

# **YMIP**

## **Target Evaluation Report For the DEL Claims Northern Tiger Resources Inc.**

YC65413 – YC65499 (DEL 1-87), YC83114 – YC83139 (DEL 88-113),  
YD34901 – YD34910 (DEL 114-123)

Hoochekoo Ck/ Yukon River area,

62°27'07"N Latitude, 136°44'53"W Longitude  
UTM NAD 83 Datum 409811E, 6925738N, Zone 8

### **Whitehorse Mining District**

NTS Sheet 115I/07, Zone 8

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**Date: January 24, 2013**

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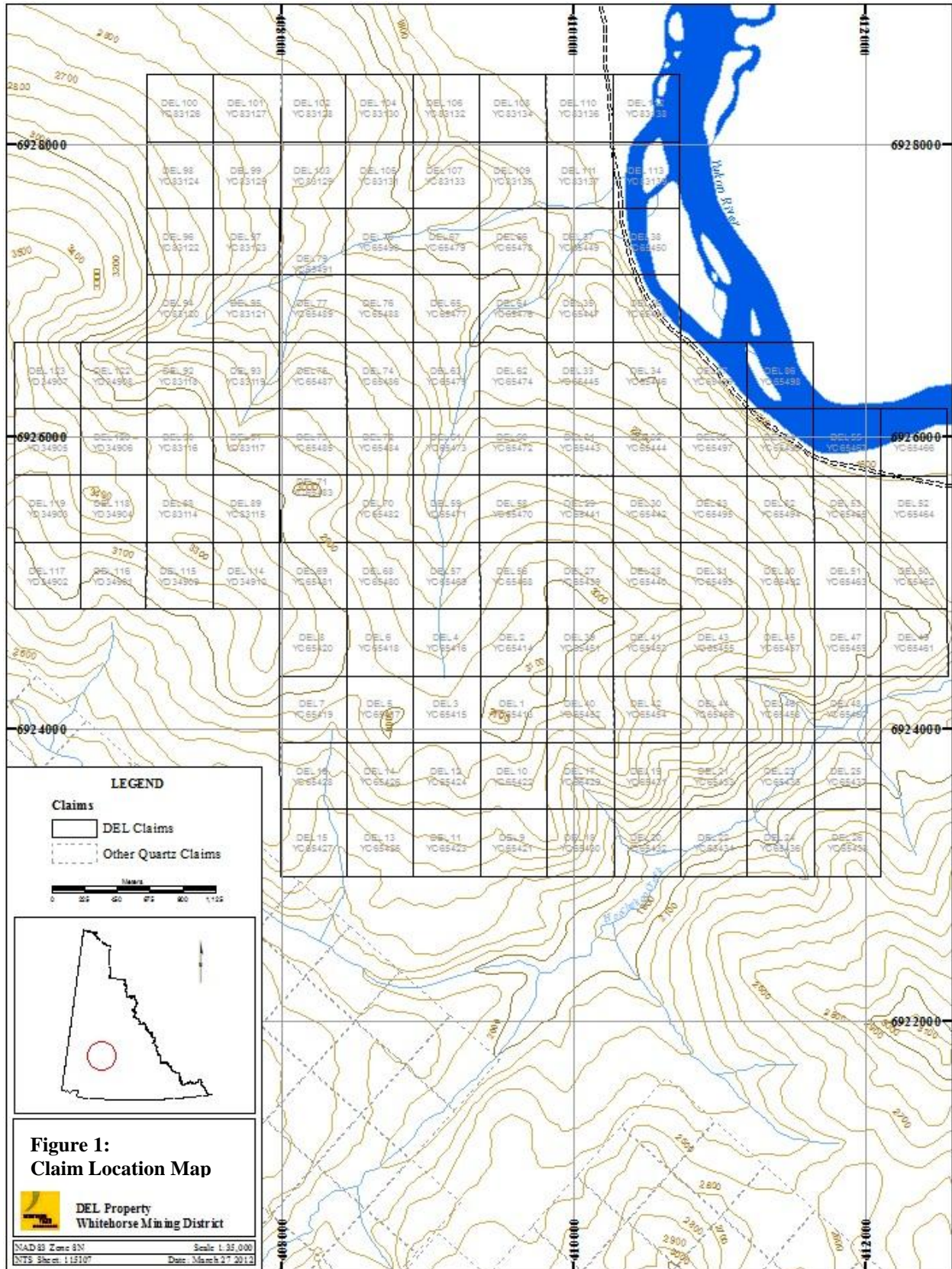
Appendix A.....Aurora Field Report  
Appendix B.....DEL 3D Inversion Report

## 1.0 Property Description, Location and Access

### 1.1 Property Description & Location

The DEL property consists of 123 unpatented quartz mining claims (Table 1, Figure 1) in one contiguous block covering 2,567.2 hectares (6,343 acres) directly northwest of the confluence of Hoochekoo Creek with the Yukon River. The property is located about 46 km north-northwest of Carmacks, Yukon, and about 210 kilometres north-northwest of Whitehorse. It is centered at 62.27'07"N Latitude, 136.44'53"W Longitude (UTM NAD 83 Datum 409811E, 6925738N, Zone 8) within NTS map sheet 115I/07. The property has not undergone a legal survey.

The DEL 1-87 claims were staked in July 2007 by Minto Explorations Ltd; the DEL 88-113 claims were added in late August 2008 by Northern Tiger Resources Inc. Northern Tiger staked an additional 10 claims, DEL 113-123, to the western part of the property in May, 2011.



1.2 Table 1: Claim Status

<b>Grant No.</b>	<b>Claim Name</b>	<b>Claim No.</b>	<b>Recording Date</b>	<b>Expiration Date</b>	<b>Mining District</b>	<b>NTS Sheet</b>
YC65413	DEL	1	06/08/2007	03/09/2017	Whitehorse	115107
YC65414	DEL	2	06/08/2007	03/09/2017	Whitehorse	115107
YC65415	DEL	3	06/08/2007	03/09/2017	Whitehorse	115107
YC65416	DEL	4	06/08/2007	03/09/2017	Whitehorse	115107
YC65417	DEL	5	06/08/2007	03/09/2017	Whitehorse	115107
YC65418	DEL	6	06/08/2007	03/09/2017	Whitehorse	115107
YC65419	DEL	7	06/08/2007	03/09/2017	Whitehorse	115107
YC65420	DEL	8	06/08/2007	03/09/2017	Whitehorse	115107
YC65421	DEL	9	06/08/2007	03/09/2017	Whitehorse	115107
YC65422	DEL	10	06/08/2007	03/09/2017	Whitehorse	115107
YC65423	DEL	11	06/08/2007	03/09/2017	Whitehorse	115107
YC65424	DEL	12	06/08/2007	03/09/2017	Whitehorse	115107
YC65425	DEL	13	06/08/2007	03/09/2017	Whitehorse	115107
YC65426	DEL	14	06/08/2007	03/09/2017	Whitehorse	115107
YC65427	DEL	15	06/08/2007	03/09/2017	Whitehorse	115107
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YC65431	DEL	19	06/08/2007	03/09/2017	Whitehorse	115107
YC65432	DEL	20	06/08/2007	03/09/2017	Whitehorse	115107
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YC65435	DEL	23	06/08/2007	03/09/2017	Whitehorse	115107
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YC65438	DEL	26	06/08/2007	03/09/2017	Whitehorse	115107
YC65439	DEL	27	06/08/2007	03/09/2017	Whitehorse	115107
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YC65484	DEL	72	06/08/2007	03/09/2017	Whitehorse	115107
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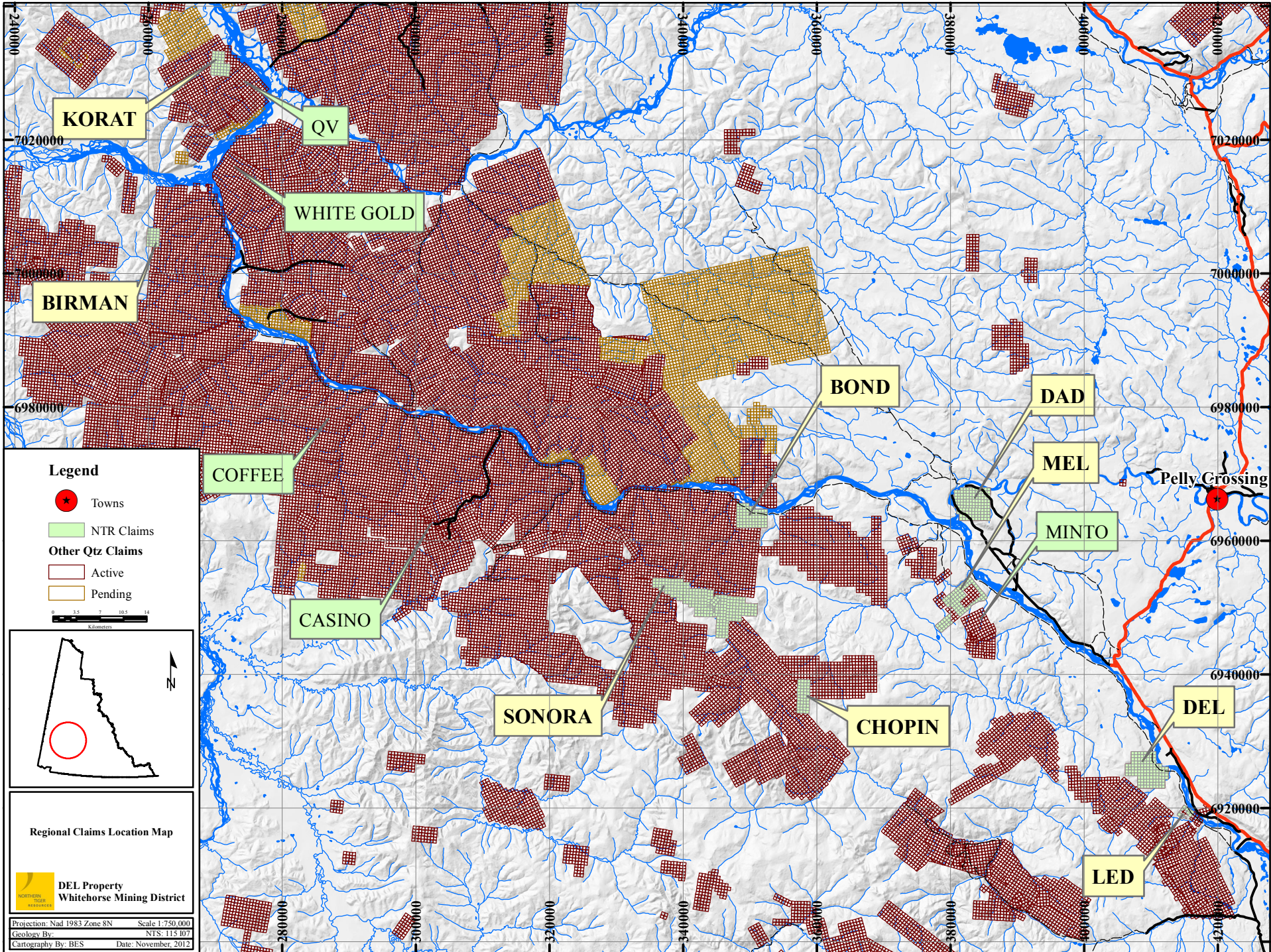


YD34905	DEL	121	06/06/2011	03/09/2016	Whitehorse	115107
YD34908	DEL	122	06/06/2011	03/09/2016	Whitehorse	115107
YD34907	DEL	123	06/06/2011	03/09/2016	Whitehorse	115107

### **1.3 Access and Infrastructure**

No permanent or currently serviced seasonal road access extends directly on to the property. A trail, servicing the DEF claims hosting the present Minto mine and extending through the property along the west side of the Yukon River has become overgrown and is not usable without significant refurbishment. However, the eastern property boundary occurs within three kilometres of the North Klondike Highway, with abundant staging areas for camp mobilization. The Minto airstrip occurs about 15 km north-northwest of the property. An exploration ‘cat’ trail comes to within 5 kilometers of the property from the Williams creek deposit to the south.

