosscut by barren calcite veins.	Float in Moraine near Rumble Zone. Reacts to zinc zap.



Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07590	Sep-19-1	463017	6226293	1690	Outcrop	Composite grab		Volcaniclastic	Chlorite-pyrite, weak QSP	25 cm coarse quartz-calcite vein included	3-5% disseminated pyrite	Strong foliated, pyritic, chlorite altered medium grained volcaniclastic.	
X 07591	Sep-19-1	463079	6226189	1687	Outcrop	Chip	1.0	Volcaniclastic	Chlorite-pyrite, weak QSP		3-5% disseminated pyrite	Strong foliated, pyritic, chlorite altered medium grained volcaniclastic.	
X 07592	Sep-19-1	463105	6226431	1612	Outcrop	Composite	8.0	Andesitic flow (?)	Strong quartz-sericite-pyrite	Irregular quartz veins <10 cm parallel to foliation	5-7% disseminated pyrite	Strong QSP zone with quartz veins along foliation and 5-7% disseminated pyrite. Abundant limonite.	
X 07593	Sep-20-1	461259	6226800	1738	Outcrop	Chip	1.8	Flow breccia	Chlorite-hematite		10% disseminated, euhedral pyrite	Strong foliated, maroon flow breccia with 10% disseminated euhedral pyrite. Few very siliceous nodules.	Ridgetop sample
X 07594	Sep-20-1	460709	6226549	1679	Outcrop	Chip	1.2	Andesite		Quartz vein with minor barite and calcite	Minor malachite stain	Chip across quartz vein +/- calcite +/- barite. Numerous crosscutting quartz veins, with vuggy quartz-limonite as last phase. Minor manganese oxide and malachite.	
X 07595	Sep-20-1	460710	6226550	1679	Outcrop	Composite	2.0	Andesitic ash tuff	Quartz-sericite	Quartz stockwork 5-10/m, <1 cm.		Composite chip across hangingwall of sample x07594. Very siliceous, sericitic fine ash tuff. Glassy, cherty, with quartz stockwork 5-10/m, <1 cm.	Hangingwall to sample x07594
X 07596	Sep-20-1	460683	6226520	1697	Outcrop	Chip	1.4	Siltstone-exhalite(?)		Calcite crackle fill	Trace of galena	Chip across very fine grained, laminated, highly deformed silty mudstone, with no measurable bedding due to deformation. Tightly folded. Locally crackled with calcite fill. Limonitic patches. Trace of galena. Includes a vuggy quartz vein at top of sample.	Ridgetop sample

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07597	Sep-21-1	462446	6228268	1020	Outcrop	Chip	0.8	Intermediate volcanics	Quartz-sericite-pyrite	Few massive pyrite stringers <2 mm	3% pyrite disseminated (and millimetric massive stringers)	Chip across QSP altered green intermediate volcanics. 3% disseminated pyrite.	Sample in rappel traverse sequence.
X 07598	Sep-21-1	462450	6228274	1010	Outcrop	Chip	2.9	Intermediate volcanics	Quartz-sericite-pyrite	Few massive pyrite stringers <2 mm	3% pyrite disseminated (and millimetric massive stringers)	Chip across QSP altered green intermediate volcanics. 3% disseminated pyrite.	Sample in rappel traverse sequence.
X 07599	Sep-21-1	462454	6228280	1000	Outcrop	Chip	1.2	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite veins <10 cm crosscut by barren quartz veins <2 cm.	Massive pyrite veins and disseminated pyrite totalling 15%	Chip across QSP altered green intermediate volcanics. 3% disseminated pyrite. Includes massive pyrite bands <10cm wide. Crosscutting shallow SW dipping white barren sheeted quartz veins <2 cm.	Sample in rappel traverse sequence.
X 07600	Sep-21-1	462458	6228284	990	Outcrop	Composite	1.2	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite veins <10 cm crosscut by barren quartz veins <2 cm.	Massive pyrite veins and disseminated pyrite totalling 15%	Composite chip across QSP altered green intermediate volcanics. 3% disseminated pyrite. Includes massive pyrite bands <10cm wide. Crosscutting shallow SW dipping white barren sheeted quartz veins <2 cm.	Sample in rappel traverse sequence. Highly oblique to foliation fabric.
X 07501	Sep-21-1	462463	6228290	980	Outcrop	Chip	0.9	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite as breccia matrix crosscut by barren quartz veins <2 cm.	Massive pyrite veins and disseminated pyrite totalling 15%	Chip across QSP altered green intermediate volcanics. 3% disseminated pyrite. Locally brecciated, with angular fragments of highly siliceous wallrock in a massive pyrite matrix. Crosscutting shallow SW dipping white barren sheeted quartz veins <2 cm.	Sample in rappel traverse sequence.

Sample #	Date	Easting	Northing	Altitude (m)	Exposure	Sample type	True width (m)	Lithology	Alteration	Veining	Mineralization	Description	Notes
X 07502	Sep-21-1	462466	6228297	970	Outcrop	Chip	1.4	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite as breccia matrix crosscut by barren quartz veins <5 cm.	Massive pyrite veins and disseminated pyrite totalling 15%	Chip across sheeted quartz veins <5 cm, 5/m in a highly QSP altered intermediate volcanic	Sample in rappel traverse sequence.
X 07503	Sep-21-1	462468	6228297	960	Outcrop	Chip	0.8	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite as breccia matrix crosscut by barren quartz veins <5 cm.	Massive fine grained pyrite veins and disseminated pyrite totalling 15%. Trace of galena in quartz stockwork.	Chip across sheeted quartz veins <5 cm, 5/m in a highly QSP altered intermediate volcanic. Very fine massive pyrite bands with an irregular quartz stockwork with traces of galena.	Sample in rappel traverse sequence. Contiguous with x07502
X 07504	Sep-21-1	462467	6228299	960	Outcrop	Grab		Intermediate volcanics	Strong quartz-sericite-pyrite	Dense quartz-pyrite +/- galena stockwork.	Very abundant, very fine grained, almost massive pyrite, 1% galena in dense quartz stockwork..	Grab from dense quartz stockwork with 30% very fine disseminated pyrite and 1% galena.	Sample in rappel traverse sequence.
X 07505	Sep-21-1	462470	6228302	960	Outcrop	Grab		Intermediate volcanics	Strong quartz-sericite-pyrite	Dense quartz-pyrite +/- galena stockwork.	Very abundant, very fine grained, almost massive pyrite, 1% galena in dense quartz stockwork..	Grab from dense quartz stockwork with 30% very fine disseminated pyrite and 1% galena.	Sample in rappel traverse sequence.
X 07506	Sep-21-1	462464	6228307	950	Outcrop	Chip	0.6	Intermediate volcanics	Strong quartz-sericite-pyrite	Massive pyrite as breccia matrix crosscut by barren quartz veins <2 cm.	Massive pyrite veins and disseminated pyrite totalling 15%	Chip across QSP altered green intermediate volcanics. 3% disseminated pyrite. Locally brecciated, with angular fragments of highly siliceous wallrock in a massive pyrite matrix. Crosscutting shallow SW dipping white barren sheeted quartz veins <2 cm.	Sample in rappel traverse sequence.



# Appendix B – Assay Lab Certificates



1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Acme Analytical Laboratories (Vancouver) Ltd.

[www.acmelab.com](http://www.acmelab.com)

**Client:** Great Bear Resources Ltd.

303 - 750 West Pender St.  
Vancouver BC V6C 2T7 Canada

Submitted By: Chris Taylor  
Receiving Lab: Canada-Smithers  
Received: August 16, 2010  
Report Date: August 25, 2010  
Page: 1 of 2

## CERTIFICATE OF ANALYSIS

SMI10000423.1

### CLIENT JOB INFORMATION

Project: BA  
Shipment ID:  
P.O. Number  
Number of Samples: 8

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200-250	8	Crush, split and pulverize 250 g rock to 200 mesh			SMI
7AR2	8	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN

### SAMPLE DISPOSAL

RTRN-PLP Return  
DISP-RJT Dispose of Reject After 90 days

### ADDITIONAL COMMENTS

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Coast Mountain Geological  
620 - 650 W. Georgia St.  
PO Box 11604  
Vancouver BC V6B 4N9  
Canada

CC: Andrew Wilkins



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Acme Analytical Laboratories (Vancouver) Ltd.  
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Great Bear Resources Ltd.**  
 303 - 750 West Pender St.  
 Vancouver BC V6C 2T7 Canada

Project: BA  
 Report Date: August 25, 2010

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CERTIFICATE OF ANALYSIS

SMI10000423.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
7121	Drill Core	1.70	<0.001	0.003	<0.01	<0.01	3	<0.001	0.001	<0.01	20.95	0.01	<0.001	<0.001	0.007	<0.01	0.01	0.010	<0.001	0.03	0.42
7122	Drill Core	2.79	0.001	0.001	<0.01	<0.01	2	<0.001	<0.001	<0.01	5.05	0.01	<0.001	<0.001	0.003	<0.01	0.15	0.041	<0.001	0.03	0.57
7123	Drill Core	1.79	<0.001	0.002	0.01	<0.01	3	<0.001	<0.001	<0.01	14.44	<0.01	0.003	<0.001	0.005	<0.01	0.24	0.097	<0.001	0.03	0.60
7124	Drill Core	0.93	0.004	0.004	0.02	<0.01	3	<0.001	0.001	0.60	8.70	0.04	0.017	<0.001	0.002	<0.01	18.56	0.014	<0.001	0.05	0.19
7125	Drill Core	1.33	<0.001	0.003	<0.01	<0.01	3	<0.001	<0.001	<0.01	1.57	<0.01	0.001	<0.001	<0.001	<0.01	0.02	0.018	0.001	0.01	0.31
7126	Drill Core	2.41	<0.001	0.015	<0.01	<0.01	<2	<0.001	<0.001	<0.01	2.47	0.01	0.002	<0.001	<0.001	<0.01	0.24	0.084	0.001	0.04	0.40
7127	Drill Core	1.30	<0.001	0.007	<0.01	0.02	6	<0.001	0.001	<0.01	4.01	0.01	0.001	<0.001	0.002	<0.01	0.07	0.058	<0.001	0.01	0.33
7128	Drill Core	0.51	0.002	<0.001	<0.01	<0.01	7	<0.001	<0.001	<0.01	4.08	0.01	0.011	<0.001	<0.001	<0.01	<0.01	0.131	<0.001	0.01	0.32



Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Phone (604) 253-3158 Fax (604) 253-1716

[www.acmelab.com](http://www.acmelab.com)

**Client:** Great Bear Resources Ltd.

303 - 750 West Pender St.

Vancouver BC V6C 2T7 Canada

Project: BA

Report Date: August 25, 2010

Page: 2 of 2 Part 2

## CERTIFICATE OF ANALYSIS

SMI10000423.1

	Method	7AR	7AR	7AR	7AR	7AR
	Analyte	Na	K	W	Hg	S
	Unit	%	%	%	%	%
	MDL	0.01	0.01	0.001	0.001	0.05
7121	Drill Core	0.01	0.46	<0.001	<0.001	24.61
7122	Drill Core	0.02	0.59	<0.001	<0.001	5.06
7123	Drill Core	0.01	0.53	<0.001	<0.001	16.46
7124	Drill Core	0.01	0.08	<0.001	<0.001	9.09
7125	Drill Core	0.01	0.38	<0.001	<0.001	1.06
7126	Drill Core	0.01	0.45	<0.001	<0.001	2.02
7127	Drill Core	0.01	0.34	<0.001	<0.001	2.00
7128	Drill Core	0.01	1.02	<0.001	<0.001	1.35





Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

**Client: Great Bear Resources Ltd.**  
 303 - 750 West Pender St.  
 Vancouver BC V6C 2T7 Canada

Project: BA  
 Report Date: August 25, 2010

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## QUALITY CONTROL REPORT

SMI10000423.1

Method	WGHT	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	7AR	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	Bi	Ca	P	Cr	Mg	Al	
Unit	kg	%	%	%	%	gm/mt	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
MDL	0.01	0.001	0.001	0.01	0.01	2	0.001	0.001	0.01	0.01	0.01	0.001	0.001	0.001	0.01	0.01	0.001	0.001	0.01	0.01	
Pulp Duplicates																					
7127	Drill Core	1.30	<0.001	0.007	<0.01	0.02	6	<0.001	0.001	<0.01	4.01	0.01	0.001	<0.001	0.002	<0.01	0.07	0.058	<0.001	0.01	0.33
REP 7127	QC		<0.001	0.007	<0.01	0.02	6	<0.001	0.001	<0.01	3.96	0.01	0.001	<0.001	0.002	<0.01	0.07	0.058	<0.001	0.01	0.34
Reference Materials																					
STD R4A	Standard		0.061	0.515	1.62	3.35	87	0.361	0.040	0.06	23.51	0.03	0.004	0.018	0.014	<0.01	0.98	0.043	0.013	0.87	1.31
STD R4A	Standard		0.062	0.515	1.61	3.33	89	0.360	0.040	0.06	23.45	0.03	0.004	0.018	0.014	<0.01	0.98	0.042	0.013	0.87	1.31
STD R4A	Standard		0.063	0.512	1.56	3.34	88	0.361	0.041	0.06	22.59	0.02	0.004	0.018	0.014	<0.01	0.99	0.044	0.013	0.88	1.31
STD R4A	Standard		0.063	0.515	1.57	3.36	89	0.366	0.041	0.06	22.77	0.03	0.004	0.018	0.015	<0.01	0.99	0.044	0.013	0.88	1.30
STD R4A Expected			0.062	0.502	1.5	3.31	86	0.334	0.04	0.06	23.38	0.023	0.004	0.017	0.0135	0.0024	0.94	0.042	0.012	0.83	1.25
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.01
BLK	Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001	<0.01	<0.01	<0.01
Prep Wash																					
G1	Prep Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.03	<0.01	0.008	<0.001	<0.001	<0.01	0.58	0.076	<0.001	0.53	1.16
G1	Prep Blank		<0.001	<0.001	<0.01	<0.01	<2	<0.001	<0.001	0.06	2.09	<0.01	0.008	<0.001	<0.001	<0.01	0.60	0.078	0.001	0.54	1.21



Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Phone (604) 253-3158 Fax (604) 253-1716

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Client: Great Bear Resources Ltd.

303 - 750 West Pender St.  
Vancouver BC V6C 2T7 Canada

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# QUALITY CONTROL REPORT

SMI10000423.1

Method		7AR	7AR	7AR	7AR	7AR
Analyte		Na	K	W	Hg	S
Unit		%	%	%	%	%
MDL		0.01	0.01	0.001	0.001	0.05
Pulp Duplicates						
7127	Drill Core	0.01	0.34	<0.001	<0.001	2.00
REP 7127	QC	0.01	0.34	<0.001	<0.001	2.01
Reference Materials						
STD R4A	Standard	0.07	0.53	<0.001	<0.001	16.63
STD R4A	Standard	0.07	0.52	<0.001	<0.001	16.53
STD R4A	Standard	0.07	0.52	<0.001	<0.001	16.46
STD R4A	Standard	0.06	0.52	<0.001	<0.001	16.49
STD R4A Expected		0.07	0.51	0.0011	0.001	16.7
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
BLK	Blank	<0.01	<0.01	<0.001	<0.001	<0.05
Prep Wash						
G1	Prep Blank	0.16	0.57	<0.001	<0.001	<0.05
G1	Prep Blank	0.17	0.61	<0.001	<0.001	<0.05



**Date Submitted:** 10-Sep-10  
**Invoice No.:** A10-5811  
**Invoice Date:** 19-Oct-10  
**Your Reference:** BA Project

**Great Bear Resources**  
**303-750 West Pender Street**  
**Vancouver B.C. V6C2T7**  
**Canada**

**ATTN: Chris Taylor**

## CERTIFICATE OF ANALYSIS

57 Rock samples were submitted for analysis.

The following analytical packages were requested: Code 1A2 Au - Fire Assay AA  
Code 1E3 Aqua Regia ICP(AQUAGEO)  
Code 8-AR Code 8-Assays

REPORT **A10-5811**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3  
Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control



**ACTIVATION LABORATORIES LTD.**

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com



**Activation Laboratories Ltd.      Report:    A10-5811 rev 1**

<b>Analyte Symbol</b>	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg	Na
<b>Unit Symbol</b>	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%	%
<b>Detection Limit</b>	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01	0.001
<b>Analysis Method</b>	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
7555	4.1	45.3	11	6320	27	7	826	4500	0.14	652	< 10	40	< 0.5	< 2	12.0	13	3	5.12	< 10	< 1	0.02	< 10	0.08	0.017
7556	0.3	3.8	16	3990	1	< 1	41	285	0.85	12	< 10	884	< 0.5	< 2	11.1	5	3	3.96	< 10	< 1	0.21	11	0.45	0.039
7557	28.8	1.4	810	1680	4	2	54	37	0.22	14	< 10	90	0.7	< 2	1.81	3	10	3.25	< 10	< 1	0.06	23	0.08	0.020
7558	0.8	0.7	14	949	10	1	34	66	0.05	24	< 10	450	1.5	< 2	0.41	< 1	23	3.51	< 10	< 1	< 0.01	< 10	< 0.01	0.023
7559	4.3	0.7	58	808	23	2	71	22	0.08	99	< 10	96	0.5	< 2	1.97	1	6	4.33	< 10	< 1	< 0.01	< 10	0.02	0.018

**Activation Laboratories Ltd.      Report:    A10-5811 rev 1**

Analyte Symbol	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Au	Zn
Unit Symbol	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	%
Detection Limit	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	5	0.001
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-AA	ICP-OES
7252	0.002	11.2	29	< 1	2	< 0.01	< 1	11	< 10	7	< 10	< 1	7		
7148	0.081	0.43	6	2	72	< 0.01	< 1	< 2	< 10	37	< 10	12	6		
7144	0.117	0.13	4	9	233	0.06	3	< 2	< 10	89	< 10	15	5		
7145	0.115	0.28	2	10	298	0.10	< 1	3	< 10	93	< 10	17	7		
7146	0.115	0.19	5	7	516	0.08	< 1	3	< 10	59	< 10	15	4		
7147	0.124	0.24	7	8	336	0.15	2	3	< 10	76	< 10	18	6		
61272	0.011	2.88	19	1	6	< 0.01	3	< 2	< 10	15	< 10	2	8		
61273	0.101	1.63	13	1	36	< 0.01	3	< 2	< 10	22	< 10	7	5		
61274	0.025	0.72	22	1	8	< 0.01	< 1	< 2	< 10	20	< 10	2	6		
61275	0.080	3.89	24	3	10	< 0.01	< 1	< 2	< 10	51	< 10	6	7		
61276	0.074	2.82	19	3	10	< 0.01	< 1	< 2	< 10	36	< 10	6	9		
61277	0.044	1.69	21	2	11	< 0.01	< 1	< 2	< 10	16	< 10	1	6		
61278	0.066	2.13	17	2	11	< 0.01	2	< 2	< 10	15	< 10	2	8		
61279	0.084	1.34	15	3	17	< 0.01	< 1	< 2	< 10	19	< 10	5	6		
61280	0.101	2.07	23	3	17	< 0.01	4	< 2	< 10	20	< 10	5	8		
61281	0.111	1.60	19	3	20	< 0.01	< 1	< 2	< 10	16	< 10	7	8		
61282	0.127	0.08	< 2	5	97	< 0.01	3	< 2	< 10	49	< 10	9	4		
61283	0.144	0.09	4	6	113	0.01	6	< 2	< 10	54	< 10	10	4		
61284	0.052	0.27	22	2	39	0.02	4	< 2	< 10	102	15	7	10		
61285	0.165	0.10	7	5	54	< 0.01	< 1	< 2	< 10	100	< 10	11	5		
61286	0.098	0.25	22	2	20	0.01	< 1	< 2	< 10	128	15	5	10		
61287	0.074	1.85	6	2	16	< 0.01	< 1	< 2	< 10	54	< 10	6	7		
61288	0.085	1.13	11	5	50	0.05	< 1	< 2	< 10	98	10	7	8		
61289	0.033	0.57	13	2	42	0.02	< 1	< 2	< 10	82	22	6	10		
61290	0.101	0.09	14	3	80	0.03	< 1	< 2	< 10	127	30	7	10		
61291	0.054	0.34	7	4	28	< 0.01	< 1	< 2	< 10	80	< 10	6	9		
61292	0.098	0.21	9	2	40	< 0.01	< 1	< 2	< 10	24	< 10	9	5		
61293	0.079	0.79	7	2	44	< 0.01	3	< 2	< 10	20	< 10	7	8		
61294	0.093	1.48	14	1	40	< 0.01	6	4	< 10	14	< 10	8	9		
61295	0.093	1.19	17	< 1	17	< 0.01	3	< 2	< 10	19	< 10	7	6		
61296	0.034	0.58	6	4	552	0.06	< 1	4	< 10	47	< 10	11	5		
61297	0.065	2.21	19	3	294	0.03	< 1	15	< 10	25	< 10	10	9		
61298	0.040	1.00	6	1	526	0.08	< 1	< 2	< 10	26	< 10	11	8		
61299	0.055	0.98	10	3	320	0.12	1	< 2	< 10	55	< 10	10	11		
61300	0.023	0.77	7	3	487	0.04	< 1	5	< 10	34	< 10	13	5		
61401	0.034	1.70	15	3	114	0.02	< 1	4	< 10	35	< 10	12	8		
61402	0.048	1.77	11	4	306	0.02	< 1	5	< 10	49	< 10	11	6		
61403	0.042	0.96	12	5	228	0.02	< 1	< 2	< 10	63	12	7	8		
61404	0.047	1.42	17	5	256	0.04	< 1	2	< 10	64	< 10	6	7		
61405	0.053	1.39	11	4	291	0.02	< 1	2	< 10	49	12	8	8		
61406	0.058	1.75	21	5	126	< 0.01	< 1	2	< 10	25	< 10	9	6		
61407	0.078	2.17	38	8	62	0.05	7	3	< 10	62	< 10	8	8		
61408	0.030	2.53	15	2	175	< 0.01	< 1	3	< 10	5	< 10	9	4		
61409	0.038	1.78	16	2	124	< 0.01	2	< 2	< 10	10	< 10	7	5		
61410	0.030	1.22	7	3	481	< 0.01	< 1	4	< 10	15	< 10	10	4		
61411	0.048	3.66	45	2	125	< 0.01	< 1	3	< 10	13	< 10	8	7	50	1.08
61412	0.026	2.18	17	1	28	< 0.01	2	3	< 10	7	< 10	4	5		
61413	0.033	2.08	22	2	19	< 0.01	< 1	2	< 10	8	< 10	4	6	42	1.05
7551	0.024	0.11	6	< 1	218	0.01	< 1	< 2	< 10	46	< 10	2	2		
7552	0.036	0.21	< 2	2	155	0.10	< 1	< 2	< 10	40	< 10	4	2		
7553	0.054	0.63	3	1	144	< 0.01	7	< 2	< 10	5	< 10	8	9		
7554	0.172	5.58	14	4	101	0.14	< 1	22	< 10	34	< 10	14	17		1.11

**Activation Laboratories Ltd.      Report:    A10-5811 rev 1**

<b>Analyte Symbol</b>	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Au	Zn
<b>Unit Symbol</b>	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	%
<b>Detection Limit</b>	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	5	0.001
<b>Analysis Method</b>	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-AA	ICP-OES
7555	0.013	3.21	18	1	417	< 0.01	< 1	25	< 10	11	< 10	4	3		
7556	0.070	0.11	3	2	290	< 0.01	< 1	< 2	< 10	45	< 10	6	3		
7557	0.013	0.35	16	2	630	0.01	4	< 2	< 10	16	< 10	9	7	< 5	
7558	0.002	0.10	16	< 1	42	< 0.01	1	< 2	< 10	8	16	2	2		
7559	0.004	0.27	36	< 1	740	< 0.01	< 1	< 2	< 10	14	< 10	3	4		





Quality Control																
Analyte Symbol	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Au	Zn	
Unit Symbol	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	%	
Detection Limit	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	5	0.001	
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-AA	ICP-OES	
GXR-1 Meas	0.037	0.18	73	1	159		6	< 2	36	78	146	23	13			
GXR-1 Cert	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0			
GXR-4 Meas	0.124	1.69	4	7	73		2	2	< 10	82	10	11	9			
GXR-4 Cert	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186			
KC-1A Meas																34.7
KC-1A Cert																34.6
CZN-3 Meas																49.6
CZN-3 Cert																50.9
GXR-6 Meas	0.034	0.01	4	25	32		< 1	< 2	< 10	181	< 10	7	18			
GXR-6 Cert	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110			
CCU-1C Meas																3.95
CCU-1C Cert																3.99
OREAS 13b (4-Acid) Meas		1.12														0.012
OREAS 13b (4-Acid) Cert		1.20														0
CDN-CGS-24 Meas																493
CDN-CGS-24 Cert																487
61278 Orig	0.065	2.10	17	2	10	< 0.01	2	< 2	< 10	15	< 10	2	8			
61278 Dup	0.068	2.16	17	2	11	< 0.01	2	< 2	< 10	15	< 10	3	8			
61292 Orig	0.098	0.21	9	2	39	< 0.01	2	< 2	< 10	24	< 10	9	4			
61292 Dup	0.099	0.21	10	2	41	< 0.01	< 1	< 2	< 10	24	< 10	9	5			
61295 Orig	0.093	1.19	17	< 1	17	< 0.01	3	< 2	< 10	19	< 10	7	6			
61295 Split	0.085	1.09	14	< 1	16	< 0.01	1	< 2	< 10	17	< 10	6	5			
61405 Orig	0.053	1.39	11	4	290	0.02	< 1	2	< 10	49	12	8	8			
61405 Dup	0.054	1.39	11	5	292	0.02	< 1	3	< 10	50	12	8	8			
7552 Orig	0.036	0.21	< 2	2	155	0.10	< 1	< 2	< 10	40	< 10	4	2			
7552 Split	0.036	0.20	< 2	2	144	0.09	< 1	< 2	< 10	37	< 10	3	2			
7556 Orig	0.068	0.11	4	2	281	< 0.01	7	3	< 10	45	< 10	6	3			
7556 Dup	0.071	0.11	3	2	298	< 0.01	< 1	< 2	< 10	46	< 10	6	3			
7557 Orig																< 5
7557 Dup																< 5
Method Blank Method Blank	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1			
Method Blank Method Blank	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	1	< 2	< 10	< 1	< 10	< 1	< 1			
Method Blank Method Blank																< 5
Method Blank Method Blank																< 0.001



