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CANADIAN EXPLORATION SERVICES LTD

BATTERY MINERAL RESOURCES LTD.

Q2594 – Shining Tree Project – North Grid
3D Distributed Induced Polarization Survey

C Jason Ploeger, P.Geo.
Melanie Postman, GIT

March 25, 2019

Abstract

Canadian Exploration Services Limited (CXS) was contracted to perform a detailed 3D Distributed IP (3D IP) survey on Battery Mineral Resources Limited's Shining Tree Project – North Property. The survey was designed to investigate a part of the project area for mineralized systems.

The 3D IP survey highlighted multiple chargeability and low resistivity anomalies, which may be related to a structural source. Numerous shallow, smaller, and constrained chargeability anomalies were also identified by the survey. These near surface chargeability anomalies should be systematically investigated through prospecting.

BATTERY MINERAL RESOURCES LTD.

Q2594- Shining Tree Project – North Grid
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Contributions by Andrew Salerno (B.Sc.) & Mandy Lim (GIT)

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES AND FIGURES

1. SURVEY DETAILS

1.1 Project Name

This project is known as the **Shining Tree Project – North Grid**.

1.2 Client

Battery Mineral Resources Limited

Level 36
Governor Phillip Tower
1 Farer Place
Sydney
Australia

1.3 Overview

In the winter of 2019, Canadian Exploration Services Limited (CXS) performed a detailed 3D Distributed Induced Polarization (3D IP) survey for Battery Mineral Resources Limited over the Shining Tree Project, North Grid. A total of 12.9-line kilometres of current injection was performed at an injection interval of approximately 50 metres. This consisted of 239 injection locations that spanned a footprint of 1.38 km^2. The survey was performed between February 18th to March 5th, 2019.

1.4 Objective

The objective of the 3D distributed IP survey was to perform a multidirectional reconnaissance survey of the area. The targeting for this survey was based on favorable geology.

1.5 Survey & Physical Activities Undertaken

Survey/Physical Activity	Dates	Total Days in Field	Total Line Kilometres
Line Cutting	January 24 to January 30, 2019	7	12.95
3D Distributed IP	February 18 to March 5, 2019	12	12.9

Table 1: Survey and Physical Activity Details

1.6 SUMMARY OF RESULTS, CONCLUSIONS & RECOMMENDATIONS

A total of 8348 filtered data points was collected from this 3D IP survey. An inversion model of the resistivity and chargeability was produced with a depth up to 410 metres.

The 3D IP survey highlighted multiple chargeability and low resistivity anomalies, which may be related to a structural source. Numerous shallow, smaller, and constrained chargeability anomalies were also identified by the survey. These near surface chargeability anomalies should be systematically investigated through prospecting.

1.7 CO-ORDINATE SYSTEM

Projection: UTM zone 17N
Datum: NAD83
UTM Coordinates near center of grid: 498097 Easting, 5268672 Northing

2. SURVEY LOCATION DETAILS

2.1 LOCATION

The Shining Tree Project – North Grid is in Leonard Township, approximately 21 kilometres southwest of Gowganda, Ontario or 18 km northeast of Shining Tree, Ontario.

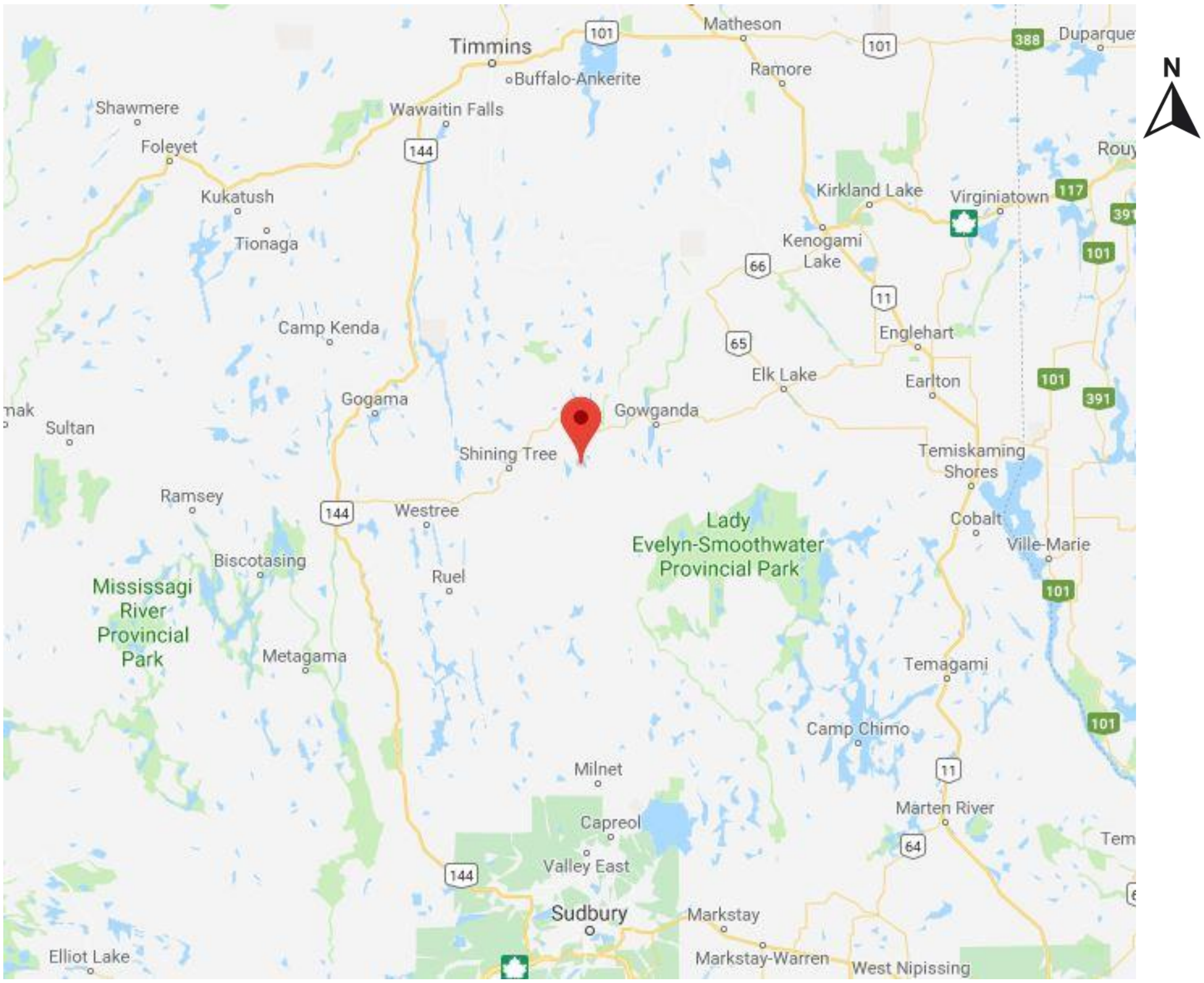


Figure 1: Location of the North Grid (Map data ©2019 Google)

2.2 ACCESS

Access to the property was attained with a 4x4 truck and snowmobiles via Hwy 560. From Gowganda, the field crew travelled approximately 16 km west along Hwy 560 before turning south, following a trail, for approximately 9 km, then southwest for approximately 7 km, and north for another 5 km to reach the southeast end of the survey grid.

2.3 MINING CLAIMS

The survey area covers a portion of mining claims 131340, 232794, 196080, 171300, 332483, 249324, 249323, 201262, 232795, 270045, 329997, 142563, 112769, and 246400 located in Leonard Township, within the Larder Lake Mining Division.

Cell Number	Provincial Grid Cell ID	Ownership of Land	Township
131340	41P11A035	Battery Mineral Resources Limited	Leonard
232794	41P11A036	Battery Mineral Resources Limited	Leonard
196080	41P11A037	Battery Mineral Resources Limited	Leonard
171300	41P11A038	Battery Mineral Resources Limited	Leonard
332483	41P11A055	Battery Mineral Resources Limited	Leonard
249324	41P11A056	Battery Mineral Resources Limited	Leonard
249323	41P11A057	Battery Mineral Resources Limited	Leonard
201262	41P11A058	Battery Mineral Resources Limited	Leonard
232795	41P11A075	Battery Mineral Resources Limited	Leonard
270045	41P11A076	Battery Mineral Resources Limited	Leonard
329997	41P11A077	Battery Mineral Resources Limited	Leonard
142563	41P11A078	Battery Mineral Resources Limited	Leonard
112769	41P11A096	Battery Mineral Resources Limited	Leonard
246400	41P11A097	Battery Mineral Resources Limited	Leonard

Table 2: Mining Lands and Cells Information

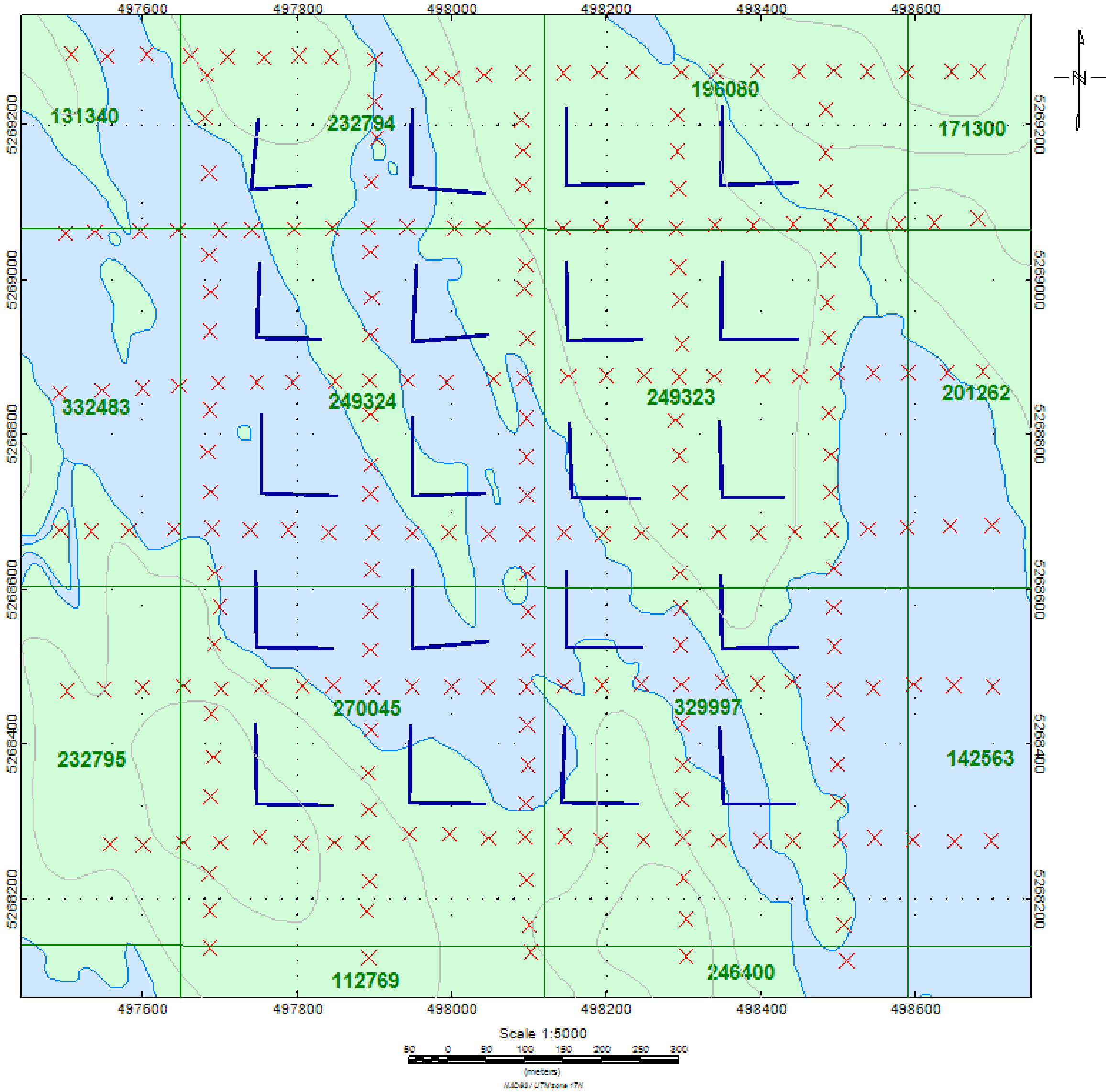


Figure 2: Operational Claim Map with 3D IP Electrode Sites – Red=Transmit Locations – Blue=Read Dipole

2.4 PROPERTY HISTORY

A lot of historical exploration has been carried out over the years all over the survey area. The following list describes details of the previous geoscience work which was collected by the Mines and Minerals division and provided by OGSEarth (MNDM & OGSEarth, 2018).