Carmacks is serviced by the Klondike Highway, a major all-weather highway extending from Whitehorse to Dawson City, and by grid electric power extending from Whitehorse. The community of about 350 has basic services, including food and fuel supplies and seasonal helicopter and fixed wing services. The community of Pelly Crossing, population about 300, is located about 30 kilometres northeast of Minto Landing, and 102 road kilometres north of Carmacks. Pelly Crossing, now serviced by grid electrical power, also has basic services and provides much of the workforce at the Minto mine-site. The City of Whitehorse, located 170 km to the south of Carmacks, is a full service community with a population of about 26,000, including a sophisticated mineral exploration service community and an available workforce.



## 2.0 Target Description

### 2.1 Deposit Model

The deposit model utilized as an exploration target is that of “Minto-style” copper-gold-silver mineralization, the setting of the currently producing Minto deposit. The Minto deposit occurs as a flat-lying body approximately 335 metres long in a north-south orientation, 245 metres in an east-west orientation, and averaging 30 metres in thickness. The deposit is hosted by foliated granodiorite to granodioritic gneiss, with higher grade zones hosted by more strongly foliated and strongly biotite-enriched sections. In the Minto deposit area, the main diagnostic feature is the presence of foliation in otherwise non-foliated Klotassin Batholith granodiorite (Capstone Mining Corp. website, 2010).

This model, which has no analogues on a worldwide basis, has several theories brought forth regarding its origin. In a 1999 report, SRK Consulting Inc. theorized the deposit resulted from emplacement of hydrothermal fluids into dilation zones. Analogies to porphyry-style copper deposits and iron-oxide copper-gold (IOCG) deposits have also been put forth.

Exploration on the Capstone property results in new discoveries and extension of known reserves on a yearly basis. Resource at January 1, 2012 is stated as being 14,392,000 tonnes grading 1.53% Cu and 0.58 gpt Au (Capstone Website).

The expected geophysical response of this type of target would be a modestly high chargeability, moderate resistivity, and a magnetic high.

A second model which could be used because of its proximity is the Williams Creek deposit model. The Williams Creek deposit is described as being hosted by feldspathic mafic gneisses believed to be roof pendants within the Mesozoic hornblende-biotite granodiorite Granite Mountain Batholith.

The gneisses are described as mafic dominant feldspathic biotite hornblende quartz units.

## 2.2 Mineralization

Using the “Minto-style” deposit model, possible mineralization to be encountered during exploration consists of chalcopyrite, bornite, and minor pyrite with or without accessory magnetite. Gold and silver will likely be associated with bornite as it is at the Minto deposit. At the Minto mine, gold occurs as free gold and silver occurs as “hessite,” a silver telluride. Copper oxide minerals, dominantly azurite and malachite, occurring along fractures and joint planes outbound from the deposit may be present at the upper portions of the mineralized zone where in contact with surface weathering.

A distinct west to east zonation extending from bornite-chalcopyrite-magnetite in the west through a central zone of bornite-chalcopyrite to pyrite in eastern areas can provide viable exploration targets where mineralization is encountered. Zonation can also be seen in the hydrothermal alteration pattern with potassic and/or phyllic alteration in mineralized zones to epidote +/- chlorite propylitic assemblages along marginal areas (Capstone Mining Corp. Website, 2010). Potassic alteration is recognized as zones of coarse-grained, strongly-foliated biotite, comprising up to half of the rock mass. Alteration does not extend far beyond the margins of mineralization providing a good mechanism for exploration targeting.

## 2.3 Geology

### 2.3a Regional Geology

The DEL property is located in the Yukon-Tanana Terrane (YTT), within the northern limit of the Intermontane Superterrane (MINFILE, 2001). This superterrane extends northwest – southeast, largely along the Yukon River. It is comprised of a narrow sequence of Triassic to Lower Jurassic Stikinia Terrane volcanic and volcanoclastic strata sequences mixed with Lower Jurassic Quesnellia Terrane metagneous units. The YTT occurs as a broad sequence of accreted terrane abutted against the northwest – southeast trending Tintina Fault, separating the YTT from shelf to off-shelf sediments bordering the ancient North American Continent to the northeast. The Tintina Fault is located about 55 kilometres northeast of the DEL property. The YTT consists of a belt of Devonian-Mississippian metamorphic rocks, mainly metavolcanics with lesser metasediments. About 170 km to the southwest, the northwest – southeast trending Denali (Shakwak) Fault forms the southwestern boundary of the YTT, separating it from a younger sequence of accreted terrane farther to the southwest (Davidson, 2008).

Stikinia Terrane units consist largely of Upper Triassic Povoas Formation basalts to andesites, including andesitic ash through lapilli tuffs, with lesser clastic sedimentary units ranging from coarse conglomerate through mudstone to shale. These represent the northernmost portions of the Whitehorse Trough. Stikinia Terrane units commonly abut against Quesnellia Terrane Lower Jurassic Aishihik Suite medium to coarse grained biotite-hornblende metagranites and granodiorites, commonly moderately foliated. The Minto copper-gold mine occurs within the Minto Pluton, a foliated biotite granite member of the Granite Mountain Batholith (Aishihik Suite).

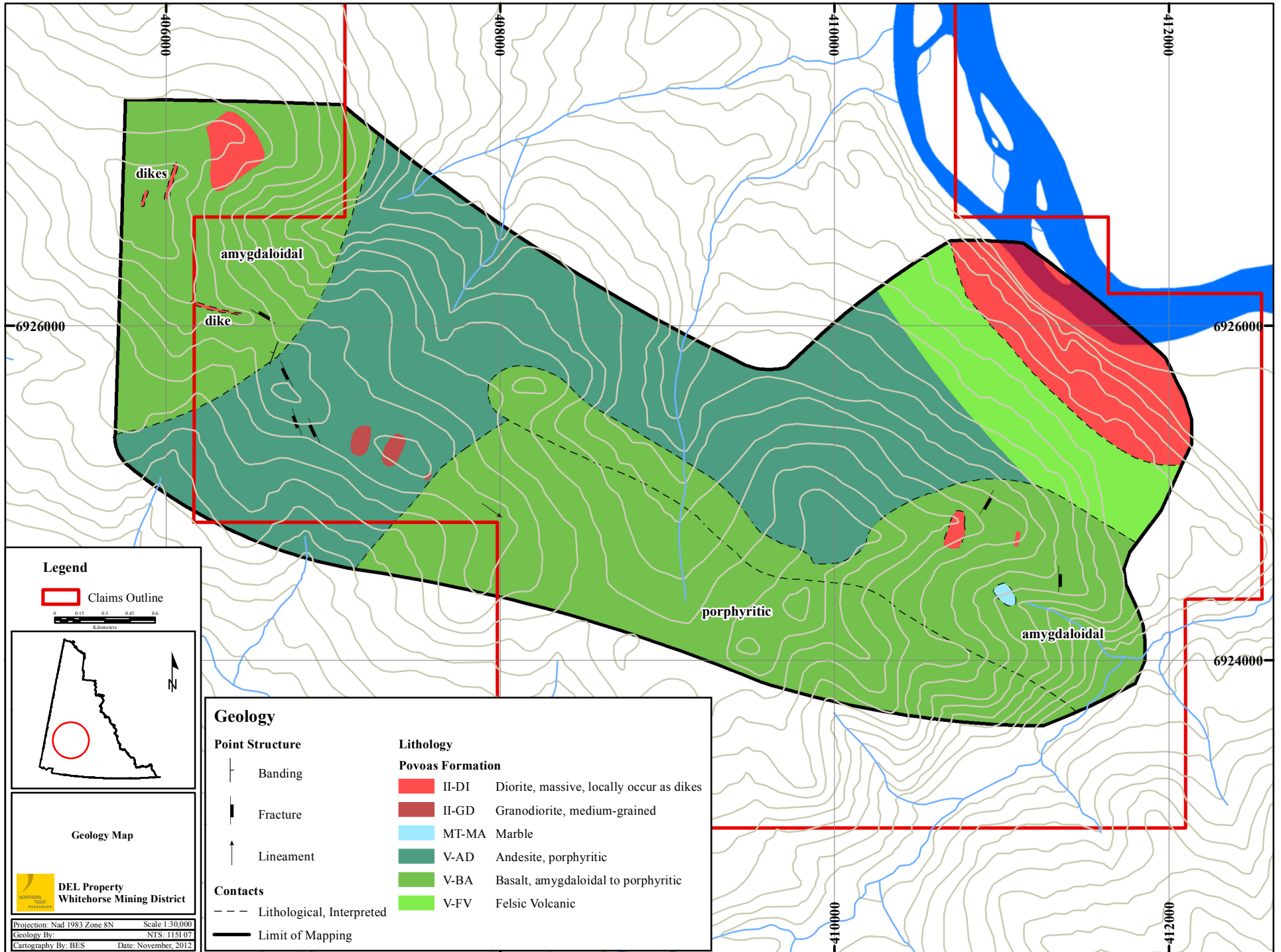
Much of the area surrounding the Intermontane Terrane is underlain by Upper Cretaceous to early Tertiary Carmacks Group volcanics, comprised largely of mafic flood basalts and andesites, with lesser felsic flow and tuffaceous units, and localized basal clastic strata (Open File, Geological Survey of Canada, 2001). Upper Triassic volcanic rocks of the Povoas formation (uTP) underlay the DEL property.

### 2.3b Property Geology

Preliminary geological mapping indicated most of the property is underlain by Upper Triassic Povoas Formation andesitic to basaltic flows, commonly feldspar and/or augite porphyritic and strongly epidote-enriched (Schulze, 2008). A malachite chip was identified from andesitic rubblecrop near Hoochekoo Creek. An east-northeast extending, steeply south-southeast dipping foliation measurement was recorded in western areas.

In 2008, mapping also revealed exposures of granite in areas now covered by the additional claims. Schulze indicates that small epidote-enriched and moderately limonite calc-silicate altered skarn occurrences are located proximally to these granite bodies. Fairly abundant limonitic monzonitic to quartz monzonitic float occurs in western areas, suggesting a proximal source (Schulze, 2008).

Mapping conducted in 2011 also confirmed that DEL is underlain by the Povoas Formation, consisting primarily of andesitic basalt amygdaloidal to vesicular flows with lesser basaltic augite porphyry flows, minor basaltic agglomerate and a central andesitic feldspar  $\pm$ augite porphyry flow with tuffaceous horizons, possibly representing the oldest member of the Povoas Formation (Pautler, 2011). The area along the Yukon River was not visited in 2008. However, 2011 mapping agreed with geological observations made in 1974 by United Keno Hill Mines stating that the area is underlain by an equigranular, coarse-grained hornblende diorite (Beavan, 1974). Probable related diorite dykes were also mapped in the northwestern and southeastern property areas, intruding the andesitic basalt amygdaloidal to vesicular flows (Pautler, 2011). Minor interflow sedimentary horizons, generally red or green siltstone, with limestone clasts and marble were also noted within the volcanic package in 2011. Sedimentary and limy volcanic horizons locally exhibited calc-silicate alteration with epidote, local garnet and pyroxene, and quartz  $\pm$ carbonate stringers (Pautler, 2011).



**Legend**

Claims Outline

0 0.15 0.3 0.45 0.6  
Kilometers

**Geology Map**

**DEL Property**  
Whitehorse Mining District

Projection: Nad 1983 Zone 8N      Scale 1:30,000  
Geology By: NTS: 1151.07  
Cartography By: BES      Date: November, 2012

**Geology**

<b>Point Structure</b>		<b>Lithology</b>	
Banding		<b>Povoas Formation</b>	
Fracture		II-DI	Diorite, massive, locally occur as dikes
Lineament		II-GD	Granodiorite, medium-grained
		MT-MA	Marble
		V-AD	Andesite, porphyritic
		V-BA	Basalt, amygdaloidal to porphyritic
		V-FV	Felsic Volcanic
<b>Contacts</b>			
Lithological, Interpreted			
Limit of Mapping			



### 3.0 History

Prospecting for vein-style copper-silver-gold showings occurred within volcanic units in the late 1800s. In 1899 the MAUD claim was staked along the north side of Hoochekoo Creek near the Yukon River, likely within the present property boundary. In 1972 Archer Cathro & Associates reported a 10-foot shaft “along a 2-foot wide unmineralized shear zone in the volcanic” (A. Beavan, 1974). This area was re-staked as the FORD claim by W. Clarke, and the adjoining GLEN claim by E. Harris (Yukon Minfile, 2008).

The “Hoochekoo showing” was staked in 1974 by R. Hilker along the “Hoochekoo Bluff”, occurring slightly to the south of the present property. George Dawson noted the showing in 1887, stating it consisted of copper staining along calcite seams in joint planes in porphyritic feldspathic rock interbedded with black argillite. A sample of this returned “minute traces of gold with 0.088 oz (3.0 g/t) of silver to the ton” (Dawson, 1887, in Yukon Minfile).

