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2006  
-032**

**REPORT ON THE  
2006 Geochemical and Geophysical Program  
LUCKY JOE PROJECT**

May 23 to June 30, 2006

Dawson Mining District  
NTS 115O/11&12  
63° 35'N – 139° 30'W  
Yukon Territory

by  
**Gerald G. Carlson, Ph.D., P.Eng.**

**COPPER RIDGE EXPLORATIONS INC.**  
500 – 625 Howe Street  
Vancouver, B.C. V6C 2T6

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## 1.0 SUMMARY

The Lucky Joe property consists of 548 contiguous claims in the Dawson Mining District of west central Yukon. The property covers the Burmeister copper-molybdenum prospect, Minfile 1150 051. Previous drilling in the 1970's, primarily by Riocanex (2,538m in 15 holes), focused on the Lucky Joe showing where low-grade copper mineralization was intersected including results of 0.3% Cu over 60.9m in Hole 2, with intervals assaying up to 0.7% Cu (gold was not analyzed). Limited sampling of the Riocanex drill core by Kennecott in 2003 outlined a strong correlation between copper and gold with an average ratio of 1% Cu: 1 g/t Au.

In 2001, prospector Shawn Ryan utilized the recent release of a low level, detailed airborne aeromagnetic survey to recognize the potential for a much larger mineralized zone and demonstrated this possibility with soil sampling and trenching. Copper Ridge Explorations Inc. (Copper Ridge) optioned the property in early 2002 and has now earned a 100% interest.

In 2002, Copper Ridge carried out a regional grid soil geochemical program on the property. After optioning the property from Copper Ridge in early 2003, Kennecott carried out more comprehensive program later that year. The key aspects of the 2003 Lucky Joe exploration program included regional ridge and spur soil sampling, follow-up soil grid sampling, trenching and geologic mapping at a scale of 1:10,000 accompanied by select lithochemical and trace element geochemical sampling.

Results from these programs defined two dominant NNW trending Cu-Au anomalies. The northernmost trend, Bear Cub, has an apparent strike length of at least 11.3 km as defined by 80<sup>th</sup> percentile values for copper and gold. It is by far the most impressive system with an apparent metal zonation in soils extending for 21.5 km along strike and up to 3 km wide. The central portion of the system consists of Cu-Au-Ag-Mo that zones outward into Pb, Pb-Zn, and Zn. Two centers of Na-enriched soils coincide with the strongest soil anomalies. The original Lucky Joe anomaly by comparison is rather insignificant and flanks the main part of the system.

The southern trend, Ryan's Creek, has an apparent strike length of 7.2 km. It consists of a strong but narrow discontinuous zone that is strongly anomalous in copper and gold.

In 2005, Kennecott completed 5 drill holes for a total of 1,035.1 m. Chalcopyrite mineralization was intersected in all of the 2005 drill holes with significant mineralization encountered in holes LJ05-1, -2 and -5. LJ05-3 intersected a major brittle fault zone throughout its extent, disrupting mineralization. Chalcopyrite mineralization correlates with potassic alteration (primarily occurring as secondary biotite) and magnetite-silica alteration. Alteration includes phyllic (quartz-sericite-pyrite-gypsum), potassic (biotite, minor potassium feldspar), quartz, quartz-pyrite and quartz-sulphide stockwork mineralization where the sulphide mineralogy includes minor pyrite plus chalcopyrite, sometimes with magnetite. The best results from the drill program include 24.1 m grading 0.06% copper beginning at 18.6 m and 33.5 m grading 0.071% copper beginning at 77.9 m in hole LJ05-01; 22.7 m averaging 0.217% copper and 88.5 ppb gold, starting at 255.4 m, within a 94.7 m interval of 0.13% copper and 52.4 ppb gold, to the end of the hole at 352.1 m in hole LJ05-02; and 74.1 m grading 0.135% copper and 0.032 gpt gold beginning at 60.1 m within a 127.7 m section grading 0.099% copper beginning at 18.3 m in hole LJ05-03.

Geologic mapping by Riocanex and by Kennecott has greatly advanced the understanding of the system. Riocanex noted a stratabound nature to the mineralization and concluded that Lucky Joe was a metamorphosed sedimentary copper occurrence (McClintock, 1979; McClintock & Sinclair, 1982). Kennecott concluded that the presence of at least three meta-intrusive phases, widespread alteration assemblages that are spatially associated and transgress all rock types and a zoned metal association of Cu-Au-Ag-Mo-Te-Pb-Zn all support a high temperature model for mineralization. The 2005 drill program suggested that, at Bear Cub,



mineralization and alteration are consistent with the classic copper-gold porphyry style model, of apparent calc-alkaline affinity, similar to the Kemess deposit in northern British Columbia, which has then been subjected to later metamorphism and deformation. The Lucky Joe system is now envisioned to be either a metamorphosed Cu-Au porphyry system (alkalic?) or a variant of the IOCG model as first proposed in 2003.

The 2006 geochemical and geophysical program was designed to provide a more detailed understanding of the Bear Cub and Ryan's Creek anomalies in order to assist the targeting of planned 2006 drill holes. It commenced in May with a crew from Ryanwood Exploration who cut 23.4 km of line grid including 7 lines of approximately 1.8 km each, for a total of 12.3 km, on the Bear Cub Grid and 7 lines of approximately 1.4 km each, for a total of 11.1 km, along the Ryan's Creek Grid. The Ryanwood crew also collected soil samples at 50 m intervals along the new grid lines.

During the period Jun 2 to June 23, a crew from Aurora Geosciences of Whitehorse carried out IP and magnetometer surveys over the grid. The IP survey utilized a dipole-dipole array with 50 and 100 m dipole spacings. Technical information regarding the survey is provided in the Aurora report (Hildes, 2006 – see Appendix II). The linecutting and geophysical crews were mobilized from Dawson on a daily basis utilizing a 206 Jet Ranger from Trans North Helicopters.

The program confirmed and further defined chargeability anomalies in the Bear Cub anomaly. At Ryan's Creek, a strong linear association of high copper and gold in soils and high chargeability correlates with the eastern edge of a linear magnetic high along a plus 4 km trend.

## **2.0 INTRODUCTION**

### **2.1 Terms of Reference and Participating Personnel**

This report summarizes the results of a combined geochemical and geophysical program conducted on the Lucky Joe property during the summer of 2006. Line cutting began on May 17, followed by soil sampling, Induced Polarization (IP) and magnetics surveys. The program was funded and operated by Copper Ridge Explorations Inc.

Two grids were cut to control the location of the work, the Bear Cub grid, consisting of 12.6 line kilometers and the Ryan's Creek Grid, consisting of 9.8 kilometers. The Bear Cub lines were cut in a 030° direction and used the 7.4 kilometer line cut during the 2005 program as a base line. The Ryan's Creek lines were cut in a 070° direction and did not utilize a baseline. IP and magnetic surveying were completed on all of the cut lines. A total of 141 soil samples were collected on part of the Bear Cub grid while 115 samples were collected on part of the Ryan's Creek Grid.

Line cutting and soil sampling services were provided by Ryanwood Explorations of Dawson City, the Geophysics was completed by Aurora Geosciences of Whitehorse and helicopter support was provided by Trans North Helicopters of Whitehorse. Project supervision was provided by Jo Van Randen of Aurum Geological Consultants from Whitehorse. Aurum Geological provided other support personnel as needed. Overall project supervision was provided by J. Greg Dawson of Copper Ridge Explorations.

### **2.2 Source Documents**

This report incorporates data from historical work by Copper Ridge in 2002 and Kennecott in 2003 and 2005. Also, historical work described in previous assessment work reports by Riocanex filed with government agencies has been referenced. This work has been supported by historical and current regional geological and geophysical studies carried out by the Geological Survey of Canada and the Yukon Geological Survey as reported in the References section.

### **2.3 Scope of Report**

This report is based primarily on field work carried out by Copper Ridge, during the period May 17 to October 22, 2006. The author of this report has visited the property a number of times during the 2002, 2003, 2005 and 2006 field seasons and assisted with the supervision of the 2005 drill program. He visited the property during the period June 15 to June 21, 2006.

## **3.0 PROPERTY DESCRIPTION AND LOCATION**

### **3.1 Location and Access**

The project area consists of a contiguous claim group of 548 quartz claims. The claims are situated along a northwest-southeast trend just east of the Yukon River, south of Dawson City. The Lucky Joe group includes seven claims optioned from Silver Standard along with 541 LJ and Lucky Joe claims optioned from Shawn Ryan. Both claim groups are now owned 100% by Copper Ridge.

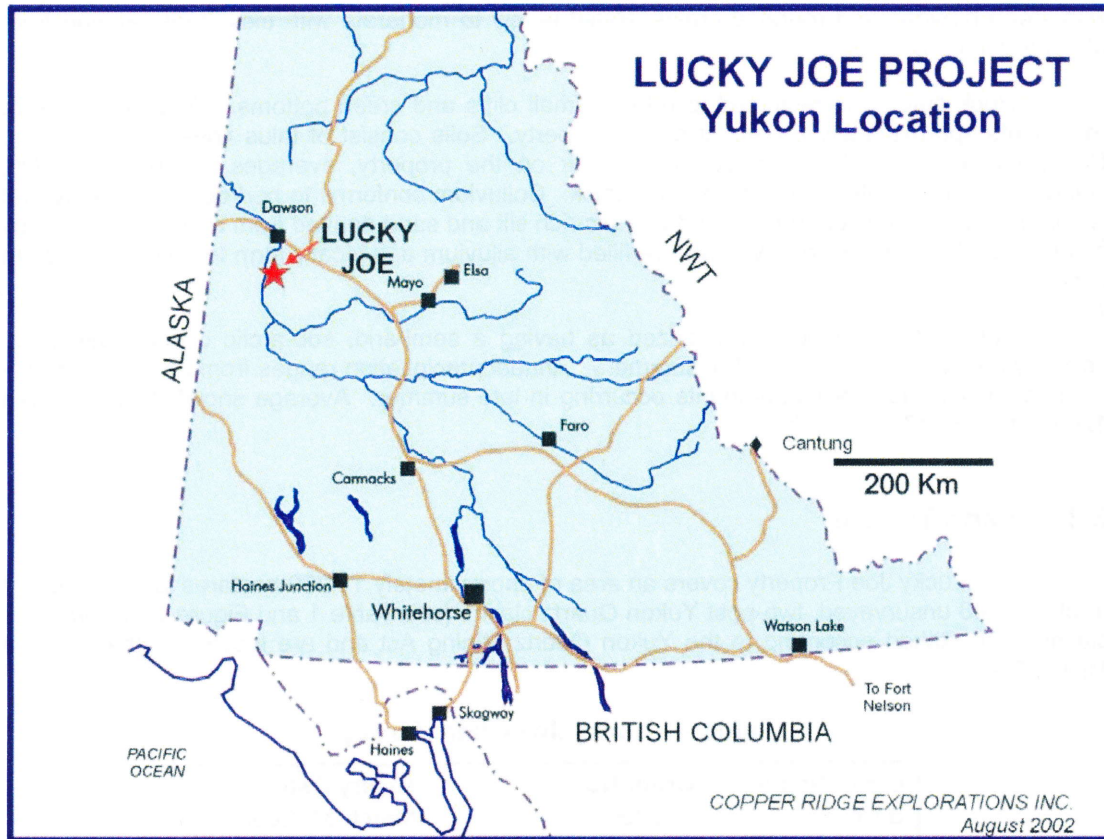


Figure 1. Location map of the Lucky Joe Project area.

The northern boundary of the project area is located approximately 42 km south-southwest of Dawson City, Yukon Territory (Fig. 1). The project area extends for 24 km in a northwest-southeast direction and averages about 14 km in width. The nearest road access to the property is some 20 km to the northeast and east. A bulldozer trail, constructed in the early 1970's, leads into the headwaters of Lucky Joe Creek from a point of origin near the confluence of Quartz Creek and the Indian River. Access to the property for the current program was by helicopter from Dawson City, with some logistical support from the road on Indian River near the mouth of Quartz Creek.

### 3.2 Physiography and Climate

The Lucky Joe Project lies within the physiographic province known as the Yukon-Tanana Upland. This region consists of a maturely dissected plateau that had only minor alpine glaciation during the Pleistocene. The lack of glaciation resulted in thick soil accumulations and extensive vegetation cover contributing to very scant bedrock exposure throughout much of the claim group. Local eolian deposits (loess) have accumulated on some slopes and low-lying areas. Much of the property is densely forested with upper slopes and south facing slopes covered by thick stands of white spruce, paper birch, and quaking aspen. Black spruce forests are prominent on most north facing slopes, and on slopes with impeded soil drainage throughout the area. Ground cover in areas of thin tree cover consists of alpine plants, "buckbrush" (alder), dwarf willow and moss. Upland soils that support spruce-hardwood forests are well drained. The entire area is underlain by discontinuous permafrost. In spite of the vegetative cover, evidence of active solifluction is fairly common. Topography in the region is typical of an incised peneplain

with steep hillsides and rounded crests. Relief is low to moderate with elevations ranging from 350-1200 m (1100 to 3900 ft).

Rock outcrop is restricted to ridges, small cliffs and creek bottoms. Outcrop exposure represents approximately 5 percent of the property. Soils consist of talus fines and colluvium. Colluvium veneer is the most common cover on the property, averages 1-2 m thick while colluvium blanket material averages >3 m thick. Colluvium conforms to bedrock topography and is composed of diamicton, rubble, and organic-rich silt and sand derived from bedrock sources by a variety of slope processes. Valleys are filled with alluvium and locally form terraces up to 20 m thick.

The region can be characterized as having a semi-arid, sub-arctic climate with long, severely cold winters and short, hot summers. Annual precipitation ranges from 25 to 43 cm (10-17 inches) with the heaviest amounts occurring in late summer. Average snowfall ranges from 120 to 250 cm (47 to 98 inches).

### 3.3 Land Tenure

The Lucky Joe Property covers an area of approximately 11,000 hectares and consists of a total of 548 unsurveyed, two-post Yukon Quartz claims (see Table 1 and Figure 2, below). The claims were staked according to the Yukon Quartz Mining Act and are located in the Dawson Mining District.

**Table 1 - Lucky Joe Claim Group**

<b>Claim Name</b>	<b>Grant No.</b>	<b>Expiry Date</b>
B No.1	Y56956	March 31, 2009
B No.2	Y56957	March 31, 2009
B No.5	Y56960	March 31, 2009
B No.6	Y56961	March 31, 2009
Ash2	Y99884	March 31, 2009
Ash4	Y99886	March 31, 2009
Tar1	YA29800	March 31, 2009
Lucky Joe1-48	YC20828-YC20875	March 31, 2006
Lucky1-12	YC21084-21095	March 31, 2009
LJ1-168	YC21232-YC21399	March 31, 2008
LJ229-400	YC21400-YC21440	March 31, 2008
LJ169-228	YC21472-YC21531	March 31, 2008
LJ270-283	YC21906YC21919	March 31, 2009
LJ333-340	YC21920-YC21927	March 31, 2008
LJ381-384	YC21928-YC21931	March 31, 2008
LJ284	YC22074	March 31, 2008
LJ285-332	YC22074-YC22121	March 31, 2008
LJ341-380	YC22122-YC22161	March 31, 2009
LJ385-441	YC22162-YC22218	March 31, 2009
LJ442-446	YC28403-YC28407	March 31, 2006
LJ448	YC28408	March 31, 2006
LJ450-483	YC28409-YC28442	March 31, 2006

The claims are located on claim sheets 1150-11 and 1150-12, available for viewing at the Dawson Mining Recorders Office or on the Yukon Mining Recorder's web site at <http://www.yukonminingrecorder.ca/>. The claims are owned 100% by Copper Ridge Explorations Inc., subject to royalties and additional share issuances to the underlying property vendor.



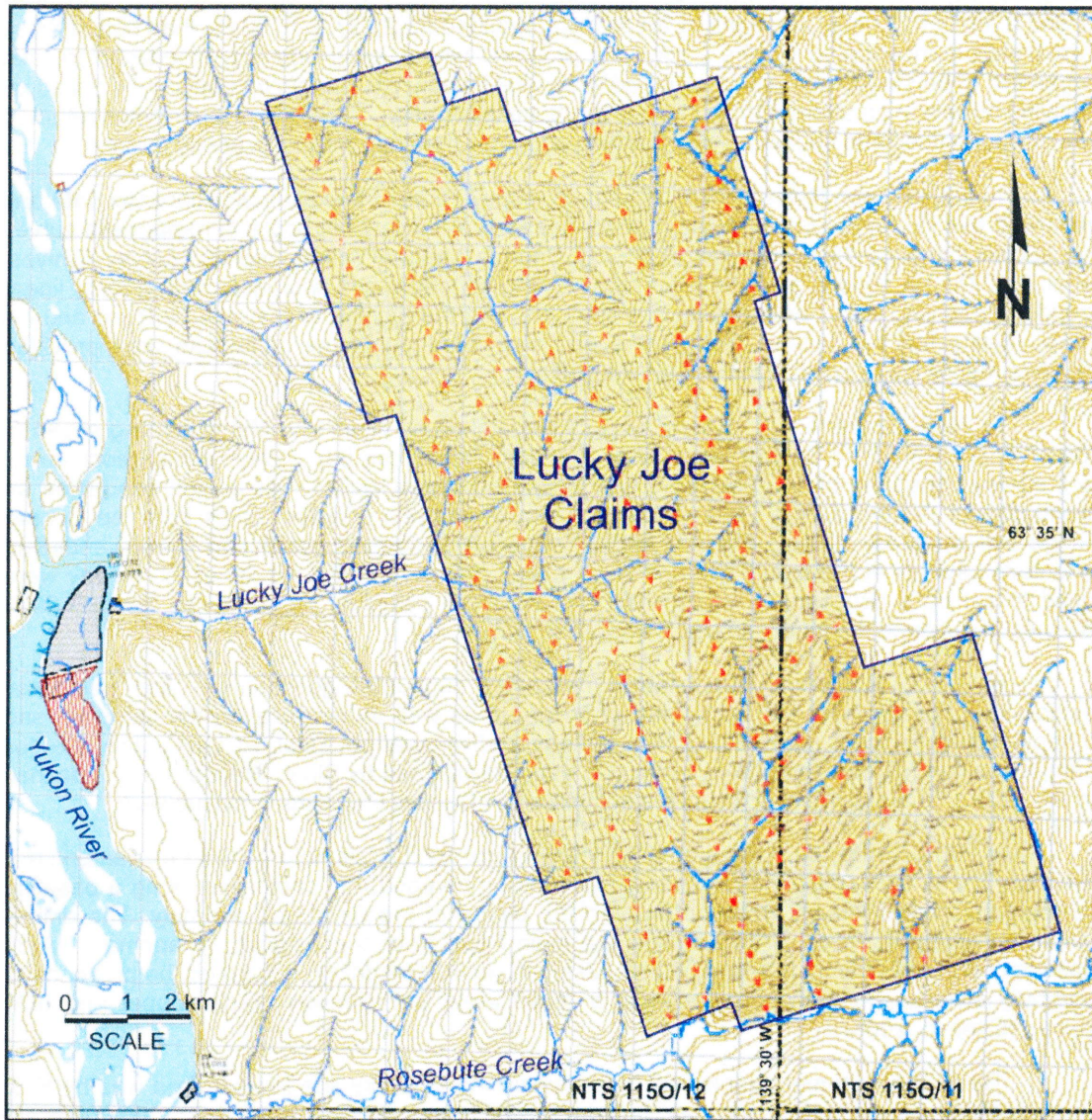


Figure 2. Lucky Joe claim group.

#### 4.0 HISTORY

The Dawson Syndicate (Silver Standard Mining Limited and Asarco) first discovered the Lucky Joe prospect as a result of a regional reconnaissance stream sediment geochemical survey in 1970. Claims were staked in the headwaters of Lucky Joe Creek and detailed prospecting quickly followed which included soil grid sampling and dozer trenching. The following year Silver Standard drilled three shallow holes in the trenched areas, two of which bottomed in rock grading 0.37% Cu (Au was not analyzed). In 1975 Riocanex (Rio Tinto Canadian Exploration Inc.) acquired the property under an option agreement with Silver Standard. They then commenced a 3-year exploration program that included geological mapping, soil geochemical grid sampling, ground magnetics, Max-Min electromagnetic surveys,

Induced Polarization surveys, and diamond drilling. During the course of the program the claim group was greatly expanded and two additional targets were identified and tested. Riocanex drilled a total of 12 holes into 3 target areas that combined for 2,427.1 m. More than half of these holes were concentrated on the Lucky Joe prospect where low-grade Cu mineralization, that appeared to be strataform, was intersected in several holes. The remaining holes were drilled on outlying targets in an attempt to find higher-grade mineralization. All of these latter holes returned low copper values and subsequent exploration suggests that they were improperly targeted.

In 2001 Shawn Ryan, a local prospector, compiled all of the available Riocanex data and reviewed this in combination with the recent release of a low level airborne aeromagnetic survey conducted jointly by the Geological Survey of Canada and the Yukon Geology Survey (Shives, et.al., 2001). He noticed a relationship between the copper in soil anomalies with a long, linear trending magnetic high. Subsequent soil sampling and the digging of test pits by Ryan and his crew, testing this relationship along strike and elsewhere within the immediate area provided positive results and a small claim group was staked.

In 2002 Copper Ridge optioned the claims staked by Ryan plus the remaining seven of the original claims from Consolidated Silver Standard Resources Inc., carried out a geochemical soil survey consisting of 1430 samples and staked additional claims. Kennecott conducted an evaluation of the property in 2002, which included re-analysis of select pulps from the Copper Ridge soil samples. During October 2002, Kennecott performed a soil and stream sediment orientation survey at the Lucky Joe and Ryan Creek prospects. The results of the survey were used to set up a geochemical protocol for the 2003 soil sampling program. In January 2003 Kennecott optioned the land package from Copper Ridge.

In 2003, Kennecott completed a helicopter supported geochemical and geological exploration program over the Lucky Joe claim group as well as reconnaissance sampling and mapping over adjacent area with similar geology and mineral potential. At Lucky Joe, the soil sampling extended from the known Lucky Joe deposit, explored by Silver Standard and Riocanex in the 1970's, and expanded soil surveys completed by Copper Ridge the previous year.

In 2005, Kennecott completed a 7.4 km IP survey and a five hole, 1,035.1 m diamond drill program. The IP survey identified two large and strong chargeability anomalies along a baseline oriented in a northwesterly direction through the centre of the Bear Cub anomaly. The drilling tested an approximately 3.5 km length of the main Papa Bear copper-gold soil anomaly, which has dimensions of over 11 km long by 2 to 2.5 km in width. The drilling confirmed the presence of porphyry style copper mineralization over a broad area, but with low grade copper and gold values (Carlson, 2005).

The first government geological investigation in the Lucky Joe Project area was by H.S. Bostock starting in 1935 (Bostock, 1942). More recently the area was mapped at 1:100,000 scale as part of a Geological Survey of Canada NATMAP project (Ryan et al, 2004).

## **5.0 GEOLOGICAL SETTING**

The property area lies between the Tintina and Denali Faults within the Omenica Belt (Wheeler and McFeely, 1991). These faults are located to the northeast and southwest of the property respectively, trend northwest and are major crustal-scale transcurrent dextral faults of Tertiary (?) age. This region is underlain by the lithotectonic (pre-accretion) Yukon-Tanana terrane (YTT) assemblage, a medium to high grade, polydeformed metasedimentary and meta-igneous rock package. The YTT is mainly Paleozoic in age and was juxtaposed by regional scale thrust faults in early Mesozoic time, a period of terrane accretion that affected much of the northern Cordillera. More locally, the YTT consists of assemblages of two main supracrustal rocks, including the Devonian-Mississippian Pelly Gneiss, consisting of orthogneiss including granitic augen gneiss, and lower YTT terrane rocks composed of Devonian and older quartz-rich

rocks, amphibolite, mica schists and minor marble. Ultramafic rocks are found across the region. They are composed of amphibolite facies metagabbro, metapyroxenite (now actinolite) and rare serpentinite. These rocks were previously included with the Paleozoic Slide Mountain Terrane (Mortensen, 1996) but this is now questionable and their origins remain undetermined (Ryan et al, 2003).

Jurassic quartz monzonite bodies intrude the YTT and Mortensen (1996) noted that field relationships indicate that they intruded prior to both Early (?) Jurassic regional thrust imbrication and Early Cretaceous normal faulting.

Post accretion units unconformably overly rocks of the YTT and Slide Mountain terrane. These units consist of a sequence of unmetamorphosed sedimentary and volcanic rocks of middle (?) and Late Cretaceous age (Mortensen, 1996). The lower part of the unit typically consists of sandstone and pebble to cobble conglomerate that is overlain by massive andesitic flows and breccias that are correlated with the (68-76Ma) Carmacks Group. Bodies of Late Cretaceous fine to medium grained, equigranular biotite-hornblende quartz monzonite and granodiorite are thought to be co-magmatic with the Carmacks group volcanics.

## 5.1 General Property Setting

The property was mapped by RioCanex during the course of their programs during the period 1975 to 1978 (McClintock, 1976, 1979). They observed the property to be underlain by a sequence, at least 2,000 m thick, of metamorphosed volcanic and sedimentary rocks, within which they defined a stratigraphic series that they broke down into five major groups.

- |           |  |
|-----------|--|
| Group I   | Intercalated quartzite, biotite-quartz gneiss with minor biotite-muscovite schist and calc-silicate marbles. |
| Group II  | Intercalated biotite-muscovite and quartz-muscovite schist, minor graphite schist.                           |
| Group III | Interbedded biotite-feldspar gneiss and amphibolites, with up to 3% magnetite.                               |
| Group IV  | Amphibolite.   |
| Group V   | Sub-gneissic textured biotite-feldspar schist and quartz-feldspar gneiss.                                    |

The sequence was interpreted to result from sedimentation in a deepening basin, with initial deposition of sand grading through silt and limestone to mud-rich sediments. As the basin deepened, mafic volcanism became more prevalent and, as a result, clastic sediments became more feldspathic. The sequence was subsequently buried, subject to regional metamorphism and deformation and intruded by a coarse grained quartz monzonite, which is also foliated parallel to the foliation of the schists and gneisses. An unfoliated leucocratic granite was mapped in the west and southwest of the map area.

RioCanex interpreted this sequence to have undergone at least two phases of deformation, including large scale isoclinal, recumbent folds with a northwest-trending axis subsequently re-folded into a series of smaller scale northwest- trending antiforms and synforms.

Kennecott re-mapped the property in 2003, with more of a focus on the Bear Cub Zone than on the original Lucky Joe deposit and found a greater influence of igneous rocks in the overall geologic succession. The body of this section of the report on the geology, alteration and mineralization of the property is taken more or less directly from the Kennecott report (Franklin, et.al., 2003), with some editing by the author.



Kennecott geologists identified three principal layered rock units that underlie the area of interest. These are interpreted from oldest to youngest as, a *metaclastic* unit, a *laminar-foliated* unit, and an *amphibolitic* unit (Fig. 2). The *Metaclastic* unit is composed of a wide range of protoliths including arkosic greywacke, quartz sandstone, arkose, and shale. The *Laminar-foliated* unit is composed predominantly of felsic volcanics, possibly altered rhyolitic to latitic tuffs, and local arkosic sediments. The *Amphibolite* unit is composed of mafic to intermediate volcanics that are locally tuffaceous and interbedded clastic sediments. Some coarser grained units may represent plugs, dikes, or sills but these are greatly subordinate to the finer-grained compositionally layered phases.

In addition to the three principle layered units, other mappable units on the property include quartzite, carbonate, skarn and a crystalline quartz feldspar rock. The latter may well be a variation of the either the amphibolite or the laminar foliated units.

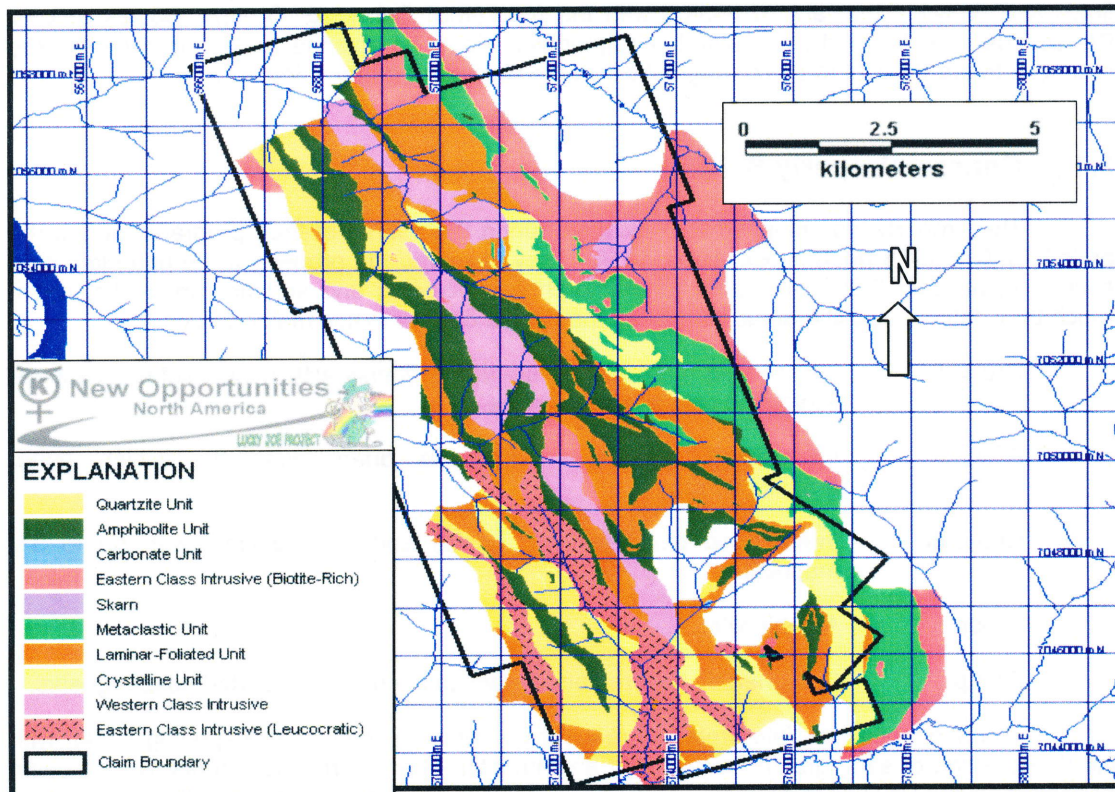


Figure 3. Geologic map showing distribution of mappable units.

Two distinct plutonic suites have intruded the above rocks; a biotite-bearing granodioritic orthogneiss (Eastern-class) and a leucocratic metagranite (Western-class). The former intrusion is of batholithic-scale, and occurs widely upon the Lucky Joe property as well as extensively to the east. This intrusion has been shown as Pelly Gneiss on past regional maps. These two intrusive suites have clear lithogeochemical, mineralogical, and textural contrasts. The older “Eastern-class” intrusions consist of gneissic-textured biotite-rich rocks with an average composition of granodiorite, and possibly of quartz monzonite composition prior to mineral redistribution during metamorphism. The younger (?) “Western-class” intrusive suite consists of weakly foliated leucocratic rock of original granite composition. At least a portion of known alteration and mineralization occurs spatial to the Western-class intrusions, which are enriched in Al and Na and depleted in K and a host of other elements. While it is not proven that the Western-class intrusions are the source of mineralization, they appear to have been within the



most vigorous portion of the alteration pathway. All of the major units and intrusive suites can be typed and correlated based upon major oxide analyses. Further, the nature of alteration associated with mineralization can be quantified. A comparison of fresh Eastern-class meta-intrusions with hydrothermally altered Eastern-class meta-intrusions demonstrates an overall increase in K and decrease in Ca. Taken together, the combined data supports deeper level and/or higher temperature sodic alteration and higher level and/or lower temperature potassic alteration in the Lucky Joe mineralized systems. In addition to the geochemical suite, the distribution of hydrothermal alteration mineralogy does not support the sedimentary model historically proposed for the Lucky Joe prospect. In fact, a significant proportion of the alteration and mineralization is hosted within meta-intrusions.

Foliation attitudes and the distribution of geologic units indicate that the gross structure might be defined by upright to northeast-vergent overturned km-scale folds with minor thrust faults.

## 5.2 Structure

The principal assumptions are that the major compression axis is ENE-WSW and that many structures should be ENE-verging. The rocks could have been metamorphosed during the Devonian-Mississippian, Permian, and/or Jurassic (?) periods, and were thrust northeastward during mid-Jurassic through Cretaceous time. Other than these assumptions, every structural detail must be gleaned from a handful of well-presented outcrops on the property. Compounding the problem, many units simply lack enough internal lithologic heterogeneity to allow the visualization of structure. Intense rodding is a ubiquitous feature. Cataclastic textures are also common in competent rock types. Crenulation cleavage is well developed, particularly in the *Metaclastic* unit. Two folding styles are observed, chevron and upright to overturned circular. No truly recumbent folds have been observed. Large-scale overturned or recumbent folding was proposed by previous workers, based upon an undocumented study of S and Z folds. Most minor folds plunge 15 to 20 degrees southeast (average ~ 150 azimuth). Pockets of bull quartz are sweated out along fold axes and the abundance of similar quartz in float across the property suggests that small folds are common everywhere. Preserved graded layers in the *Metaclastic* unit indicate that most bedding in this unit is not overturned, but geological relationships suggest that property-scale structure is characterized by km-scale northwest trending upright to overturned syncline-anticline pairs

## 5.3 Alteration

### 5.3.1 Magnetite Alteration

There are two principal belts and several smaller zones of magnetite alteration (Figure 3). In general this alteration type occurs locally to regionally in the hangingwall to muscovite-quartz alteration and roughly tracks the *Amphibolite* unit. However many of the strongest magnetite occurrences are within the *Laminar-foliated* unit. This may be a consequence of host rock mineralogy, as magnetite dominantly occurs with feldspar. The important observation is that magnetite occurs to at least a minor extent in every unit, suggesting that it is not forming after hematite in a particular sedimentary horizon.

There are patches of magnetite in the *Western-class intrusions*. These can be partially to wholly altered to hematite. This is suggested to be hydrothermal and not supergene hematite, since magnetite in other units is typically fresh in surface samples. Significant garnet occurrences are accompanied by magnetite and locally the garnets are magnetic. This relationship suggests that magnetite alteration formed contemporaneously with, or grew as inclusions in pre-existing iron-rich garnet.

### **5.3.2 Garnet Alteration**

Although minor brown-red garnets appear to be widely distributed and probably of metamorphic origin, the largest and most concentrated (10% or more garnet) occurrences are near the base of the magnetite zone and above the muscovite-quartz zone. The *Laminar-foliated* and *Amphibolite* units are the best host, but garnets can occur in the *Metaclastic* unit and *Eastern-class metaintrusions* as well.

### **5.3.3 Biotite Alteration**

Evidence for biotite alteration consists of locally high contents of poorly oriented biotite (30% or more) in the *Metaclastic* unit at Papa Bear and the discordance of biotite flakes with respect to primary foliation in different units (very equivocal evidence). Stronger evidence is provided by petrographic observations that biotite crosscuts and replaces the boundaries of feldspar grains.