**Date Submitted:** 21-Sep-10  
**Invoice No.:** A10-6144  
**Invoice Date:** 15-Oct-10  
**Your Reference:** BA Project

**Great Bear Resources  
STEWART B.C. OFFICE  
Stewart B.C.  
Canada**

**ATTN: Andrew Wilkins**

## CERTIFICATE OF ANALYSIS

31 Rock samples were submitted for analysis.

The following analytical package was requested: Code 1E3 Aqua Regia ICP(AQUAGEO)

REPORT **A10-6144**

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Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :

A handwritten signature in black ink, appearing to be "Emmanuel Esemé", written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control



**ACTIVATION LABORATORIES LTD.**

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL [Ancaster@actlabs.com](mailto:Ancaster@actlabs.com) ACTLABS GROUP WEBSITE [www.actlabs.com](http://www.actlabs.com)

**Activation Laboratories Ltd.      Report:    A10-6144**

Analyte Symbol	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg	Na
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%	%
Detection Limit	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01	0.001
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
x07155	37.2	0.8	85	373	3	2	316	106	0.08	134	< 10	284	< 0.5	331	0.03	3	21	4.76	< 10	< 1	0.05	< 10	0.01	0.066
x07422	< 0.2	1.3	21	979	4	8	3	101	2.98	31	< 10	60	0.6	< 2	0.79	32	9	7.50	20	< 1	0.02	< 10	4.23	0.040
x07423	< 0.2	1.3	28	952	4	9	6	92	2.69	36	< 10	57	0.5	< 2	0.69	30	9	7.87	10	< 1	0.02	< 10	3.70	0.044
x07424	< 0.2	0.6	6	422	2	< 1	5	116	0.78	3	< 10	130	1.6	< 2	0.13	2	8	2.46	10	< 1	0.11	51	0.87	0.077
x07560	18.3	61.1	24	924	21	3	452	9070	0.14	163	< 10	13	< 0.5	< 2	1.47	9	37	2.55	< 10	10	0.11	< 10	0.02	0.020
x07561	6.4	13.0	36	1360	4	2	489	1660	0.28	35	< 10	115	< 0.5	< 2	0.63	4	6	0.97	< 10	< 1	0.26	16	0.01	0.038
x07562	20.5	10.5	26	316	3	2	733	1080	0.12	87	< 10	12	< 0.5	< 2	0.02	6	11	2.64	< 10	5	0.10	< 10	< 0.01	0.019
x07563	62.7	249	29	1410	1	< 1	> 5000	> 10000	0.05	8	< 10	17	1.0	< 2	1.98	1	12	0.32	< 10	13	0.04	< 10	0.01	0.020
x07564	3.8	21.2	65	1100	< 1	< 1	3900	1640	0.07	38	< 10	57	< 0.5	< 2	0.89	4	< 1	0.53	< 10	4	0.05	< 10	< 0.01	0.024
x07565	2.2	28.2	30	2100	2	5	704	3200	1.02	20	< 10	247	< 0.5	< 2	2.84	14	12	3.77	< 10	1	0.79	14	0.50	0.065
x07566	64.4	4.0	43	151	20	4	585	369	0.33	445	< 10	< 10	< 0.5	< 2	0.30	17	3	5.01	< 10	2	0.24	< 10	0.02	0.018
x07567	33.6	10.7	60	441	7	3	2080	1610	0.28	113	< 10	13	< 0.5	< 2	0.27	11	4	3.12	< 10	7	0.20	< 10	0.02	0.020
x07568	51.8	15.1	224	317	6	5	> 5000	1370	0.47	427	< 10	15	< 0.5	2	0.26	17	4	3.97	< 10	< 1	0.32	13	0.02	0.020
x07569	0.3	1.8	8	2090	1	< 1	179	218	0.60	6	< 10	1470	< 0.5	< 2	6.42	10	2	3.32	< 10	< 1	0.42	19	0.20	0.318
x07570	7.8	< 0.5	6	44	6	1	180	27	0.03	16	< 10	1060	< 0.5	10	0.03	< 1	20	0.48	< 10	< 1	0.02	17	< 0.01	0.209
x07571	8.4	2.1	36	39	110	10	234	1680	0.18	192	< 10	192	< 0.5	9	< 0.01	5	5	17.5	< 10	< 1	0.06	15	< 0.01	0.046
x07572	43.8	5.0	57	28	25	2	1700	777	0.06	163	< 10	11	< 0.5	18	< 0.01	2	13	5.31	< 10	2	0.72	< 10	< 0.01	0.021
x07573	3.1	1.2	12	597	26	< 1	48	138	0.04	100	< 10	140	< 0.5	< 2	0.05	2	30	0.87	< 10	< 1	0.02	< 10	< 0.01	0.040
x07574	0.3	1.0	20	193	2	1	26	71	0.61	23	< 10	93	< 0.5	< 2	0.16	2	13	2.32	< 10	< 1	0.30	28	0.13	0.043
x07575	0.8	< 0.5	17	23	7	1	36	9	0.25	63	< 10	183	< 0.5	< 2	0.04	< 1	17	1.00	< 10	< 1	0.28	32	0.01	0.045
x07576	9.9	< 0.5	47	35	12	2	227	14	0.07	69	< 10	64	< 0.5	< 2	0.02	1	21	2.65	< 10	1	0.24	43	< 0.01	0.031
x07577	16.7	1.7	77	100	3	1	3430	256	0.80	90	11	146	0.9	< 2	0.22	7	5	2.40	< 10	< 1	0.50	24	0.04	0.046
x07578	30.9	1.2	115	29	28	2	169	31	0.44	77	< 10	212	< 0.5	14	< 0.01	2	7	10.1	< 10	< 1	0.43	88	0.03	0.054
x07579	1.7	1.3	8	4510	30	1	49	97	0.20	446	< 10	38	< 0.5	< 2	7.79	2	20	2.18	< 10	< 1	0.13	< 10	0.05	0.024
x07580	1.1	4.2	10	4860	6	3	574	550	1.58	74	25	101	2.1	< 2	5.09	5	8	15.5	< 10	< 1	0.01	< 10	0.35	0.029
x07581	2.2	5.3	4	2810	7	4	46	473	1.17	21	14	403	0.9	< 2	8.46	6	6	11.9	< 10	< 1	0.08	< 10	0.54	0.087
x07582	18.2	6.1	20	78	127	3	297	690	0.08	727	< 10	65	< 0.5	< 2	0.04	4	41	2.51	< 10	4	0.06	16	< 0.01	0.027
x07583	6.9	< 0.5	316	66	51	< 1	162	61	0.59	595	12	20	0.7	< 2	0.16	3	4	2.89	< 10	< 1	0.49	12	0.03	0.020
x07584	0.2	0.8	8	2550	2	5	10	132	1.16	34	< 10	490	0.7	< 2	3.65	11	10	4.45	< 10	< 1	0.51	12	0.50	0.105
x07585	18.3	11.6	54	3460	12	7	378	1050	1.02	276	< 10	64	< 0.5	< 2	4.27	53	10	3.44	< 10	< 1	0.45	12	0.15	0.047
x07586	5.8	19.3	38	7900	10	6	879	3170	0.31	403	< 10	163	0.7	< 2	0.06	12	4	9.84	< 10	1	0.22	< 10	0.04	0.043

**Activation Laboratories Ltd.      Report:    A10-6144**

Analyte Symbol	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Au	Au	Zn	Pb
Unit Symbol	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	g/tonne	%	%
Detection Limit	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	5	0.03	0.001	0.003
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-AA	FA-GRA	ICP-OES	ICP-OES
x07155	0.012	0.04	30	< 1	3	< 0.01	< 1	< 2	< 10	7	< 10	2	2	762			
x07422	0.078	1.15	5	17	24	0.19	1	< 2	< 10	255	< 10	15	14				
x07423	0.071	1.28	5	18	20	0.23	< 1	< 2	< 10	239	< 10	15	17				
x07424	0.007	0.09	< 2	3	16	0.12	2	< 2	< 10	12	< 10	31	20				
x07560	0.013	2.98	21	2	120	< 0.01	< 1	3	< 10	12	< 10	2	3	13			
x07561	0.025	0.27	15	1	30	< 0.01	< 1	< 2	< 10	7	< 10	6	9				
x07562	0.015	1.95	23	1	71	< 0.01	< 1	< 2	< 10	7	< 10	1	2	13			
x07563	0.001	1.23	39	< 1	229	< 0.01	< 1	< 2	< 10	5	< 10	3	< 1		< 0.03	1.90	3.85
x07564	0.016	0.45	7	< 1	912	< 0.01	< 1	< 2	< 10	3	< 10	2	< 1				
x07565	0.121	0.13	5	4	245	0.11	< 1	< 2	< 10	42	< 10	13	3				
x07566	0.067	4.62	43	2	31	< 0.01	< 1	7	< 10	14	< 10	3	5		< 0.03		
x07567	0.076	2.34	46	2	113	< 0.01	< 1	< 2	< 10	12	< 10	3	2	< 5			
x07568	0.109	2.51	93	2	32	< 0.01	< 1	< 2	< 10	17	< 10	3	3		0.45		2.48
x07569	0.142	0.09	5	6	257	< 0.01	< 1	< 2	< 10	35	< 10	11	3				
x07570	0.004	0.07	23	< 1	14	< 0.01	< 1	< 2	< 10	< 1	< 10	1	< 1				
x07571	0.036	0.13	95	< 1	14	< 0.01	2	< 2	< 10	11	119	< 1	6				
x07572	0.012	1.95	37	< 1	25	< 0.01	< 1	2	< 10	5	13	< 1	4	290			
x07573	0.002	0.04	12	< 1	28	< 0.01	< 1	< 2	< 10	2	< 10	< 1	1				
x07574	0.068	0.18	5	2	15	< 0.01	< 1	< 2	< 10	25	< 10	7	5				
x07575	0.066	0.19	5	2	30	< 0.01	< 1	< 2	< 10	12	< 10	3	2				
x07576	0.050	0.68	21	1	25	< 0.01	< 1	< 2	< 10	11	< 10	5	4				
x07577	0.201	0.44	41	7	38	< 0.01	< 1	< 2	< 10	54	< 10	8	2				
x07578	0.099	0.42	38	4	3	< 0.01	3	4	< 10	62	< 10	3	8	866			
x07579	0.007	2.10	44	< 1	379	< 0.01	< 1	10	< 10	4	< 10	2	2				
x07580	0.034	0.23	12	4	62	0.04	< 1	< 2	< 10	55	10	4	7				
x07581	0.031	0.09	10	2	222	0.01	< 1	< 2	< 10	38	< 10	4	6				
x07582	0.005	0.51	52	< 1	4	< 0.01	< 1	7	16	3	< 10	< 1	4	8			
x07583	0.099	2.32	51	2	10	< 0.01	< 1	4	< 10	15	< 10	6	7				
x07584	0.092	0.05	3	4	55	0.07	2	< 2	< 10	51	< 10	8	7				
x07585	0.144	0.60	6	6	80	0.17	2	< 2	< 10	71	11	11	10	< 5			
x07586	0.036	0.02	30	2	17	< 0.01	1	< 2	< 10	11	< 10	4	6				

Activation Laboratories Ltd. Report: A10-6144

Quality Control																								
Analyte Symbol	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg	Na
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%	%
Detection Limit	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01	0.001
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas	27.0	3.3	1140	749	14	34	550	653	0.24	361	15	217	0.8	1350	0.75	9	5	21.2	< 10	3	0.02	< 10	0.13	0.080
GXR-1 Cert	31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.0500	7.50	0.217	0.0520
GXR-4 Meas	3.5	0.7	6540	136	325	38	42	75	2.29	107	< 10	26	1.4	18	0.94	15	57	3.03	10	< 1	1.50	46	1.68	0.132
GXR-4 Cert	4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66	0.564
KC-1A Meas																								
KC-1A Cert																								
GXR-6 Meas	0.3	0.9	73	1080	2	25	96	130	5.88	262	< 10	865	0.9	< 2	0.15	15	84	5.79	20	< 1	0.98	11	0.42	0.209
GXR-6 Cert	1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609	0.104
CCU-1C Meas																								
CCU-1C Cert																								
CPB-1 Meas																								
CPB-1 Cert																								
PTC-1a Meas																								
PTC-1a Cert																								
OXN62 Meas																								
OXN62 Cert																								
OXN62 Meas																								
OXN62 Cert																								
OREAS 13b (4-Acid) Meas	0.8		2480		10	2230		54		55						50	337							
OREAS 13b (4-Acid) Cert	0.86		2327		9.0	2247		133		57						75	8650							
CDN-CGS-24 Meas																								
CDN-CGS-24 Cert																								
x07563 Orig	63.5	254	29	1440	1	< 1	> 5000	> 10000	0.05	8	< 10	18	1.1	< 2	2.02	1	13	0.33	< 10	13	0.04	< 10	0.01	0.020
x07563 Dup	61.8	243	28	1380	1	< 1	> 5000	> 10000	0.05	8	< 10	16	1.0	< 2	1.94	1	11	0.32	< 10	13	0.03	< 10	0.01	0.019
x07567 Orig																								
x07567 Dup																								
x07568 Orig																								
x07568 Dup																								
x07576 Orig	9.7	< 0.5	46	34	12	2	222	13	0.07	67	< 10	59	< 0.5	< 2	0.02	1	22	2.58	< 10	1	0.23	42	< 0.01	0.029
x07576 Dup	10.1	< 0.5	48	36	12	2	233	14	0.07	71	< 10	69	< 0.5	< 2	0.02	1	21	2.72	< 10	1	0.24	45	< 0.01	0.032
x07585 Orig	18.3	11.6	54	3460	12	7	378	1050	1.02	276	< 10	64	< 0.5	< 2	4.27	53	10	3.44	< 10	< 1	0.45	12	0.15	0.047
x07585 Split	18.1	11.2	53	3440	12	8	375	1040	1.00	273	< 10	56	< 0.5	< 2	4.24	51	10	3.38	< 10	< 1	0.44	11	0.14	0.044
Method Blank Method Blank	< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01	< 0.001
Method Blank Method Blank	< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01	0.011
Method Blank Method Blank																								
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Method Blank Method Blank																								
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Activation Laboratories Ltd. Report: A10-6144

Quality Control																			
Analyte Symbol	P	S	Sb	Sc	Sr	Ti	Ta	Tl	U	V	W	Y	Zr	Au	Au	Zn	Pb		
Unit Symbol	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	g/tonne	%	%		
Detection Limit	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	5	0.03	0.001	0.003		
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FA-AA	FA-GRA	ICP-OES	ICP-OES		
GXR-1 Meas	0.035	0.17	68	1	147		13	< 2	31	74	132	22	13						
GXR-1 Cert	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0						
GXR-4 Meas	0.123	1.69	4	7	72		2	< 2	< 10	82	12	11	9						
GXR-4 Cert	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186						
KC-1A Meas																34.7	2.24		
KC-1A Cert																34.6	2.24		
GXR-6 Meas	0.034	0.01	5	24	30		< 1	< 2	< 10	179	< 10	7	14						
GXR-6 Cert	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110						
CCU-1C Meas																	3.99		
CCU-1C Cert																	3.99		
CPB-1 Meas																	4.36	64.5	
CPB-1 Cert																	4.42	64.7	
PTC-1a Meas																		0.054	
PTC-1a Cert																		0.05	
OXN62 Meas															7.72				
OXN62 Cert															7.71				
OXN62 Meas															7.77				
OXN62 Cert															7.71				
OREAS 13b (4-Acid) Meas		1.13															0.011		
OREAS 13b (4-Acid) Cert		1.20															0		
CDN-CGS-24 Meas														537					
CDN-CGS-24 Cert														487					
x07563 Orig	0.001	1.25	40	< 1	235	< 0.01	< 1	< 2	< 10	5	< 10	3	< 1				1.87	3.81	
x07563 Dup	0.001	1.21	38	< 1	222	< 0.01	2	< 2	< 10	5	< 10	3	< 1				1.93	3.90	
x07567 Orig																		< 5	
x07567 Dup																		< 5	
x07568 Orig																		0.43	
x07568 Dup																		0.46	
x07576 Orig	0.048	0.67	20	1	24	< 0.01	< 1	< 2	< 10	10	< 10	5	4						
x07576 Dup	0.051	0.70	21	1	25	< 0.01	< 1	< 2	< 10	11	< 10	5	4						
x07585 Orig	0.144	0.60	6	6	80	0.17	2	< 2	< 10	71	11	11	10	< 5					
x07585 Split	0.143	0.60	4	6	78	0.17	< 1	< 2	< 10	70	12	11	9	< 5					
Method Blank Method Blank	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1						
Method Blank Method Blank	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1						
Method Blank Method Blank																		< 0.03	
Method Blank Method Blank																		< 0.03	
Method Blank Method Blank																		0.003	< 0.003
Method Blank Method Blank																		< 5	



**Date Submitted:** 25-Sep-10  
**Invoice No.:** A10-6319  
**Invoice Date:** 26-Oct-10  
**Your Reference:** BA Project

**Great Bear Resources**  
**303-750 West Pender Street**  
**Vancouver B.C. V6C2T7**  
**Canada**

**ATTN: Chris Taylor**

## CERTIFICATE OF ANALYSIS

29 Rock samples were submitted for analysis.

The following analytical package was requested: Code 1E3 Aqua Regia ICP(AQUAGEO)

REPORT **A10-6319**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is written in a cursive style with some loops and is positioned above a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL [Ancaster@actlabs.com](mailto:Ancaster@actlabs.com) ACTLABS GROUP WEBSITE [www.actlabs.com](http://www.actlabs.com)



**Activation Laboratories Ltd.      Report:    A10-6319**

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
X07425	> 3000	1.6	< 0.5	2360	2560	< 1	6	12	22	0.42	1310	< 10	44	0.5	3	0.88	81	9	12.4	< 10	1	0.10	< 10	0.14
X07426	58	0.3	< 0.5	46	958	2	3	4	23	0.56	425	< 10	30	< 0.5	< 2	0.85	65	4	7.18	< 10	2	0.03	< 10	0.24
X07427	71	0.9	< 0.5	623	2310	8	7	21	68	1.78	66	< 10	21	< 0.5	< 2	3.06	56	11	7.99	10	2	0.11	< 10	0.80
X07428	146	1.3	0.5	4630	2330	< 1	6	11	60	1.65	268	< 10	16	< 0.5	< 2	1.26	63	6	9.92	10	1	0.10	< 10	0.65
X07501	27	11.9	2.0	20	618	8	< 1	313	361	0.33	87	< 10	20	< 0.5	14	1.04	7	4	1.82	< 10	1	0.29	< 10	0.04
X07502	42	5.3	14.3	21	578	7	4	400	1860	0.40	136	< 10	10	0.9	< 2	1.20	11	7	3.68	< 10	3	0.26	< 10	0.03
X07503	68	35.7	54.3	44	259	18	8	1420	8340	0.15	233	< 10	< 10	< 0.5	< 2	0.25	6	15	4.74	< 10	26	0.12	< 10	< 0.01
X07504	87	33.5	30.9	41	48	12	1	1210	4810	0.08	243	< 10	< 10	< 0.5	< 2	0.03	3	18	5.66	< 10	14	0.06	< 10	< 0.01
X07505	8	31.5	27.0	12	35	14	7	1270	3970	0.05	235	< 10	18	< 0.5	< 2	< 0.01	3	17	1.71	< 10	26	0.04	< 10	< 0.01
X07506	21	> 100	55.3	30	173	9	4	1220	8140	0.17	309	< 10	13	< 0.5	< 2	0.05	6	21	5.21	< 10	29	0.12	< 10	< 0.01
X07507	45	5.8	2.4	12	99	5	2	133	330	0.17	107	< 10	< 10	< 0.5	6	0.19	6	12	3.44	< 10	< 1	0.15	< 10	< 0.01
X07508	79	21.5	20.4	48	637	17	9	597	3400	0.15	278	< 10	12	< 0.5	3	1.03	8	15	3.90	< 10	9	0.10	< 10	0.01
X07509	76	13.6	59.9	52	647	15	8	957	9580	0.21	123	< 10	12	< 0.5	11	0.42	9	17	2.60	< 10	10	0.13	< 10	0.01
X07510	34	16.3	2.1	31	520	7	3	165	218	0.34	98	12	< 10	< 0.5	< 2	0.97	20	10	4.53	< 10	< 1	0.24	< 10	0.03
X07511	22	2.8	163	135	9840	89	9	313	> 10000	0.08	38	< 10	36	< 0.5	< 2	12.3	24	2	4.08	< 10	3	0.06	< 10	0.42
X07587	27	65.7	2.9	83	129	64	3	872	451	0.13	294	< 10	< 10	< 0.5	< 2	0.09	16	15	5.71	< 10	6	0.15	< 10	< 0.01
X07588	< 5	32.6	12.7	84	2200	26	4	2490	1440	0.13	129	< 10	197	< 0.5	< 2	1.59	14	15	1.71	< 10	6	0.10	11	0.01
X07589	< 5	10.2	61.3	37	11900	9	7	2170	9390	0.05	215	< 10	26	< 0.5	< 2	14.2	8	2	2.60	< 10	2	0.02	< 10	0.07
X07590	423	7.2	14.7	24	764	26	5	371	1120	0.54	250	< 10	42	< 0.5	< 2	1.04	17	3	4.07	< 10	8	0.50	< 10	0.04
X07591	25	6.7	0.6	127	855	3	16	79	58	1.23	116	< 10	17	< 0.5	< 2	0.68	61	4	5.88	< 10	2	0.69	< 10	0.24
X07592	33	1.8	< 0.5	6	58	5	< 1	48	92	0.44	179	< 10	170	< 0.5	< 2	0.06	2	3	1.51	< 10	< 1	0.45	15	0.04
X07593	750	1.1	0.5	12	480	1	1	42	159	0.77	98	< 10	31	< 0.5	< 2	0.46	8	7	4.60	< 10	< 1	0.43	< 10	0.27
X07594	58	2.6	2.8	462	1860	2	2	122	257	0.42	151	< 10	194	< 0.5	< 2	3.65	11	8	1.98	< 10	< 1	0.24	19	0.93
X07595	8	1.0	< 0.5	13	658	1	< 1	40	89	0.81	46	< 10	256	< 0.5	< 2	0.91	7	7	2.02	< 10	< 1	0.25	15	0.45
X07596	< 5	2.6	6.6	12	3210	31	2	224	683	1.39	173	< 10	460	< 0.5	< 2	6.21	6	4	7.13	< 10	1	0.11	< 10	0.79
X07597	< 5	7.4	3.8	10	1150	6	< 1	33	396	0.45	42	< 10	57	< 0.5	< 2	1.58	7	1	1.77	< 10	< 1	0.40	13	0.03
X07598	< 5	0.3	2.3	4	1270	3	< 1	26	468	0.59	6	< 10	350	< 0.5	< 2	2.32	4	< 1	1.35	< 10	< 1	0.48	16	0.09
X07599	< 5	50.6	0.6	13	74	30	1	370	117	0.23	206	< 10	< 10	< 0.5	< 2	0.01	4	2	4.85	< 10	2	0.21	< 10	0.02
X07600	57	68.5	53.0	39	77	47	2	2390	8490	0.27	286	13	< 10	< 0.5	< 2	0.06	10	5	5.12	< 10	22	0.17	< 10	< 0.01