The Carmacks map sheet was mapped by H.S. Bostock, and reported in Memoir 189 in 1936. In 1974 D.J. Templeman-Kluit performed a correlation of map units and re-interpretation of stratigraphic ages (Beavan, 1974).

The area next saw private sector activity in 1970, with the discovery of significant copper by the Dawson Range Joint Venture. Although considerable activity occurred nearby following the discovery of the Williams Creek copper-gold deposit (currently called the Carmacks deposit, held by Copper North Mining Corporation), the area hosting the area of the present DEL claims remained unstaked (Beavan, 1974).

In March 1974 United Keno Hill Mines Ltd. staked the DEL 1-84 claims to cover a copper-silver occurrence revealed during construction of an access road from Carmacks to the DEF block, currently hosting the Minto mine held by the Capstone Mining Corporation to the northwest. The considerable size of the block, similar in extent to the present DEL 1-113 claims, was selected due to proximity to the Williams Creek deposit and mineral potential of the area. From August to September 1974 geological mapping and systematic soil sampling was

conducted. Minor chalcopyrite and malachite occurrences were found along the access road, and within a dioritic intrusion, or proximal to dioritic and “basic and siliceous dykes” (Beavan, 1974). Weak copper-in-soil anomalies were identified in the extreme southwestern area, covered by the claims staked in late August 2008. No further work was recommended in 1974, and the claims were allowed to lapse.

No further activity was reported prior to acquisition by Minto Explorations Ltd. in 2007.

The 2008 program, extending from July 6-13, was conducted by All Terrane Mineral Exploration Services for Northern Tiger Resources Inc. The program consisted of six soil geochemical traverses with geological mapping and stream silt sampling where available along claim lines, including an east-west extending traverse in southern areas (Schulze, 2008). Soil samples were taken at 100-metre intervals. Two silt sampling traverses were also done respectively along a stream in the west-central area and another extending along the western and, further downstream, the northern property boundary. Silt samples were obtained at 250-metre intervals and from tributaries. A total of 11 rock, 137 soil and 27 silt samples were taken, returning favorable results along the western and northern boundaries which led to staking of the DEL88 – 113 claims in late August, 2008 (Schulze, 2008).

A brief surface exploration program was conducted by Northern Tiger Resources Inc. on August 9, 2010. The program involved the attempt to locate and map an inferred geological contact on claim DEL 90 at the western boundary of the claim block, and to emplace a small soil sample grid across this contact. Due to limited outcrop exposure, the geological contact was mapped from subsurface rock chips, trending approximately northwest-southeast with andesitic rocks occurring to the northeast of the contact and monzonitic rocks to the southwest. A total of 57 soil samples were taken at 50-metre intervals along 5 north-south trending lines spaced 50 meters apart across this contact. Results of the soil sampling program indicate the presence of a 300 meter by 300 meter zone anomalous in copper (Cu). High Cu values range from 50 to 447 ppm, beginning at the geological contact and continuing southwest into the monzonite unit. The anomalous zone remained open to the northwest, west and south.

The property was re-visited by a 2-person crew (Geologist and Sample Technician) from May 27 to June 1, 2011 to follow up on the anomaly discovered in 2010. 10 claims were staked onto the western side of the property (see Fig. 1) to cover the potential extension of the 2010 Cu-in-soil anomaly to the west and south. The 2010 soil grid was then expanded with the addition of 20 soil samples in two lines located 50 meters to the south and west of the existing grid. Sampling was kept at 50 meter spacing. The larger grid planned could not be completed due to ground difficulties resulting from the presence of early-season permafrost. Results of the 2011 soil survey expanded the existing anomaly to a 400 m by 300 m zone with 2011 Cu-in-soil values ranging from 15.7 ppm to 572 ppm. The soil anomaly remains open to the west and south. In addition to the soil grid, extensive mapping was conducted across the property. A new occurrence, the D-Zone (see Figure 2), was identified 350 meters to the southwest of the anomalous soil grid. The D-Zone is described as a 25cm, malachite-bearing fracture zone oriented 160/70W, hosted in an andesite augite-feldspar porphyry outcrop. A 0.3 m chip sample across the fracture zone returned 0.972% Cu and 0.741 g/t Au.

#### 4.0 Program Rationale

Soil-sampling and mapping conducted around DEL 90 in 2010/2011 by Northern Tiger Resources identified a 400 meter by 300 meter Cu-in-soil anomaly with anomalous soil values up to 572 ppm Cu and 200 ppb Au. The extent of anomalous soil samples remains open to the west and south. A malachite occurrence, dubbed the D-Zone, was also discovered in an outcrop 350m to the southwest of the current soil anomaly with a chip sample returning 0.972% Cu and 0.741 g/t Au. This andesite-hosted fracture zone has a measured orientation of 160°, but cannot be traced at surface due to poor exposure.

The soil survey also returned anomalous values in As, Bi, and Mo. This suite of elements closely resembles the geochemical profile of the Williams Creek deposit located 13 kilometers south of the DEL property.

Geophysical surveys conducted over the Minto deposit show mineralized zones with moderate to high chargeability and resistivity, but low to moderate magnetic intensity. These parameters can be used to identify the potential for Minto-style mineralization in the anomalous areas identified on the DEL property.

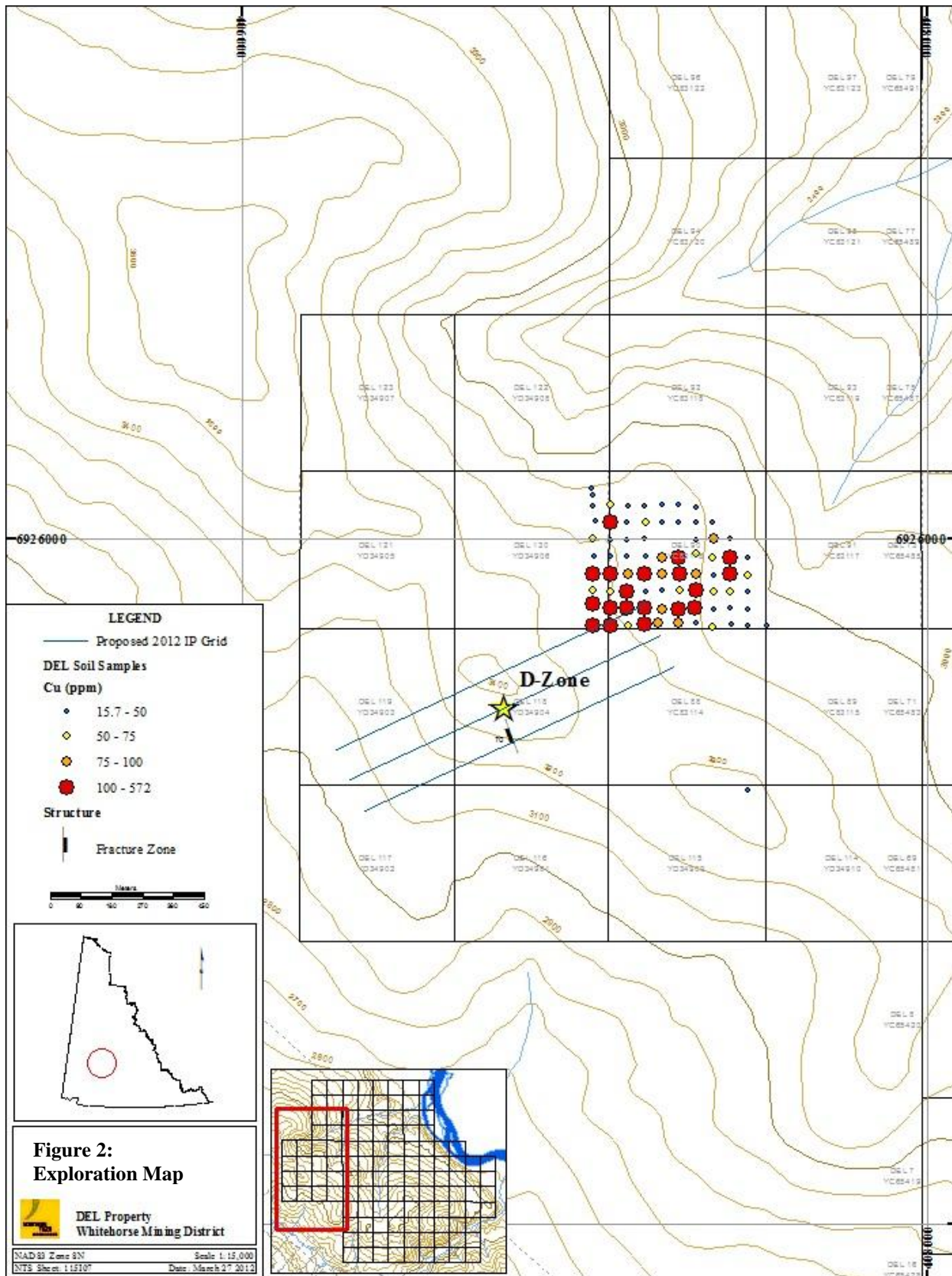
## 5.0 Description of Work Program

The 2012 program target evaluation program consisted of a ground geophysical survey conducted over the prospective area by Aurora Geosciences from May 26<sup>th</sup> to June 2<sup>nd</sup>. The survey included three 1.25 kilometer lines for a total of 3.75 line-kilometers of line-cutting and 3.75 line-kilometers of IP, resistivity and total magnetic field survey picketed at 50 meter intervals. Lines were centered on the D-Zone outcrop at an orientation of 250°, perpendicular to the 160-degree strike of the mineralized fracture zone (see Figure 2). The easternmost sections of the lines covered the southwestern edge of the known soil anomaly. The four person crew completed mobilization, the line cutting and survey in eight days.

The field work was conducted from a field camp based on the DEL property. Crews drove from Whitehorse to a staging point along the North Klondike Highway, located east of the DEL claim block. Carmacks-based helicopter support provided for mobilization to and from the field camp at the start and end of the program.

A full description of the survey parameters is described in the Aurora field report in Appendix A.

At the recommendation of Aurora Geosciences based upon the favorable survey results, a 3D Inversion study of the IP data was also completed. This was not in the proposed YMIP project but the hope is that the information gleaned from the study would allow for its inclusion in the final YMIP expenditures.