- **1956: Newnorth Gold Mines (File 41P10SW0112)**

Electromagnetic Survey – Leonard Township

- **1963: Coulee Lead & Zinc Mines Ltd (File 41P10SW0109)**

Geological Surveying – Leonard Township
During the months of July and August 1963, a geological mapping program was done on the property to examine the Nipissing diabase (Keewatin contact) found in the area, as well as locating more calcite and quartz-calcite veins.

- **1974: G E Waddington (File 41P10SW0104–41P10SW0107)**

Ground Geophysics – Leonard Township
Line cutting was carried out between May 11th and May 21st,1974. The magnetometer survey was carried out between May 22nd and May 27th, 1974. The number of stations read was 539 and the number of survey miles including the base line was 5.87

- **1975: G E Waddington (File 41P10SW0101)**

Geological Surveying – Leonard Township
Line cutting was carried out between May 11th and May 21st, 1975. Geological mapping was done between June 27th to July 3rd, 1974 and August 23rd to September 2nd, 1974. I.P. survey suggested to trace the mineralization.

- **1999: Walter Hanych (File 41P11SE2024)**

Line Cutting and Geochemical Sampling – Tyrrell Township
The soil survey was conducted between October 20th to 28th, 1999. The grid was initiated in July 1999 and rocks samples were collected in August 1999.

- **2004: Intl Krl Resc Corp (File 41P10SW2024)**

Geological Surveying and Geochemical Sampling – Tyrrell Township
During the month of October 2004, a prospecting, geological mapping and rock sampling program was carried out on the Spider Lake property. A total of 53 rock chip samples were collected and assayed during this program.

- **2016: Battery Mineral Resources Limited (File 20000015781)**

Airborne Geophysical Survey – Donovan Townships
Precision GeoSurveys conducted airborne magnetometer and radiometric surveys over 12 024 line-km of land for the Cobalt Project. Geophysical maps were generated with data obtained, but no solid interpretation was made. Additional geophysical surveying was recommended for accurate interpretation of airborne data collected.

2.5 General Regional/Local Geological Settings

Regional Geology:

The project area occurs within the Superior Province that is composed of northeast trending Paleo- to Neoarchean gneissic complexes, granite-greenstone terranes, and sedimentary basins that were assembled by repeated island arc-microcontinent collisions (Bauer et al., 2011). The Shining Tree project partially comprises Paleoproterozoic (2.5-2.2 Ga) metasedimentary rocks of the Huronian Supergroup (HS) that form a ~60,000 km2 irregular-shaped siliciclastic paleo-basin, colloquially known as the Cobalt Embayment (Potter and Taylor, 2009). The HS unconformably overlies complexly folded and subvertically dipping Neoarchean volcanic, intrusive, and sedimentary rocks of the Wawa-Abitibi terrane that forms the southernmost subprovince of the Canadian portion of the Superior Province (Stott et al., 2010; Stott, 2011; Lodge, 2013). Both Archean rocks and the HS were intruded by Nipissing Diabase sills that are primarily tholeiitic and were sourced from MORB-type parental magma (Potter and Taylor, 2009). These intrusive rocks were emplaced along reactivated pre-HS faults at ca. 2,219 (Corfu and Andrews, 1986) and are envisioned as the heat source that drove hydrothermal fluid circulation responsible for Ag-Co mineralization.

Archean Rocks:

Archean rocks in the region are part of the Wawa-Abitibi subprovince and dominantly comprise mafic to felsic volcanic and volcanoclastic rocks, syn- to post-volcanic intrusions and lesser siliciclastic and chemical sedimentary rocks deposited at ca. 2.7 Ga. The volcanic rocks were deposited in an oceanic arc setting during collision between the Wawa terrane and the Superior Craton in the Neoarchean time period. Paleotectonic settings (e.g., arc, back-arc, rifted arc) and crustal architecture and thickness varies both between and within greenstone belts in the Wawa-Abitibi terrane, which has resulted in a diverse petrogenesis of igneous rocks and related mineralization styles (Mercier-Langevin et al., 2014).

Deformation in the Archean resulted in tight folding and tilting of the rocks to subvertical dips. The stress field was also accommodated by thrust faulting as evidenced by duplication of rock sequences and implied in areas where strain intensity is too low to account for the subvertical rock orientations. Major thrust faults may have been reactivated as deep-seated normal faults developed during extension and deposition of the volcanic facies (Bleeker, 2015). After Archean deformation and deposition of the Huronian Supergroup, the rocks were deformed during the Penokean orogeny that resulted in local reactivation of faults developed in the Archean and Proterozoic (Potter and Taylor, 2009).

Paleoproterozoic Huronian Supergroup:

The Huronian Supergroup comprises a southward-thickening sequence of mainly siliciclastic sedimentary rocks that reach a maximum thickness of 12 km in the southern part of the basin but have an estimated thickness of ~6 km near Cobalt, Ontario (Young et al., 2001). The HS is subdivided in Lower and Upper Huronian. The Lower Huronian comprises, from top to bottom, the Elliot Lake, Hough Lake, and Quirke Lake groups, while the Upper Huronian is solely composed of the Cobalt group. The Lower Huronian has a restricted distribution and was deposited in a rift controlled, non-marine environment. After a significant hiatus, deposition of the more homogenous Upper Huronian is interpreted to have taken place at a passive margin under submarine conditions (Young et al., 2001).

Inversion of the Huronian basin resulted in lower greenschist metamorphism of the sedimentary rocks and caused basin-scale hydrothermal fluid flow that resulted in regionally extensive Na and Ca alteration of the rocks (Potter and Taylor, 2009).

Property Geology:

Geological mapping carried out in the past indicates that the two prominent rock groups occurring on the property are the Gowganda sediments and the Nipissing gabbros, granophyres, and diabase dykes.

The northwest region of the area (Bobtail Lake) is dominated by outcrops of boulder conglomerate. This polymictic clast supported conglomerate is composed of cobble to boulder sized angular to rounded clast of pink felsic intrusive (granite) with some clasts of medium grey chert and some metavolcanic clasts in a pink sandy matrix.

The boulder conglomerate grades into a pebble conglomerate and argillite southeast of Bobtail Lake. The matrix supported pebble conglomerate is composed of dark grey to black argillaceous matrix with a low amount of widely spaced pebble sized angular to rounded clasts of granitic composition. Outcrops of dark grey to green argillite occur southeast of the paraconglomerate. Dark green Nipissing gabbro that is strongly magnetic, outcrops in contact with the argillaceous sediments between Bobtail Lake and Mullen Lake.

The west–central portion of the property around Mullen, Herron and Taylor Lakes is dominated by outcrops of Nipissing diabase, gabbros and granophyres.

Mafic and intermediate metavolcanics outcrop in the area around Spider Lake. Most of the property around Spider Lake is underlain by intermediate metavolcanic rocks of andesite–dacite composition that has been intruded by Nipissing gabbros and/or diabase dykes. Minor quartz–calcite veins occur within the metavolcanic rocks and within the Nipissing gabbroic rocks.

Mineralization in the outcrops consists mostly of pyrite with minor amounts of chalcopyrite, bornite, malachite and minor pentlandite. The general strike of the formations seen on the property was north to northwest with shallow to moderate west to southwest dips. Minor quartz-carbonate veining was observed in various outcrops at various orientations. Sulphide content in the area is general low except for some pyrite rich cherts located on the northwestern shore of Fournier Lake and in some of the quartz calcite veins within the Nippissing gabbros.

2.6 Target of Interest

The targeting of the survey was to investigate the northeast part of the Shining Tree project. The use of the multidirectional IP survey maximizes the possibility of locating previously undiscovered mineralized systems. Targeting was based on favorable geology.

3. PLANNING

3.1 Exploration Permit/Plan

The 3D Distributed Induced Polarization survey was performed over mining claims held by Battery Mineral Resources Limited. This required plan PL-18-010911 for the entire area of the survey coverage.

3.2 Survey Design

Specialized IP survey design software was used as a tool to assist in the targeting of the survey. In this case a theoretical survey distribution scenario was established to determine the survey results coverage.

For optimal coverage, 20 receivers with 3 read electrodes each were planned in selected locations in between the current injection paths. The 3 read electrodes of each receiver were planned in 2 orthogonal directions, with 100-metre dipole lengths (north-south and east-west). Current injections were planned at 50-metre intervals along cut lines. An infinite was planned far from the survey location to achieve an offset pole-dipole array scenario. A theoretical depth of 450 metres was obtained from the software with this layout.

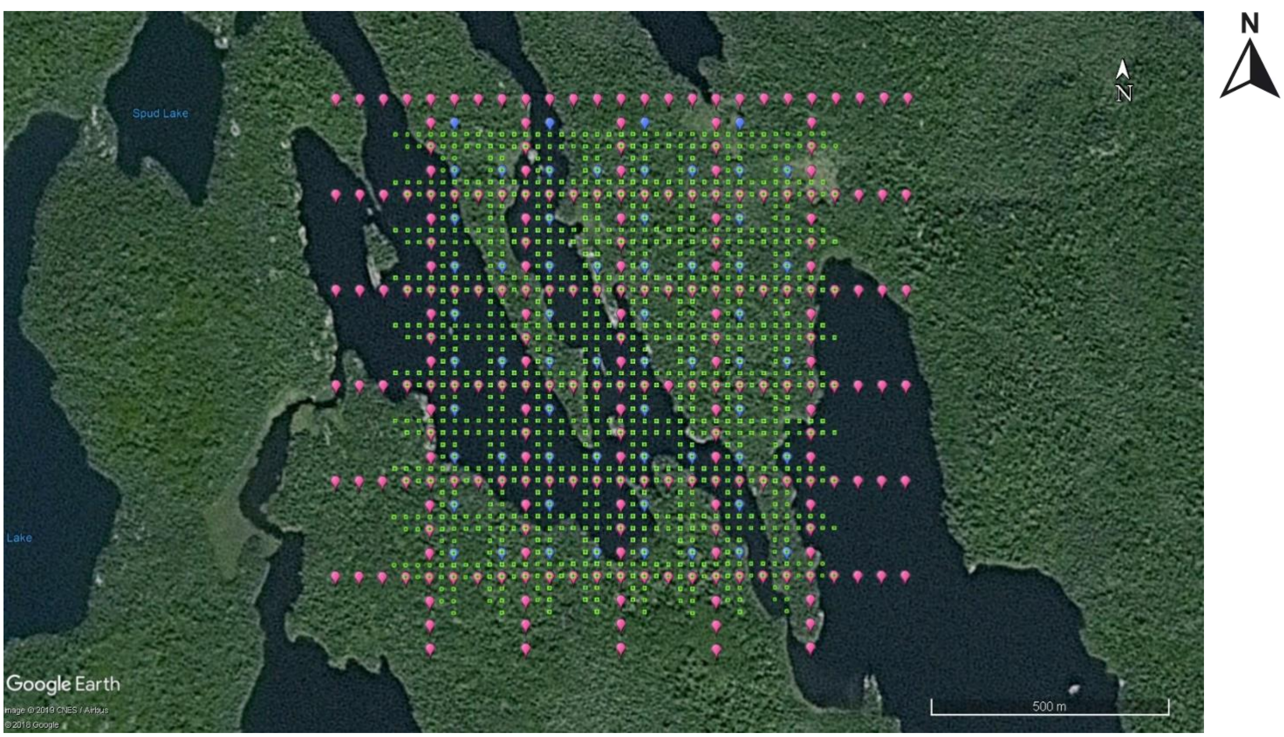


Figure 3: Survey Design Model Looking Down – Pink=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point (©2018 Google, Image ©2019 CNES/Airbus)