**Activation Laboratories Ltd.      Report:    A10-6319**

Analyte Symbol	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Zn	Ag	Au
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	g/tonne	g/tonne
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.001	3	0.03
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	ICP-OES	FA-GRA	FA-GRA
X07425	0.018	0.013	0.64	7	7	20	< 0.01	7	< 2	< 10	166	48	8	4			3.66
X07426	0.014	0.019	4.64	3	4	64	< 0.01	2	< 2	< 10	45	< 10	4	2			
X07427	0.029	0.094	0.97	2	12	62	< 0.01	< 1	< 2	< 10	152	< 10	9	2			
X07428	0.047	0.125	1.43	< 2	8	45	< 0.01	3	< 2	< 10	136	< 10	8	3			
X07501	0.025	0.110	1.47	10	2	144	< 0.01	< 1	< 2	< 10	10	< 10	6	3			
X07502	0.023	0.072	3.53	7	3	112	< 0.01	4	< 2	< 10	26	< 10	4	7			
X07503	0.019	0.009	4.83	55	1	23	< 0.01	1	4	< 10	6	< 10	< 1	3			
X07504	0.019	0.003	5.54	59	< 1	41	< 0.01	2	3	< 10	9	< 10	< 1	3			
X07505	0.017	0.005	1.65	93	< 1	231	< 0.01	1	< 2	< 10	4	< 10	< 1	1			
X07506	0.017	0.010	5.34	68	2	79	< 0.01	< 1	4	< 10	30	< 10	< 1	3		97	
X07507	0.018	0.004	3.45	5	< 1	39	< 0.01	1	< 2	< 10	14	< 10	< 1	3			
X07508	0.019	0.011	3.79	54	2	95	< 0.01	< 1	4	< 10	9	< 10	1	2			
X07509	0.019	0.023	2.40	24	2	33	< 0.01	< 1	< 2	< 10	12	< 10	1	3			
X07510	0.019	0.103	4.52	14	2	77	< 0.01	< 1	< 2	< 10	19	< 10	4	4			
X07511	0.018	0.018	1.97	6	2	678	< 0.01	4	< 2	< 10	< 1	< 10	11	3		2.28	
X07587	0.019	0.060	4.07	84	2	28	< 0.01	4	2	< 10	8	< 10	1	7			
X07588	0.021	0.029	0.30	48	2	51	< 0.01	4	< 2	< 10	5	< 10	3	3			
X07589	0.018	0.014	1.19	19	< 1	479	< 0.01	2	< 2	< 10	< 1	< 10	5	2			
X07590	0.021	0.115	1.55	20	3	34	< 0.01	7	< 2	< 10	15	< 10	5	8			
X07591	0.021	0.171	2.37	13	4	34	0.07	5	< 2	< 10	46	< 10	5	8			
X07592	0.023	0.048	0.45	6	< 1	10	< 0.01	3	< 2	< 10	9	< 10	3	12			
X07593	0.019	0.105	1.39	6	3	12	0.01	< 1	< 2	< 10	38	< 10	4	3			
X07594	0.021	0.035	0.39	10	3	75	< 0.01	< 1	< 2	< 10	13	< 10	9	2			
X07595	0.021	0.017	0.08	4	< 1	22	< 0.01	< 1	< 2	< 10	10	< 10	4	6			
X07596	0.025	0.040	0.17	11	3	217	< 0.01	3	< 2	< 10	23	< 10	6	6			
X07597	0.029	0.089	0.68	5	2	62	0.01	1	< 2	< 10	7	< 10	9	4			
X07598	0.035	0.119	0.20	< 2	2	138	0.01	< 1	< 2	< 10	6	< 10	9	2			
X07599	0.019	0.022	4.13	24	1	23	< 0.01	< 1	5	< 10	8	< 10	< 1	4			
X07600	0.014	0.031	5.47	44	1	14	< 0.01	8	7	< 10	14	< 10	1	7			

Activation Laboratories Ltd. Report: A10-6319

Quality Control																								
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	
GXR-1 Meas		27.9	3.4	1170	802	15	33	609	686	0.26	385	17	254	0.8	1400	0.80	7	6	23.6	10	5	0.03	< 10	0.13
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.0500	7.50	0.217
DH-1a Meas																								
DH-1a Cert																								
MP-1a Meas																								
MP-1a Cert																								
GXR-4 Meas		3.3	< 0.5	6590	134	328	34	42	79	2.25	98	< 10	27	1.4	8	0.92	15	55	3.11	10	< 1	1.55	46	1.65
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
KC-1A Meas																								
KC-1A Cert																								
CZN-3 Meas																								
CZN-3 Cert																								
GXR-6 Meas		0.3	< 0.5	61	943	3	18	85	113	5.47	188	< 10	1240	0.9	< 2	0.22	14	73	5.11	20	3	0.91	11	0.38
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
CCU-1C Meas																								
CCU-1C Cert																								
CPB-1 Meas																								
CPB-1 Cert																								
CDN-CGS-13 Meas	899																							
CDN-CGS-13 Cert	1010																							
OXN62 Meas																								
OXN62 Cert																								
OREAS 13b (4-Acid) Meas		0.9		2410		9	2380		55		56						50	346						
OREAS 13b (4-Acid) Cert		0.86		2327		9.0	2247		133		57						75	8650						
X07425 Orig																								
X07425 Dup																								
X07506 Orig	21																							
X07506 Dup	21																							
X07509 Orig		13.8	60.8	52	655	15	5	970	9750	0.21	125	< 10	12	< 0.5	11	0.43	8	19	2.64	< 10	10	0.13	< 10	0.01
X07509 Dup		13.4	58.9	52	639	15	10	944	9410	0.21	121	< 10	12	< 0.5	11	0.41	9	16	2.57	< 10	10	0.13	< 10	0.01
X07591 Orig	25																							
X07591 Dup	25																							
X07598 Orig		0.3	2.3	4	1270	3	< 1	26	466	0.59	7	< 10	353	< 0.5	< 2	2.32	4	< 1	1.34	< 10	< 1	0.48	16	0.09
X07598 Dup		0.4	2.3	4	1260	3	< 1	25	471	0.58	4	< 10	347	< 0.5	< 2	2.33	4	< 1	1.35	< 10	< 1	0.48	16	0.09
Method Blank Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	12	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank Method Blank																								
Method Blank Method Blank	< 5																							
Method Blank Method Blank																								
Method Blank Method Blank																								
Method Blank Method Blank																								

Activation Laboratories Ltd. Report: A10-6319

Quality Control																		
Analyte Symbol	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	Zn	Ag	Au	
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	g/tonne	g/tonne	
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.001	3	0.03	
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	ICP-OES	FA-GRA	FA-GRA	
GXR-1 Meas	0.053	0.037	0.18	76	1	167		21	< 2	34	79	155	24	14				
GXR-1 Cert	0.0520	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0				
DH-1a Meas										2570								
DH-1a Cert										2630								
MP-1a Meas															18.8			
MP-1a Cert															19.0			
GXR-4 Meas	0.138	0.121	1.70	3	7	76		7	3	< 10	80	11	11	10				
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186				
KC-1A Meas																		34.7
KC-1A Cert																		34.6
CZN-3 Meas																		50.9
CZN-3 Cert																		50.9
GXR-6 Meas	0.111	0.029	0.01	3	22	45		3	2	< 10	159	< 10	6	14				
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110				
CCU-1C Meas																		3.96
CCU-1C Cert																		3.99
CPB-1 Meas																		4.55
CPB-1 Cert																		4.42
CDN-CGS-13 Meas																		
CDN-CGS-13 Cert																		
OXN62 Meas																		7.74
OXN62 Cert																		7.71
OREAS 13b (4-Acid) Meas			1.13												0.012			
OREAS 13b (4-Acid) Cert			1.20												0			
X07425 Orig																		3.76
X07425 Dup																		3.56
X07506 Orig																98		
X07506 Dup																96		
X07509 Orig	0.019	0.023	2.41	25	2	33	< 0.01	5	< 2	< 10	12	< 10	1	3				
X07509 Dup	0.019	0.023	2.39	22	2	32	< 0.01	< 1	< 2	< 10	11	< 10	1	3				
X07591 Orig																		
X07591 Dup																		
X07598 Orig	0.036	0.119	0.20	< 2	2	138	0.01	< 1	< 2	< 10	6	< 10	10	2				
X07598 Dup	0.035	0.119	0.20	< 2	2	138	0.01	3	< 2	< 10	6	< 10	9	2				
Method Blank Method Blank	0.010	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1				
Method Blank Method Blank	0.010	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1				
Method Blank Method Blank															0.001			
Method Blank Method Blank																		
Method Blank Method Blank																		< 3
Method Blank Method Blank																		< 0.03



**Date Submitted:** 05-Oct-10  
**Invoice No.:** A10-6740  
**Invoice Date:** 21-Oct-10  
**Your Reference:** BA Project

**Great Bear Resources**  
303-750 West Pender Street  
Vancouver B.C. V6C2T7  
Canada

**ATTN: Chris Taylor**

## CERTIFICATE OF ANALYSIS

2 Rock samples were submitted for analysis.

The following analytical packages were requested: Code 1A2 Au - Fire Assay AA  
Code 1E3 Aqua Regia ICP(AQUAGEO)

REPORT **A10-6740**

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3  
Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

**ACTIVATION LABORATORIES LTD.**

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com



**Activation Laboratories Ltd.      Report:    A10-6740**

<b>Analyte Symbol</b>	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg
<b>Unit Symbol</b>	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
<b>Detection Limit</b>	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
<b>Analysis Method</b>	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
x07512	102	1.9	8.4	27	57	46	4	88	754	0.45	679	< 10	14	< 0.5	< 2	0.06	5	20	3.60	< 10	4	0.42	18	0.03
x07513	18	1.5	1.6	44	1650	8	4	42	308	0.37	102	< 10	53	< 0.5	5	1.57	8	7	4.40	< 10	< 1	0.38	< 10	0.03

**Activation Laboratories Ltd.      Report:    A10-6740**

<b>Analyte Symbol</b>	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr
<b>Unit Symbol</b>	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>Detection Limit</b>	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1
<b>Analysis Method</b>	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
x07512	0.020	0.003	3.53	14	< 1	5	< 0.01	< 1	10	< 10	< 1	< 10	2	38
x07513	0.018	0.057	0.83	3	1	58	< 0.01	< 1	< 2	< 10	6	< 10	5	7

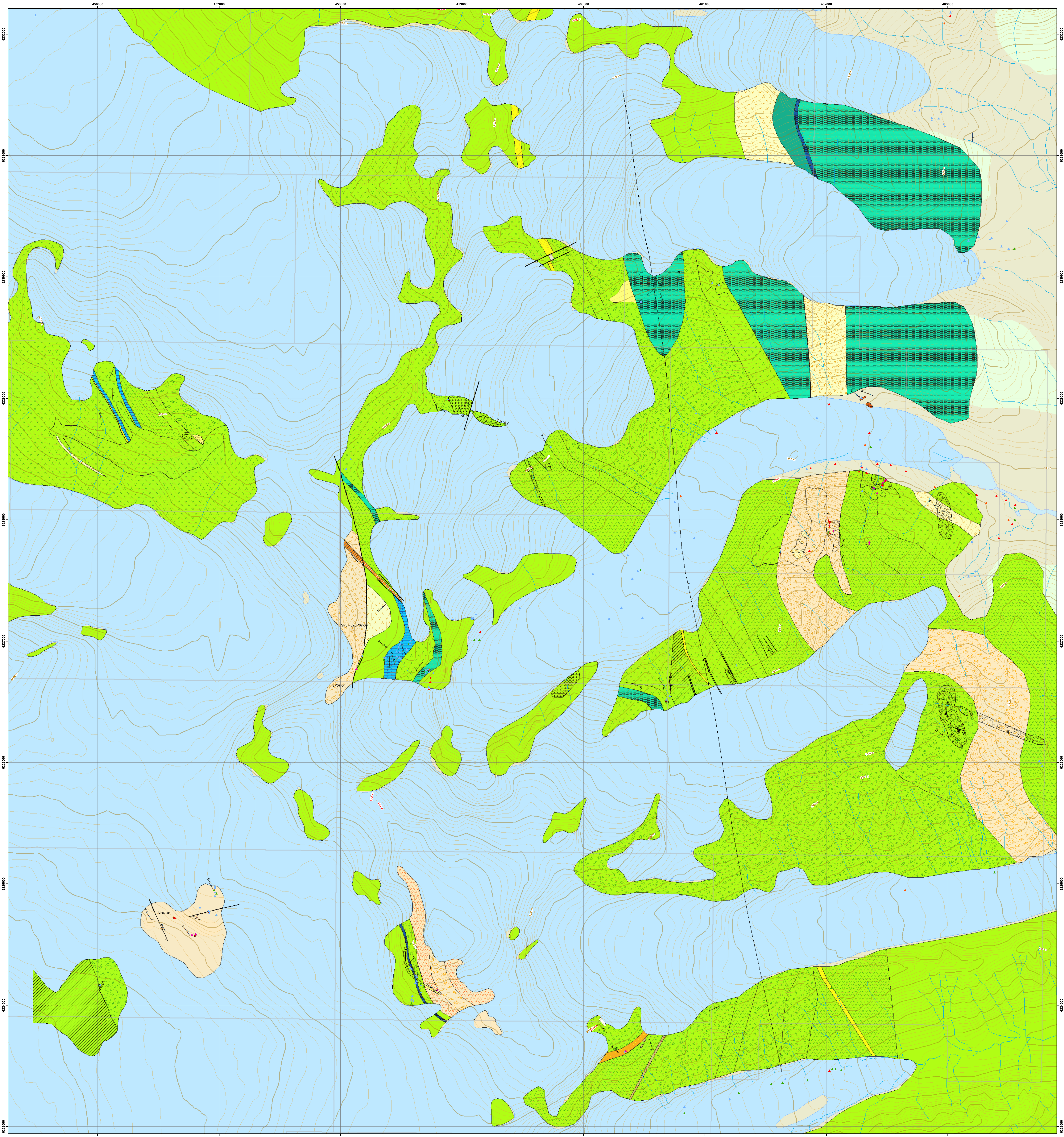
Activation Laboratories Ltd. Report: A10-6740

Quality Control																								
Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La	Mg
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	%
Detection Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10	0.01
Analysis Method	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		28.5	3.3	1130	781	15	31	597	682	0.30	359	15	132	0.8	1380	0.80	8	6	22.7	10	4	0.03	< 10	0.14
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.0500	7.50	0.217
GXR-4 Meas		3.2	< 0.5	6410	130	315	36	42	73	2.27	96	< 10	29	1.3	13	0.92	15	54	2.99	10	< 1	1.53	43	1.63
GXR-4 Cert		4.00	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5	1.66
GXR-6 Meas		< 0.2	< 0.5	57	909	3	18	84	113	5.34	181	< 10	1220	0.8	< 2	0.22	14	71	4.96	20	< 1	0.90	10	0.38
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9	0.609
OREAS 13b (4-Acid) Meas		0.5		2370		10	2320		55		49						50	359						
OREAS 13b (4-Acid) Cert		0.86		2327		9.0	2247		133		57						75	8650						
CDN-CGS-24 Meas	493																							
CDN-CGS-24 Cert	487																							
x07513 Orig	19																							
x07513 Dup	16																							
Method Blank Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10	< 0.01
Method Blank Method Blank	< 5																							

Quality Control														
Analyte Symbol	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr
Unit Symbol	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1
Analysis Method	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas	0.051	0.037	0.19	79	1	159		13	< 2	35	78	152	23	14
GXR-1 Cert	0.0520	0.0650	0.257	122	1.58	275		13.0	0.390	34.9	80.0	164	32.0	38.0
GXR-4 Meas	0.140	0.118	1.68	4	7	74		4	< 2	< 10	80	11	11	10
GXR-4 Cert	0.564	0.120	1.77	4.80	7.70	221		0.970	3.20	6.20	87.0	30.8	14.0	186
GXR-6 Meas	0.114	0.029	0.01	3	22	44		< 1	< 2	< 10	157	< 10	6	15
GXR-6 Cert	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110
OREAS 13b (4-Acid) Meas			1.13											
OREAS 13b (4-Acid) Cert			1.20											
CDN-CGS-24 Meas														
CDN-CGS-24 Cert														
x07513 Orig														
x07513 Dup														
Method Blank Method Blank	0.009	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1
Method Blank Method Blank														



# Map 1 – Geology Map of the Surprise Creek Claims



0 0.5 1 2 3 4 Kilometers

NAD 1983 Datum; UTM Projection, Zone 9; 20 metre contours.

**Legend**

- Rock Samples**  
 Silver  
 0.0 to 3.9 gm/t  
 4.0 to 7.9 gm/t  
 8.0 to 15.9 gm/t  
 >16.0 gm/t

- Bedding, inclined  
 Foliation  
 Cleavage  
 Fracture plane

- Dike  
 Vein  
 Quartz Sulphide Vein  
 Fold hinge

- Lineation  
 Slickenline  
 Mineral Showing  
 Thrust, defined  
 Thrust, approx  
 Lineament

- Antiform  
 Synform  
 Fault, approx  
 Fault, defined  
 Thrust, approx  
 Thrust, defined  
 Lineament

- quartz+sericite+pyrite  
 gossian  
 quartz stockwork  
 silicification  
 propylitic

- <all other values>  
 mudstone  
 felsic dyke  
 siltstone  
 conglomerate  
 limestone  
 epiclastics  
 banded quartz-jasper-barite-hematite-magnetite

- hornblende feldspar porphyry  
 rhyolite dome  
 rhyolite tuff  
 rhyolitic lapilli tuff  
 rhyolitic agglomerate  
 dacite - undifferentiated  
 dacite flows  
 dacitic lapilli tuff

- andresite  
 andresite - undifferentiated  
 andresite flows  
 andresite tuff  
 andresite lapilli tuff  
 andresite agglomerate/breccia  
 fault zone

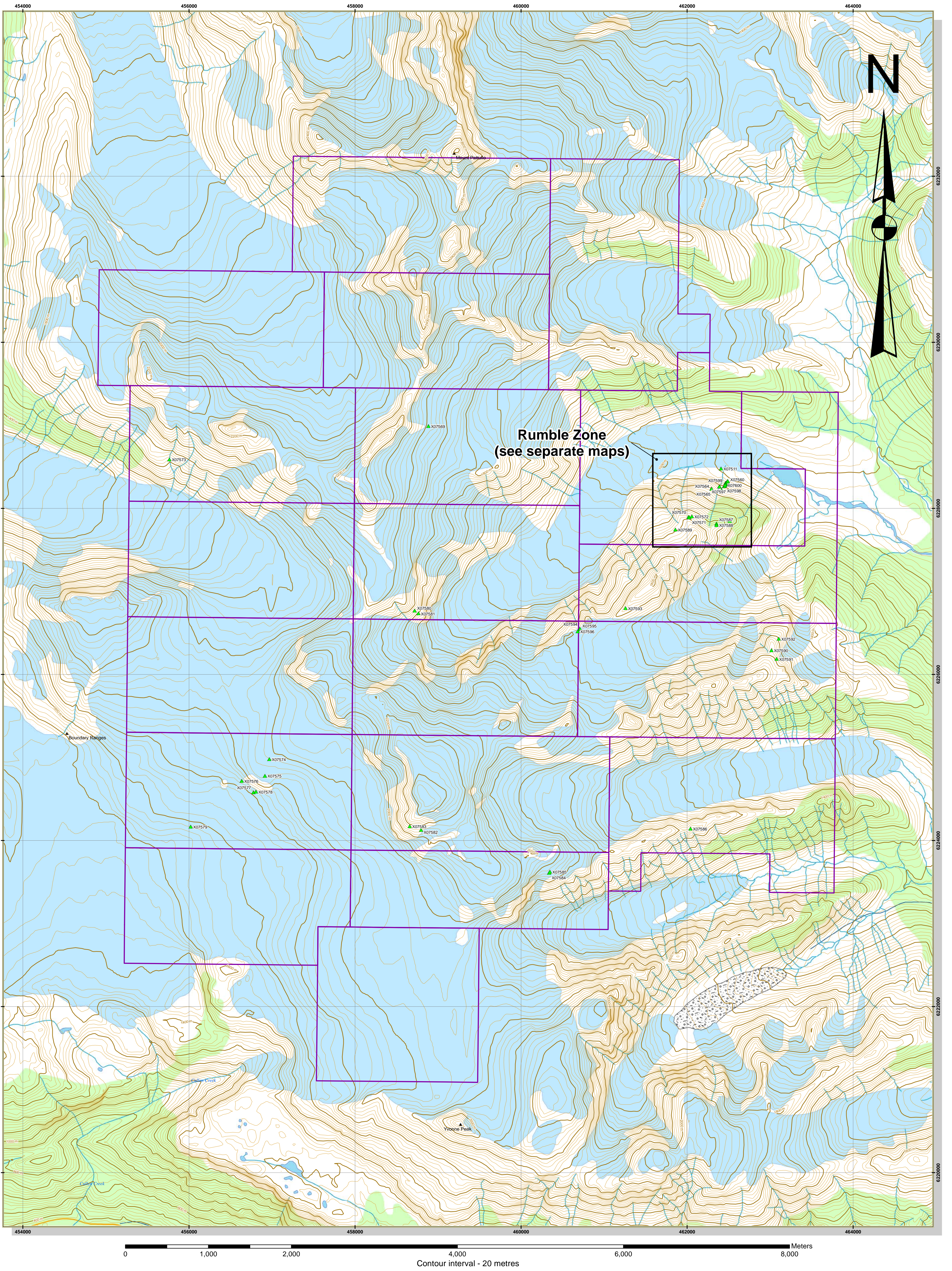
- andresite  
 andresite - undifferentiated  
 andresite flows  
 andresite tuff  
 andresite lapilli tuff  
 andresite agglomerate/breccia  
 fault zone

**Great Bear Resources**

**Surprise Creek Project**  
 Skeena Mining Division, BC

**Geology Map**

NTS 104 A/04 Scale 1:10,000 Date: July 2011



0 1,000 2,000 4,000 6,000 8,000 Meters  
 Contour interval - 20 metres



**GREATBEAR**  
 RESOURCES

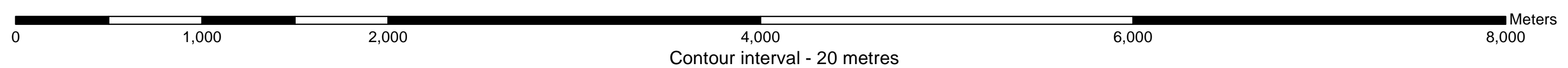
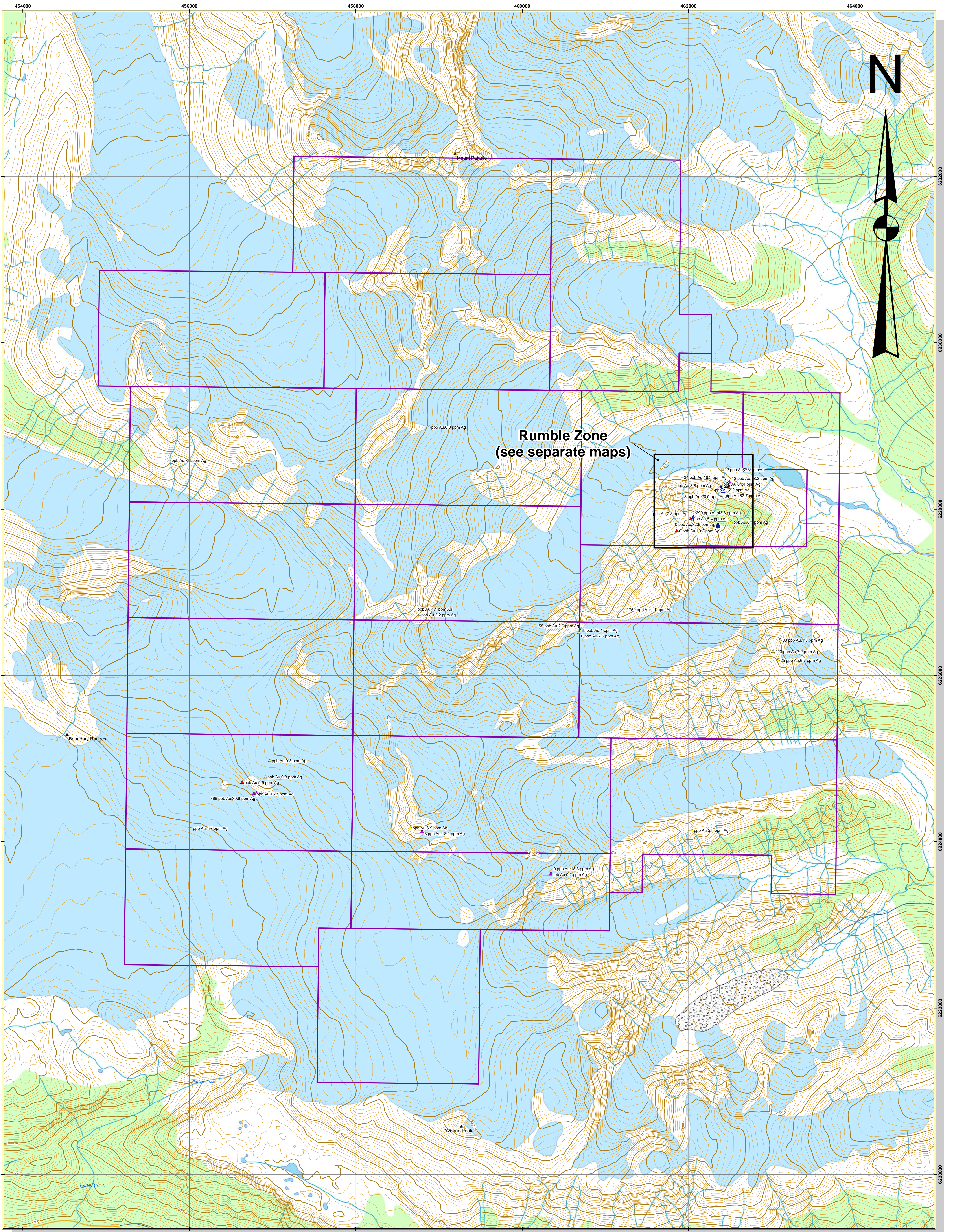
**Legend**