## 6.0 Conclusions and Recommendations

### 6.1 Conclusions

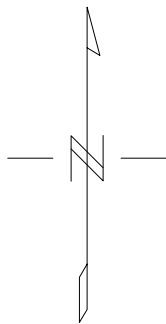
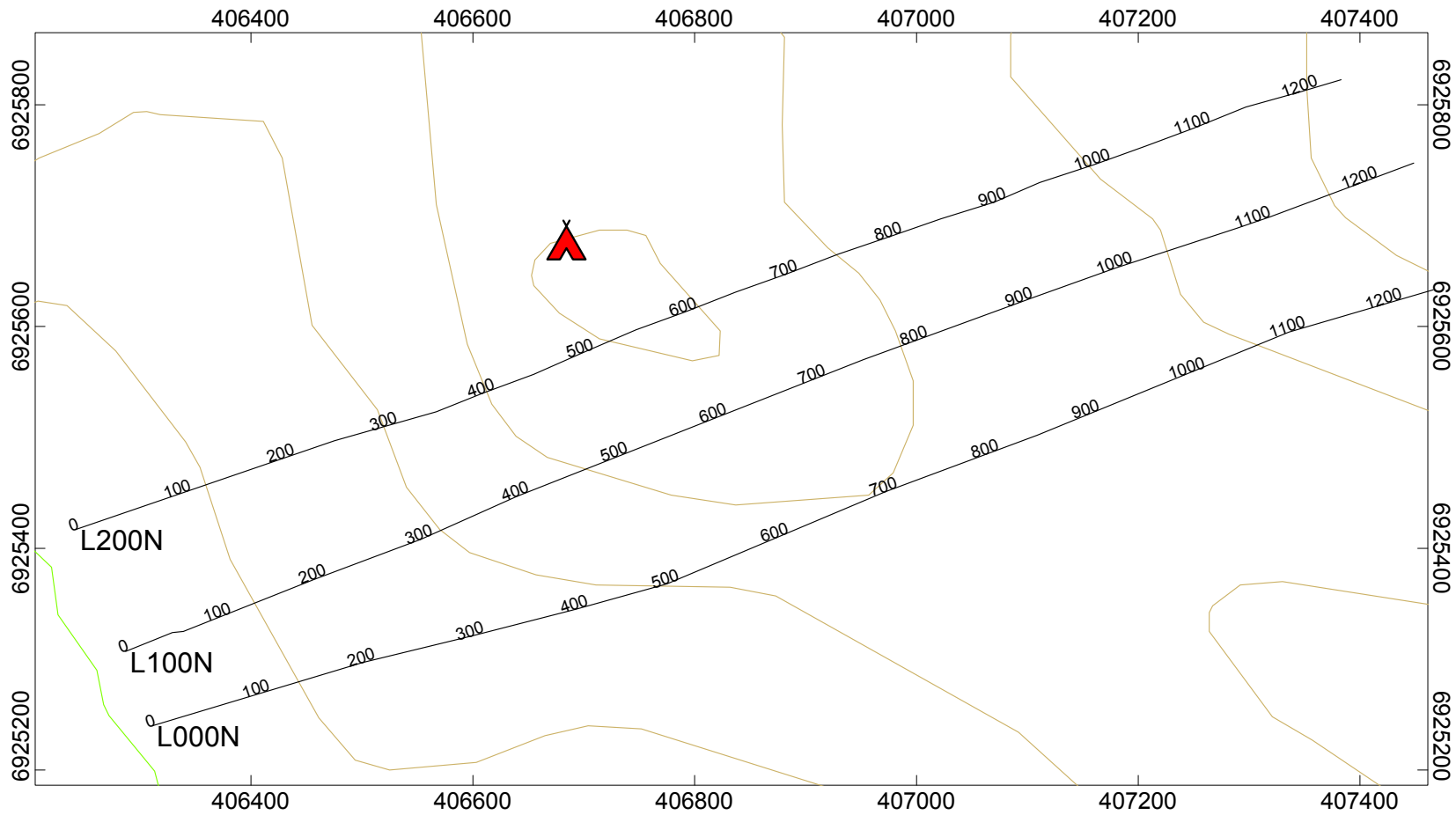
The survey resulted in the delineation of moderate chargeability anomalies with moderate resistivity and low to moderate magnetic response within the eastern panel of feldspar porphyritic andesite.

The anomaly is described as being synclinal in nature with higher response on the outer edges of the survey and weaker response along the central line. The 3D inversion (report Appendix B) clearly shows the synclinal nature of the anomaly. The northern portion of the anomaly corresponds to the southern limits of the copper anomalous soil grid.

The geophysical anomaly resembles that which would be expected for a Minto type deposit. The corresponding soil geochemistry strengthens this assertion. However, the soil geochemistry more closely resembles the Williams creek deposit with copper associated with anomalous arsenic, bismuth, and molybdenum. The geophysical and geochemical anomalies are underlain by feldspar porphyritic andesite of the Povoas Formation.

Mapping in early 2012 indicated diorite and granodiorite intruding the Povoas Formation volcanic rocks in several areas on the DEL property. Three small, medium grained, granodiorite outcrops were mapped immediately south of the geophysical grid suggesting that Granite Mountain intrusive rocks, the host for the Williams creek deposit, may be present.

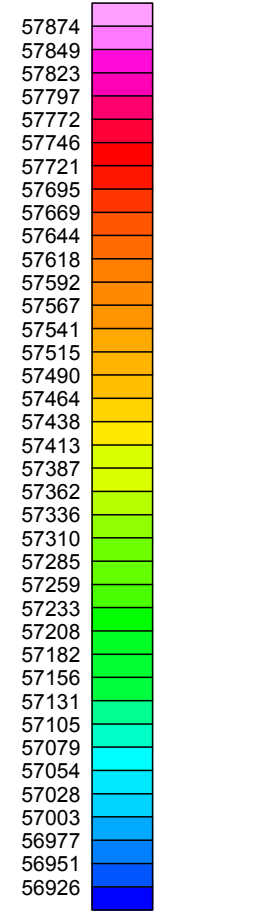
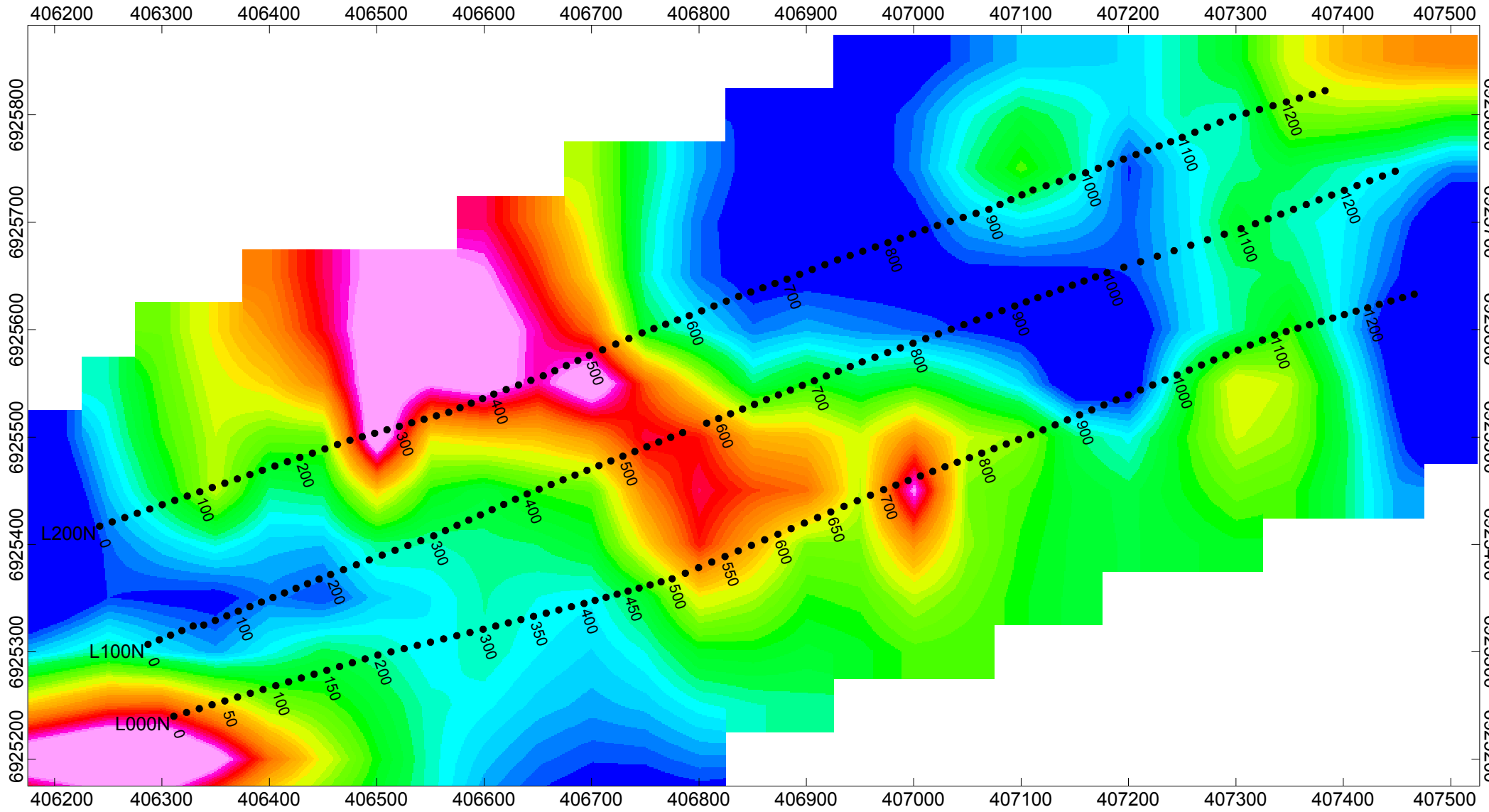
The highest magnetic response was in the D-Zone area which is the contact between the monzonite to the west and andesite to the east. The zone contains fractures within weakly magnetic augite porphyritic basalt orientated at  $160^{\circ}$  with a steep western dip. This strike is very close to the  $330^{\circ}$  strike of the No. 1 zone of the Williams Creek deposit which has a  $75^{\circ}$  east dip. The fractures contain malachite but with a copper assay of 0.97% with 0.74 g/t Au, it is likely that copper sulphides also exist. The gold values suggest primary copper mineralization. Both the magnetic and resistivity anomaly in the area of the D-Zone mineralization have a NW orientation similar to the Williams Creek deposit. However, the low chargeability of the zone suggests that sulphides do not occur in abundance in the area. However, the Williams Creek deposit is



Scale 1:6000  
 100 0 100  
 (meters)  
 WGS 84 / UTM zone 8N

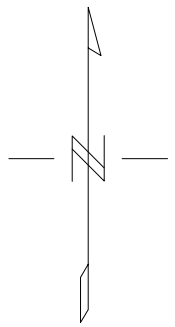
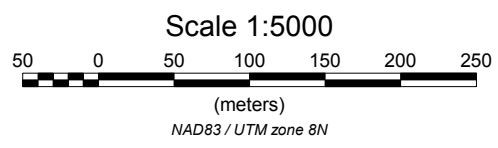
<b>NORTHERN TIGER RESOURCES</b>	
<b>Del Geophysics 2012</b> Del D Zone	
Mining District: Whitehorse	GRID: Local
Date: June 8 2012	Job: NTR-12525-YT
NTS: 115 I/07	Drawn by: SS
<b>AURORA GEOSCIENCES LTD.</b>	





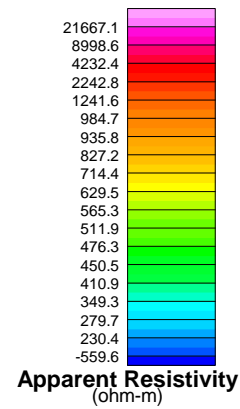
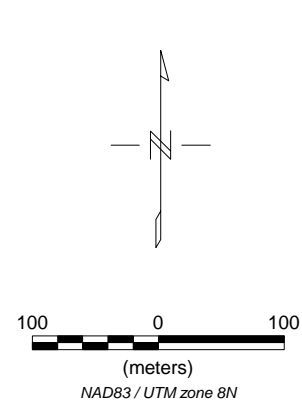
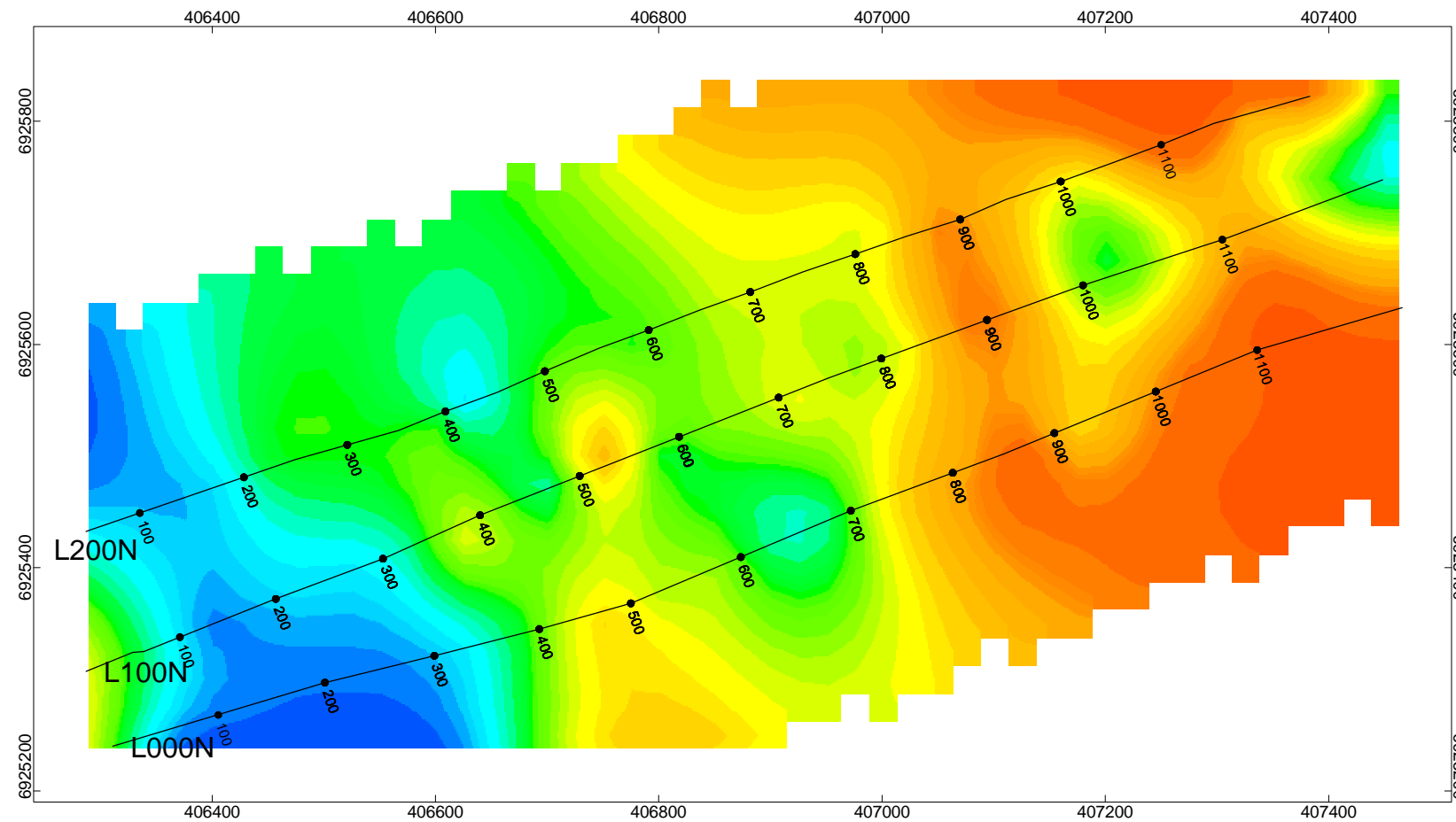
**Total Magnetic Field**  
(nT)

