# GEOPHYSICAL REPORT

# on

# IP and RESISTIVITY SURVEYS

# over the

# MAIN ZONE

# within the

# CHACO BEAR PROPERTY

# DRIFTWOOD RIVER, BEAR LAKE AREA

# OMINECA MINING DIVISION, BRITISH COLUMBIA



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| **PROPERTY LOCATION**: | 4 km west of Bear Lake<br>56° 10’ N Latitude, 126° 50’ W Longitude<br>NTS: 94D/02,03 |
| **WRITTEN FOR:** | **HOUSTON MINERALS INC.**<br>1402-1500 Haro St<br>Vancouver, BC, V6G 1G5 |
| **WRITTEN BY:** | David G. Mark, P.Geo.<br>**GEOTRONICS CONSULTING INC.**<br>6204 – 125th Street<br>Surrey, British Columbia V3X 2E1 |
| **DATED:** | May 1, 2013 |

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# 1 SUMMARY

IP and resistivity surveys were carried out within the Chaco Bear Property which is situated in the north central area of BC to the west of Bear Lake within the Omineca Mining Division. The property is located about 100 km north of the town of Smithers.

The main part of the Chaco Bear Property occurs at the headwaters of the Driftwood Valley. The elevations range from a high of about 2,200 m along the mountainous west side of the property to 800 meters along Bear Lake on the east side, The Driftwood Valley bottom at its lowest is about 1,400 m.

The bulk of the property is underlain by a thick succession of intermediate to basic metavolcanic rocks of the Telkwa Formation, the lowest member of the Hazelton Group which occupies the western and central portions of the property. Most of the units mapped are of andesitic composition and are comprised of red and green coloured aphyric andesite flows, fine and coarser grained plagiophyric andesite flows, grey and maroon coloured basaltic flows and andesitic lithic ash tuffs, and flow breccias. The eastern portion of the claims is underlain by felsic metavolcanic rocks comprised of flow layered rhyolite flows, rhyolite welded and unwelded lapilli ash tuffs, as well as porphyritic dacite flows and tuffs and lesser aphyric andesite flows.

The main purpose of exploration on the Chaco Bear Property is to explore for mineralization that may vary from epithermal gold-silver veins to larger tonnage, low-grade porphyry copper type deposits. Also past exploration work has suggested the possibility of an Eskay Creek type deposit, which is a VMS type, occurring on the property. The specific purpose of the IP survey is to locate sulphide mineralization and that of the resistivity survey is to map geology, especially as it pertains to any possible sulphide mineralization as may have been mapped by the IP survey.

The resistivity and IP surveys were carried out using a BRGM Elrec Pro multi-channel receiver operating in the time-domain mode. The transmitter used was a BRGM VIP 4000 powered by a 6.5-kilowatt motor generator. The dipole length and reading interval chosen was 25 meters read up to 10 levels. Two lines of IP/resistivity surveying, one line north-south and the other east-west, were carried out for a total survey length of 1,925 meters.

The IP and resistivity results were plotted, both in pseudosection form, and contoured. A 2-D inversion interpretation using Geotomo software, a least squares method, was also carried out along each of the IP lines and the results plotted and contoured.

# 2 CONCLUSIONS

1. The IP survey has revealed 9 anomalies along two survey lines perpendicular to each other and these have been labeled by the upper case letters, A to I, for ease of discussion. These anomalies occur in an area of known mineralization and soil geochemistry anomalies.
2. IP anomalies B, C and E correlate with and/or nearby MMI soil anomalies therefore suggesting that the causative source may be sulphides of economic interest. Anomaly D occurs close to the MMI reconnaissance line in an area without MMI

anomaly. However, there are missing soil samples in this area. There was no MMI sampling done in the area of any of the remaining IP anomalies.

3. The IP anomalies vary in width from 25 meters, being anomaly I, to 250 and 275 meters, which are anomalies A and G, respectively. The narrower anomalies may be reflecting vein-type mineralization and the larger ones, perhaps, porphyry copper type mineralization, that is, some type that is lower grade, but larger tonnage.
4. IP anomalies B ,D, the western part of G, and H correlate with resistivity highs which may mean that sulphide mineralization occurs with silicification/calcification, or that it is hosted with an intrusive-type host rock. Anomalies C, E, F, and the eastern part of G, correlate with resistivity lows which suggest that the IP-indicated mineralization may be occurring within areas of alteration and/or fracturing. Anomalies A and I correlate with background resistivity.
5. The resistivity survey revealed three narrow resistivity lows along line 29100E that may be caused by faulting. One of these correlates with Driftwood River therefore suggesting that Driftwood River occurs along a fault system.

# 3 RECOMMENDATIONS

Both the 2007 MMI survey and the 2012 IP survey have revealed positive results of strong exploration interest. However, these two surveys were reconnaissance in nature and thus it is recommended to establish a grid within this area with 9 lines every 100 meters running east-west, that is, across Driftwood River valley. This means extending the surveying of line 23500N which would result in a total of 10 lines. MMI soil sampling should then be carried out along the 10 lines with samples every 25 meters. IP surveying should also be done along the remaining 9 lines with the same dipole length used for the reconnaissance work, that is, 25 meters. It is recommended to cut the lines out because of thick brush.

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## 4 INTRODUCTION AND GENERAL REMARKS

This report discusses survey procedure, compilation of data, interpretation methods, and the results of IP and resistivity surveying carried out over the Main Zone within the Chaco Bear Property which is located 4 km to the west of Bear Lake, BC, and is owned by Houston Minerals Inc. which is the operator of the property.

The IP/resistivity survey was carried out by a Geotronics crew of six men during the period of September 4th to the 22nd, 2012. It was carried out under the supervision of the writer and under the field supervision of Kyle St Amour Brennan.

The main purpose of exploration on the Chaco Bear Property is to explore for mineralization that may vary from epithermal gold-silver veins to larger tonnage, low-grade porphyry copper type deposits. Also past exploration work has suggested the possibility of an Eskay Creek type deposit, which is a VMS type, occurring on the property.

The specific purpose of the IP survey is to locate sulphide mineralization. The purpose of the resistivity survey, which is carried out while doing the IP survey, is to map geology. In addition, its purpose is also to determine whether IP anomalies correlate with (1) resistivity highs, which may indicate that sulphide mineralization is associated with silicification or calcification; or (2) resistivity lows, which may indicate that alteration and/or fracturing is associated with sulphide mineralization.

Much of the following within the sections ‘Location and Access’ through ‘Geology’ is taken from Jack Ashton’s report on the property dated January 25th, 2011.

## 5 PROPERTY AND OWNERSHIP

The property is comprised of 12 contiguous claims that consist of an area of 4,310 ha and is located within the Omineca Mining Division as shown on figures #2 and #3: These claims occur on NTS map sheet 82D/02,03 and on BCGS map sheet 94D.015,016.

| Tenure Number | Type | Claim Name | Good Until | Area (ha) |
|---|---|---|---|---|
| 312052 | Mineral | CHACO BEAR 2 | Nov 10, 2015 | 500 |
| 312053 | Mineral | CHACO BEAR 3 | Nov 10, 2015 | 500 |
| 312054 | Mineral | CHACO BEAR 4 | Nov 10, 2015 | 500 |
| 561258 | Mineral | CHACO BEAR 11 | Nov 10, 2015 | 450.4757 |
| 561260 | Mineral | CHACO BEAR 12 | Nov 10, 2015 | 306.4422 |
| 561261 | Mineral | CHACO BEAR 13 | Nov 10, 2015 | 324.2965 |
| 598583 | Mineral | CHACO BEAR 21 | Nov 10, 2015 | 378.2379 |
| 598586 | Mineral | CHACO BEAR 22 | Nov 10, 2015 | 108.0675 |
| 598587 | Mineral | CHACO BEAR 24 | Nov 10, 2015 | 162.0489 |
| 598588 | Mineral | CHACO BEAR 23 | Nov 10, 2015 | 378.1161 |
| 598589 | Mineral | CHACO BEAR 25 | Nov 10, 2015 | 252.0168 |
| 836222 | Mineral | CHACO BEAR 1 | Nov 10, 2015 | 450.4767 |
| | | | Total Area | 4310.1783 |

Chaco Bear 1, tenure #836222, is owned by the writer and all other claims are owned by Houston Minerals Inc. of Vancouver, British Columbia.

## 6 LOCATION AND ACCESS

The centre of the original claim block which comprises the Chaco Bear 1, 2, 3 and 4 mineral claims is located about 4 kilometres West of Bear Lake, British Columbia, at Longitude 126°50’00” West and Latitude 56°10’00 North.

Bear Lake is located about 150 km north of Smithers and about 350 km northwest of Prince George. The Kemess Mine is located about 100 km north-northeast from Chaco Bear, and the deep-sea seaport town of Stewart is located about 200 km west of Chaco Bear.

The Canadian National Railway (formerly the British Columbia Railway) has operating track up to the east side of Bear Lake. Similarly logging road along the east side of Bear Lake provides access from Fort St. James to the south east. From “Big Lake” at the centre of the Chaco Bear property, to the railroad and truck-road is about 3 miles easterly as the crow flies. Construction of a road from Bear Lake to the property should not be difficult. A bridge across the Bear River would be required.

The British Columbia government has plans for the construction of the Stewart-Omineca Road that will connect the deep sea port of Stewart with the Kemess Mine and other promising mineral prospects throughout the region. This road will pass by the Chaco Bear property about 11 miles to the north and will connect to existing logging road that extends northward from the east side of Bear Lake.

Access to the vicinity of the property is presently by any of the following alternatives to Bear Lake, thence by helicopter to the property.

- road or railroad to Bear Lake. However, this is somewhat questionable since the IP crew could not gain access since some of the roads were not passable.

- fixed wing float aircraft to Bear Lake.

- fixed wing wheeled aircraft to the Bear Lake dirt strip

Alternatively direct helicopter access can be provided from Smithers, Prince George, Fraser Lake, or Takla Lake, to name a few.

Various alternatives are recommended to gain access to the property in a cost effective manner depending upon the amount of freight and equipment that is required for advanced exploration work.

# 7 PHYSIOGRAPHY AND VEGETATION

The claim area at the headwaters of the Driftwood Valley is mountainous. West of the Driftwood Valley the elevations range from a high about 2,200 m along the high, most ragged, serrated and knife edge ridges and peaks whereas east of the Driftwood Valley the ridge line is somewhat rounded with the highest elevation at 1,800 m. The immature Driftwood Valley bottom at its lowest is about 1,400 m. The East Ridge slopes continually downward until it reaches Bear Lake at an elevation of about 800 metres.

Treeline is located at about 1,500 m and the majority of the claim area in the Driftwood River bottom is above this level where stable slopes support vegetation of mostly grasses and small entanglements of conifers. Much of the area above tree-line is composed of talus slopes.

The area below tree-line is for the most part that area which straddles the headwaters of the Driftwood River and contains abundant yet small alpine fir, white and black spruce, and lodgepole pine.

Rock outcrop predominates along the ridge areas and those steeply incised drainage features which drain the ridges. Outcrop is found alongside the headwaters of the Driftwood River along the valley bottom and where the river has carved itself into the bedrock. The valley bottom on both sides of the Driftwood River is obscured by a combination of ferricrete, talus, and organic soil. Rock outcrop is estimated to represent not more than 5 to 10 percent of the property area.

According to Lord, 1948, the best evidence for the direction of movement of the ice-sheet was found only in the northeast half of the map area, NTS 94D. Here the ice moved generally from west to east and to the southeast. He suggests that those U-shaped valleys, which includes the headwaters of the Driftwood River where the Chaco Bear 4 Mineral Claim is located was eroded by glaciers flowing along them to the southeast.

## 8 HISTORY OF PREVIOUS WORK

In terms of mineral exploration data acquired and subsequently published by the Geological Survey of British Columbia; the exploration work carried out by Suncor Inc. in 1985 and 1986, by Imperial Metals Corporation in 1996 and 1997 and by Houston Minerals Inc. in 2007 using the new Mobile Metal Ion assay method; stands out as being the most meaningful exploration work thus far conducted on the Chaco Bear property.

However from personal communication with others it is known that Cominco, Noranda Exploration, and Canadian Superior Exploration prospected the area of the claims. Their work was not published or made public.

There are numerous showings that show signs of early trenches and test pits dug by the old-timers possibly as early as the 1930's who are unknown. Subsequently the known work and the operators include but may not be limited to the following:

**1930's or 1940's?** A large area measuring about 1.5 miles north-south by 1 mile east-west at the north end of the Chaco Bear 1 to 4 mineral claims contained 14 mineral claims that had been surveyed for the purpose of having them Crown Granted. For whatever reason they did not achieve crown granted status. These claims are shown on NTS Map 94 D/2, Salix Creek south of Mount Coccola east of the north end of Bear Lake.

**1948** The area was mapped as part of a regional geological survey by C.S. Lord, McConnell Creek Area; Geological Survey of Canada; Memoir 251.

**1968** Cominco staked the Dave Claims at the south end of "Big Lake" and completed 7.8 line-miles of horizontal loop electromagnetic survey. The survey was unsuccessful in locating any conductors. It was concluded that the highly oxidized nature of the sulphides in the limited area of the survey insulated the sulphide grains from their contiguous neighbours and accordingly would not respond well to EM induction effects. Cominco abandoned the claims thereafter.