- ▲ Rock Sample Locations
- Surprise Creek Claims

**Great Bear Resources**  
***Surprise Creek***

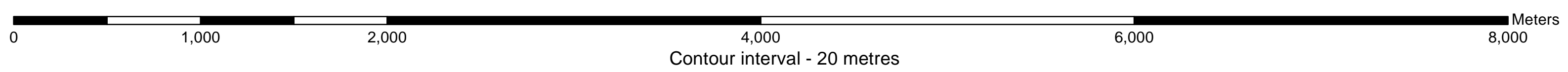
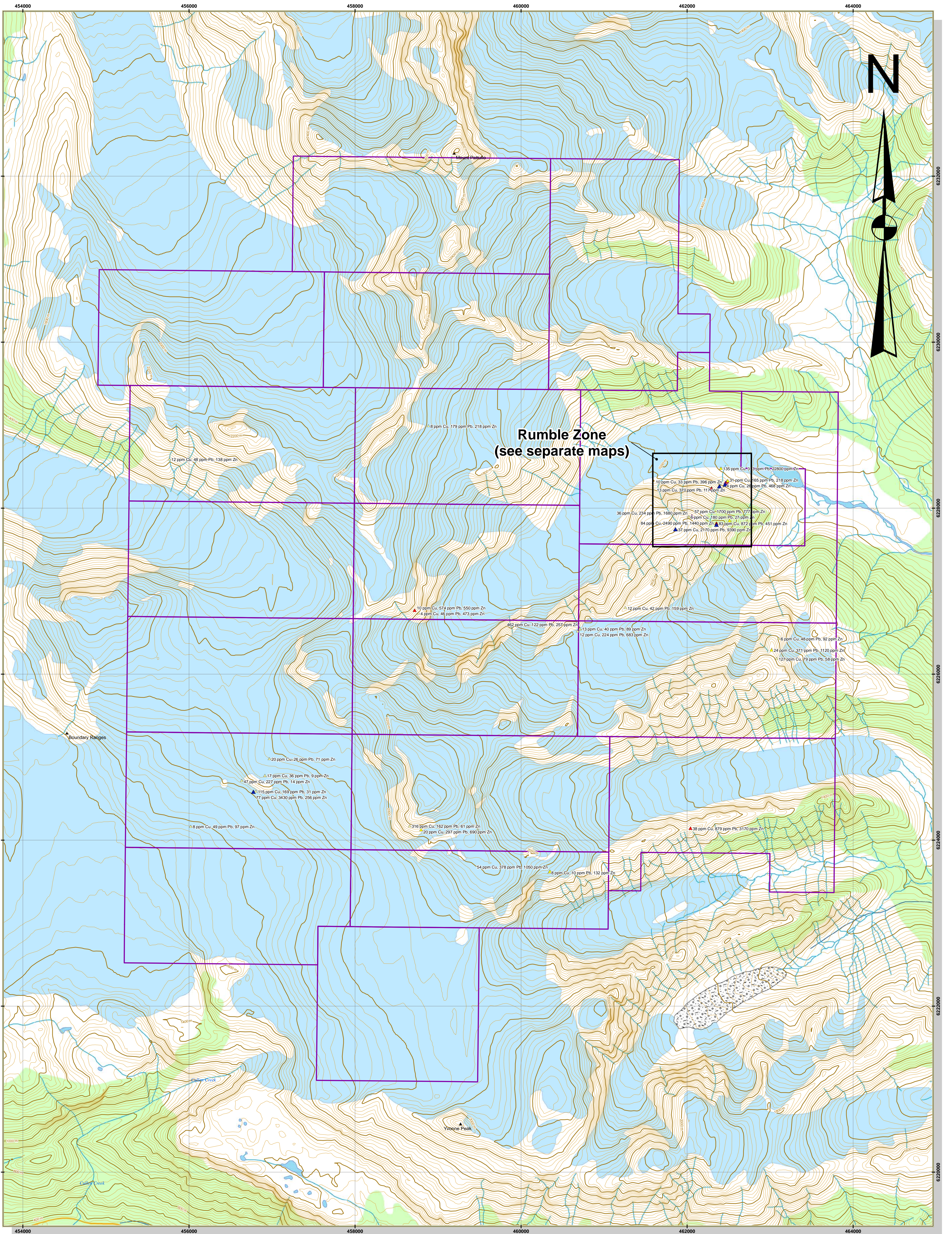
**Rock Sample Locations**

NTS 104 A/04 Scale 1:20,000 Map 1



- Legend**
- ▲ 0.2 to 3.9 ppm Ag
  - ▲ 4.0 to 7.9 ppm Ag
  - ▲ 8.0 to 15.9 ppm Ag
  - ▲ 16.0 to 31.9 ppm Ag
  - ▲ > 31.9 ppm Ag
  - ▭ Surprise Creek Claims

**Great Bear Resources**  
**Surprise Creek**  
Gold and Silver Geochemistry  
NTS 104 A/04 Scale 1:20,000 Map 2



**Legend**

- ▲ 10 to 249 ppm Pb
- ▲ 250 to 499 ppm Pb
- ▲ 500 to 999 ppm Pb
- ▲ 1000 to 1999 ppm Pb
- ▲ >1999 ppm Pb
- Surprise Creek Claims

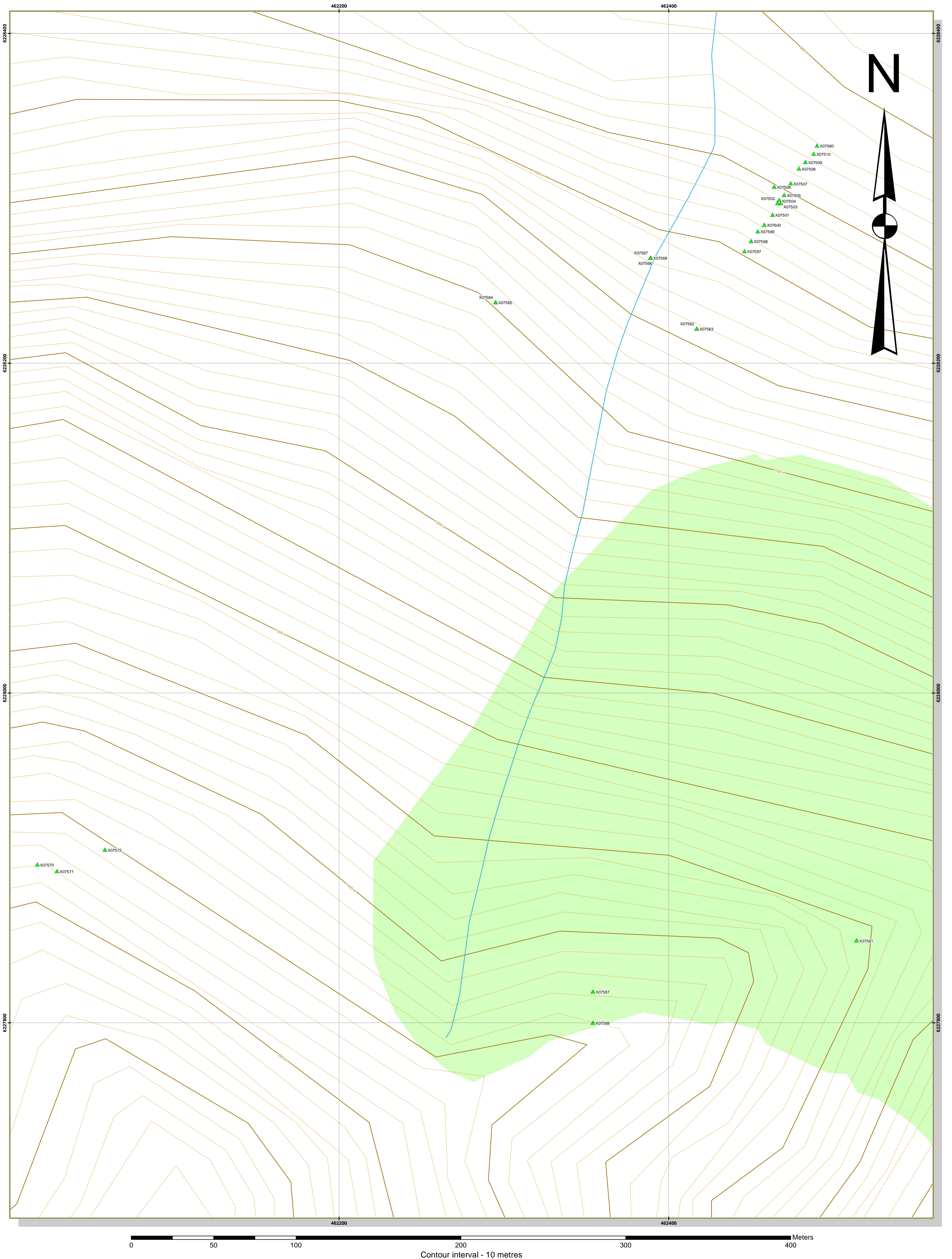
**Great Bear Resources**

**Surprise Creek**

**Copper, Lead and Zinc  
Geochemistry**

NTS 104 A/04 Scale 1:20,000 Map 3





0 50 100 200 300 400 Meters  
 Contour interval - 10 metres



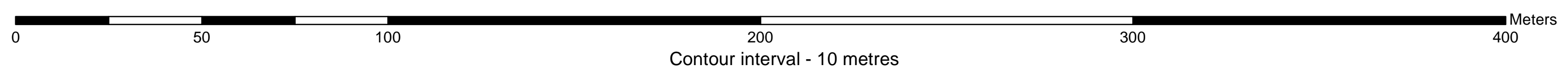
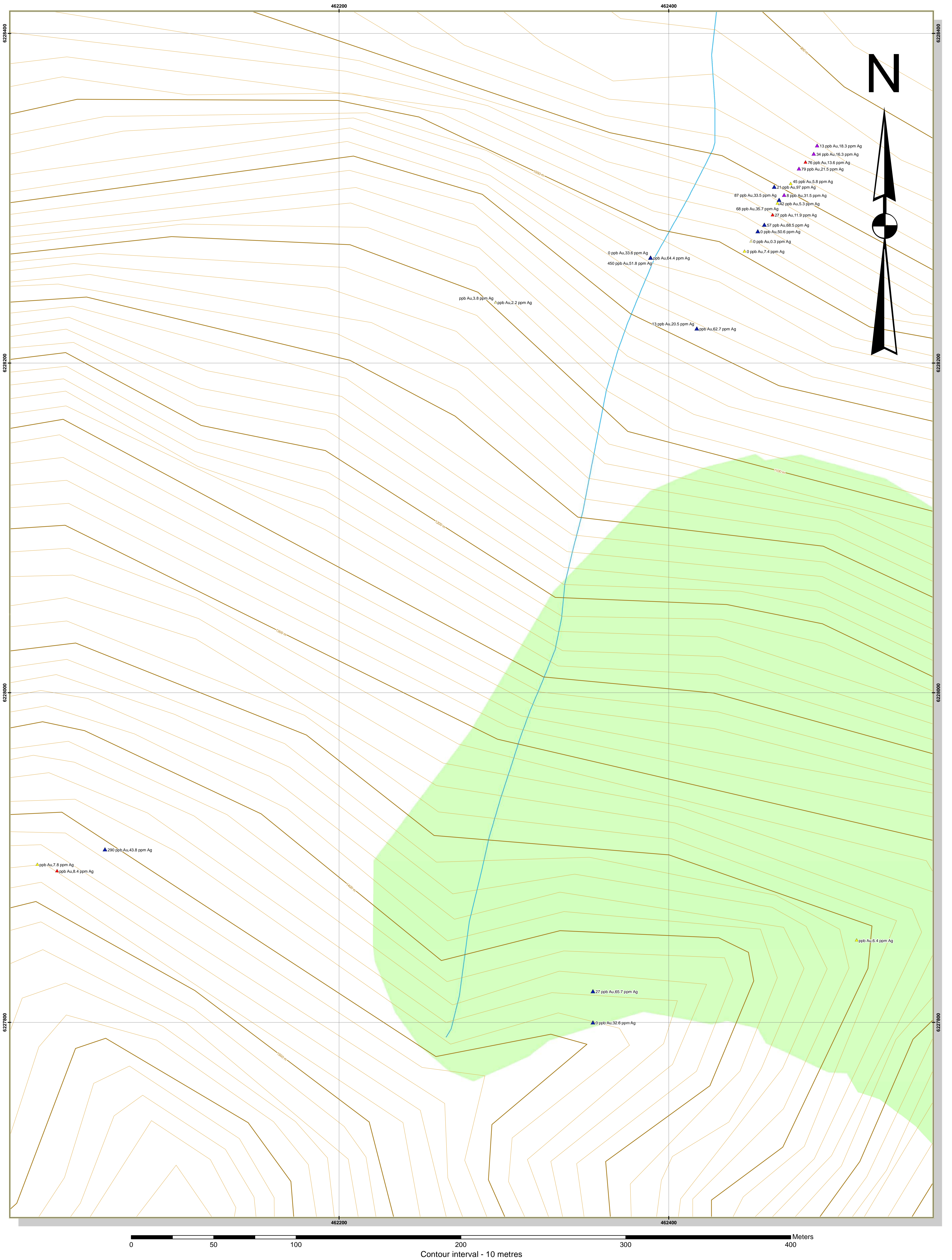
**GREATBEAR**  
 RESOURCES

**Legend**

▲ Rock Sample Locations

**Great Bear Resources**  
**Surprise Creek**  
**Rumble Zone**  
**Rock Sample Locations**

NTS 104 A/04 Scale 1:1,000 Map 4



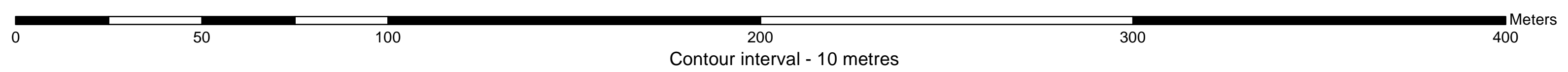
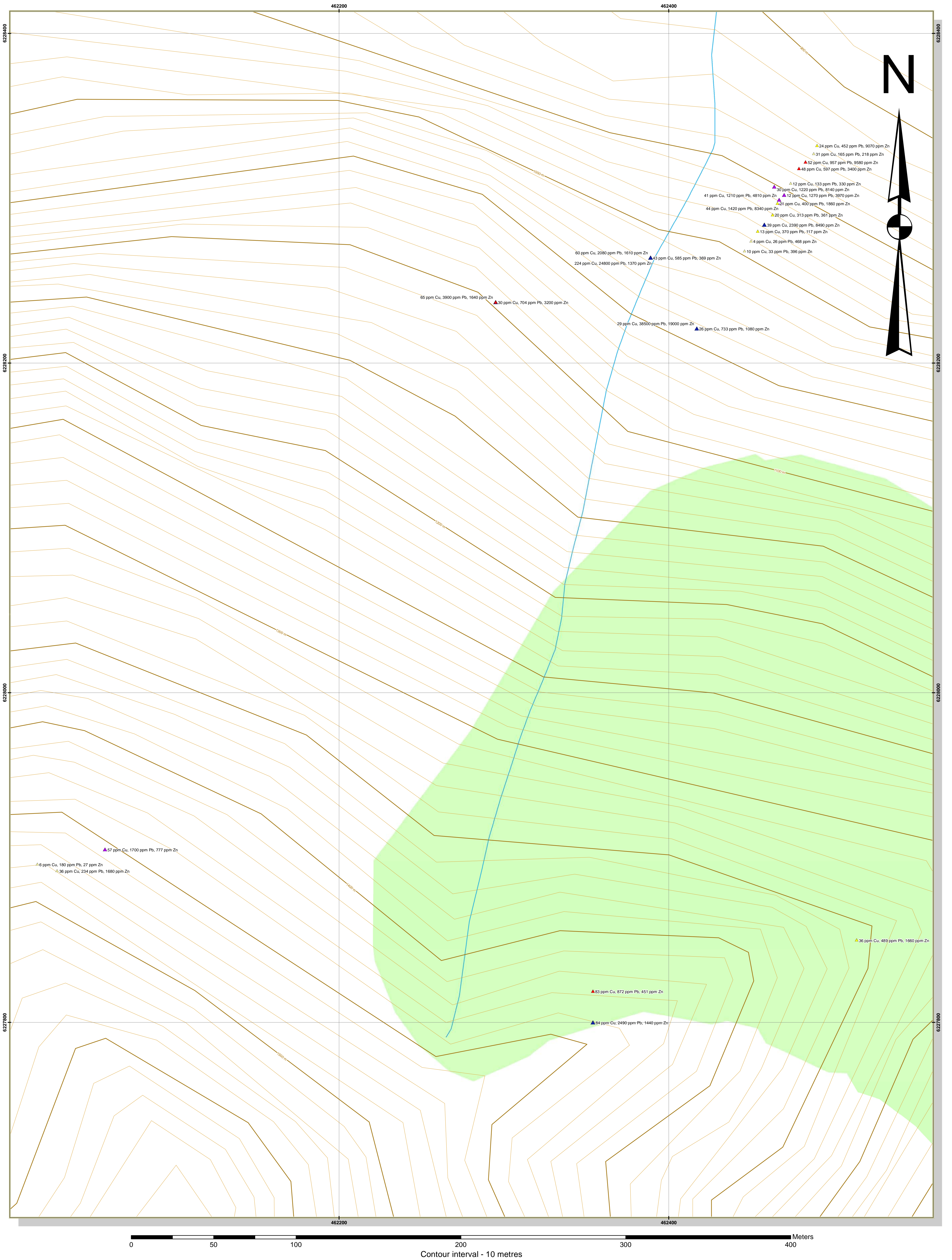
**GREATBEAR**  
RESOURCES

**Legend**

- ▲ 0.2 to 3.9 ppm Ag
- ▲ 4 to 7.9 ppm Ag
- ▲ 8 to 15.9 ppm Ag
- ▲ 16 to 31.9 ppm Ag
- ▲ > 31.9 ppm Ag

**Great Bear Resources**  
**Surprise Creek**  
**Rumble Zone**  
**Gold and Silver Geochemistry**

NTS 104 A/04 Scale 1:1,000 Map 5



**Legend**

- ▲ 10 to 249 ppm Pb
- ▲ 250 to 499 ppm Pb
- ▲ 500 to 999 ppm Pb
- ▲ 1000 to 1999 ppm Pb
- ▲ > 1999 ppm Pb

**Great Bear Resources  
Surprise Creek**

**Rumble Zone  
Copper, Lead and Zinc  
Geochemistry**

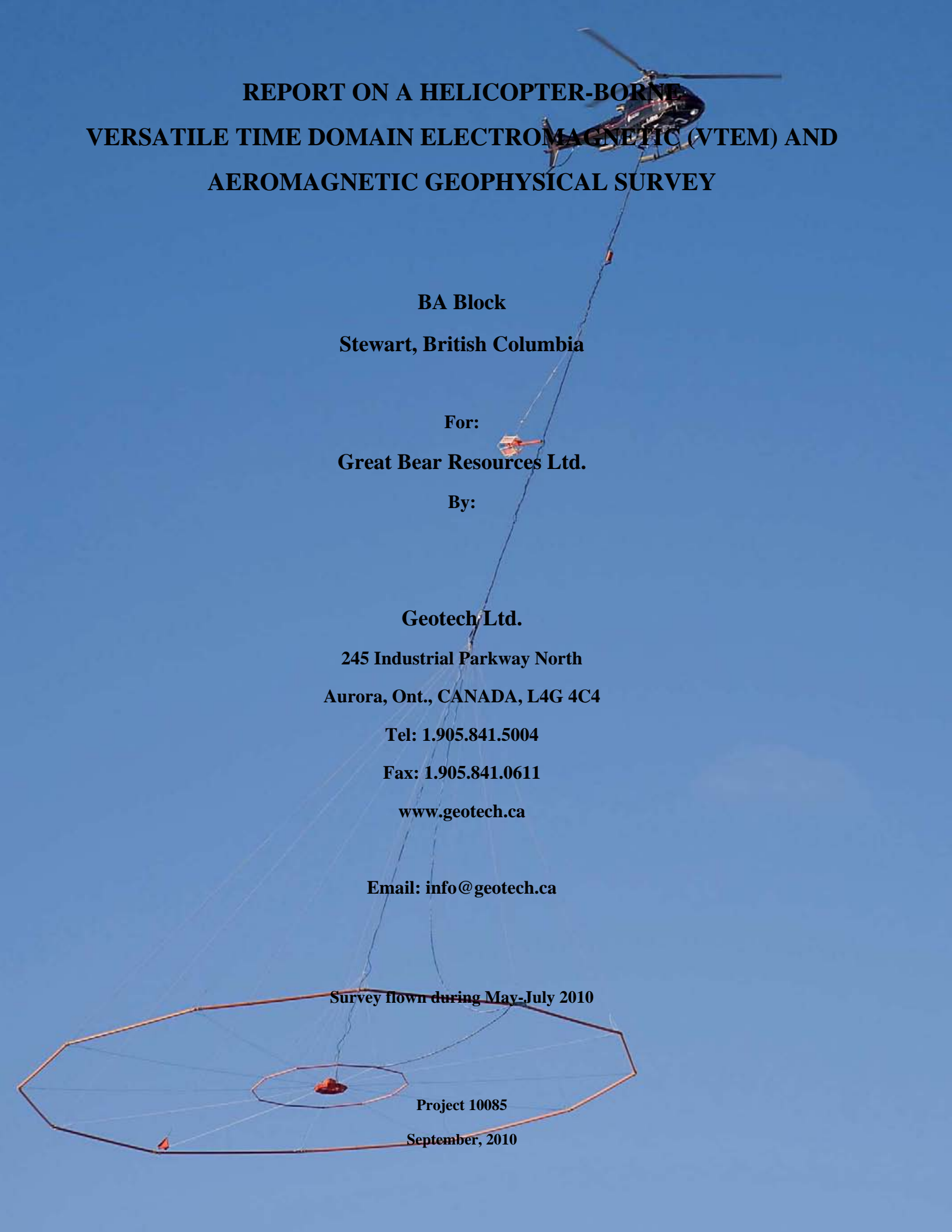
NTS 104 A/04 Scale 1:1,000 Map 6



**GREATBEAR**  
RESOURCES



## Appendix C – VTEM Geophysics Report



**REPORT ON A HELICOPTER-BORNE  
VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM) AND  
AEROMAGNETIC GEOPHYSICAL SURVEY**

**BA Block  
Stewart, British Columbia**

**For:  
Great Bear Resources Ltd.**

**By:  
Geotech Ltd.  
245 Industrial Parkway North  
Aurora, Ont., CANADA, L4G 4C4**

**Tel: 1.905.841.5004**

**Fax: 1.905.841.0611**

**[www.geotech.ca](http://www.geotech.ca)**

**Email: [info@geotech.ca](mailto:info@geotech.ca)**

**Survey flown during May-July 2010**

**Project 10085**

**September, 2010**

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# REPORT ON A HELICOPTER-BORNE VERSATILE TIME DOMAIN ELECTROMAGNETIC (VTEM) and AEROMAGNETIC SURVEY

BA Block  
Stewart, British Columbia

## Executive Summary

During April 29<sup>th</sup> – July 7<sup>th</sup>, 2010 Geotech Ltd. carried out a helicopter-borne geophysical survey over the BA Block situated about 10 km northeast of Stewart, British Columbia, Canada.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEM) system, and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 3317 line-kilometres were planned to be flown.

In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products were undertaken from the office of Geotech Ltd. in Aurora, Ontario.

The processed survey results are presented as electromagnetic stacked profiles of the B-field Z Component and dB/dt Z and as colour grids of a B-Field Z Component Channel, Fraser Filter X Component and Total Magnetic Intensity (TMI).

Digital data includes all electromagnetic and magnetic products, plus ancillary data including the waveform.

The survey report describes the procedures for data acquisition, processing, final image presentation and the specifications for the digital data set. No formal Interpretation has been included.

# 1. INTRODUCTION

## 1.1 General Considerations

Geotech Ltd. performed a helicopter-borne geophysical survey over the BA block located about 10 km northeast of Stewart, in British Columbia, Canada (Figure 1 & 2).

Chris Taylor represented Great Bear Resources Ltd. during the data acquisition and data processing phases of this project.

The geophysical surveys consisted of helicopter borne EM using the versatile time-domain electromagnetic (VTEM) system with Z and X component measurements and aeromagnetics using a cesium magnetometer. A total of 3327 line-km of geophysical data were acquired during the survey.

The crew was based out of Stewart 10 km southwest of the survey block (Figure 2) in British Columbia for the acquisition phase of the survey. Survey flying started on April 29<sup>th</sup> and was completed on July 7<sup>th</sup>, 2010. Some lines were re flown in September 2010 and are included in this report.