### **5.3.4 Muscovite-quartz Alteration**

Muscovite-quartz is the most recognizable form of alteration on the property. Note that the term "muscovite" is used *sensu lato*, and includes muscovite, sericite after feldspar, and other white phyllosilicates as alteration products of other original minerals. Muscovite-quartz alteration is probably magnetite-destructive, since this mineral rarely if ever occurs with this alteration suite. This alteration is characterized by interlayered coarse-grained lustrous to splendent or pearly white mica and gray quartz, either as original rods or eyes or as introduced silica

### **5.3.5 K-spar alteration**

Petrographic studies show that potassium feldspar replaces plagioclase. Descriptions from previous core logging include the mention of quartz-potassium feldspar veins. However, as shown above, documented potassium enrichment is seemingly associated with muscovite-quartz alteration that would classically be called a phyllic assemblage.

### **5.3.6 Chlorite-epidote-hematite alteration**

Chlorite alteration of biotite and hornblende and epidote alteration of feldspar or other minerals is fairly widespread. In some cases this could be ascribed to non-hydrothermal alteration of chemically permissive rock types. Chlorite-epidote alteration shows few unequivocal patterns on the Lucky Joe property, but is convincingly concentrated in and around the *Western-class intrusion* along the Papa Bear grid and chlorite alteration is commonly developed after biotite in other *Western-class intrusions*. At Papa Bear chloritized biotite and late quartz-epidote-chlorite veinlets and hematite alteration are locally observed in *Eastern-class metaintrusive* rock that contains sulfides. Hematite alteration is also present in *Metaclastic* unit rocks in drill core from the Papa Bear grid. Core from the Papa Bear grid examined during 2003 shows an alteration continuum from biotite to chlorite to muscovite, an observation also supported by surface evaluation and petrographic studies at main Lucky Joe.

### **5.3.7 Sodic alteration**

Sodic alteration, presumably albitization, is probably widely developed in the *Western-class metaintrusions*, based on analyses with Na<sub>2</sub>O returns of 4 to greater than 6%. Interestingly, the plagioclase in *Western-class metaintrusions* is commonly glassy and unaltered.

### 5.3.8 Skarn alteration

Skarn and calc-silicate alteration occurs in several locales. Undoubtedly, such alteration is more widespread than can be appreciated from the limited rock exposures. Skarn forms after carbonate, amphibolite, and possibly other rock types. Skarn and calc-silicate occurrences occur along the margins of the *Eastern-class* and *Western-class* intrusions. Regardless of the underlying protolith, skarns are dense and dark, exhibiting high Fe and low SiO<sub>2</sub> concentrations and sulfides are minor to absent. The mineral assemblages consist of garnet, epidote, diopside, tremolite or other amphiboles, and possibly rhodonite or rhodochrosite. A zinc content of 2.97% in one skarn occurrence suggests a link with carbonate-hosted mineralization discussed below.

Magnetite content ranges from none to abundant, and elevated Bi, Cu, Mo, and Te are variably associated. Skarns possibly became more enriched with Zn and Pb as the hydrothermal system evolved.

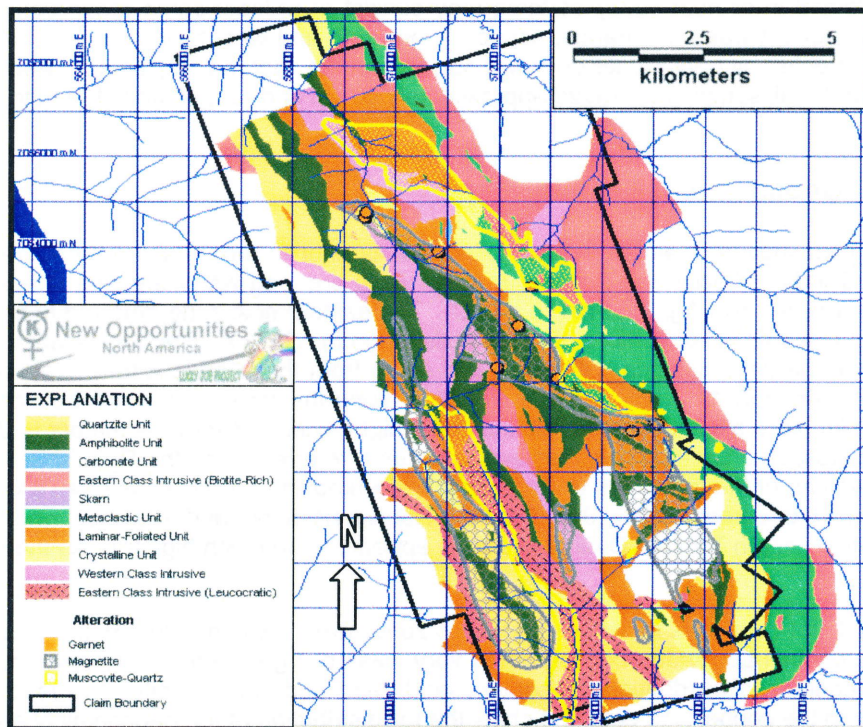


Figure 4. Map showing the distribution of selected alteration types.

## 6.0 SOIL GEOCHEMISTRY

The bulk of the geochemical sampling was completed in 2003 with a focus on soil sampling to determine the surface extent of the Cu-Au bearing hydrothermal system. These samples along with rock samples mostly from the trenches and test pits were submitted for multi-element trace level analysis. A total of 1884 soil samples were collected in 2003 within the property and surrounding area of interest.

## 6.1 Sampling Method and Approach

The first phase of geochemical sampling consisted of regional ridge and spur reconnaissance soil sampling with a nominal sample spacing 200 m. The primary objective was to explore for unknown anomalies both on and off existing trends and to determine if previously known anomalies have continuity amongst one another. The widespread lines were designed to locate large, km scale, coherent anomalies in an effort to delineate a potential hydrothermal system(s) capable of hosting a significant size Cu-Au deposit. Following the reconnaissance phase, anomalies were refined by gridding at a nominal 100 m sample spacing and 200 m line spacing. Six grids were established at the Echo, South Bear, LJ, Ryan's Creek, Papa Bear, and Far South Grids. Eventually the Papa Bear and South Bear grids merged into the Bear Cub grid as did the LJ and Ryan's Creek grids.

The sample medium consisted of poorly developed B- and C-horizon material derived predominantly from colluvium, talus fines and weathered bedrock soil environments. Some samples collected in or near valley bottoms may consist of at least some proportion of alluvial material. Permafrost was a hindrance, especially on north and west facing slopes. All samples were collected either by hand auger or power auger, with the vast majority being collected by the former. Depth for all samples averaged approximately 40 cm and ranged from 10 cm to 1.6 m.

## 6.2 Soil Geochemical Results

The combination of all the soil sampling results prior to the 2006 work has defined two main Cu-Au trends at Lucky Joe (Figures 5 & 9). Both are long NNW trending zones that are anomalous in Cu, Au, Mo, Ag, Zn, Pb, (Te and U). The easternmost zone, referred to as the Bear Cub, encompasses all of Riocanex's grids established in the 1970's. Reconnaissance sampling suggested that the zone extends both north and south from these grids with an apparent strike length of approximately 11.3 km. Sparse sampling along the far southeastern boundary of the Lucky Joe claim block also suggested that the zone might extend several kilometers further south possibly into Rosebute Creek. The Westernmost trend, referred to as the Ryan's Creek Trend, closely follows one of the tributaries to Rosebute Creek (known unofficially as Ryan's Creek) and extends northward across Lucky Joe Creek. Reconnaissance and previous grid sampling suggests a strike length 7.2 km. Overall this zone appears to be much higher in Au than the Bear Cub Trend.

Results for copper as it defines these two zones are shown in Figure 9. It is interesting to note that the original Lucky Joe deposit has a very weak soil geochemical expression. Figure 5 shows the generalized distribution for copper, gold, lead and zinc in soils. The lead and zinc occur distally to the copper and gold and show the full distribution of the geochemical and related hydrothermal systems, namely 21.5 km in length for Bear Cub and 7.5 km in length for Ryan's Creek.



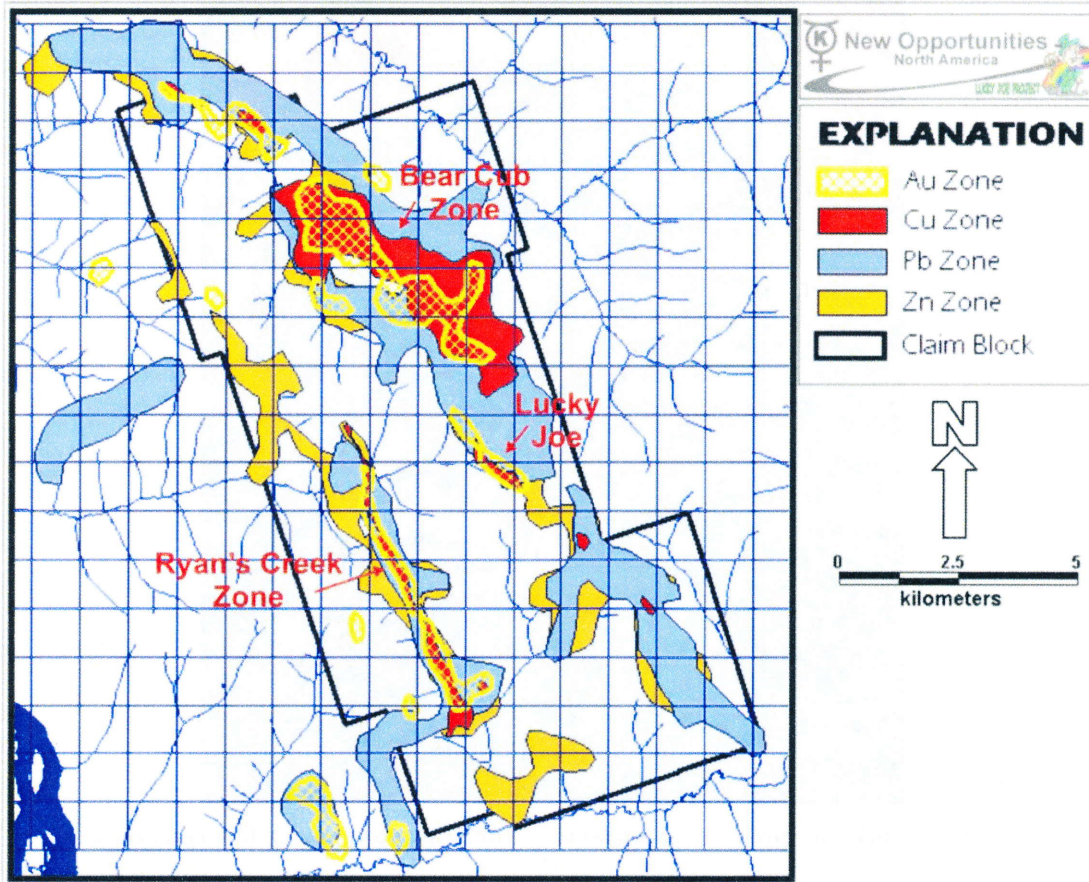


Figure 5. Map showing +80th percentile soil areas for Cu, Au, Pb and Zn (not all samples within these areas are anomalous with respect to each metal).

## 7.0 GEOPHYSICS

During the initial evaluation of Lucky Joe, RioCanex ran several lines of IP in the area of the Lucky Joe deposit and the Bear Cub anomaly, as well as Max-Min electromagnetics and magnetics. In 2000, a detailed, low level airborne aeromagnetic survey was conducted jointly by the Geological Survey of Canada and the Yukon Geology Survey (Shives, et.al., 2001). In 2004, prior to drilling, Kennecott conducted additional IP surveying over the Bear Cub Zone.

### 7.1 Aeromagnetic Survey

The aeromagnetic survey outlined an unusual pattern of linear magnetic highs (See Figure 6). The recognition that the original Lucky Joe discovery occurred along the edge of one of these highs led prospector Shawn Ryan to the discovery of additional copper mineralization on the Ryan's Creek trend. The Bear Cub Zone is also aligned along a less intense linear trend. The cause of these anomalies is thought to be magnetite-bearing amphibolite layers as well as magnetite alteration associated with the Lucky Joe mineralization. Ultramafic rocks are known to occur in the vicinity of the claim group and could be in part responsible for the observed magnetic patterns.



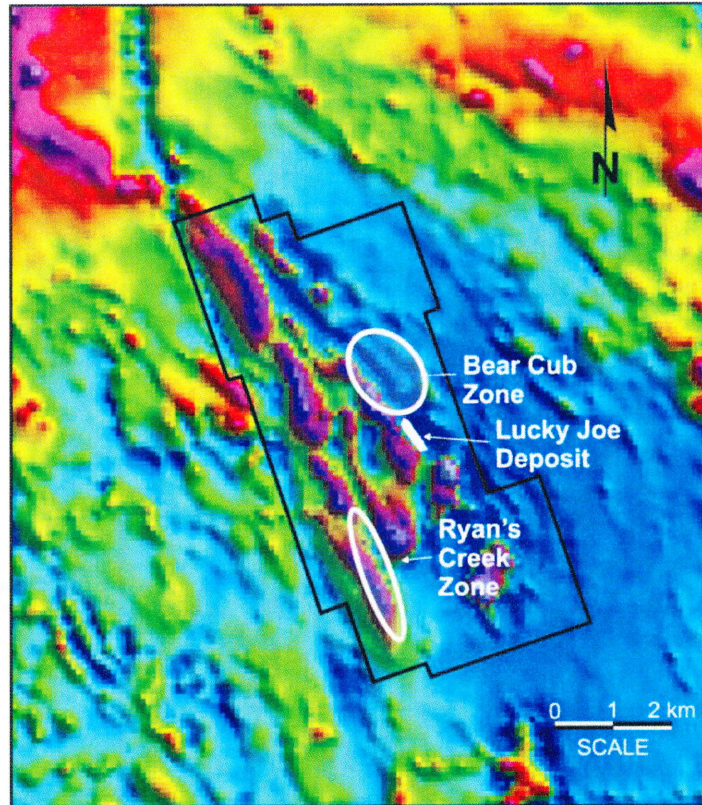


Figure 6. Lucky Joe property with total magnetic field and copper-gold target areas.

## 7.2 IP Surveys

Riocanex conducted 16.5 km of IP surveys over the Lucky Joe deposit in 1975 as part of their initial evaluation of the main showing area. The survey detected a broad, linear zone of chargeability, from 30 mv/V to plus 60 mv/V, that ran the full 2.5 km of the grid and correlated to some extent with the known copper mineralization. After comparison with the results of the first two drill holes, the chargeability effect was attributed to a variety of sources including clay minerals and mica, graphite and sulphide minerals. In general, the copper mineralization correlates with the edge of a linear magnetic anomaly and the upper portion of the parallel trending chargeability anomaly.

In 1978, Riocanex conducted additional IP surveys on two grids to the north and west of the main Lucky Joe deposit in the area that is now known as the Bear Cub anomaly. This work included 31.6 km of additional surveying, with a 100 m dipole spacing. Several high chargeability zones were outlined, including a 2400 m by 300 m zone of high chargeability in the southern part of the area. The high chargeability zones were found to be caused by high pyrite concentrations. However, there was little correlation with higher copper values and there was not the strong correlation with magnetic patterns as at Lucky Joe. The chargeability anomalies did correlate, in part, with copper soil geochemical anomalies.

In 2005, Kennecott completed 6 km of IP along a northwest trending baseline through the core of the Bear Cub anomaly. The survey cut through the two areas surveyed by Riocanex in 1978, but utilized a greater dipole spacing of 200 m. The modeled chargeability from this line is shown in Figure 7. Two large zones of high to very high chargeability were defined. Drill holes LJ05-02 and LJ05-05 were drilled into the high chargeability zones and the anomalies were found

to be caused by disseminated to locally semi-massive pyrite mineralization. Higher copper values in hole LJ05-02, indicated by the green pattern adjacent to the hole on the section, occur at the bottom of the hole where a sharp drop in pyrite concentration, from 5-10% to less than 3%, was observed.

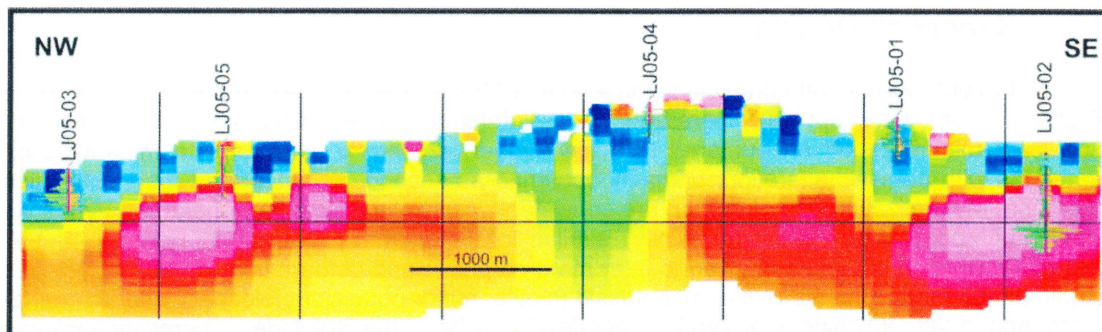


Figure 7. Bear Cub Zone chargeability profile showing 2005 drill holes.

## 8.0 DRILLING

### 8.1 Silver Standard and Riocanex Drilling

In 1971, Silver Standard drilled 3 short holes, two of which ended in mineralization grading 0.35% to 0.4% copper. In 1975, Riocanex optioned the property and drilled two holes, one of which averaged 0.36% copper over 30 m. An additional 1212 m of diamond drilling in five holes was completed by Riocanex in 1976. Best results from this program included 0.62% copper over 22.87 m. The work defined an apparently stratigraphically controlled zone of biotite-muscovite schist, with a thickness of 20 to 30 m, a strike length of 700 m (open at both ends) and an average grade of 0.35% copper. The core was not analyzed for gold. The key intersections in the Lucky Joe Zone are shown in the Table 2 below.

Table 2 - Summary of Riocanex Drill Results

Hole No.	Cu (%)	Width (m)
75-2	0.36	30.0
76-1	0.18	27.1
76-2	0.62	22.9
76-3	0.03	21.9
76-4	0.40	33.1
76-5	0.27	25.0
78-1	0.18	12.9
78-1	0.28	7.8
78-1	0.12	7.9
78-2	0.17	10.7

In 1978, Riocanex drilled an additional 784.5 m in five holes, all focused on the Bear Cub Anomaly. Three of the holes tested the vicinity of the southern IP anomaly and related copper soil anomalies while two tested a second chargeability anomaly in the northern part of the zone associated with an irregular copper soil anomaly. Copper mineralization was found to be less

continuous and occurring over narrower intervals than at Lucky Joe. However, Riocanex had difficulty correlating the Lucky Joe stratigraphy to the northern area. In particular, the association of copper mineralization in a strataform setting between strongly magnetic rocks and the pyritic schist was not observed. The best values from this drilling are reported in Table 2.

## 8.2 Kennecott Drilling

In 2005, Kennecott completed a five hole, 1,035.1m drill program in the Bear Cub Zone (Carlson, 2006). Chalcopyrite mineralization was intersected in all of the 2005 drill holes with significant mineralization encountered in holes LJ05-1, -2 and -5. Chalcopyrite mineralization correlates with potassic alteration, primarily occurring as secondary biotite, and magnetite-silica alteration. Mineralization and alteration are consistent with the classic copper-gold porphyry style model, of apparent calc-alkaline affinity, similar to the Kemess deposit in northern British Columbia, which has been subjected to later metamorphism and deformation. Alteration includes phyllic (quartz-sericite-pyrite-gypsum), potassic (biotite, minor potassium feldspar), quartz, quartz-pyrite and quartz-sulphide stockwork mineralization where the sulphide mineralogy includes minor pyrite, chalcopyrite and/or magnetite.

The best mineralization and alteration were encountered in holes LJ05-2 and LJ05-5, which targeted chargeability highs as outlined by the induced polarization (IP) survey. LJ05-2 ended in mineralization at a depth of 352m and the mineralization in LJ05-5 was obliterated by a late phyllic event, limiting the extent of the mineralized zone. In LJ05-2 the best chalcopyrite mineralization is associated with approximately 3% pyrite lying beneath a large zone averaging plus 5% pyrite. In LJ05-5 lower grade chalcopyrite mineralization is associated with 7 to 10% pyrite. It is possible therefore that the IP survey is detecting a pyritic halo peripheral to higher grade copper-gold mineralization. Due to metamorphism and deformation, it is possible that the pyrite halo now occurs as a discontinuous horizon.

The best results from the 2005 program included 24.1 m grading 0.06% copper beginning at 18.6 m and 33.5 m grading 0.071% copper beginning at 77.9 m in hole LJ05-01; 22.7 m averaging 0.217% copper and 88.5 ppb gold, starting at 255.4 m, within a 94.7 m interval of 0.13% copper and 52.4 ppb gold, to the end of the hole at 352.1 m in hole LJ05-02; and 74.1 m grading 0.135% copper and 0.032 gpt gold beginning at 60.1 m within a 127.7 m section grading 0.099% copper beginning at 18.3 m in hole LJ05-03.

## 9.0 MINERALIZATION

Sulfide mineralization consists of chalcopyrite-pyrite-pyrrhotite and trace molybdenite. Gold and silver are associated with chalcopyrite occurring as inclusions of electrum (53 wt% Ag, 47 wt% Au). Surface exposures of sulfide are invariably oxidized and information concerning economic mineralogy is determined from core drilling and to a lesser extent from trenches. Copper mineralization occurs in rock that contains at least some biotite, commonly near to or just within the muscovite-quartz alteration assemblage. Magnetite forms a halo above and/or lateral to sulfide mineralization. Sulfides commonly follow foliation, but post-fabric quartz-sulfide veinlets with sharp boundaries are at least locally observed.

Based upon field observations, a very general paragenesis is shown in Figure 8. The *Eastern-class intrusions* represent the initial significant event. Exoskarn mapped along the contact of *Eastern-class intrusions* would be empirically linked to intrusion. The *Western-class intrusive* suite is younger, at least in part, and could represent a volumetrically subordinate fractionated phase of the *Eastern-class* batholithic scale event. A genetic association between the *Eastern-* and *Western-class intrusions* is intuitively satisfying, because of the close spatial and locally ambiguous relationship between these suites. However, weaker fabric development



in the *Western-class intrusions* suggests that fractionation may have post-dated the culmination of a metamorphic episode, and thus a change from ductile to brittle deformation and development of permissive structural (steep fault) architecture. Skarn could have formed at any time during intrusion, fractionation, and hydrothermal activity. This might be why there is a wide range of Cu, Zn, and Pb content from occurrence to occurrence. Garnet and magnetite alteration are evidence of Fe oxide and silicate alteration of permissive lithotypes and could represent early manifestations of mass transfer of metals from the (now depleted) *Western-class intrusions* into overlying and adjacent rocks. Biotite and K-feldspar alteration is partly conceptual, in that the extent and importance is unknown, but it remains possible that subsequent muscovite-quartz alteration coincides with and overprints a former biotite and K-feldspar rich zone. The timing of propylitic alteration is especially problematic, but the hematization of magnetite, and chlorite and/or epidote in and around highly fractionated *Western-class intrusions* provides limited constraints. Because of the observed close association of sulfides with biotite, the inception of significant sulfide deposition is correlated with potassic alteration. If subsequent work shows biotite-K-feldspar alteration to be a non-event, the timing of sulfides would coincide with the overprinting of muscovite-quartz alteration upon (primary) biotite-rich metamorphic rocks.

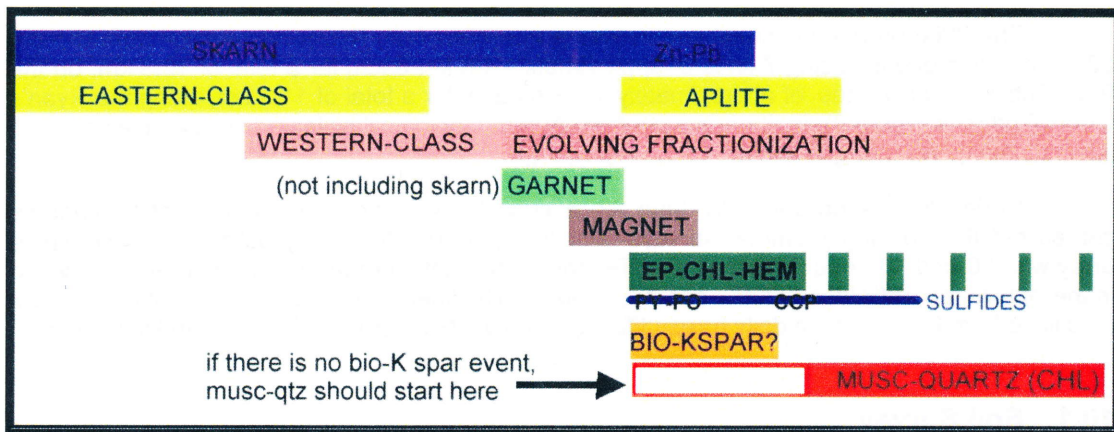


Figure 8. Possible paragenesis for alteration and mineralization.

Aplites are known to be associated with the *Eastern-class intrusions*, and are reported from core at Papa Bear and Bear Cub. Aplites at Bear Cub could be related to the *Western-class intrusions*. Aplite injection could be a measure of cooling of intrusions and release of volatiles, along with contained metals.

The inception of quartz-muscovite alteration is unconstrained, but this alteration is inferred to also post-date other major episodes of alteration, save possibly minor propylitization. Although quartz-muscovite alteration is destructive, it was not necessarily the highest temperature; instead it may have involved fluids of lower pH. Muscovite-quartz alteration forms partly offset linear belts that might mimic structural trends that were active during mineralization. The occurrence of post-brecciation muscovite at main Lucky Joe suggests that fault movements were occurring during part of this alteration stage. The suggested strike of mineralized trends might be 300° to 330° with northeast offsets, although there is a strong risk that these trends were inherited during subsequent deformation and thrust faulting.

A larger area encompassing Bear Cub exhibits the best Cu soil geochemistry. The greatest concentration of propylitic and quartz-muscovite alteration and the most sodic footwall rocks occur in this area. In addition, there is a relative abundance of potential (biotite-rich) host rocks, represented by the *Eastern-class intrusions* and the *Metaclastic* unit and a greater proportion of the potential host rock lies closer to surface. For these and other reasons, the Bear Cub trend and surrounding areas are considered prospective. Soil anomalies in this area that are underlain by muscovite-quartz alteration may be transported, and more biotite-rich rocks spatial

to these anomalies should be evaluated. The strong soil geochemistry at Ryan's Creek is also an important target, recognizing that it may be similar to main Lucky Joe: a west-dipping panel of biotite-rich rocks at the base of a magnetite-bearing zone. Thus, although primary grade potential might be as good as or better at Ryan's Creek than elsewhere, the proportion of this mineralization that lies near surface could be modest.

In summary, the presence of at least three intrusive phases (Eastern- and Western-class; aplites), combined with multiple types of alteration assemblages that transgress several rock types, two or more generations of sulfide  $\pm$  quartz (early foliation-parallel and later cross-cutting), and a Cu-Au-Ag-Mo elemental association tend to point more toward a high temperature geologic model for mineralization. Indeed the limited sulfur isotope work by the GSC with values in the magmatic range lends further support to this concept. The Lucky Joe system is now envisioned to be either a Cu-Au porphyry system (alkalic?) or a variant of the IOCG model.

## **10.0 2006 EXPLORATION PROGRAM**

The 2006 program commenced in May with a crew from Ryanwood Exploration who cut 22.4 km of line grid including 7 lines of approximately 1.8 km each, for a total of 12.3 km, on the Bear Cub Grid and 7 lines of approximately 1.4 km each, for a total of 11.1 km, along the Ryan's Creek Grid (see Figure 9). In June, a crew from Aurum Geological collected soil samples at 50 m intervals along the new grid lines.

During the period Jun 2 to June 23, a crew from Aurora Geosciences of Whitehorse carried out IP and magnetometer surveys over the grid. The IP survey utilized a dipole-dipole array with 50 and 100 m dipole spacings. Technical information regarding the survey is provided in the Aurora report (Hildes, 2006 – see Appendix II). The linecutting and geophysical crews were mobilized from Dawson on a daily basis utilizing a 206 Jet Ranger from Trans North Helicopters.

### **10.1 Soil Survey**

In total, 414 soil samples were collected at 50 m sample spacings along approximately 23.4 km of grid line. Geochemical analysis certificates are included in Appendix I. Since the sampling was carried out early in the season, a large percentage of the sample sites could not be sampled due to frozen ground. Un-sampled permafrost sites are shown by black dots on the maps (Figures 10 & 11).



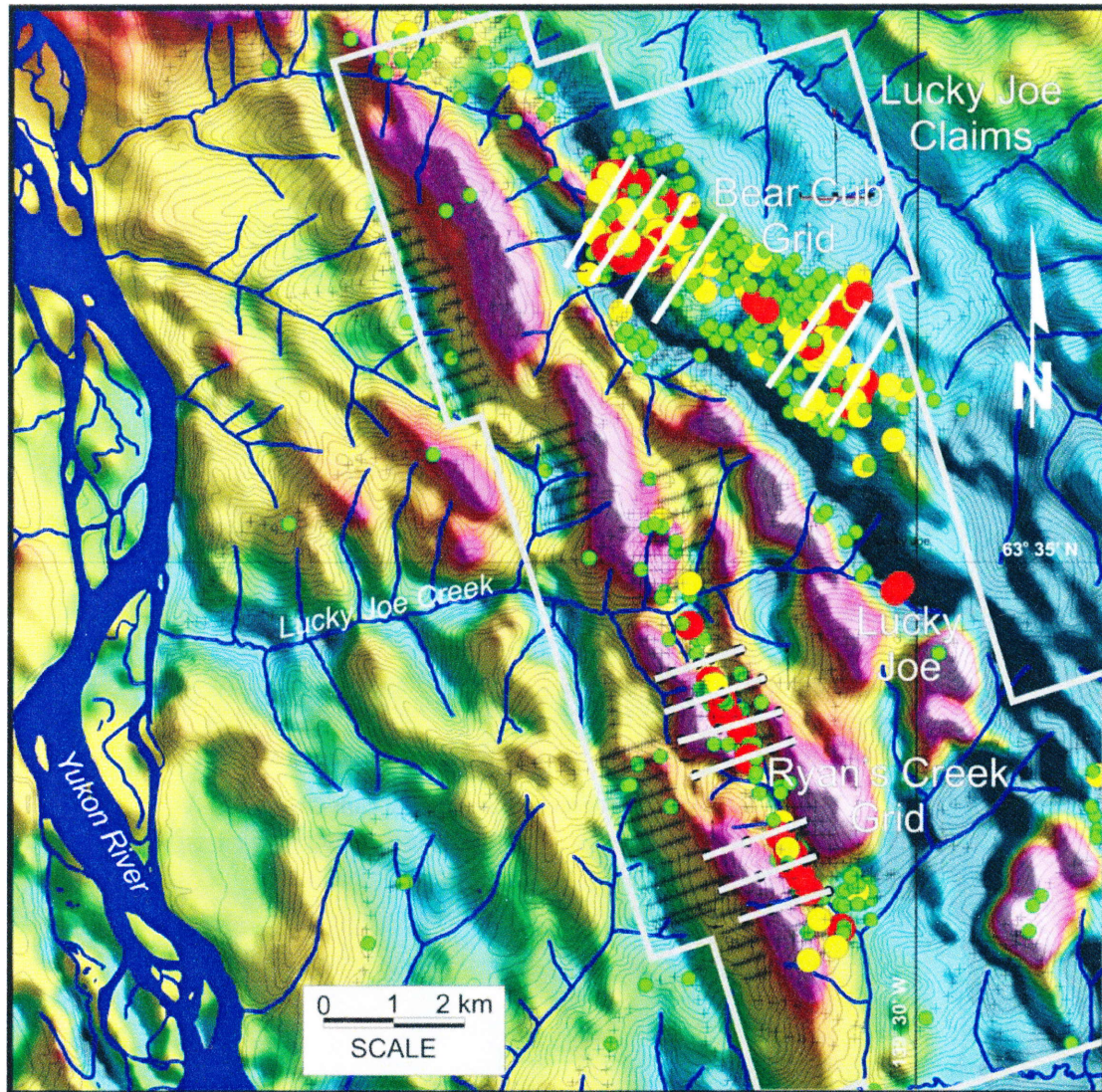


Figure 9. 2006 Lucky Joe grids.

Figure 10 shows the copper values for the Bear Cub 2006 grid superimposed on the airborne magnetics. The anomalous values confirm the strong copper anomaly previously defined by Copper Ridge and Kennecott sampling in 2002 and 2003 (see Figure 5). There is not a clear association between the soil geochemistry and the aeromagnetics at Bear Cub.

Figure 11 shows the copper values over the Ryan's Creek grid, again superimposed on the aeromagnetics. The trend of the anomalous copper values is clearly evident trending along the eastern edge of the linear magnetic anomaly. However, the copper and gold values at the south end of the trend are much lower than in previous sampling in this area (see Figure 9). This is believed to be the result of difficult sampling conditions due to the early season program and resultant frozen ground. The pattern at Ryan's Creek is quite similar to that observed at the original Lucky Joe showing.



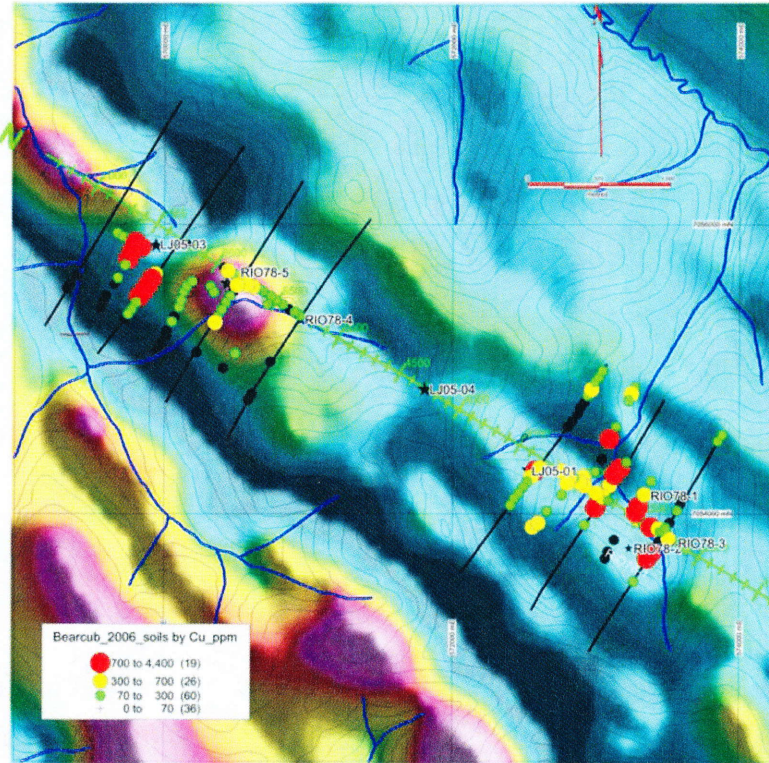


Figure 10. Copper soil geochemistry, Bear Cub Grid.