**1984** Suncor Inc. of Calgary Alberta, staked the Peteka 1-4 claims and completed stream sediment sampling, prospecting, and rock sampling. Their survey results identified highly anomalous gold and copper values in the stream sediments and from intensely altered rock samples.

**1985** Suncor Inc. completed follow up prospecting, a limited amount of geological mapping, geochemical soils sampling, rock sampling, a VLF-EM survey, and a total field magnetic survey over the large >1 square mile intensely altered area bisected by the Driftwood Valley. The results showed several anomalous features from all the survey programs in this central area of interest and in particular they mapped and sampled many quartz veins, quartz-carbonate veins, carbonate veins, and specularite veins; many of which contained high values in copper, gold and silver. They identified a breccia pipe within the intensely altered area.

Suncor Inc. abandoned the property after ceasing to operate their mineral exploration division.

**1992** J. M. Ashton acquired the property by staking; and completed a shallow-probe reconnaissance, induced-polarization survey over the northeastern part of the alteration zone. A high-chargeability, low-resistivity anomaly striking north-northwest was found which coincided with a strong linear VLF-EM anomaly, and the strongest copper-zinc-lead-gold geochemical anomaly known on the property. The target structure identified by the three coincidental anomalies has a strike length of about 1,200 metres (4,000 feet).

A geological examination of the property by a specialist geologist working with Ashton confirmed the extensive zone of alteration and identified classic alteration facies and zonation symmetry of a transitional geological environment with the potential for discovery of mineralization from epithermal to a high level porphyry system. Potential economic minerals include gold-rich porphyry copper, high sulphidation copper-gold lodes and low sulphidation gold lodes.

**1996** Imperials Metals Corporation optioned the property and completed prospecting and sampling, geochemical soils surveying, a small horizontal loop EM survey. Their results confirmed the anomalous character of the property identified by previous operators and outlined several additional areas of interest. In the fall of 1996 Imperial completed a weather-limited diamond drilling program on the Bearnx shear zone in the north part of the claims. Five holes totaling 455.8 metres were drilled. The best hole, CB96-1, returned assays of 0.45 g/t Au, 5.61 g/t Ag, and 0.6% Cu over a width of 6.8metres.

**1997** Imperial Metals completed extensive geological mapping of the property and confirmed the large zone of alteration in the central southern section of the property. Late in the exploration program as a result of drilling shear hosted copper-gold-silver mineralization in the north part of the property heavily altered rhyolite dikes with similarly altered andesitic wall rocks were discovered. These lithological intersections which were fractured and brecciated contained geochemically anomalous gold values throughout.

Geological mapping showed altered dacitic and rhyolitic flows extruded at the top of an andesitic succession. The volcanic succession is interpreted to be Hazelton Series lithology. Rock geochemistry shows shoshonitic or potassic composition.

In addition to geological mapping, extensive prospecting and rock sampling was undertaken over several prospective areas of the property. Two small VLF-EM surveys totaling about 6.5 line-km were conducted. Four target areas were tested by diamond drilling with eleven holes drilled from seven sites for a total length of 1,382.2 metres.

A study completed by the Geological Survey of Canada in 2004 showed that “Uppermost Hazelton Group strata in north McConnell Creek map area (the area partly occupied by the Chaco Bear Minerals Claims) although Callovian age, are lithologically similar to (and in the same stratigraphic position as) strata which host the Eskay Creek Au-Ag deposit on the west side of the Bowser Basin

Geological mapping of the Chaco Bear Mineral Claims by Dr. Peter Read showed that the lower section of volcanics is made up of an incomplete sequence of the Hazelton Series consisting of a **restricted** Telkwa Formation which is unconformably overlain by a sequence of felsic extrusives consisting of andesites, dacites, and rhyolites up to 600 metres thick named the "Unnamed Formation" by Dr. Read.

Imperial Metals Corporation relinquished their option on the property in 1997 probably to conserve working capital. Imperial had just put the Mount Polley copper-gold porphyry deposit into production and falling gold and copper prices had reduced their cash flow substantially.

**2007** In 2007 Geotronics Consulting Inc. on behalf of Houston Minerals Inc. completed two Mobile Metal Ion (MMI) Geochemical surveys on the claims, one a gridded survey at the north end of the claims over the Bearnx Zone, and a reconnaissance survey over the hydrothermally altered Main Zone. The reconnaissance survey showed several strong MMI gold, and coincidental lead anomalies over the Main Zone that coincided with Very Low Frequency (VLF) electromagnetic (EM) anomalies identified by Suncor in 1985. At the west end of the MMI survey, beyond the VLF-EM area surveyed by Suncor, a large MMI gold anomaly with a width of about 400 metres was identified. This MMI gold anomaly is at the western edge of the altered Main Zone. This area is underlain by lithic andesite tuffs and meta andesite flows and tephra which are favourable lithology to host epithermal gold deposits.

# 9 GEOLOGY

## 9.1 REGIONAL

The area was first mapped by C. S. Lord between 1941 and 1945. The results of that work were published in 1948 in Geological Survey of Canada Memoir 251. Lord classified the rocks in the area as belonging to the Upper Jurassic division of the Takla Group volcanics. He further subdivided the units into a lower section of predominantly volcanic rocks and an upper section of mostly sedimentary, with lesser intercalated volcanic units. Richards, 1976, has re-classified the rocks as forming part of the Hazelton Group volcanics.

The Lower to Middle Jurassic aged Hazelton Group, in the McConnell Creek map area is further subdivided into an upper unit of mostly sedimentary rocks and a lower unit of mostly volcanic rocks. The Chaco Bear claims are underlain primarily by lower members of the Hazelton Group volcanics.

## 9.2 PROPERTY

The bulk of the property is underlain by a thick succession of intermediate to basic metavolcanic rocks of the Telkwa Formation, the lowest member of the Hazelton Group which occupies the western and central portions of the property. Most of the units mapped are of andesitic composition and are comprised of red and green coloured aphyric andesite flows, fine and coarser grained plagiophyric andesite flows, grey and maroon coloured basaltic flows and andesitic lithic ash tuffs, and flow breccias.

The eastern portion of the claims is underlain by felsic metavolcanic rocks comprised of flow layered rhyolite flows, rhyolite welded and unwelded lapilli ash tuffs, as well as porphyritic dacite flows and tuffs and lesser aphyric andesite flows.

The only exposed intrusive unit of any extent was located on the western portion of the claims, a leucogranite to leucosyenite body that extends beyond the western property boundary. All of these units are cut by a variety of both mafic and felsite dikes, primarily volcanic in appearance and texture with minor diabase intrusive dikes. The felsite dikes are fine grained, white to greenish-white, and are commonly flow banded, particularly at the margins. They are likely rhyolitic in composition and may be related to the thicker felsic volcanics on the east ridge, or possibly the Kastberg intrusions; the parent source of the dikes is uncertain. Mafic dikes are found throughout the property and are compositionally similar but show a variety of textures, from massive, coarse-grained, to layered feldspar phyric.

The youngest units mapped are found on the east ridge in an unnamed formation of the Hazelton Group and are comprised of light to medium grey dacite flows with fine plagioclase laths. This unit is underlain by grey-green aphyric andesite flows of undetermined thickness which overlie, and form flows up to 50 metres thick, within a thick succession of rhyolitic flows and tuffs. The rhyolite assemblage is up to 300 metres thick and comprised of tuff, lapilli tuff, and local spherulitic flows with coarse-grained spherules up to 3-4 cm in cross section. This unit extends throughout the length of the property and forms a prominent marker horizon. It overlies porphyritic dacite flows and tuffs which were distinguished in the northern portion of the property. These flows appear to disappear to the southeast.

The majority of units mapped are of andesitic composition in a northwest-trending belt that extends throughout the length of the property. The youngest of these, underlying the felsic assemblage in the southeast portion of the property is comprised of grey-green to green aphyric to fine grained plagioclase-bearing andesite flows and minor lapilli tuff. These rocks are fairly extensive to the south and are unsubdivided due to the loss of marker horizons and more extensive drift cover. Elsewhere on the property the upper green andesite is the unit most commonly underlying the felsic assemblage at what appears to be an unconformable contact. It is a crowded andesite porphyry containing 15-30%, 1-2 mm plagioclase crystals. This unit is underlain by a distinctive marker unit termed the "plagiophyric andesite". It is a medium grey to green unit with 1—20% plagioclase phenocrysts that are 2-8 mm in length. This unit is quite prominent in the northern portion of the property but thins to the south. Near the southern limit of the mapped area it reappears with intercalated beds up to 15 metres thick of maroon andesite tuff and lapilli tuff.

The plagiophyric andesite is underlain by the lower green andesite only in the northern part of the property. This unit is the typical grey-green aphyric to fine grained plagioclase-bearing andesite flows with some lapilli tuffs. Thick grey and maroon coloured basaltic unit outcrops extensively in the western part of the property before being truncated against the Big Lake Fault just south of “Big Lake”. This is underlain by a thin, but very distinctive rhyodacite breccia. The characteristic feature of this unit is differentially weathered clasts of rhyodacitic composition set in a felsic matrix. As the unit thins to the southeast the clasts become more andesitic in composition; it then thickens just north of Cigar Lake, with rhyodacitic clasts prominent once again and also rare leucogranite. South of Cigar Lake the unit truncates against the Big Lake Fault. Underlying this unit is a thick succession of green and maroon coloured andesite flows that underlie most of the west ridge. Within these flows are minor lapilli tuff, and in the area of Cigar Lake, there is a well bedded sequence of andesite ash tuff that could not be traced southeast of the Cigar Lake Fault.

## 9.3 INTRUSIONS

Within the map area, mainly thin, up to 5 metres; and rarely thick, up to 30 metres dikes intrude all stratified units. Most dips range from subvertical to moderate southwest to west, but some, especially those east of “Big Lake dip southeast to south. The dikes are either aphyric, porphyritic with an aphanitic matrix or fine grained (1 mm or less) with plutonic rocks absent.

Intrusive rocks are confined mainly to the leucogranite to leucosyenite body located on the west side of the ridge. The unit was mapped out over a length of 1500 metres, the full width was not determined as the unit extends westerly beyond the western property boundary into the drift covered Squingila River valley. The intrusive is a white to pink colour with medium grained orthoclase feldspar and has virtually no mafic minerals. It appears to be virtually unaltered with the exception of very minor specularite veinlets. It is not known if this unit is part of the Eocene Kastberg intrusions or the Cretaceous Bulkley intrusions. The lack of mafic minerals makes it difficult to age date the unit and relative age relationships with the Kastberg intrusions to the south are undetermined. The only other evidence of nearby plutonic rocks is the presence of rare leucogranite clasts in the rhyodacite breccia and rhyolite lapilli tuff units.

## 9.4 DIKES

### Mafic Dikes

Aphanitic andesite dikes, which are regionally altered by sub-greenschist metamorphism, are common particularly in the volcanic rocks of the restricted Telkwa Formation. Because they are distinguished with difficulty from the andesite flows characteristic of the Telkwa, they may be much more common than mapped.

**Plagiophyric Meta-andesite Dikes**

Plagiophyric phenocryst-bearing andesite dikes cut all the rock units stratigraphically beneath the plagiophyric andesite.

**Metadiorite Dikes**

These are chloritized, fine-grained diorite or gabbro dikes. They occur exclusively in the restricted Telkwa Formation.

**Felsite Dikes**

These are white aphanitic to sparse fine feldspar-bearing dikes which are marginally flow layered. They cut all the volcanic rock units.

**Breccia Pipe**

A breccia pipe is located east of the north extremity of the Gossan Zone and is shown in Figure 23. The pipe appears elliptical in plan with exposed dimensions of about 250 metres by 110 metres. It is heavily altered and contains intensely milled polymictic clasts in a dacitic matrix. Intense hydrothermal alteration in the form of epidote, hematite and carbonate pervades the milled clasts and flour like dacitic matrix. The clasts and matrix have been flooded with silica. When close to the breccia it stands out clearly with its brilliant pistachio-green epidote colour. The breccia pipe appears to be the "milled-matrix fluidised-breccia type" caused by "phreato-magmatic" (water converted to steam) eruptions. They are normally found in association with high level porphyry intrusions.

## 9.5 FAULTING AND GENERAL STRUCTURE

**General**

Shear zones and faults are widespread in the rock units beneath the rhyolite on the east ridge. The shears and faults offset all intrusions except possibly the leucogranite along Tsaytut Spur. The offsets of dike contacts and closely positioned rock unit boundaries indicate northwesterly and northerly striking faults. Both are subvertical or have a westerly component of dip, are probably pre-vein in age, and provided channel ways and open space for the vein mineralization on the claims.

**Bearnx Fault**

This main fault follows the creek bed of the Upper Driftwood Creek above Big Lake. This fault is of interest as it hosts the Bearnx Zone which was drill tested in both 1996 and 1997.

**Upper Driftwood Fault**

This fault has been traced for 6 km southeasterly across the width of the property from the head of Upper Driftwood Creek, across the north end of "Big Lake" to the ridge on the east side of the property. It is also a normal fault, the southwest side having been down dropped with hundreds of metres of dip slip movement.

**"Big Lake Fault"**

A strong north-striking lineament trends north from "Big Lake" for 2.5 km through "Coccola Lake". The gulley immediately north of Big Lake exposes northerly-striking sub-vertical faults filled with carbonate.

**Shear Zones and Fractures**

Shear zones and fractures mimic the trend of the major faulting and the strike of the stratigraphy. The most prominent joint sets strike about 320º to 340º with dips 50º to 60º southwest. Another strong fracture pattern is oriented 040º to 050º with dips 60º to 70º northwest. The 320º to 340º is considered the most important as most of the better mineralization is contained within veins oriented along this trend.