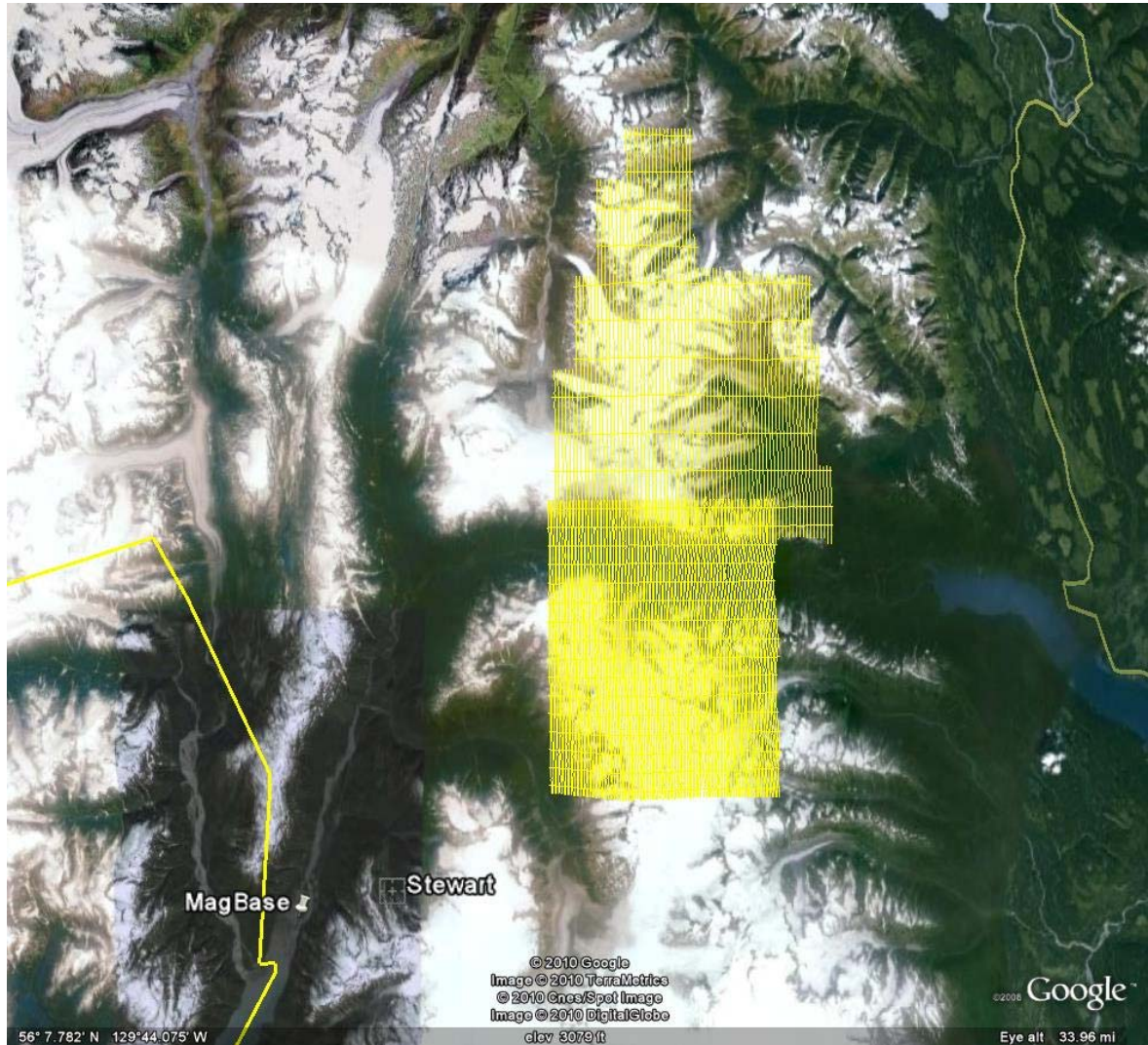
Data quality control and quality assurance, and preliminary data processing were carried out on a daily basis during the acquisition phase of the project. Final data processing followed immediately after the end of the survey. Final reporting, data presentation and archiving were completed from the Aurora office of Geotech Ltd. in September, 2010.



Figure 1 - Property Location

## 1.2 Survey and System Specifications

The block is located approximately 10 kilometres northeast of Stewart, British Columbia (Figure 2).

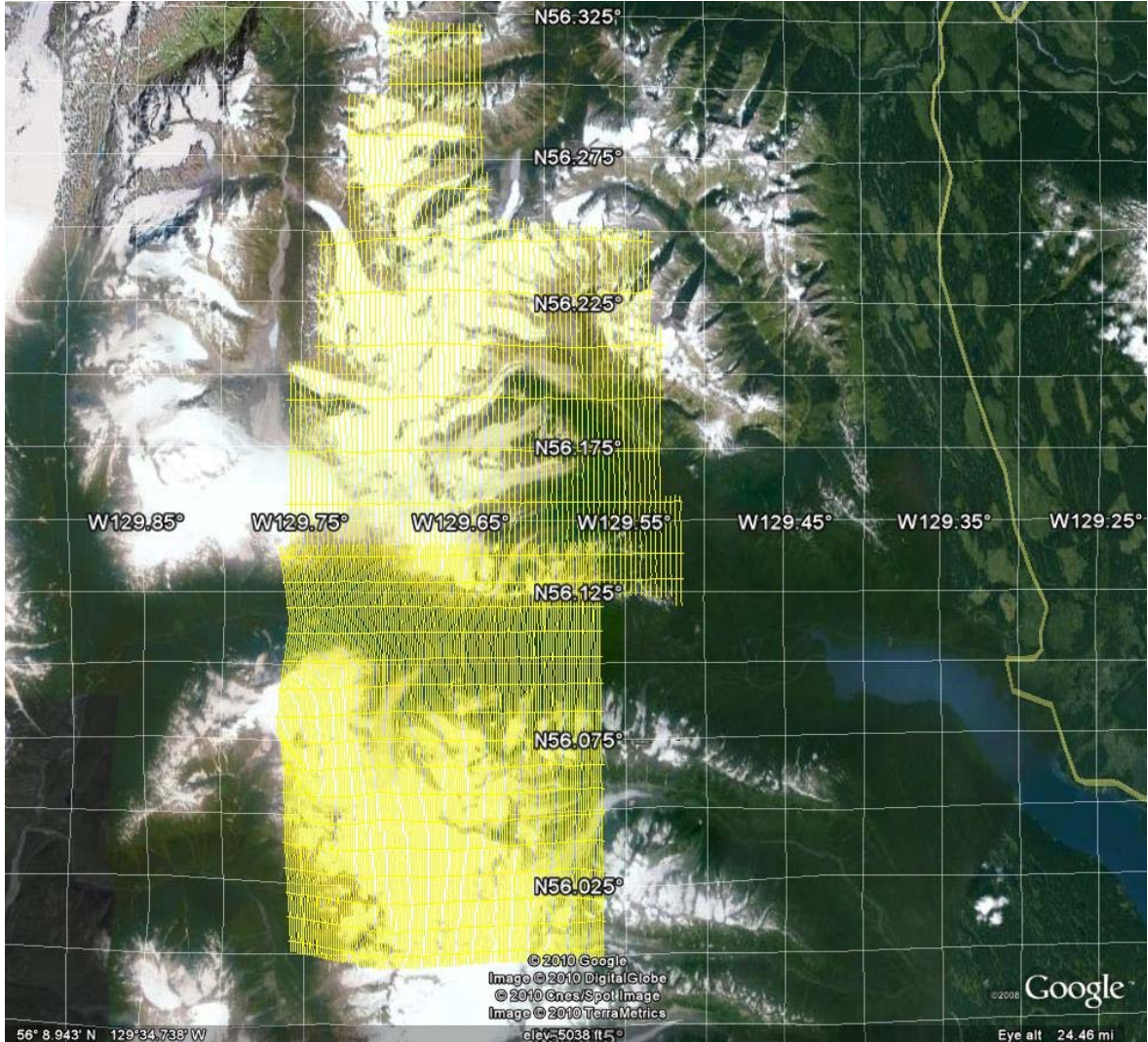


**Figure 2** – survey area location on Google Earth

The block was flown in a north to south (N 0° E azimuth) direction with traverse line spacing of 100 & 200 metres as depicted in Figure 3. Tie lines were flown perpendicular to the traverse lines at a spacing of 1000 & 2000 metres (N 90° E azimuth). For more detailed information on the flight spacing and direction see Table 1.

### 1.3 Topographic Relief and Cultural Features

Topographically, the block exhibits a high relief with an elevation ranging from 168 to 2709 metres above sea level over an area of 409.8 square kilometres (Figure 3). There are numerous rivers and streams running through the survey area which connect various lakes and wetlands. There are also a number of glaciers throughout survey area. There are a few signs of culture such as roads and trails through out the survey. However, in the south block there is a road and a mining area which are located near top end.



**Figure 3** – Flight path over a Google Earth Image.

The block is covered by numerous mining claims, which are shown in Appendix A, and are plotted on all maps. The survey area is covered by NTS (National Topographic Survey) of Canada sheet 104A03, 104A04, 104A05 and 104A06.

## 2. DATA ACQUISITION

### 2.1 Survey Area

The survey block (see Figure 3 and Appendix A) and general flight specifications are as follows:

**Table 1** - Survey Specifications

Survey block	Traverse Line spacing (m)	Area (Km <sup>2</sup> )	Planned <sup>1</sup> Line-km	Actual Line-km	Flight direction	Line numbers
BA	Traverse: 100&200	409.8	3014	3020	N 0° E / N 180° E	L1000 - L2540
	Tie: 1000&2000		303	307	N 90° E / N 270° E	T2900- T3250
<b>TOTAL</b>		409.8	3317	3327		

Survey block boundaries co-ordinates are provided in Appendix B.

### 2.2 Survey Operations

Survey operations were based out of Stewart in British Columbia from April 29<sup>th</sup> to July 7<sup>th</sup>, 2010. The following table shows the timing of the flying.

**Table 2** - Survey schedule

Date	Flight #	Block	Crew location	Comments
29-Apr-2010			Stewart, BC	No Production - Test Flight
30-Apr-2010			Stewart, BC	No Production due to weather
01-May-2010			Stewart, BC	No Production due to weather
02-May-2010	F1	GB_v3	Stewart, BC	26km flown limited production due to weather
03-May-2010			Stewart, BC	No Production due to weather
04-May-2010			Stewart, BC	No Production due to weather
05-May-2010			Stewart, BC	No Production due to weather
06-May-2010	F2	BG_V3	Stewart, BC	123km flown
07-May-2010	F3,F4	Gb_V3	Stewart, BC	221km flown
08-May-2010	F5,F6	GB_V3	Stewart, BC	251km flown
09-May-2010	F7, F8	GB_V3	Stewart, BC	285km flown
10-May-2010			Stewart, BC	No Production - Test Flight – Technical Difficulties
11-May-2010			Stewart, BC	No Production - Test Flight
12-May-2010			Stewart, BC	No Production due to weather
13-May-2010			Stewart, BC	No Production due to weather
14-May-2010	F9,10,11	GB_V3	Stewart, BC	275km flown
15-May-2010			Stewart, BC	No Production due to weather
16-May-2010			Stewart, BC	No Production due to weather
17-May-2010			Stewart, BC	No Production due to weather

<sup>1</sup> Note: Actual Line kilometres represent the total line kilometres in the final database. These line-km normally exceed the Planned line-km, as indicated in the survey NAV files.



Date	Flight #	Block	Crew location	Comments
18-May-2010			Stewart, BC	No Production due to weather
19-May-2010			Stewart, BC	No Production due to weather
20-May-2010			Stewart, BC	No Production due to weather
21-May-2010			Stewart, BC	No Production due to weather
22-May-2010			Stewart, BC	No Production due to weather
23-May-2010			Stewart, BC	No Production due to weather
24-May-2010			Stewart, BC	No Production due to weather
25-May-2010			Stewart, BC	No Production due to weather
26-May-2010			Stewart, BC	No Production due to weather
27-May-2010			Stewart, BC	No Production due to weather
28-May-2010	F12	GB_V3	Stewart, BC	144km flown
29-May-2010	F13,F14	GB_V3	Stewart, BC	250km flown
30-May-2010			Stewart, BC	No Production technical issues- Test Flight – Troubleshooting
31-May-2010			Stewart, BC	No Production technical issues- Test Flight – Troubleshooting
01-Jun-2010			Stewart, BC	No Production technical issues- Test Flight – Troubleshooting
02-Jun-2010			Stewart, BC	No Production due to weather and technical issues
03-Jun-2010			Stewart, BC	No Production – Test Flight – Geometry Test
04-Jun-2010			Stewart, BC	No Production due to weather
05-Jun-2010			Stewart, BC	No Production due to weather
06-Jun-2010	F15,16,17,18	Gb_V3	Stewart, BC	143km flown
07-Jun-2010			Stewart, BC	No Production due to weather
08-Jun-2010			Stewart, BC	No Production due to weather
09-Jun-2010	F19,20		Stewart, BC	227km flown
10-Jun-2010	F21,22,23	GB_V3	Stewart, BC	330km flown
11-Jun-2010			Stewart, BC	No Production due to weather
12-Jun-2010			Stewart, BC	No Production due to weather
13-Jun-2010			Stewart, BC	No Production due to weather
14-Jun-2010			Stewart, BC	No Production due to weather
15-Jun-2010			Stewart, BC	No Production due to weather
16-Jun-2010			Stewart, BC	No Production due to weather
17-Jun-2010	24,25		Stewart, BC	237km flown
18-Jun-2010	F26	GB_V3	Stewart, BC	126km flown
19-Jun-2010	F27,28	GB_V3	Stewart, BC	253km flown
20-Jun-2010	F29	GB_V3	Stewart, BC	111km flown
21-Jun-2010			Stewart, BC	No Production due to weather
22-Jun-2010			Stewart, BC	No Production due to weather
23-Jun-2010			Stewart, BC	No Production due to weather
24-Jun-2010			Stewart, BC	No Production due to weather
25-Jun-2010			Stewart, BC	No Production due to weather
26-Jun-2010			Stewart, BC	No Production due to weather
27-Jun-2010			Stewart, BC	No Production due to weather
28-Jun-2010			Stewart, BC	No Production due to weather
29-Jun-2010			Stewart, BC	No Production due to weather

Date	Flight #	Block	Crew location	Comments
30-Jun-2010			Stewart, BC	No Production due to weather
01-Jul-2010			Stewart, BC	No Production due to weather
02-Jul-2010			Stewart, BC	No Production due to weather
03-Jul-2010			Stewart, BC	No Production due to weather
04-Jul-2010			Stewart, BC	No Production due to weather
05-Jul-2010			Stewart, BC	No Production due to weather
06-Jul-2010	F30	GB_V3	Stewart, BC	95km flown
07-Jul-2010	F31,32,33	GB_v4,v5,v6	Stewart, BC	357km flown – Job Complete
16-17 Sep-2010			Stewart, BC	reflights

## 2.3 Flight Specifications

During the survey the helicopter was maintained at a mean altitude of 303 metres above the ground with a nominal survey speed of 80 km/hour. This allowed for a nominal EM bird terrain clearance of 268 metres and a magnetic sensor clearance of 290 metres.

The on board operator was responsible for monitoring the system integrity. He also maintained a detailed flight log during the survey, tracking the times of the flight as well as any unusual geophysical or topographic features.

On return of the aircrew to the base camp the survey data was transferred from a compact flash card (PCMCIA) to the data processing computer. The data were then uploaded via ftp to the Geotech office in Aurora for daily quality assurance and quality control by qualified personnel.

## 2.4 Aircraft and Equipment

### 2.4.1 Survey Aircraft

The survey was flown using a Eurocopter Aerospatiale (Astar) 350 B3 helicopters, registration C-GEOC and C-GABH. The helicopters were operated by Geotech Aviation Ltd and Bighorn Helicopters. Installation of the geophysical and ancillary equipment was carried out by a Geotech Ltd crew.

### 2.4.2 Electromagnetic System

The electromagnetic system was a Geotech Time Domain EM (VTEM) system. The configuration is as indicated in Figure 4.

The VTEM Receiver and transmitter coils were in concentric-coplanar and Z-direction oriented configuration. The receiver system for the project also included a coincident-coaxial X-direction coil to measure the in-line dB/dt and calculate B-Field responses. The EM bird was towed at a mean distance of 35 metres below the aircraft as shown in Figure 4 and Figure 6. The receiver decay recording scheme is shown diagrammatically in Figure 5.

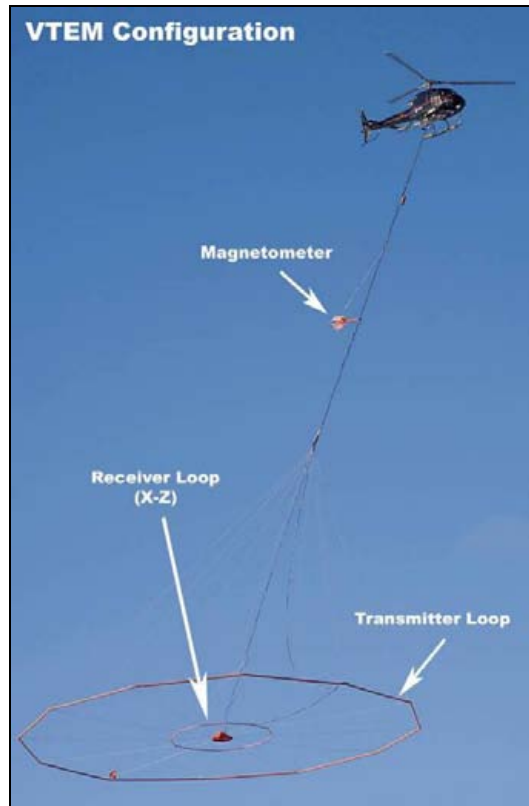


Figure 4 - VTEM Configuration, with magnetometer.

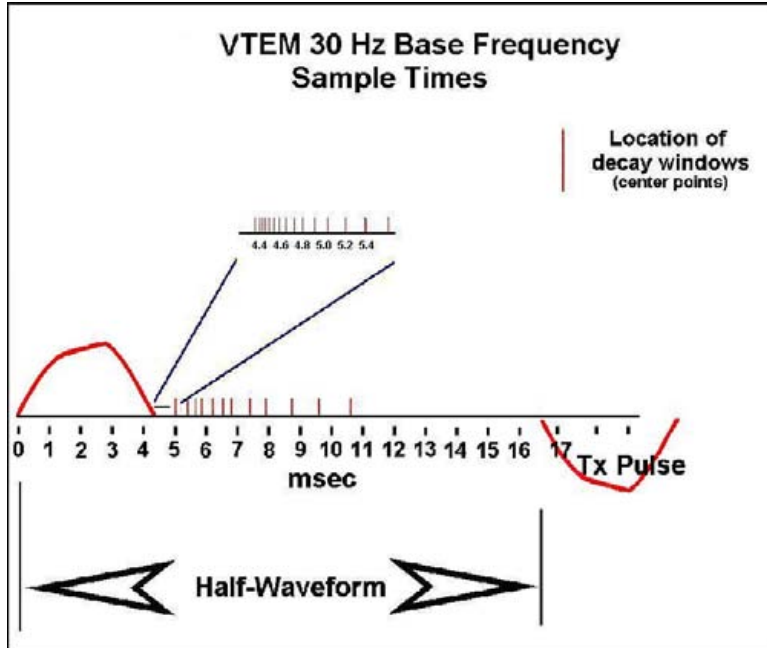


Figure 5 - VTEM Waveform & Sample Times

The VTEM decay sampling scheme is shown in Table 3 below. Thirty-two time measurement gates were used for the final data processing in the range from 96 to 7036  $\mu$  sec.

**Table 3 - Decay Sampling Scheme**

<b>VTEM Decay Sampling Scheme</b>				
<b>Index</b>	<b>Middle</b>	<b>Start</b>	<b>End</b>	<b>Window</b>
<b>Microseconds</b>				
14	96	90	103	13
15	110	103	118	15
16	126	118	136	18
17	145	136	156	20
18	167	156	179	23
19	192	179	206	27
20	220	206	236	30
21	253	236	271	35
22	290	271	312	40
23	333	312	358	46
24	383	358	411	53
25	440	411	472	61
26	505	472	543	70
27	580	543	623	81
28	667	623	716	93
29	766	716	823	107
30	880	823	945	122
31	1,010	945	1,086	141
32	1,161	1,086	1,247	161
33	1,333	1,247	1,432	185
34	1,531	1,432	1,646	214
35	1,760	1,646	1,891	245
36	2,021	1,891	2,172	281
37	2,323	2,172	2,495	323
38	2,667	2,495	2,865	370
39	3,063	2,865	3,292	427
40	3,521	3,292	3,781	490
41	4,042	3,781	4,341	560
42	4,641	4,341	4,987	646
43	5,333	4,987	5,729	742
44	6,125	5,729	6,581	852
45	7,036	6,581	7,560	979

VTEM system parameters:

Entire survey was flown using VTEM Micro system while the reflights were done using VTEM Lite system. Please note the reflight settings differences in the below table

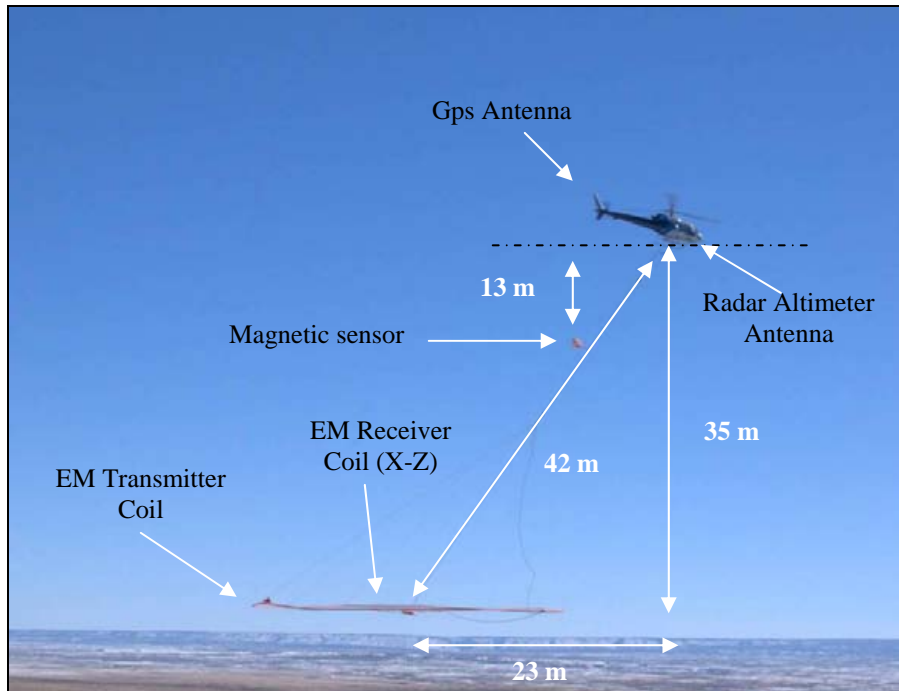
Transmitter Section

VTEM - Transmitter		VTEM - Transmitter (reflights)	
Coil diameter (m)	19.4	Coil diameter (m)	17.6
Number of turns	3	Number of turns	4
Pulse repetition rate (Hz)	30	Pulse repetition rate (Hz)	30
Peak current (Amp)	316	Peak current (Amp)	249
Duty cycle (%)	22	Duty cycle (%)	20
Peak dipole moment (nIA)	280,221.6	Peak dipole moment (nIA)	242,311.8
Pulse width (ms)	3.651	Pulse width (ms)	3.396
Average terrain clearance (m)	303	Average terrain clearance (m)	231
Effective coil area: 508 m <sup>2</sup>			

Receiver Section

Z-coil Receiver		Z-coil Receiver	
Coil diameter (m)	1.2	Coil diameter (m)	1.2
Number of turns	100	Number of turns	100
Effective area (m <sup>2</sup> )	113.10	Effective area (m <sup>2</sup> )	113.10
Sampling interval (s)	0.1	Sampling interval (s)	0.1
Average terrain clearance (m)	303	Average terrain clearance (m)	200
Effective coil area: 19.69 m <sup>2</sup>			

X-coil Receiver		X-coil Receiver	
Coil diameter (m)	0.32	<p>No X-coil in VTEM-Lite                      Lines with prefix 'P' will be delivered                      Containing the x-coil data from the original flights</p>	
Number of turns	245		
Effective area (m <sup>2</sup> )	19.70		
Sampling interval (s)	0.1		
Average terrain clearance (m)	303		
Effective coil area: 113.04m <sup>2</sup>			



**Figure 6 - VTEM System Configuration**

### 2.4.3 Airborne magnetometer

The magnetic sensor utilized for the survey was Geometrics optically pumped cesium vapour magnetic field sensor mounted 13 metres below the helicopter, as shown in Figure 6. The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds.

### 2.4.4 Radar Altimeter

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The antenna was mounted beneath the bubble of the helicopter cockpit (Figure 6).

### 2.4.5 GPS Navigation System

The navigation system used was a Geotech PC104 based navigation system utilizing a NovAtel's CDGPS (Canada-Wide Differential Global Positioning System Correction Service) enable OEM4-G2-3151W GPS receiver, Geotech navigate software, a full screen display with controls in front of the pilot to direct the flight and an NovAtel GPS antenna mounted on the helicopter tail (Figure 6). As many as 11 GPS and two CDGPS satellites may be monitored at any one time. The positional accuracy or circular error probability (CEP) is 1.8 m, with CDGPS active, it is 1.0 m. The co-ordinates of the block were set-up prior to the survey and the information was fed into the airborne navigation system.

### 2.4.6 Digital Acquisition System

A Geotech data acquisition system recorded the digital survey data on an internal compact flash card. Data is displayed on an LCD screen as traces to allow the operator to monitor the integrity of the system. The data type and sampling interval as provided in Table 4.

**Table 4** - Acquisition Sampling Rates

<b>DATA TYPE</b>	<b>SAMPLING</b>
TDEM	0.1 sec
Magnetometer	0.1 sec
GPS Position	0.2 sec
Radar Altimeter	0.2 sec

## 2.5 Base Station

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Cesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer.

The base station magnetometer sensor was installed at the Stewart airport in an open area (55° 56.1021 N, 129° 59.0178 W); away from electric transmission lines and moving ferrous objects such as motor vehicles. The base station data were backed-up to the data processing computer at the end of each survey day.

### 3. PERSONNEL

The following Geotech Ltd. personnel were involved in the project.