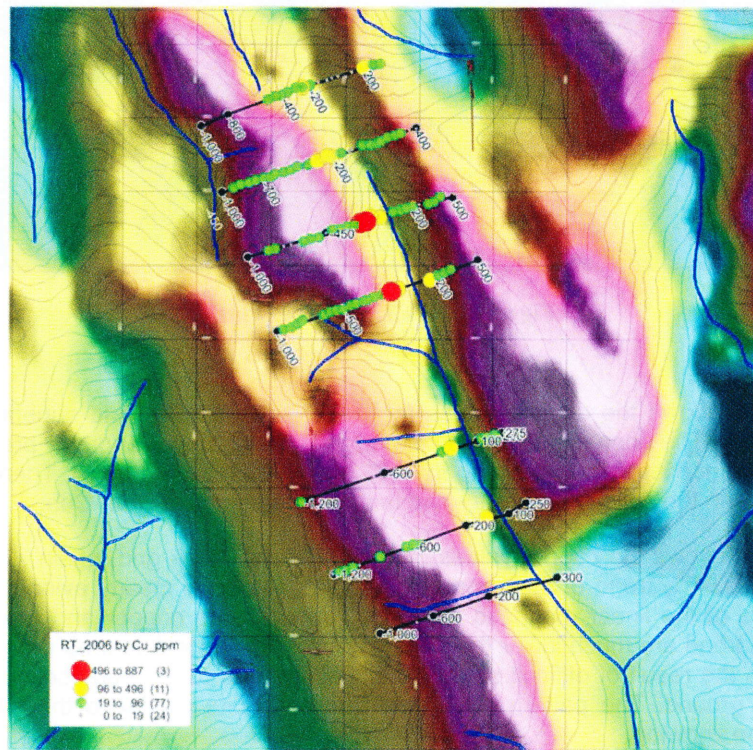


Figure 11. Copper soil geochemistry, Ryan's Creek Grid.

## 10.2 Geophysical Surveys

The 2006 geophysical survey confirmed and expanded the areas of anomalous chargeability over the Bear Cub grid. At Ryan's Creek, a four km long trend of anomalous chargeability correlates with a strong, linear copper-gold soil anomaly and the eastern edge of a linear magnetic anomaly.

### 10.2.1 Bear Cub Grid

The seven lines over the Bear Cub grid cover a strike length of 4.5 km, utilizing the baseline established by Kennecott in 2005. The line spacings are 500 m with a 2000 m gap in the central portion of the grid and the lines average 1,800 m in length. Profiles showing the magnetics and the modeled resistivity and chargeability for each line are shown in Figure 12. It should be noted that the lines are slope chained, whereas the profiles are plotted assuming a horizontal line, so there will be some small scaling errors on the horizontal plane in these profiles.

On the northern four lines, the magnetics are relatively flat, with the exception of a strong magnetic high on L58N that can be observed as a circular anomaly on Figure 10. This high correlates with a resistivity low and a chargeability high that is offset to the west of the mag peak. Otherwise, there is possible correlation of a similar trend from L68N to L53N, with a small spike high just east of the centre of each line and increasing in intensity to the north. This mag spike correlates with a chargeability anomaly (C1) that is strong on L53N, weaker on the middle two lines and stronger again on L68N. It is possible that two parallel chargeability trends (C1 and C2) observed on lines 53 to 63 have merged into a single feature on L68N. This latter feature has a large and strikingly low resistivity feature associated with it.

The southern three lines are dominated by a broad and strong chargeability anomaly that is over 100 m wide and is open at both ends. This is the same anomaly detected on the south end of the 2005 baseline (see Figure 7). The magnetic pattern over this zone is slightly irregular compared with a flat magnetic pattern on either side.

Drilling in 2005 has shown that the high chargeability core of this chargeability anomaly is caused by predominantly disseminated pyrite mineralization. Copper values were noted to increase below the high chargeability zone in hole LJ05-02. This is consistent with previous RioCanex drilling, where the best copper mineralization was found to be on the fringe of high chargeability zones.

### 10.2.2 Ryan's Creek Grid

The Ryan's Creek grid shows a linear geochemical and geophysical trend that can be traced along the entire 3,700 m covered by the seven grid lines (see Figure 13). The zone of interest, defined by prominent copper and gold geochemical anomalies and both chargeability and resistivity responses, is located along the eastern edge of a prominent, linear magnetic high. In fact, on all the lines, the western portion is marked by a choppy magnetic high, followed by a flat magnetic response or weak magnetic low, 300 to 500 m wide, followed by another mag high. The irregular nature of the magnetic highs suggests that they could be caused by stratigraphy similar to that described as Group III or IV by RioCanex, namely magnetite-bearing amphibolite with interlayered schist. If so, this suggests that the anomalous and possibly mineralized trend could be stratabound, as was originally hypothesized by RioCanex geologists.

The linear pattern and alignment of the geophysical features suggest that a major structure may also be involved. None of the chargeability anomalies appear to reach surface and this is likely to be the result of deep weathering of sulphide mineralization in this unglaciated landscape. However, all the resistivity sections show a vertical aspect of low resistivity reaching to surface and this could represent a fault zone. The geochemical anomalies also correlate



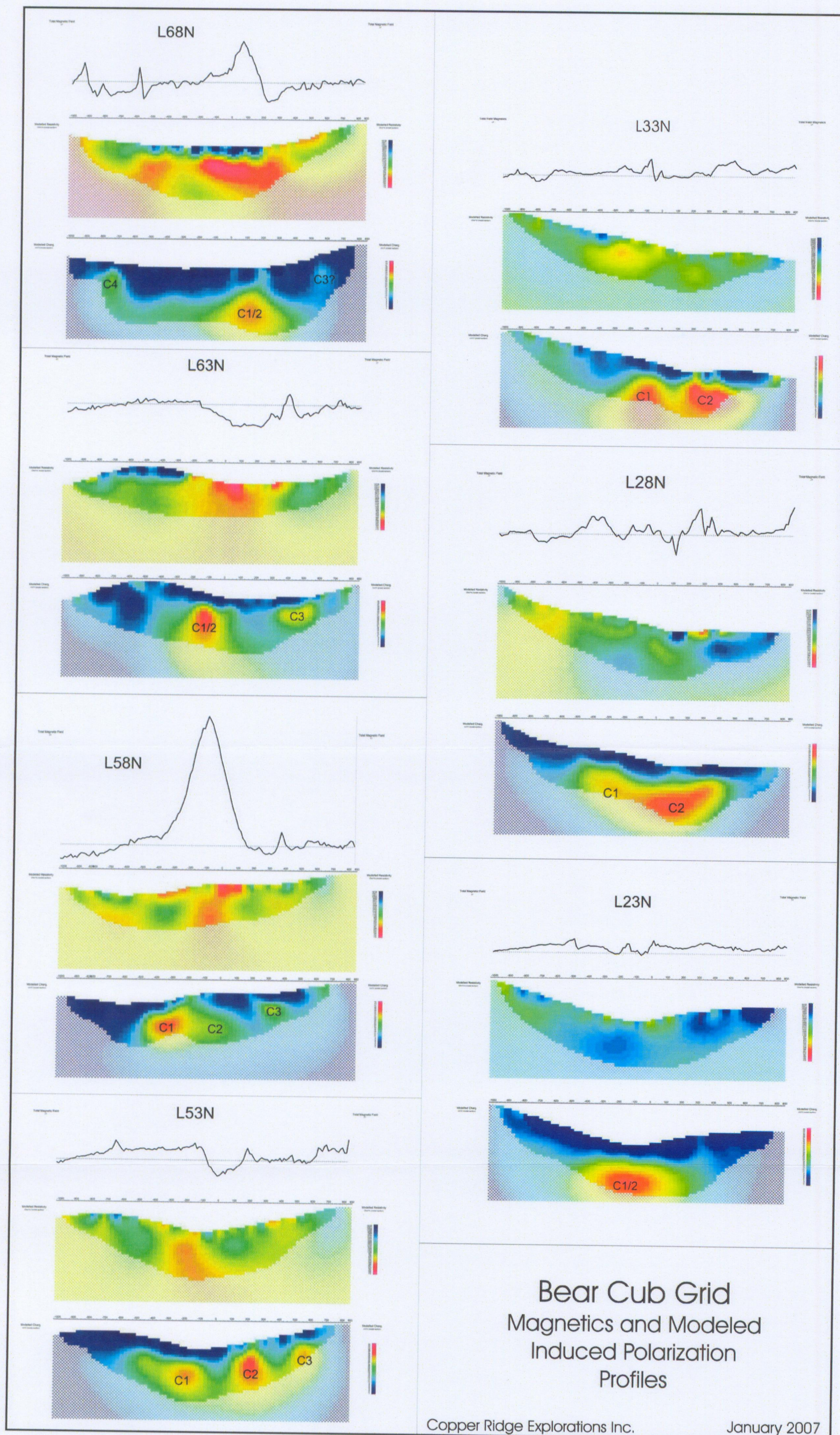


Figure 12. Bear Cub Grid magnetics and IP (modeled resistivity and chargeability) profiles.



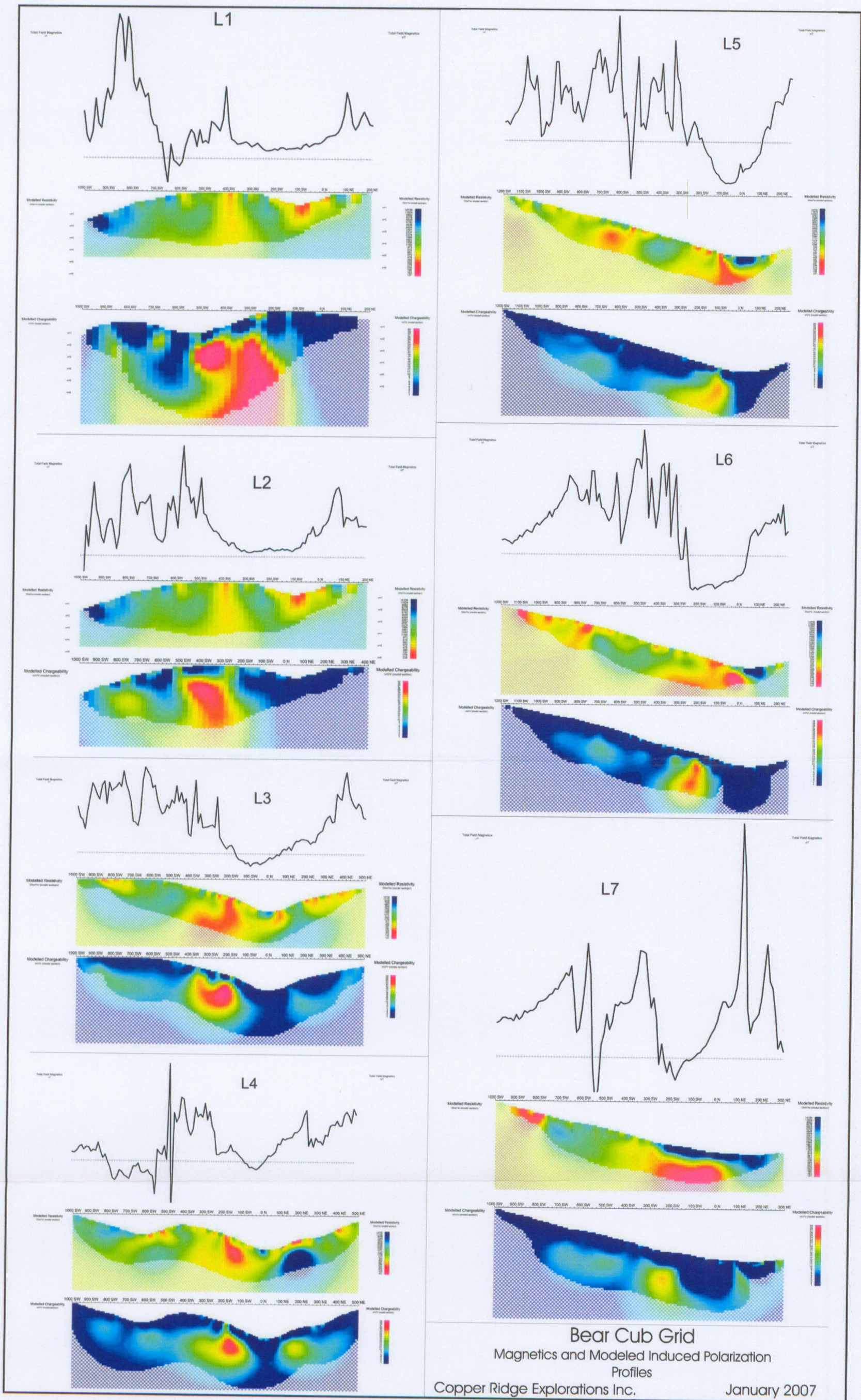


Figure 13. Ryan's Creek Grid magnetics and IP (modeled resistivity and chargeability) profiles.



quite closely with this feature. It should be noted that while the copper and gold anomalies appear to be weak in the southern lines (Figure 11), this effect appears to be related to difficult early season sampling conditions. Strongly anomalous copper and gold geochemistry can be seen in this area from previous sampling (see Figure 9). Results from this area include malachite staining in the soil profile discovered in Ryan's Pit (Franklin, et.al., 2003).

The chargeability anomalies are also closely associated with this major "structure". The chargeability zones occur on either or both sides of the feature. Assuming that the chargeability is the result of sulphide mineralization in the rock, this mineralization also appears to be closely associated with this "structure". Drilling will be required to determine the nature of the "structure" and the nature of the chargeable source.

## 11.0 CONCLUSIONS

The Lucky Joe property is underlain by Yukon Tanana Terrane Phanerozoic ductilely deformed metasedimentary and metaigneous rocks. These rocks include arc magmatic rocks of Late Devonian to early Mississippian, mid Permian and syn- to late-kinematic Late Triassic - Early Jurassic age.

The type of deposit sought on the property is a bulk tonnage Cu-Au target defined by two large soil anomaly trends that exhibit a systematic metal zonation and a crude association with positive aeromagnetic anomalies. The larger of the two anomalous trends, the Bear Cub Trend, extends for a length of 21.5 km and is up to 3 km wide. This anomaly encompasses, expands and defines previous soil geochemical anomalies, trenches and mineralization found in 1970's drill holes located by Silver Standard and Riocanex. Within this trend are three discrete anomalies defined by soils with greater than 90<sup>th</sup> percentile Cu values. Values for Au and Cu reach 235 ppb and 3060 ppm, respectively. The other anomaly, the Ryan's Creek Trend, although discontinuous and narrow, extends for a length of 7.2 km and has high Au and Cu values of 611 ppb and 4400 ppm, respectively.

The central portions of the Bear Cub and Ryan's Creek zones are characterized by soils that are enriched with Cu-Au-Ag-Mo. These zones are fringed by soils enriched in Pb and pass outward into soils that are enriched in both Pb and Zn and are finally flanked by soils with elevated Zn values. Strong Na enrichment is coincident with Cu-Au-Mo anomalies and may define the hottest parts of the mineralizing system.

The Bear Cub target exhibits the strongest Cu soil geochemistry. The greatest concentration of propylitic and quartz-muscovite alteration and the most sodic footwall rocks occur in this area. In addition, there is a relative abundance of potential (biotite-rich) host rocks, represented by the Eastern-class intrusions and the Metaclastic unit and a greater proportion of the potential host rocks lie closer to surface. For these and other reasons, the Bear Cub trend and surrounding areas are considered highly prospective. Soil anomalies in this area that are underlain by muscovite-quartz alteration may be transported, and more biotite-rich rocks spatial to these anomalies should be evaluated. The strong soil geochemistry at Ryan's Creek is also important, recognizing that this target may be similar to main Lucky Joe: a west-dipping panel of biotite-rich rocks at the base of a magnetite-bearing zone. Although primary grade potential might be as good as or better at Ryan's Creek than elsewhere, the proportion of this mineralization that lies near surface could be modest.

The 2006 geophysical and geochemical surveys confirmed and refined drill targets in the Bear Cub area. At Ryan's Creek, the linear soil geochemistry trend was confirmed and enhanced by an underlying high chargeability anomaly that correlates with the eastern edge of the linear magnetic high that originally attracted attention to this zone.



## **12.0 RECOMMENDATIONS**

Drilling is required to test the mineralization potential of both the Bear Cub and Ryan's Creek trends. A 2,000 m program of 12 to 15 drill holes has been proposed to test both of these target areas. This work was undertaken subsequent to the completion of the work reported herein. Due to difficulties with drill contractors and, ultimately, a very late start for drilling, only 3 drill holes were completed. Results of this drill program are presented in Copper Ridge's report on the 2006 drilling (Dawson, in preparation) and in a Copper Ridge news release dated December 14, 2006 (see Appendix III). It is expected that additional drilling will be recommended for the 2007 field season.

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## 14.0 STATEMENT OF COSTS

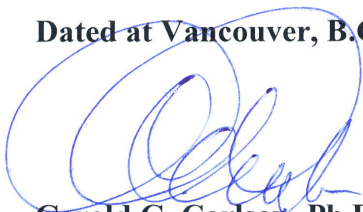
Helicopter		
	Trans North	\$ 108,302.40
Geology, camp support, soil sampling		
	Aurum Geological	\$ 44,004.86
Linecutting		
	Ryanwood Exploration	\$ 27,739.75
Geophysical Surveys		
	Aurora Geosciences	\$ 69,433.93
Analytical		
	Acme Analytical	\$ 3,849.07
Report Preparation		
	KGE Management	\$ 5,000.00
<b>Total</b>		<b>\$ 258,330.01</b>

## 15.0 STATEMENT OF QUALIFICATIONS

I, Gerald G. Carlson, hereby certify that:

1. I am a consulting mineral exploration geologist and President of KGE Management Ltd. of 1740 Orchard Way, West Vancouver, B.C. V7V 4E8.
2. I am a graduate of the University of Toronto, with a degree in Geological Engineering (B.A.Sc., 1969). I attended graduate school at Michigan Technological University (M.Sc., 1974) and Dartmouth College (Ph.D., 1978). I have been involved in geological mapping, mineral exploration and the management of mineral exploration companies continuously since 1969, with the exception of time between 1972 and 1978 for graduate studies in economic geology.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 12513 and of the Association of Professional Engineers of Yukon, Registration No. 0198.
4. I am the author of this report on the Lucky Joe Project, Report on the 2006 Geochemical and Geophysical Program. The report is based on a literature review, on private company reports and on property visits during the 2002, 2003, 2005 and 2006 field seasons.
5. I am a Director, President and CEO of Copper Ridge Explorations Inc., and I own shares in the company.
6. I was personally involved in the planning, execution and interpretation of the exploration programs conducted on the area discussed in this report.

**Dated at Vancouver, B.C. this 15th day of January, 2007,**



**Gerald G. Carlson, Ph.D., P. Eng.**  
KGE Management Ltd.  
1740 Orchard Way  
West Vancouver, B.C. V7V 4E8  
604-816-3012

# Appendix I

## Soil Analysis Certificates Acme Analytical





SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.2	2.9	3.1	45	<.1	3.5	4.0	534	1.95	<.5	2.1	2.3	3.8	68	<.1	<.1	.1	36	.52	.075	8	7	.60	212	.131	2	1.05	.088	.46	.1	<.01	3.4	.3	<.05	5	<.5
C115622	2.5	235.7	6.5	53	.3	13.7	7.5	211	3.03	5.4	1.2	7.6	3.7	63	.1	.3	.2	79	.29	.038	11	26	.65	206	.083	2	2.17	.031	.14	.1	.03	6.4	.1	.18	7	1.0
C115623	2.1	559.6	6.4	87	.6	7.3	16.5	477	6.14	1.0	2.0	5.8	7.8	133	.2	.1	.1	160	.42	.065	13	15	1.69	300	.270	<1	3.43	.046	1.55	.2	<.01	10.4	.5	1.01	11	2.6
C115624	35.7	882.6	9.9	169	.4	12.9	11.2	436	5.90	.8	2.9	6.0	10.1	127	.5	<.1	.1	169	.61	.066	15	50	1.80	394	.244	1	3.98	.080	1.03	.1	.01	11.3	.3	1.04	11	2.6
C115625	49.5	2699.8	5.5	157	.8	14.1	22.8	502	6.52	3.6	1.4	40.6	5.7	56	.3	.1	.1	156	.45	.064	8	46	2.01	422	.276	1	3.60	.028	1.17	.1	.01	7.2	.5	.66	11	4.5
C115626	2.9	74.9	7.5	68	.1	18.2	10.6	502	2.56	6.2	1.0	20.9	3.7	35	.3	.5	.2	58	.51	.065	13	26	.54	256	.089	2	1.27	.026	.11	.2	.02	3.9	.1	<.05	4	.7
C115627	1.2	64.2	7.5	61	<.1	16.2	8.0	350	2.21	6.7	.6	2.6	3.2	25	.1	.5	.2	53	.24	.016	13	26	.46	184	.070	1	1.37	.012	.07	.1	.02	4.0	.1	<.05	5	<.5
C115628	1.6	46.7	7.2	49	<.1	22.2	9.1	514	2.45	8.0	.8	3.8	3.8	34	.1	.4	.2	54	.39	.048	13	30	.50	277	.077	1	1.43	.018	.05	.2	.03	4.5	.1	<.05	4	<.5
C115629	1.6	40.3	7.6	52	<.1	19.7	10.9	437	2.61	8.3	1.1	2.6	4.4	37	.1	.4	.2	57	.51	.047	14	29	.52	283	.083	1	1.52	.022	.05	.1	.01	4.1	.1	<.05	4	<.5
C115630	1.4	34.7	7.4	60	<.1	18.9	10.8	389	2.69	7.0	.9	1.8	4.8	32	.1	.4	.2	59	.43	.042	14	29	.60	264	.100	1	1.61	.019	.06	.1	.02	4.0	.1	<.05	5	.5
C115631	1.0	39.5	6.9	68	.1	19.2	8.5	365	2.53	6.6	.9	4.2	4.5	31	.2	.4	.2	57	.42	.048	13	25	.57	273	.097	1	1.49	.019	.09	.2	.03	4.2	.1	<.05	5	<.5
C115632	7.4	256.8	20.5	187	<.1	7.0	15.0	590	3.93	1.4	2.7	2.0	12.9	24	.5	.1	.2	71	.27	.062	12	15	1.01	304	.170	<1	1.96	.012	.89	.1	.01	6.0	.4	<.05	6	.5
C115633	2.5	370.0	13.0	143	.1	11.2	22.7	705	5.13	.7	1.4	3.3	4.3	43	.8	.1	.1	150	.66	.116	8	42	2.05	543	.290	<1	3.32	.014	1.60	.2	<.01	5.6	.4	<.05	9	<.5
C115634	3.6	238.9	14.6	253	.2	10.8	13.8	750	4.51	1.6	1.8	2.1	7.4	40	.6	.1	.2	133	.68	.055	12	38	1.54	455	.204	1	3.06	.015	.94	.1	.02	10.1	.3	<.05	10	<.5
C115635	5.0	240.2	6.8	308	.1	9.9	17.7	572	5.15	.7	1.4	6.0	5.5	32	.5	.1	<.1	161	.52	.062	8	43	1.93	395	.256	1	3.32	.015	1.42	.1	<.01	8.9	.4	<.05	10	<.5
C115636	3.1	95.0	5.7	88	.3	9.6	15.6	660	3.68	4.0	.9	2.5	4.0	28	.1	.2	.2	92	.35	.053	10	27	1.01	292	.146	1	1.87	.012	.43	.2	.03	5.0	.1	<.05	6	.6
C115637	2.5	250.4	4.0	159	<.1	11.8	13.8	522	4.20	1.6	1.0	2.7	4.4	34	.4	.1	.1	118	.35	.051	9	32	1.48	400	.203	1	2.34	.011	.83	.1	<.01	4.8	.5	<.05	7	.7
C115638	2.7	393.0	10.4	217	<.1	10.7	13.4	607	3.92	1.9	1.5	1.9	7.2	37	.3	.1	.1	106	.45	.056	10	33	1.36	556	.174	1	2.33	.014	.55	.1	<.01	6.4	.2	<.05	7	.5
C115639	7.0	105.4	26.0	168	.2	18.6	14.7	534	4.18	6.5	1.5	4.3	6.4	59	.5	.4	.1	74	.44	.082	12	22	.68	310	.107	1	1.57	.024	.17	<.1	.02	5.3	.2	<.05	6	.7
RE C115639	7.4	105.5	27.0	166	.2	18.8	14.4	544	4.15	6.3	1.5	4.7	6.3	59	.5	.4	.2	76	.46	.086	12	22	.69	306	.109	1	1.56	.025	.17	.1	.03	5.9	.2	<.05	5	.7
C115640	1.8	140.6	7.2	65	.1	22.3	16.9	432	2.88	6.8	1.2	5.1	4.9	30	.2	.5	.2	70	.38	.047	15	36	.56	322	.102	1	1.65	.017	.09	.2	.04	5.8	.1	<.05	5	<.5
C115641	10.0	1346.6	29.3	126	.4	10.0	12.3	443	6.86	9.0	4.0	15.4	9.7	90	.6	.2	.3	187	.84	.064	9	47	1.66	242	.197	<1	4.17	.031	.22	<.1	.01	15.3	.2	.06	12	6.5
C115642	2.0	61.8	12.9	60	<.1	15.0	7.2	206	2.92	6.9	.8	3.1	4.1	44	.1	.4	.3	74	.27	.032	11	28	.52	221	.093	1	1.92	.023	.08	.1	.02	5.3	.1	.13	6	.6
C115643	14.9	164.2	13.6	83	.1	6.0	3.3	275	6.25	2.0	1.0	4.0	4.9	86	.1	.1	.9	112	.11	.040	14	31	1.08	133	.120	<1	2.87	.242	.74	<.1	.01	9.1	.2	1.89	8	3.2
C115644	1.8	542.0	42.6	121	.6	5.7	2.8	284	5.71	3.1	1.6	12.0	6.2	142	.2	.1	3.3	114	.25	.045	13	13	.94	152	.118	<1	3.16	.287	.59	<.1	.01	9.6	.2	1.93	9	3.3
C115751	.9	338.8	3.7	81	<.1	4.2	16.5	624	4.48	1.0	.6	2.4	5.2	40	<.1	.1	.1	99	.06	.041	10	8	1.13	378	.202	<1	2.28	.015	1.01	.1	<.01	5.3	.3	.24	8	.6
C115752	23.0	6.7	2.2	3	<.1	1.2	.4	12	1.15	.7	.4	5.5	5.6	6	<.1	.1	.4	7	.01	.026	13	2	.03	82	.057	<1	.16	.020	.12	.1	.01	.9	.1	.28	1	2.2
C115753	27.3	147.8	4.4	7	.7	.6	.3	34	5.71	<.5	.4	34.7	10.1	57	<.1	<.1	.9	18	.02	.026	16	3	.10	83	.021	<1	.53	.292	.47	<.1	.02	2.1	.2	2.16	3	13.1
C115754	7.8	203.0	4.9	28	.6	5.0	2.3	114	5.20	3.3	.8	11.0	6.8	95	<.1	.2	.5	50	.07	.035	12	16	.48	158	.064	<1	1.74	.079	.30	<.1	.01	4.1	.2	.75	5	6.3
C115755	3.5	236.3	10.8	92	.2	7.0	11.8	374	6.37	.9	1.6	6.8	8.6	118	<.1	.1	.8	115	.10	.058	24	31	1.22	188	.073	<1	3.10	.133	.76	<.1	.01	10.3	.3	1.53	8	4.7
C115756	2.3	200.7	63.6	99	.3	5.4	2.2	309	6.53	1.2	1.4	3.2	6.7	189	.1	.1	1.5	132	.35	.052	14	35	1.24	139	.126	1	3.34	.156	.99	<.1	.01	13.1	.4	1.83	9	3.2
C115757	2.1	353.6	8.6	45	.1	7.0	4.0	162	9.52	3.5	2.0	3.1	4.7	75	.2	.3	.4	112	.17	.054	9	23	.60	145	.102	1	1.39	.089	.51	.1	.03	5.1	.2	1.42	5	2.1
C115758	3.3	50.4	4.1	70	.1	10.6	5.8	603	3.68	3.2	3.0	2.6	9.9	155	.1	.2	.5	92	.22	.047	22	13	1.31	356	.208	1	2.37	.059	.89	.1	.01	10.1	.3	.63	10	1.8
C115759	2.9	37.4	21.5	96	.3	30.6	11.5	354	3.19	74.5	1.9	4.6	19.9	26	.2	1.7	.6	34	.47	.054	60	32	.70	252	.087	<1	1.62	.014	.39	.1	.02	3.5	.4	<.05	6	<.5
C115760	.6	36.2	16.8	119	<.1	31.8	11.6	458	3.55	5.8	1.1	2.3	14.5	27	.1	.2	.3	52	.33	.036	35	45	1.00	973	.183	<1	2.01	.014	.77	.1	.02	4.6	.6	<.05	9	<.5
STANDARD DS6	11.3	120.1	28.7	139	.3	24.1	10.5	697	2.76	21.1	6.7	47.3	3.0	40	5.9	3.4	5.0	54	.83	.076	12	176	.56	165	.080	16	1.86	.071	.14	3.4	.21	3.2	1.7	<.05	6	3.8

Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.





SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.2	2.1	3.1	46	<1	4.0	4.4	568	2.02	.5	2.1	2.0	4.0	69	<1	<1	.1	37	.54	.077	8	8	.64	218	.131	6	1.06	.082	.49	.1	<.01	2.1	.3	<.05	5	<.5
C115761	2.1	67.1	12.4	131	.1	10.8	8.2	409	3.01	4.9	1.5	1.0	19.4	15	.6	.3	1.0	21	.15	.013	9	11	.42	225	.060	3	1.36	.007	.29	.1	<.01	3.1	.2	<.05	7	<.5
C115762	2.3	61.4	3.7	81	<1	3.8	2.2	365	2.20	2.4	2.0	1.9	13.9	47	<1	.1	.4	39	.10	.048	27	9	1.47	284	.117	2	1.82	.014	.57	<1	<.01	3.2	.2	.26	6	1.0
C115763	6.2	75.6	7.4	74	.1	2.1	3.1	298	2.24	.5	4.8	7.1	18.6	27	.1	1.2	1.7	21	.21	.024	12	3	.97	113	.052	2	1.75	.017	.30	<1	.01	1.9	.2	.06	5	1.1
C115764	.9	19.7	5.9	54	<1	9.7	6.9	313	2.02	4.5	.6	.6	5.3	22	.1	.3	.3	37	.22	.016	6	13	.46	185	.068	2	1.30	.011	.20	.1	.01	2.2	.1	<.05	5	<.5
C115765	2.6	116.4	7.7	111	.1	17.9	6.2	362	4.26	5.6	.9	4.1	5.9	59	<1	.4	.8	109	.40	.034	15	40	1.26	322	.122	2	2.04	.057	.29	.1	.02	11.0	.1	.49	7	1.4
C115766	.8	70.3	8.5	74	<1	10.3	9.2	411	5.10	2.8	.8	2.0	3.5	68	<1	.2	.7	131	.33	.043	16	38	1.42	140	.145	1	2.84	.091	.90	.1	.02	10.6	.2	1.01	9	2.6
C115767	.4	167.0	9.8	122	.2	7.4	8.5	405	5.66	<.5	1.6	2.2	3.5	203	.2	.1	.7	166	.37	.058	10	45	1.80	89	.187	2	3.49	.173	1.46	.1	<.01	15.4	.3	1.59	11	2.1
C115768	10.3	124.5	4.6	83	<1	8.3	16.0	441	5.70	<.5	1.7	3.5	6.1	128	.1	.1	.4	162	.34	.051	17	39	1.61	148	.151	1	3.12	.088	1.30	<1	<.01	15.5	.3	1.28	10	4.6
C115769	22.3	103.2	7.5	31	.1	3.9	3.2	158	4.71	<.5	1.1	2.3	9.2	96	<1	.1	.5	43	.10	.046	24	12	.49	77	.039	2	1.61	.258	.55	<1	.01	3.5	.2	1.67	4	8.4
C115770	31.3	551.0	8.4	71	.7	4.7	3.2	243	4.21	1.1	1.9	32.9	16.0	42	.2	.2	.4	46	.06	.069	32	8	.80	102	.108	1	1.71	.159	.72	<1	.01	4.0	.4	1.33	5	9.8
C115771	11.8	845.2	8.9	79	.4	10.0	6.9	294	3.92	4.2	2.1	35.2	13.6	36	.1	.4	.3	67	.10	.049	30	18	.98	285	.138	2	2.27	.039	.51	.1	.02	4.9	.2	.51	7	2.6
C115772	53.2	745.3	6.4	77	.2	4.4	6.4	417	3.32	3.2	1.7	22.2	16.8	45	.1	.1	.6	49	.06	.068	38	8	1.37	237	.130	1	2.57	.022	.51	.1	.01	4.6	.3	.48	7	2.5
C115773	8.0	1274.9	13.9	95	.2	6.2	6.4	339	5.97	<.5	2.4	14.1	8.8	42	.2	.1	.3	132	.25	.050	11	29	2.25	298	.151	<1	3.42	.039	1.29	<1	.01	12.5	.5	.79	12	6.1
C115774	21.8	948.9	8.8	139	.3	2.1	8.6	332	4.24	.5	3.7	38.1	18.0	30	.1	.1	.6	78	.12	.061	62	3	1.92	382	.166	1	3.00	.018	1.20	<1	.01	6.7	.6	.37	9	3.7
C115775	2.4	110.2	7.4	32	<1	4.6	2.2	136	4.61	4.6	2.2	2.8	18.3	41	.1	.3	.6	41	.04	.048	34	11	.44	203	.093	<1	1.47	.137	.36	<1	.01	3.9	.3	.98	5	3.1
C115776	1.8	99.5	6.2	63	<1	3.3	2.5	328	4.37	2.2	2.2	.8	12.9	56	<1	.1	2.2	60	.08	.051	38	5	1.30	231	.152	<1	3.10	.090	.94	<1	.01	5.8	.4	1.07	9	1.2
C115777	3.7	82.6	13.4	128	<1	39.2	13.8	619	3.85	13.7	3.6	3.6	15.1	30	.3	.4	.3	51	.51	.048	42	50	1.10	450	.158	<1	2.38	.016	.39	.1	.01	5.9	.5	<.05	9	.6
C115778	1.2	44.9	203.7	355	.1	26.8	8.0	516	3.05	3.4	1.6	<.5	12.9	8	.4	.3	3.1	46	.16	.047	45	41	1.10	153	.203	<1	2.00	.008	.45	.1	.01	4.4	.6	<.05	10	<.5
C115779	.9	118.6	62.2	261	.3	8.5	13.2	324	4.15	1.1	2.9	4.2	14.6	43	.2	.3	2.0	82	.24	.044	16	12	.59	194	.064	1	1.63	.043	.25	<1	.01	8.0	.1	.32	5	.7
C115780	1.1	79.1	6.0	65	.2	2.2	3.4	409	4.59	2.4	3.2	4.6	20.7	154	<1	.3	2.7	33	.08	.053	38	5	.68	222	.134	<1	2.62	.135	.63	<1	.02	3.6	.3	1.09	8	.8
C115781	2.5	27.5	7.0	38	.1	5.3	3.6	176	2.85	3.1	1.7	1.1	5.3	71	.1	.2	.9	51	.13	.050	17	10	.47	310	.090	1	1.63	.069	.26	.1	.03	4.3	.1	.52	6	1.2
C115782	2.1	14.2	5.9	37	<1	11.0	4.9	198	2.85	4.5	1.5	1.0	9.7	44	.1	.3	.5	41	.16	.033	19	18	.42	396	.078	<1	1.55	.056	.13	.1	.02	2.8	.1	.30	5	.7
RE C115782	1.8	13.5	5.9	36	<1	10.8	5.2	197	2.90	4.6	1.5	2.0	9.5	41	.1	.3	.4	41	.15	.034	19	18	.43	414	.077	1	1.58	.057	.12	<1	.01	2.8	.1	.30	5	.7
C115783	2.2	51.7	4.3	83	<1	4.2	12.9	426	5.56	1.0	2.6	.6	8.7	213	.1	.1	1.0	115	.45	.059	16	5	1.50	378	.162	<1	4.36	.086	.93	.1	.01	15.0	.2	.79	12	.8
C115784	.9	21.4	6.9	51	<1	10.0	4.5	213	2.80	4.1	1.0	2.0	3.3	69	.1	.2	.4	65	.15	.042	10	24	.53	144	.069	<1	1.82	.018	.09	.1	.02	4.1	.1	.12	6	.5
C115785	4.7	308.9	3.4	186	.2	19.5	38.3	641	6.02	3.0	2.1	2.2	5.4	31	.5	.1	<1	171	.79	.102	13	51	1.94	487	.276	<1	3.27	.021	1.25	<1	.01	10.2	.4	<.05	10	<.5
C115786	4.3	162.4	2.8	152	.1	16.8	26.1	909	5.56	3.6	1.5	.8	3.1	32	.3	.1	<1	142	.66	.085	7	44	2.03	379	.239	<1	3.11	.018	1.29	.1	<.01	7.6	.3	<.05	9	<.5
C115787	5.8	173.9	5.9	95	.2	15.6	11.8	431	3.23	6.0	1.3	3.2	5.4	29	.2	.4	.3	68	.44	.067	15	25	.79	163	.115	<1	1.67	.020	.26	.2	.02	4.0	.1	<.05	6	<.5
C115788	1.5	69.7	5.8	70	.1	16.8	10.8	473	2.82	5.6	1.1	2.2	3.7	35	.3	.3	.2	65	.57	.056	12	29	.76	254	.110	<1	1.65	.026	.20	.2	.03	4.3	.1	.08	6	.6
C115789	.7	2241.4	4.0	130	<1	13.8	41.4	980	3.26	.7	2.6	1.8	5.1	285	.8	<1	.2	109	1.06	.053	20	25	1.41	440	.098	<1	3.84	.037	.56	<1	.02	12.2	.1	<.05	8	.5
C115790	.6	1223.6	5.5	117	<1	18.2	26.2	902	3.27	3.0	1.2	1.3	5.3	76	.4	.1	.1	94	.61	.053	22	32	1.26	357	.097	<1	3.33	.027	.37	.1	.02	7.6	.2	<.05	7	<.5
C115791	1.3	132.9	5.4	35	.1	6.5	3.4	154	1.81	2.9	.8	14.0	3.3	23	.1	.1	.1	39	.18	.038	12	16	.46	169	.081	<1	1.18	.013	.17	.2	.02	2.8	.1	.12	4	.5
C115792	.9	49.5	3.8	76	<1	8.2	11.1	665	4.48	2.1	.8	<.5	4.1	40	.2	.1	.2	126	.18	.054	10	38	1.73	555	.241	<1	2.82	.015	1.16	.1	.01	4.7	.3	.47	9	<.5
C115793	.7	65.0	2.1	89	<1	13.5	27.7	991	6.11	.8	.8	1.4	4.6	47	.1	.1	.1	153	.28	.064	6	44	2.37	546	.309	<1	3.71	.014	1.31	<1	.01	3.7	.3	.28	10	.8
STANDARD DS6	10.7	120.1	29.0	139	.3	24.2	10.4	688	2.77	20.9	6.6	45.9	3.3	42	6.0	3.5	5.0	54	.84	.077	13	191	.57	159	.081	16	1.90	.073	.15	3.3	.20	3.1	1.7	<.05	6	4.2

Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.





SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.2	2.0	2.9	47	<.1	3.4	4.6	535	1.98	.5	1.8	<.5	3.6	64	<.1	<.1	.1	37	.54	.075	8	7	.59	212	.125	1	1.00	.072	.45	.1	<.01	2.0	.3	<.05	5	<.5
C115827	2.3	486.1	41.1	189	.3	5.4	6.2	409	5.30	2.5	2.7	3.8	6.9	124	.2	.1	1.3	143	.17	.050	22	18	1.30	172	.199	<1	2.80	.108	.93	.1	.01	10.7	.4	1.08	9	1.6
C115828	8.1	377.4	46.1	143	.4	4.2	5.7	444	7.92	2.2	1.6	6.4	5.2	142	.2	.1	.7	137	.21	.062	15	13	1.14	43	.136	<1	2.49	.358	1.26	<.1	<.01	12.6	.4	3.25	9	4.3
C115829	12.3	87.4	12.4	36	.2	11.0	4.3	178	3.16	6.1	1.0	24.8	7.5	26	.1	.4	.3	48	.13	.033	17	21	.35	195	.049	1	1.36	.033	.14	.1	.02	2.3	.1	.22	5	1.6
C115830	21.3	71.6	8.6	38	.2	9.5	3.6	158	3.44	4.7	1.2	14.5	7.4	27	<.1	.3	.3	39	.13	.048	21	17	.30	259	.046	1	1.06	.049	.17	.1	.02	2.0	.1	.39	4	2.2
C115831	1.9	360.0	5.2	88	.1	11.4	13.4	364	3.56	3.0	1.9	2.4	6.3	44	.3	.2	.2	88	.27	.026	15	28	1.10	295	.124	1	2.13	.038	.34	.1	.01	5.2	.1	.12	6	.6
C115832	2.5	302.6	4.0	89	.2	5.0	7.4	494	7.22	.8	1.8	6.7	5.0	104	.1	.1	1.6	140	.32	.054	17	34	1.55	142	.215	<1	2.78	.148	1.43	.1	.01	10.6	.3	1.64	11	3.1
C115833	4.8	190.0	6.8	68	.2	8.5	11.4	318	4.09	3.5	1.5	7.2	5.4	60	.1	.2	.2	103	.25	.037	13	29	1.00	326	.132	<1	2.19	.034	.31	.1	.01	5.3	.1	.30	7	1.1
C115834	3.1	201.2	6.8	61	.2	10.0	29.6	476	2.37	3.8	.9	24.6	4.1	28	.1	.3	.2	53	.16	.027	10	23	.61	178	.084	<1	1.38	.012	.12	.1	.01	4.1	.1	.07	5	.6
C115835	7.3	396.0	12.7	78	.3	10.7	9.8	361	4.16	4.2	1.8	14.1	5.8	60	.2	.3	.3	107	.23	.037	16	31	.92	323	.116	1	2.25	.028	.31	<.1	.03	6.4	.1	.27	7	1.5
STANDARD	11.4	120.1	29.3	139	.3	24.7	10.6	688	2.75	20.9	6.7	46.6	3.1	40	6.0	3.6	5.1	54	.82	.077	12	185	.56	161	.078	18	1.88	.072	.13	3.5	.22	3.1	1.7	<.05	5	4.2

Standard is STANDARD DS6.



GEOCHEMICAL ANALYSIS CERTIFICATE

Copper Ridge Exploration Inc. File # A602946 Page 1

500 - 625 Howe St., Vancouver BC V6C 2T6 Submitted by: Al Doherty

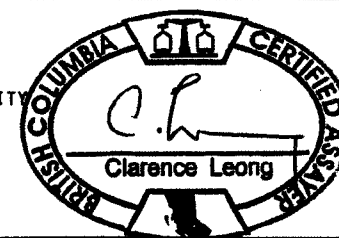
Table with columns for ELEMENT and 33 ANALYTES (Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Hg, Sc, Tl, S, Ga, Se). Rows include sample IDs G-1, C115556, RE C115556, C115557, C115558, and STANDARD D.

Standard is STANDARD DS6.

GROUP 10X - 15.0 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED BY ICP-MS.

(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY

- SAMPLE TYPE: SOIL SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Data ( ) FA DATE RECEIVED: JUN 21 2006 DATE REPORT MAILED: 06-29-2006 P01:11

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.





SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.2	1.9	3.0	47	<.1	3.6	4.4	537	1.95	<.5	2.0	.6	3.7	63	<.1	<.1	.1	37	.52	.079	8	8	.62	211	.121	<.1	1.06	.087	.50	.1	<.01	2.0	.3	.06	5	<.5
C115729	.7	35.8	6.0	104	<.1	16.1	13.6	307	3.05	5.9	.4	2.0	1.9	38	.2	.3	.1	69	.41	.057	7	27	.72	192	.115	<.1	1.81	.019	.10	.1	.01	3.2	.1	.09	6	<.5
C115730	.7	30.7	6.9	76	.1	18.5	12.6	610	2.63	7.4	.7	3.0	2.8	35	.2	.4	.1	61	.48	.050	11	31	.57	298	.086	1	1.56	.017	.07	.1	.02	4.1	.1	.06	5	<.5
C115836	.7	31.3	6.1	52	<.1	29.6	13.5	424	2.79	5.3	1.1	2.2	2.6	41	.1	.3	.1	71	.67	.081	10	59	.71	218	.097	<.1	1.69	.026	.05	.2	.02	4.4	.1	<.05	6	<.5
C115837	.7	33.1	5.2	49	<.1	26.0	13.3	445	2.64	5.1	.9	1.4	2.4	40	.1	.2	.1	66	.68	.092	9	53	.73	226	.092	<.1	1.62	.030	.05	.2	.02	4.3	.1	<.05	6	<.5
C115838	.7	21.3	4.5	57	<.1	14.3	13.4	567	2.79	3.7	.3	<.5	1.4	41	.1	.2	.1	75	.85	.115	5	26	.70	163	.125	1	1.99	.029	.17	.1	.01	3.6	.1	.06	7	<.5
C115839	.5	23.0	4.5	82	<.1	12.5	12.3	389	3.06	3.3	.4	1.0	1.6	79	.1	.1	.1	72	1.30	.092	5	21	.72	191	.143	<.1	2.67	.024	.30	.1	.01	3.9	.1	<.05	10	<.5
C115840	.7	44.6	6.4	122	.2	13.2	13.9	757	3.50	4.6	.8	1.8	2.3	61	.3	.2	.1	74	.95	.107	12	21	.75	204	.136	<.1	2.14	.026	.24	.1	.04	6.8	.1	.06	8	<.5
C115841	.3	29.2	4.5	55	<.1	12.3	13.1	374	3.47	3.2	.2	.5	1.2	54	.1	.2	<.1	94	1.07	.092	5	20	.64	91	.092	<.1	2.53	.042	.07	.1	.01	7.9	<.1	<.05	8	<.5
C115842	.7	42.4	6.5	280	<.1	17.1	13.0	974	4.39	4.7	.7	3.8	3.4	45	.3	.2	.1	78	.65	.082	14	25	1.12	303	.241	<.1	2.49	.018	.70	.1	.01	7.4	.2	<.05	11	<.5
C115843	.6	22.6	5.6	136	<.1	13.2	9.6	799	4.00	5.7	.6	<.5	3.1	28	.1	.3	.1	63	.42	.057	11	24	.64	224	.128	<.1	2.15	.011	.52	.1	.01	8.7	.1	.06	10	<.5
C115844	.6	20.2	6.5	55	<.1	16.9	8.7	310	2.72	7.3	.7	2.1	3.6	29	.1	.4	.1	59	.39	.041	16	32	.58	227	.101	1	1.69	.015	.11	.1	.02	5.9	.1	<.05	6	<.5
C115845	.7	42.6	6.0	82	<.1	31.1	24.4	521	2.97	7.1	.4	.7	2.3	65	.1	.3	.1	74	.59	.031	5	34	1.17	243	.160	<.1	2.82	.013	.17	.1	.01	3.6	.1	<.05	8	<.5
C115846	1.3	19.8	5.7	42	<.1	21.2	8.7	211	2.54	5.2	.6	1.8	2.4	25	<.1	.3	.1	62	.24	.016	13	46	.73	129	.078	<.1	1.65	.024	.05	<.1	.01	4.8	.1	.09	6	<.5
C115847	.8	28.5	6.1	61	<.1	19.7	11.7	280	3.09	7.0	.7	2.3	2.7	31	.1	.4	.1	71	.39	.031	10	36	.71	184	.078	<.1	1.77	.035	.04	.1	.02	5.9	.1	.09	6	.5
C115848	1.1	60.3	4.8	114	<.1	8.2	15.9	542	7.21	3.1	.7	.7	1.6	59	.1	.2	.3	217	.52	.080	9	10	1.41	271	.107	<.1	2.96	.079	.10	<.1	.01	14.6	.1	.32	13	1.4
C115849	2.0	54.3	15.2	153	.2	32.2	12.9	365	3.75	3.7	1.7	1.7	8.2	42	.3	.1	.2	87	.44	.084	26	51	1.00	358	.138	<.1	2.05	.027	.39	<.1	.01	5.5	.3	.18	8	1.0
C115850	6.1	886.3	21.2	169	.4	44.4	17.5	293	4.25	2.8	2.6	20.4	7.6	29	.4	.1	5.3	75	.30	.084	38	48	1.12	311	.137	<.1	2.18	.015	.58	.1	.01	4.9	.3	.16	8	1.1
297351	1.1	36.9	5.1	65	<.1	15.3	13.7	469	3.43	4.7	1.0	3.4	2.7	64	.1	.3	.1	89	.86	.080	11	30	.78	191	.088	<.1	2.09	.034	.06	.1	.03	7.4	.1	<.05	8	<.5
297352	1.0	44.5	6.1	61	.1	19.8	13.4	463	3.05	5.8	1.3	3.1	2.7	51	.1	.3	.1	80	.77	.077	13	34	.75	238	.082	<.1	1.99	.027	.06	.1	.04	6.6	.1	<.05	6	<.5
297353	.9	32.8	6.5	60	<.1	20.5	14.6	580	2.91	6.0	1.1	2.8	2.9	47	.1	.3	.1	76	.65	.058	11	37	.72	240	.083	<.1	1.85	.024	.05	.1	.04	5.7	.1	<.05	6	<.5
297354	4.4	145.7	36.2	108	.5	3.7	2.8	270	3.48	2.5	2.6	5.5	21.5	86	.2	.1	.6	23	.29	.056	64	8	.50	207	.033	<.1	1.29	.077	.62	<.1	.02	2.8	.2	1.07	6	1.1
297355	.4	8.2	4.4	54	<.1	6.5	5.6	272	1.74	3.2	.4	.7	1.6	54	<.1	.2	.1	43	.44	.062	6	14	.47	210	.082	<.1	1.23	.016	.09	.1	.01	2.3	.1	<.05	5	<.5
297356	.7	12.3	5.1	48	<.1	9.7	7.5	336	2.14	5.0	.3	<.5	1.8	32	.1	.3	.1	55	.42	.036	6	19	.46	168	.095	<.1	1.40	.022	.07	.1	.02	2.7	.1	<.05	5	<.5
297357	.6	19.4	6.2	46	<.1	12.4	8.0	343	2.26	6.0	.7	1.7	3.0	35	.1	.3	.1	54	.49	.066	11	23	.53	275	.071	<.1	1.50	.018	.05	.2	.02	3.6	.1	<.05	5	<.5
297358	.2	23.1	1.3	90	<.1	11.0	19.2	744	4.94	.9	.2	<.5	.5	41	.1	.1	<.1	126	.99	.215	2	13	1.46	355	.231	<.1	2.41	.042	1.14	<.1	.01	4.9	.3	.07	9	<.5
297359	.6	33.2	5.2	83	<.1	14.4	18.5	450	4.51	3.4	.4	1.0	2.3	27	.1	.2	<.1	112	.92	.142	6	27	1.08	254	.213	<.1	2.28	.055	.58	.1	<.01	5.7	.1	.06	9	<.5
297360	.3	18.0	2.1	87	<.1	13.9	16.2	509	4.15	2.9	.9	1.8	9.2	26	.1	.2	<.1	89	.65	.099	24	30	1.70	243	.174	<.1	2.58	.029	.56	<.1	.01	6.3	.1	.06	11	<.5
297361	.3	26.9	2.1	55	<.1	18.5	15.9	525	3.27	1.8	.3	<.5	1.7	88	.1	.1	<.1	85	1.27	.120	5	48	1.34	192	.080	<.1	2.64	.042	.11	<.1	.01	6.6	<.1	.07	7	<.5
297362	.2	28.1	2.5	38	<.1	52.7	17.3	310	2.19	2.4	.3	.6	4.4	35	<.1	.1	<.1	55	.78	.041	7	112	1.43	128	.168	<.1	2.51	.016	.28	.1	<.01	2.6	.1	<.05	7	<.5
297363	.3	28.4	2.8	44	<.1	19.0	14.7	286	2.54	2.9	.2	<.5	1.8	37	<.1	.1	<.1	69	.72	.069	4	43	1.21	160	.185	<.1	2.58	.022	.31	.1	.01	2.9	.1	.08	8	<.5
297364	2.0	31.6	7.9	55	.1	11.7	9.5	346	2.47	2.7	1.6	2.0	6.4	71	.1	.2	.1	54	1.05	.052	19	21	.79	127	.100	1	1.93	.028	.18	.1	.02	4.3	.1	.19	6	.6
297365	3.7	218.5	19.0	137	.5	20.2	9.6	477	3.06	5.0	2.9	6.8	9.0	40	.6	.2	.5	58	.54	.079	28	25	.75	352	.089	<.1	1.82	.013	.27	.1	.05	4.9	.2	.10	7	1.3
RE 297365	3.8	203.9	18.6	132	.5	19.0	9.4	483	3.05	5.1	2.9	29.8	9.1	39	.6	.2	.5	57	.55	.081	28	25	.71	339	.088	<.1	1.80	.013	.26	.1	.05	5.0	.2	.11	7	1.3
297366	1.0	96.6	11.9	172	.2	5.4	8.8	504	2.56	2.5	2.2	2.2	10.5	64	.5	.1	.3	37	.88	.045	28	7	.54	138	.095	<.1	2.46	.010	.30	<.1	.01	2.7	.1	.08	8	<.5
STANDARD	11.7	125.3	29.3	142	.3	25.9	11.0	703	2.87	21.2	6.6	48.0	3.1	40	6.1	3.6	5.0	56	.86	.080	13	188	.59	167	.081	19	1.93	.074	.16	3.5	.23	3.3	1.8	<.05	6	4.4

Standard is STANDARD DS6. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
G-1	.2	.6	3.3	44	<.1	3.5	4.2	529	1.84	<.5	2.2	.8	3.6	65	<.1	<.1	.1	35	.56	.075	10	8	.62	208	.120	2	.98	.082	.48	.1	<.01	2.3	.3	<.05	5	<.5
297367	6.3	496.9	8.5	136	.3	8.5	8.8	428	3.70	3.5	3.8	7.0	12.3	27	.2	.2	1.0	62	.28	.032	27	11	1.01	199	.126	1	1.97	.013	.31	.1	.01	6.0	.2	.10	10	.8
297368	16.0	661.2	7.2	135	.7	9.2	8.8	431	3.59	4.5	5.4	13.3	16.5	7	.1	.2	1.5	39	.10	.044	22	12	.88	161	.079	1	1.86	.008	.33	.1	.01	2.4	.3	.06	7	1.4
297369	1.4	42.7	22.4	136	<.1	36.2	20.1	718	3.56	3.1	1.2	.9	11.7	10	.2	.1	.2	58	.20	.071	21	49	.87	181	.126	1	1.90	.010	.68	.1	.01	3.7	.3	.06	7	<.5
297370	1.0	74.3	5.2	150	.4	8.0	14.6	443	6.24	1.6	.6	5.3	1.2	46	.2	.1	.2	136	.54	.167	8	10	1.18	192	.103	<1	3.00	.067	.11	<.1	.04	15.4	.1	.21	11	1.0
297371	1.3	65.9	4.8	82	.2	9.4	11.7	406	6.13	1.6	.7	2.1	1.5	73	.1	.1	.2	91	.42	.161	14	18	1.22	169	.084	<1	2.72	.062	.14	<.1	.02	11.2	.1	.27	11	1.3
297372	3.6	62.9	2.7	45	<.1	43.6	9.3	256	5.36	1.6	.6	.5	2.1	44	<.1	.1	.1	88	.33	.058	13	121	1.36	235	.110	<1	2.03	.091	.19	<.1	<.01	6.6	.1	.61	10	1.4
297373	.6	16.5	5.8	58	<.1	11.5	8.5	276	2.65	4.7	.6	1.3	2.3	33	.1	.3	.1	66	.36	.033	10	22	.60	190	.107	<1	1.53	.022	.05	.1	.01	3.9	.1	<.05	6	<.5
297374	.5	21.2	4.8	76	<.1	10.6	13.2	401	3.29	2.8	.4	1.0	1.5	58	.1	.2	.1	84	.57	.062	6	17	.86	203	.160	1	1.89	.035	.14	.1	.01	4.9	.1	<.05	8	<.5
297375	.5	21.4	4.3	64	<.1	16.2	14.2	526	3.01	2.3	.4	.6	2.2	184	.1	.1	.1	70	.64	.044	9	30	1.40	277	.209	<1	2.70	.023	.37	.1	.01	3.8	.2	<.05	10	<.5
297376	.5	20.4	5.5	106	<.1	12.5	10.2	715	3.99	4.6	.6	1.6	2.1	31	.1	.3	.1	71	.34	.051	15	19	.98	409	.200	1	2.49	.013	.46	.1	<.01	5.3	.2	<.05	11	<.5
297377	.7	11.7	4.4	155	<.1	9.1	12.5	1555	6.46	3.9	.9	1.9	3.6	29	.1	.2	<.1	75	.27	.059	11	15	1.61	393	.318	<1	3.94	.012	1.25	.1	<.01	11.1	.3	.06	19	<.5
297378	.4	15.3	5.0	98	<.1	10.3	11.0	759	3.93	2.7	.6	.6	3.3	41	.1	.2	<.1	55	.31	.039	10	16	1.06	244	.189	<1	2.76	.012	.39	.1	<.01	6.8	.2	<.05	12	<.5
RE 297378	.4	15.4	4.9	98	<.1	9.9	10.3	775	3.93	2.6	.6	<.5	3.3	41	.1	.2	<.1	55	.32	.039	10	17	1.04	242	.189	1	2.71	.012	.40	<.1	.01	6.8	.2	<.05	12	<.5
297379	1.3	14.7	6.0	109	<.1	13.7	8.5	842	4.20	5.0	.8	1.7	2.9	37	.1	.3	.1	48	.53	.074	14	19	.89	253	.136	1	2.62	.014	.25	.1	.01	7.7	.1	<.05	12	<.5
297380	1.3	20.9	6.9	123	<.1	17.2	14.6	695	5.11	4.8	.9	1.1	3.1	68	.1	.3	.1	89	.75	.186	18	40	1.19	321	.115	1	2.97	.028	.13	.1	.01	13.3	.1	<.05	16	<.5
297381	1.0	25.9	4.3	102	<.1	8.4	10.8	769	4.52	3.0	1.1	.9	6.6	33	.1	.2	.1	63	.37	.025	32	14	1.03	231	.159	<1	2.62	.010	.40	<.1	.01	8.4	.2	<.05	13	<.5
STANDARD	11.7	123.8	29.3	143	.3	25.7	11.1	716	2.92	21.3	6.7	47.5	3.3	42	6.1	3.5	5.0	58	.88	.082	15	195	.60	168	.084	19	1.92	.074	.17	3.2	.23	3.4	1.8	.06	7	4.5

Standard is STANDARD DS6. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

## Appendix II

### Field Report – Aurora Geosciences



**INDUCED POLARIZATION / RESISTIVITY  
AND TOTAL MAGNETIC FIELD  
SURVEY AT  
THE LUCKY JOE PROPERTY,  
YUKON TERRITORY**

for: **COPPER RIDGE EXPLORATIONS INC.**  
Suite 500 - 625 Howe Street,  
Vancouver, B.C.  
Canada V1C 2P1

by: Dave Hildes, Ph. D., P. Geo.  
and Geneviève Héту, Tech.  
Aurora Geosciences Ltd.  
108 Gold Road  
Whitehorse, Yukon, Y1A 2W3

Work Performed: June 2 – June 23, 2006  
Location: 63° 37' N 139° 32' W  
NTS: 115 O/11, O/12  
Mining District: Dawson  
Date: Dec 18 2006

*Lucky Joe Property 2006 geophysical survey report*

## SUMMARY

Induced polarization / resistivity and total magnetic field surveys were conducted on the Lucky Joe Property for Copper Ridge Explorations Inc. Two sets of 7 lines, one on the Bear Cub Anomaly and the other on Ryan's Creek Anomaly were surveyed between June 2 and June 23. Aurora Geosciences Ltd. was not retained to provide an interpretation of the data.

A zone of elevated chargeability associated with a conductive zone, open to both the south and the north, was imaged immediately west of the baseline on the Ryan's Creek Anomaly grid. It is coincident with a change in magnetic signature.

Elevated chargeability was detected in the central part of the Bear Cub Anomaly grid, occasionally in several distinct bodies.

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## 1.0 INTRODUCTION

Aurora Geosciences Ltd. was retained by Copper Ridge Exploration Inc. to perform induced polarization / resistivity (IP) and total magnetic field (Mag) surveys at the Lucky Joe Property. Two sets of 7 lines were surveyed, one on the Bear Cub Anomaly to follow up on a single line of 7.4 km surveyed with 200 m dipoles in May 2005 and one on the Ryan's Creek Anomaly. The IP survey on the Bear Cub Anomaly and on lines 1N and 2N of the Ryan's Creek Anomaly was made using 100 m dipoles. Lines 3N to 7N of the Ryan's Creek Anomaly were surveyed using 50 m dipoles. A total of 22.45 line kilometres of IP, and 22.45 line kilometres of total magnetic field survey were completed.

## 2.0 LOCATION AND ACCESS

The Lucky Joe Property is located in the Dawson Mining District, approximately 50 km south of the town of Dawson, on NTS map sheets: 115 O/11, O/12 (Figure 1). It comprises 337 Quartz claims (Figure 2). The property was accessed daily by helicopter from Dawson City, with occasional staging from the junction of Quartz Creek and the Indian River.

## 3.0 GRID

The 2006 survey grids are shown in Figure 3 (back pocket). The Bear Cub Anomaly grid used the 2005 line as a base line, centered at 572550E, 7054430N (UTM Zone 7, NAD83). The Ryan's Creek Anomaly grid was put in without a base line, centered at 571736E, 705484N (UTM Zone 7, NAD83). Direction of the lines for the Bear Cub grid is 30° and 15° for the Ryan's Creek grid. Grid cutting and installation was performed by Copper Ridge prior to the IP survey. Station coordinates were recorded every 500 m (nominal) and at line-ends using non-differential GPS.

#### 4.0 PERSONNEL AND EQUIPMENT

The survey was conducted by the following personnel:

Jennifer Black	Crew chief / geophysicist	From June 2 to June 23
Suzanne Aichele	Technician	From June 2 to June 23
Shaun O'Connor	Helper	From June 2 to June 23
Mike Bonderchuck	Helper	From June 2 to June 11
Chris Mills (replacement)	Helper	From June 12 to June 23
Dave Hildes	Mag operator	From June 6 to June 11

The crew was equipped with the following instruments and general equipment:

<u>IP Receiver</u>	IRIS Elrec Pro (s/n 2315-2758300063-165)
<u>IP Transmitters</u>	GDD Tx II - 3.6 kW GDD Tx II - 1.4 kW (spare) Honda 5kVA gas generator
<u>Magnetometers</u>	2 x Gem GSM-19T proton precession magnetometers.
<u>Other</u>	Pentium 4 lap top computer Ford 1 Ton Car for Mag survey Repair tools (electrical / light mechanical) IP repair tools Globalstar satellite phone Geo-reel winders Geo-reel spools Speedy winders and spools IP wire
<u>Software</u>	Geosoft Oasis 6.0.1 with IP package



## 5.0 SURVEY SPECIFICATIONS

The surveys were conducted according to the following specifications:

### IP SURVEY

Grid registration: All geographic coordinates are in NAD83 (Canada) projected in UTM Zone 7N coordinates. Line-ends and stations were surveyed every 500 m (nominal) with non-differential GPS to an estimated averaged accuracy of < 10 m.

IP Array: Dipole-dipole array

Dipole spacing: 100 m for lines 1N, 2N, 23E, 28E, 33E, 53E, 58E, 63E, 68E and 50 m for lines 3N – 7N.

Separations: Six dipoles read from n=1,2, ..., 6.

Tx: Time domain with a 50% duty cycle, reversing polarity, 0.125 Hz

Signal sampling: 20 windows, semi-logarithmic sampling over 2 s. Sampling commences 40 ms after shutoff. Sample windows are shown in the table below:

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Width	40	40	40	40	40	40	40	80	80	80
<b>Channel</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
Width	80	80	80	80	160	160	160	160	160	160

Parameters read:

M - total ch  
 Mi - 20 sem  
 V<sub>p</sub> - primary  
 Sp - self-po  
 I - current  
 Rs - electro  
 Err - standa

Stacks, repeats: At least 15 stacks were taken at each station. Stations that were noisy (error > 5 mV/V) had extra readings taken.

Mag SURVEY

Station spacing	12.5 m
Base station	Installed at a fixed location (572500, 7053190) and cycled at a five second interval throughout the survey period.
Registration	Data was registered to UTM Zone 7N, NAD83 coordinates using a non-differential GPS points averaged to an estimated accuracy of < 10 m, at line-ends and every 500 m (nominal).

**6.0 SURVEY NOTES**

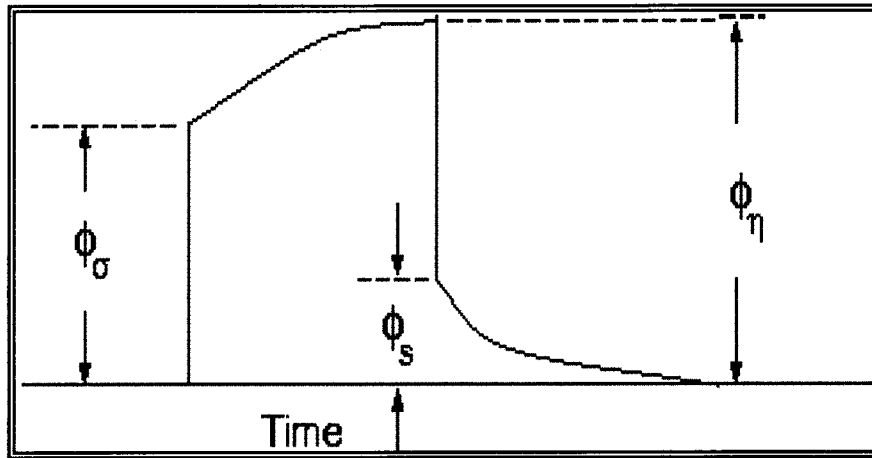
The survey log in Appendix B describes detailed survey operations including production. The crew mobilized to Dawson City on June 2 by truck from Whitehorse. On June 3, all gear was flown onto the property, set up and the crew started to survey. IP production proceeded from June 3 to June 22. The crew demobilized back to Whitehorse on June 23. The total magnetic field crew mobilized on June 6, surveyed from June 7 to June 10 and demobilized on June 11. Bad weather prevented the crew from flying into the property on June 16.

**7.0 IP INVERSION METHOD**

The data were inverted using the DCIP2D package developed by the University of British Columbia Geophysical Inversion Facility. The inversion algorithm is described in detail by Oldenburg and Li (1994). A brief description of key features of the algorithm follows.

The IP effect can be described in macroscopic terms. If a time domain signal is put into the ground, as soon as the current is turned on, the voltage immediately rises to a level ( $\phi_{\sigma}$ ) and thereafter continues to rise to a higher level ( $\phi_{\eta}$ ). At current shutoff, the voltage immediately falls to a level ( $\phi_s$ ) and then slowly decays to zero along a curve similar to that between  $\phi_{\sigma}$  and  $\phi_{\eta}$ . Apparent chargeability is defined as the "extra" voltage observed:

$$\eta_a = \frac{\phi_{\eta} - \phi_{\sigma}}{\phi_{\eta}} = \frac{\phi_s}{\phi_{\eta}}$$



The observed DC potentials  $\phi_\sigma$  are defined by the vector form of Ohms Law:

$$\nabla \cdot (\sigma \nabla \phi_s) = -I \delta(\mathbf{r} - \mathbf{r}_s)$$

where  $\mathbf{r} - \mathbf{r}_s$  is the vector to the measurement point,  $I$  is the current and  $\sigma$  is the conductivity structure of the earth - the unknown quantity in the geophysical problem. The chargeability can be modeled by replacing the conductivity by an equivalent apparent conductivity controlled by the chargeability:

$$\sigma_\eta = \sigma(1 - \eta)$$

Modeling the IP effect then involves running two conductivity models - one with  $\sigma$  and one with  $\sigma_\eta$ .

The unknown quantity is the distribution of conductivities in the earth. The software models the earth conductivity structure as a series of rectangular cells of varying size and aspect ratio. The grid is finest (most detailed) near the measurement points and much coarser at locations beside or at depth beneath the measurement points. The padding cells are necessary to avoid having edge effects appear in the model. The size and dimensions of the models in no way compensates for the basic limitations on depth of penetration and resolution inherent in the IP/resistivity survey. Thus the effective depth of penetration (0.5 to 1.0 times the maximum dipole separation) is the limit to which the models should be relied upon to accurately reflect true earth conductivities and chargeabilities.

The program calculates the potential across the finite element network using a starting model. Appropriate boundary conditions are applied when calculating the potentials across the network. These include the condition that all current flow is normal to the cell

boundaries and voltages are continuous across the boundaries. The sensitivity of the model to changing the parameters in any cell is calculated as is the misfit between the model results and the actual observed potentials / chargeabilities. The model is then adjusted using the calculated sensitivities of the response to changes in the conductivity of individual cells.

There is no unique solution or model which fits any set of IP / resistivity data. A best-fit model is one which (1) fits the data within the error of the survey and (2) invokes the minimum required degree of complexity to fit the data. For a set of **N** measurements, a global misfit can be defined as:

$$\Psi_d = \sum_{i=1}^N (W_i (r_i - r_i^{obs}))^2$$

where  $W_i$  is the weighting factor for the  $i^{th}$  measurement ( $r^{obs}$ ) and  $r_i$  is the model response for this measurement. The weighting factor is usually the inverse of the error so that a measurement with high error has a low weighting and vice versa. In a system with random noise, the target misfit is **N**. The algorithm reduces  $\Psi_d$  by repeatedly adjusting the conductivities to improve the fit until the global misfit equals the target misfit. At this point, the model fits the data to within the error of the survey.