**Field**



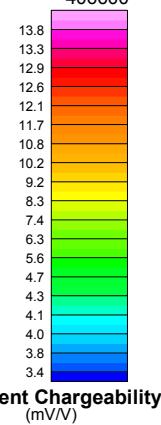
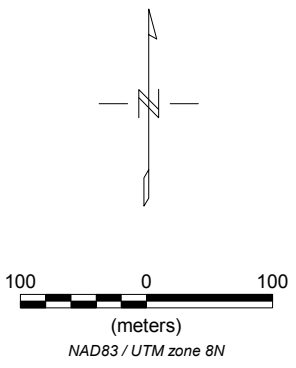
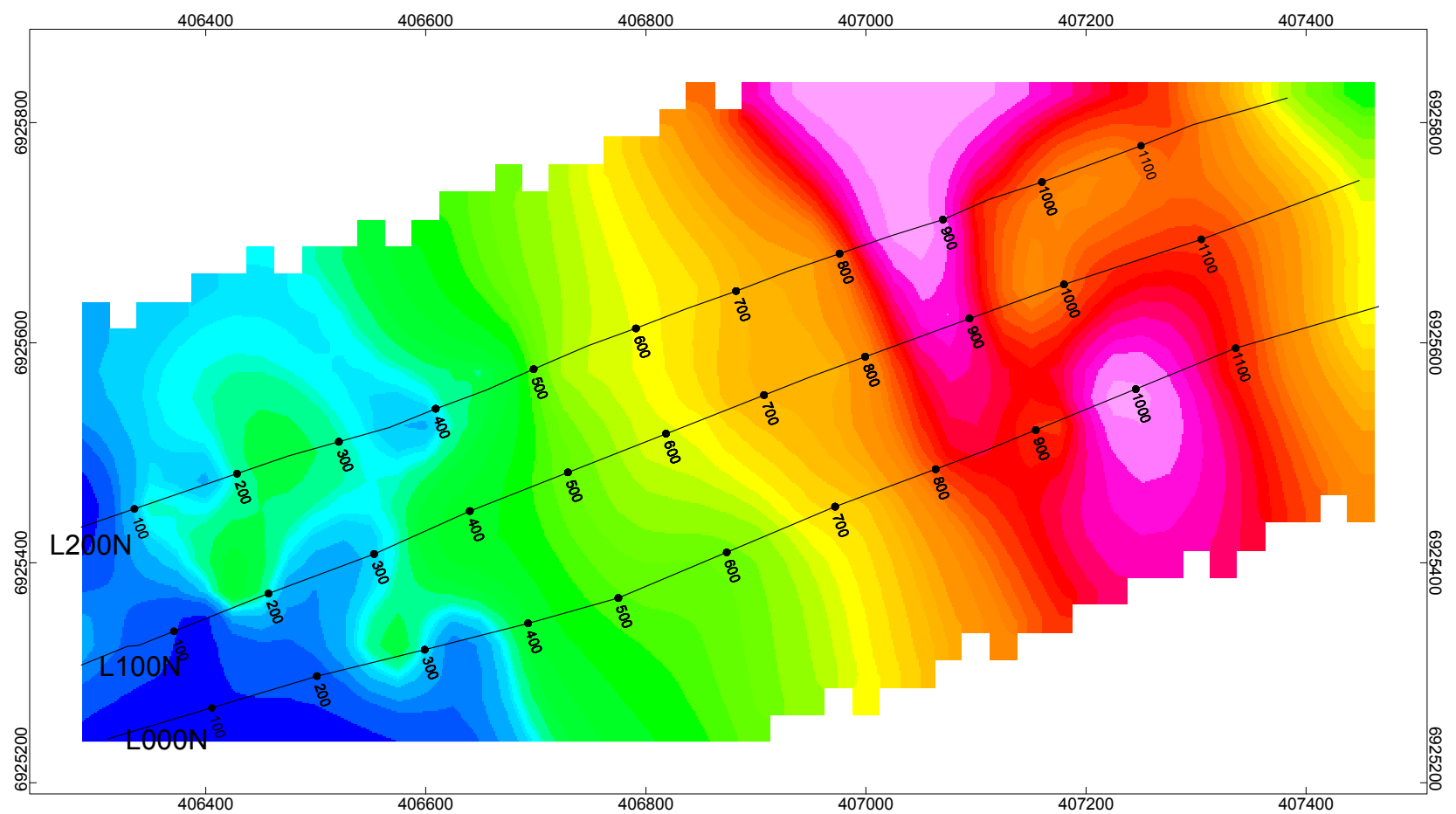
Magnetometer: S/N:708719  
 Data file: FINAL\_mag0602ss  
 Surveyed: June 2nd 2012

<b>Northern Tiger Resources</b>	
<b>Total Magnetic Field Survey Del "D Zone"</b>	
June 2nd 2012 Datum: NAD 83 NTR-12538-YT	NTS 115I07 Zone 8N Drawn by:SS



Data file: FINAL\_GRAD.gdb  
 Surveyed: May 29th - June 2nd 2012

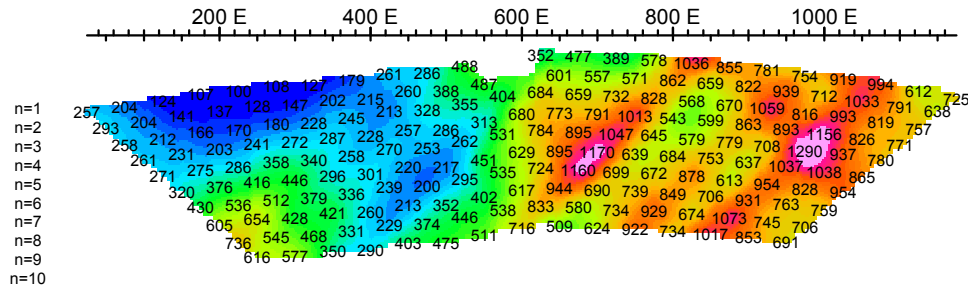
<b>Northern Tiger Resources</b>	
<b>Modified Gradient IP Survey Del "D Zone"</b>	
June 11th 2012 Datum: NAD 83 NTR-12538-YT	NTS 115107 Zone 8N Drawn by:SS



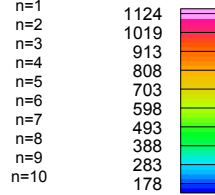
Data file: FINAL\_GRAD.gdb  
 Surveyed: May 29th - June 2nd 2012

<b>Northern Tiger Resources</b>	
<b>Modified Gradient IP Survey Del "D Zone"</b>	
June 11th 2012 Datum: NAD 83 NTR-12538-YT	NTS 115I07 Zone 8N Drawn by:SS

App Resistivity  
(Ohm-m)

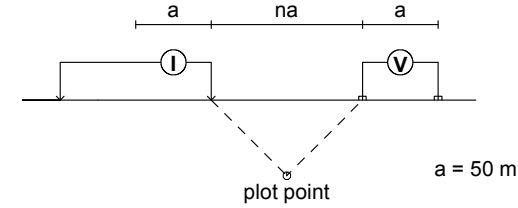


App Resistivity  
(Ohm-m)



# PSEUDOSECTION PLOTS 0 N

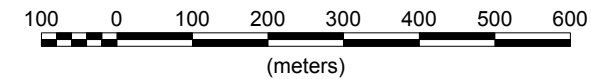
Modified Pole-Dipole Array



Stationary electrode at -100E (moving E).  
Receiver: Iris ElrecPro  
Transmitter: GDD Tx-II 3.6kW  
Data File: Del2012IP.xyz  
Dates Surveyed : May 27 - June 1 2012

**Field**

Scale 1:10000



NORTHERN TIGER RESOURCES

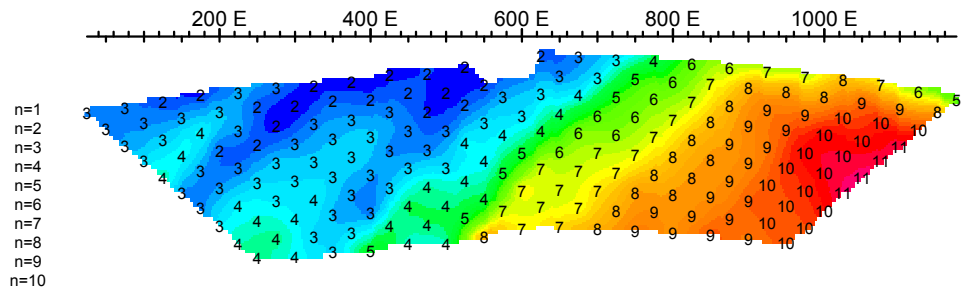
**INDUCED POLARIZATION SURVEY**  
Del D Zone  
PSEUDOSECTION PLOTS 0 N

Mining District: Whitehorse  
Date: June 8 2012  
NTS: 115 I/07

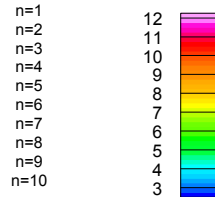
GRID: Local  
Job: NTR-12525-YT  
Drawn by: SS

*AURORA GEOSCIENCES LTD.*

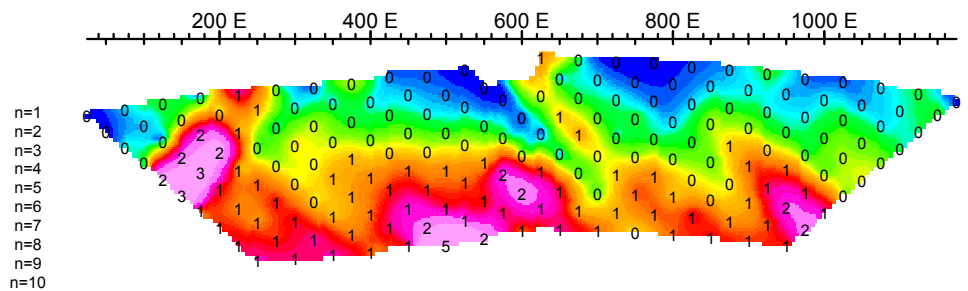
App. Chargeability  
(mV/V)



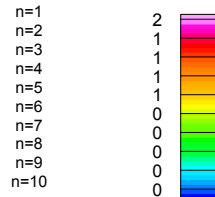
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(mV/V)