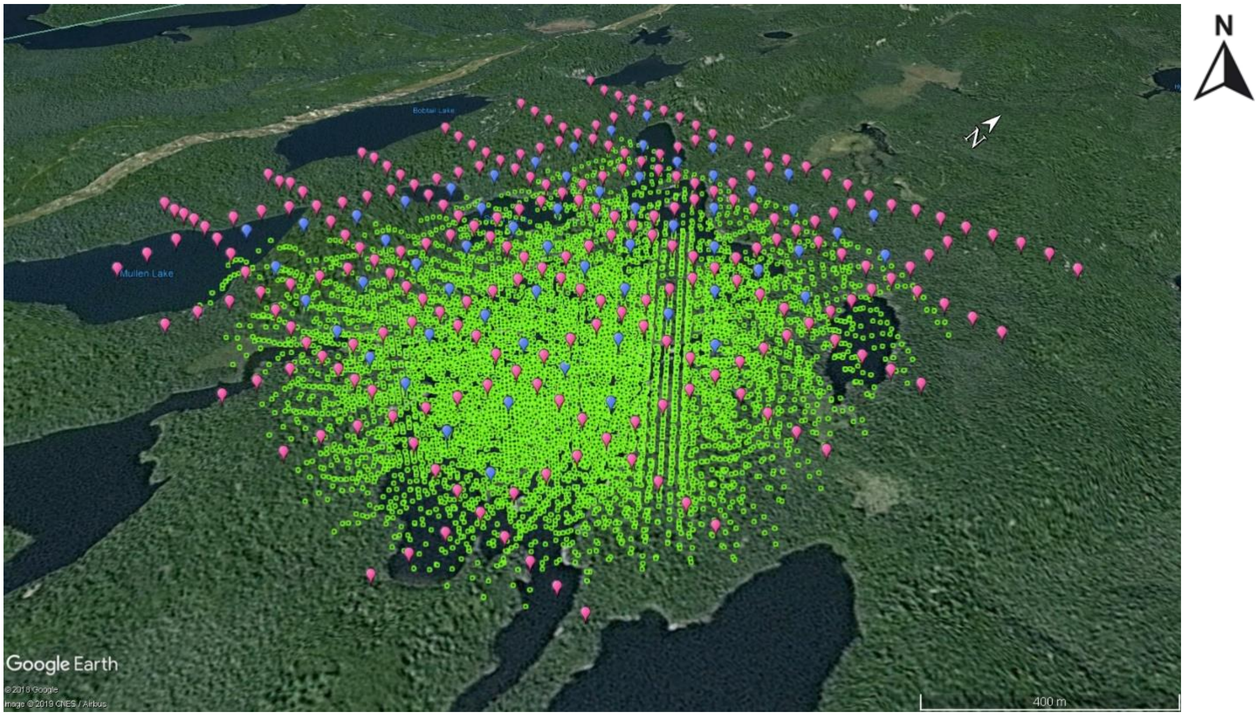


Figure 4: Survey Design Model Looking Northwest – Pink=Current Injection, Blue=Receiver Electrodes, Green=Theoretical Data Point (©2018 Google, Image ©2019 CNES/Airbus)

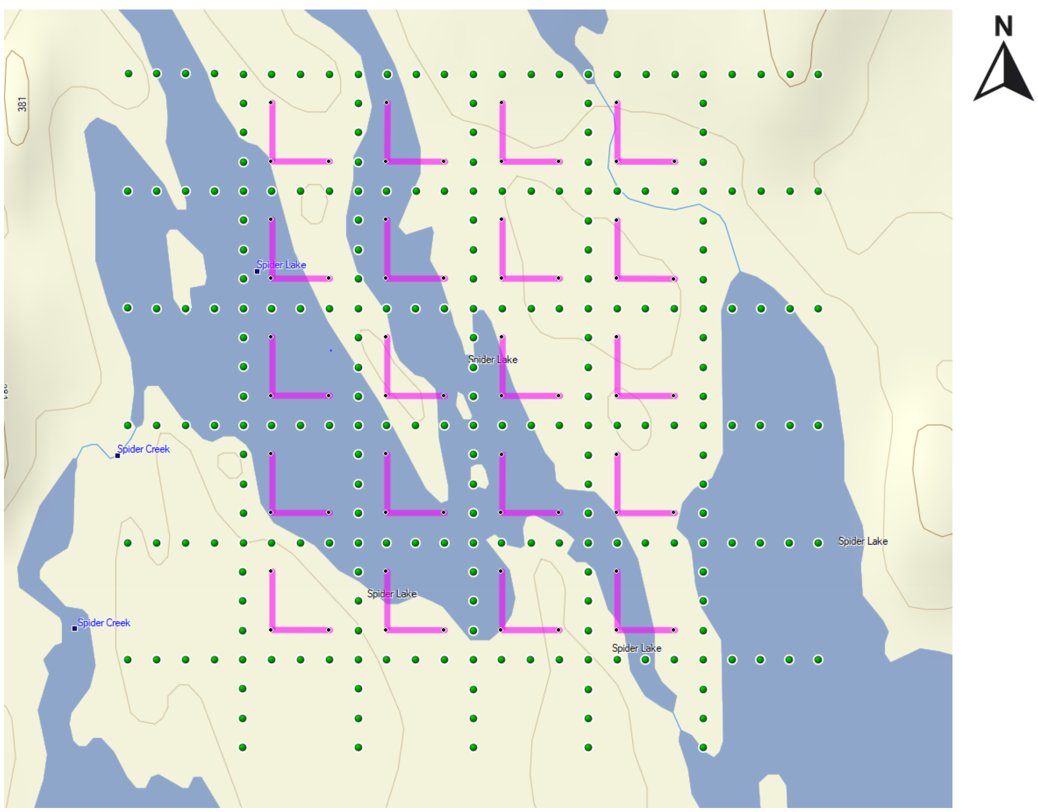


Figure 5: Planned Survey Layout – Green Circles=Current Injections, Pink Lines=Dipoles, Black Dots=Read Electrodes, Red Circle=Pseudo-Infinite

4. SURVEY WORK UNDERTAKEN

4.1 SUMMARY

CXS was contracted to cut a grid and perform a 3D Distributed Induced Polarization survey over the North Grid for the Shining Tree Project. The CXS 3D IP crew occupied the site in February and March of 2019. A total length of 12.9 kilometres was covered with 239 injected current points for this survey occurring between February 18th and March 5th, 2019. True GPS locations were collected upon setting up the grid and utilized as field electrode locations for data processing. The survey area footprint was 1.38 km^2 (1200m x 1150m).

4.2 SURVEY GRID

A grid was cut along the intended current injection paths. The grid consisted of 5 north-south lines and 6 east-west lines, both spaced at 200-metre intervals, with stations picketed at 25-metre intervals (Figure 6). All lines were cut by Five on Line Contracting based out of Belleterre, Quebec in January 2019.

Figure 6: Survey Grid Image (©2018 Google, Image ©2019 CNES/Airbus)

4.3 SURVEY SETUP

20 receivers were placed in 20 previously selected locations scattered between the grid lines. Each receiver was connected to 2 approximately orthogonal, ~100-metre dipoles (north-south and east-west). The coordinates of the read electrodes were recorded by GPS and are listed in Table 3. Due to field conditions exact locations and directions were not always achieved. The infinite was located approximately 4.8 km southeast from the centre of the survey area at 499892E, 5264268N to achieve an offset pole-dipole array scenario. The survey layout covered a footprint of 1.38 km^2 with dimensions of 1.2 km (X) x 1.15 km (Y).

Read Electrode	UTM X (m)	UTM Y (m)
402-P1	497749	5269208
402-P2	497740	5269117
402-P3	497817	5269120
403-P1	497948	5269221
403-P2	497947	5269121
403-P3	498044	5269112
404-P1	498147	5269223
404-P2	498148	5269123
404-P3	498247	5269123
405-P1	498348	5269224
405-P2	498347	5269123
405-P3	498448	5269123
406-P1	498348	5269024
406-P2	498347	5268924
406-P3	498447	5268924
407-P1	498147	5269023
407-P2	498149	5268923
407-P3	498243	5268924
408-P1	497954	5269020
408-P2	497948	5268921
408-P3	498046	5268928
409-P1	497751	5269021
409-P2	497747	5268925
409-P3	497830	5268924
410-P1	497752	5268826
410-P2	497752	5268724
410-P3	497850	5268721
411-P1	497948	5268823
411-P2	497948	5268721
411-P3	498044	5268723

Read Electrode	UTM X (m)	UTM Y (m)
412-P1	498152	5268816
412-P2	498155	5268720
412-P3	498243	5268718
413-P1	498345	5268818
413-P2	498349	5268720
413-P3	498428	5268719
414-P1	498346	5268618
414-P2	498348	5268524
414-P3	498448	5268524
415-P1	498148	5268624
415-P2	498147	5268525
415-P3	498247	5268524
416-P1	497948	5268626
416-P2	497948	5268523
416-P3	498047	5268530
417-P1	497746	5268623
417-P2	497748	5268525
417-P3	497848	5268524
418-P1	497746	5268426
418-P2	497747	5268323
418-P3	497847	5268319
419-P1	497947	5268424
419-P2	497944	5268325
419-P3	498043	5268323
420-P1	498146	5268423
420-P2	498142	5268325
420-P3	498241	5268321
421-P1	498345	5268422
421-P2	498351	5268322
421-P3	498443	5268322

Table 3: Receiver Electrode Coordinates

4.4 Data Acquisition

CXS began acquiring data on February 20, 2019. Current injection sites were injected along the grid lines at approximately 50-metre increments. GPS points were collected at each injection rod location prior to each current injection and recorded along with their respective injection details, such as injection file numbers and ground conditions. There was a total of 239 injection locations for this survey.