## 9.6 MINERALIZATION

### *9.6.1 Disseminated Mineralization*

Large areas, measuring up to hundreds of metres on the Chaco Bear 3 and 4 claims are so extensively hydrothermally altered that the protolith is destroyed and replaced by a porous assemblage of finely disseminated pyrite and quartz ± sericite. Four such areas in order of increasing intensity of alteration are:

**Base of Rhyolite Unit**

Along an exposed contact on the east ridge southeasterly dipping rhyolite lapilli tuff overlies a bumpy surface of an upper green andesite flow of uncertain orientation. At the base of the rhyolite unit weakly disseminated pyrite lies within a few metres of its base and yields a gossanous zone which extends into the upper green andesite along its contact. This zone is interpreted as an unconformity.

**Driftwood River**

A 600-metre long canyon in the Driftwood River north and south of Rusty Lake exposes zones of strongly disseminated pyrite-quartz±sericite alteration in the undivided volcanics.

**East Side of Tsaytut Spur, South of Cigar Lake (Gossan Zone)**

The mineralization in the Cigar Lake Area is comprised mainly of disseminated pyrite in felsic dikes and andesitic volcanics. This area borders the Gossan Zone upslope to the ridge top to the west (Tsaytut Spur) and the Ferruginate zones downslope to the Driftwood Creek valley.

The **Gossan Zone** to the west is manifested by three prominent limonite altered gossanous knobs aligned northwesterly over a length of 1.3 kilometres. Geologically this area is complex due to the presence of mafic and felsic dikes crosscutting andesitic flows and tuffs. Pink leucogranite to leucosyentite dikes intrude the area. The felsic dikes are found mostly as white to pale green coloured variably flow layered units that crosscut the volcanic stratigraphy.

The **Ferruginate Zone** is comprised of a series of prominent gossans consisting of rusty weathering agglomerate located both in the Driftwood River and tributaries that drain easterly off of the Gossan Zone into the Driftwood River. The host unit is either a tuffaceous dacite or quartz-sericite altered andesite tuff with widespread disseminated pyrite up to 10%. The characteristic feature of this zone is the development of a thick cap of ferricrete which outcrops both sporadically and prominently in the creek beds down to the Driftwood River itself and partway up the eastern side of the valley. On the west side of the Driftwood River it appears as a cap up to 4 metres thick on a less iron altered andesitic agglomerate. In other outcrops beside the Driftwood River it appears to be at least 30 metres thick.

**Meadows Southeast of Cigar Lake**

The streams cutting the meadowed bench southeast of Cigar Lake expose very strongly altered plagiophyric meta-andesite dikes and rocks of unknown protolith. Intense pyrite-quartz ± sericite alteration accompanies these closely fractured rocks.

***9.6.2 <u>Vein Mineralization</u>***

Vein mineralization is ubiquitous. It occupies joints, shears, fractures, and faults throughout the property. Veins, albeit narrow, can contain significant amounts of copper, gold, and silver assaying from trace up to 16.8% Cu, 0.82 ounces/t Au and 13.4 ounces/t Ag. Several mineralized vein types are found throughout the area and include but are not limited to:

- quartz-carbonate veins
- carbonate veins
- specularite-carbonate veins
- specular hematite veins
- vuggy silica specularite veins
- massive specularite veins
- massive sulphide veins

Vein mineralization consists of specularite, chalcopyrite, pyrite, bornite, chalcocite, argentite?, galena, sphalerite, quartz, calcite and ferroan dolomite, form veins ranging from a few centimetres to 0.5 metres in width with some specularite veins ranging up to 1.5 metres in width.

In the area around the breccia pipe and widespread throughout the area within an estimated 1.5 km radius of the core alteration zone and within the propylitic zone beyond the core alteration zone are mineralized quartz-veins, quartz-carbonate veins, carbonate veins, specularite veins and vuggy silica specularite veins which occupy shear, joint and fault structures. Assays from these veins ranged up to 16.8% copper, 0.82 ounces gold per tonne and 4.67 ounces silver per tonne.

In the meadows southeast of Cigar Lake an exposure in the creek shows vuggy quartz-specularite veins cutting the bedded tuffs. Here the tuffs are hydrothermally altered with disseminated pyrite-quartz ± sericite.

As reported by Hartley, 1986, generally massive chalcopyrite occurs locally with specular hematite both adjacent to the hematite and as open space vug filling within the hematite. Through petrographical examination the gold in the hematite veins apparently occurs as free-gold in quartz with no preference for association with sulphides, either pyrite or chalcopyrite. Free gold in quartz in high-sulphidation vein systems is commonly diagnostic of the top of the high-sulphidation mineralizing system; hence in terms of probabilities the system is fully preserved.

### *9.6.3 Mineralization Associated with Rhyolite Dikes*

Drilling the mineralized shear zone of the Coccola Zone, resulted in the interception of several altered and mineralized rhyolite dikes. All of the dikes carry anomalous gold.

The rhyolites pre-date the mineralizing event and because of their brittle nature were subsequently brecciated and fractured by the mineralizing event. Their brittle nature performs two functions; the rhyolites act as conduit for the transport of magmatic-hydrothermal fluids from their source to deposit sites and enables the rhyolites to act as a preferable host to the mineralization. Because the rhyolites are anomalous in gold the system of rhyolite dikes are worthy of further exploration.

## 10 INSTRUMENTATION

The transmitter used was a BRGM model VIP 4000. It was powered by a Honda 6.5 kW motor generator. The receiver used was a ten-channel BRGM model Elrec Pro. This is state-of -the-art equipment, with software-controlled functions, programmable through a keyboard located on the front of the instrument. It can measure up to 10 chargeability windows and store up to 2,500 measurements within the internal memory.

## 11 THEORY

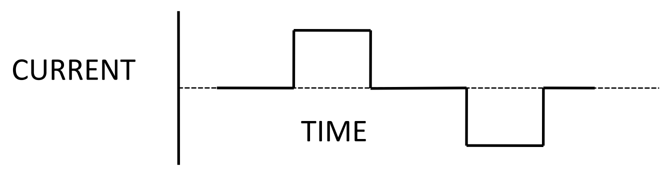
When a voltage is applied to the ground, electrical current flows, mainly in the electrolyte-filled capillaries within the rock. If the capillaries also contain certain mineral particles that transport current by electrons (mostly sulphides, some oxides and graphite), then the ionic charges build up at the particle-electrolyte interface, positive ones where the current enters the particle and negative ones where it leaves. This accumulation of charge creates a voltage that tends to oppose the current flow across the interface. When the current is switched off, the created voltage slowly decreases as the accumulated ions diffuse back into the electrolyte. This type of induced polarization phenomena is known as electrode polarization.

A similar effect occurs if clay particles are present in the conducting medium. Charged clay particles attract oppositely-charged ions from the surrounding electrolyte; when the current stops, the ions slowly diffuse back to their equilibrium state. This process is known as membrane polarization and gives rise to induced polarization effects even in the absence of metallic-type conductors.

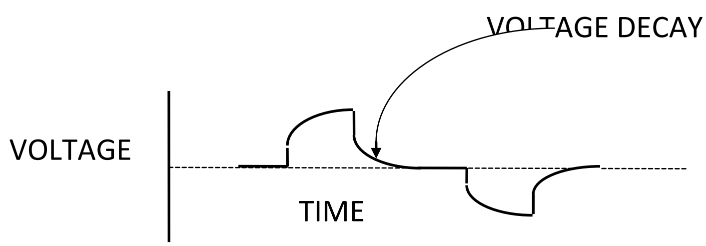
Most IP surveys are carried out by taking measurements in the “time-domain” or the “frequency-domain”.

Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive a dimensionless parameter, the chargeability “M”, which is a measure of the strength of the induced polarization effect. Measurements in the frequency domain are based on the fact that the resistance produced at the electrolyte-charged particle interface decreases with increasing frequency. The difference between apparent resistivity readings at a high and low frequency is expressed as the percentage frequency effect, or “PFE”.

The quantity, apparent resistivity, $\rho_a$, computed from electrical survey results is only the true earth resistivity in a homogenous sub-surface. When vertical (and lateral) variations in electrical properties occur, as they almost always will, the apparent resistivity will be influenced by the various layers, depending on their depth relative to the electrode spacing. A single reading, therefore, cannot be attributed to a particular depth.




TRANSMITTED WAVEFORM




RECORDED VOLTAGE

The ability of the ground to transmit electricity is, in the absence of metallic-type conductors, almost completely dependent on the volume, nature and content of the pore space. Empirical relationships can be derived linking the formation resistivity to the pore water resistivity, as a function of porosity. Such a formula is Archie’s Law, which states (assuming complete saturation) in clean formations:

$$R_o = O^{-2} R_w$$

Where: $R_o$ is formation resistivity

$R_w$ is pore water resistivity

O is porosity

## 12 SURVEY PROCEDURE

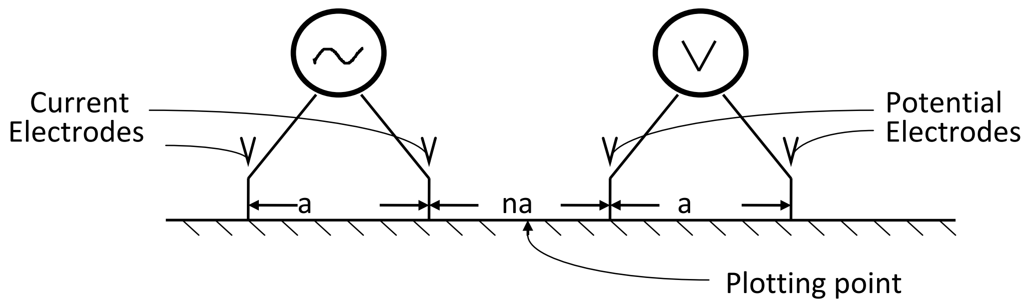
It was assumed because of road and/or railroad along the east side of Bear Lake that access could be gained by road from Fort St. James. However, this could not be done since roads were either not passable, or they were not located. The government forestry personnel were consulted but they were not knowledgeable about access to the Bear Lake area. This resulted in considerable time spent in trying to drive to the area. In the end, access had to be gained by helicopter from a road north of the northern tip of Takla Lake.

The IP and resistivity surveys were carried out along two lines, line 29100E running north-south and line 23500N running east-west. Line 29100E ran 975 meters and line 23500N ran 950 meters, for a total survey length of 1,925 meters.

The IP and resistivity measurements were taken in the time-domain mode using an 8-second square wave charge cycle (2-seconds positive charge, 2-seconds off, 2-seconds negative charge, 2-seconds off). The delay time used after the charge shuts off was 80 milliseconds and the integration time used was 1,760 milliseconds divided into 10 windows.

The array chosen was the dipole-dipole, shown as follows:

DIPOLE-DIPOLE ARRAY




For the IP surveying the electrode separation, or 'a' spacing, and reading interval was chosen to be 25 meters read to 10 separations, which is the 'na' in the above diagram. The 10 separations give a theoretical depth penetration of about 300 meters, or 1,000 feet. This depth will vary

Stainless steel stakes were used for current electrodes as well as for the potential electrodes.

## 13 COMPILATION OF DATA

All the data were reduced by a computer software program developed by Geosoft Inc. of Toronto, Ontario. The computerized data reduction included the resistivity calculations, pseudosection plotting, survey plan plotting, and contouring.

The chargeability (IP) values are read directly from the instrument and no data processing is therefore required prior to plotting. However, the data is edited for errors and for reliability. The reliability is usually dependant on the strength of the signal, which weakens at greater dipole separations.

The resistivity values are derived from current and voltage readings taken in the field. These values are combined with the geometrical factor appropriate for the dipole-dipole array to compute the apparent resistivity. The resistivity data were relatively reliable to the 10 separations.

All the data have been plotted in pseudosection form with one pseudosection map being plotted for each line, as shown in the Table of Contents. The pseudosection is formed by each value being plotted at a point formed from the intersection of a line drawn from the mid-point of each of the two dipoles. The result of this method of plotting is that the farther the dipoles are separated, the deeper the reading is plotted. The resistivity pseudosection is plotted on the upper part of the map for each of the lines, and the chargeability pseudosection is plotted on the lower part.

All chargeability and resistivity pseudosections were contoured at a logarithmic interval to the base 10.

The self-potential (SP) data from the IP and resistivity surveys were plotted and profiled above the two pseudosections for each line at a scale of 1 cm = 100 millivolts with a base of zero millivolts. It is not expected that the SP data will be important in the exploration of the property, especially with the dipole length used, but considering that the data was taken, it was plotted and profiled for its possible usefulness.

A 2-D inversion interpretation was also carried out, by a least squares method using computer software produced by Geotomo Software was carried out on the IP and resistivity data on a line by line basis. This program uses the smoothness-constrained least-squares method inversion technique. The purpose of inversion interpretation is to eliminate the electrode effect that is endemic with IP and resistivity data and thus locate the causative sources more accurately.

In addition to the above, the MMI histograms for the 2007 work carried out along the two reconnaissance lines have been included for ease of reference.

# 14 DISCUSSION OF RESULTS

## 14.1 IP ANOMALIES

The IP survey, according to the inversion interpretation, has revealed 9 anomalies along the two survey lines and these have been labeled by the upper case letters, A to I, for ease of discussion. The labeling runs from east to west on line 23500N and then north to south on line 29100E. The anomaly labels are placed on the 2-D inversion line sections as well as on the Main Zone grid map, fig. 4.