The second requirement of a successful solution is that the complexity of the final model be minimized. IP measurements are inherent averages, deriving resistivity and chargeabilities from large volumes of the subsurface. It is possible to over-fit data, deriving solutions which over-minimize misfit but which invoke models with detail beyond the resolving power of the measuring arrays. The problem is ill-posed and inherently ambiguous in that an infinite number of models may satisfy the global misfit equals target misfit criterion. If both a simple and complex solution can adequately replicate the field data within the bounds of measurement error, the simple solution is to be preferred.

Starting with a reference model  $m_0$  and weighting functions for  $x$  and  $z$  ( $w_x, w_z$ ), define the complexity of the model as  $\Psi_m$  where:

$$\psi_m(m, m_0) = \alpha_x \int \int w_x(x, z) (m - m_0)^2 dx dz + \int \int \left\{ \alpha_s w_s(x, z) \left( \frac{\partial(\tau_t - \tau_{t0})}{\partial x} \right)^2 + \alpha_z w_z(x, z) \left( \frac{\partial(\tau_t - \tau_{t0})}{\partial z} \right)^2 \right\} dx dz$$

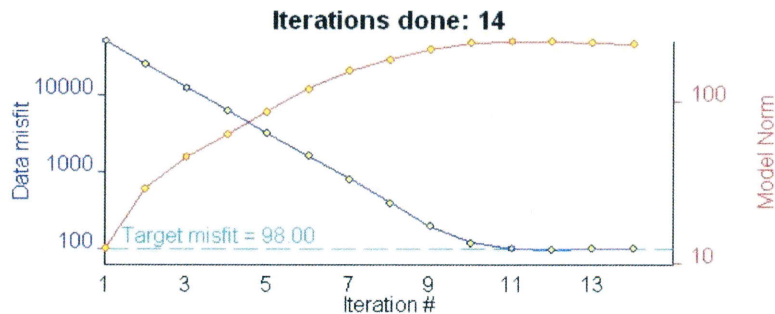
where  $\alpha_x, \alpha_z$  and  $\alpha_s$  define the relative weight of the model in  $x, z$  and fineness. Increasing any of these values increases the importance of that dimension in the final

solution. For example, to weight the final solutions towards vertical structures,  $\alpha_z$  would be weighted several times more than  $\alpha_x$ . To force the model to generate fewer small scale structures,  $\alpha_s$  is increased.

The final criteria for a successful solution can then be expressed as:

1. Minimize  $\Psi_m$
2. Subject to the constraint that  $\Psi_d = N$  ( or very close to it).

To evaluate a solution, the reader should examine not only the final values but the path the program followed to reach these values. An example of typical convergence curves is shown below:

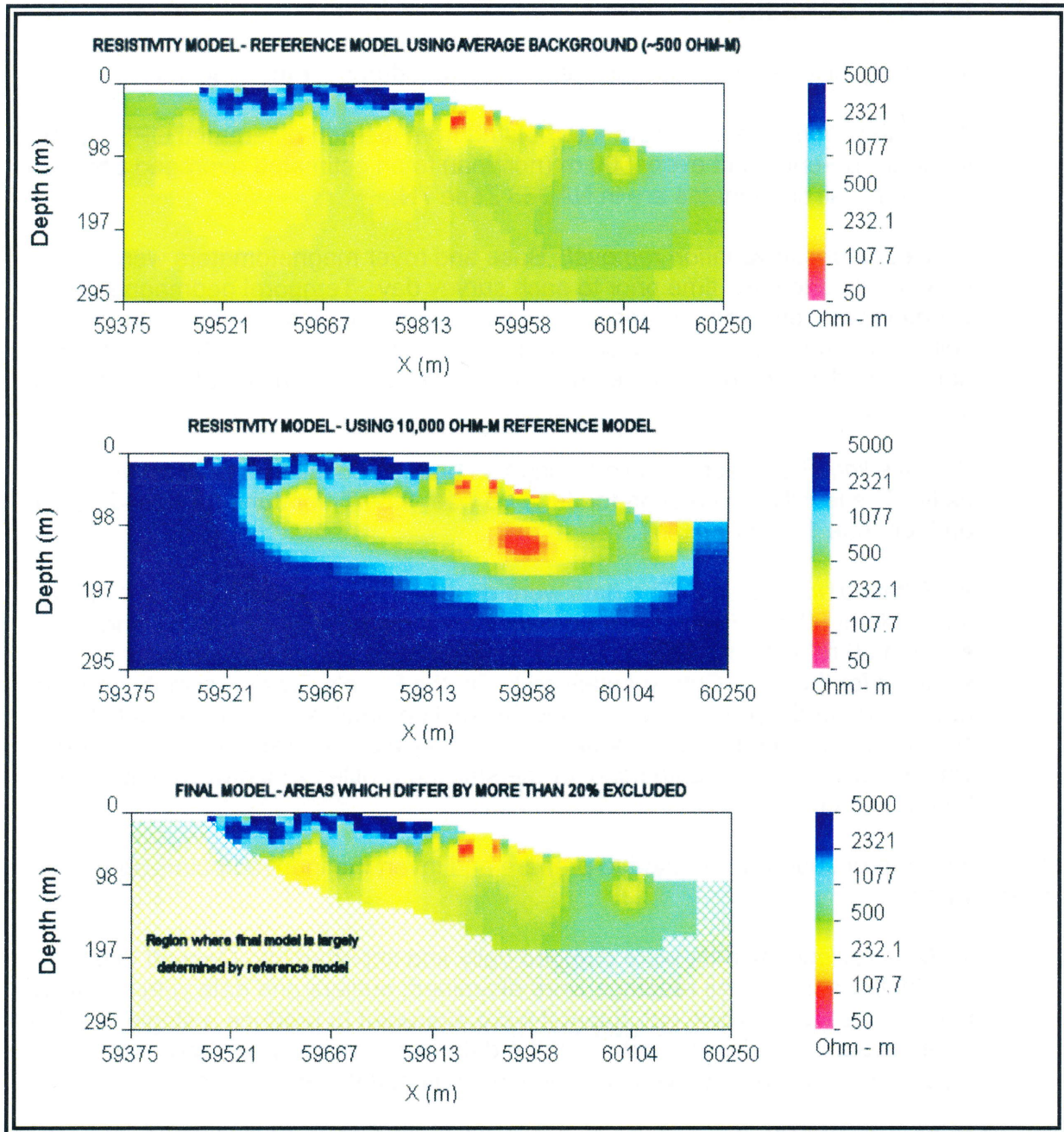


The black line traces the value of  $\Psi_d$  with each iteration and in a good inversion, this will converge to the target misfit ( $N$ ). The orange curve traces the convergence behavior of  $\Psi_m$ . This curve normally starts at a very small value because the reference model is usually set to the initial model and the initial and reference models are very simple. As the inversion proceeds, the solution model becomes increasingly complex as it is adjusted to meet the target misfit. After reaching target misfit, minor adjustments are made to reduce the complexity of the model and the  $\Psi_m$  curve stabilizes at some high value.

The field observations often have significant poorly quantified errors and the complexity of the background conductivity response may be such that it is impossible to reduce  $\Psi_d$  to  $N$ . Instead,  $\Psi_d$  can be scaled proportionately by a “chi-factor” ranging up or down from 1.0 (no scaling). Setting a large chi-factor loosens the control that goodness-of-fit exerts on the solution and generally directs the program to use very simple models which tend to smooth out the conductivities and fails to accurately model the fine details in resistivity or chargeability known to exist in the ground. Setting a chi-factor which is too low may prevent convergence to an acceptable solution. Generally, chi is left at 1.0.



A final feature of note in the inversion is the use of initial and reference conductivity and chargeability models in the inversion process. As noted above, the relation for  $\Psi_m$  requires a reference model ( $m_0$ ) against which solutions are compared. This can be an actual 2D model constructed from known geology or a estimate of half space conductivity or chargeability. In addition, the modeling process will start from an initial model which has the same general form. In general, an average half space conductivity and chargeability based on the field values is the best model to start from and this is the default model for both inversions if none other is specified. This will ensure that  $\Psi_m$  converges to a value which is not too large. The initial and reference models can be used to estimate the depth of investigation. If two inversions are performed with very different reference models, there will be regions in the final models which will be the same in both inversion and peripheral regions where the final models will resemble the reference models. An example is shown below:



## 8.0 DATA PROCESSING

Data processing included the following steps and procedures for the Mag survey:

1. *Registration.* Stations were interpolated from the non-differential GPS points taken at line-ends and every 500 m (nominal) to an estimated averaged accuracy of < 10 m. All coordinates are in NAD83 Zone 7N.
2. *Geomagnetic variation removal.* Base and rover magnetometers were synchronized to GPS time prior to each survey day. Temporal geomagnetic variation was removed by linear interpolation using the base station data. Data collected during periods in which geomagnetic variation exceeds 5 nT / 5 s were not included in the final data set; no data were rejected as being above this noise threshold.
3. *Levelling.* Data were levelled using 14 common points that were surveyed daily. The levelling correction for June 08 was -9.5 nT, for June 09 was -21.2 nT and for June 10 was +7.0 nT.
4. *Filtering and plotting.* The data were despiked using a filter width of 1 and a threshold of 30 nT. Profiles were produced using a base of 57,000 nT and a scale of 50 nT = 1 cm. These profiles are plotted as part of the composite sections for the Bear Cub Anomaly grid. On the Ryan's Creek Anomaly grid, the data were not despiked for the composite section profiles as there is spatial correlation of smooth and spiky data, which may aid interpretation. No despiking was performed on any data used for the stacked profiles which were plotted at 200 nT = 1 cm.

The following procedures were used to prepare and invert the induced polarization and resistivity data:

1. *Data review.* All data were dumped daily and imported into Geosoft Oasis Montaj IP package. All readings were examined; outliers and data with relatively large errors were thrown out, the rest were averaged to produce a single reading for each station and n-separation. If the data were too noisy and were not repeatable, no final data were included in the final data set.
2. *Registration.* Station coordinates were interpolated from the non-differential GPS points taken at line-ends and every 500 m (nominal) to an estimated averaged accuracy of < 10 m. All UTM coordinates are in NAD83 Zone 7N.

3. *Data formatting.* The apparent chargeability, resistivity (in normalized voltage over current) and topographic data were formatted for entry into the UBC inversion program.

4. *Resistivity modelling.* For each line, errors in the apparent conductance were assigned to the data. There is no means of directly quantifying these errors because neither the transmitter nor receiver records the error in the current or voltage. Errors were assumed to be  $0.0001 + 3\%$  S/m. Following error assignment, the data were inverted. Default initial and reference models were used, based on an average of the apparent resistivity. After the default run, the data were inverted a second time using initial and reference models as detailed below under DOI model (depth of investigation). These half-space models are a much higher value than the average in the survey area. The purpose of this second run is to generate a model with a background resistivity greatly different than the average values used in the default run. After the second run, the two models were compared and regions in the default model which showed more than the DOI cut off were replaced by a hatching pattern on the default run. In these hatched regions, the final model is not sensitive to the field data and there is no reliable subsurface information.

#### Resistivity inversion parameters

##### Bear Cub Anomaly

Line	Chi Factor	DOI model (Ohm-m)	DOI cutoff
23	1	20000	0.2
28	1	20000	0.2
33	1	20000	0.2
53	1	20000	0.2
58	1	20000	0.2
63	1	20000	0.2
68	1	20000	0.2

##### Ryan's Trend Anomaly

Line	Chi Factor	DOI model (Ohm-m)	DOI cutoff
1	1	20000	0.2
2	1	20000	0.2
3	1	20000	0.2
4	1	20000	0.1
5	1	20000	0.1
6	1	20000	0.1
7	1	20000	0.1

**5. Chargeability modelling.** For each datum, the observed standard deviation of chargeability was used as a measure of error for apparent chargeability. To avoid zero errors, a minimum of 0.3 mV/V was added to each error measurement. The IP data were first inverted using default values (initial and reference model of a 0 mV/V half-space), with the same mesh as the resistivity modelling, using the default recovered resistivity model. After the first run, the data were inverted a second time using initial and reference models which incorporated background chargeabilities as detailed below under DOI model (a much higher value than the average in the survey area). The two models were then compared and regions in the default model which showed more than the DOI cut off were replaced by a hatched pattern in the final models. In these hatched regions, the final model is not sensitive to the field data and there is no reliable subsurface information. The Chi factor was adjusted to ensure convergence and an appropriate level of structure to the model.

#### Chargeability inversion parameters

##### Bear Cub Anomaly

Line	Chi Factor	DOI model (mV/V)	DOI cutoff
23	0.01	100	0.1
28	0.007	100	0.1
33	0.02	100	0.1
53	0.2	100	0.1
58	0.05	100	0.1
63	0.03	100	0.1
68	0.02	100	0.1

##### Ryan's Creek Anomaly

Line	Chi Factor	DOI model (mV/V)	DOI cutoff
1	0.03	100	0.1
2	0.03	100	0.1
3	0.1	100	0.2
4	0.1	100	0.3
5	0.03	100	0.1
6	0.03	100	0.1
7	0.03	100	0.1

**6. Image extraction.** After the modelling was complete, final images were generated with the inversion software and converted to JPEGs which appear in Appendix D.

**7. Composite sections.** Composite sections of the apparent resistivity, apparent chargeability, error in chargeability, recovered models of resistivity and

chargeability and total magnetic field profiles were prepared from the final edited data using the Geosoft Oasis Montaj IP package with logarithmic colour scales for apparent and modelled resistivity in Ohm-m, linear colour scale for apparent and modelled chargeability in mV/V and linear colour scale for error in apparent chargeability. Composite sections are in Appendix E, found in the back pocket of this report.

8. *Digital archive.* The final IP data, digital copies of the pseudosections and inversion images were written to CD-ROM.

## 9.0 DATA PRODUCTS

The following data files are appended to the digital version of this report

Raw	Raw IRIS Elrec Pro daily dump files, exported to ASCII Raw Magnetometer daily dump files Raw GPS daily dump files
BearCub.gdb BearCub.XYZ RyanCreek.gdb RyanCreek.XYZ LuckyJoeMag.gdb LuckyJoeMag.XYZ	Final IP data in Geosoft database and ASCII xyz format Final Mag data in Geosoft database and ASCII xyz format.
Figure 3 – Grid Map.pdf	1:25000 scale plan map of the survey area.
Appendix E – Composite sections.pdf	Composite sections (scale = 1:5000) of apparent resistivity, apparent chargeability, error in apparent chargeability, recovered models and total magnetic field profiles
Appendix F – StackedMag.jpg	Stacked total magnetic field profiles (scale = 1:20000)
Report.pdf	PDF of this report

## 10.0 RESULTS

Composite sections of total magnetic field profiles, pseudosections of apparent resistivity, apparent chargeability and error in apparent chargeability and recovered models of resistivity and chargeability are found in Appendix E (back pocket of this report). A map of total magnetic field stacked profiles is in Appendix F (back pocket of



this report).

There are two magnetic domains delineated on the Ryan's Creek Anomaly grid: 1) A generally high magnetic response east of station 0 characterized by short wavelength (< 12.5 m, the station spacing) high amplitude (200-800 nT) variations. This domain is also seen on the eastern edge of the grid. 2) An area 200 m wide in the south ranging to 500 m wide in the north, roughly centered at station 0, of low magnetic response with very little short wavelength variation. Generally there is elevated chargeability on the western edge of the second magnetic domain with a relatively low resistivity.

The magnetic response on the Bear Cub Anomaly grid is relatively featureless aside from L58E where there is a 800 nT anomaly with a 250 m half-width and on L68E where there is a 250 nT anomaly with a 150 m half-width and two 600 nT spikes. Generally elevated chargeability was detected proximal to the baselines, often split into several distinct zones.

A line by line review of the IP / resistivity data follows:

L1: A zone of > 30 mV/V chargeability anomaly from station -500 to -200. A 500 Ohm-m conductive zone at station -250 in a 1500 Ohm-m background.

L2: A 25 mV/V chargeable zone at station -400. Two 350 Ohm-m conductive zones at stations -300 and 50.

L3: A 20-25 mV/V chargeable zone at station -250 coincident with a 350 Ohm-m conductive area in a background of 1500 Ohm-m.

L4: A 25 mV/V chargeability anomaly at station -200 coincident with a 350 Ohm-m conductive area and a 20 mV/V chargeability anomaly at station 150 coincident with a > 10 000 Ohm-m resistive zone.

L5: A 20 mV/V chargeable area centered at station -150 immediately adjacent to a 300 Ohm-m conductive area centered at station -50. A weakly chargeable zone of 10 mV/V at station -750, also immediately adjacent to a 500 Ohm-m conductive zone centered at station -650.

L6: A 25 mV/V chargeable area at station -250 within a broader conductive area and a weak chargeable anomaly at station -700, adjacent to a conductive area.

L7: A 15-20 mV/V chargeability anomaly at station -250 at the edge of 150 Ohm-m conductive zone. A zone of slightly elevated chargeability (10 mV/V) from station -750 to -450.

L23: A broad, deep 35 mV/V chargeability anomaly imaged immediate south of the baseline.

L28: A broad chargeable anomaly from station -400 to 400. 30 mV/V in the south, 35 mV/V in the north

L33: Two 35 mV/V chargeable zones, one centered at station -100, the other at station 250. A 600 Ohm-m conductive zone (in a 2000 Ohm-m background) at station -300.

L53: Three 30-35 mV/V chargeable zones at stations -200, 200 and 550. A 400 Ohm-m conductive area at station -200 in a 2000 Ohm-m background.

L58: A 35 mV/V chargeable zone at station -350 and a small 20-25 mV/V anomaly at station 300. A 200-400 Ohm-m conductive areas from stations -400 to 100.

L63: A 40 mV/V chargeability anomaly at station -150 and a 30 mV/V anomaly at station 450. A 100-150 Ohm-m near surface conductive zone centered at station 0.

L68: A 30-35 mV/V chargeable zone at station 100. A thin resistive cap over a generally conductive (100-500 Ohm-m) section.

Aurora Geosciences Ltd. was not retained to provide an interpretation of the data.

Respectfully submitted,  
**AURORA GEOSCIENCES LTD.**

Dave Hildes P. Geo, Ph. D.  
Geophysicist

Geneviève Héту  
Technician

## REFERENCES

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Geophysics Vol. 59. No. 9. pp. 1327-1341.
- Sumner, J.S. (1976) Principles of Induced Polarization for Geophysical Exploration.  
New York: Elsevier.
- Telford, W.M., L.P. Geldart and R.E. Sheriff (1990) Applied Geophysics (2nd Edition)  
New York: Cambridge University Pres

## APPENDIX A - CERTIFICATE

I, David Henry Degast Hildes, Ph. D., with residence address in Whitehorse, Yukon Territory do hereby certify that:

1. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia, license #29887
2. I am a graduate of the Queens University of Ontario with a B.Sc. (Honours) degree in Chemical Physics obtained in 1991 and a graduate of the University of British Columbia with a Ph. D. in Geophysics obtained in 2001.
3. I have been actively involved in mineral exploration since 1999 and am now employed as a geophysicist with Aurora Geosciences Ltd.
4. I am the project manager for the work described in this report.

Dated this \_\_\_\_ of \_\_\_\_\_, 2006 in Whitehorse, Yukon.

Respectfully Submitted,

Dave H. D. Hildes Ph. D.

APPENDIX B – SURVEY LOG

**AURORA GEOSCIENCES LTD.**  
**LUCKY JOE IP AND MAG**  
**JOB KRX-06-01-YT**  
**COPPER RIDGE EXPLORATIONS INC.**

**Period:** June 2 - June 23, 2006

**Personnel:** Jennifer Black  
Suzanne Aichele  
Shaun O'Connor  
Mike Bonderchuck  
Chris Mills  
Dave Hildes

INDUCED POLARIZATION SURVEY

- Fri, June 2 06**    **Mobe**  
Mobed to Dawson. Met with pilot to discuss details. No IP completed
- Sat, June 3 06**    **Survey**  
Moved equipment to site, set up, provided IP instruction and surveyed line 58  
Wx: Mix of sun and cloud, including rain and brief thundershowers  
Production: 300 m
- Sun, June 4 06**    **Survey**  
Completed line 58  
Wx: Cool, mix of sun and cloud, 12°C  
Production: 1500 m
- Mon, June 5 06**    **Survey**  
Mobed to line 68, started line  
Wx: Clear blue skies, 13°C  
Production: 500 m
- Tue, June 6 06**    **Survey**  
Completed line 68  
Wx: Clear blue skies, 17°C  
Production: 1300 m
- Wed, June 7 06**    **Survey**  
Completed line 28

Wx: Clear skies with patches of cloud 17°C  
Production: 1800 m

**Thu, June 8 06 Survey**  
Completed line 23  
Wx: Sunny skies, 25°C  
Production: 1800 m

**Fri, June 9 06 Survey**  
Surveyed line 33  
Wx: Partly cloudy  
Production: 1400 m

**Sat, June 10 06 Survey**  
Completed line 33 and returned to line 68 to reel wire  
Wx: Sunny, 30°C  
Production: 400 m

**Sun, June 11 06 Survey**  
Completed line 53 and mobed to final Bear Cub grid line  
Wx: Sunny, 30°C  
Production: 1800 m

**Mon, June 12 06 Survey**  
Started line 63. Pad was 450m north of the line. Chris injured his knee and was unable to carry reel  
Wx: Cloudy  
Production: 800 m

**Tue, June 13 06 Survey**  
Completed line 63 with a 3-man crew and moved all equipment to Ryan Creek  
Wx: Mix of sun and cloud, 28°C  
Production: 1000 m

**Wed, June 14 06 Survey**  
Completed line 1  
Wx: Mostly cloudy, 27°C  
Production: 1200 m

**Thu, June 15 06 Survey**  
Completed line 2  
Wx: Patches of rain, mostly cloudy  
Production: 1400 m

**Fri, June 16 06 Survey**  
Weather day  
Wx: Solid rain, fog, and low clouds throughout day  
Production: 0 m

**Sat, June 17 06 Survey**  
Completed line 3, requires return for clean-up



Wx: Mostly cloudy  
Production: 1500 m

**Sun, June 18 06 Survey**

Completed line 4, requires return for clean-up  
Wx: Mix of sun and cloud, light rain  
Production: 1500 m

**Mon, June 19 06 Survey**

Cleaned up lines 3 & 4, and completed line 5. L5 requires return for clean-up  
Wx: Mix of sun and cloud, 25°C  
Production: 1450 m

**Tue, June 20 06 Survey**

Started line 6, operation stalled due to a bear which also seemed to have taken out some of our wire lines  
Production: 950 m

**Wed, June 21 06 Survey**

Finished line 6 before intense thundershowers moved in. Cleaned up wire on both 5 & 6  
Production: 500 m

**Thu, June 22 06 Survey**

Completed line 7 and mobed all equipment out of Lucky Joe  
Production: 1300 m

**Fri, June 23 06 Demobe**

Mobe back to Whitehorse

Survey Days: 19.0 days  
Weather Day: 1.0 day

Mobe/Demobe: 2.0 days

IP Total Production: 22.45 km

**MAGNETIC FIELD SURVEY**

**Tue, June 6 06 Mobe**  
Mobe to Dawson

**Wed, June 7 06 Survey**  
Completed lines 23, 38, 33  
Production: 5400 m

**Thu, June 8 06 Survey**  
Completed lines 53, 58, 63  
Production: 5400 m

**Fri, June 9 06 Survey**  
Completed lines 68, 5, 6  
Production: 4700 m

**Sat, June 10 06 Survey**  
Completed lines 1, 2, 3, 4, 7  
Production: 6950 m

**Sun, June 11 06 Demobe**  
Demobed to Whitehorse

Survey Days: 4.0 days

Mobe/Demobe: 2.0 days

Mag Total Production: 22.45 km

## APPENDIX C – INSTRUMENT SPECIFICATIONS

### I OVERVIEW

#### I.1 GENERALITIES

The ELREC Pro unit is a receiver designed for high productivity mineral exploration. It allows to measure primary voltage and decay voltage curve values, giving thus resistivity and chargeability (IP) data.

This unit is designed to be used with an *IRIS instruments* external transmitter, called VIP.

The main technical characteristics of this receiver are the following ones:

- 10 reception dipoles available to carry out some measurements with high productivity in the field.
- 20 partial chargeability windows available to measure the discharge phenomena with an high accuracy.
- a 1  $\mu$ V resolution on the primary voltage allowing to obtain very accurate measurements.
- a large graphic LCD display for user-friendly operating allowing to show the data in real time numerically and graphically.

The ELREC Pro unit can be also used in automatic switching mode (in that case, some additional external *Switch Plus* boxes have to be used) for intensive measurements.

#### I.2 DESCRIPTION

##### I.2.1. Front panel

All controls are located on the front panel. This one features:

- Graphic LCD (128x140 dots) made of 16 lines by 40 characters
- Eleven plugs for connecting the potential electrodes
- Plugs "+" and "-" for the external battery connection
- Three pins plug (RS232 standard port) for the serial link cable connection
- Four pins plug for internal battery charger connection
- Keyboard with 16 keys

3/61

**ANNEX 3: IP PARAMETERS AND CHARGEABILITY**

The partial chargeabilities measurements ( $M_i$ ) and the average global one deduced ( $M_g$ ) give some information regarding the ability of the soil to charge itself due to a current flow.

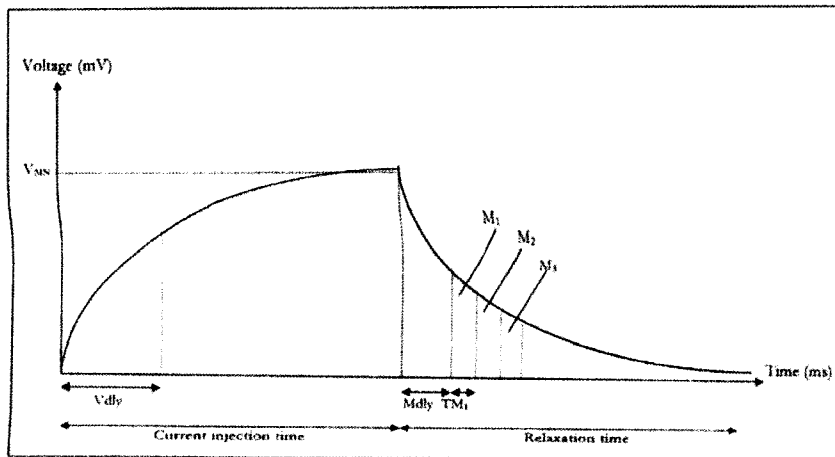
The partial chargeability of the window "i" is measured thanks to the following formula:

$$M_i = \int_{TM_i} V dt / TM_i \cdot V_{MS}$$

And the global chargeability is computed thanks to the following formula:

$$M_g = \frac{\sum_{i=1}^n (M_i \cdot TM_i)}{\sum_{i=1}^n TM_i} \quad (n: \text{number of IP windows})$$

The discharge phenomena observed during the relaxation time can be described according to the following curve:



With the ELREC Pro, up to 20 IP windows can be used to define the decay curve.

The number of IP windows available for the measurement depends on the type of IP mode and on the current injection time:

- ⇒ Current injection times available (cf. II.1.5): 500 ms - 1 s - 2 s - 4 s - 8 s
- ⇒ Types of IP mode available (cf. II.1.5): Arithmetic - Semi logarithmic - Logarithmic Cole-Cole - Programmable

For a given current injection time and IP mode, the program will choose automatically the IP parameters (Mdly, Vdly, TM<sub>i</sub>) that will be used for the measurement.

**Note:**

The programmable mode is a mode where 20 fully programmable windows are available. The operator has to select the delay time (Mdly) with a minimum of 20 ms and the width of each partial window (TM<sub>i</sub>) with a minimum of 10 ms. Vdly is automatically determined by the injection time chosen.

In the following tables, the preset TM<sub>i</sub> values are given for each IP mode (1 means TM<sub>1</sub> ...):

• Time = 500 ms

Mode	Vdly	Mdly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arith.	280	60	40	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Semi	280	40	40	80	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Log.	280	160	80	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cole	280	160	80	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

• Time = 1000 ms

Mode	Vdly	Mdly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arith.	580	120	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Semi	580	40	20	20	20	20	20	20	20	20	40	40	40	40	40	40	80	80	80	80	80	80
Log.	580	160	120	220	420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cole	580	20	10	20	20	20	20	20	30	30	30	40	40	40	50	50	50	60	60	70	80	90

• Time = 2000 ms

Mode	Vdly	Mdly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arith.	1260	240	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Semi	1260	40	40	40	40	40	40	40	80	80	80	80	80	80	80	160	160	160	160	160	160	160
Log.	1260	160	120	220	420	820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cole	1260	20	20	30	30	30	40	40	50	60	70	80	90	100	110	120	130	140	150	160	180	200

ELREC Pro - User's manual

• Time = 4000 ms

Mode	Vdly	Mdly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arith	2620	480	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
Semu	2620	160	80	80	80	80	80	80	80	80	160	160	160	160	160	160	320	320	320	320	320	320
Log	2620	160	120	220	420	820	1620	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cole	2620	20	40	50	60	70	80	90	100	110	120	140	160	180	200	220	250	280	320	380	450	530

• Time = 8000 ms

Mode	Vdly	Mdly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Arith	5340	960	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320	320
Semu	5340	320	160	160	160	160	160	160	160	160	320	320	320	320	320	320	640	640	640	640	640	640
Log	5340	160	120	220	420	820	1620	3220	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cole	5340	20	40	60	80	100	120	150	180	220	250	280	320	360	400	450	500	580	700	850	1010	1180

About the IP values type, note that the changing "raw (R) ↔ normalised (N)" can be realised after the acquisition.

The normalization allows to homogenize the data that have been obtained with various injection and integration times. This is made with respect to a standard decay curve, which is the one obtained with the following parameters:

- Mode: Logarithmic
- Injection time: 2000 ms
- Vdly: 1260 ms
- Mdly: 160 ms
- TM<sub>1</sub>: 120 ms
- TM<sub>2</sub>: 220 ms
- TM<sub>3</sub>: 420 ms
- TM<sub>4</sub>: 820 ms

The coefficients to multiply, allowing to go from a type to the other one, are indicated in the following tables:

ELREC 10

**ANNEX 7: SPECIFICATIONS***Technical:*

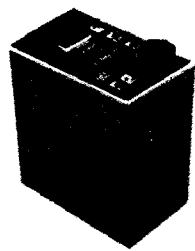
- Input impedance: 10 Mohm
- Input overvoltage protection up to 1000V
- Automatic SP bucking with linear drift correction
- Internal calibration generator for a true calibration on request of the operator
- Internal memory: 3200 dipoles reading
- Automatic synchronization and re-synchronization process on primary voltages signals whenever needed
- Proprietary intelligent stacking process rejecting strong non-linear SP drifts
- Common mode rejection: more than 100 dB (for  $R_s = 0$ )
- Self potential (Sp) : range: -15V - +15V  
: resolution: 0.1 mV
- Ground resistance measurement range: 0.1 - 100 kohms
- Primary voltage : range: 10 $\mu$ V - 15V  
: resolution: 1 $\mu$ V  
: accuracy: typ. 0.3%
- Chargeability : resolution: 10 $\mu$ V/V  
: accuracy: typ. 0.6%

*General:*

- Dimensions: 31x21x25 cm
- Weight (with the internal battery): 9 kg
- Operating temperature range: -30°C - 70°C
- Case in fiber-glass for resisting to field shocks and vibrations



Instrumentation GDD



### The Induced Polarization Transmitter

TxII-1800 and TxII-3600 Models

For Fast, High-Quality Induced Polarization Surveys in All Field Conditions

Flyers high / low resolution TxII/1 (63 KB) / TxII/2 (1 MB)

At Last, a High-Quality Affordable IP Transmitter

TxII-1800 Model, 1800 watts

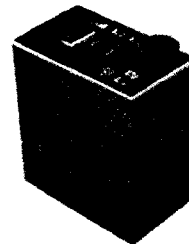
Its high power, up to 10 amperes, combined with its light weight and a 21 kg/2000W Honda generator makes it particularly suitable for dipole-dipole Induced Polarization surveys.

**Features**

- Protection against short circuits even at zero (0) ohms
- Output voltage range: 150 V to 2400 V / 14 steps
- Power source: 120 V, Optional: 220 V / 50/60 Hz
- Operates from a light backpackable standard 120 V generator
- Up to three years warranty

This backpackable 1800 watts induced polarization (I.P.) transmitter works from a standard 120 V source and is well adapted to

<b>CONTENTS</b>	
<input type="checkbox"/>	TxII-1800/TxII-3600 IP transmitter
<input type="checkbox"/>	Specifications
<input type="checkbox"/>	Purchase - Rental



rocky environments where a high output voltage of up to 2400 V is needed. Moreover, in highly conductive overburden, at 150 V, the highly efficient TxII-1800 watts transmitter is able to send a current of up to 10 amperes. By using this I.P. transmitter, you obtain fast and high-quality I.P. readings even in the most difficult conditions

**TxII-3600 Model, 3600 watts**

Its high power, up to 10 amperes, combined with a Honda generator makes it particularly suitable for pole-dipole Induced Polarization surveys.

**Features**

- Protection against short circuits even at zero (0) ohms
- Output voltage range: 150 V to 2400 V / 14 steps
- Power source: 220 V, 50/60 Hz
- Operates from a standard 220 V generator
- Up to three years warranty

This 3600 watts induced polarization (I.P.) transmitter works from a standard 220 V source and is well adapted to rocky environments where a high output voltage of up to 2400 V is needed. Moreover, in highly conductive overburden, at 150 V, the highly efficient TxII-3600 watts transmitter is able to send a current of up to 10 amperes. By using this I.P. transmitter, you obtain fast and high-quality I.P. readings even in the most difficult conditions.