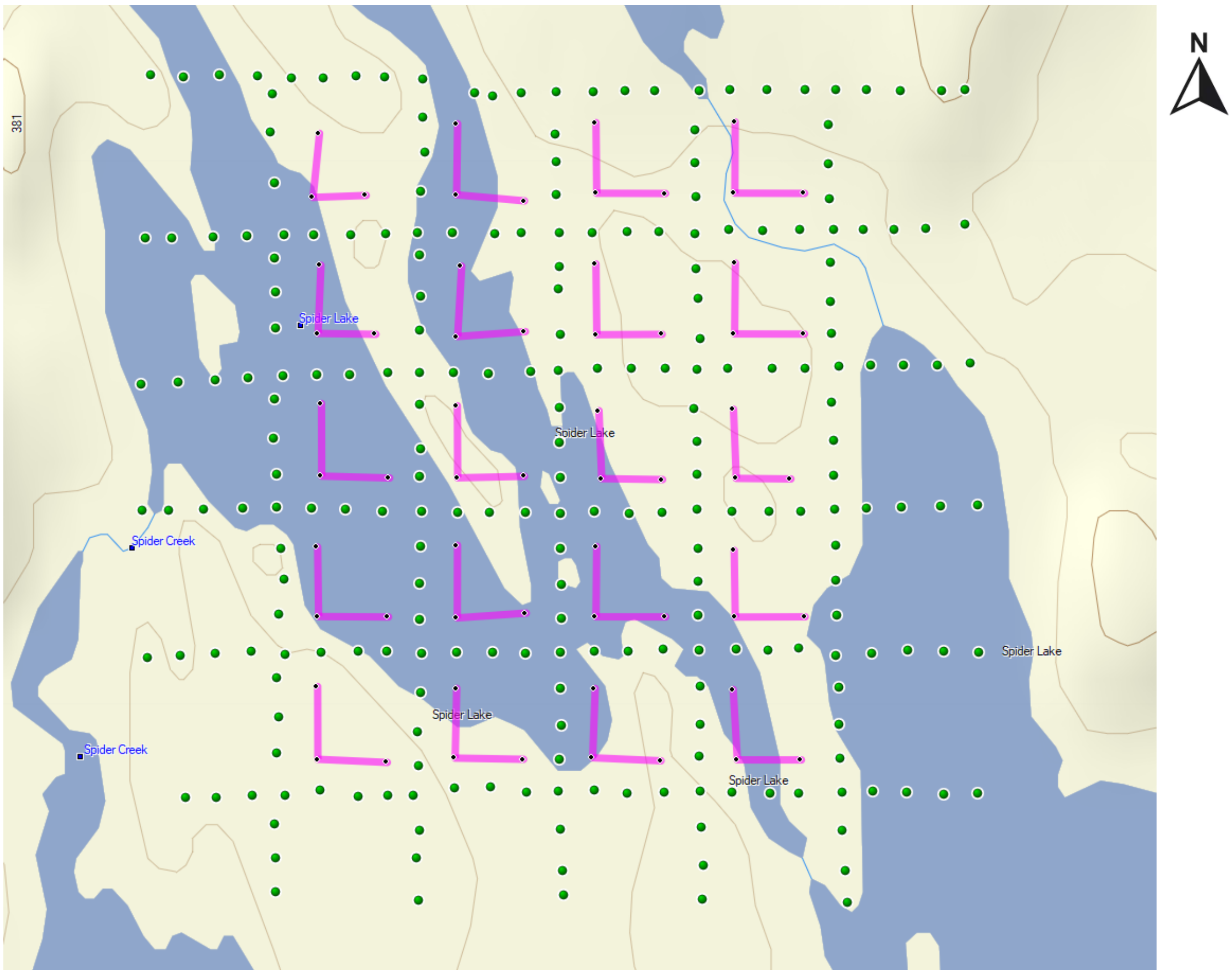


Figure 7: Field Survey Layout with Injection Sites (green dots) in Mapsource

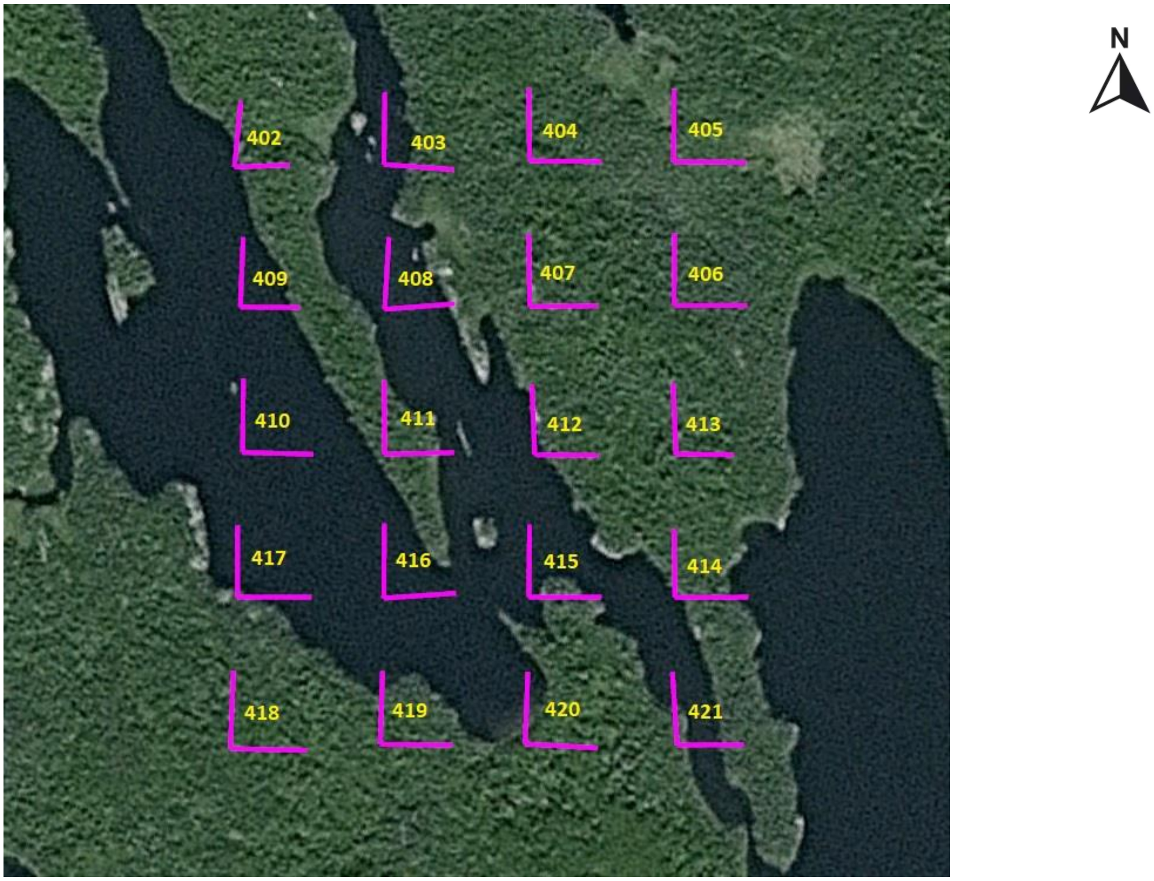


Figure 8: Receiver Dipole Orientations on Google Earth (©2018 Google, Image ©2019 CNES/Airbus)

Figure 9: Topographical Relief with the Survey Deployment Looking Northwest (Image ©2019 CNES/Airbus, ©2018 Google)

4.5 Survey Log

<table>
<tr><th colspan="6">3D IP Survey Log</th></tr>
<tr><th>Date</th><th>Description</th><th>Line</th><th>Min Extent</th><th>Max Extent</th><th>Total Survey (m)</th></tr>
<tr><td>February 18, 2019</td><td>Checked access. Began setup.</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>February 19, 2019</td><td>Setup Loggers, infinite sites, and power wire.</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td rowspan="2">February 20, 2019</td><td rowspan="2">Finished setup of loggers and infinite site. Read L600N partial.</td><td>600N</td><td>600W</td><td>200W</td><td>400</td></tr>
<tr><td colspan="4">9 injections, 0.4km</td></tr>
<tr><td rowspan="2">February 21, 2019</td><td rowspan="2">Read L600N partial. Recovered equipment and demobilized for break.</td><td>600N</td><td>200W</td><td>300E</td><td>500</td></tr>
<tr><td colspan="4">10 injections, 0.5km</td></tr>
<tr><td>February 26, 2019</td><td>Mobilized to Spear Lake. Re-opened trail to North grid.</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td rowspan="3">February 27, 2019</td><td rowspan="3">Completed L600N and L400N readings.</td><td>L600N</td><td>300E</td><td>600E</td><td>300</td></tr>
<tr><td>L400N</td><td>600W</td><td>600E</td><td>1200</td></tr>
<tr><td colspan="4">31 injections, 1.5km</td></tr>
<tr><td rowspan="3">February 28, 2019</td><td rowspan="3">Completed L200N reading and started BL0 reading.</td><td>L200N</td><td>600W</td><td>600E</td><td>1200</td></tr>
<tr><td>BL0</td><td>250W</td><td>600E</td><td>850</td></tr>
<tr><td colspan="4">43 injections, 2.05km</td></tr>
<tr><td rowspan="4">March 01, 2019</td><td rowspan="4">Completed BL0 and L200S readings. Started L400S reading.</td><td>BL0</td><td>600W</td><td>250W</td><td>350</td></tr>
<tr><td>L200S</td><td>600W</td><td>600E</td><td>1200</td></tr>
<tr><td>L400S</td><td>300W</td><td>600E</td><td>900</td></tr>
<tr><td colspan="4">51 injections, 2.45km</td></tr>
<tr><td rowspan="4">March 02, 2019</td><td rowspan="4">Completed L400S and L400W readings. Started L200W reading.</td><td>L400S</td><td>550W</td><td>300W</td><td>250</td></tr>
<tr><td>L400W</td><td>550S</td><td>600N</td><td>1150</td></tr>
<tr><td>L200W</td><td>250N</td><td>600N</td><td>350</td></tr>
<tr><td colspan="4">29 injections, 1.75km</td></tr>
<tr><td rowspan="4">March 03, 2019</td><td rowspan="4">Completed L200W and L0 readings. Started L200E reading.</td><td>L200W</td><td>550S</td><td>250N</td><td>800</td></tr>
<tr><td>L0</td><td>550S</td><td>600N</td><td>1150</td></tr>
<tr><td>L200E</td><td>250N</td><td>600N</td><td>350</td></tr>
<tr><td colspan="4">36 injections, 2.3 km</td></tr>
</table>

3D IP Survey Log					
Date	**Description**	**Line**	**Min Extent**	**Max Extent**	**Total Survey (m)**
March 04, 2019	Completed L200E and L400E readings. Done with data collection.	L200E	550S	250N	800
		L400E	550S	600N	1150
		30 injections, 1.95km			
March 05, 2019	Dismantled, picked up equipment, and demobilized.	-	-	-	-
Total	**239 injections, 12.9km**				

Table 4: 3D IP Survey Log

4.6 Personnel

Crew Member	**Position**	**Resident**	**Province**
Bruce Lavalley	Crew Chief	Britt	Ontario
Claudia Moraga	Transmitter Operator	Britt	Ontario
Neil Jack	Transmitter Operator	Kirkland Lake	Ontario
David Ellerton	IP Technician	Englehart	Ontario
Andrew Johnson	IP Technician	Kirkland Lake	Ontario
Joey Emmell	IP Technician	Englehart	Ontario
Spencer McGaughey	IP Technician	Kirkland Lake	Ontario
Five on Line Contracting	Line Cutters	Belleterre	Quebec
C Jason Ploeger P.Geo.	Senior Geophysicist	Larder Lake	Ontario
Melanie Postman GIT	Junior Geophysicist	Larder Lake	Ontario
Mandy Lim GIT	Junior Geophysicist	Saint John's	NL
Andrew Salerno	Junior Geologist in training	Waterloo	Ontario

Table 5: CXS Induced Polarization Personnel

4.7 Field Notes: Condition and Culture

The average weather over the twelve field days was -12°C with highs up to -4°C and lows down to -35°C. There was little precipitation throughout the survey period.