It is expected that as additional IP surveying is carried out, especially on a proper grid, the labeling will change. At this point, the readings are taken along two lines that are perpendicular to each other and therefore continuity of anomalies from one line to another cannot be assumed.

Each survey line appears to be covered by a large amount of IP anomalous results when looking at the plan map of figure 4. Much of this is due to the IP lines occurring within an area expected to contain much mineralization. However, this is also exacerbated by some of the anomalies dipping and therefore the plan view shows a dipping anomaly to be bigger than it actually is. Also, anomalies occur at different depths, and therefore on a plan view, the appearance is a greater amount of anomalous results than actually occur.

***Anomaly A*** is the eastern-most anomaly on line 23500N. It extends to a width of 250 meters and reaches a high of over 20 mv/v. It correlates with moderate resistivity values. This anomaly is of strong exploration interest because of its size and its geological environment. There is expected to be limited surface expression of the causative source since it appears to be at depth, the top averaging about 30 meters below surface. However, it abuts the northeastern edge of Rusty Lake and thus at least part of the causative source may be iron sulphides. There is no MMI sampling in the area.

***Anomaly B*** occurs on both of the survey lines since it occurs at the intersection of the two lines. On line 23500N, it averages about 100 meters in size and on line 29100E it has a minimum size of 100 meters being open to the north. In spite of this anomaly occurring on both lines, it is difficult to determine strike direction since it is open to the north, and since it could be striking in a northwesterly or northeasterly direction. However, the direction of Driftwood River, which could be running along a fault, as well as the location of the nearby MMI anomaly, suggests a northeasterly strike.

Anomaly B reaches a high of over 35 mv/v. Like anomaly A, it occurs close to Rusty Lake, but along its northwestern edge. Thus it also may be reflecting iron sulphides, which is part of the cause of the rust around this small lake. In addition, this anomaly occurs just to the north, or northeast of an MMI anomaly that is high in copper, lead and gold values, and that extends for a length of 250 meters. This suggests that economic mineralization may be part of, or be associated with the causative source of anomaly B.

***Anomaly C*** is a small anomaly that is about 35 meters wide, dips to the west, reaches a high of over 35 mv/v, and correlates with a resistivity low. The low could be due to fracturing and/or alteration associated with the IP-indicated mineralization. It also occurs just to the north of an MMI anomaly that is high in copper, lead, and gold, which is the same MMI anomaly associated with anomaly B, and therefore suggests that the mineralization is of economic interest.

***Anomaly D*** is located at the west end of line 23500N. It reaches a high of over40 mv/v and has a width of about 60 meters. It correlates with a resistivity high suggesting that the host rock may be an intrusive. Anomaly D occurs close to the MMI traverse line in an area of no MMI anomalies, therefore suggesting that the causative source may be of limited economic interest. However, there are missing samples in this area.

***Anomaly E*** is of strong economic interest since it correlates directly with the same MMI anomaly mentioned above, that is the one that is anomalous in copper, lead, and gold. It is 50 meters wide and reaches a high of over 40 mv/v. It also correlates with a resistivity low that the resistivity pseudosection suggests may be caused by a fault, possibly running along Driftwood River.

No MMI soil sampling has been carried out in this area.

***Anomaly F*** is a relatively strong anomaly with good width that dips to the south. It reaches a high of over 40 mv/v and has an average width of about 60 meters. It correlates with a moderate resistivity low that may be caused by fracturing and/or alteration.

No MMI soil sampling has been carried out in this area.

***Anomaly G*** is a large IP anomaly that is 275 meters in size. It appears to be composed of two parts with the southern part dipping to the north and averaging about 75 meters in width. It reaches a high of over 40 mv/v and correlates with a moderate resistivity low. The northern part is near vertical in dip and averages about 75 meters as well. It reaches a high of over 35 mv/v and correlates, for the most part, with a moderate resistivity high. However, the strongest part of the northern part of anomaly G correlates with a near flat resistivity low that dips slightly to the north. This part of the IP anomaly appears to follow the resistivity low suggesting that anomaly G is somewhat complex.

No MMI soil sampling has been carried out in this area.

***Anomaly H*** is a relatively narrow but strong IP anomaly that has an average width of about 30 meters and reaches a high of over 40 mv/v. It dips to the north. It correlates with a low-level resistivity high possibly due to fracturing and/or alteration.

No MMI soil sampling has been carried out in this area.

***Anomaly I*** occurs at the southern end of line 29100E. It is relatively narrow being about 25 meters wide and appears to be dipping to the south. It reaches a high of about 40 mv/v and correlates with background resistivity values. No MMI soil sampling has been carried out in this area.

## 14.2 GEOLOGICAL MAPPING

Three narrow, well-defined lows can be seen on the pseudosection for line 29100E. These have been interpreted to be reflecting faults. These type of lows do not occur on line 23500N except possibly the low just west of Driftwood River. This would be the same low/fault(?) that occurs on line 29100E.

Stronger resistivity highs, say above 2,000 ohm-meters, can be seen on the inversion sections on both lines. The highs on line 23500N are located at 28675E, 29100E, 29250E, and 29400E, and on line 29100E are located at 22725N, 22850N, 22975N, and 23100N. These highs could be reflecting intrusives some of which may be hosting mineralization because of their correlations with IP highs. It is also possible that those resistivity highs that correlate with IP highs may be reflecting silicification and/or calcification associated with mineralization.

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## 16 GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Surrey, in the Province of British Columbia, do hereby certify that:

a. I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

b. I am a Consulting Geophysicist of Geotronics Consulting Inc, with offices at 6204 – 125th Street, Surrey, British Columbia.

I further certify that:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.

2. I have been practicing my profession for the past 45 years, and have been active in the mining industry for the past 48 years.

3. This report is compiled from data obtained from an induced polarization/resistivity survey carried out by a crew of Geotronics Consulting within the Chaco Bear Property located just west of Bear Lake, Omineca Mining Division of British Columbia. The field work was carried out during the period of September 4th, to the 22nd, 2012.

4. I do hold interest in Chaco Bear 1 mineral claim, but I do not hold any interest in Houston Minerals Inc., nor in any of the remaining claims discussed in this report, nor in any other property held by this company, nor do I expect to receive any interest as a result of writing this report.

David G. Mark, P.Geo. May 1, 2013
Geophysicist

## 17 AFFIDAVIT OF EXPENSES

IP/resistivity surveying was carried out within the Main Zone area of the Chaco Bear Property, which occurs on Bear Lake about a 150 km north of Smithers, B.C. This work was done during the period of September 4th to the 22nd, 2012, and to the value of the following:

| | | |
|---|---|---|
| **MOB/DEMOB:** | | |
| Wages | $10,280.00 | |
| Room and board | 4,485.00 | |
| Truck rental and gas | 3,500.00 | |
| Helicopter | 22,450.00 | |
| TOTAL | $41,075.00 | $41,075.00 |
| | | |
| **:** | | |
| **FIELD** | | |
| IP/resistivity survey, 5-man crew, 2 days @ $3,300/day | 6,600.00 | |
| IP/resistivity survey, 6-man crew, 2 days @ $3,800/day | 7,600.00 | |
| TOTAL | $14,200.00 | $14,200.00 |
| | | |
| | | |
| **DATA REDUCTION and REPORT:** | | |
| Geophysicist, 25 hours @ $75/hour | $1,875.00 | |
| Geophysicist, 55 hours @ $50/hour | 2,750.00 | |
| Report compilation, photocopying, etc. | 450.00 | |
| TOTAL | $5,075.00 | $5,075.00 |
| | | |
| **GRAND TOTAL** | | $60,350.00 |
| | | |
| | | |

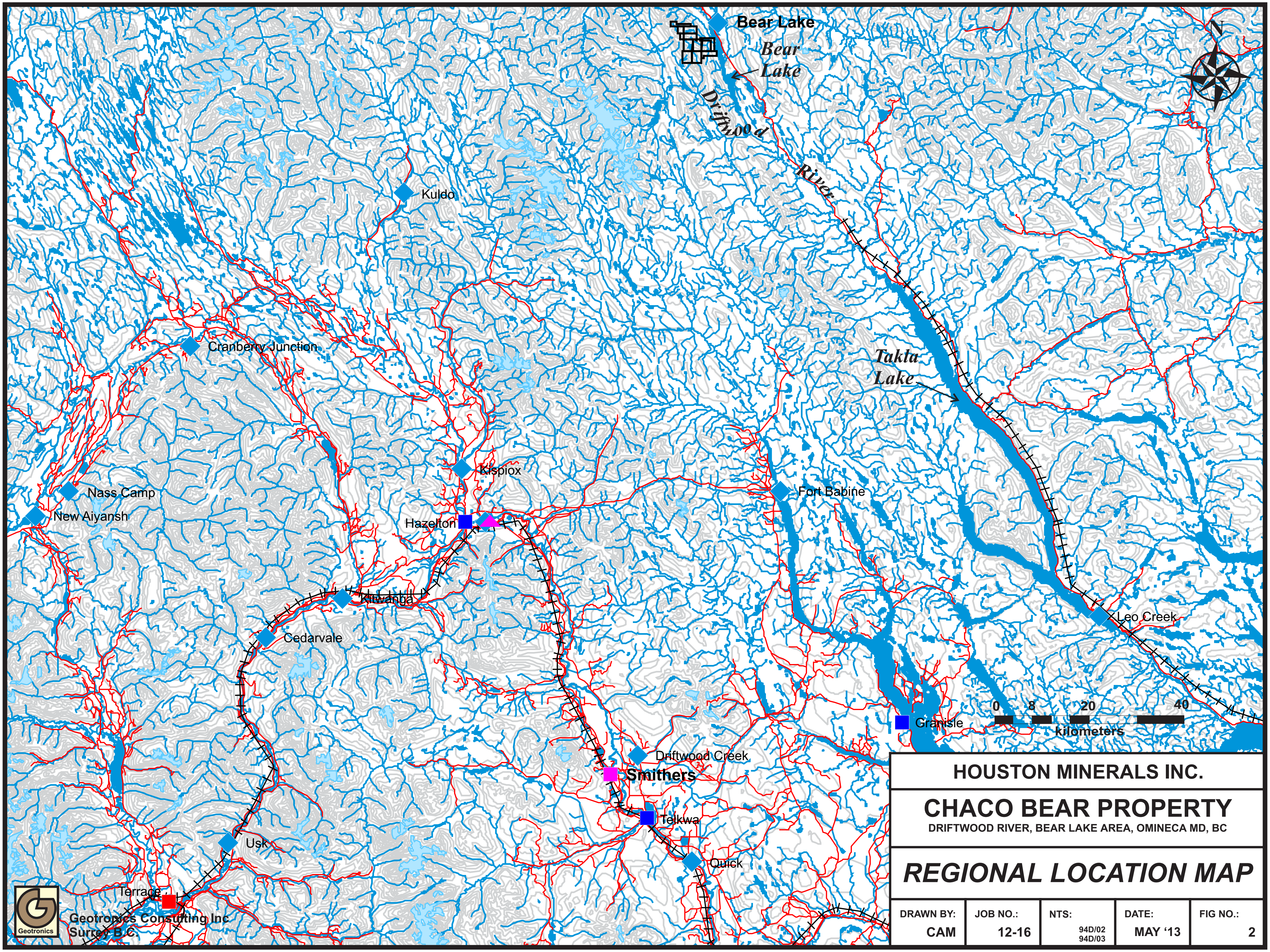
Respectfully submitted,
Geotronics Consulting Inc.

David G. Mark, P.Geo,
Geophysicist

May 1st, 2013

| HOUSTON MINERALS INC. | | | | |
|---|---|---|---|---|
| **CHACO BEAR PROPERTY**<br>DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC | | | | |
| ***BC LOCATION MAP*** | | | | |
| DRAWN BY: CAM | JOB NO.: 12-16 | NTS: 94D/02 94D/03 | DATE: MAY '13 | FIG NO.: 1 |


Geotronics Consulting Inc
Surrey B.C.