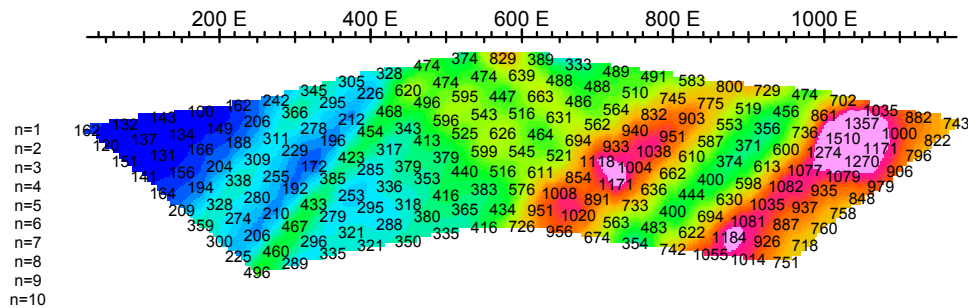
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(mV/V)



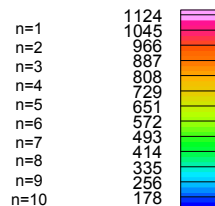
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(mV/V)



App Resistivity  
(Ohm-m)

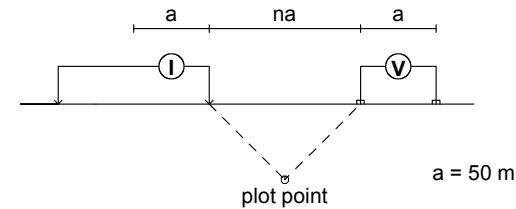


App Resistivity  
(Ohm-m)



# PSEUDOSECTION PLOTS 100 N

Modified Pole-Dipole Array



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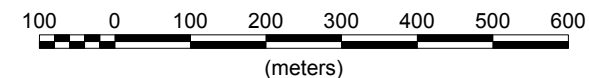
Transmitter: GDD Tx-II 3.6kW

Data File: Del2012IP.xyz

Dates Surveyed : May 27 - June 1 2012

# Field

Scale 1:10000



NORTHERN TIGER RESOURCES

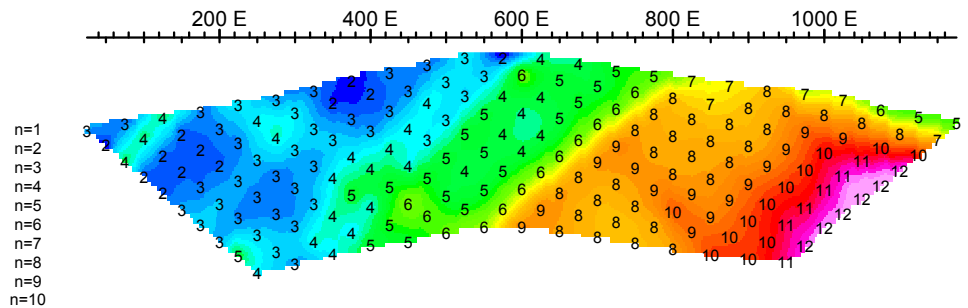
**INDUCED POLARIZATION SURVEY**  
Del D Zone  
PSEUDOSECTION PLOTS 100 N

Mining District: Whitehorse  
Date: June 8 2012  
NTS: 115 I/07

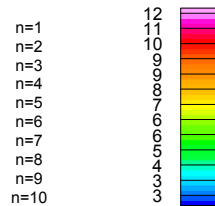
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Job: NTR-12525-YT  
Drawn by: SS

*AURORA GEOSCIENCES LTD.*

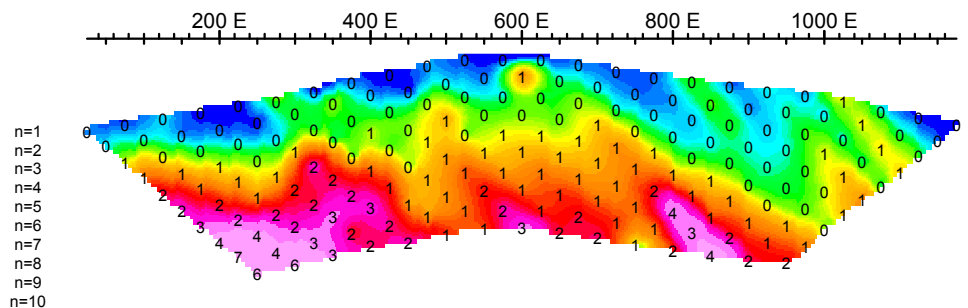
App. Chargeability  
(mV/V)



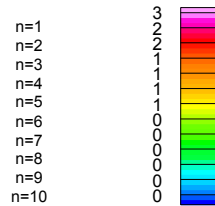
App. Chargeability  
(mV/V)



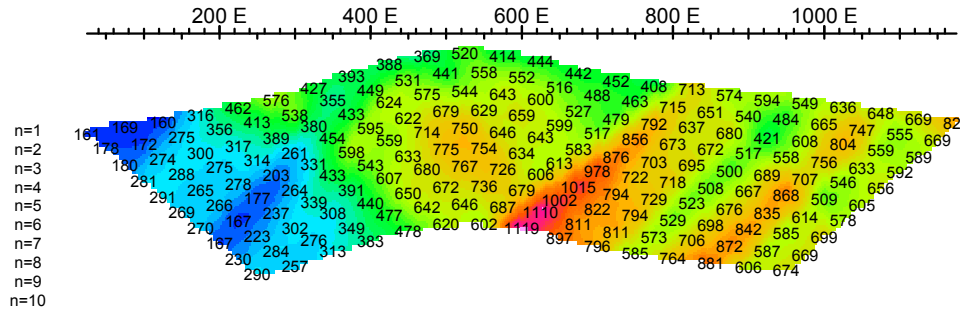
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(mV/V)



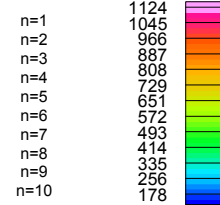
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(mV/V)



App Resistivity  
(Ohm-m)

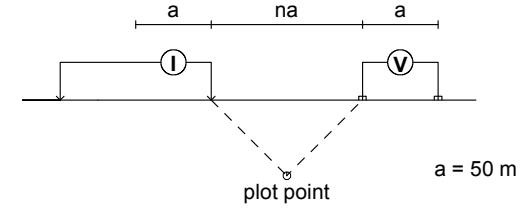


App Resistivity  
(Ohm-m)



# PSEUDOSECTION PLOTS 200 N

### Modified Pole-Dipole Array



Stationary electrode at -100E (moving E).

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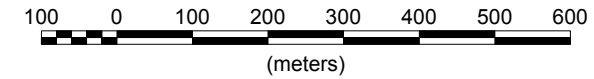
Transmitter: GDD Tx-II 3.6kW

Data File: Del2012IP.xyz

Dates Surveyed : May 27 - June 1 2012

# Field

Scale 1:10000



## NORTHERN TIGER RESOURCES

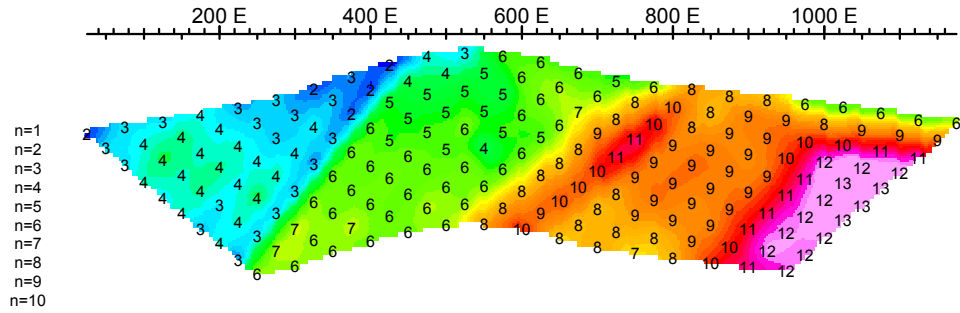
### INDUCED POLARIZATION SURVEY Del D Zone PSEUDOSECTION PLOTS 200 N

Mining District: Whitehorse  
Date: June 8 2012  
NTS: 115 I/07

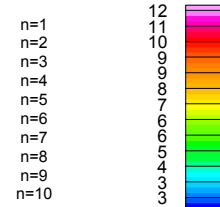
GRID: Local  
Job: NTR-12525-YT  
Drawn by: SS

*AURORA GEOSCIENCES LTD.*

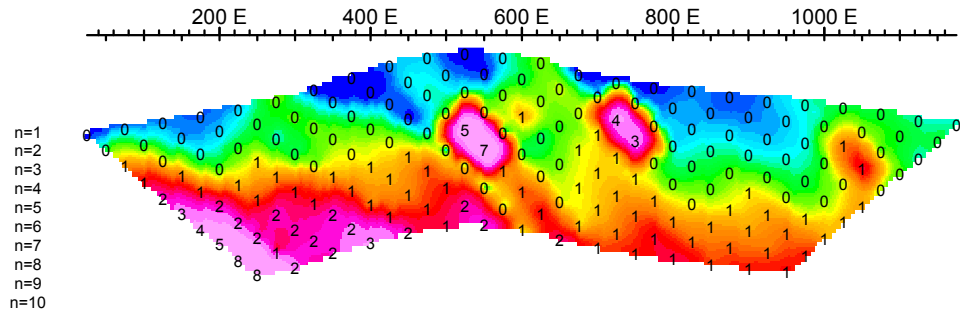
App. Chargeability  
(mV/V)



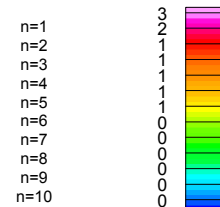
App. Chargeability  
(mV/V)



App. Charg. Error  
(mV/V)



App. Charg. Error  
(mV/V)



oxidized to a depth of 250 feet which would likely result in a low chargeability response. Since the magnetic signature of the survey varies only 1062 nT from weakest to strongest, it is likely that the basalt itself is responsible for the 'high' magnetic signature.

Three possible scenarios could explain the geochemical and geophysical anomalies:

- 1) Geochemically modified, flat lying, folded, Minto type mineralization exists within intrusive rocks below the overlying feldspar porphyritic andesite;
- 2) Orientation modified Williams Creek type mineralization exists within intrusive rocks below the overlying feldspar porphyritic andesite;
- 3) A relatively unmodified Mesozoic copper porphyry deposit hosted by Povoas volcanic and Granite Mountain intrusive rocks (theorised Williams Creek deposit precursor).

## 6.2 Recommendations

A two-phase program is recommended to follow up the successful 2012 geophysical program.

Phase One would consist of an IP/Mag survey consisting of two lines parallel to and north of L200N and one line south of and parallel to L000N. Soil sampling consisting of 10 north-south lines 100 metres apart and 500 metres long with a sample spacing of 50 metres starting south of the existing grid should be completed. The sampling would cover the D-Zone area and extend under the southern limit of the existing geochemical soil grid. The soil survey would yield 110 samples which could be collected by three people in one day. Likely, the geophysical crew could manage the survey.

Phase Two, contingent upon favourable results from Phase One, would consist of five 200 meter NQ diamond drill holes for a total of 1,000 meters of drilling. The holes would be targeted over the best combined geochemical and geophysical anomalies.

## 7.0 Project Partners

There are no project partners for this exploration program.



## 8.0 References

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- Davidson, G.S. 2000: Summary Report on the Sonora Gulch Property, Private report for Engineer Mining Corporation.
- Gordey, S.P. and Makepeace, A.J., (compilers), 2001: Bedrock Geology, Yukon Territory; Geological Survey of Canada, Open File 3754 and Exploration and Geological Services Division, Yukon Indian and Northern Affairs Canada, Open File 2001-1.
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- Joy, R.J. 1974: Report on Initial Showing, DEL Claim Group, Report for United Keno Hill Mines Ltd.
- Pautler, J. 2011: DEL Property 2011 Exploration Summary: Interoffice Memorandum.
- Schulze, C.M. 2008: Assessment Report on the 2008 Geological and Geochemical Surveying on the DEL Claim Block, DEL Project, Dawson Range, Yukon, Northern Tiger Resources Inc.
- Website, Capstone Mining Corporation, 2010.
- Yukon Geological Survey, 2010: Yukon Minfile website, Ministry of Energy, Mines and Resources, Government of Yukon.