**Specifications**

General		
Size	TxII-1800	21 x 34 x 39 cm
Size	TxII-3600	21 x 34 x 50 cm
Weight	TxII-1800	approx. 20 kg
Weight	TxII-3600	approx. 35 kg

<b>Operating temperature</b>	-40°C to 65°C
<b>Electrical</b>	
<b>Used for time-domain IP</b>	2 sec. ON 2 sec. OFF
<b>Time Base</b>	1-2-4-8 sec.
<b>Output current range</b>	0.005 to 10 A
<b>Output voltage range</b>	150 to 2400 V
<b>Power source Txii-1800</b>	Recommended motor/generator set: Standard 120 V / 60 Hz backpackable Honda generator Suggested Models: EU1000iC, 1000 W, 13.5 kg or EU2000iC, 2000 W, 21.0 kg.
<b>Power Source Txii-3600</b>	Recommended motor/generator set: Standard 220 V, 50/60 Hz Honda generator Suggested Models: EM3500XK1C, 3500 W, 62 kg or EM5000XK1C, 5000 W, 77 kg.
<b>Controls</b>	
<b>Power</b>	ON/OFF
<b>Output voltage range switch</b>	150 V, 180 V, 350 V, 420 V, 500 V, 600 V, 700 V, 840 V, 1000 V, 1200 V, 1400 V, 1680 V, 2000 V, 2400 V
<b>Displays</b>	
<b>Output current LCD</b>	reads to $\pm 0.001$ A
<b>Very cold weather</b>	standard LCD heater on readout
<b>Protection</b>	Total protection against short circuits even at zero (0) ohms
<b>Indicator lamps (in case of overload)</b>	- High voltage ON-OFF - Output overcurrent - Generator over or undervoltage - Overheating - Logic failure - Open loop protection

**Purchase and Rental Info**

**Interested by the Txii-1800 W IP or the Txii-3600 W IP transmitter?**

It is simple. You can rent it or purchase it. The choice is yours. Here is some information you

<http://www.eddinstrumentation.com/IPtransmitter1.htm>

5/27/2004

## INSTRUMENT SPECIFICATIONS

### MAGNETOMETER / GRADIOMETER

Resolution:	0.01nT (gamma), magnetic field and gradient.
Accuracy:	0.2nT over operating range.
Range:	20,000 to 120,000nT.
Gradient Tolerance:	Over 10,000nT/m
Operating Interval:	3 seconds minimum, faster optional. Readings initiated from keyboard, external trigger, or carriage return via RS-232C.
Input / Output:	6 pin weatherproof connector, RS-232C, and (optional) analog output.
Power Requirements:	12V, 200mA peak (during polarization), 30mA standby. 300mA peak in gradiometer mode.
Power Source:	Internal 12V, 2.6Ah sealed lead-acid battery standard, others optional. An External 12V power source can also be used.
Battery Charger:	Input: 110 VAC, 60Hz. Optional 110 / 220 VAC, 50 / 60Hz. Output: dual level charging.
Operating Ranges:	Temperature: - 40°C to +60°C. Battery Voltage: 10.0V minimum to 15V maximum. Humidity: up to 90% relative, non condensing.
Storage Temperature:	-50°C to +65°C.
Display:	LCD: 240 X 64 pixels, OR 8 X 30 characters. Built in heater for operation below -20°C.
Dimensions:	Console: 223 x 69 x 240mm. Sensor Staff: 4 x 450mm sections. Sensor: 170 x 71mm dia. Weight: console 2.1kg, Staff 0.9kg, Sensors 1.1kg each.
VLF	
Frequency Range:	15 - 30.0 kHz plus 57.9 kHz (Alaskan station)
Parameters Measured:	Vertical in-phase and out-of-phase components as percentage of total field. 2 relative components of horizontal field. Absolute amplitude of total field.
Resolution:	0.1%.
Number of Stations:	Up to 3 at a time.
Storage:	Automatic with: time, coordinates, magnetic field / gradient, slope, EM field, frequency, in- and out-of-phase vertical, and both horizontal components for each selected station.
Terrain Slope Range:	0° - 90° (entered manually).
Sensor Dimensions:	140 x 150 x 90 mm. (5.5 x 6 x 3 inches).
Sensor Weight:	1.0 kg (2.2 lb).

9 V 1997

## APPENDIX G GSM-19T MAGNETOMETER/GRADIOMETER

### THEORETICAL DESCRIPTION

#### Introduction

The GSM-19T is a portable standard proton magnetometer/gradiometer designed for handheld or base station use for geophysical, geotechnical, or archaeological exploration, long term magnetic field monitoring at Magnetic Observatories, volcanological and seismic research, etc. The GSM-19T is a secondary standard for measurement of the Earth's magnetic field, having 0.2nT resolution, and 1nT absolute accuracy over its full temperature range.

The GSM-19T is a microprocessor based instrument with storing capabilities. Large memory storage is available (up to 2Mbytes). Synchronized operation between hand held and base station units is possible, and the corrections for diurnal variations of magnetic field are done automatically. The results of measurement are made available in serial form (RS-232-C interface) for collection by data acquisition systems, terminals or computers. Both on-line and post-operation transfer are possible.

The measurement of two magnetic fields for determination of gradient is done concurrently with strict control of measuring intervals. The result is a high quality gradient reading, independent of diurnal variations of magnetic field.

Optionally the addition of a VLF sensor for combined magnetometer / gradiometer-VLF measurement is available.

#### Magnetic Field Measurement

The magnetic field measuring process consist of the following steps:

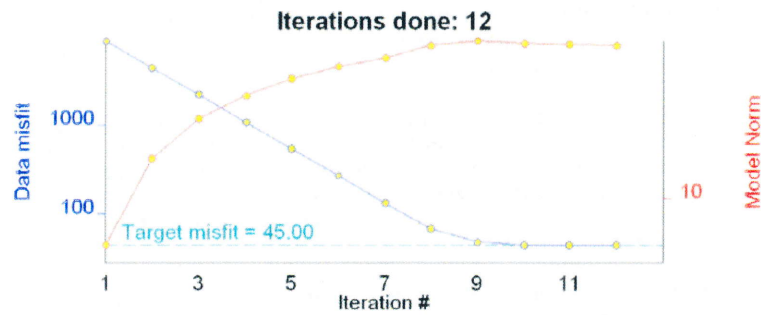
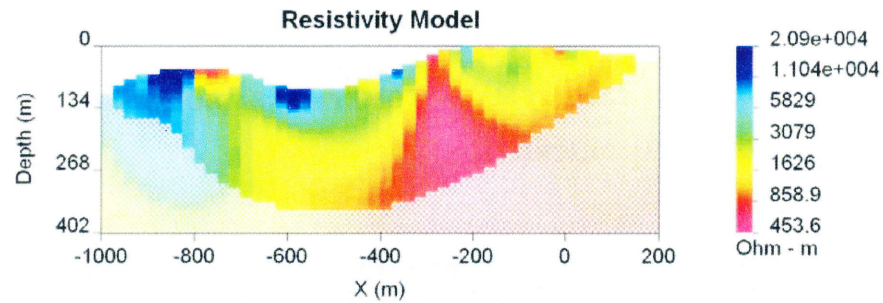
- a) Polarization: A strong DC current is passed through the sensor creating polarization of a proton-rich fluid in the sensor.
- b) Pause: The pause allows the electrical transients to die off, leaving a slowly decaying proton precession signal above the noise level.
- c) Counting: The proton precession frequency is measured and converted into magnetic field units.
- d) Storage: The results are stored in memory together with date, time and coordinates of measurement. In base station mode, only the time and total field are stored.

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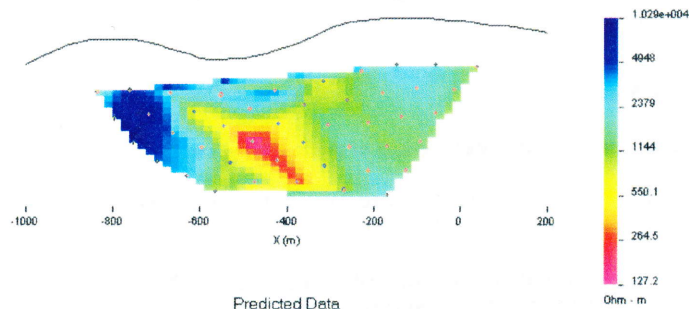
GEM System Inc.

## APPENDIX D – INVERSION RESULTS

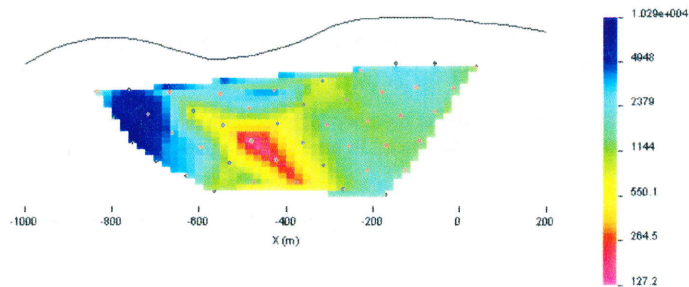
### Line 1 - Resistivity Inversion Results



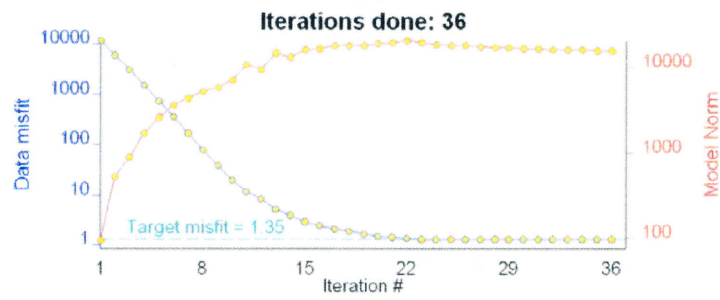
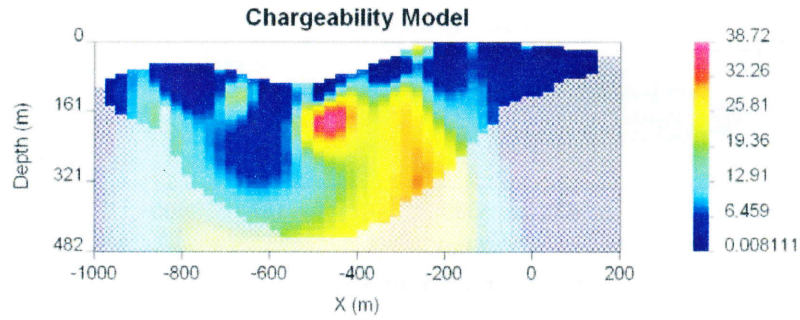
Ryan Trend Anomaly 100 m dipoles L1 : dipole-dipole : 45 data  
 Observed Apparent Resistivity



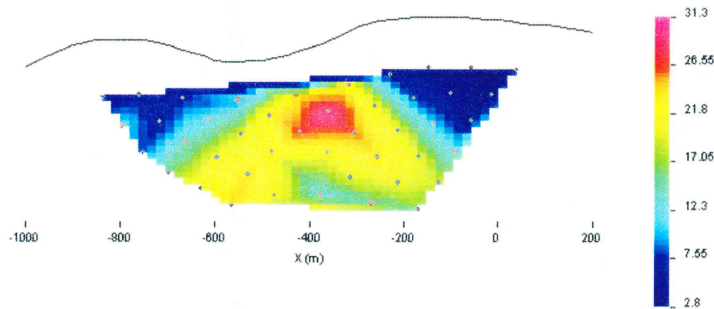
Predicted Data



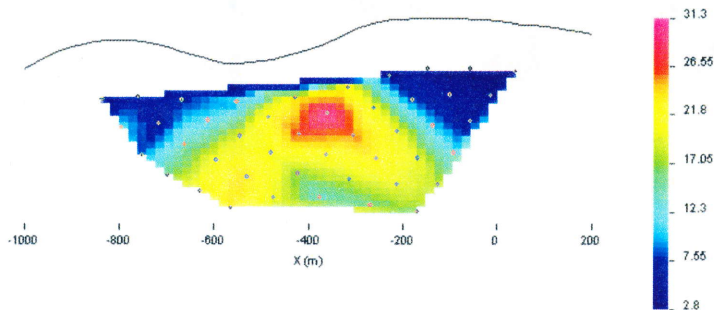
### L1 - Chargeability Inversion Results



Ryan Trend Anomaly 100 m dipoles L1 : dipole-dipole : 45 data  
Observed Apparent Chargeability

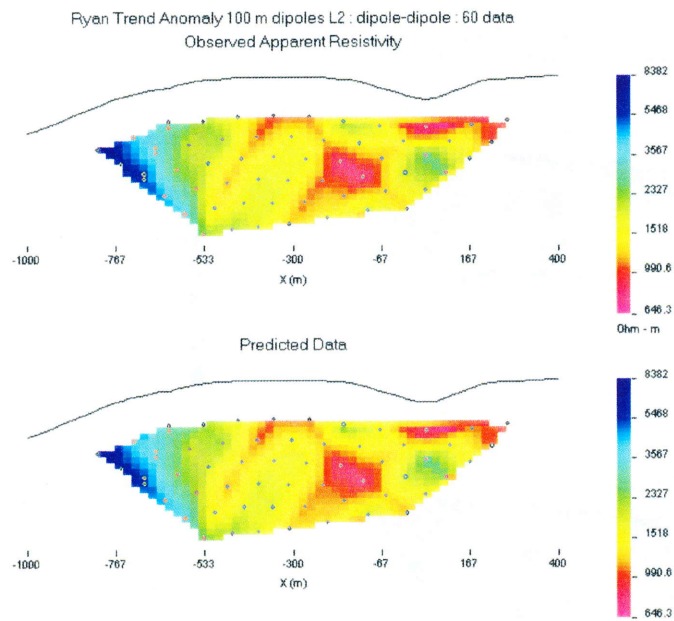
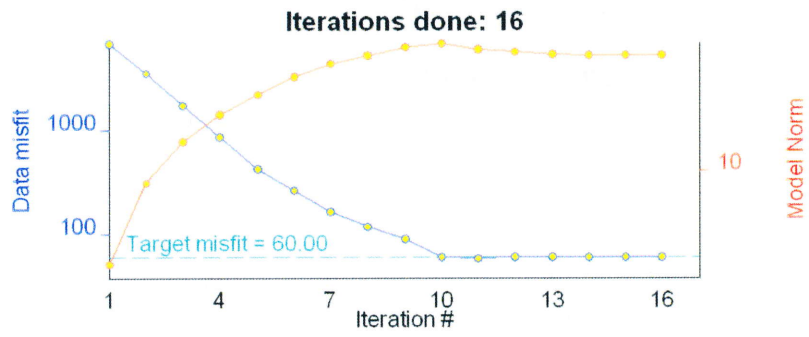
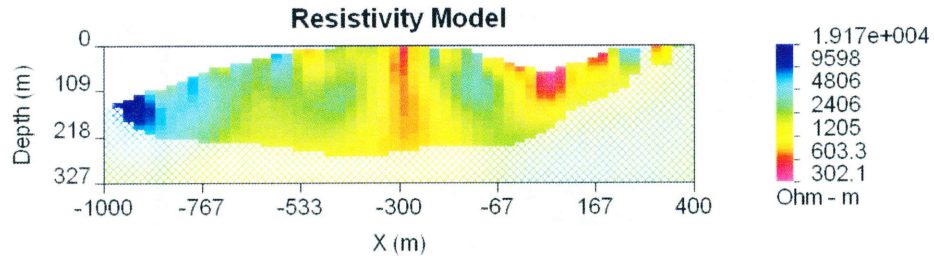


Predicted Data

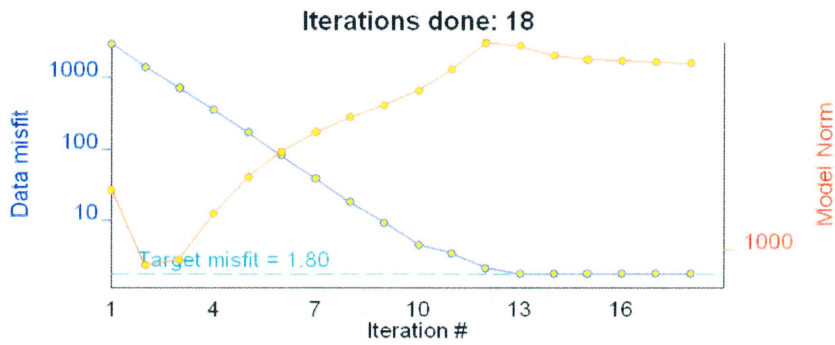
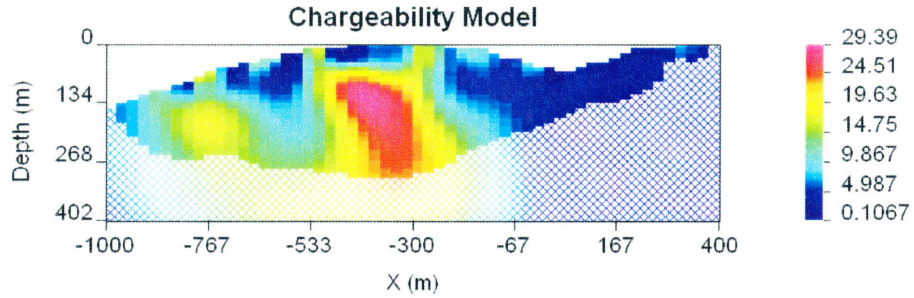




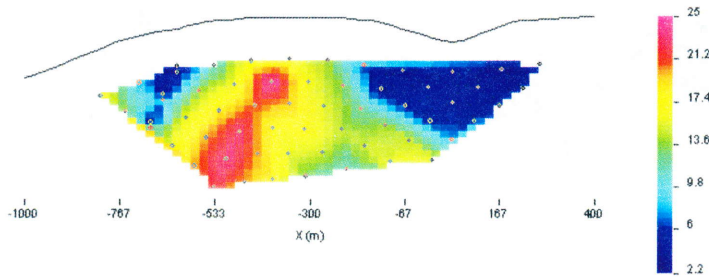
## L2 - Resistivity Inversion Results



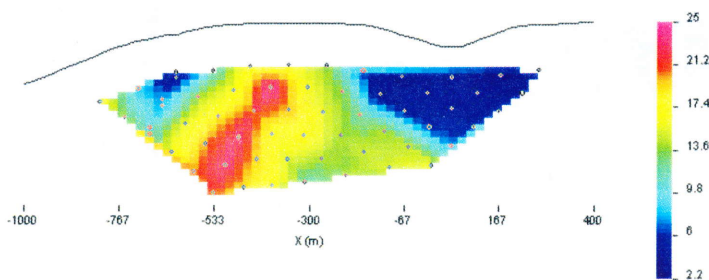
## L2 – Chargeability Inversion Results



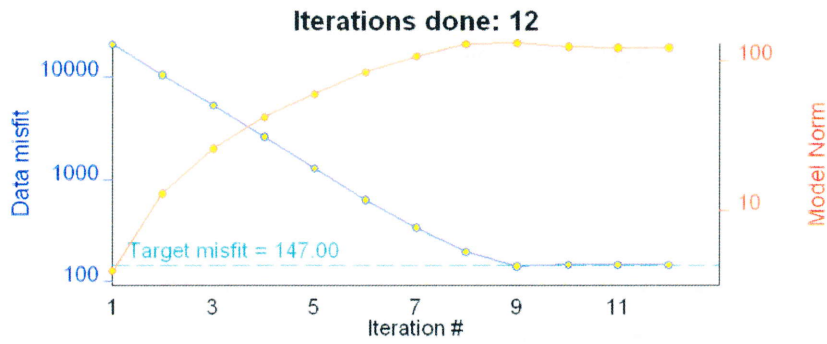
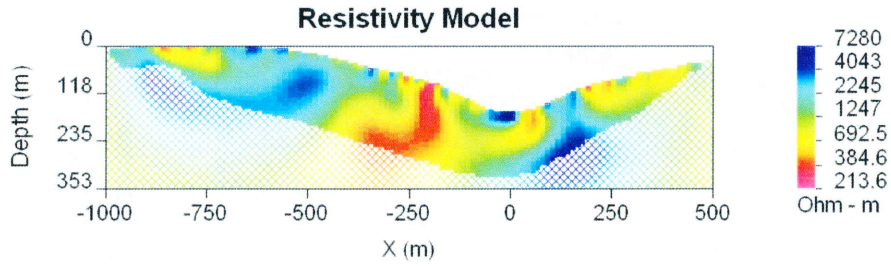
Ryan Trend Anomaly 100 m dipoles L2 : dipole-dipole : 60 data  
Observed Apparent Chargeability



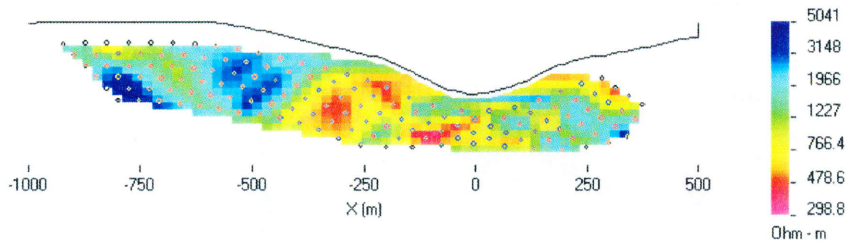
Predicted Data



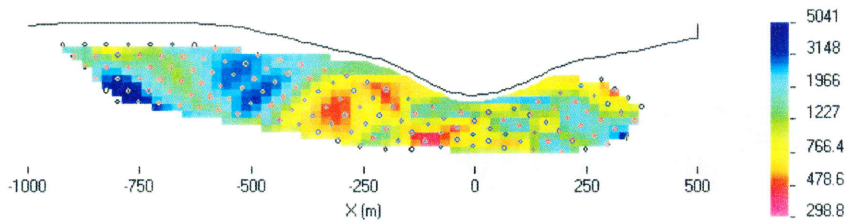
### L3 – Resistivity Inversion Results



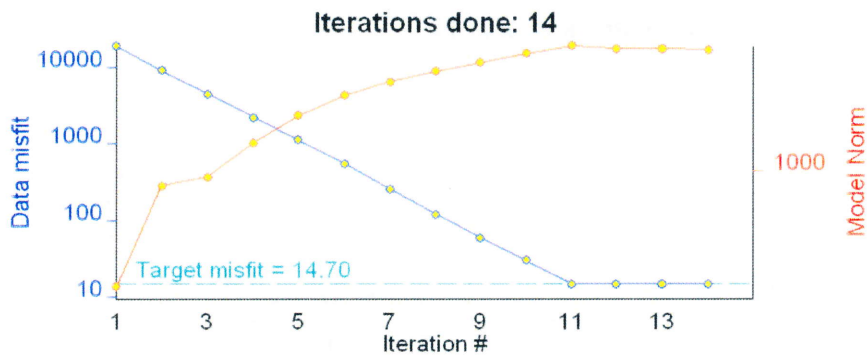
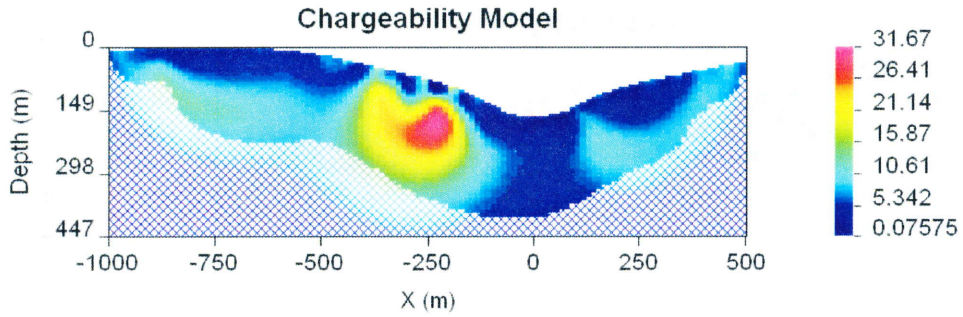
Ryan Trend Anomaly 50 m dipoles L3 : dipole-dipole : 147 data  
 Observed Apparent Resistivity



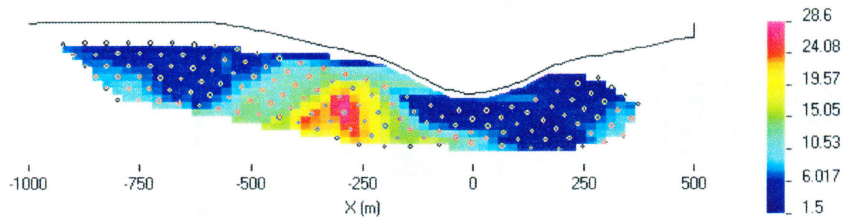
Predicted Data



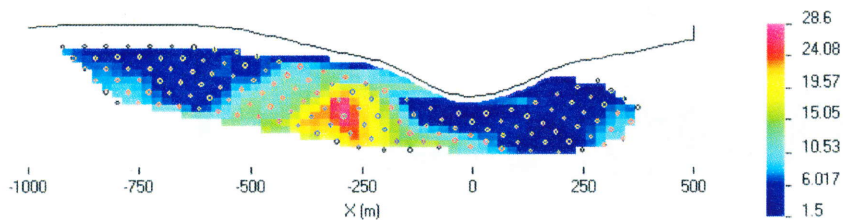
### L3 – Chargeability Inversion Results



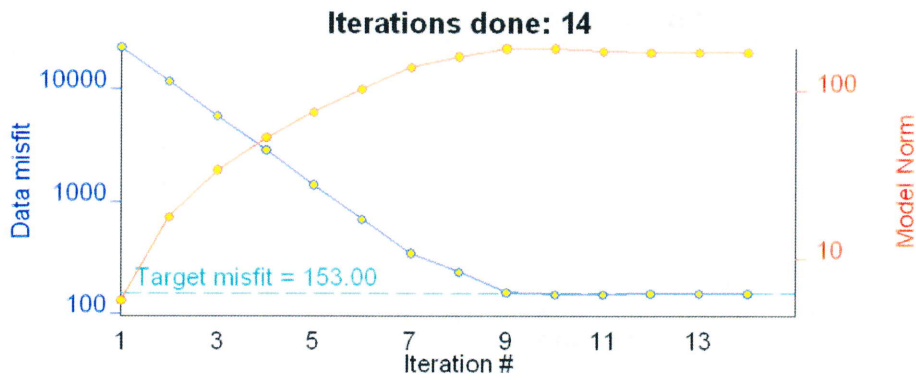
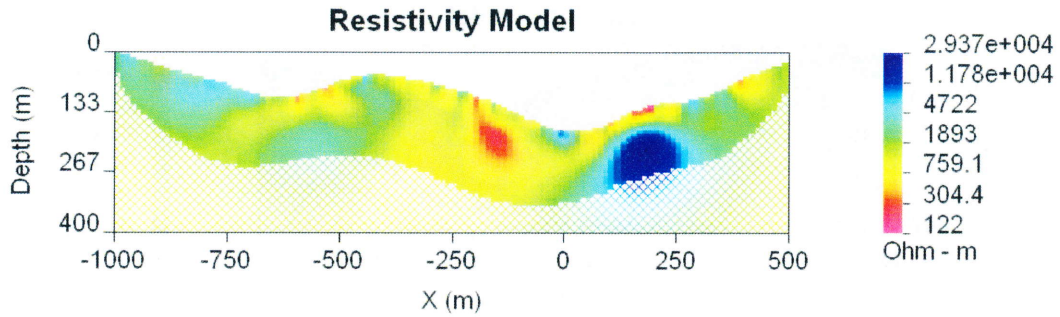
Ryan Trend Anomaly 50 m dipoles L3 : dipole-dipole : 147 data  
 Observed Apparent Chargeability



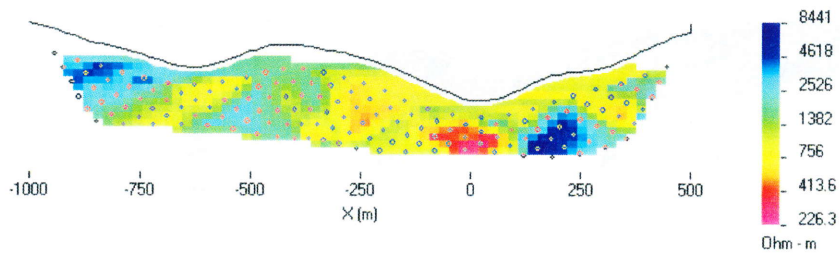
Predicted Data



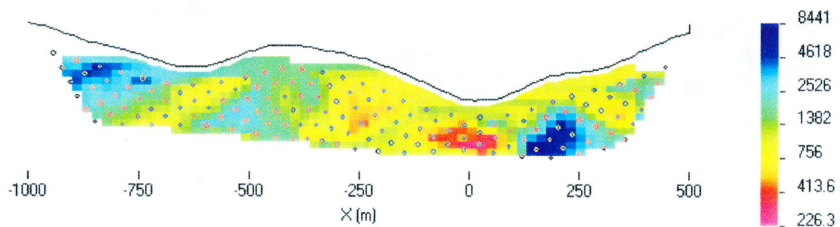
### L4 – Resistivity Inversion Results



Ryan Trend Anomaly 100 m dipoles L4 : dipole-dipole : 153 data  
 Observed Apparent Resistivity

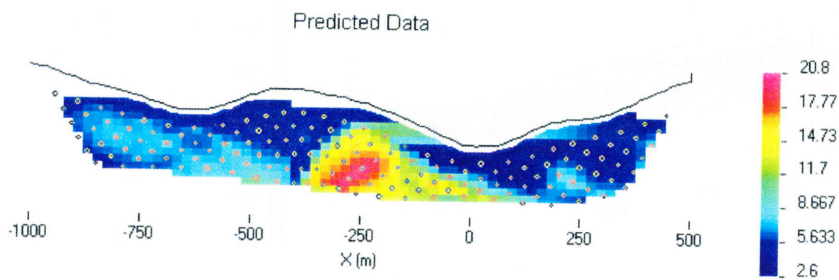
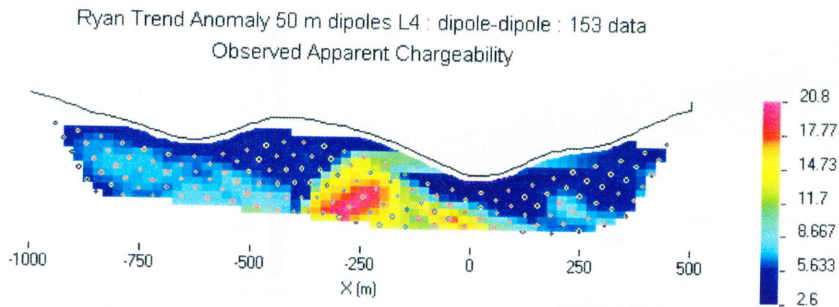
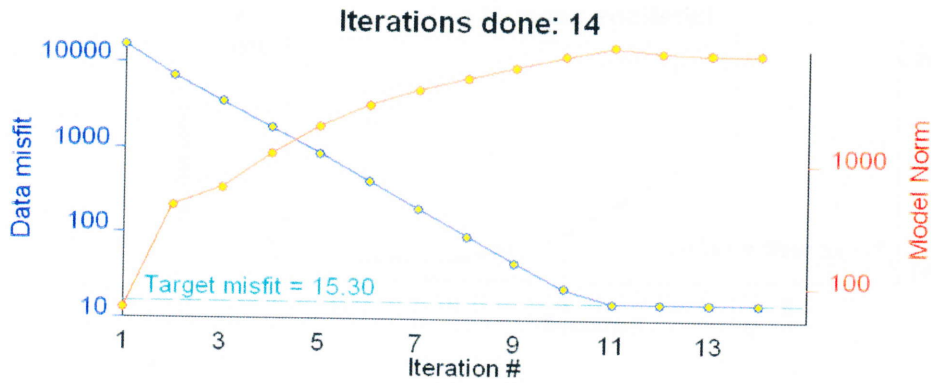
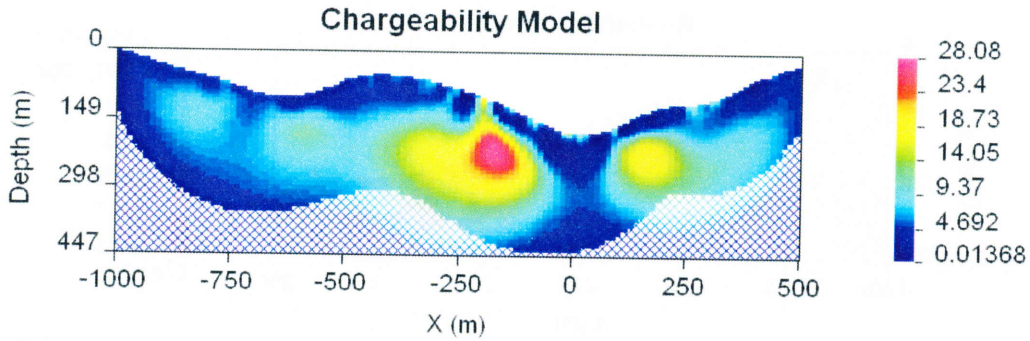


Predicted Data

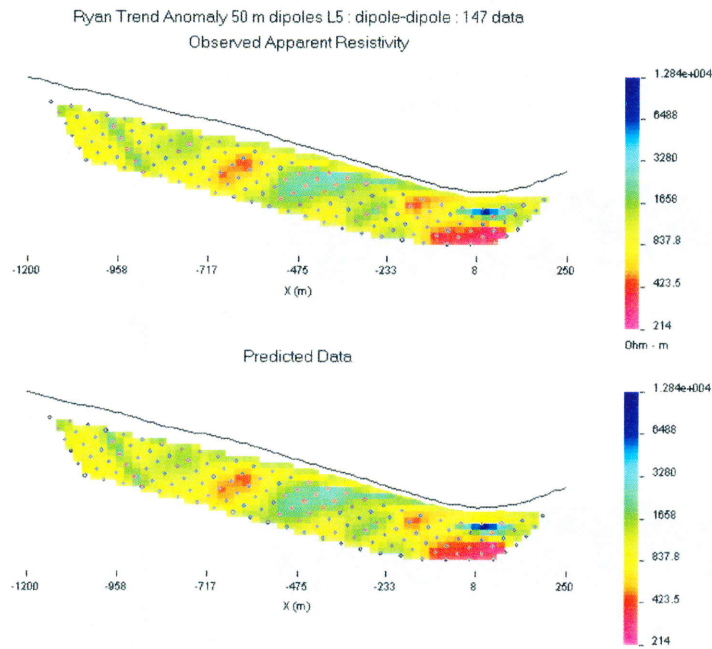
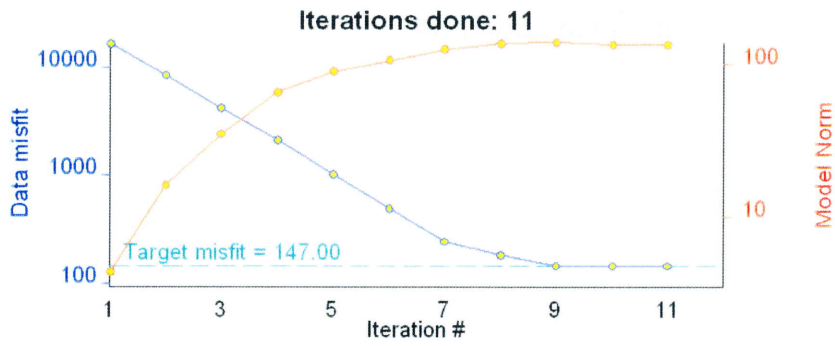
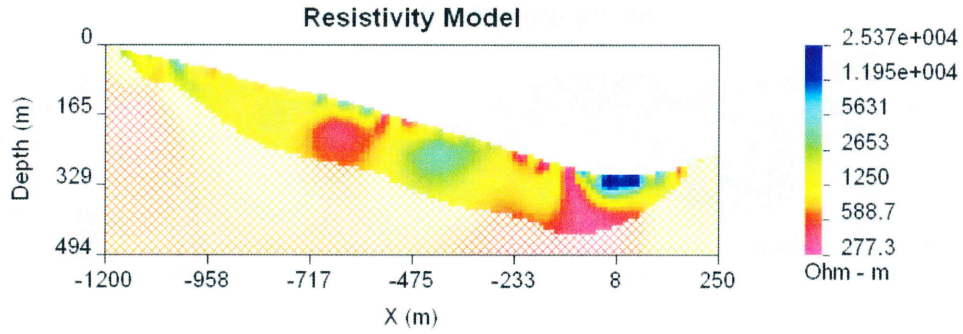