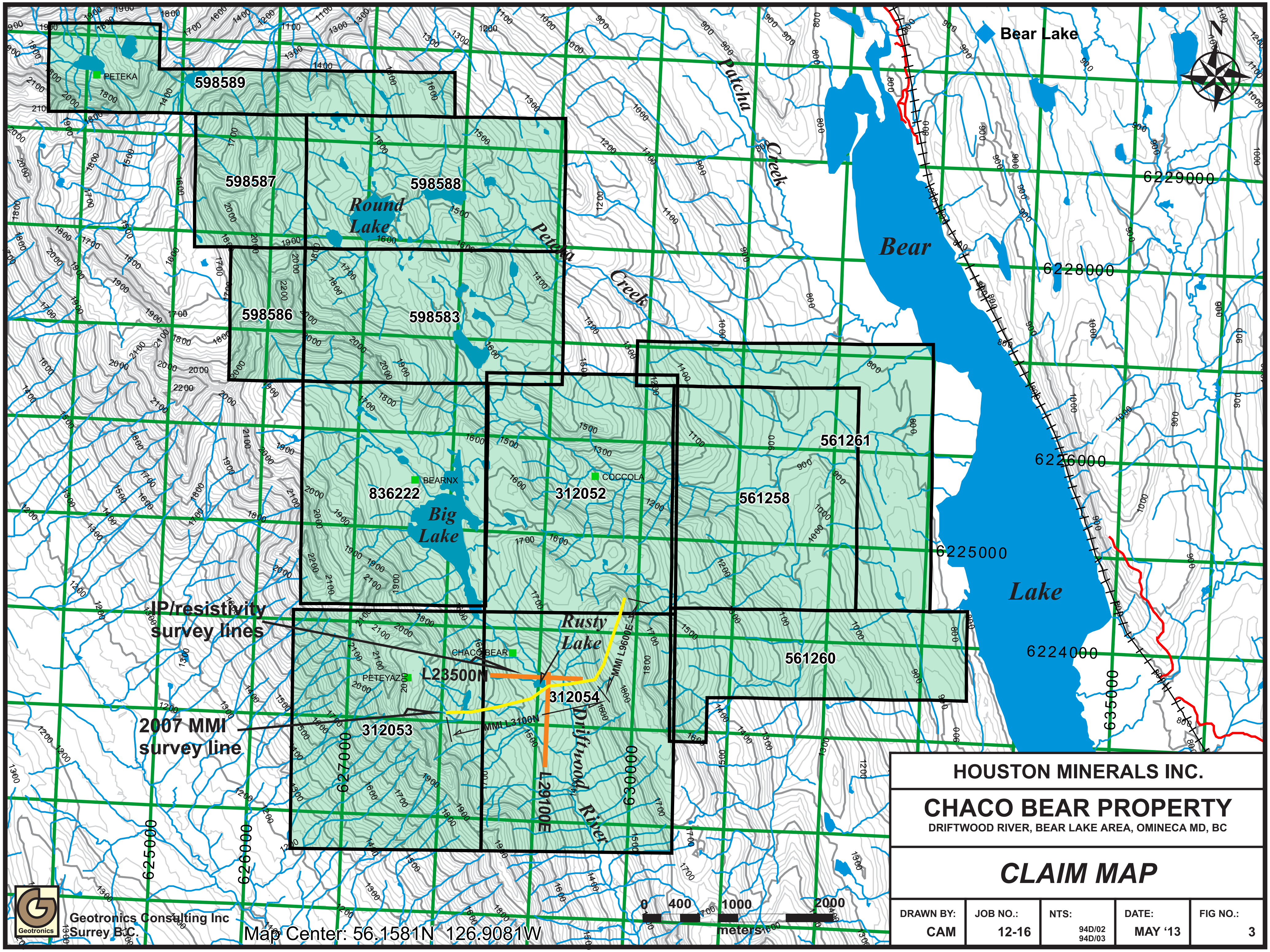

HOUSTON MINERALS INC.

CHACO BEAR PROPERTY

DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC

REGIONAL LOCATION MAP

| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CAM | 12-16 | 94D/02<br>94D/03 | MAY '13 | 2 |


HOUSTON MINERALS INC.
CHACO BEAR PROPERTY
DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC
CLAIM MAP
DRAWN BY: CAM
JOB NO.: 12-16
NTS: 94D/02 94D/03
DATE: MAY '13
FIG NO.: 3
Geotronics Consulting Inc
Surrey B.C.
Map Center: 56.1581N 126.9081W
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meters
Bear Lake
N
598589
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598586
598583
836222
312052
312053
312054
561261
561258
561260
Round Lake
Big Lake
Rusty Lake
Bear Lake
Patcha Creek
Petcha Creek
Driftwood River
PETEKA
BEARNX
COCCOLA
CHACO BEAR
PETEYAZO
IP/resistivity survey lines
2007 MMI survey line
L23500N
L29100E
MMI L9600E
MMI L3100N
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6228000
6226000
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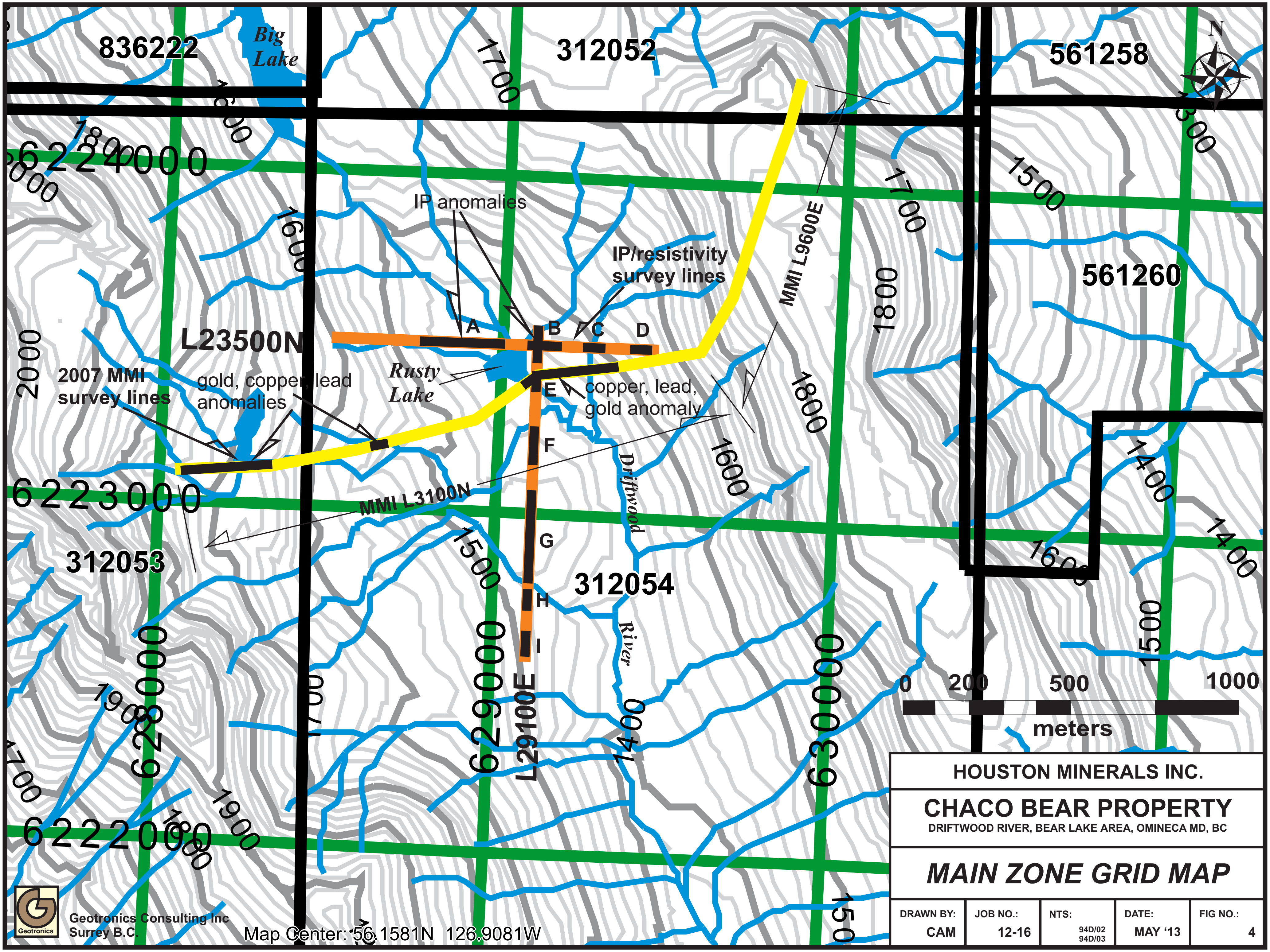
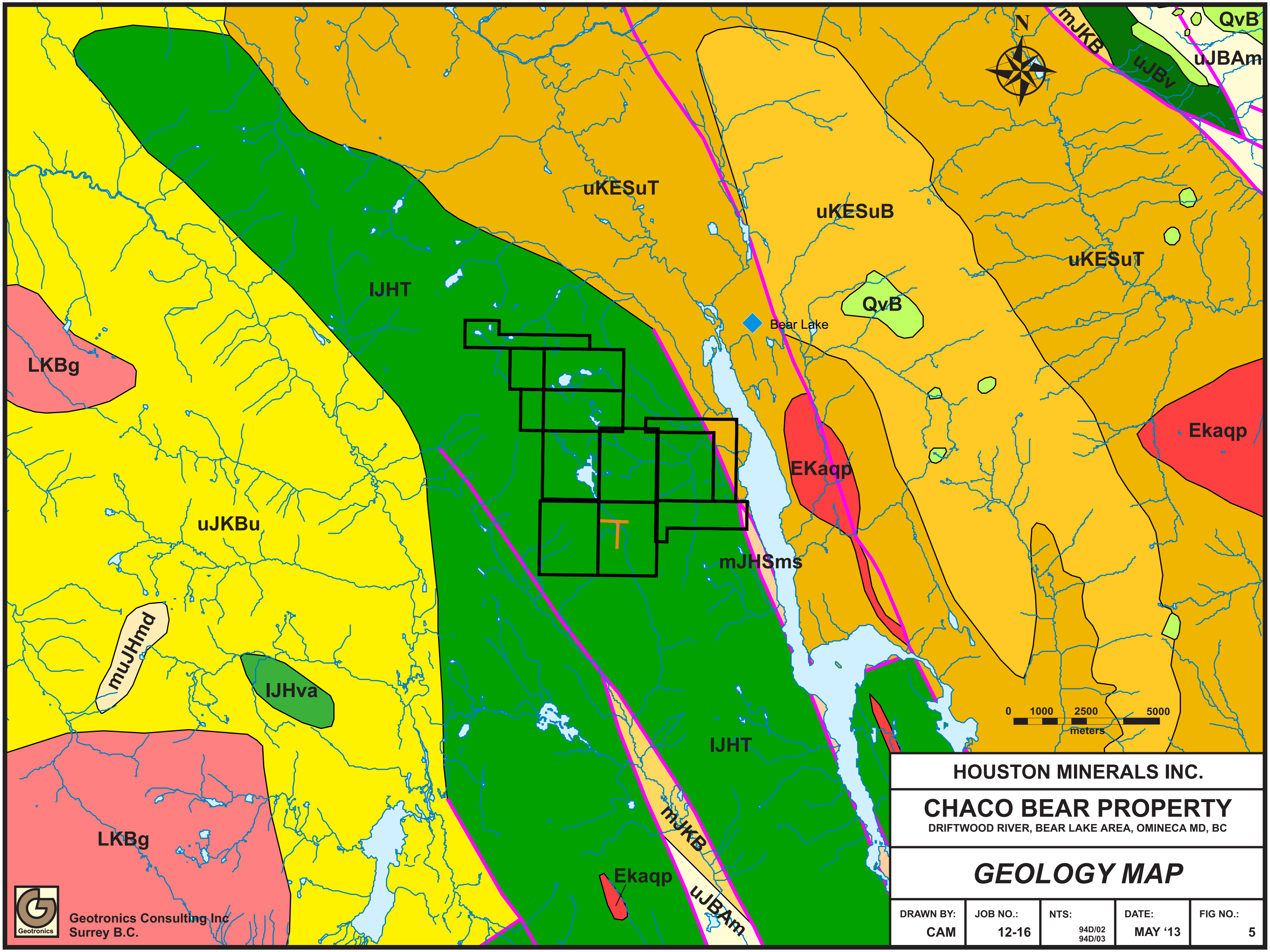
626000
627000
630000
635000



836222
Big Lake
312052
561258
N
6224000
561260
IP anomalies
IP/resistivity survey lines
MMI L9600E
L23500N
A
B
C
D
E
F
G
H
I
Rusty Lake
2007 MMI survey lines
gold, copper, lead anomalies
copper, lead, gold anomaly
6223000
MMI L3100N
Driftwood River
312053
312054
628000
629000
630000
L29100E
6222000
0
200
500
1000
meters
HOUSTON MINERALS INC.
CHACO BEAR PROPERTY
DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC
MAIN ZONE GRID MAP
DRAWN BY: CAM
JOB NO.: 12-16
NTS: 94D/02 94D/03
DATE: MAY '13
FIG NO.: 4
Geotronics Consulting Inc
Surrey B.C.
Map Center: 56.1581N 126.9081W




HOUSTON MINERALS INC.