A source of culture in the area is power line running approximately north-northwest about 1.5 km from the southwest edge of the grid. This may impact the background noise slightly but is likely far enough that it is insignificant to the data. Topographical features and ground characteristics along the read dipoles and current injection lines are noted in the following two tables (Table 6 & 7, respectively).

Logger Field Notes (Soil/Topography/Vegetation/Culture notes on dipoles and corresponding electrodes P1/P2/P3)		
402	**Soil**	P1 and P3 Rocky, sandy – P2 Swampy, shoreline
	Topo	P1 to P2 and P2 to P3 Up hill
	Veg	P1 and P3 Mixed bush
403	**Soil**	P1 Lake (1m depth) – P2 Lake (1.7m depth) – P3 Rocky, mossy
	Topo	P2 to P1 Lake – P2 to P3 60m on Lake, 40m light topo – P3 Side hill
	Veg	P3 Thick bush
404	**Soil**	P1 and P2 Rocky, sandy – P3 Swampy, rocky
	Topo	P2 to P3 Slight down hill to flat swamp – P2 to P1 10m down hill, then 25m flat then slight up hill to P1 – P1, P2 and P3 Flat
	Veg	P1 and P2 Spruce, balsam – P3 Cedar, Alder
405	**Soil**	P1, P2 and P3 Swampy
	Topo	P2 to P1 Steep Up hill for 10m then flat to swamp – P2 to P3 Flat – P1, P2 and P3 Flat, P3 beside Pond
	Veg	P2 and P1 Thick mixed Alder and Cedar – P3 Mostly clear, some small Alder and young small Cedar
406	**Topo**	P1, P2 and P3 Very rocky, sandy
	Veg	P2 to P3 Down hill, up and down – P2 to P1 Up and down – P2 Top of side hill, Flat – P1 and P3 Flat
	Culture	P1, P2 and P3 Mixed bush
407	**Soil**	P1 and P3 Very rocky, sandy – P2 Top of outcrop, Rod was moved to a better spot for contact, Waypoint correspond to where P2 is located.
	Topo	P2 to P1 Flat outcrop for 25m then slight down hill, outcrop for 25m then flat – P2 to P3 25m outcrop then slight down hill – P1, P2 and P3 Flat.
	Veg	P1 and P3 Balsam – P2 Spruce
408	**Soil**	P1 Lake (1.5m depth) – P2 Lake (1m depth) – P3 Rocky, mossy
	Topo	P1 to P2 Across Lake, flat – P2 to P3 70m on Lake, 30m Up hill – P3 Side hill
	Veg	P3 Thick bush
409	**Soil**	P1 Lake (4.5m depth) – P2 Lake (4m depth) – P3 Rocky, sandy
	Topo	P1 to P2 Flat – P2 to P3 Up hill
	Veg	P3 Mixed bush
410	**Soil**	P1 Lake (5m depth) – P2 Lake (4.8m depth) – P3 Lake (6.7m depth)
	Topo	P1 to P2 and P2 to P3 Flat
411	**Soil**	P1 Wet, swampy, Lake side – P2 Mossy – P3 Wet, rocky
	Topo	P2 Side hill – P2 to P1 Down hill – P2 to P3 Downhill, light topo
	Veg	P2 Open bush – P1 and P3 Mixed bush

Logger Field Notes (Soil/Topography/Vegetation/Culture notes on dipoles and corresponding electrodes P1/P2/P3)		
412	**Soil**	P1 and P2 Rocky, mossy – P3 Rocky
	Topo	P2 to P1 Up hill, across lake for 70m – P1 Side hill – P2 to P3 Steep rough topo – P3 Small dip between outcrops – P2 Bottom of steep hill, shore line
	Veg	P1, P2 and P3 Thick bush
413	**Soil**	P1, P2 and P3 Rocky, sandy
	Topo	P1 to P2 and P2 to P3 Up and down
	Veg	P1, P2 and P3 Balsam
414	**Soil**	P1 and P2 Rocky, sandy – P3 Lake
	Topo	P2 to P1 Up hill – P2 15m from Lake – P2 to P3 Flat
	Veg	P1 and P2 Mixed bush
415	**Soil**	P1 Lake (2.2m depth) – P2 Lake (2.7m depth) – P3 Lake (2.0m depth)
	Topo	P1, P2, P3 Run across lake
416	**Soil**	P1, P2, P3 Lake
	Topo	P1, P2, P3 Run across lake
417	**Soil**	P1 (5m depth) – P2 Lake – P3 Lake (6.5m depth)
	Topo	P1, P2, P3 Run across lake
418	**Soil**	P1, P2, P3 Sandy, rocky
	Topo	P2 to P1 Across top of ridge – P2 to P3 Bumpy, downhill to flat
	Veg	P1, P2, P3 New growth balsam, deadfall
419	**Soil**	P1 Lake (5.5m depth) – P2, P3 Swamp
	Topo	P2 to P1 Lake to swamp – P2 to P3 Moderate topo to shore of lake
420	**Soil**	P1 Lake (3.0m depth) – P2 Sandy – P3 Sandy/Rocky
	Topo	P2 to P1 Slight downhill, swamp, lake. P2 to P3 Flat swamp to bumpy.
421	**Soil**	P3 Rocky, sandy – P2 shore of Lake – P1 Lake
	Topo	P3 Is up hill – P2 and P1 Flat
	Veg	P3 Mixed bush
Infinite	**Soil**	Muddy, swamp
	Topo	Flat
	Veg	Cedar

Table 6: Logger Electrode & Dipole Field Notes

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
20-Feb-19	**L600N**					
	600W	497507	5269292	371	1100	Sidehill, rocky, mossy
	550W	497554	5269289	364.5	1500	Lake; 2.5m depth
	500W	497605	5269292	366	1600	Lake; 3m depth
	450W	497661	5269290	377	500	Sidehill, very rocky
	400W	497709	5269288	382	400	Sidehill, very rocky
	350W	497756	5269287	383	1500	Down in valley, sandy, rocky
	300W	497802	5269290	383	400	Uphill, sandy, rocky
	250W	497843	5269288	384	300	Downhill, rocky
	200W	497899	5269286	369	2200	Lake; 1m depth
21-Feb-19	**L600N**					
	150W	497974	5269267	377	500	Top of outcrop, very rocky
	100W	497999	5269262	377	500	Level, rocky, mossy
	50W	498041	5269265	373	400	Down in valley, sandy, rocky
	0	498091	5269268	379	300	Uphill, rocky, mossy
	50E	498144	5269268	382	300	Downhill, rocky, mossy
	100E	498189	5269269	378	300	Downhill, rocky
	150E	498232	5269269	371	400	Top of hill, sandy, rocky
	200E	498296	5269269	369	500	Level creek, mossy
	250E	498341	5269270	369	1500	Uphill, swampy, mossy
	300E	498395	5269271	372	400	Level, rocky
27-Feb-19	**L600N**					
	350E	498448	5269270	385	1500	Between 2 outcrops, sandy, rocky
	400E	498493	5269271	384	400	Level, really rocky
	450E	498537	5269270	385	1300	Low, mossy, sandy area
	500E	498587	5269269	392	400	Up hill, mossy, rocky
	550E	498646	5269270	397	300	Top of outcrop, very rocky
	600E	498680	5269270	393	400	Side hill, very rocky
	L400N					
	600E	498680	5269080	380	400	Side hill, very rocky
	550E	498623	5269074	388	300	Top of outcrop, very rocky
	500E	498577	5269073	386	400	Still on outcrop, very rocky
	450E	498533	5269073	376	1600	Flat, swampy
	400E	498489	5269072	377	500	Flat sandy, rocky

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	350E	498441	5269073	377	1200	Flat, swampy
	300E	498389	5269071	377	1500	Flat, swampy
	250E	498339	5269072	377	1500	Flat, swampy
	200E	498290	5269067	377	1600	Flat, swampy
	150E	498238	5269070	377	1900	Flat, swampy
	100E	498193	5269070	380	500	Up hill, sandy, rocky
	50E	498143	5269068	384	400	Up hill, sandy, rocky
	0	498096	5269069	382	400	Down hill, sandy, rocky
	50W	498040	5269068	380	300	Top of outcrop, Rocky
	100W	498003	5269067	373	1700	Beside outcrop, beside lake, mossy, rocky
	150W	497942	5269069	369.1	2000	Lake; 1.9m depth
	200W	497891	5269068	369.5	2000	Lake; 1.5m depth
	250W	497845	5269067	374	300	Top of outcrop, rocky
	300W	497795	5269066	374	500	Up hill, rocky
	350W	497741	5269065	362.5	1600	Lake; 4.5m depth
	400W	497699	5269065	361.3	2000	Lake; 4.7m depth
	450W	497645	5269064	362.6	2000	Lake; 4.4m depth
	500W	497597	5269063	361.9	2000	Lake; 4.1m depth
	550W	497538	5269062	360.5	1500	Lake; 5.5m depth
	600W	497500	5269061	358.7	2000	Lake; 7.3m depth
28-Feb-19	**L200N**					
	600W	497493	5268854	353.9	2200	Lake; 13.1m depth
	550W	497547	5268858	356.5	2200	Lake; 12.5m depth
	500W	497600	5268860	363.6	1600	Lake; 4.4m depth
	450W	497647	5268863	363	2000	Lake; 5m depth
	400W	497697	5268867	365.3	1600	Lake; 1.7m depth
	350W	497747	5268868	362.1	2000	Lake; 4.9m depth
	300W	497793	5268868	362	2200	Lake; 6m depth
	250W	497849	5268870	378	400	Top of hill, on island, rocky
	200W	497893	5268871	377	400	Flat, rocky
	150W	497943	5268871	370.7	2200	Lake; 1.3m depth
	100W	497993	5268868	371.1	2500	Lake; 1.9m depth
	50W	498053	5268872	376	400	Top of hill, on island, rocky
	0	498093	5268873	368.6	2100	Lake; 1.4m depth
	50E	498150	5268876	378	300	Low area between 2 hills, rocky, sandy
	100E	498199	5268877	382	300	Top of hill, rocky, sandy
	150E	498248	5268877	376	400	Up and down, rocky, sandy

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	200E	498293	5268875	378	400	Flat, rocky, sandy
	250E	498338	5268876	383	300	Top of hill, rocky, sandy
	300E	498401	5268876	365	300	Down hill, rocky, sandy
	350E	498449	5268876	364	300	Down hill, rocky, sandy
	400E	498498	5268880	357	1200	Down hill, beside lake, rocky
	450E	498544	5268881	353.8	1700	Lake; 3.2m depth
	500E	498590	5268881	359	1500	Lake
	550E	498640	5268881	359	1400	Lake
	600E	498686	5268883	365	1400	Up hill, rocky
	BL0					
	600E	498698	5268683	357.3	2000	Lake; 7.7m depth
	550E	498644	5268682	361.7	1700	Lake; 6.3m depth
	500E	498588	5268681	361.3	1700	Lake; 6.7m depth
	450E	498538	5268679	366.8	1600	Lake; 3.2m depth
	400E	498491	5268678	372	300	Up hill, rocky, sandy
	350E	498443	5268675	378	400	Top of hill, mossy
	300E	498396	5268674	375	400	Up hill, rocky
	250E	498344	5268675	383	400	Down hill, sandy, rocky
	200E	498294	5268677	376	1200	Bottom of hill, sandy
	150E	498244	5268673	380	300	Up hill, rocky
	100E	498195	5268672	373	600	Edge of lake, rocky
	50E	498145	5268674	367.5	2200	Lake; 2.5m depth
	0	498097	5268672	367.8	2200	Lake; 2.2m depth
	50W	498047	5268672	367.8	1700	Lake; 1.2m depth
	100W	497995	5268674	370	1000	Up hill, sandy, rocky
	150W	497948	5268673	367	700	Shore of island, rocky
	200W	497897	5268674	357.2	2100	Lake; 8.8m depth
	250W	497840	5268674	358	2000	Lake; 7m depth
01-Mar-19	**BL0**					
	300W	497788	5268678	355.4	2000	Lake; 8.6m depth
	350W	497739	5268678	354.4	2400	Lake; 9.6m depth
	400W	497689	5268680	354.2	2400	Lake; 9.8m depth
	450W	497640	5268679	357.7	1500	Lake; 6.3m depth
	500W	497582	5268677	360	1500	Lake; 3m depth
	550W	497533	5268676	373	400	Top of outcrop, rocky
	600W	497494	5268677	364	2100	Lake