### L4 – Chargeability Inversion Results

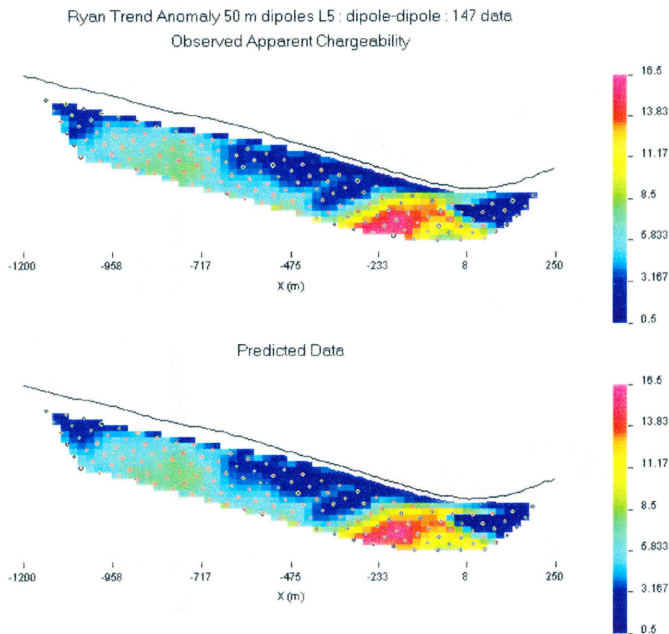
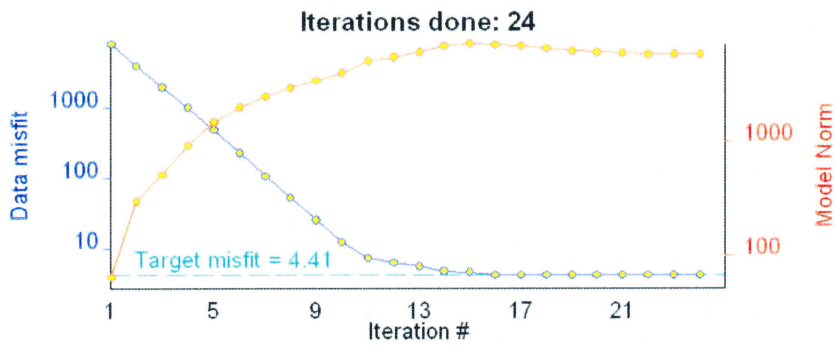
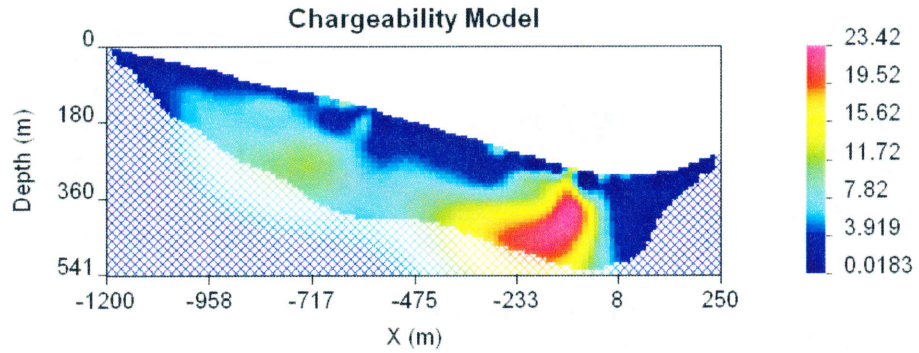


### L5 – Resistivity Inversion Results

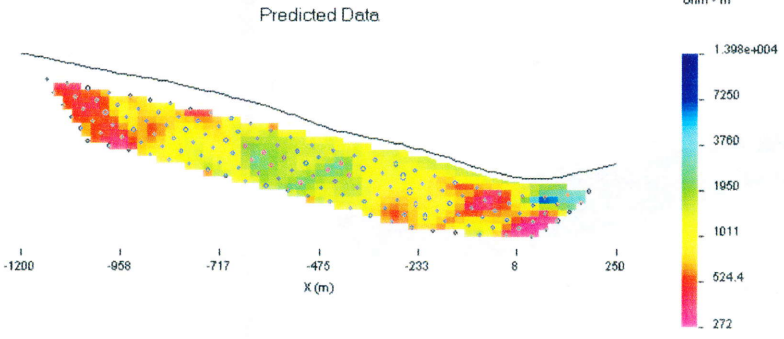
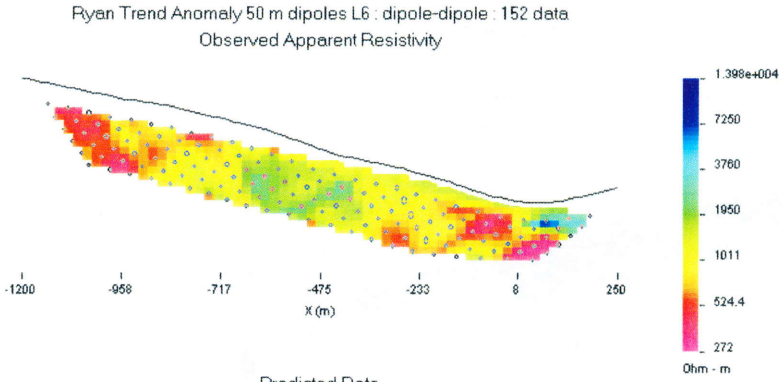
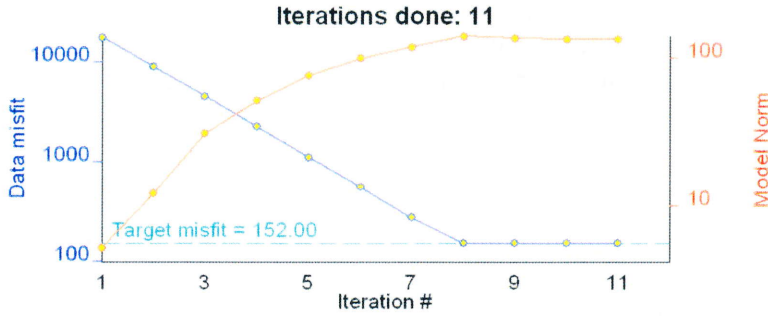
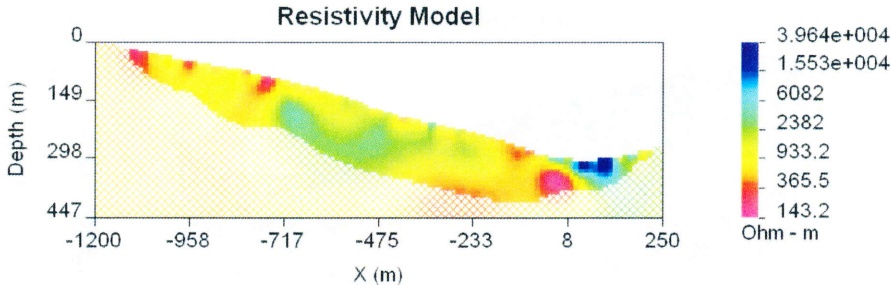




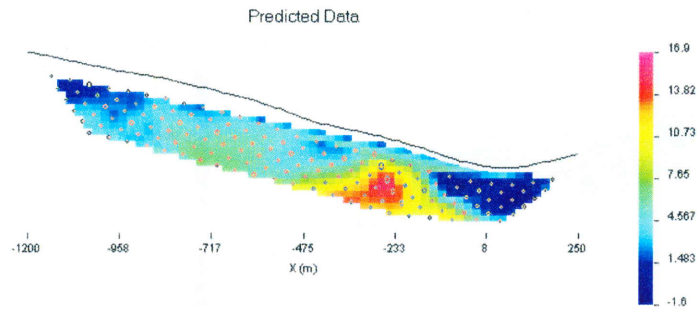
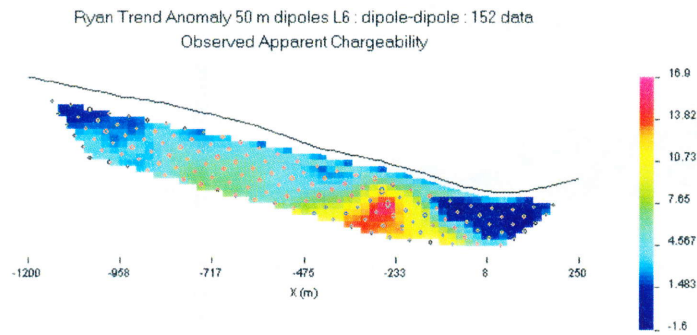
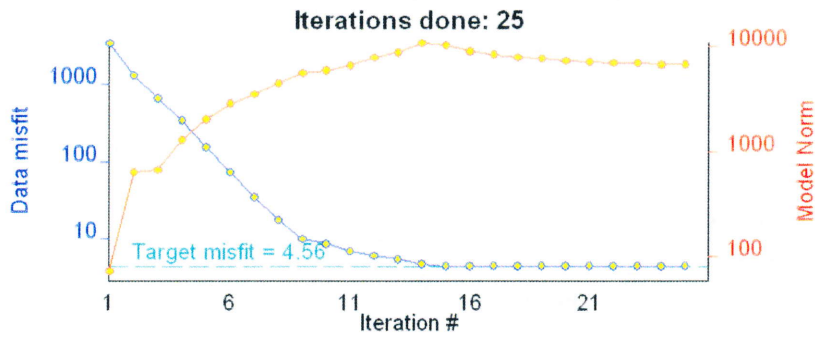
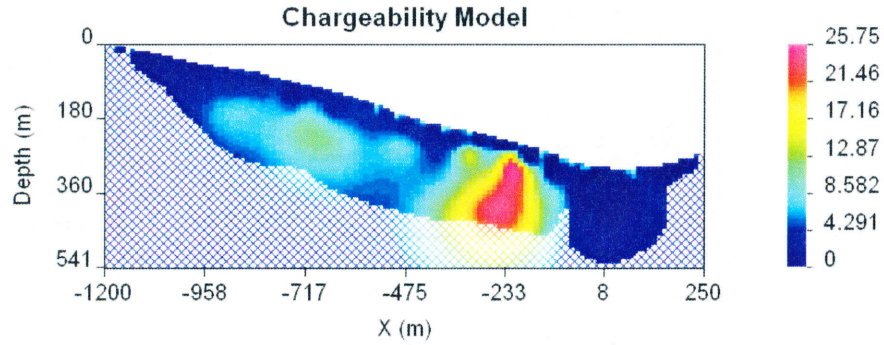
### L5 – Chargeability Inversion Results



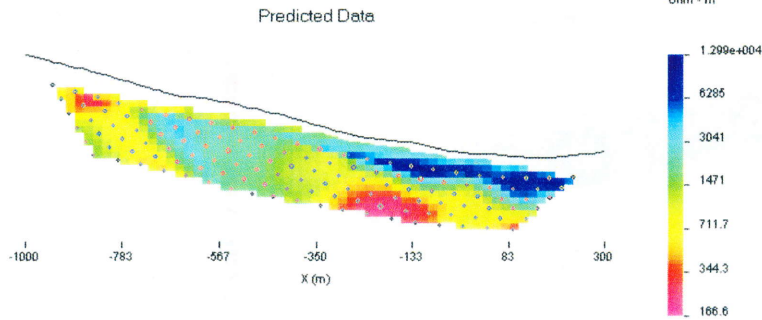
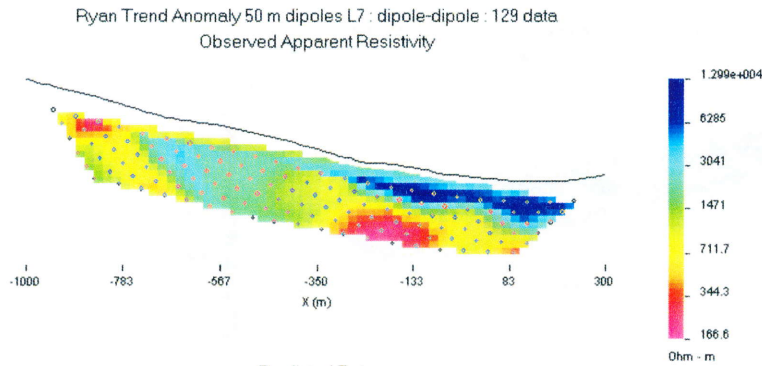
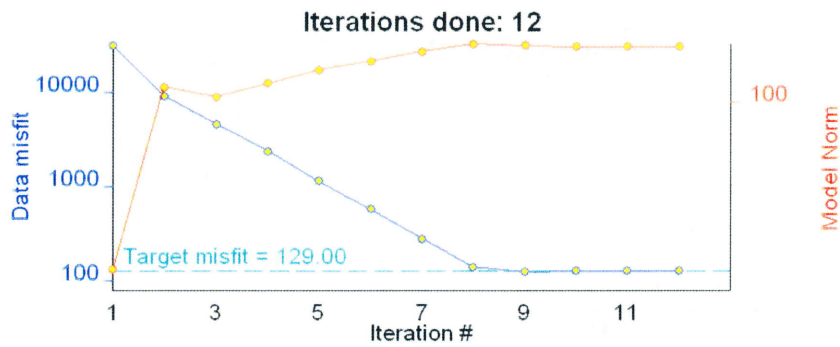
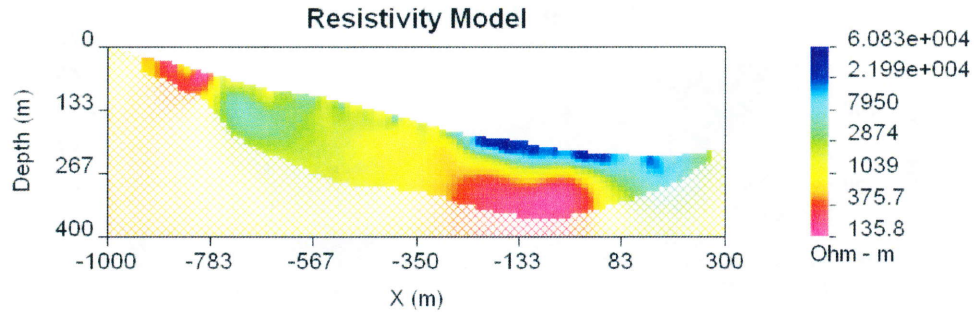
### L6 – Resistivity Inversion Results



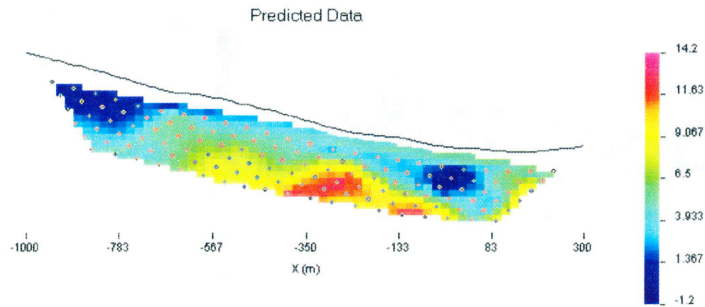
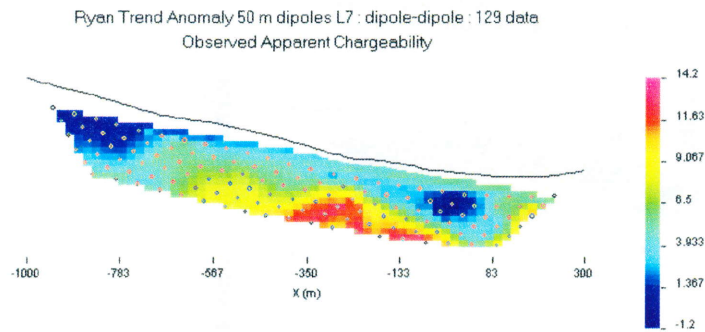
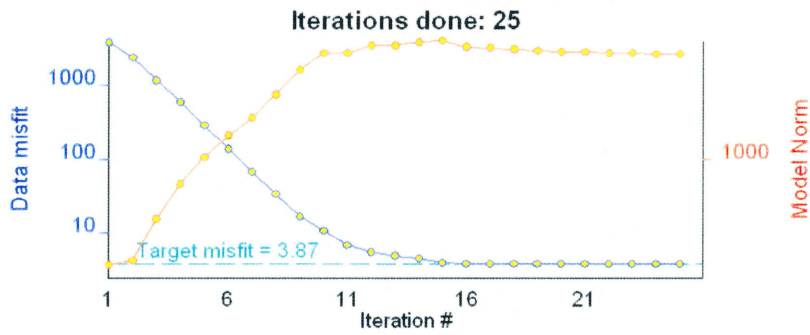
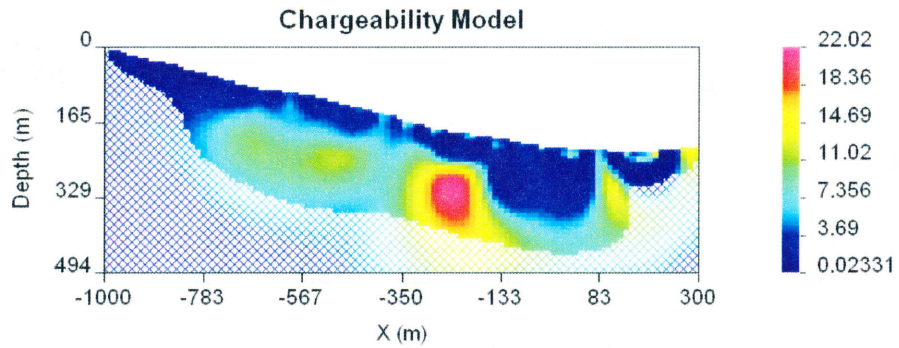
### L6 – Chargeability Inversion Results



### L7 – Resistivity Inversion Results

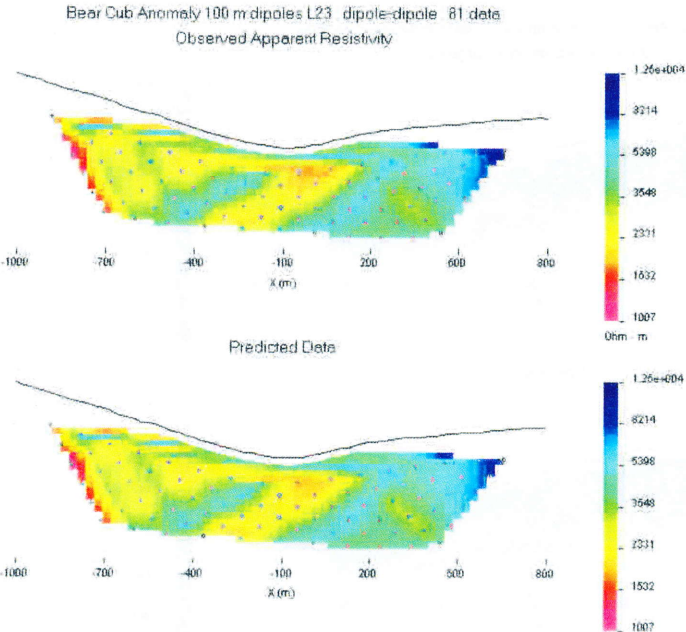
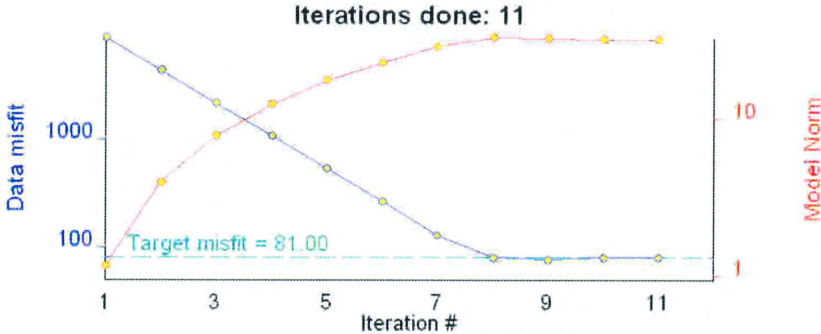
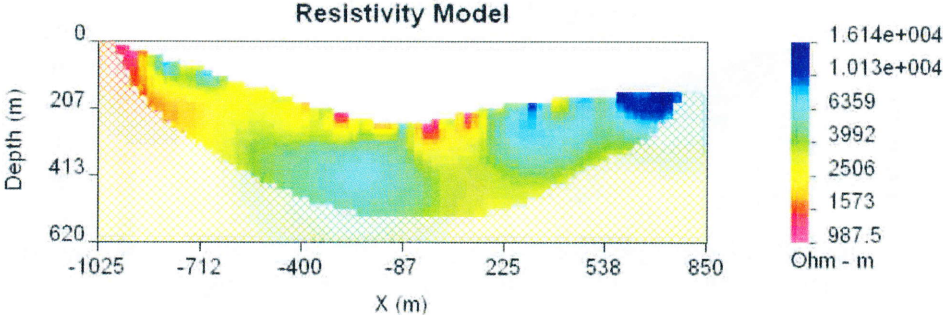


### L7 – Chargeability Inversion Results

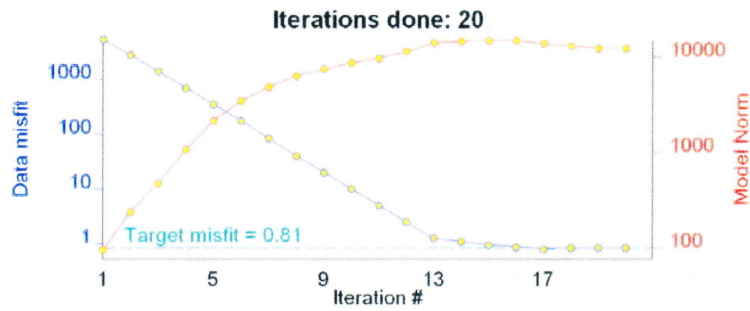
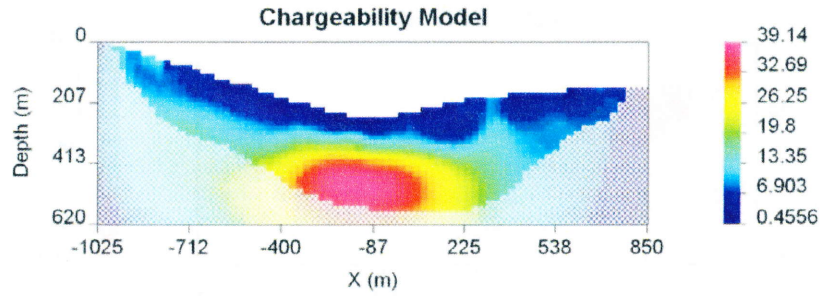




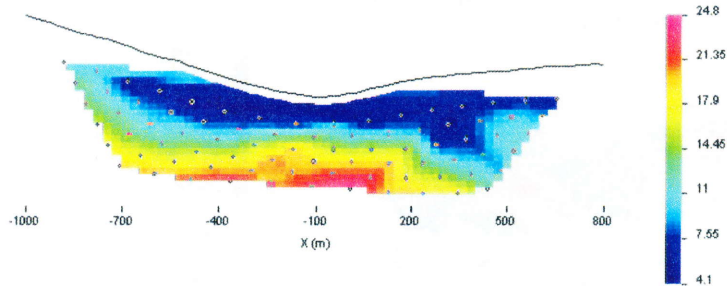
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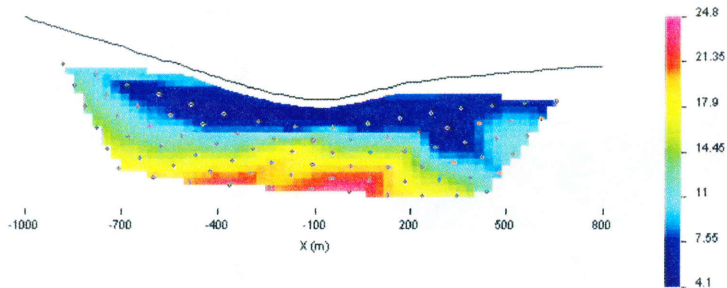
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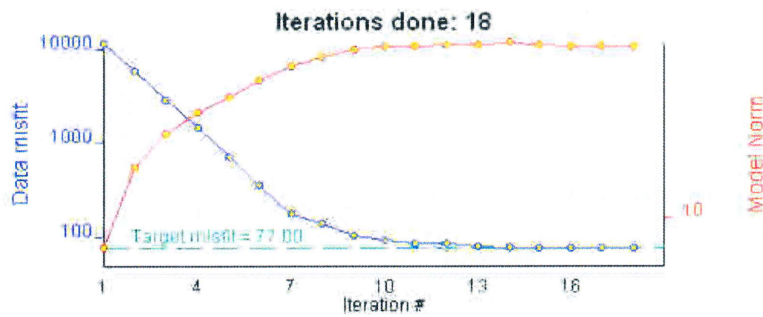
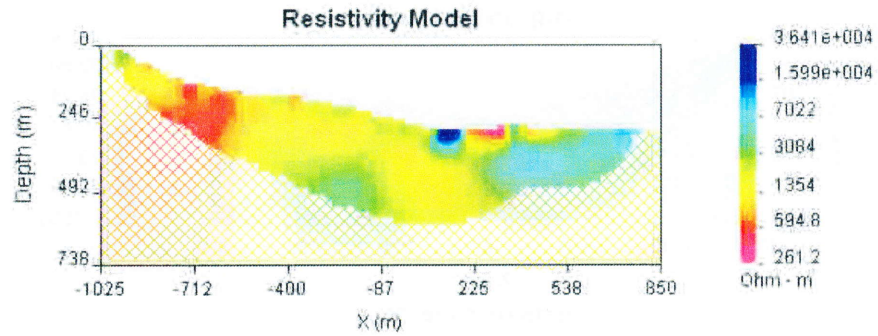
Bear Cub Anomaly 100 m dipoles L23 : dipole-dipole : 81 data  
Observed Apparent Chargeability



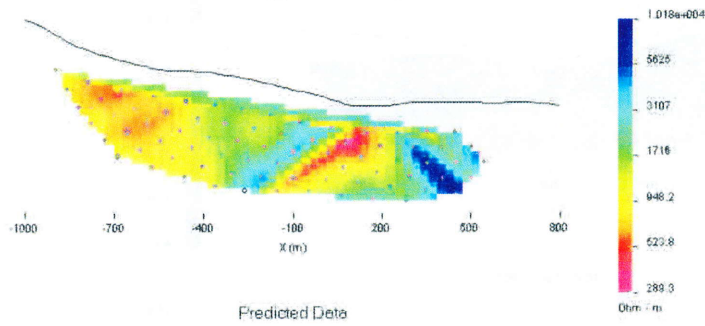
Predicted Data



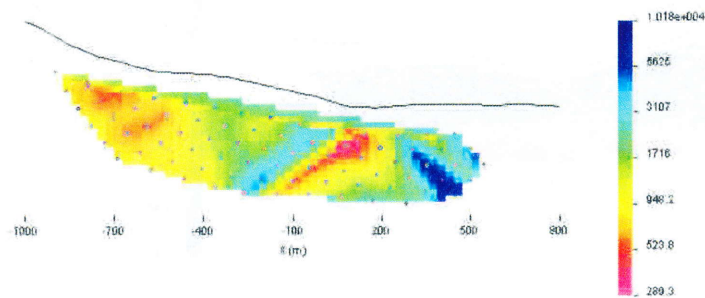
### L28 – Resistivity Inversion Results



Lucky Joe Bear Cub Anomaly L28 - dipole-dipole - 77 data  
Observed Apparent Resistivity

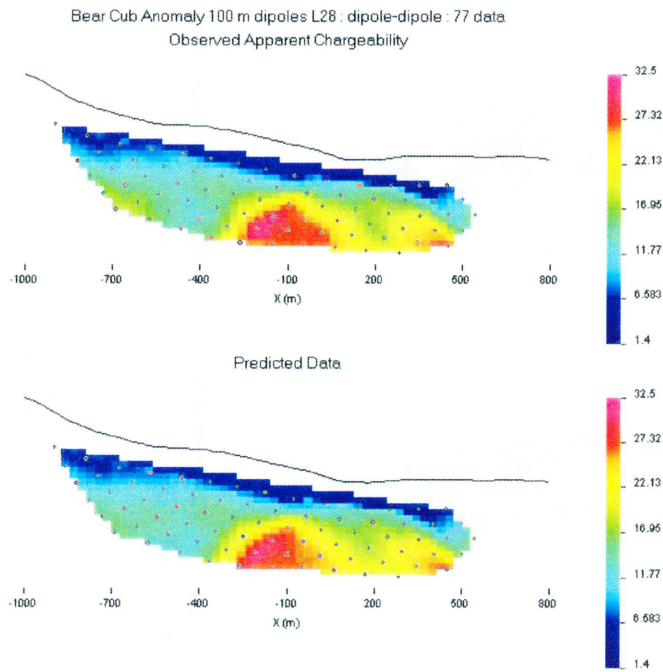
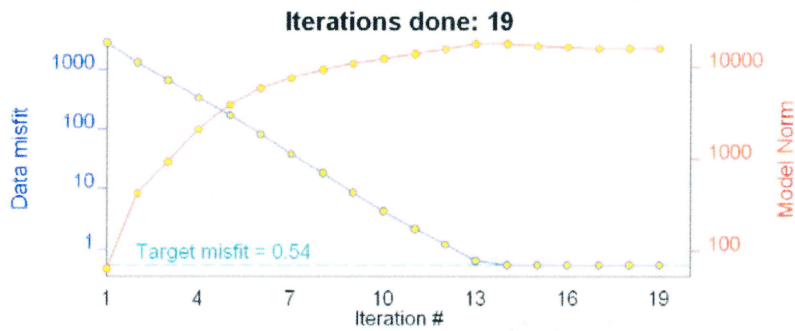
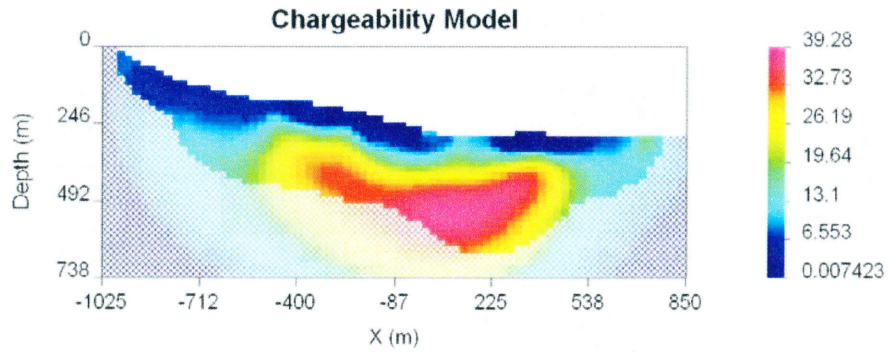


Predicted Data

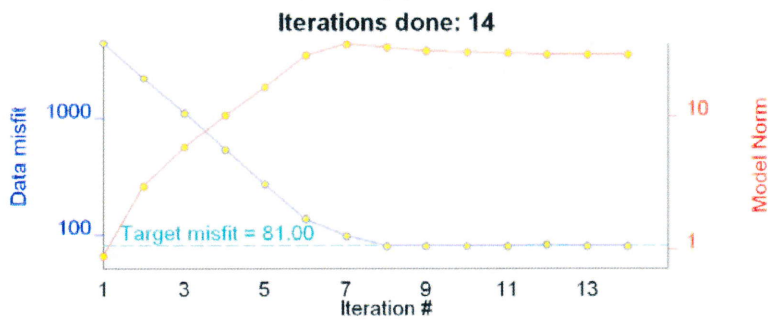
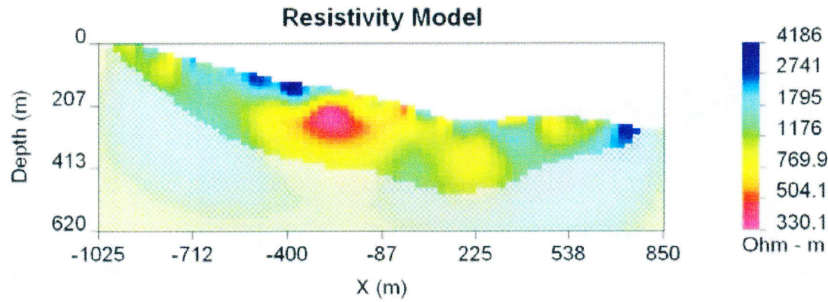




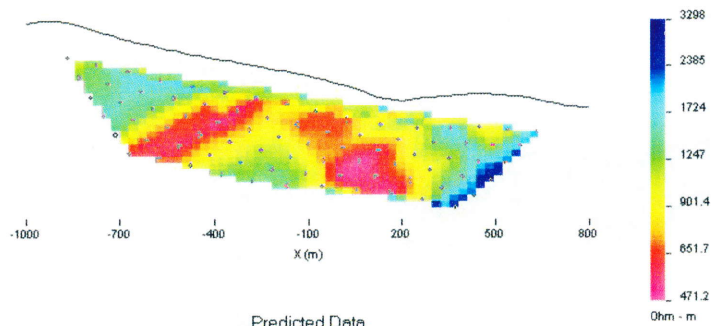
### L28 – Chargeability Inversion Results



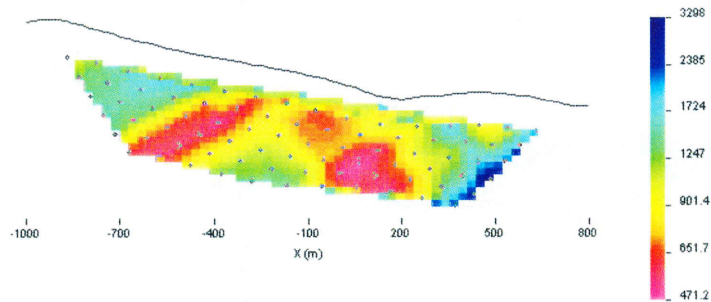
### L33 – Resistivity Inversion Results



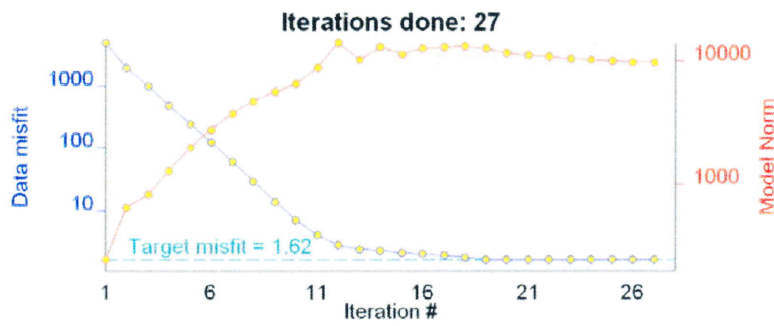
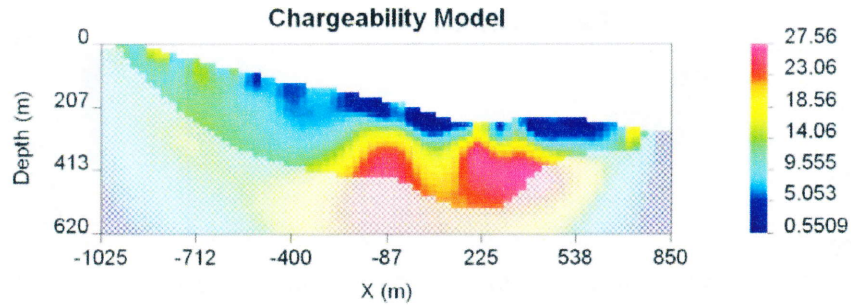
Lucky Joe Bear Cub Anomaly L33 : dipole-dipole : 81 data  
 Observed Apparent Resistivity