CHACO BEAR PROPERTY

DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC

*GEOLOGY MAP*

| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CAM | 12-16 | 94D/02 94D/03 | MAY '13 | 5 |

BOWSER LAKE GROUP Middle Jurassic to Late Cretaceous
undivided sedimentary rocks (mJKB)

HAZELTON GROUP - SMITHERS FORMATION Middle Jurassic
undivided sedimentary rocks (mJHSms)

HAZELTON GROUP - TELKWA FORMATION Lower Jurassic
calc-alkaline volcanic rocks (lJHT)

HAZELTON GROUP Lower Jurassic
andesitic volcanic rocks (lJHva)

HAZELTON GROUP Middle Jurassic to Upper Jurassic
mudstone/laminate fine clastic sedimentary rocks (muJHmd)

BOWSER LAKE GROUP Upper Jurassic
undivided volcanic rocks (uJBv)

BOWSER LAKE GROUP - ASHMAN FORMATION Upper Jurassic
mudstone, siltstone, shale fine clastic sedimentary rocks (uJBAm)

BOWSER LAKE GROUP - UNDIVIDED Upper Jurassic to Lower Cretaceous
undivided sedimentary rocks (uJKBu)

BULKLEY PLUTONIC SUITE Late Cretaceous
intrusive rocks, undivided (LKBg)

SUSTUT GROUP - TANGO CREEK FORMATION Upper Cretaceous to Eocene
undivided sedimentary rocks (uKESuT)

SUSTUT GROUP - BROTHERS PEAK FORMATION Upper Cretaceous to Eocene
undivided sedimentary rocks (uKESuB)

KASTBERG PLUTONIC SUITE Eocene
high level quartz phyric, felsitic intrusive rocks (Ekaqp)

UNNAMED Pleistocene to Holocene
basaltic volcanic rocks (QvB)

Fault

Contact

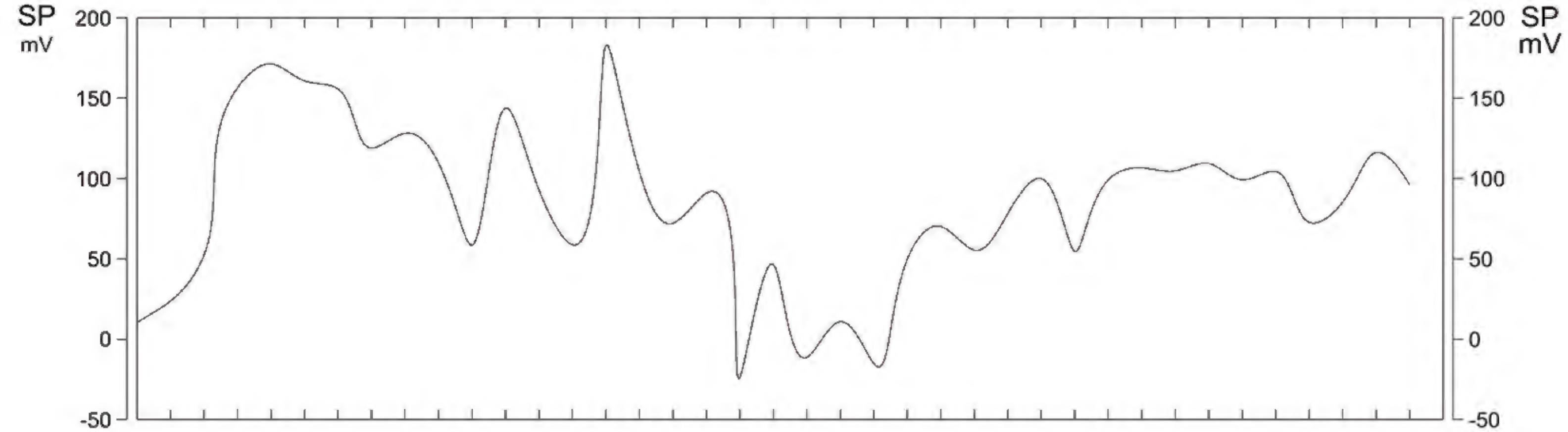
**HOUSTON MINERALS INC.**

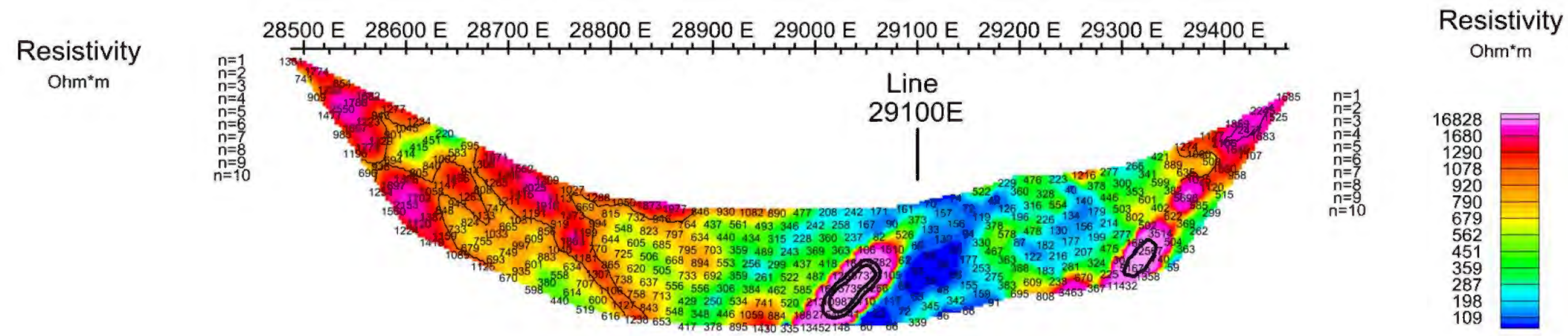
# CHACO BEAR PROPERTY

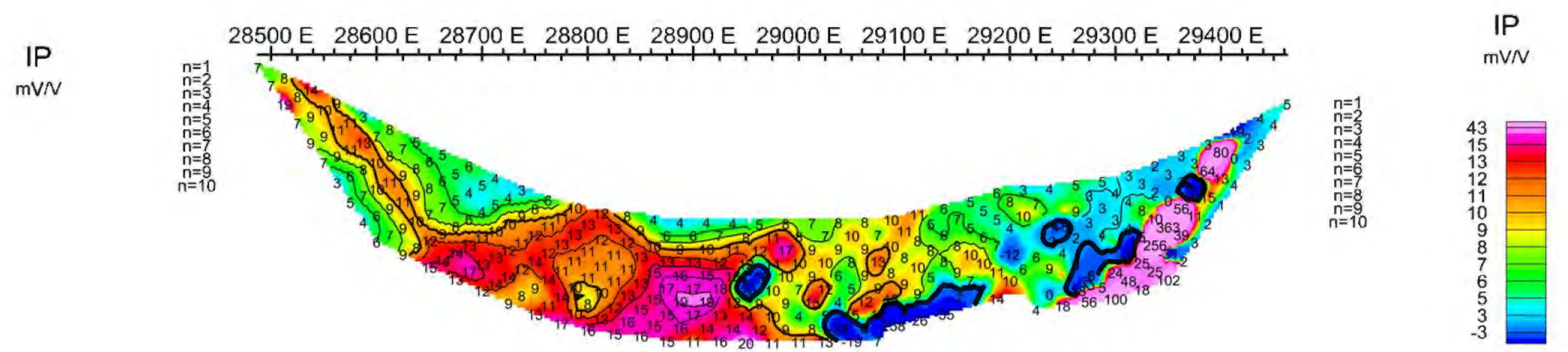
**DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC**

## *GEOLOGY LEGEND*

| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CAM | 12-16 | n/a | MAY '13 | 5a |

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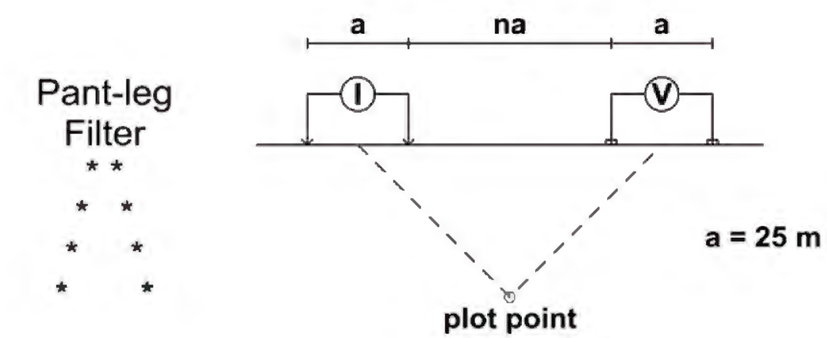
Surrey B.C.

# Pseudo Section Plot

***23500 N***

Dipole-Dipole Array




## LEGEND:

**CONTOUR INTERVALS:**

Resistivity: log base 10 ohm-meters
Chargeability (IP): log base 10 ohm-meters

**INSTRUMENTATION:**

IP Receiver: BRGM Iris Elrec Pro
IP Transmitter: BRGM VIP 4000
IP Generator: 6.5 kWatt Honda

**IP SURVEY PARAMETERS:**

Survey Mode: Time Domain
Array: Dipole-dipole
Dipole Length: 25 meters (82 feet)
Dipole Separation: n=1 to n=10
Delay Time: 240 milliseconds
Integration Time: 1600 milliseconds
Charge Cycle: 8 second square wave

100 0 100 200 300 400
(meters)

# HOUSTON MINERALS INC.

## CHACO BEAR PROPERTY - MAIN ZONE

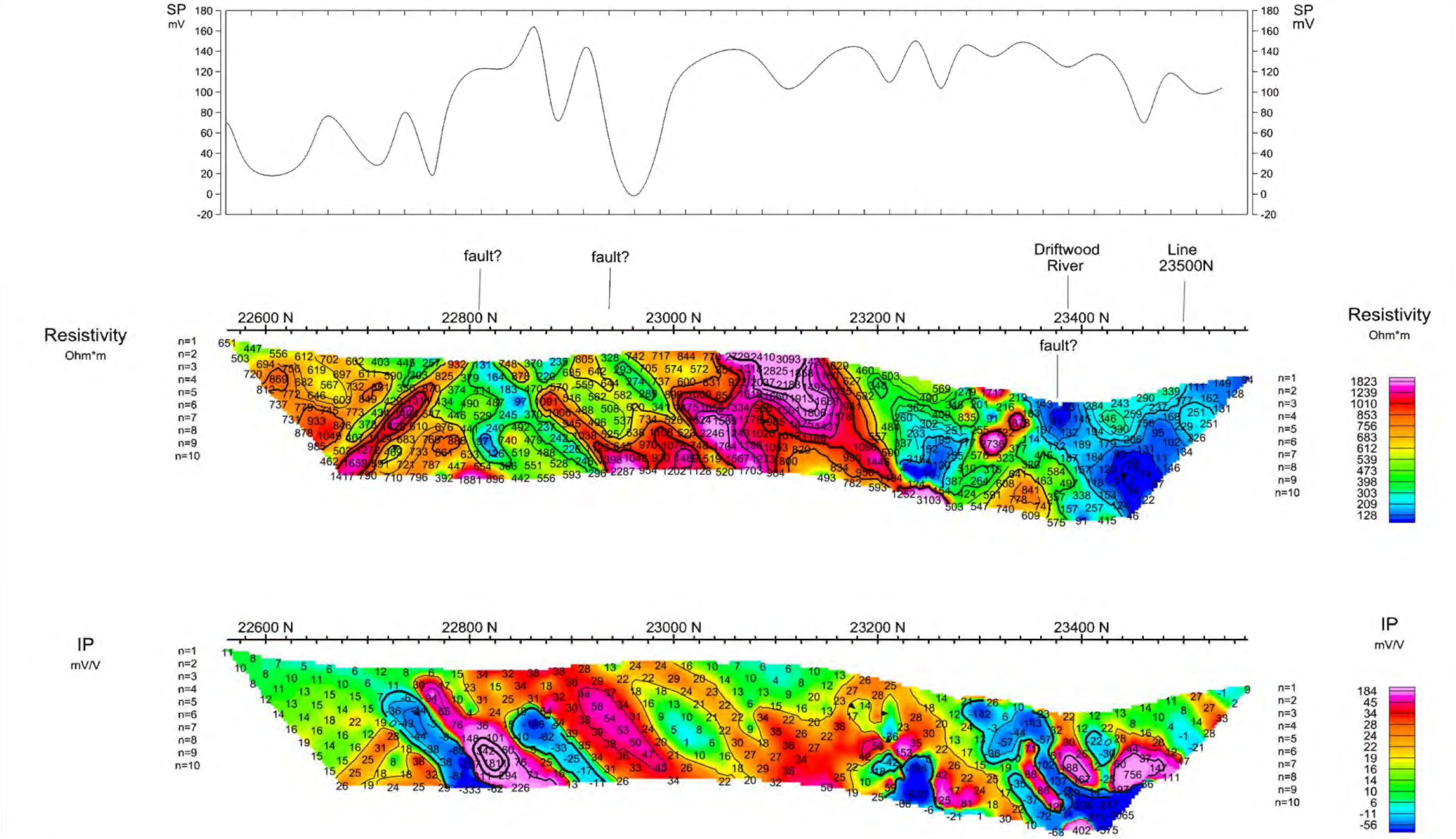
DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC

***INDUCED POLARIZATION and RESISTIVITY SURVEYS***

*PSEUDO SECTION PLOT*

***Line 23500N***

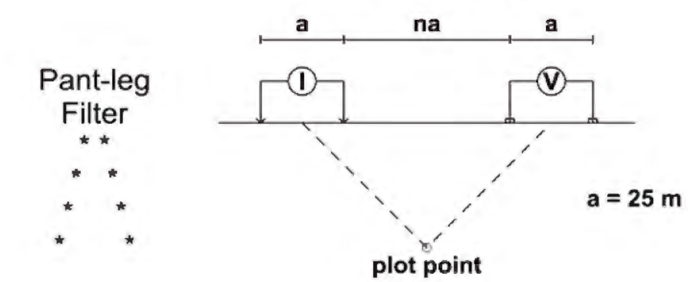
| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CAM | 12-16 | 92D/02<br>94D/03 | SEPT '12 | GP-1A |




# Pseudo Section Plot

***29100 E***

Dipole-Dipole Array




## LEGEND:

**CONTOUR INTERVALS:**

Resistivity: log base 10 ohm-meters

Chargeability (IP): log base 10 ohm-meters

**INSTRUMENTATION:**

IP Receiver: BRGM Iris Elrec Pro

IP Transmitter: BRGM VIP 4000

IP Generator: 6.5 kWatt Honda

**IP SURVEY PARAMETERS:**

Survey Mode: Time Domain

Array: Dipole-dipole

Dipole Length: 25 meters (82 feet)