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	L200S					
	600W	497502	5268469	370	1800	Flat, swampy
	550W	497550	5268471	371	2100	Flat, swampy
	500W	497600	5268474	377	400	Top of hill, rocky, mossy
	450W	497652	5268476	374	300	Top of outcrop, really rocky
	400W	497701	5268472	369	1500	Bottom of outcrop, wet, rocky
	350W	497753	5268476	379	400	top of steep outcrop, rocky
	300W	497806	5268476	366	1500	Shore of lake, rocky, mossy
	250W	497846	5268477	360.2	1300	Lake; 3.8m depth
	200W	497897	5268474	359.5	1800	Lake; 5.5m depth
	150W	497948	5268475	358.8	1800	Lake; 5.2m depth
	100W	497999	5268475	359.6	2000	Lake; 5.4m depth
	50W	498046	5268474	360.4	2000	Lake; 5.6m depth
	0	498096	5268475	361	1800	Lake; 4m depth
	50E	498145	5268476	363.1	2500	Lake; 2.9m depth
	100E	498194	5268477	371	400	Up hill, rocky
	150E	498244	5268479	364.6	1600	Lake; 1.4m depth
	200E	498296	5268478	362.4	2300	Lake; 2.6m depth
	250E	498349	5268480	362.5	2200	Lake; 2.5m depth
	300E	498395	5268479	370	400	Top of outcrop, rocky
	350E	498440	5268481	367	400	Up hill, sandy, rocky
	400E	498493	5268471	357.7	2000	Lake; 6.3m depth
	450E	498544	5268473	356.3	2000	Lake; 7.7m depth
	500E	498597	5268478	351.2	2300	Lake; 11.8m depth
	550E	498648	5268477	352.9	2300	Lake; 10.1m depth
	600E	498699	5268475	353.7	2100	Lake; 8.3m depth
	L400S					
	600E	498697	5268276	352.5	2300	Lake; 10.5m depth
	550E	498649	5268275	352	2500	Lake; 11m depth
	500E	498596	5268277	351	2500	Lake; 11m depth
	450E	498546	5268279	355.5	2000	Lake; 7.5m depth
	400E	498502	5268277	363.8	1300	Lake; 1.2m depth
	350E	498440	5268276	370	500	Top of outcrop on island, rocky
	300E	498398	5268276	367.7	2200	Lake; 1.3m depth
	250E	498344	5268277	373	400	Up hill, rocky, mossy
	200E	498298	5268279	376	400	Up and down, rocky, mossy
	150E	498247	5268277	377	500	Up and down, rocky, mossy
	100E	498192	5268276	369	500	Flat, swampy

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	50E	498146	5268281	365	1800	Flat, swampy
	0E	498094	5268280	361	400	Flat, rocky, sandy
	50W	498047	5268278	361	1700	Flat, swampy
	100W	497996	5268284	361	2300	Flat, swampy
	150W	497945	5268284	364	400	Up hill, rocky, sandy
	200W	497884	5268273	373	400	Up hill, rocky
	250W	497848	5268273	373	300	Level, rocky
	300W	497805	5268272	373	400	Bottom of hill, rocky, sandy
02-Mar-19	**L400S**					
	350W	497751	5268280	387	400	Up and down, rocky, sandy
	400W	497700	5268273	385	200	Up and down, sandy
	450W	497652	5268273	386	400	Up hill, sandy
	500W	497601	5268270	386	400	Up hill, sandy
	550W	497557	5268271	373	500	Top of cliff, very rocky
	L400W					
	550S	497686	5268137	378	1600	Flat, swampy
	500S	497686	5268185	383	400	Flat, rocky, sandy
	450S	497685	5268233	380	1400	Flat, swampy
	350S	497687	5268333	382	1600	Flat, swampy
	300S	497691	5268384	382	400	Up and down, rocky, sandy
	250S	497688	5268440	380	300	Down hill, rocky, sandy
	150S	497692	5268529	372	500	Down hill, rocky, sandy
	100S	497699	5268578	360	1500	Lake; 5m depth
	50S	497693	5268622	362.5	1500	Lake; 3.5m depth
	50N	497687	5268727	358.7	2000	Lake; 8.3m depth
	100N	497684	5268778	359.8	2000	Lake; 6.2m depth
	150N	497686	5268833	360.9	1700	Lake; 5.1m depth
	250N	497686	5268934	364.2	1700	Lake; 2.8m depth
	300N	497687	5268985	362	2000	Lake; 5m depth
	350N	497685	5269033	363.3	2100	Lake; 4.7m depth
	450N	497685	5269139	363	2000	Lake; 5m depth
	500N	497680	5269211	373	900	Up and down, sandy, rocky
	550N	497683	5269265	378	400	Up hill, rocky, sandy
	L200W					
	550N	497899	5269231	371	1300	Lake
	500N	497902	5269183	371	2000	Lake

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	450N	497895	5269127	368.6	2400	Lake; 1.4m depth
	350N	497894	5269037	367.2	2500	Lake; 1.8m depth
	300N	497896	5268978	366.2	2300	Lake; 1.8m depth
	250N	497894	5268930	367.1	1700	Lake; 0.9m depth
03-Mar-19	**L200W**					
	150N	497894	5268826	378	800	Up and down, sandy, rocky
	100N	497895	5268762	370	400	Shore, rocky
	50N	497894	5268724	363.7	1800	Lake; 6.3m depth
	50S	497896	5268626	365.3	2300	Lake; 6.7m depth
	100S	497894	5268573	364.8	2200	Lake; 6.2m depth
	150S	497894	5268522	363	2100	Lake; 6m depth
	250S	497895	5268419	366.3	1600	Lake; 2.7m depth
	300S	497891	5268363	372	900	Up hill, mossy, rocky
	350S	497892	5268315	381	300	Level, sandy
	450S	497893	5268223	387	300	Level, sandy, rocky
	500S	497889	5268184	386	600	Side hill, sandy, rocky
	550S	497892	5268124	384	500	Level, sandy, rocky
	L0					
	550S	498101	5268132	372	2000	Level, cedar swamp
	500S	498100	5268167	372	1600	Level, cedar swamp
	450S	498096	5268225	371	400	Level, sandy
	350S	498095	5268324	365.5	1600	Lake; 0.5m depth
	300S	498098	5268373	362.2	1600	Lake; 2.8m depth
	250S	498097	5268425	360.3	2100	Lake; 5.7m depth
	150S	498098	5268522	362.7	2000	Lake; 3.3m depth
	100S	498098	5268572	363.2	2000	Lake; 3.8m depth
	50S	498097	5268622	365	2400	Lake; 2m depth
	50N	498097	5268722	364.9	2400	Lake; 2.1m depth
	100N	498096	5268772	365.7	2200	Lake; 2.3m depth
	150N	498096	5268822	367.2	2200	Lake; 1.8m depth
	250N	498097	5268925	377	400	Side hill, sandy, rocky
	300N	498093	5268990	374	1100	Flat, mossy, rocky
	350N	498095	5269020	376	1000	up hill, mossy, rocky
	450N	498091	5269123	379	1000	Level, sandy, rocky
	500N	498091	5269168	381	1300	Up and down, rocky
	550N	498089	5269207	383	150	Up hill, rocky

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	L200E					
	550N	498291	5269214	394	1600	Flat, sandy, rocky
	500N	498291	5269167	378	400	Down hill, rocky
	450N	498292	5269119	372	1700	Flat, swampy
	350N	498292	5269017	371	300	Up hill, rocky
	300N	498294	5268975	373	300	Up and down, sandy, rocky
	250N	498297	5268918	372	400	Down hill, sandy, rocky
04-Mar-19	**L200E**					
	150N	498289	5268819	376	500	Down hill, sandy, rocky
	100N	498293	5268774	376	2100	Up and down, swampy
	50N	498294	5268726	376	1200	Flat, swampy
	50S	498294	5268622	374	1200	Flat, swampy, rocky
	100S	498295	5268576	373	1800	Shore
	150S	498295	5268528	370.6	2200	Lake; 2.4m depth
	250S	498297	5268427	371.5	2000	Lake; 1.5m depth
	300S	498298	5268373	374	1000	Shore, flat, rocky
	350S	498297	5268329	378	600	Up and down, rocky
	450S	498299	5268228	385	400	Flat, sandy, rocky
	500S	498302	5268174	386	1100	Up hill, sandy, rocky
	550S	498302	5268126	392	700	Top of hill, rocky
	L400E					
	550S	498510	5268121	367.8	2300	Lake; 3.2m depth
	500S	498506	5268167	374	1100	Lake
	450S	498502	5268224	373	1600	Shore
	350S	498499	5268326	373	600	Top of hill on island, rocky
	300S	498498	5268374	363.6	1600	Lake; 6.4m depth
	250S	498498	5268426	375	1800	Lake; 6m depth
	150S	498494	5268527	355.7	2000	Lake; 5.3m depth
	100S	498493	5268577	357.2	1800	Lake; 4.8m depth
	50S	498493	5268627	363	1100	Shore
	50N	498490	5268726	363	1100	Shore
	100N	498490	5268775	363	900	Shore
	150N	498487	5268828	364	300	Sidehill, sandy, rocky
	250N	498487	5268926	371	300	Up hill, sandy, rocky
	300N	498485	5268971	378	500	Up hill, sandy, rocky
	350N	498486	5269026	372	1300	Side hill, sandy mossy
	450N	498483	5269116	376	800	Low, swampy, mossy

Date	Line/ Station	UTM X (m)	UTM Y (m)	MSL Z (m)	I (mA)	Injection Field Notes
	500N	498483	5269165	375	2000	Edge of swampy, mossy
	550N	498483	5269221	380	1200	Up hill, sandy, rocky

Table 7: Current Injection Field Notes

4.8 SAFETY

Canadian Exploration Services Ltd prides itself in creating and maintaining a safe work environment for its employees. Each crew member is briefed on the jobsite location, equipment safety, standard operating procedures along with our health and safety manual. An emergency response plan is generated relating to the specific job and with the jobsite predominantly in the field, which is unpredictable, morning safety briefings are essential. Topics are generally chosen based off jobsite characteristics of the area, weather conditions, timing and crew experience. All possible topics discussed during a survey, dependent on field conditions and time of the year, are listed in the following table.

Safety Topic	Protocol
Active Work Site	Be aware of surrounding activities – drilling, mine monitoring, and traffic. Caution when working near roads, and post safety signs to alert passers-by of ongoing geophysical surveys.
ATV	Conduct circle check before operating an ATV. Ensure brakes and tires are in good working condition. Drive at reasonable speeds according to terrain to avoid accidents. The use of helmets is mandatory.
Extreme Temperatures	With temperatures down to -40, there is an increased risk of cold related injuries (i.e. frostbite, hypothermia). Dress accordingly and take breaks to warm up if necessary. Bring extra clothing to anticipate for possible drop in temperature throughout the day. With temperatures up to +30C, there is an increased risk of heat stroke. Keep hydrated throughout the day and in shaded areas if possible.
Communication	Check in with the crew leader or any crew member when working individually to inform the team of your safety and well-being.
Heavy Lifting	When lifting equipment individually, always lift with your legs rather than your back. Always ask fellow crew members for help when lifting or moving heavy and large equipment (i.e. transmitter, generator, snowmobile, etc.).
Hunting Seasons	There may be more traffic during hunting season. Be careful when crossing. Wear proper (high-visibility) attire to avoid being mistaken for an animal in the bush.