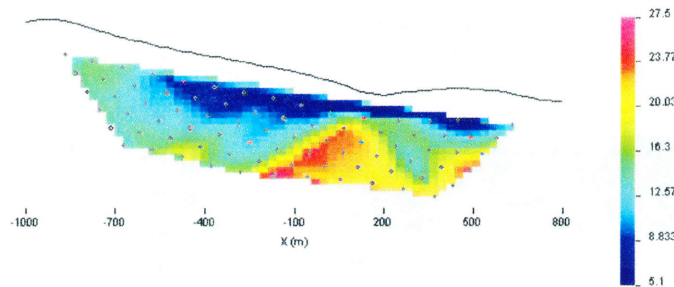
Predicted Data



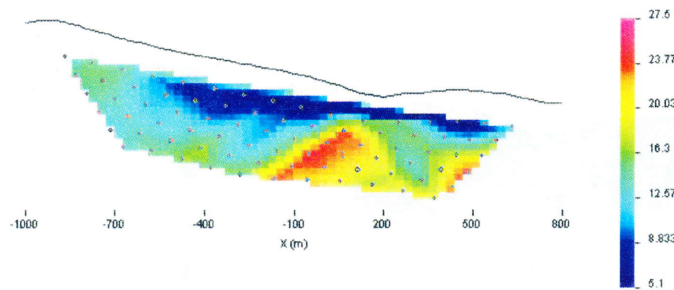
### L33 – Chargeability Inversion Results



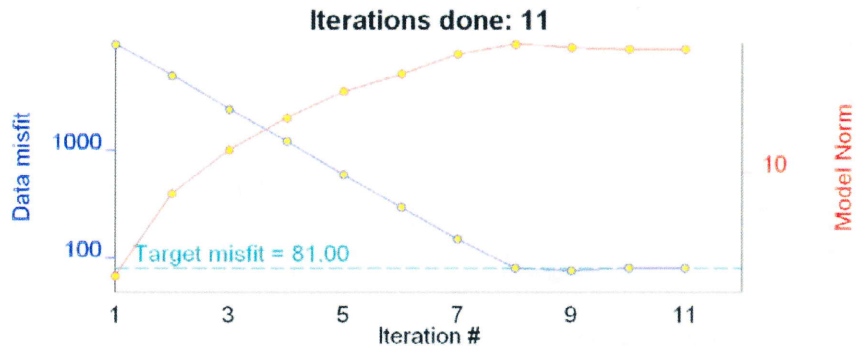
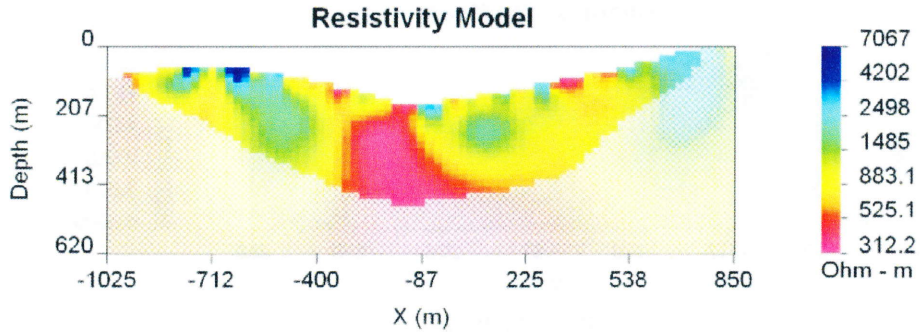
Bear Cub Anomaly 100 m dipoles L33 : dipole-dipole : 81 data  
Observed Apparent Chargeability



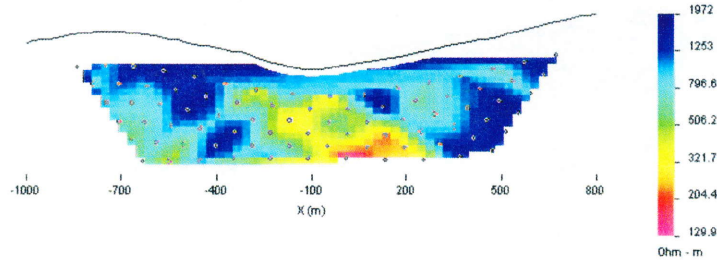
Predicted Data



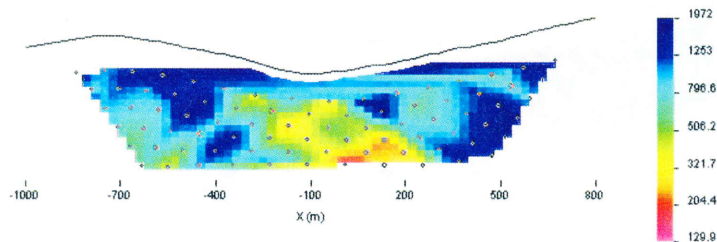
### L53 – Resistivity Inversion Results



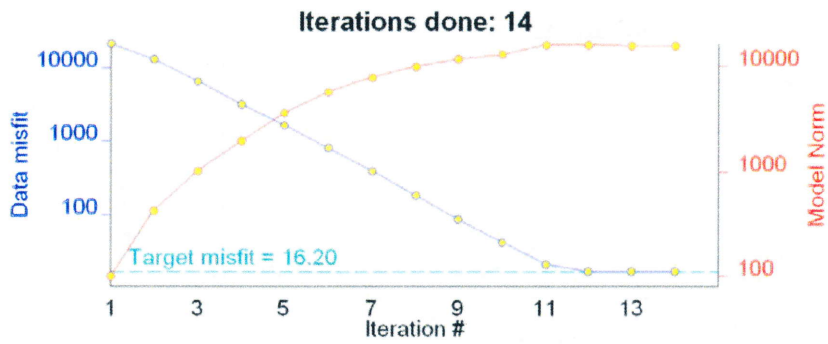
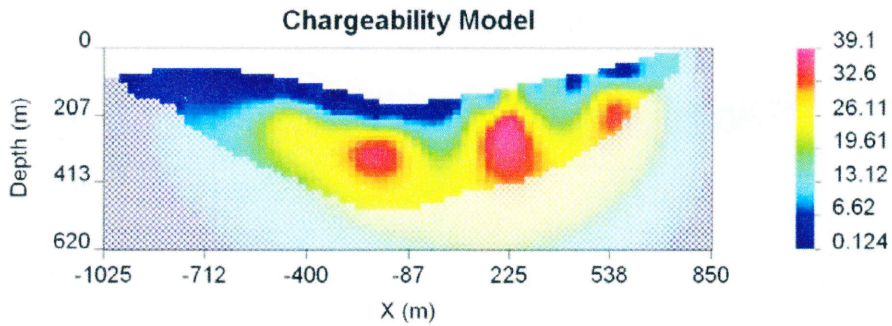
Bear Cub Anomaly 100 m dipoles L53 : dipole-dipole : 81 data  
 Observed Apparent Resistivity



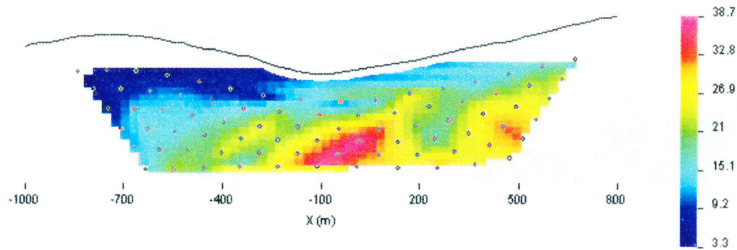
Predicted Data



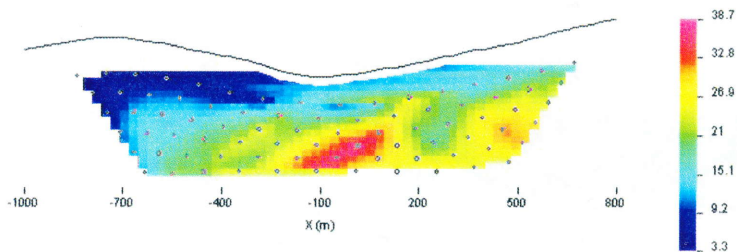
### L53 – Chargeability Inversion Results



Bear Cub Anomaly 100 m dipoles L53 : dipole-dipole : 81 data  
 Observed Apparent Chargeability

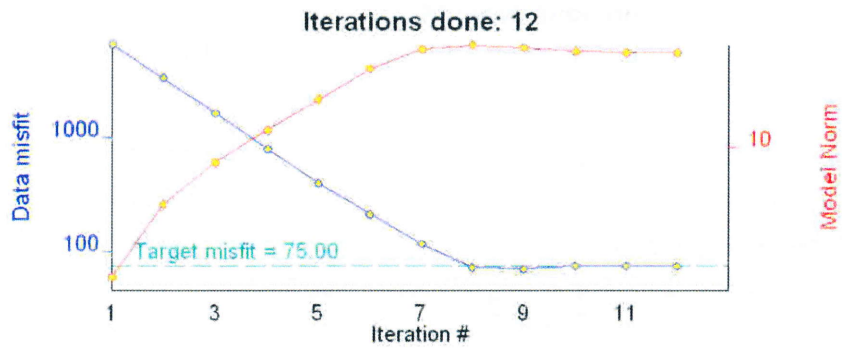
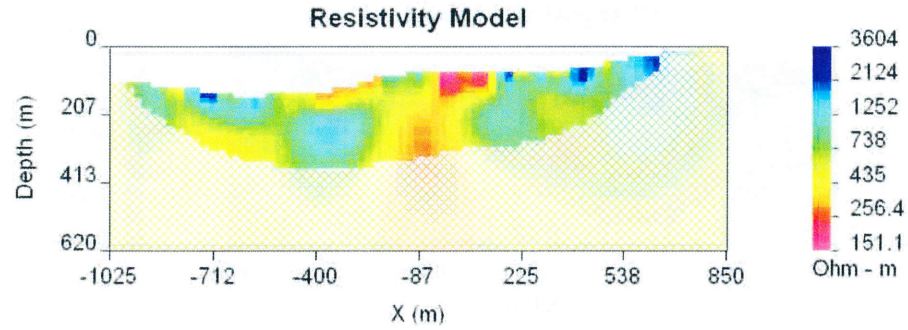


Predicted Data

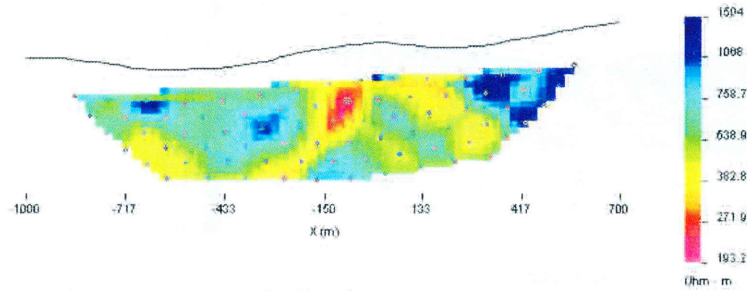




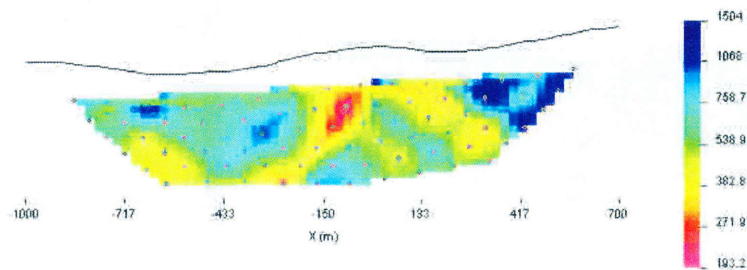
### L58 – Resistivity Inversion Results



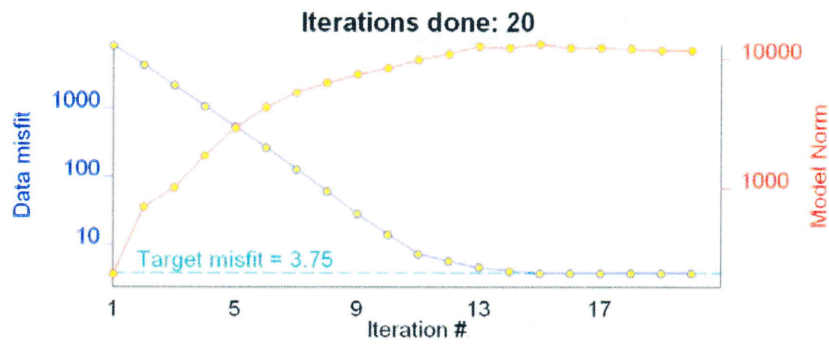
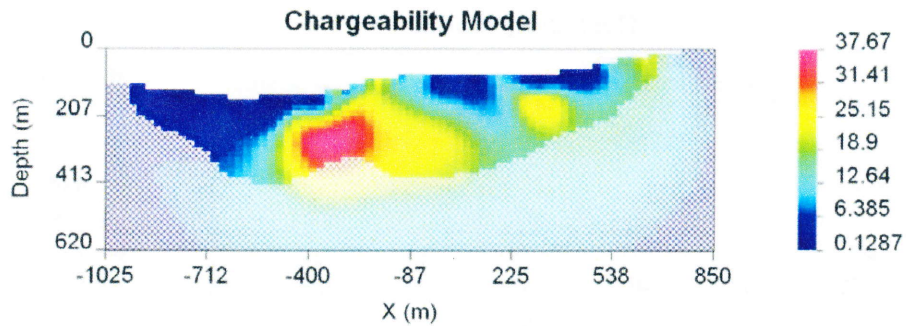
Bear Cub Anomaly 100 m dipoles L58 - dipole-dipole : 75 data  
 Observed Apparent Resistivity



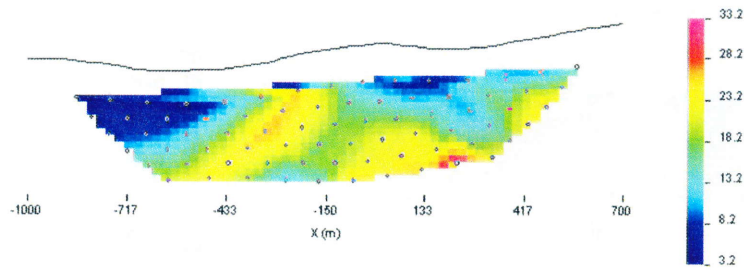
Predicted Data



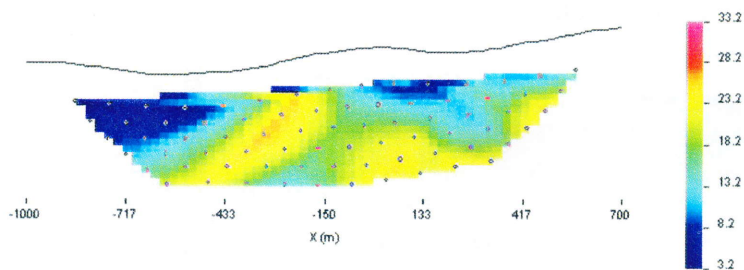
### L58 – Chargeability Inversion Results



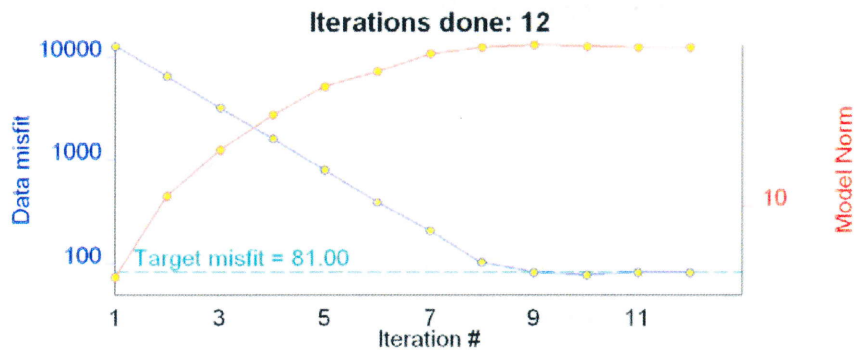
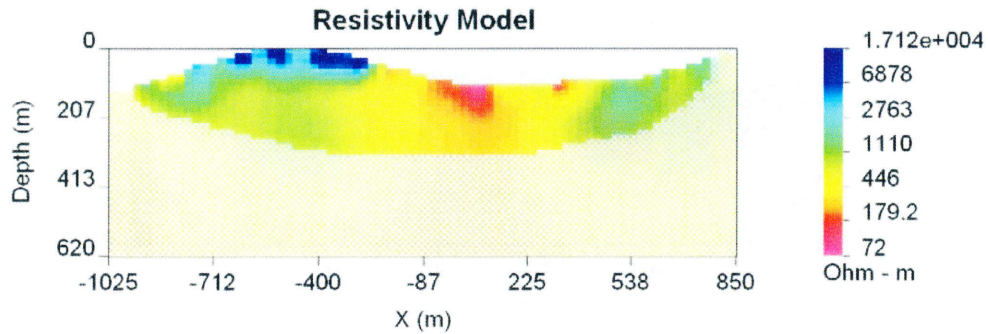
Bear Cub Anomaly 100 m dipoles L58 : dipole-dipole : 75 data  
 Observed Apparent Chargeability



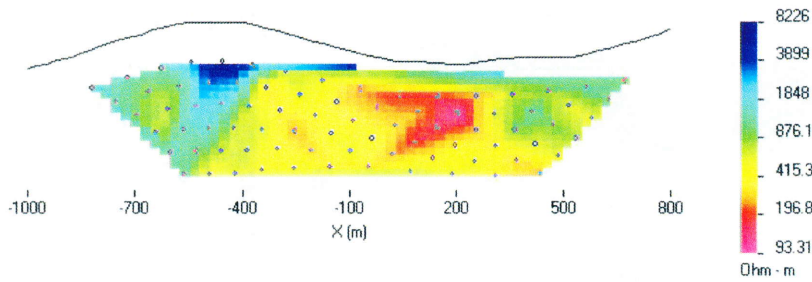
Predicted Data



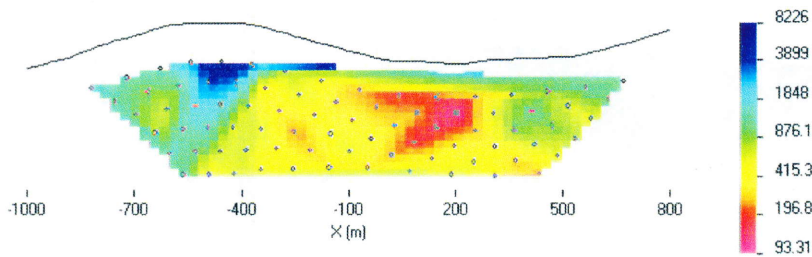
### L63 – Resistivity Inversion Results



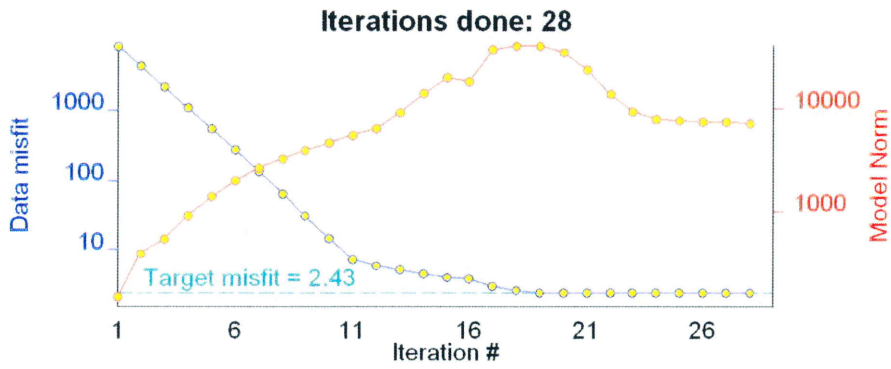
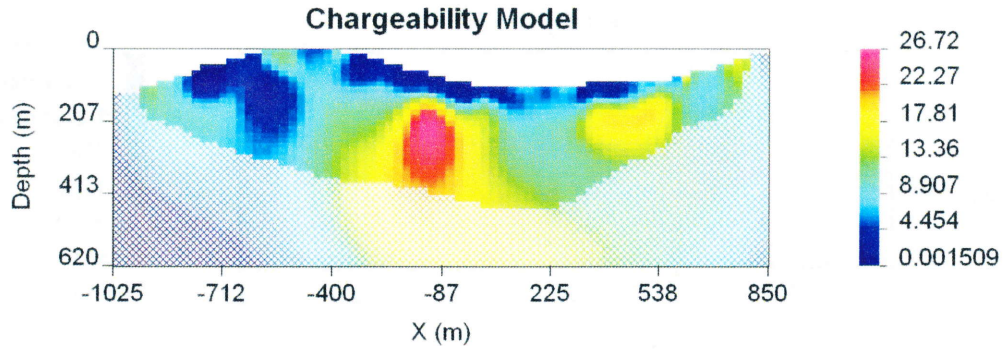
Bear Cub Anomaly 100 m dipoles L63 : dipole-dipole : 81 data  
 Observed Apparent Resistivity



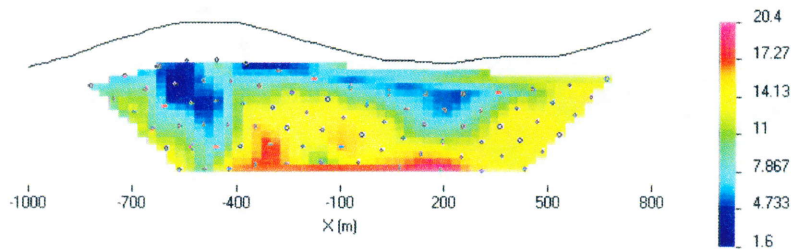
Predicted Data



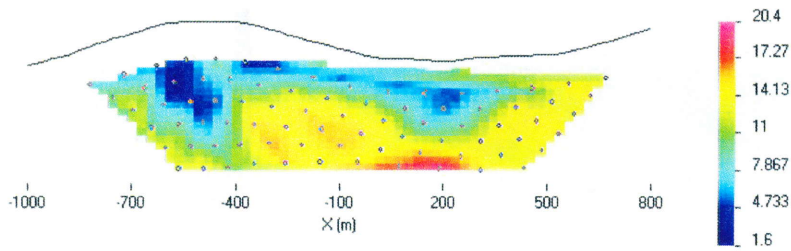
L63 – Chargeability Inversion Results



Bear Cub Anomaly 100 m dipoles L63 : dipole-dipole : 81 data  
 Observed Apparent Chargeability

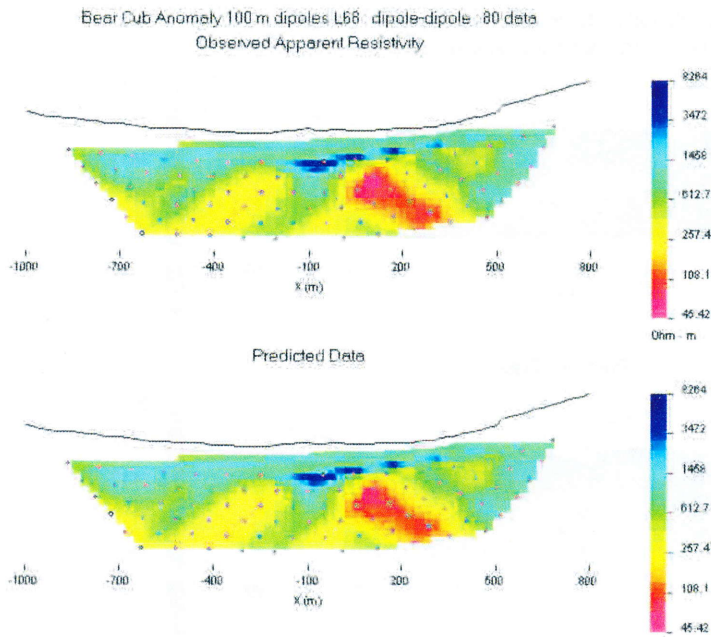
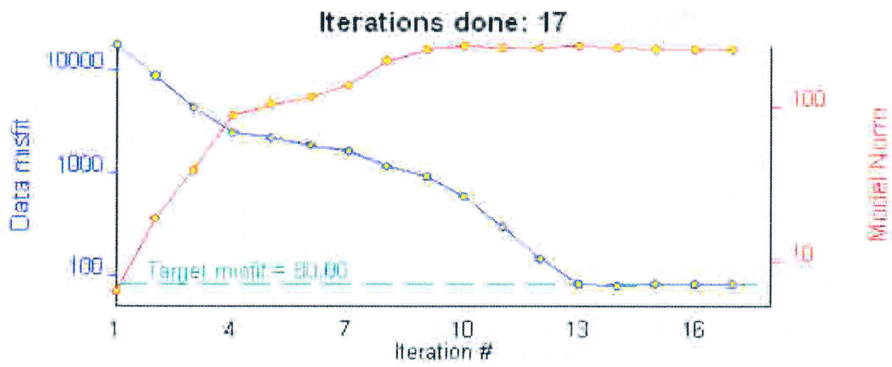
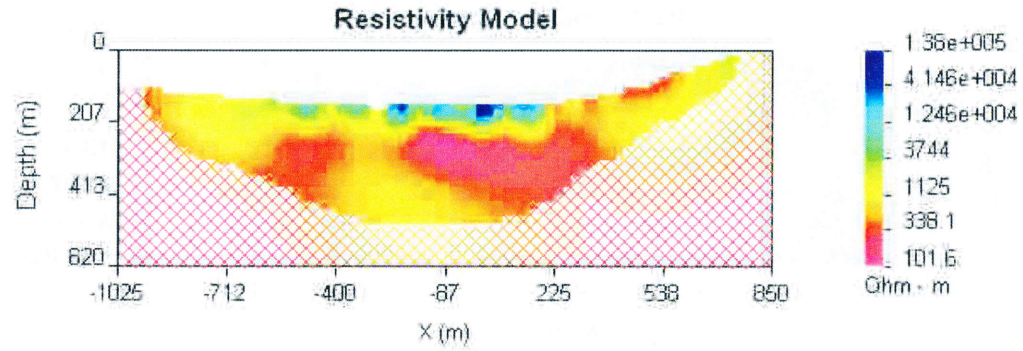


Predicted Data



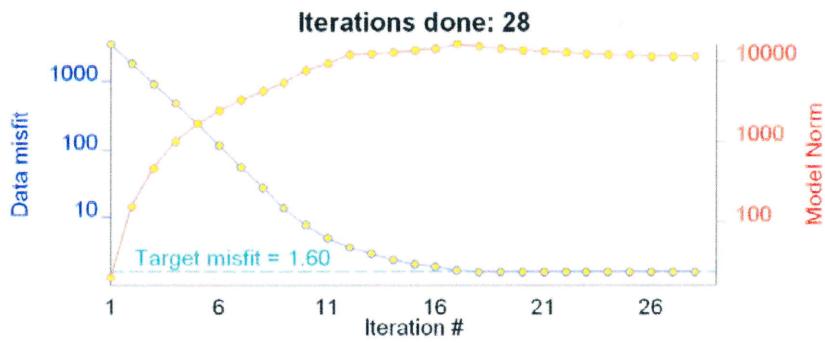
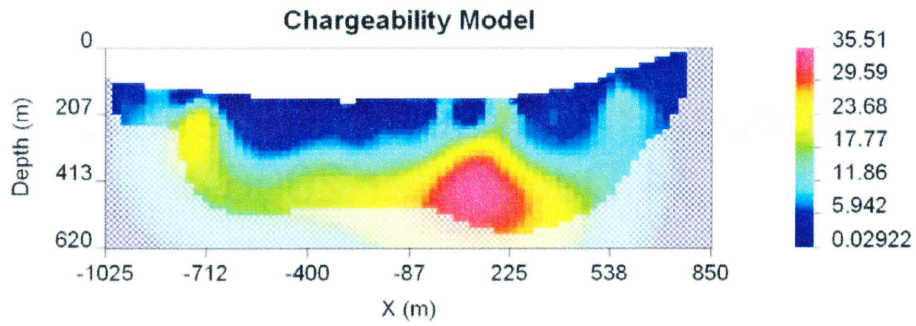


L68 – Resistivity Inversion Results

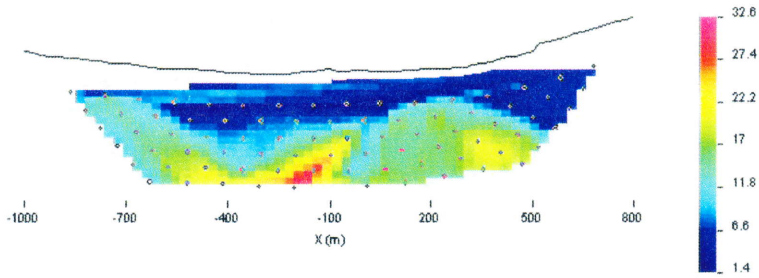




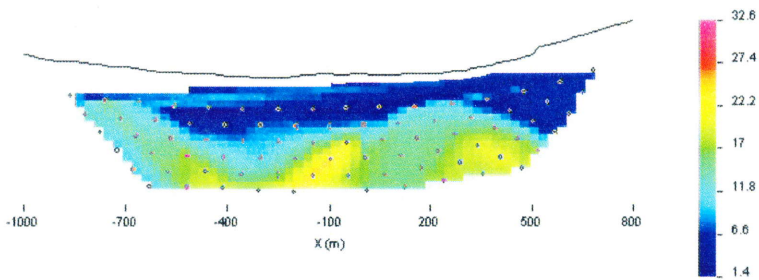
### L68 – Chargeability Inversion Results



Bear Cub Anomaly 100 m dipoles L68 : dipole-dipole : 80 data  
 Observed Apparent Chargeability



Predicted Data



## Appendix III

### Copper Ridge News Release of 14 December 2006



## COPPER RIDGE INTERSECTS COPPER-GOLD MINERALIZATION IN LUCKY JOE DRILLING

Vancouver, BC, December 14, 2006 – Copper Ridge Explorations Inc. (“Copper Ridge” or the “Company”) announces initial results from the drilling program completed on its 100% owned Lucky Joe project, located 40 km south of Dawson City in the Yukon. The target at Lucky Joe is a metamorphosed porphyry deposit or possibly a variety of IOCG (iron oxide copper-gold) deposit as defined by two large copper and gold soil geochemical anomalies: The Bear Cub Zone is 11 km in length and the nearby Ryan’s Creek zone is 7 km in length. The combination of a late start, difficult drilling conditions, drill equipment break-downs and the onset of winter weather resulted in only three holes out of a proposed 10 hole program being completed.

On the Ryan’s Creek trend, hole LJ06-09 intersected strongly to moderately altered schist through most of its length. A mineralized zone consisting of trace to 2% chalcopyrite and trace to 2% pyrite was encountered between 48 and 91 m. Within this zone, **copper values up to 0.75 % over 3.0 m and gold values up to 3.0 g/t over 2.4 m were encountered.** Significant mineralization within the zone is summarized as follows:

From (m)	To (m)	Interval (m)	Copper (%)	Gold (g/t)
51.0	63.0	12.0	0.36	0.80
Includes 57.0	63.0	6.0	0.50	1.50
And 60.0	63.0	3.0	0.23	2.90

These results are from the extreme south end of a 7 km long anomalous trend defined by gold and copper soil geochemistry, magnetics and IP chargeability. Two other holes attempted in this area did not reach bedrock, so the mineralization encountered in hole LJ06-09 remains open in all directions.

Gerald Carlson, President of Copper Ridge stated “We are very pleased by these results. In particular, the gold results are the highest yet returned from the Lucky Joe property. To get such encouraging results from the only hole successfully completed on the Ryan Trend confirms that this structure has the potential to host a significant body of economic copper-gold mineralization.” The coincident chargeability and copper-gold geochemical anomaly that defines the Ryan Trend is remarkably persistent and strong over a strike length of at least 3.5 kilometres. The northwest part of this trend, where the gold and copper soil geochemical values are highest and most widespread, remains untested by drilling.

Copper Ridge is planning a drill program as early as conditions permit in 2007 to further defined the extent of the copper-gold mineralization on the Ryan Trend and to complete the testing of the Bear Cub zone.

At the Bear Cub anomaly, drill hole LJ06-06 was drilled to test a strong copper soil geochemical anomaly on the flanks of a chargeability anomaly and a magnetic high. The hole intersected strongly to weakly altered metamorphosed intrusive rocks, the typical host for most of the known mineralization at Bear Cub, throughout its 213 m length. The hole was terminated in a fault zone short of its target length of 250 m. Up to 10 % pyrite was encountered in local intervals, but only a trace of copper mineralization was observed. The source of the large copper geochemical anomaly in this area of the Bear Cub Zone therefore remains unexplained.

Drill hole LJ06-07 was drilled 500 m to the southwest of hole LJ06-07, also on the flanks of a strong chargeability anomaly. The results from this hole have not yet been received.

Complete results for the Lucky Joe program will be released when they have been received. Mr. Greg Dawson, VP Exploration for Copper Ridge is the Qualified Person for the Lucky Joe Project and is responsible for the technical content of this news release. Drilling was carried out by Blackhawk Drilling (formerly Suisse Diamond Drilling Ltd.) of Smithers, BC. Supervision of the drill program was carried out by Aurora Geosciences Ltd. of Whitehorse under the direction of Copper Ridge. Assaying was conducted by Acme Analytical Laboratories Ltd. of Vancouver.

This release was prepared by management of the Company who takes full responsibility for its contents. The TSX Venture Exchange has not reviewed and does not accept responsibility for the adequacy or accuracy of this news release.

Copper Ridge's exploration philosophy focuses on maximizing the potential for success in a high-risk business. With grass roots mineral exploration, where the entry cost is low but the potential reward can be very high, success will be contingent on exploration skill and on carefully managed risk. Our management team brings tenacity, technical skill and experience, all crucial ingredients for discovery. By exploring a broad array of projects, focusing on the right commodities, in areas of high mineral potential and in mining-friendly jurisdictions, Copper Ridge is reducing the exploration risks for its shareholders and exposing them to a greater chance for discovery. Copper Ridge is well financed and is near completion of a busy field season on its Yukon and British Columbia properties.

Contact:

**Gerald G. Carlson, President & CEO**

Copper Ridge Explorations Inc.  
Suite 500 – 625 Howe Street  
Vancouver, B.C. V6C 2T6  
Phone: 604-688-0833; 1-888-278-2288  
Fax: 604-688-0835  
[info@copper-ridge.com](mailto:info@copper-ridge.com)

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