Dipole Separation: n=1 to n=10

Delay Time: 240 milliseconds

Integration Time: 1600 milliseconds

Charge Cycle: 8 second square wave

50 0 50 100 150 200 250 300

(meters)

# HOUSTON MINERALS INC.

## CHACO BEAR PROPERTY - MAIN ZONE

DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC

***INDUCED POLARIZATION and RESISTIVITY SURVEYS***

*PSEUDO SECTION PLOT*

# *Line 29100E*

| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CAM | 12-16 | 92D/02 94D/03 | SEPT '12 | GP-2A |

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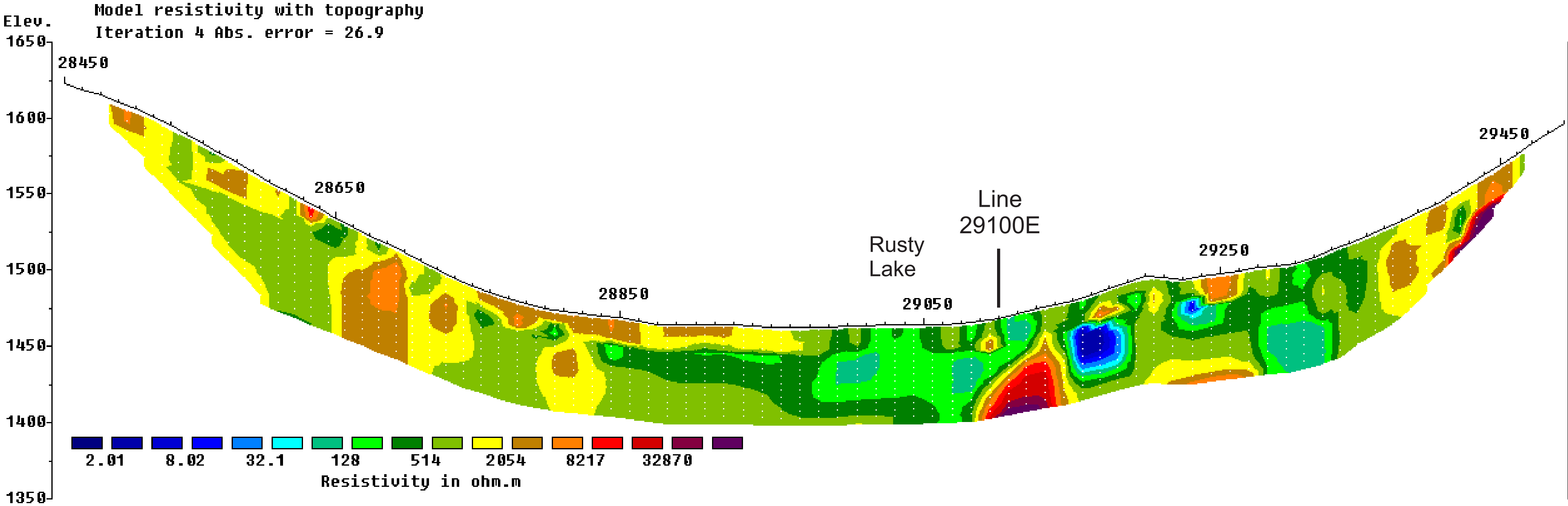
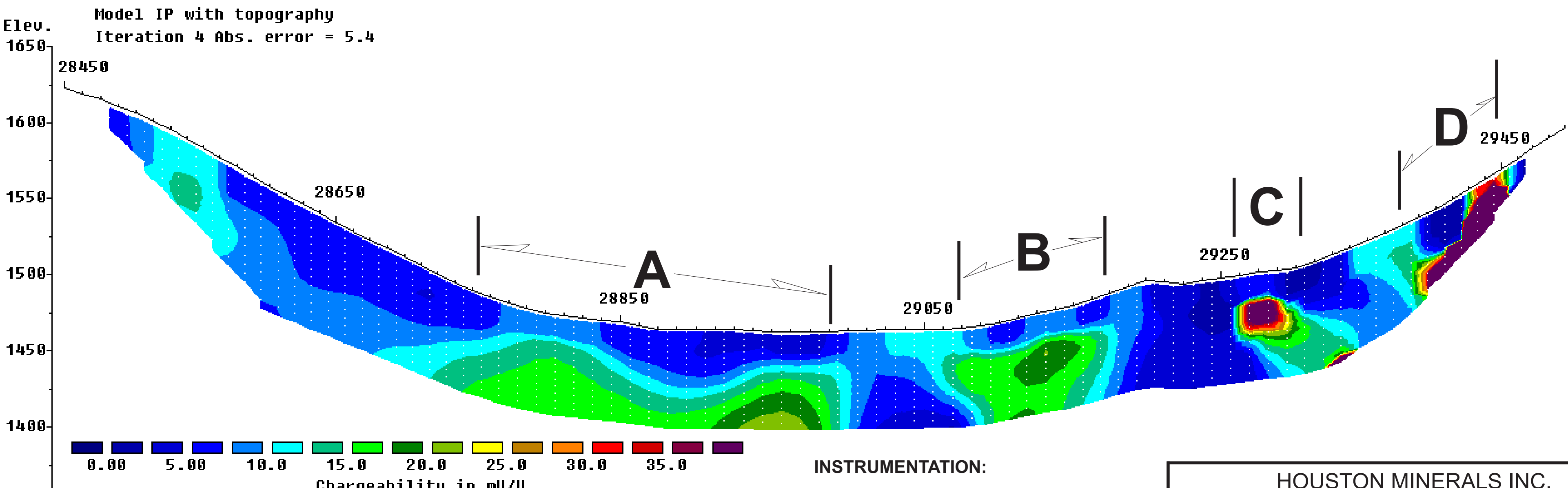
Chaco Bear L-23500 N.bin




Horizontal scale is 15.20 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 28450.0 m.
Last electrode is located at 84.0 m.

**INSTRUMENTATION:**

IP Receiver: BRGM IRIS ELREC PRO
IP Transmitter: BRGM VIP 4000
IP Generator: HONDA ES 6500

**IP SURVEY PARAMETERS**

Survey Mode: Time Domain
Array: Dipole-Dipole
Dipole Length: 25 meters (82 feet)
Dipole Separation: n=1 to n=10
Delay Time: 240 milliseconds
Integration: 1600 milliseconds
Charge Cycle: 8 second square wave

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HOUSTON MINERALS INC.

**CHACO BEAR PROPERTY**

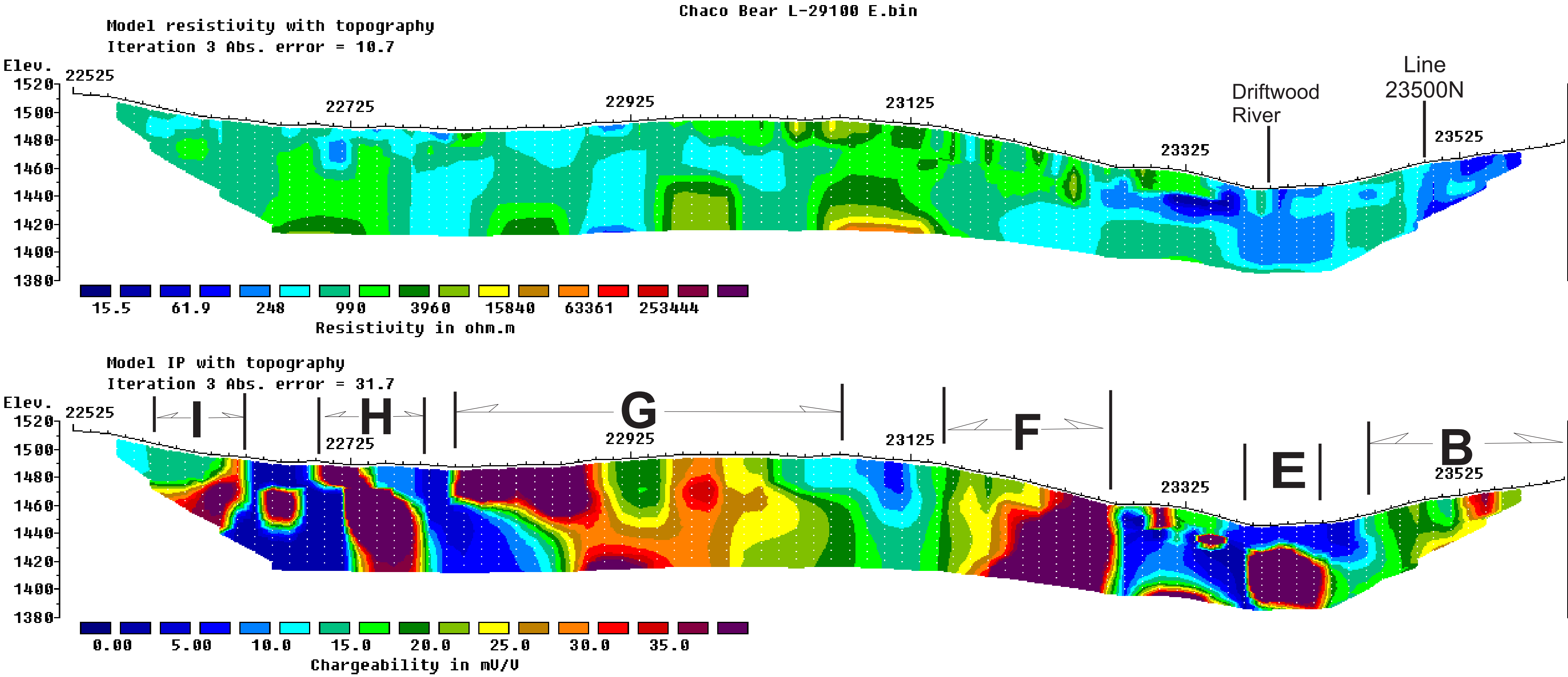
**DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC**

***IP/RESISTIVITY SURVEY - MAIN ZONE***

*2-D GEOTOMO INVERSION*

***LINE 23500N***

| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CM | 12-16 | 94D/02<br>94D/03 | SEPT'12 | GP-1B |




Horizontal scale is 14.08 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 22525.0 m.
Last electrode is located at 86.0 m.

**INSTRUMENTATION:**

IP Receiver: BRGM IRIS ELREC PRO
IP Transmitter: BRGM VIP 4000
IP Generator: HONDA ES 6500

**IP SURVEY PARAMETERS**

Survey Mode: Time Domain
Array: Dipole-Dipole
Dipole Length: 25 meters (82 feet)
Dipole Separation: n=1 to n=10
Delay Time: 240 milliseconds
Integration: 1600 milliseconds
Charge Cycle: 8 second square wave

Geotronics Consulting Inc
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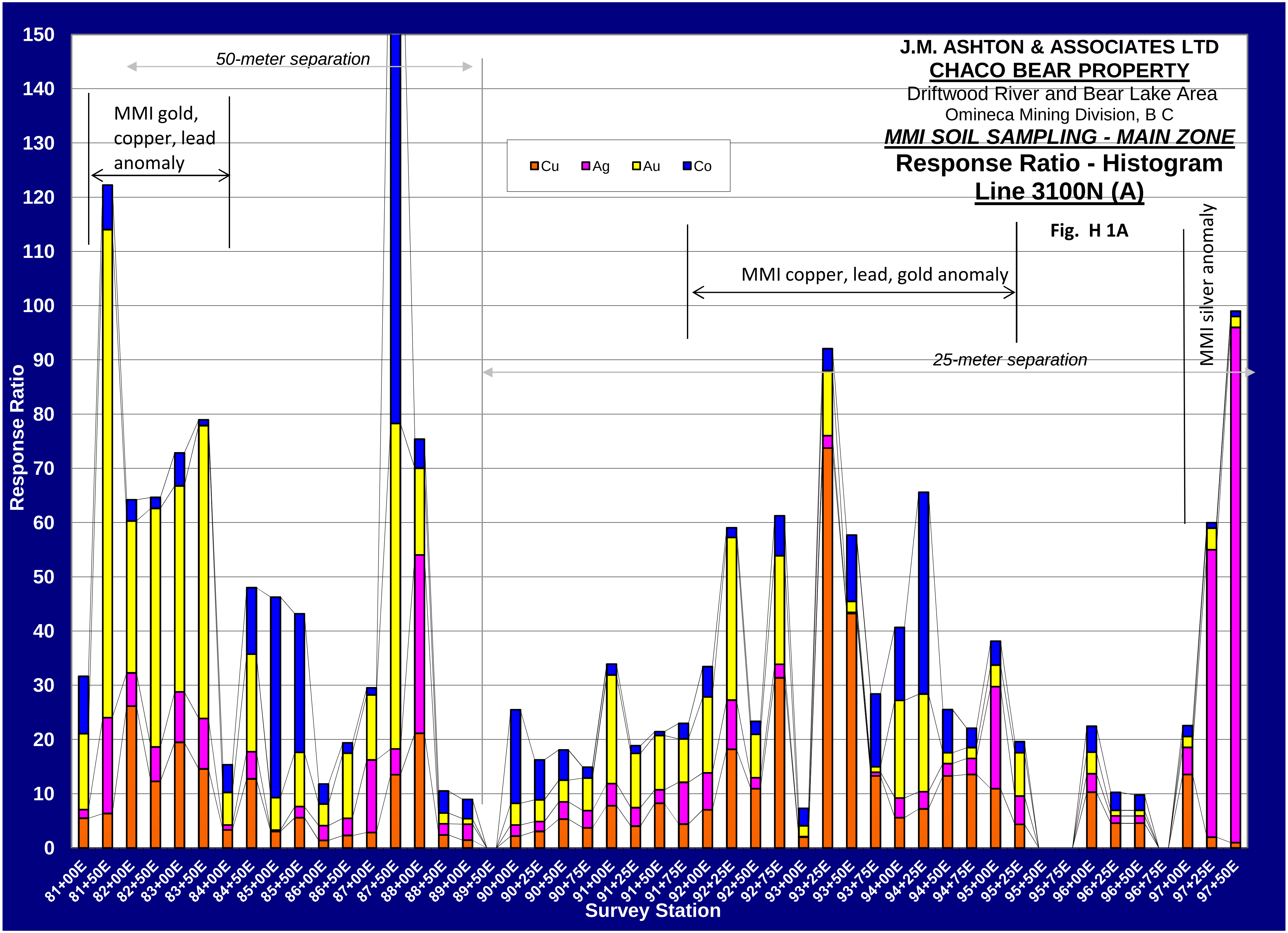
HOUSTON MINERALS INC.