Field:

Project Manager:	Darren Tuck (office)
Data QA/QC:	Neil Fiset (office)
Crew chief:	Gavin Boege
System Operators:	Scott Trew

The survey pilot and the mechanical engineer were employed directly by the helicopter operator – Geotech Aviation and Bighorn Helicopters.

Pilot:	Alex Parra
Mechanical Engineer:	Greg Hynes

Office:

Preliminary Data Processing:	Neil Fiset
Final Data Processing:	Neil Fiset
Final Data QA/QC:	Marta Orta
Reporting/Mapping:	Wendy Acorn

Data acquisition phase was carried out under the supervision of Andrei Bagrianski, P. Geo, Chief Operating Officer. Processing phase was carried out under the supervision of Harish Kumar, P. Geo, Assistant Manager of Data Processing. The interpretation phase was under the supervision of Jean Legault, P. Geo. The customer relations were looked after by Paolo Berardelli.



## 4. DATA PROCESSING AND PRESENTATION

Data compilation and processing were carried out by the application of Geosoft OASIS Montaj and programs proprietary to Geotech Ltd.

### 4.1 Flight Path

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the NAD83 Datum, UTM Zone 9 North coordinate system in Oasis Montaj.

The flight path was drawn using linear interpolation between x, y positions from the navigation system. Positions are updated every second and expressed as UTM easting's (x) and UTM northing's (y).

### 4.2 Electromagnetic Data

A three stage digital filtering process was used to reject major spheric events and to reduce system noise. Local spheric activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major spheric events.

The signal to noise ratio was further improved by the application of a low pass linear digital filter. This filter has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 1 second or 15 metres. This filter is a symmetrical 1 sec linear filter.

The results are presented as stacked profiles of EM voltages for the time gates, in linear - logarithmic scale for the B-field Z component and dB/dt responses in the Z and X components. B-field Z component time channel recorded at 1.010 milliseconds after the termination of the impulse is also presented as contour color image.

VTEM has two receiver coil orientations. Z-axis coil is oriented parallel to the transmitter coil axis and both are horizontal to the ground. The X-axis coil is oriented parallel to the ground and along the line-of-flight. This combined two coil configuration provides information on the position, depth, dip and thickness of a conductor. The responses are free from a system geometric effect and can be easily compared to model type curves in most cases. Generalized modeling results of VTEM data, are shown in Appendix E.

In general X-component data produce cross-over type anomalies: from “+ to -“ in direction of flight for “thin” subvertical targets and from “- to +” in direction of flight for “thick” targets. Z component data produce double peak type anomalies for “thin” subvertical targets and single peak for “thick” targets.

The limits and change-over of “thin-tick” depends on dimensions of a TEM system. For example, for VTEM-26 the border corresponds to diameter of the system (Appendix E, Fig.E-16).

Graphical representations of the VTEM transmitter input current and the output voltage of the receiver coil are shown in Appendix C.

### **4.3 Magnetic Data**

The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data was edited and merged into the Geosoft GDB database on a daily basis. The aeromagnetic data was corrected for diurnal variations by subtracting the observed magnetic base station deviations.

Tie line levelling was carried out by adjusting intersection points along traverse lines. A micro-levelling procedure was applied to remove persistent low-amplitude components of flight-line noise remaining in the data.

The corrected magnetic data was interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of approximately 10 metres at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

## 5. DELIVERABLES

### 5.1 Survey Report

The survey report describes the data acquisition, processing, and final presentation of the survey results. The survey report is provided in two paper copies and digitally in PDF format.

### 5.2 Maps

Final maps were produced at scale of 1:20,000 for best representation of the survey size and line spacing. The coordinate/projection system used was NAD83 Datum, UTM Zone 9 North. All maps show the mining claims, flight path trace and topographic data; latitude and longitude are also noted on maps.

The preliminary and final results of the survey are presented as EM profiles, a late-time gate gridded EM channel, and a color magnetic TMI contour map. The following maps are presented on paper;

- VTEM dB/dt profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
- VTEM Fraser Filtered X Component dB/dt Channel 26, Time Gate 0.505ms.
- VTEM B-field late time Z Component Channel 31, Time Gate 1.010 ms color image.
- VTEM B-Field profiles Z Component, Time Gates 0.220 – 7.036 ms in linear – logarithmic scale.
- Total magnetic intensity (TMI) color image and contours.

### 5.3 Digital Data

- Two copies of the data and maps on DVD were prepared to accompany the report. Each DVD contains a digital file of the line data in GDB Geosoft Montaj format as well as the maps in Geosoft Montaj Map and PDF format.
- DVD structure.

<b>Data</b>	contains databases, grids and maps, as described below.
<b>Report</b>	contains a copy of the report and appendices in PDF format.

Databases in Geosoft GDB format, containing the channels listed in Table 5.

**Table 5 - Geosoft GDB Data Format**

Channel name	Units	Description
X:	metres	UTM Easting NAD83 Zone 9 North
Y:	metres	UTM Northing NAD83 Zone 9 North
Longitude:	Decimal Degrees	WGS 84 Longitude data
Latitude:	Decimal Degrees	WGS 84 Latitude data
Z:	metres	GPS antenna elevation (above Geoid)
Radar:	metres	helicopter terrain clearance from radar altimeter
Radarb:	metres	Calculated EM bird terrain clearance from radar altimeter
DEM:	metres	Digital Elevation Model
Gtime:	Seconds of the day	GPS time
Mag1:	nT	Raw Total Magnetic field data
Basemag:	nT	Magnetic diurnal variation data
Mag2:	nT	Diurnal corrected Total Magnetic field data
Mag3:	nT	Levelled Total Magnetic field data
SFz[14]:	$\rho V/(A \cdot m^4)$	Z dB/dt 96 microsecond time channel
SFz[15]:	$\rho V/(A \cdot m^4)$	Z dB/dt 110 microsecond time channel
SFz[16]:	$\rho V/(A \cdot m^4)$	Z dB/dt 126 microsecond time channel
SFz[17]:	$\rho V/(A \cdot m^4)$	Z dB/dt 145 microsecond time channel
SFz[18]:	$\rho V/(A \cdot m^4)$	Z dB/dt 167 microsecond time channel
SFz[19]:	$\rho V/(A \cdot m^4)$	Z dB/dt 192 microsecond time channel
SFz[20]:	$\rho V/(A \cdot m^4)$	Z dB/dt 220 microsecond time channel
SFz[21]:	$\rho V/(A \cdot m^4)$	Z dB/dt 253 microsecond time channel
SFz[22]:	$\rho V/(A \cdot m^4)$	Z dB/dt 290 microsecond time channel
SFz[23]:	$\rho V/(A \cdot m^4)$	Z dB/dt 333 microsecond time channel
SFz[24]:	$\rho V/(A \cdot m^4)$	Z dB/dt 383 microsecond time channel
SFz[25]:	$\rho V/(A \cdot m^4)$	Z dB/dt 440 microsecond time channel
SFz[26]:	$\rho V/(A \cdot m^4)$	Z dB/dt 505 microsecond time channel
SFz[27]:	$\rho V/(A \cdot m^4)$	Z dB/dt 580 microsecond time channel
SFz[28]:	$\rho V/(A \cdot m^4)$	Z dB/dt 667 microsecond time channel
SFz[29]:	$\rho V/(A \cdot m^4)$	Z dB/dt 766 microsecond time channel
SFz[30]:	$\rho V/(A \cdot m^4)$	Z dB/dt 880 microsecond time channel
SFz[31]:	$\rho V/(A \cdot m^4)$	Z dB/dt 1010 microsecond time channel
SFz[32]:	$\rho V/(A \cdot m^4)$	Z dB/dt 1161 microsecond time channel
SFz[33]:	$\rho V/(A \cdot m^4)$	Z dB/dt 1333 microsecond time channel
SFz[34]:	$\rho V/(A \cdot m^4)$	Z dB/dt 1531 microsecond time channel
SFz[35]:	$\rho V/(A \cdot m^4)$	Z dB/dt 1760 microsecond time channel
SFz[36]:	$\rho V/(A \cdot m^4)$	Z dB/dt 2021 microsecond time channel
SFz[37]:	$\rho V/(A \cdot m^4)$	Z dB/dt 2323 microsecond time channel
SFz[38]:	$\rho V/(A \cdot m^4)$	Z dB/dt 2667 microsecond time channel
SFz[39]:	$\rho V/(A \cdot m^4)$	Z dB/dt 3063 microsecond time channel
SFz[40]:	$\rho V/(A \cdot m^4)$	Z dB/dt 3521 microsecond time channel
SFz[41]:	$\rho V/(A \cdot m^4)$	Z dB/dt 4042 microsecond time channel
SFz[42]:	$\rho V/(A \cdot m^4)$	Z dB/dt 4641 microsecond time channel
SFz[43]:	$\rho V/(A \cdot m^4)$	Z dB/dt 5333 microsecond time channel
SFz[44]:	$\rho V/(A \cdot m^4)$	Z dB/dt 6125 microsecond time channel
SFz[45]:	$\rho V/(A \cdot m^4)$	Z dB/dt 7036 microsecond time channel
SFx[20]:	$\rho V/(A \cdot m^4)$	X dB/dt 220 microsecond time channel
SFx[21]:	$\rho V/(A \cdot m^4)$	X dB/dt 253 microsecond time channel
SFx[22]:	$\rho V/(A \cdot m^4)$	X dB/dt 290 microsecond time channel
SFx[23]:	$\rho V/(A \cdot m^4)$	X dB/dt 333 microsecond time channel
SFx[24]:	$\rho V/(A \cdot m^4)$	X dB/dt 383 microsecond time channel

Channel name	Units	Description
SFx[25]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 440 microsecond time channel
SFx[26]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 505 microsecond time channel
SFx[27]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 580 microsecond time channel
SFx[28]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 667 microsecond time channel
SFx[29]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 766 microsecond time channel
SFx[30]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 880 microsecond time channel
SFx[31]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 1010 microsecond time channel
SFx[32]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 1161 microsecond time channel
SFx[33]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 1333 microsecond time channel
SFx[34]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 1531 microsecond time channel
SFx[35]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 1760 microsecond time channel
SFx[36]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 2021 microsecond time channel
SFx[37]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 2323 microsecond time channel
SFx[38]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 2667 microsecond time channel
SFx[39]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 3063 microsecond time channel
SFx[40]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 3521 microsecond time channel
SFx[41]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 4042 microsecond time channel
SFx[42]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 4641 microsecond time channel
SFx[43]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 5333 microsecond time channel
SFx[44]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 6125 microsecond time channel
SFx[45]:	$\text{pV}/(\text{A}\cdot\text{m}^4)$	X dB/dt 7036 microsecond time channel
BFz	$(\text{pV}\cdot\text{ms})/(\text{A}\cdot\text{m}^4)$	Z B-Field data for time channels 14 to 45
BFx	$(\text{pV}\cdot\text{ms})/(\text{A}\cdot\text{m}^4)$	X B-Field data for time channels 20 to 45
SFx_FF	$(\text{pV}/(\text{A}\cdot\text{m}^4))$	Fraser filtered X dB/dt
PLM:		60 Hz power line monitor

Electromagnetic B-field and dB/dt Z component data is found in array channel format between indexes 14 – 45, and X component data from 20 – 45, as described above.

- Database of the VTEM Waveform “10085\_waveform\_final.gdb” in Geosoft GDB format, containing the following channels:

Time: Sampling rate interval, 5.2083 microseconds  
Rx\_Volt: Output voltage of the receiver coil (Volt)  
Tx\_Current: Output current of the transmitter (Amp)

- Grids in Geosoft GRD format, as follows:

BFz31: B-Field Z Component Channel 31 (Time Gate 1.010 ms)  
MAG: Total magnetic intensity (nT)  
SFxFF26: Fraser Filter dB/dt channel 26 (Time Gate 0.505 ms)

A Geosoft .GRD file has a .GI metadata file associated with it, containing grid projection information. A grid cell size of 50 metres was used.

- Maps at 1:20,000 in Geosoft MAP format, as follows:

10085\_20k\_dBdtz\_bb: dB/dt profiles Z Component, Time Gates 0.333 – 7.036 ms in linear – logarithmic scale.

10085\_20k\_SFxFF26\_bb: Fraser Filtered X Component dB/dt, Channel 26, Time Gate 0.505ms.

10085\_20k\_bfield\_bb: B-field profiles Z Component, Time Gates 0.333 – 7.036 ms in linear – logarithmic scale.

10085\_20k\_BFz31\_bb: B-field late time Z Component Channel 31, Time Gate 1.010 ms color image.

10085\_20k\_TMI\_bb: Total magnetic intensity (TMI) color image and contours.

Where bb represents the block name (ie. 10085\_20K\_TMI\_plate1)

Maps are also presented in PDF format.

1:50,000 topographic vectors were taken from the NRCAN Geogratis database at; <http://geogratis.gc.ca/geogratis/en/index.html>.

- A Google Earth file *10085\_GreatBear.kml* showing the flight path of the block is included. Free versions of Google Earth software from: <http://earth.google.com/download-earth.html>

## 6. CONCLUSIONS AND RECOMMENDATIONS

### 6.1 Conclusions


A helicopter-borne versatile time domain electromagnetic (VTEM) geophysical survey has been completed over the BA Block near Stewart, British Columbia.

The total area coverage is 409.8 km<sup>2</sup>. Total survey line coverage is 3327 line kilometres. The principal sensors included a Time Domain EM system and a magnetometer. Results have been presented as stacked profiles, and contour color images at a scale of 1:20,000. No formal Interpretation has been included.

### 6.2 Recommendations

Based on the geophysical results obtained, a number of interesting EM anomalies were identified across the property. The magnetic results may also contain worthwhile information in support of exploration targets of interest. We therefore recommend a detailed interpretation of the available geophysical data, in conjunction with the geology. It should include 2D - 3D inversion modeling analyses and magnetic derivative analysis prior to ground follow up and drill testing.

Respectfully submitted<sup>6</sup>,



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Nick Venter  
**Geotech Ltd.**

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Alexander Prikhodko, P. Geo, Ph.D.  
**Geotech Ltd.**

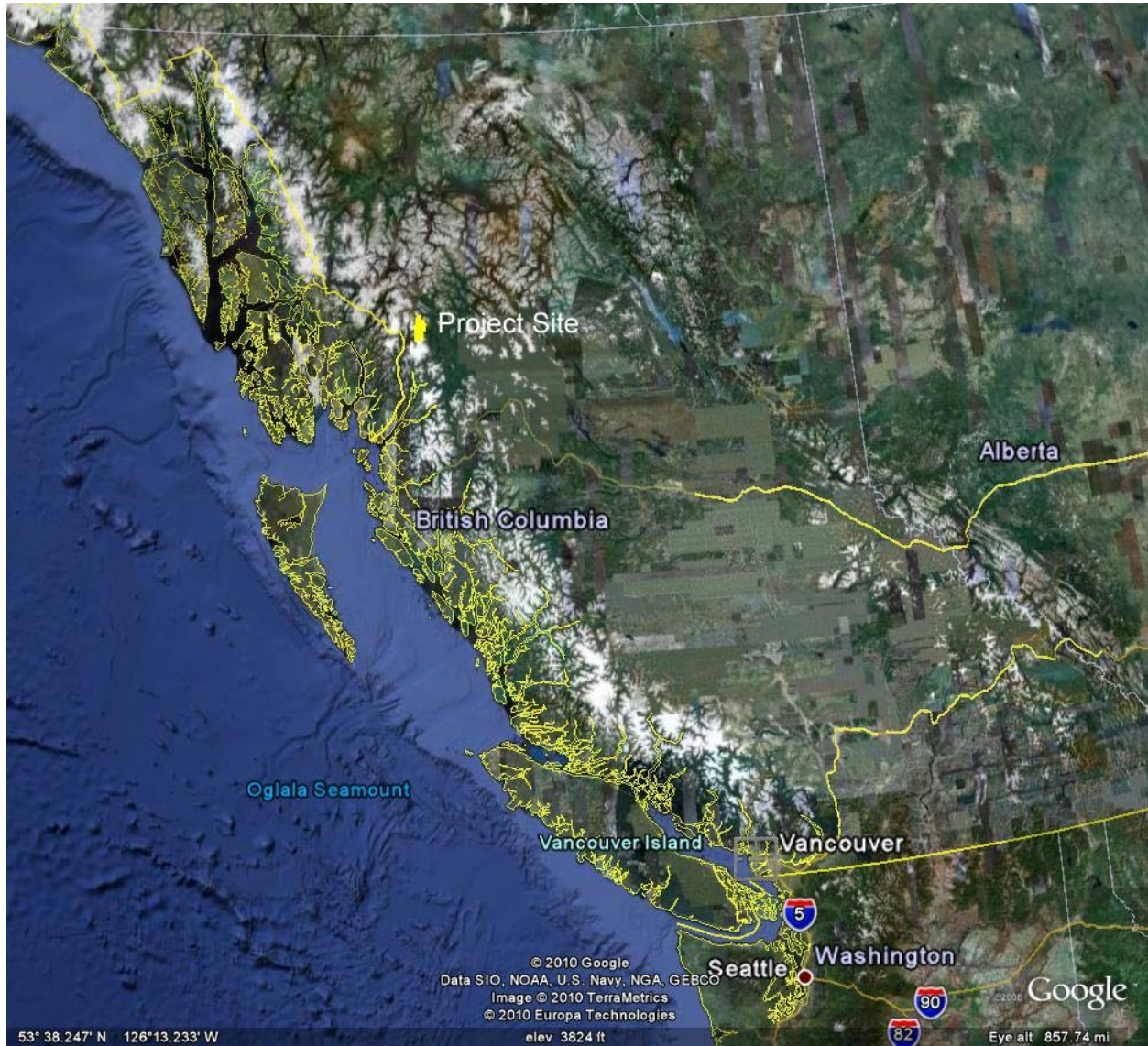
---

Harish Kumar P. Geo  
**Geotech Ltd.**

September 2010

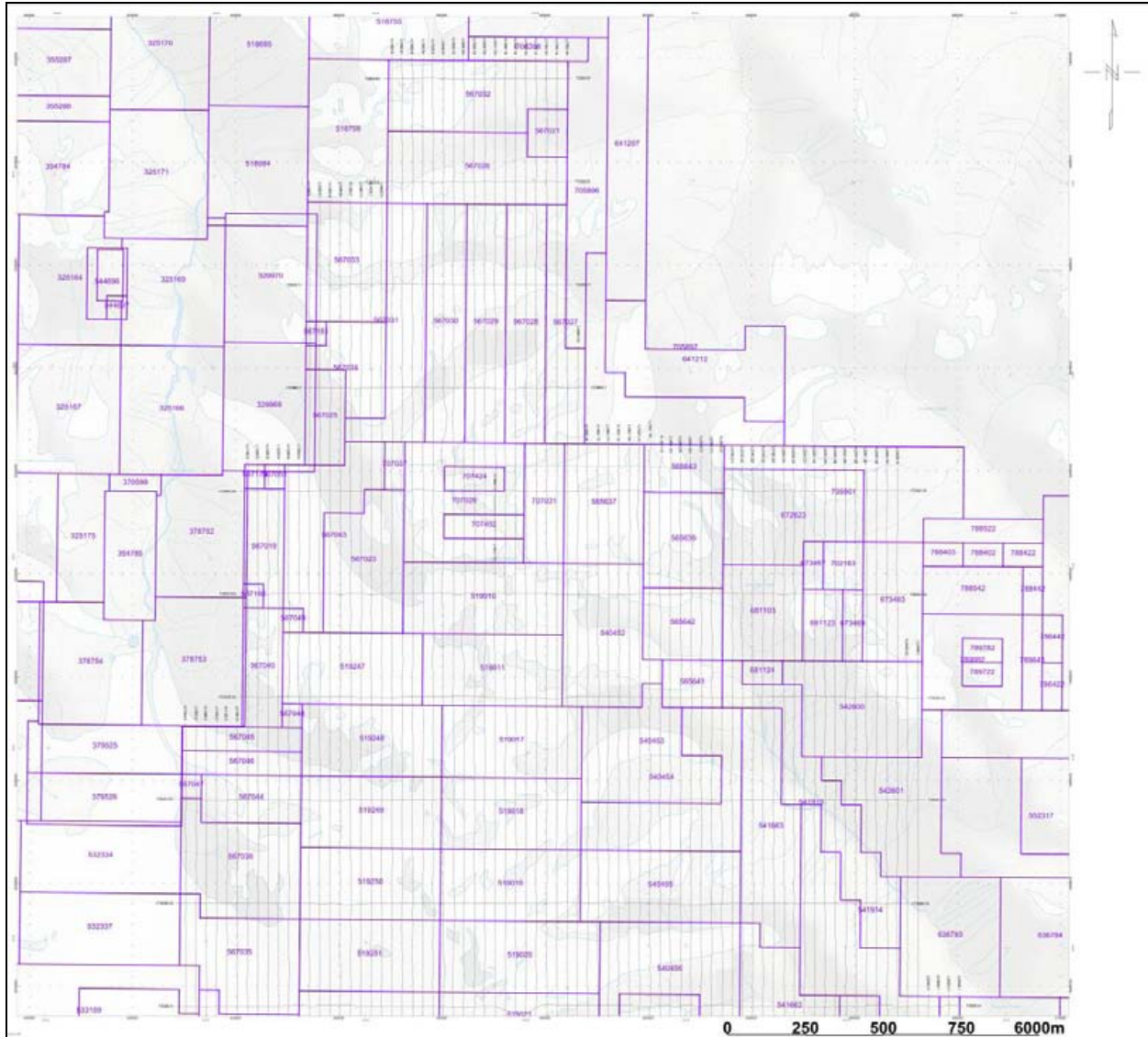
<sup>6</sup>Final data processing of the EM and magnetic data were carried out by Nick Venter, from the office of Geotech Ltd. in Aurora, Ontario, under the supervision of Harish Kumar, Assitant Manager of Data Processing and Alexander Prikhodko, P. Geo, PhD., Senior Geophysicist, VTEM Interpretation Supervisor