Safety Topic	Protocol
Power Protocol	When in doubt, always assume that power is on and stay clear of survey circuits until confirmed otherwise.
Power Tools	Be alert when operating power tools – chainsaw, Tanaka, etc. Do not operate equipment when unsure of safety instructions for the specific tool.
Rain	Terrains may be slippery. Traverse carefully to avoid slipping, especially when ascending, descending, or walking along side of hills. When there is a chance of thunderstorm, notify person in-charge of transmitter when thunder is heard. Be extra careful with power protocol due to increased risk of shock. Bring extra clothing in case gear gets too wet and heavy.
Sharp Tools	Be careful when handling tools such as a machete and knives to avoid injuries. Inform another crew member of any injuries.
Slips, Trips and Falls	Increased risk of hidden hazards with snow coverage. Proper use of snow shoes is encouraged to avoid injuries from slipping, tripping, or falling. 3 points of contact is encouraged.
Snowmobile	Proper use of PPE (i.e. safety helmet, high visibility attire, etc.). Practice safety checks before operating snowmobiles. Ensure that engines and brakes are in good working condition. Ensure that oil, coolant, and gasoline levels are sufficient for distance of travel. Check that snowmobile is physically safe to operate (i.e. no broken parts).
Truck and Trailer	Conduct safety checks prior to operation of company trucks to ensure engines, brakes, tires, and etc. are in good working condition prior to operating vehicle. Conduct circuit checks when mobilizing and de-mobilizing trailers.
Water Hazards	Creeks, lakes, and swamps may not be fully frozen even under very low temperatures. The use of a stick or pole is encouraged for testing water bodies prior to crossing.
Wildlife	Always be aware of surroundings, keeping an eye out for animals such as bears, moose and wolves. Carry bear spray when in the field during the summer.
Winter Driving	Snow accumulation, freezing rain and icy conditions create added road hazards. Road into field sites may be rough. Drive at appropriate speeds according to road conditions.

Table 8: General Safety Topic Protocols

Emphasized daily topics discussed in the field for this project include:

Date	Safety Topic
February 19, 2019	Extreme cold weather.
February 20, 2019	Slips, trips, and falls. Steep topo and cliffs.
February 21, 2019	Truck and trailer circle checks. Review demobilization.
February 26, 2019	Truck and trailer circle checks. Check straps on snowmobiles periodically.
February 27, 2019	Power Protocol; Always assume power is on. Clear in Front/Back. do not clip in/out when power is on. Ask Tx if un-sure
February 28, 2019	Snowmobile circle checks. Oil, gas, belt, kill switch, ice on wheels, etc..
March 01, 2019	Slips, trips and falls. Number one cause of loss time in the workplace. Steep topo and cliffs
March 02, 2019	Winter driving; a lot of snow on secondary road. Main Hwy, Logging trucks at high speed, Caution.
March 03, 2019	Weekly review.
March 04, 2019	Extreme cold: -27 in the morning, - 34 with windchill. Dress accordingly, increased risk of hypothermia and frostbite.
March 05, 2019	Work Review / Trucks and Trailer circle check / Demob

Table 9: Daily Field Safety Topics

5. INSTRUMENTATION & METHODS

5.1 INSTRUMENTATION[1]

Twenty 2-channel Full Waver IP receivers were employed for the 3D IP survey. The transmitter consisted of a GDDII (5kW) with a Honda 6500 as a power plant. Two current monitors were connected to the transmitter to record the current transmitted; one to record each 90s transmit and the second to continuously record throughout the day, as a backup.

Time-domain IP surveys involve measurement of the magnitude of the polarization voltage that results from the injection of pulsed current into the ground. Apparent resistivity and chargeability are the parameters of interest measured through this procedure.

5.2 THEORETICAL BASIS

Time domain IP (TD-IP) surveys involve measurement of the magnitude of the polarization voltage that results from the injection of pulsed current into the ground.

Two main mechanisms are known to be responsible for the IP effect although the exact causes are still poorly understood. The main mechanism in rocks containing metallic conductors is electrode polarization (overvoltage effect). This results from the buildup of charge on either side of conductive grains within the rock matrix as they block the flow of current. Upon removal of this current the ions responsible for the charge slowly diffuse back into the electrolyte (groundwater) and the potential difference across each grain slowly decays to zero.

The second mechanism, membrane polarization, results from a constriction of the flow of ions around narrow pore channels. It may also result from the excessive build up of positive ions around clay particles. This cloud of positive ions similarly blocks the passage of negative ions through pore spaces within the rock. Upon removal of the applied voltage the concentration of ions slowly returns to its original state resulting in the observed IP response.

In TD-IP, the current is usually applied in the form of a square waveform, with the polarization voltage being measured over a series of short time intervals after each current cut-off, following a short delay of approximately 0.5s. These readings are integrated to give the area under the decay curve. The integral voltage is divided by the observed steady voltage (the voltage due to the applied current, plus the polarization voltage) to give the apparent chargeability (Ma) measured in milliseconds. For a given charging period and integration time the measured apparent chargeability provides qualitative information on the subsurface geology.

[1] Refer to appendix B for instrument specifications.

The polarization voltage is measured using a pair of non-polarizing electrodes like those used in spontaneous potential measurements and other IP techniques.

5.3 Survey Specifications

3D Distributed Induced Polarization Array

The 3D Distributed Induced Polarization array configuration was used for this survey. This array consisted of 60 mobile stainless steel read electrodes and two current electrodes. 20 portable receivers were each connected to 3 read electrodes (P1, P2, and P3) to create 2 orthogonal components with 100m dipole spacings. The power location CA was chosen based on field conditions but placed throughout the survey area (randomly or in a grid-like manner). In this case, there were 5 north-south lines and 6 east-west lines, spaced every 200m, used for power locations. Along each line the power transmits were injected at approximately every 50m. The infinite was located approximately 4.8 kilometres southeast of the center of the survey grid at 499892E and 5264268N. The infinite was placed as far as possible to achieve an offset pole-dipole array. The maximum theoretical depth obtained was approximately 450 metres. An 8 second transmit cycle time, with a 2 second energizing time was used for a duration of 90 seconds for approximately 12 stacks.

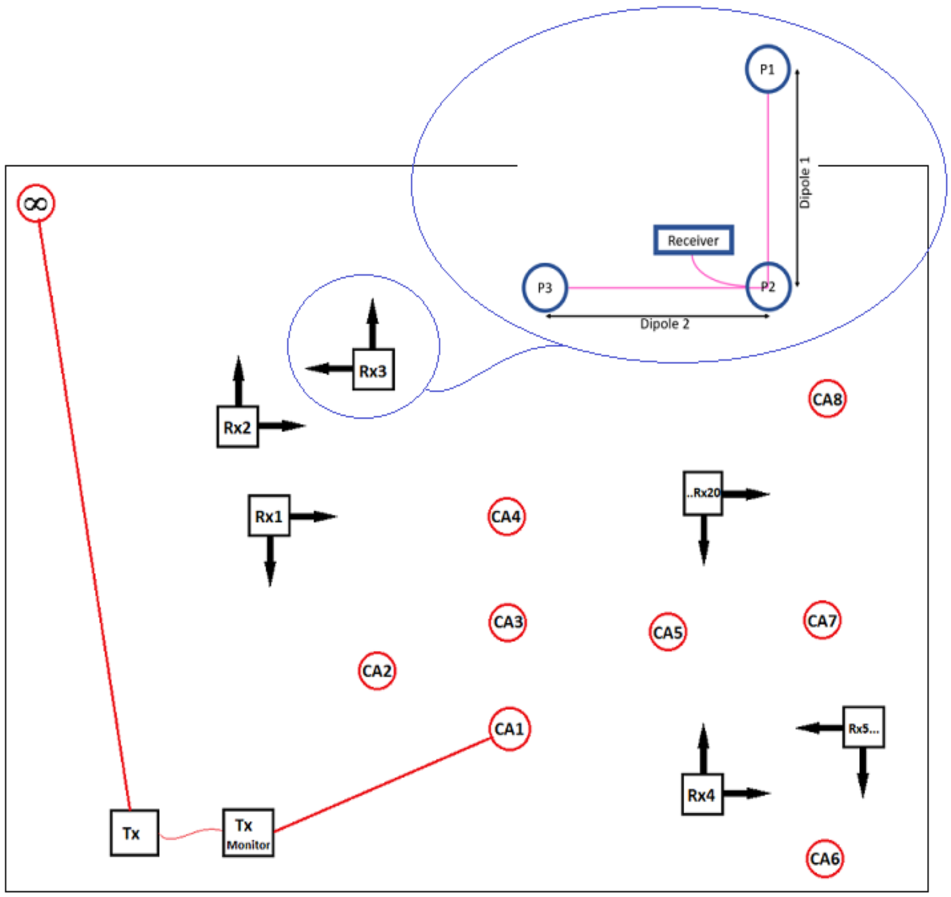


Figure 10: 3D Distributed IP Configuration

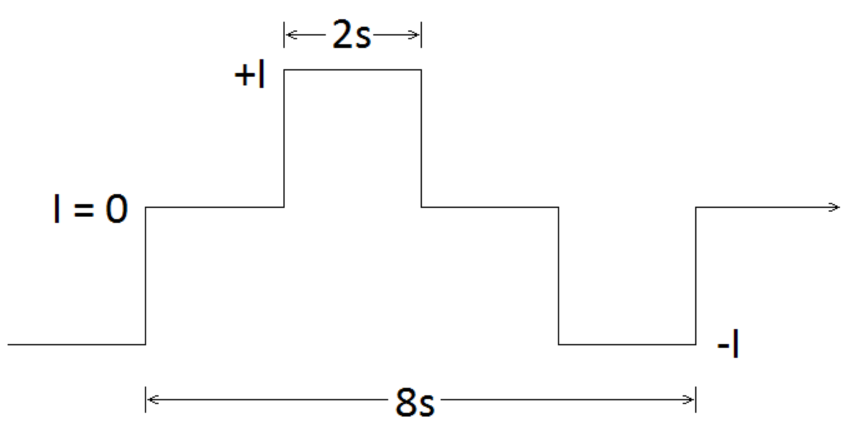


Figure 11: Transmit Cycle Used

6. QUALITY CONTROL & PROCESSING

6.1 Field Quality Control

Daily field quality control steps consisted of the following:

1. Resistivity checks – the resistivity of each dipole was recorded in the field pre- and post-acquisition to ensure dipoles were connected to the receiver properly and the electrode was well contacted with the ground.

2. GPS checks – internal GPS of each receiver was checked that they were placed in the proper position. GPS and injection file time stamps were compared to confirm correlation.

3. Data check – data was dumped daily and confirmed that the number of GPS points matched the number of injection files.

4. Backup – a second current monitor recorded the transmit cycles continuously throughout every acquisition day. If necessary, the backup was used.

5. Repeats – repeats of lines/data were taken if necessary.

6.2 Processing

In the office, processing of the data and quality control was done interchangeably. The steps included:

1. Import positions – GPS coordinates were imported into each corresponding current injection file (IAB) and receiver file (VMN) using the Fullwave Viewer Software.