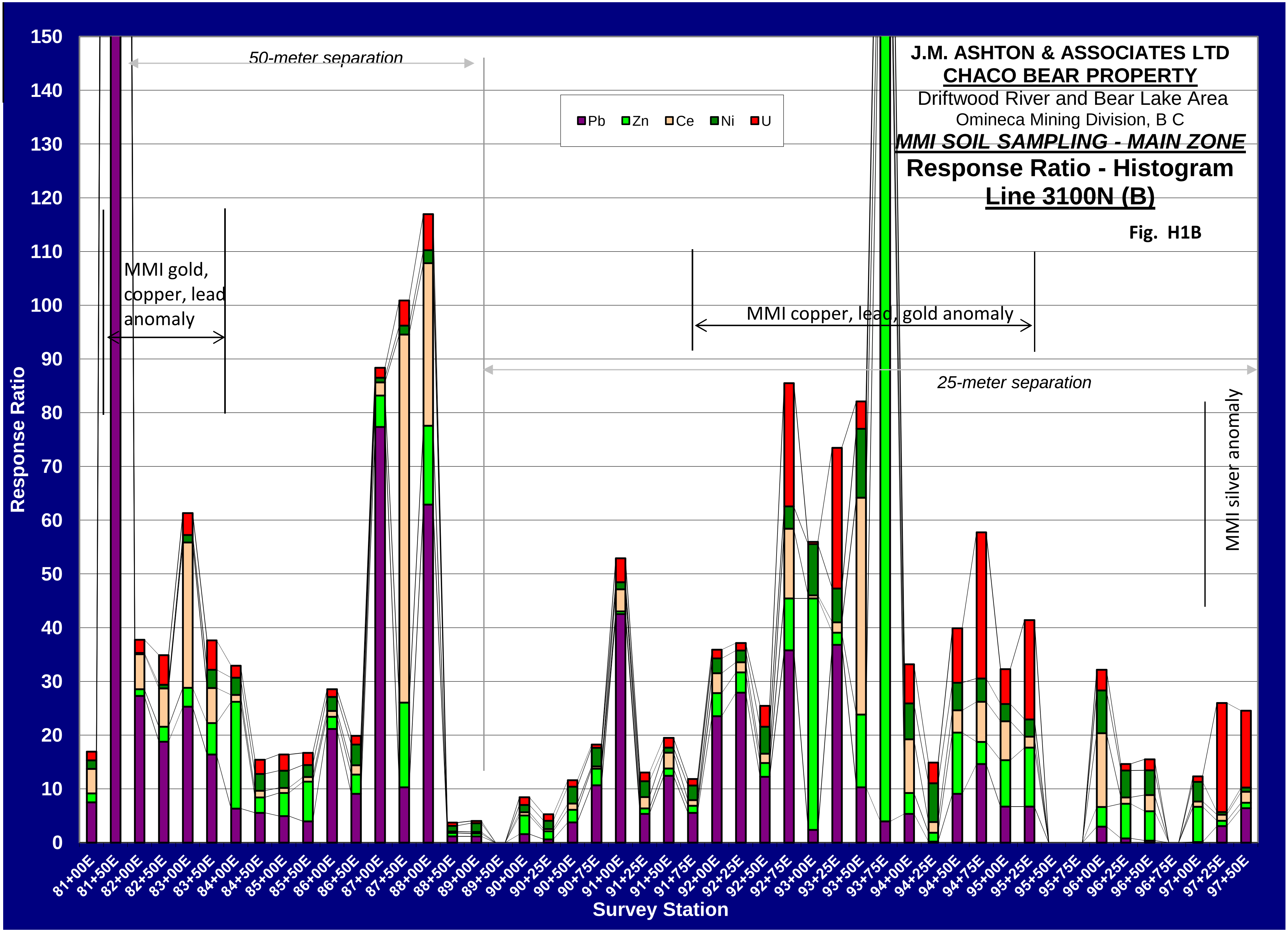
**CHACO BEAR PROPERTY**
**DRIFTWOOD RIVER, BEAR LAKE AREA, OMINECA MD, BC**

***IP/RESISTIVITY SURVEY - MAIN ZONE***
*2-D GEOTOMO INVERSION*
***LINE 29100E***

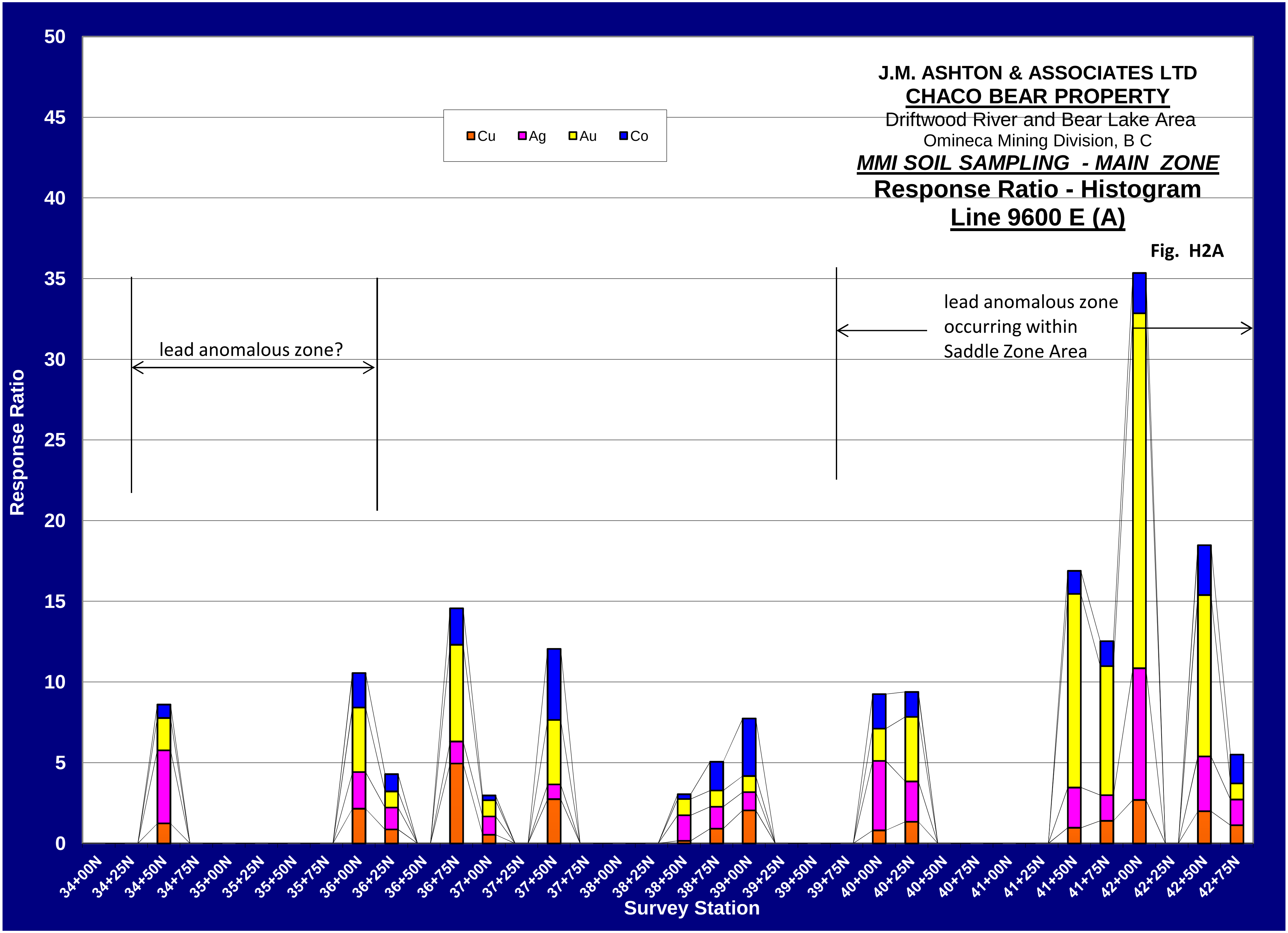
| DRAWN BY: | JOB NO.: | NTS: | DATE: | FIG NO.: |
|---|---|---|---|---|
| CM | 12-16 | 94D/02 94D/03 | SEPT'12 | GP-2B |



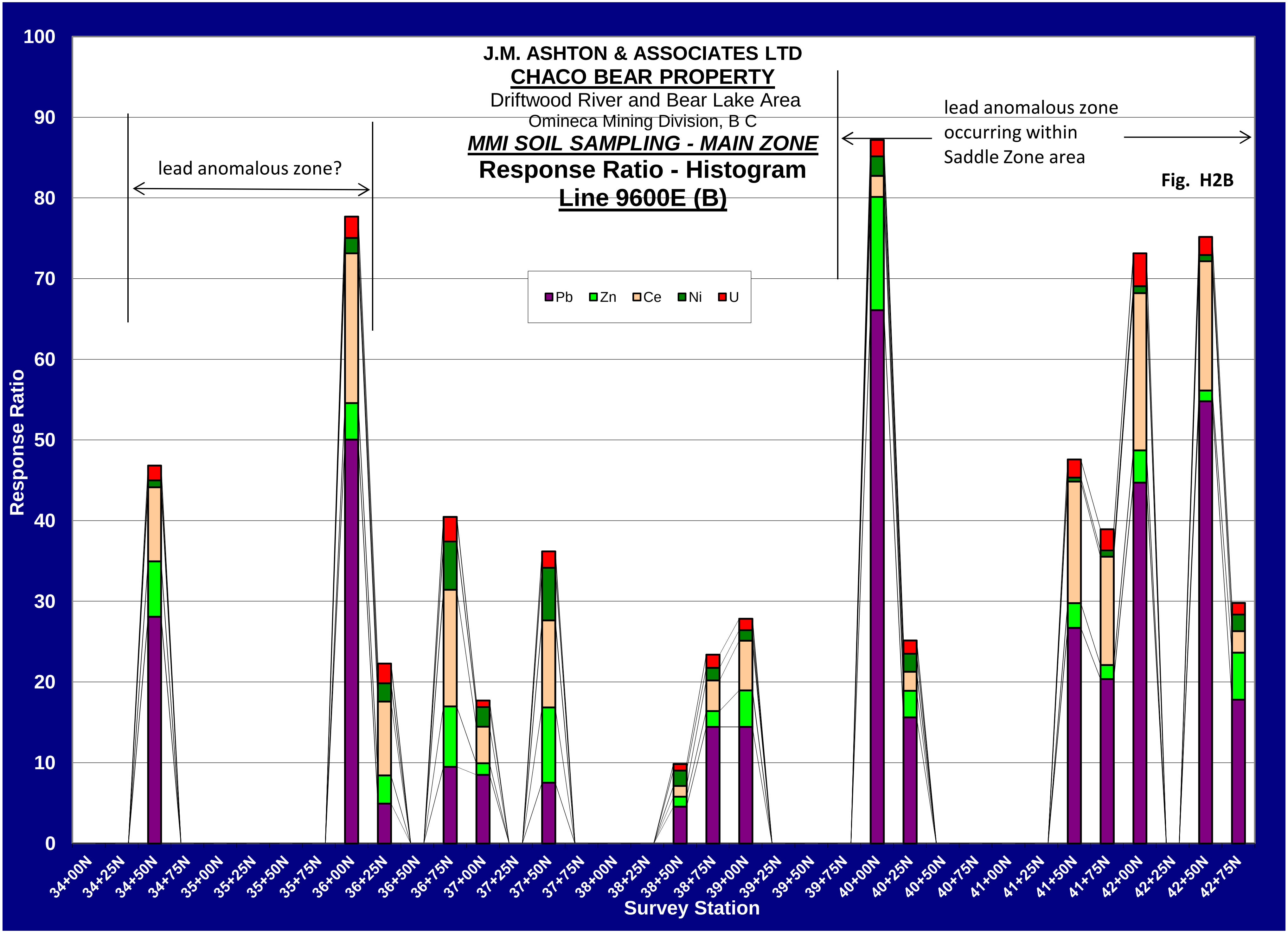

*Data Reduced by* : **GEOTRONICS CONSULTING INC**




*Data Reduced by* : **GEOTRONICS CONSULTING INC**




*Data Reduced by* : **GEOTRONICS CONSULTING INC**




*Data Reduced by* : **GEOTRONICS CONSULTING INC**