**APPENDIX A**  
**SURVEY BLOCK LOCATION MAP**

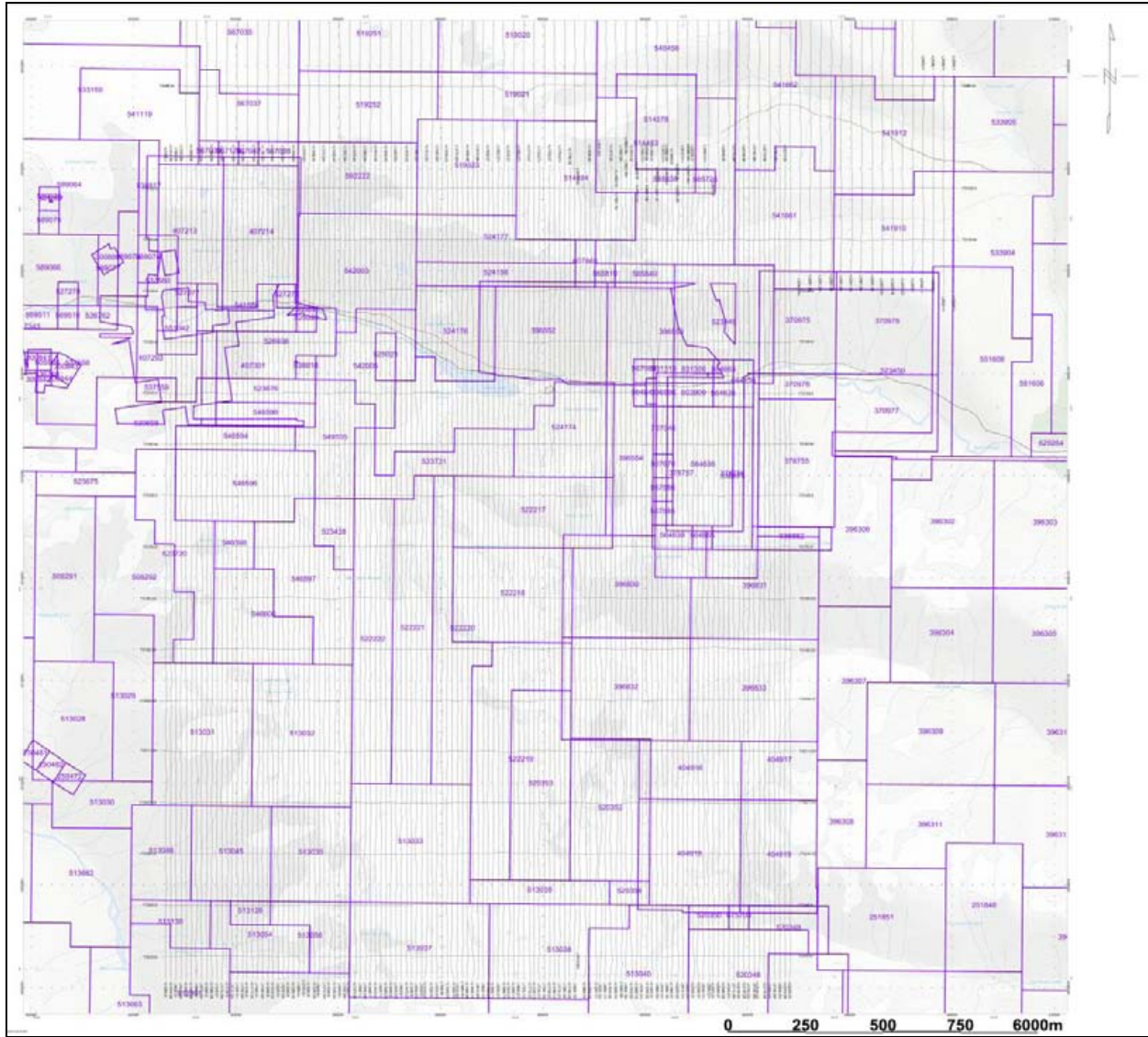


**Survey Overview of the Block**





**Mining Claims for the block – Plate 1**



Mining Claims for the block – Plate 2

## APPENDIX B

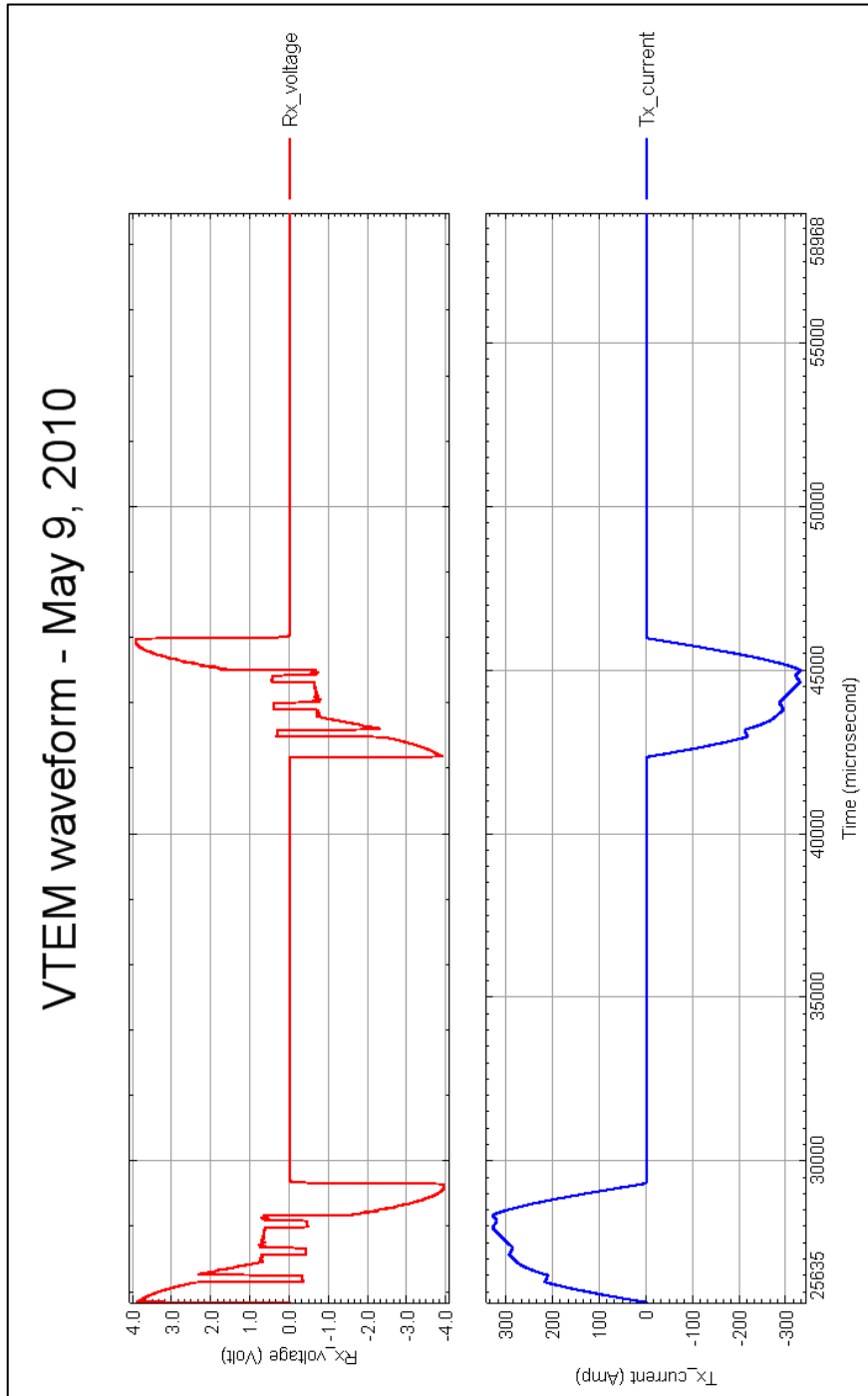
### SURVEY BLOCK COORDINATES

(WGS 84, UTM Zone 9 North)

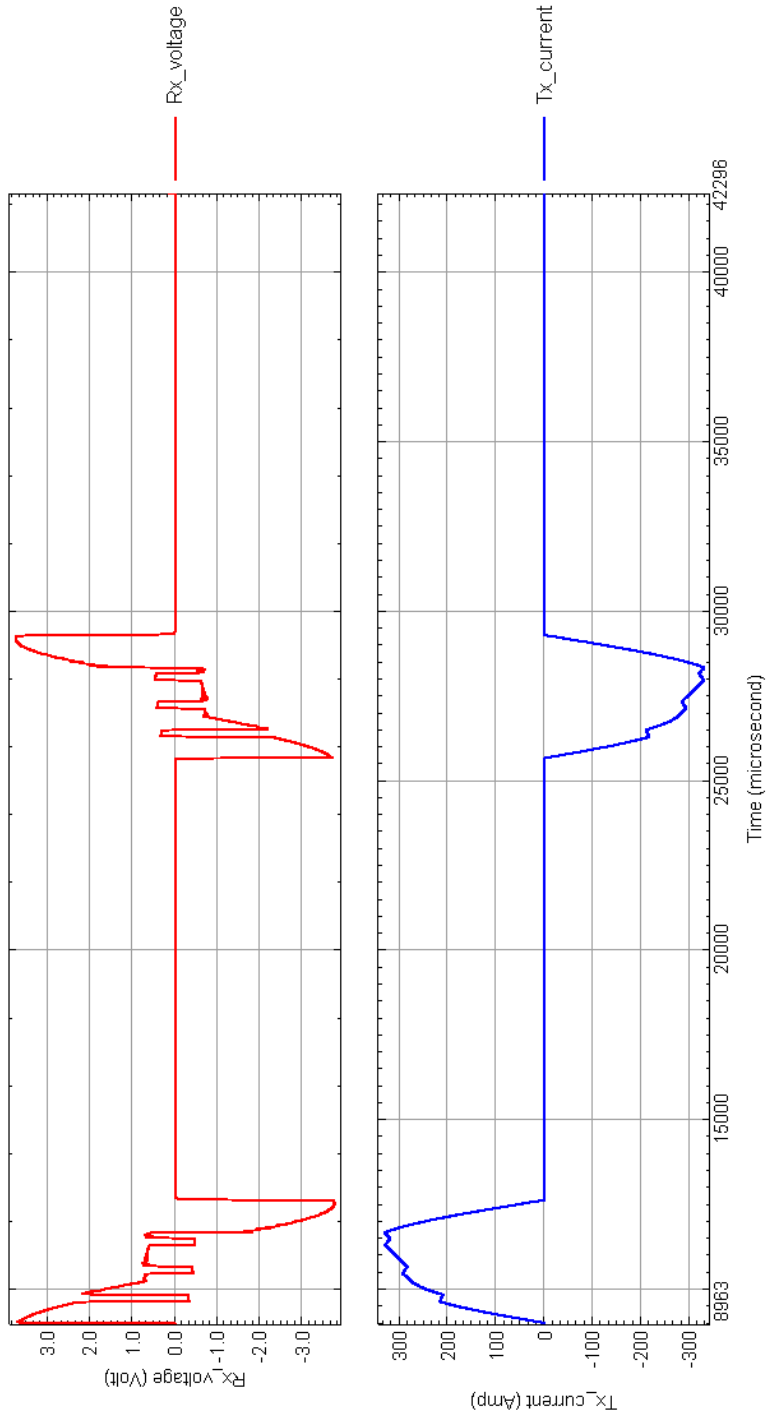
South		North	
X	Y	X	Y
452600.9	6206222.8	456967.6	6241984.1
452600.9	6222016.1	460446.7	6241950.5
464866.4	6222016.1	460446.7	6236384.9
464866.4	6206222.8	460782.2	6236381.3
		460765.2	6234526.1
		462230.2	6234526.1
		462229.1	6234235.7
		463469.7	6234225.6
		463471.9	6234038.3
		466957.6	6234010.1
		466929.1	6230299.9
		467316.7	6230296.9
		467284.9	6226123
		467284.9	6223807.2
		468043.6	6223798.4
		468043.6	6219624.6
		467737.7	6219624.6
		467737.7	6220040.4
		464891.7	6220040.4
		464888	6221798.6
		452970.4	6221814.1
		452970.4	6229057.5
		454174.6	6229044
		454174.6	6233999.4
		455392.3	6233999.4
		455392.3	6239217.4
		456939.6	6239201.4

# APPENDIX C

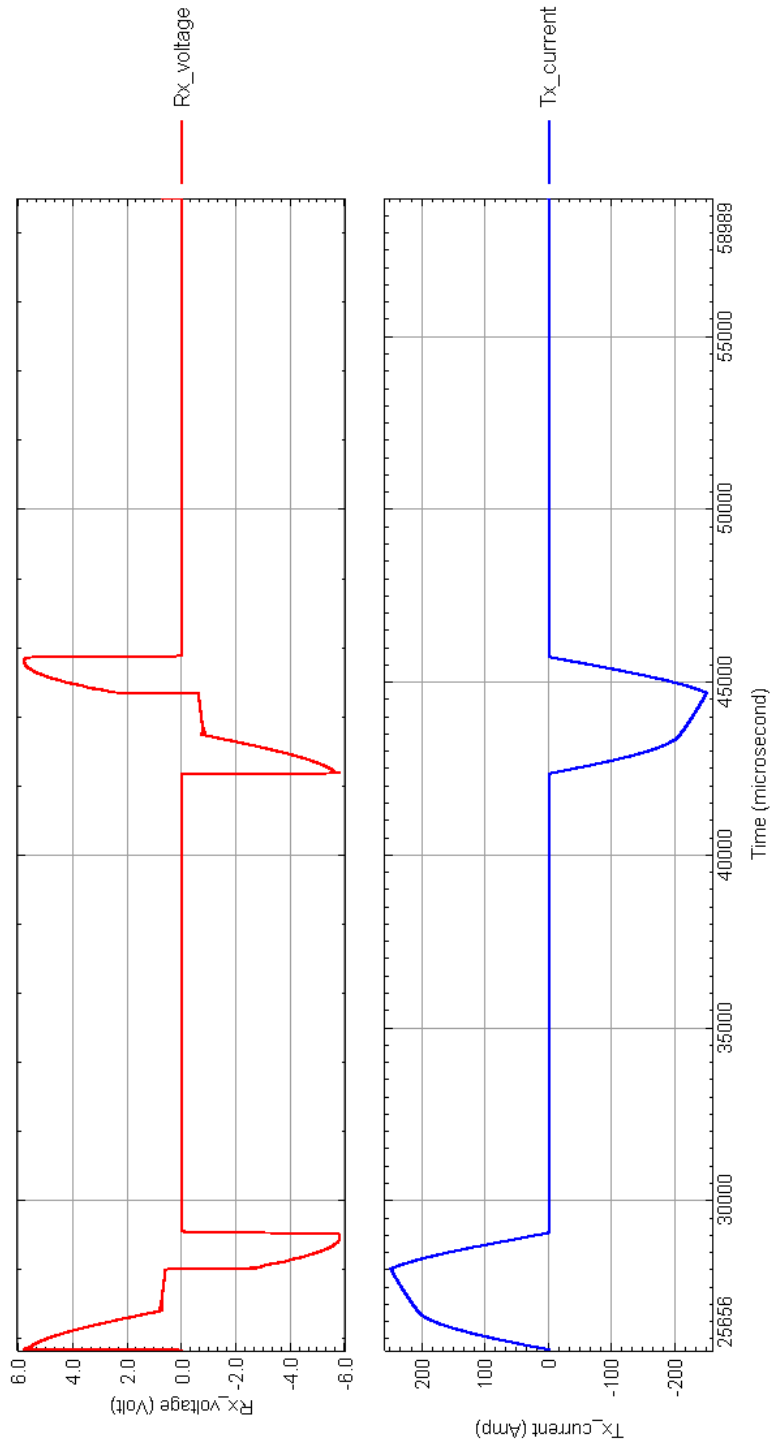
## VTEM WAVEFORM



# VTEM waveform - July 7, 2010

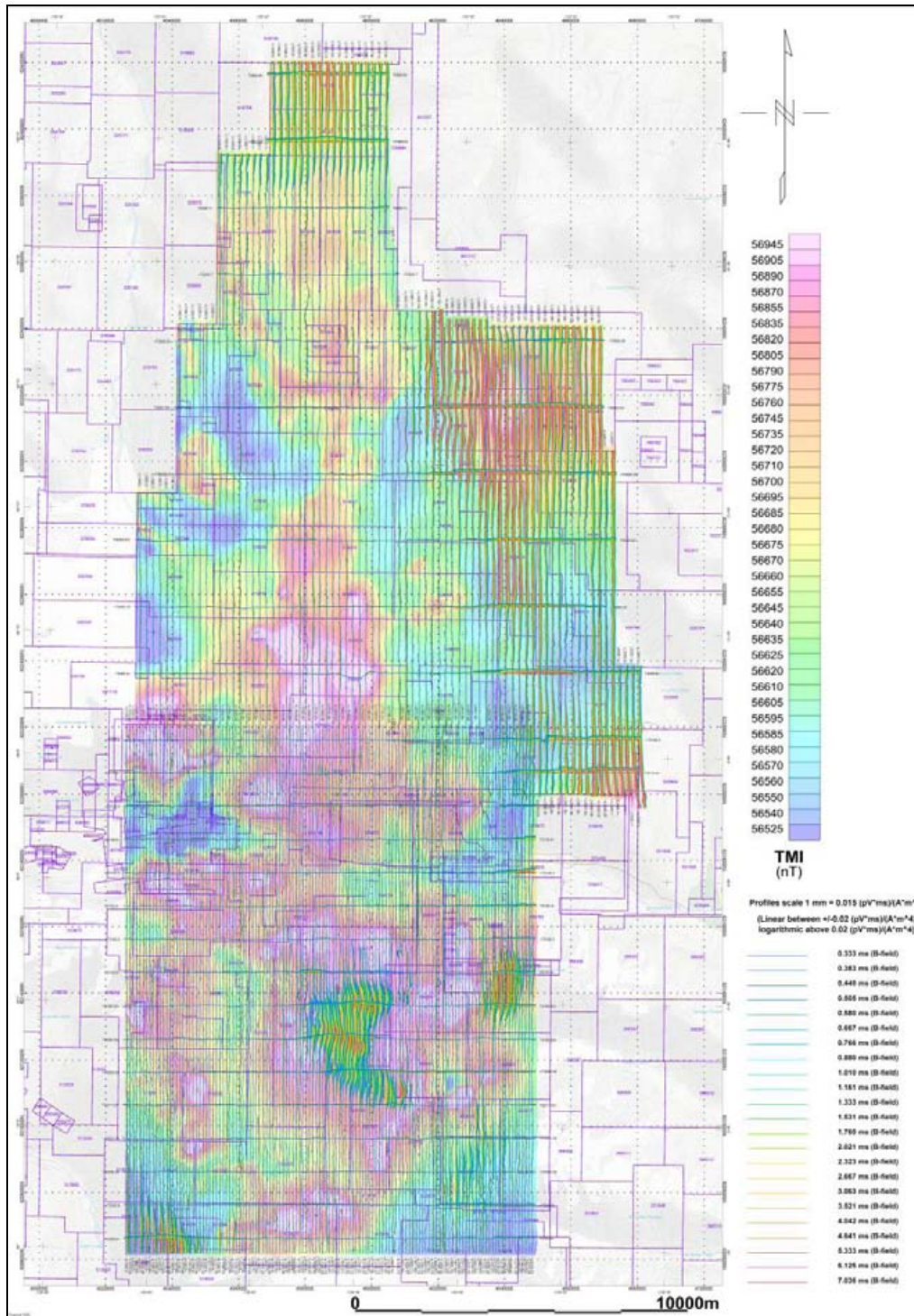


# VTEM waveform - September 14, 2010



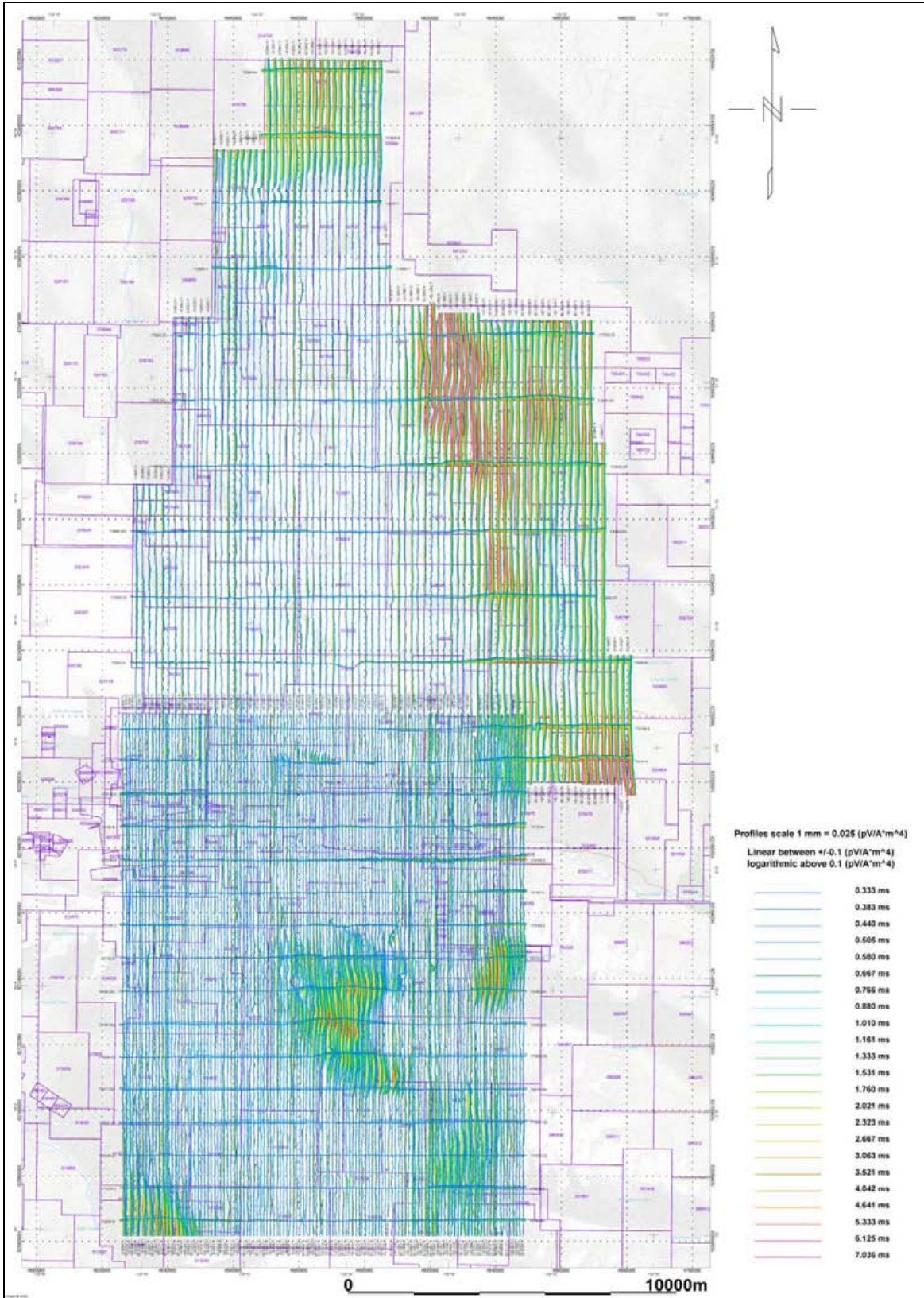
# APPENDIX D

## GEOPHYSICAL MAPS<sup>1</sup>



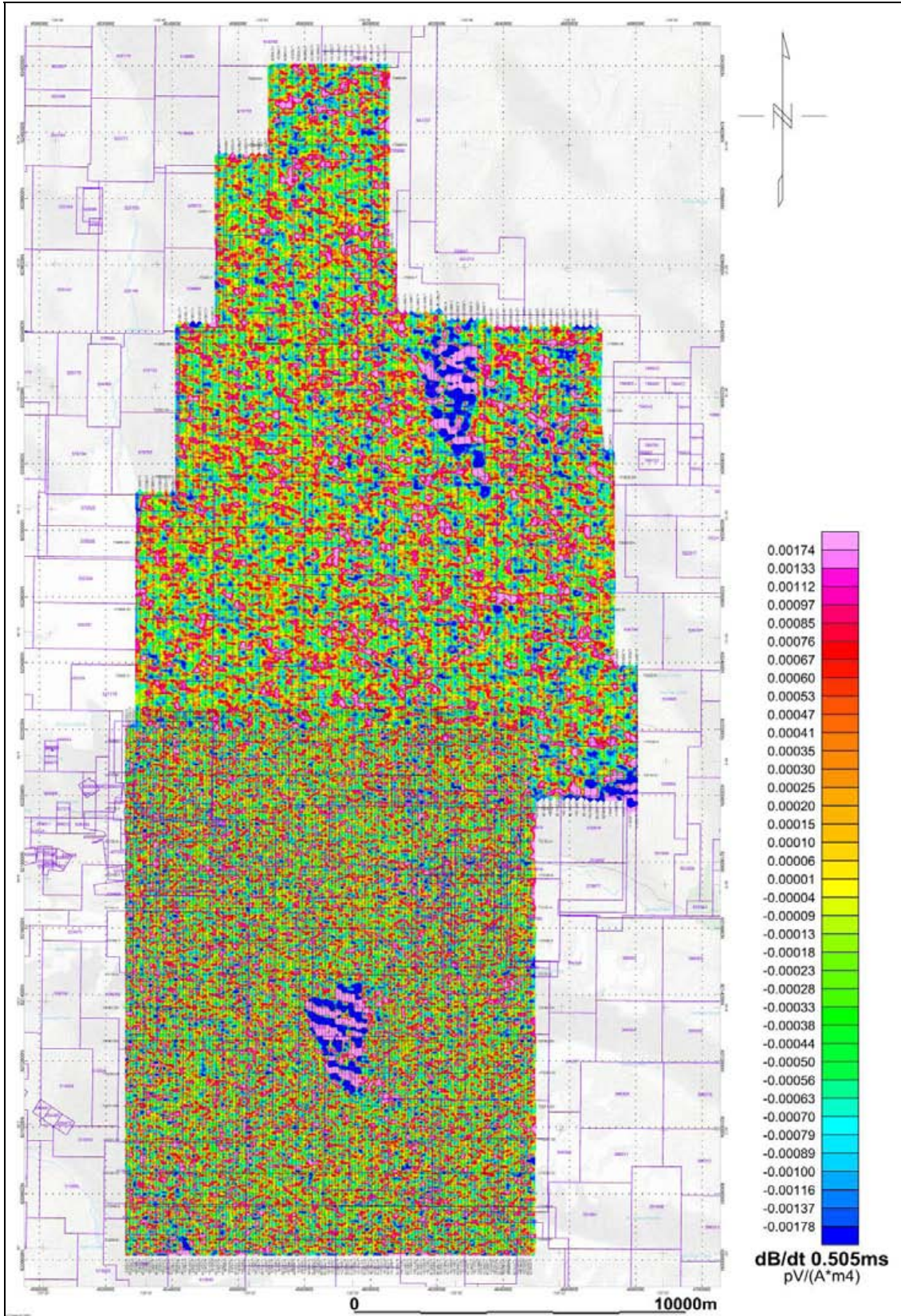
**VTEM B-Field Z Component Profiles, Time Gates 0.333 to 7.036 ms**

<sup>1</sup> Full size geophysical maps are also available in PDF format on the final DVD