Appendix A  
Aurora Geosciences Field report



**AURORA GEOSCIENCES**

**NORTHERN GEOLOGICAL & GEOPHYSICAL CONSULTANTS**

**YELLOWKNIFE - WHITEHORSE - JUNEAU**

34A Laberge Road, Whitehorse, Yukon, Canada Tel (867) 668-7673 Fax (867) 393-3577

## **MEMORANDUM**

**To:** Dennis Ouellette      **Date:** June 8<sup>th</sup> 2012  
**From:** Shawn Scott, Aurora Geosciences Ltd.  
**Re:** 2012 Induced Polarization & Magnetic Survey Field Report

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This memorandum is a field report describing the expanding pole-dipole induced polarization (IP), gradient IP and total magnetic field (Mag) surveys conducted in the "D zone" of the Del property, Yukon Territory, from May 27<sup>th</sup> until June 2<sup>nd</sup> 2012.

The Del Claims are located approximately 50km NW of Carmacks, immediately west of the Yukon River and only a few kilometres from the North Klondike highway. The camp was located in the west end of the claims in the "D zone" at 406700E and 6925600N UTM Z8 NAD 83 coordinates.

The crew left Whitehorse on the morning of May 26<sup>th</sup> and drove to TNTA Carmacks. From here, fuel was brought to the staging area located at approximately 414000E and 6928500N UTM Z8, 8km from camp. Using the chartered TNTA Bell 206 the gear was slung to the site, leaving the truck behind until the completion of the survey on June 2<sup>nd</sup> 2012. Daily access to the grid from camp was by foot.

A total of 3.75km of line were cut and picketed at 50m spacings and at a line azimuth of 250 degrees E of N. The three 1.25km lines were then surveyed both with an expanding pole dipole IP setup and a modified gradient IP setup before the Mag survey was conducted. Additionally, the eastern 1km of line 100 was surveyed with an alternate array geometry using non-collinear current injection and potential electrode sites.

The terrain, though steep in some places, presented no significant barriers to the safe and efficient implementation of the survey.

A full survey log is attached to this report including a summary of IP, magnetometer, and line-cutting production.

### Crew and equipment.

The line cutting, IP and Mag were conducted by the following personnel:

Dave Hildes	Project manager
Shawn Scott	Crew chief
Micheal Cunningham	Helper
Micheal Murdock	Helper

The crew was equipped with the following instruments and equipment:

IP receiver	1	Iris Elrec Pro   S/N: 2315-275830063-165
IP transmitter	1	GDD TxII 3.6 kW   S/N: TX-242
Generator	1	Honda 5kW
IP tool box	1	Repair tools and spare parts
IP Equipment	6km	18 gauge wire
	24	50m 10 conductor cables
	2	Geo-Reels w/spools
	2	Speedy winders w/spools

	24	Stainless steel electrodes
Laptops with Geosoft IP packages	1	FL-115
4 man Summer camp	1	
Office Box	1	
Chainsaws	3	Husqavarna 353
Chainsaw safety gear	3	Helmet, visor, chaps
Chainsaw tool box	1	Repair tools and spare Parts
GEM Magnetometers	3	S/N:708719 (rover) S/N:706694 (base) S/N:45335 (spare)

## Survey Specifications

### Line cutting:

Width	1.5 m width maximum and cleared to ground.
Station Spacing	50 m
Station Marking	Marked with tagged half-length pickets. Line/station coordinates written on the tags and stapled to the pickets
Chaining	All stations tight chained, not slope corrected
Alignment and registration	Stations at 250 m intervals located with a non-differential GPS receiver in UTM NAD83 coordinates, averaged for a minimum 60sec with an estimated accuracy of less than 10m.

### Total magnetic field:

Station spacing	12.5m, relative to chained station pickets
Base mag location	406672E 6925620N UTM Z8
Base mag time cycle	3 sec
Quality Control	No readings exceeded the set rejection threshold of 3nT per 3sec. The highest variation encountered between base station readings was only 0.2nT.

**Induced-Polarization:**

Array	Modified pole-dipole array, modified gradient and non-collinear 3D array.
Dipole spacing	50 m on all lines
Dipoles Read	N=1 through 10 (10 Channels)
TX	Time domain / 0.125 Hz / 50% duty cycle / reversing polarity (2 s positive -2 s off - 2 s negative - 2 s off)
RX	Receiver sampling: 20 channels / semi-logarithmic channel width / sampled minimum 15 times per reading.
Parameters read	Mt - total chargeability (mV/V) Ro - apparent resistivity M1 to M20 - 20 channel samples of decay curve Vp - Primary voltage Sp - spontaneous potential E - error in chargeability (mV/V)
Noise	Standard deviation of the chargeability to be kept to 5 mV/V or less wherever possible. If this is not possible, readings were repeated multiple times to determine their repeatability.

Stationary  
Electrodes

000 -100 406218 6925191 (L000 PL/DP)

100 -100 406192 6925280 (L100 PL/DP)

200 -100 406167 6925371 (L200 PL/DP)

100 1105 407311 6925696 (Gradient Original)

100 1350 407543 6925783 (Gradient Extended Lines)





## **Data processing**

### **Induced-Polarization:**

Data was downloaded nightly from the receiver and imported into Geosoft Oasis Montaj IP package. Every reading was inspected and readings which did not repeat were rejected from the database. Apparent resistivity was recalculated using a four electrode equation assuming a homogeneous earth. Average apparent chargeability was calculated using a weighted mean based on the number of stacks and the standard deviation of the chargeability.

GPS points were created from the target area by means of picketed lines and handheld GPS units to record Rx electrode locations and the location of the stationary electrodes. Any stations not measured by GPS were determined by interpolation.

Pseudosections of apparent chargeability, apparent chargeability error, and apparent resistivity draped over topography were produced with Oasis Montaj.

### **Total magnetic field:**

The magnetic data from the rover was diurnally corrected using GEM 3.0 software. GPS points from the IP survey were used and coordinated for stations in between GPS points were determined by interpolation

**Products.**

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

Data	Final data in Geosoft ASCII XYZ and gdb format. The GPS files have all GPS coordinates taken in NAD83, UTM zone 8N coordinates.
Figures	Pseudo sections in .PDF and packed Geosoft map formats of apparent chargeability, apparent resistivity, & chargeability error. A plotted grid map of TMF, Modified Gradient IP, Modified Gradient Apparent Resistivity and survey locations.
Raw	A folder with all raw instrument and GPS-location dump files.
Del Geophysics 2012.pdf	A PDF of this report.
Del IP and LC Field Production Summary.pdf	Survey log

Respectfully submitted,  
AURORA GEOSCIENCES LTD.

Shawn Scott

## Appendix B

### Aurora Geosciences 3D Inversion Report

## **MEMORANDUM**

**To:** Dennis Ouellette  
Northern Tiger Resources Inc. **Date:** Nov 30, 2012

**From:** Louis Rosenthal

**Re:** 2012 Del IP survey – 3D Inversion

This memorandum describes the data inversion steps taken to model the resistivity and induced polarization data provided in the field report submitted on June 8<sup>th</sup>, 2012. Additionally, this report integrates all the geophysical and geological data on the “D” zone and makes recommendations based on the results of the interpretation.

### **1) Data Inversion**

The final resistivity and chargeability data were modeled using the DCIP3D inversion software developed by the University of British Columbia Geophysical Inversion Facility. This software package produces a geo-referenced chargeability (V/V) and conductivity (mS/m) model.

The inversions incorporated the 2D gradient and expanding pole-dipole (EPLDP) data from the field report as well as EPLDP and gradient data acquired using a 3D array. The 3D array consists of a static 50m 20 pin (on L100) receiver array flanked by roving current sources on adjacent lines (L0 and L200). This 3D array simultaneously produces both a 3D EPLDP and a 3D gradient dataset. The 3D EPLDP is collected when both current electrodes are on the same side of the receiver dipole. The 3D gradient data is collected when the receiver dipole is between the current electrodes. To avoid confusion, the 3D data collected with current source on L0 is labelled L50 and the 3D data collected with the current source on L200 is labelled L150.

The DC inversions used the primary voltage normalized by the current as input and the IP inversions used dimensionless averaged IP as input. The assumed data error for the DC inversions was  $\pm 5\%$  of the

primary voltage plus a floor of 0.0001 V/A and the assumed data error in the IP inversion is the averaged standard deviation calculated by the IP receiver.

### *DC inversion*

Initially, the DC dataset was inverted with a coarse 25m mesh to provide a reasonable first model while minimizing computer time. This model was used as a starting point for the next stage of the inversion which used a finer 12.5 m mesh. The final inversion was weighed from the top down to discourage surface noise. The final model required no additional smoothing and fit the data closely. There appears to be a small discrepancy between the 2D and 3D data which caused the inversion to fit the 3D data more closely due to the higher density of data collected. No prior geological knowledge was incorporated into the inversion process. Stacked sections of the observed and predicted conductivity and a difference calculation plot are included in with this report for all four datasets.

### *IP inversion*

The sensitivity of the IP inversion was calculated using the final DC model. Different models were calculated using several combinations of initial and reference models. The best model used a default reference and initial model, and used surface weighing to discourage spottiness. The inversion was able to fit the data very closely. No prior geological knowledge was incorporated into the inversion process. Stacked sections of predicted and observed chargeability and a difference calculation are included with this report for all four datasets.

## **2) Processing**

The padding cells were removed from the final models which were then imported into Oasis Montaj as 3D voxels. A resistivity model was created by taking the inverse of the conductivity model. Isosurfaces were extracted from these models to visualize the data more effectively. The processed voxels are included with this report in various formats (geosoft Voxels, packed maps, and a 3D PDF).

## **3) Interpretation**

The survey was centered on and perpendicular to a malachite bearing fracture zone which is located 350m SW of a 400x300m soil sampling anomaly delineated in 2011. This area, the D-Zone, is an inferred geologic contact between andesitic rocks to the northeast and monzonitic rocks to the southwest. The purpose of the survey was to identify the potential for "Minto-style mineralization" in the area. The expected geophysical response of this type of target would be a modestly high chargeability, moderate resistivity, and a magnetic high.

Generally, the magnetic response (Figure 1) of the area show a 100-200m wide magnetic high at the fracture zone bounded by areas of low magnetic intensity to the east and west. The strike of the highly magnetic feature is approximately Az 130. The highly magnetic area has a sharp contact to the east and

a more gradual contact to the west. The magnetic intensity variations in the area could potentially be due to variations in the overburden thickness as the magnetic highs correspond to areas with outcropping bedrock.

This interpretation splits the study area into 3 zones (figures 1 - 3). The variations in magnetic intensity, resistivity and chargeability in the study area are modest, so in the following discussion, qualitative adjectives such as high and low are used relative to the domain of the local variation.

Zone 1 is interpreted as the monzonite unit and has a low resistivity, negligible chargeability response and a low magnetic intensity.

Zone 2 is interpreted as the contact between the monzonite to the west and the andesite to the east. It contains the malachite bearing fracture zone. The geophysical response of Zone 2 is moderate to high resistivity, low chargeability and high magnetic intensity.

Zone 3 interpreted as the andesite and the anomalous geochemical samples were collected on the surface in this zone. The geophysical model contains a low resistivity area under L100 flanked by highly resistive areas to the northwest and southeast. The resistive parts of this zone are moderately chargeable and the low resistivity core is variably chargeable. Both the resistive and chargeable zones connect at depth which suggests an synclinal fold structure. The magnetic intensity in this zone was generally low, with a few subtle highs.

The geophysical response of zone 3 closely matches the expected response from “minto style” mineralization. The main chargeable body is hosted within the resistive outer limb of the fold. The north limb of the fold is modelled on surface just north of L200N and the south limb is south of L0N. There are some smaller scale variations resistivity and chargeability variations within the “core” of the fold. Magnetic highs coincided with chargeability highs within this zone.

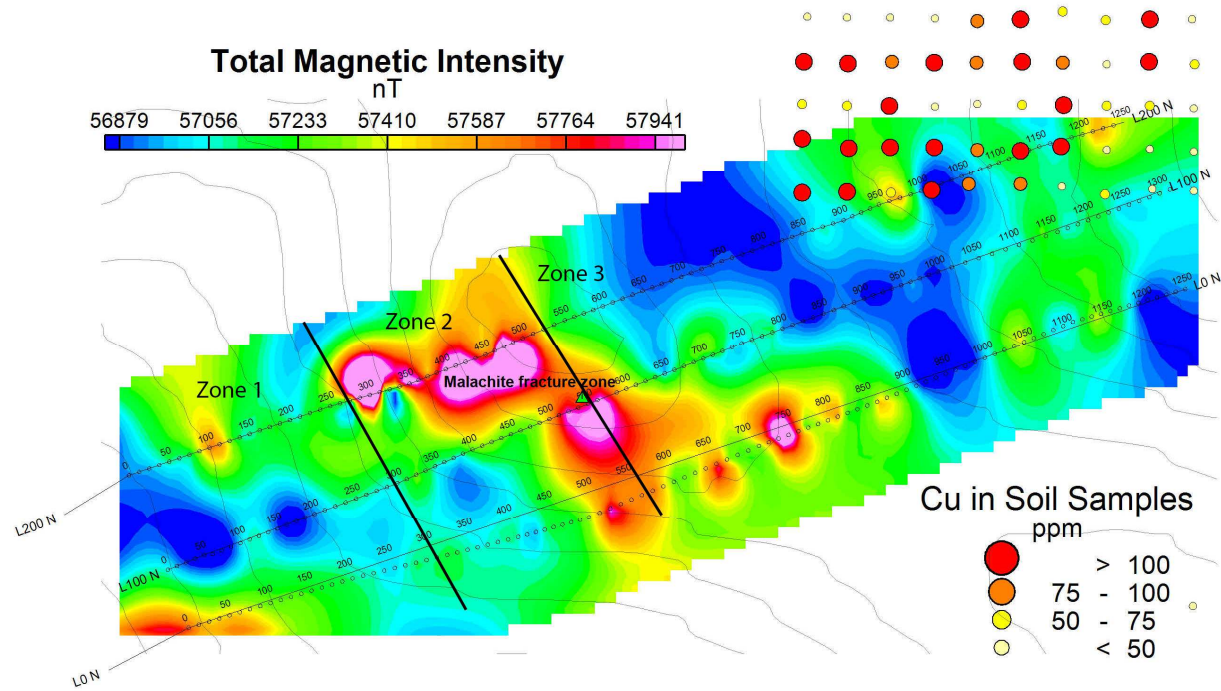


Figure 1: The total magnetic intensity in the survey area.

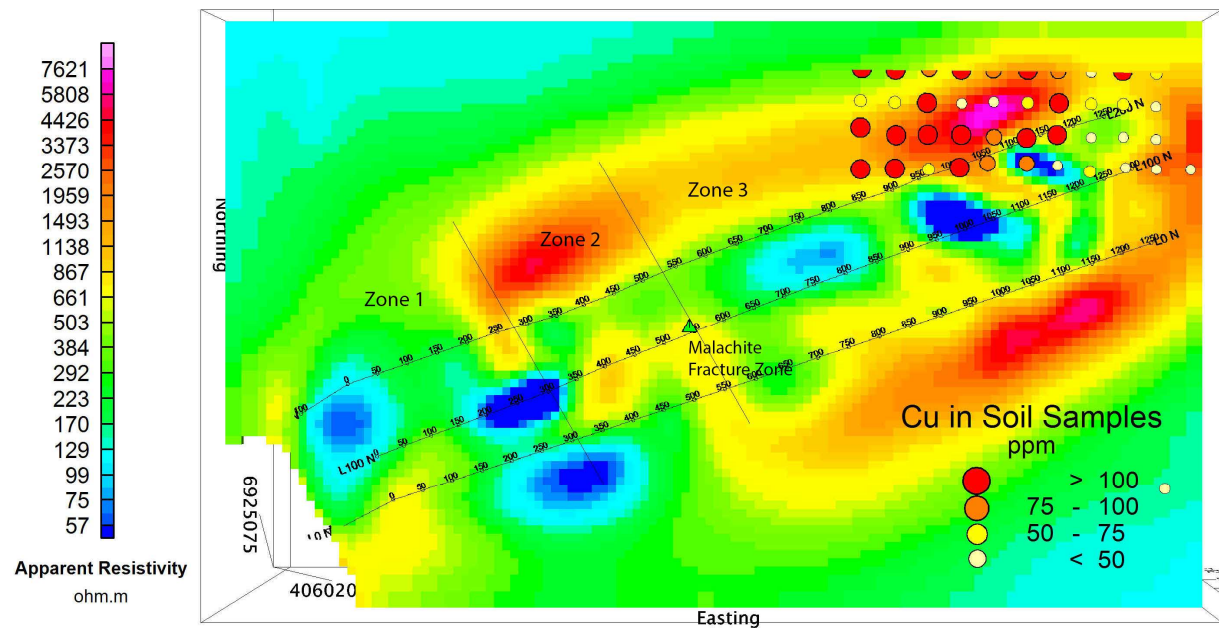


Figure 2: Plan Map view of the recovered resistivity model at an elevation of 900m.

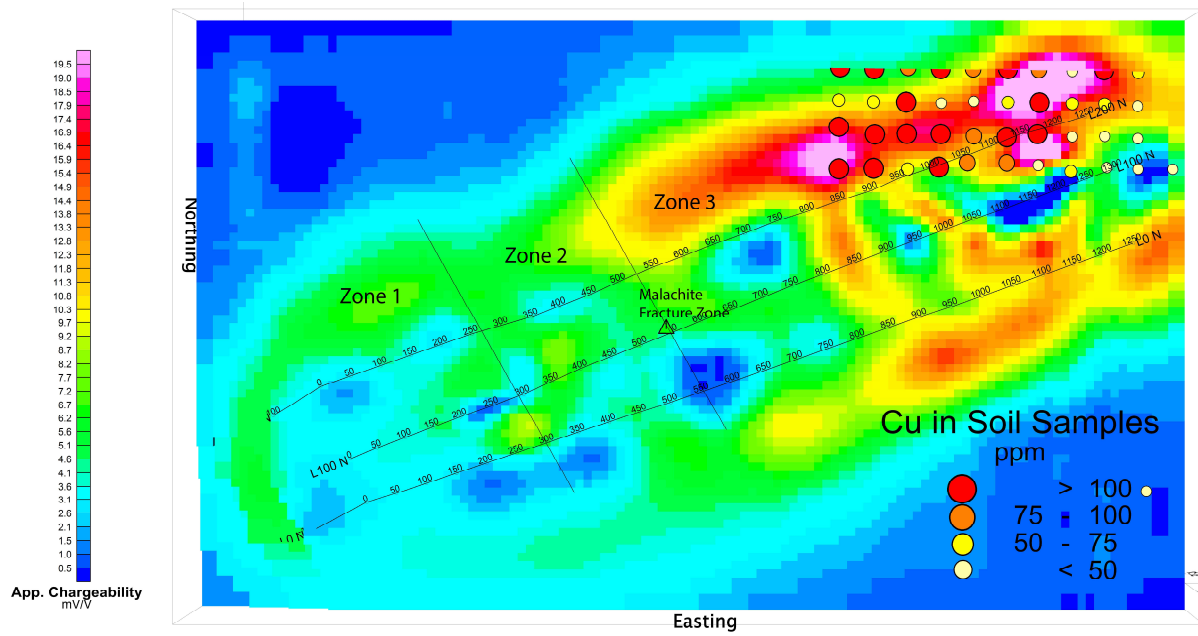


Figure 3: Plan map view of the recovered chargeability model at an elevation of 900m.



#### 4) Recommendations

Table 1 shows the collar and survey of the recommended drill holes and figure 4 and 5 show the location of these drillholes.

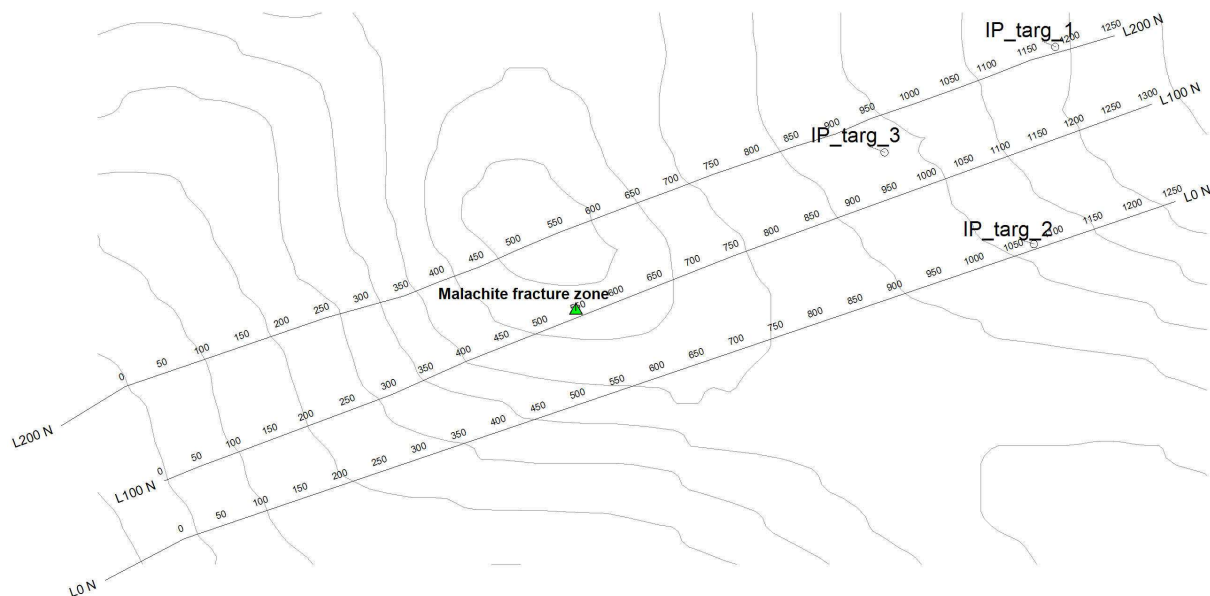
Hole_ID	Easting	Northing	Elevation	Azimuth	Dip	Depth to anomaly
IP_targ_1	407326	6925813	946.67	0	-90	25-50m
IP_targ_2	407301	6925583	969.85	0	-90	75-100m
IP_targ_3	407127	6925690	977.97	0	-90	100-125m

IP\_targ\_1 targets the northern limb where it is the most chargeable.

IP\_targ\_2 targets the south limb where it is the most chargeable.

IP\_targ\_3 targets a smaller IP anomaly located in the core of the fold.

In addition to the drill targets, additional geophysical and geochemical surveys are recommended to close off the anomaly. Further IP surveying from station 400 to 1400 is recommended both north and south of the current survey with priority being to the north. Further geochemical sampling is recommended throughout the area interpreted to be underlain by the andesite (Zone 3).



**Figure 4: Location of proposed drill holes.**

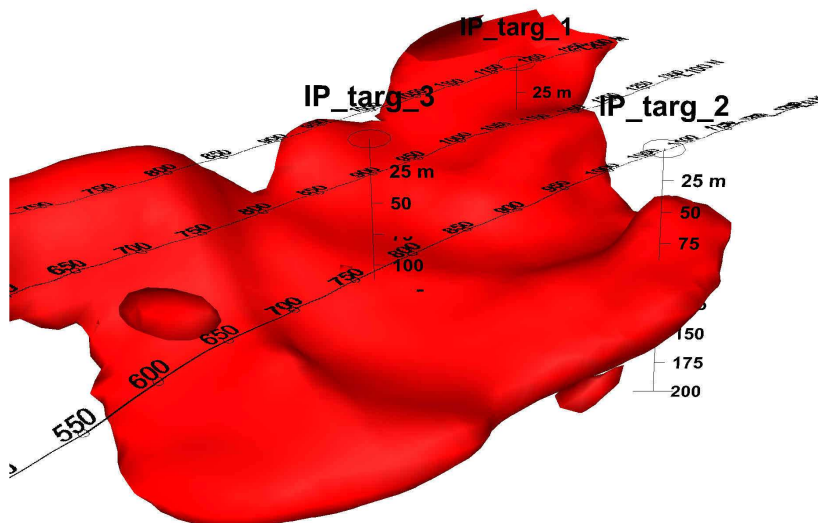


Figure 5: Proposed drill targets plotted with a 13 mV/V chargeability isosurface

## 5) Products

The following files are included with the digital version of this report

\MAP	Packed 3D geosoft map containing voxels, isosurfaces and other data used to make the figures in this report.
\UBC	Final UBC models and mesh file
\3D PDF	3D PDF of the final IP and DC models
\Voxel	Final models in voxel format
\Pred vs Obs	Predicted vs Observed Stacked Sections and raw data
Del 2012 IP - 3D Inversion Report.pdf	A copy of this report
IP Target Database.xls	Excel database containing drill targets

Respectfully submitted,

AURORA GEOSCIENCES LTD.

Louis Rosenthal