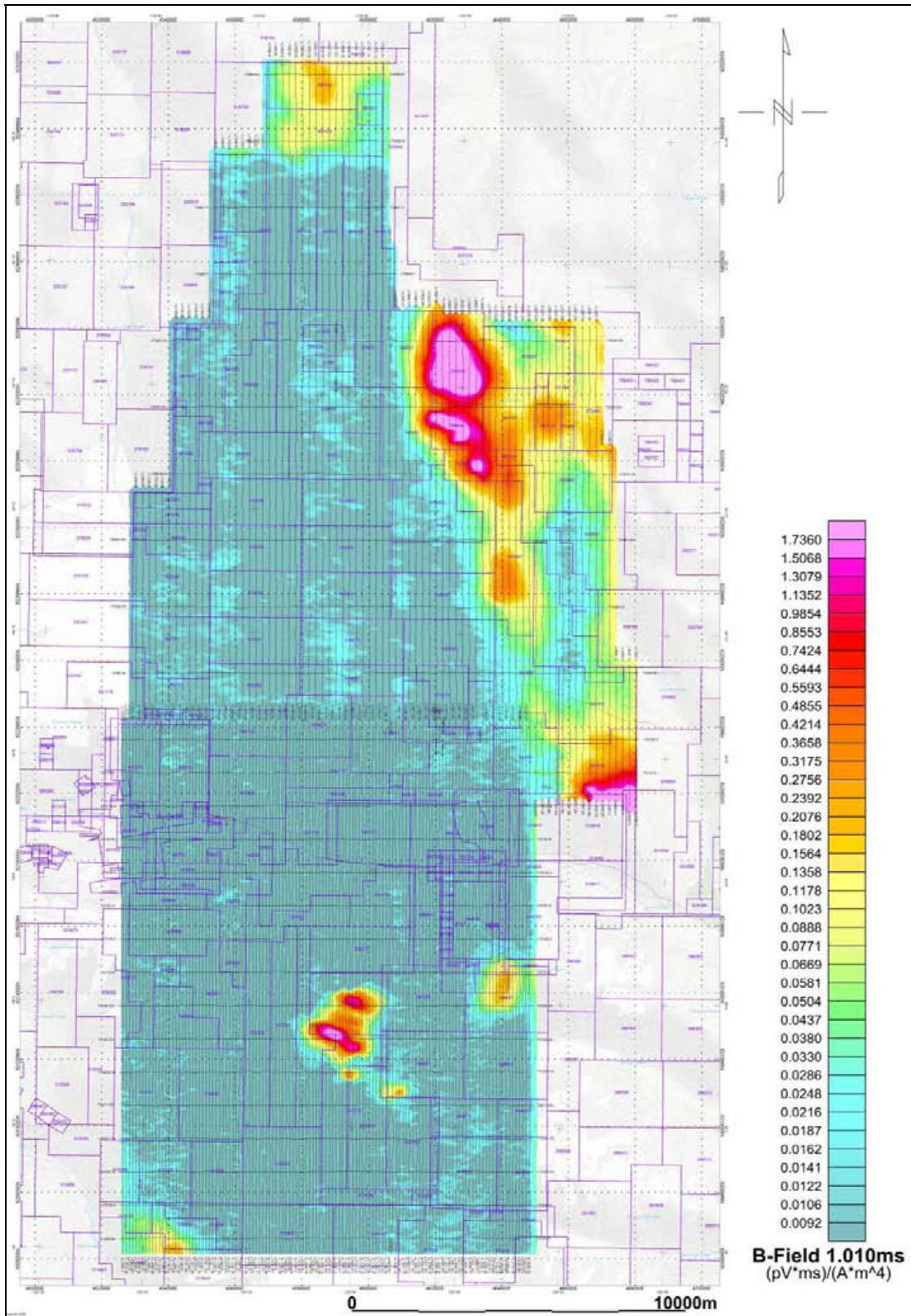


VTEM dB/dt Z Component Profiles, Time Gates 0.333 to 7.036 ms

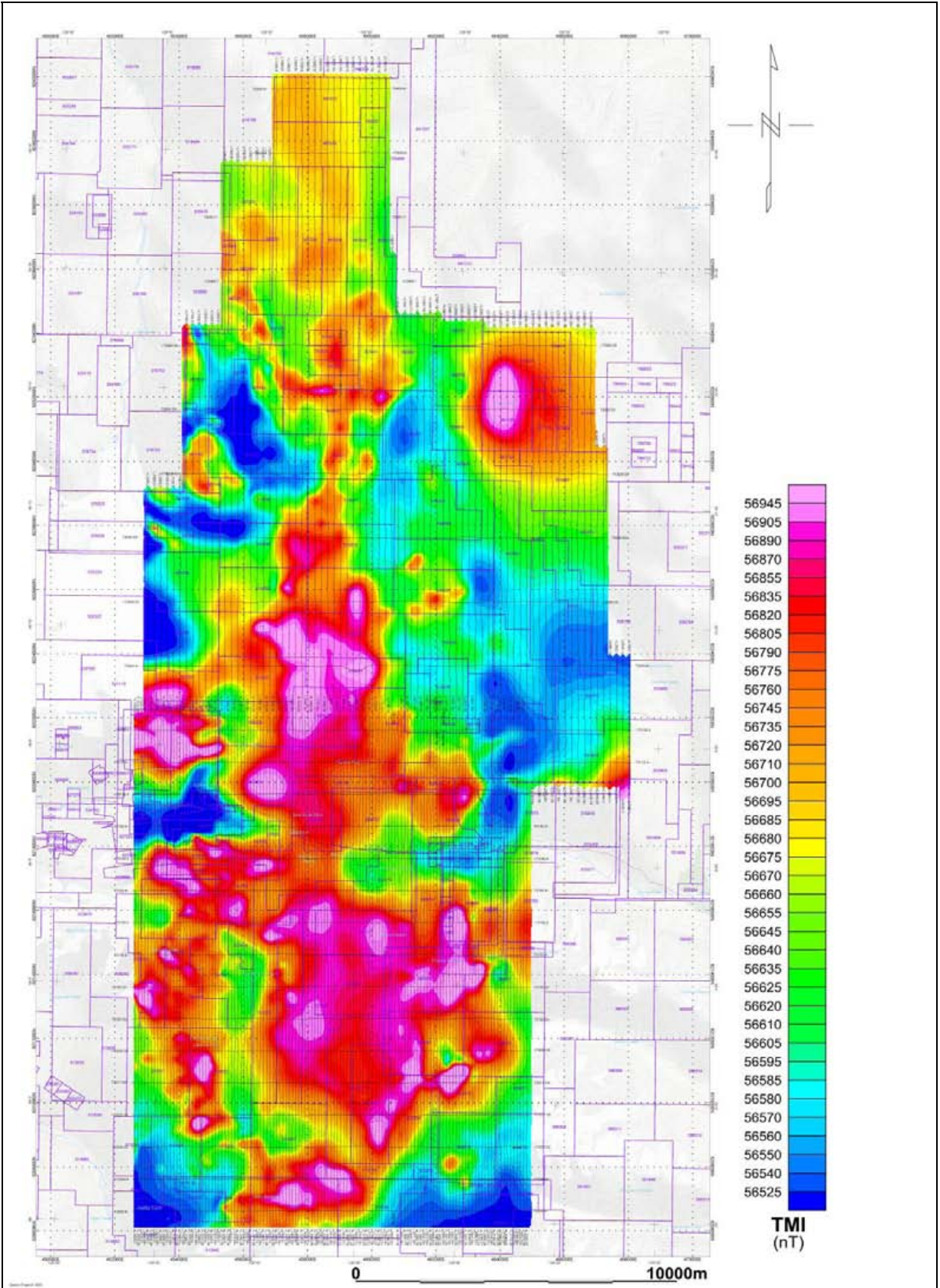




**VTEM Fraser Filtered dB/dt X Component, Channel 26, Time Gate 0.505ms**



VTEM B-Field Z Component Channel 31, Time Gate 1.010 ms



**Total Magnetic Intensity (TMI)**

## APPENDIX E

### GENERALIZED MODELING RESULTS OF THE VTEM SYSTEM

#### Introduction

The VTEM system is based on a concentric or central loop design, whereby, the receiver is positioned at the centre of a transmitter loop that produces a primary field. The wave form is a bipolar, modified square wave with a turn-on and turn-off at each end.

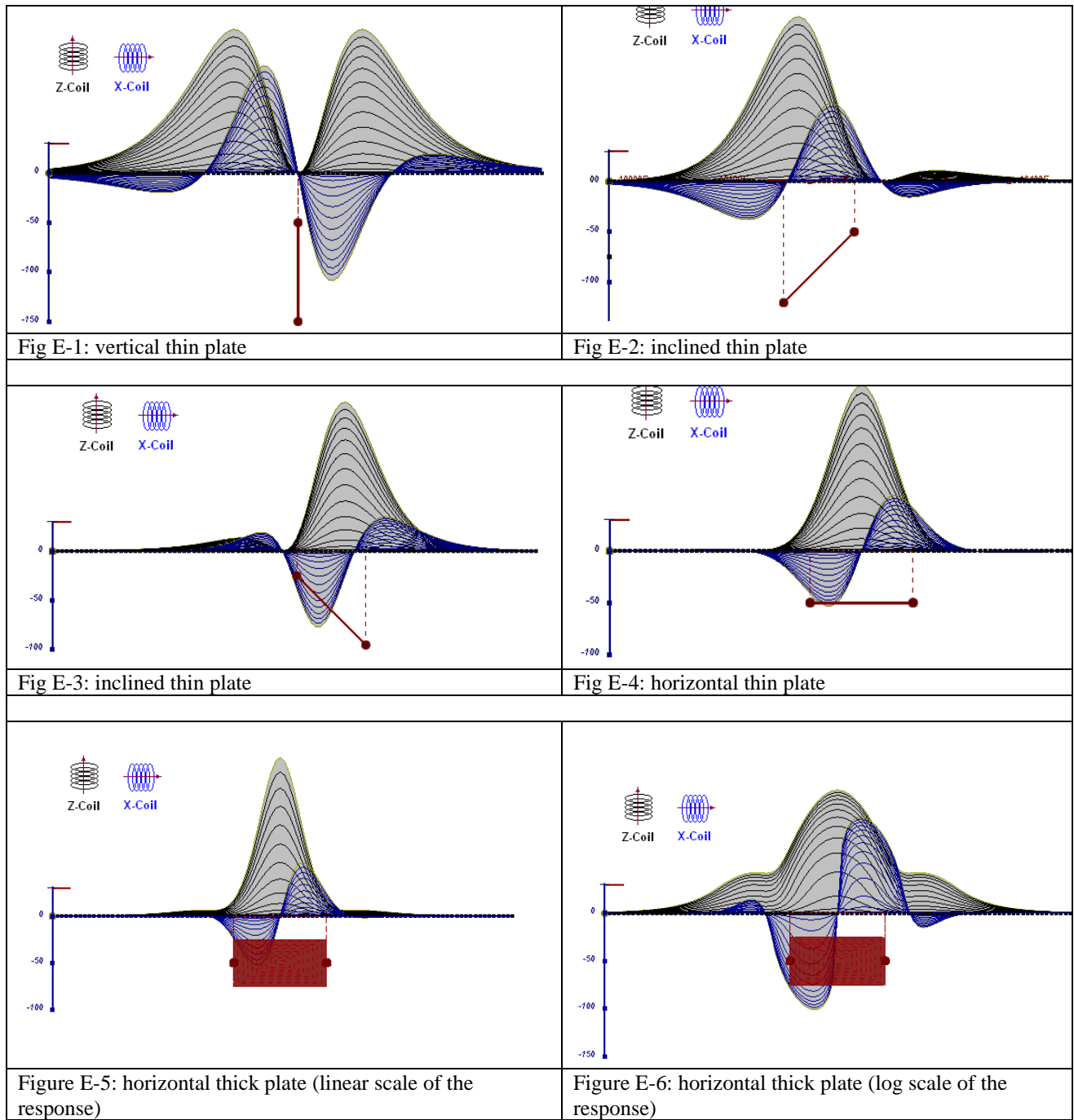
During turn-on and turn-off, a time varying field is produced (dB/dt) and an electro-motive force (emf) is created as a finite impulse response. A current ring around the transmitter loop moves outward and downward as time progresses. When conductive rocks and mineralization are encountered, a secondary field is created by mutual induction and measured by the receiver at the centre of the transmitter loop.

Efficient modeling of the results can be carried out on regularly shaped geometries, thus yielding close approximations to the parameters of the measured targets. The following is a description of a series of common models made for the purpose of promoting a general understanding of the measured results.

A set of models has been produced for the Geotech VTEM® system dB/dT Z and X components (see models E1 to E15). The Maxwell™ modeling program (EMIT Technology Pty. Ltd. Midland, WA, AU) used to generate the following responses assumes a resistive half-space. The reader is encouraged to review these models, so as to get a general understanding of the responses as they apply to survey results. While these models do not begin to cover all possibilities, they give a general perspective on the simple and most commonly encountered anomalies.

As the plate dips and departs from the vertical position, the peaks become asymmetrical.

As the dip increases, the aspect ratio (Min/Max) decreases and this aspect ratio can be used as an empirical guide to dip angles from near 90° to about 30°. The method is not sensitive enough where dips are less than about 30°.



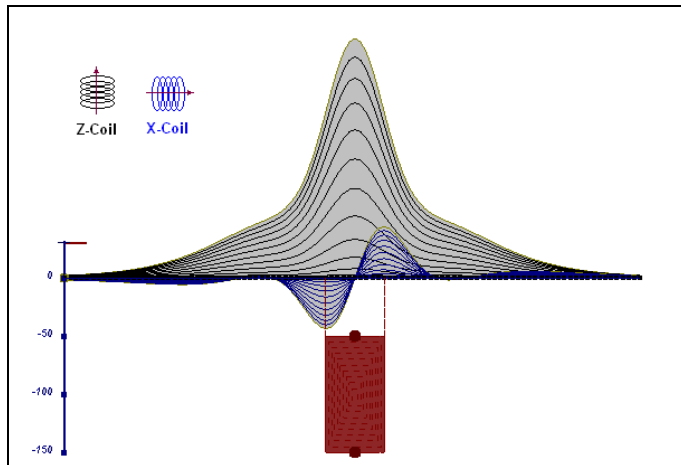


Figure E-7: vertical thick plate (linear scale of the response). 50 m depth

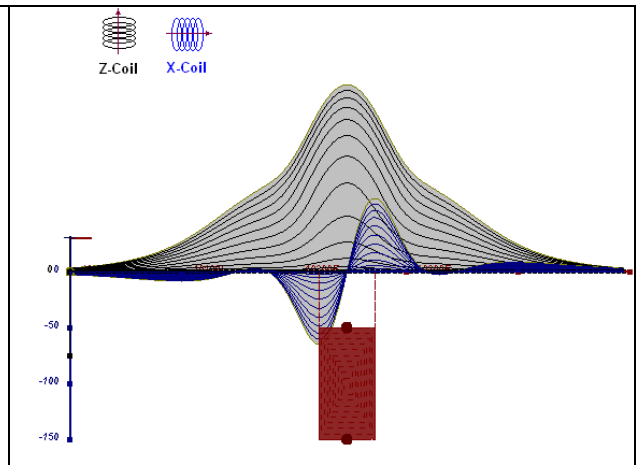


Figure E-8: vertical thick plate (log scale of the response). 50 m depth

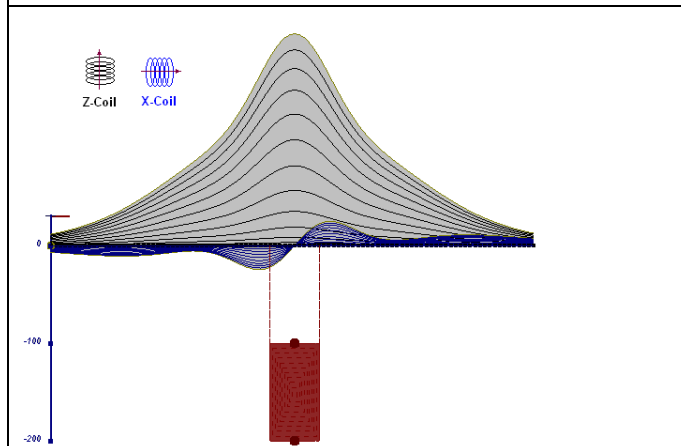


Fig E-9: vertical thick plate (linear scale of the response). 100 m depth

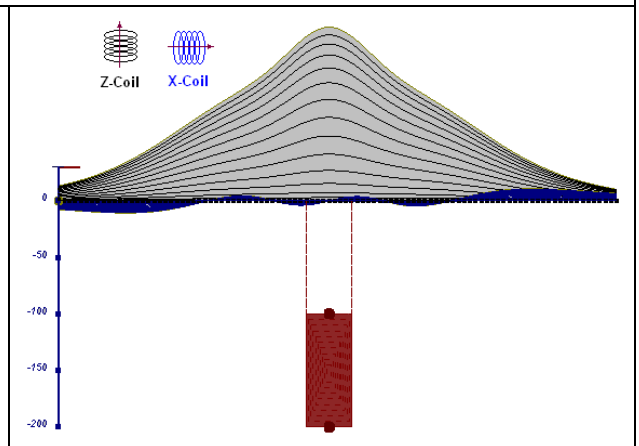


Fig E-10: vertical thick plate (linear scale of the response). Depth/hor.thickness=2.5

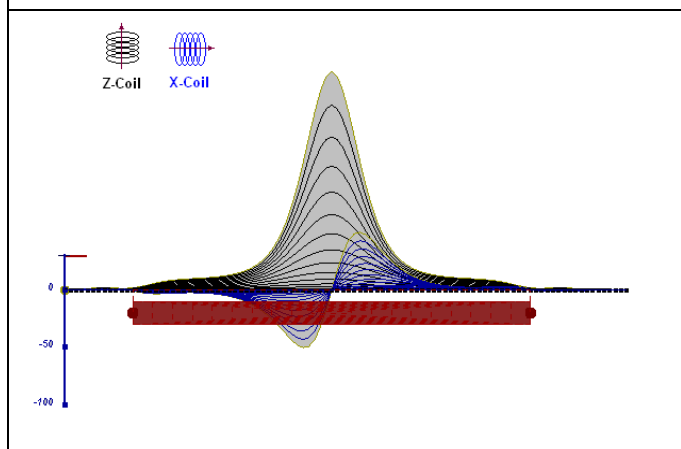


Figure E-10: horizontal thick plate (linear scale of the response)

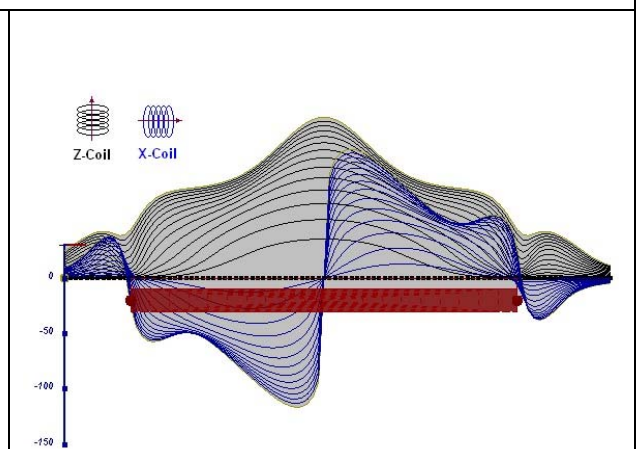


Figure E-11: horizontal thick plate (log scale of the response)

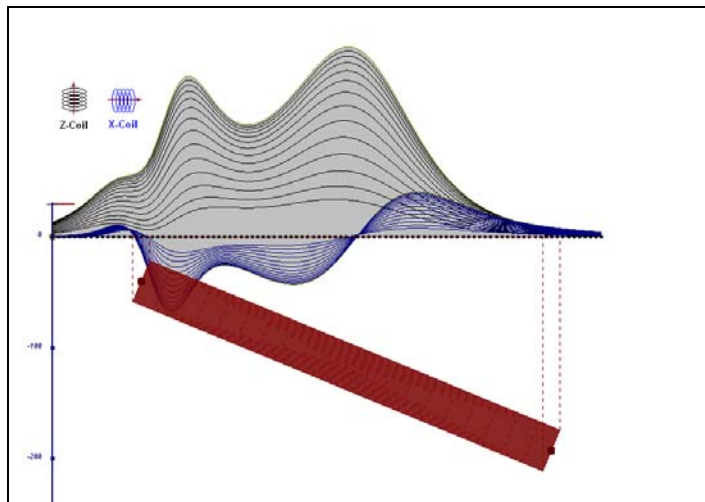


Fig E-12: inclined long thick plate

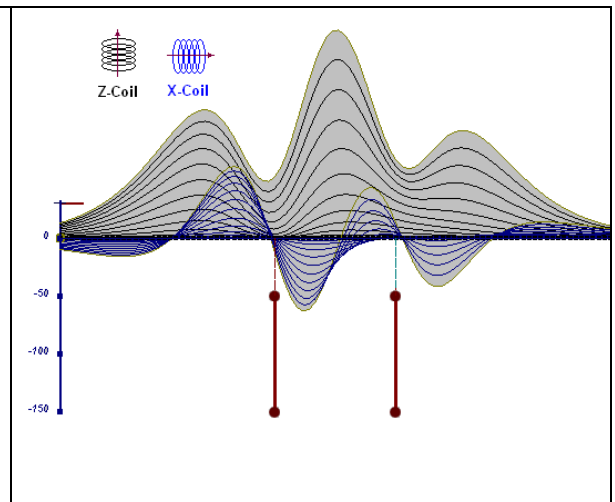


Fig E-13: two vertical thin plates

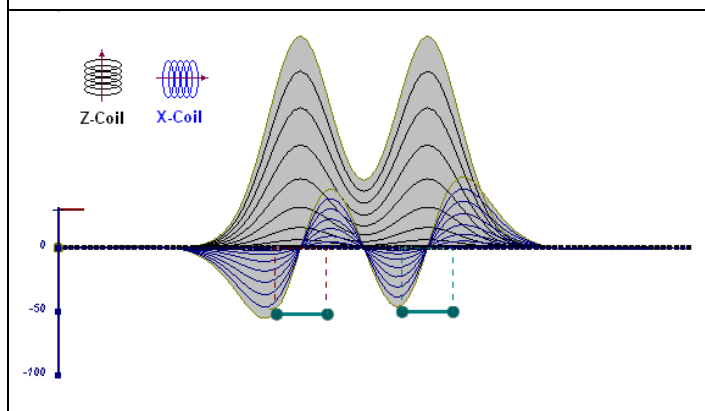


Fig E-14: two horizontal thin plates

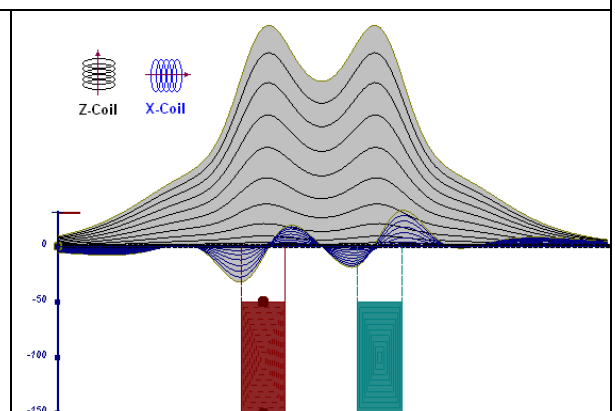


Fig E-15: two vertical thick plates

The same type of target but with different thickness, for example, creates different form of the response:

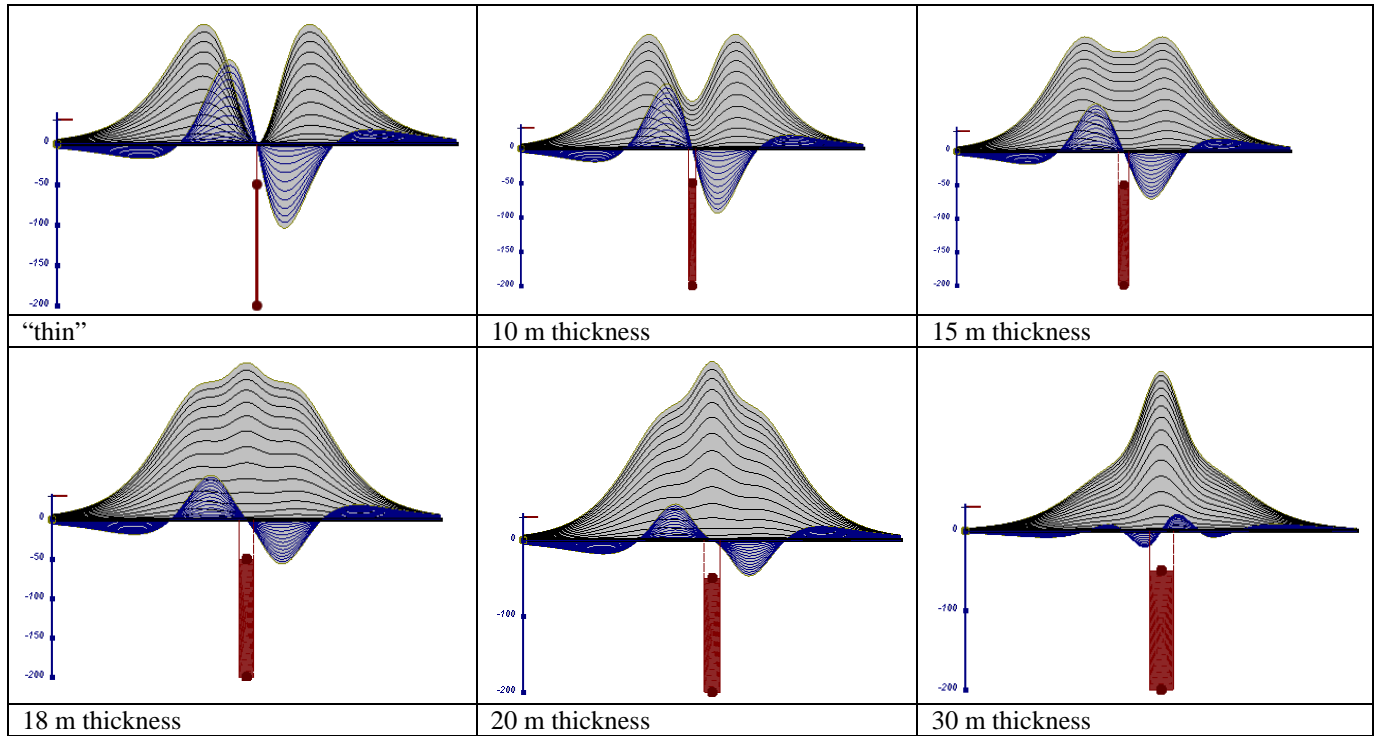


Fig.E-16 Conductive vertical plate, depth 50 m, strike length 200 m, depth extend 150 m.