2. GPS check – the imported positions were confirmed on Google Earth.

3. Synchronization check – in case of GPS lags or different time settings the synchronization of the files was checked to determine they match (Figure 12).

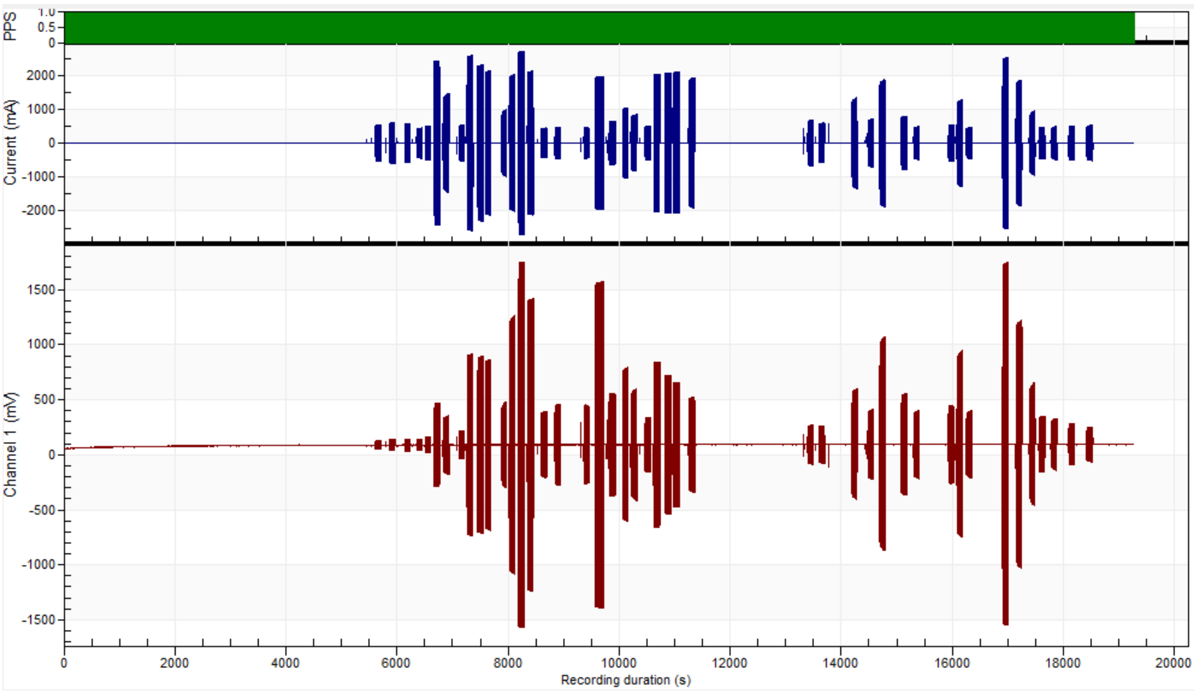


Figure 12: Receiver recordings (red) synchronized with the current injections (blue)

4. Prosys output – a complete .bin file was output from the Fullwave Viewer software.

5. Data quality control – values were viewed in the complete .bin file. Accepted values with a normal M1-M20 range would have a proper transmit cycle, a smooth curve, and a high amplitude low frequency narrow peak (Figure 13). Unaccepted values with an abnormal M1-M20 range (Figure 14, red circle) would not have proper signals (Figure 15). These abnormal values could be due to a few different things or a combination of the following; the dipole being too far from the current injected, the background noise being greater than that of the current injected, poor dipole coupling, and/or cultural features on surface causing coupling or a significant background noise interference. These were removed in the following step.

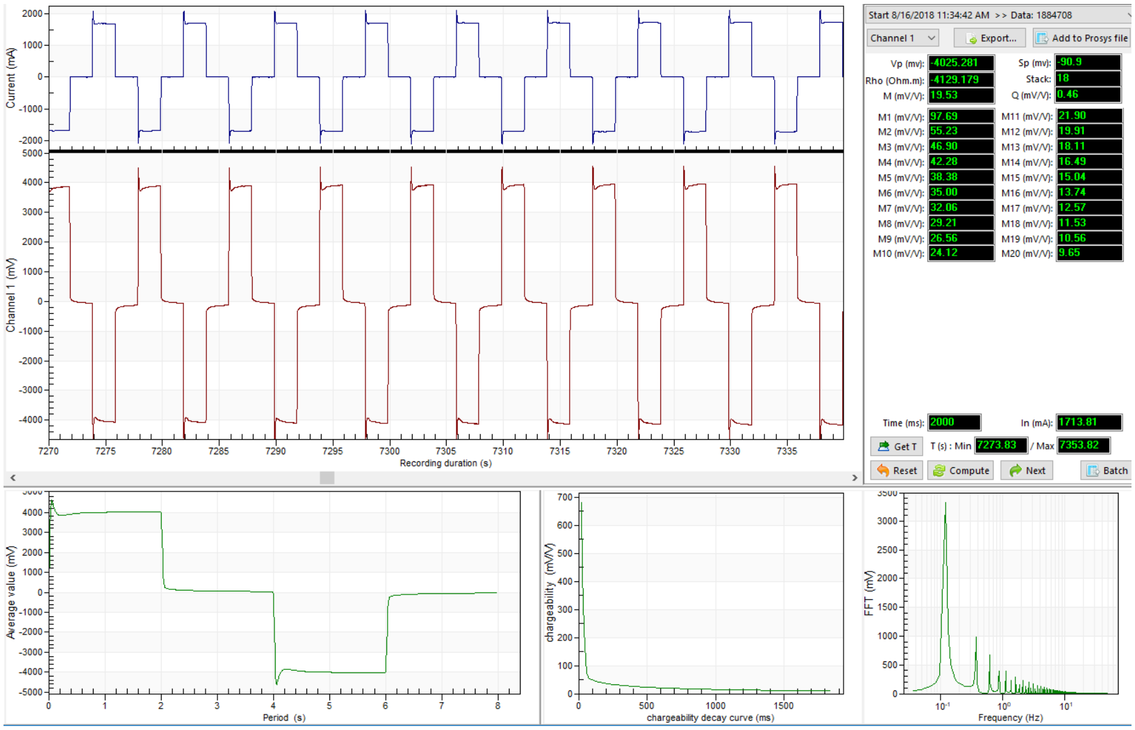


Figure 13: Good 90 second transmit/read pair. Injection (blue), read signal (red), transmit signal (bottom left), decay curve (bottom centre), FFT (bottom right).

M1 (...	M2 (...	M3 (...	M4 (...	M5 (...	M6 (...	M7 (...	M8 (...
69.11	45.44	39.99	36.58	33.48	30.76	28.53	26.05
75.78	48.86	41.69	37.53	34.34	31.16	27.97	25.89
75.73	50.14	43.65	39.60	36.34	33.18	30.49	27.90
81.56	54.13	46.51	41.97	38.16	34.65	31.68	28.80
69.46	44.71	38.75	35.17	32.20	29.45	27.06	24.76
94.25	60.44	57.79	52.34	47.77	43.66	40.14	36.61
128554.88	-11085.17	-14311.44	-14973.24	-16379.58	-4281.03	4318.25	-3929.44
67.53	41.83	35.53	32.24	29.36	26.85	24.26	22.33
65.87	42.73	37.79	34.62	31.80	29.44	27.04	24.97
91.27	62.90	54.94	49.39	45.30	41.31	37.83	34.67
91.55	63.34	55.08	50.01	45.57	41.54	38.07	34.83
124.30	92.27	80.17	72.73	66.38	61.02	56.01	50.97
66.66	44.00	37.08	32.36	29.95	27.68	24.13	22.05

Figure 14: Output .bin file viewed in Prosys. Larger abnormal M values circled in red.

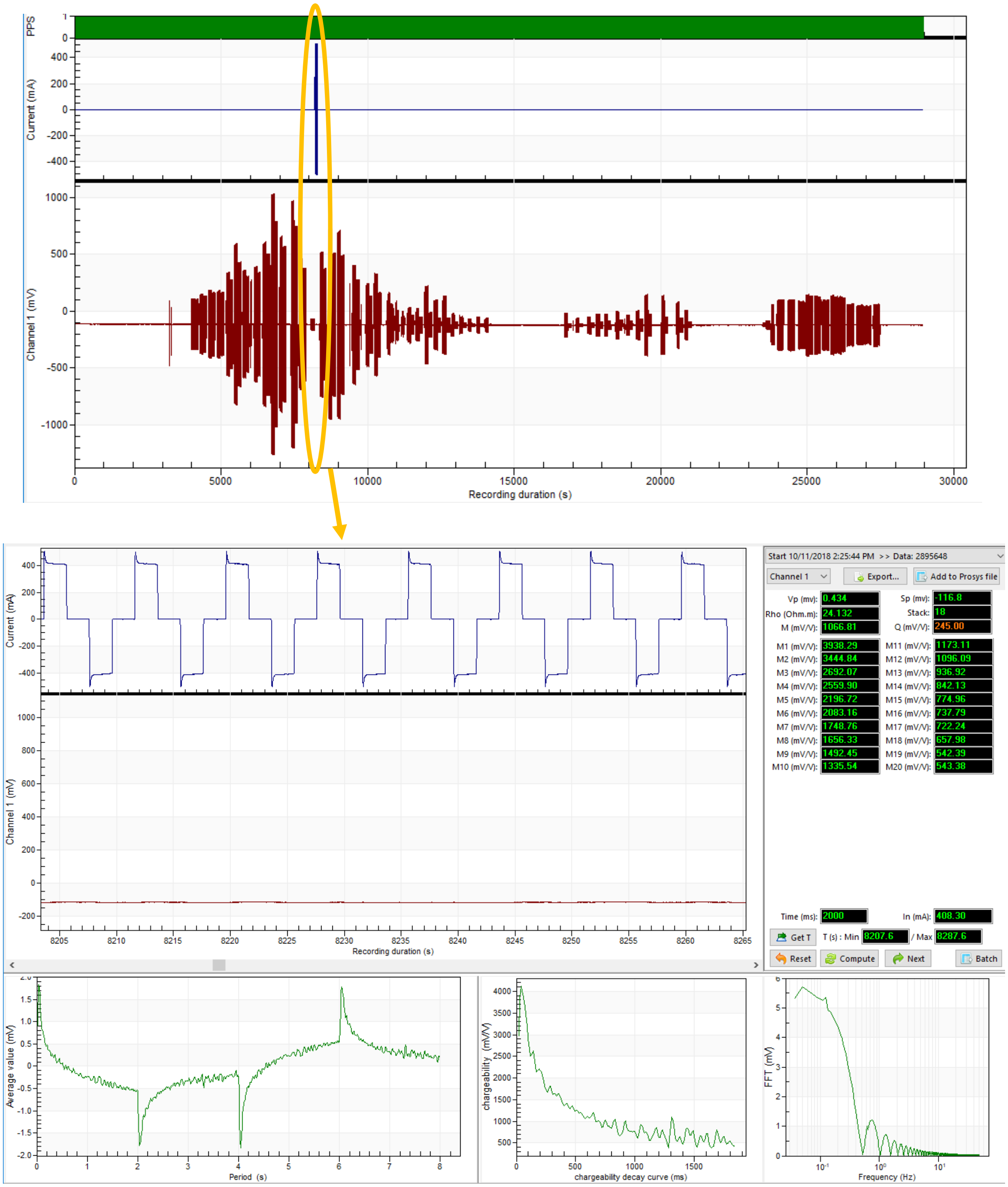


Figure 15: Signal, cycle, and curves of abnormal unaccepted M values.

6. Filtering – Values with unrealistic resistivities and chargeabilities, high standard deviations, large geometric factors, and that are oversaturated were filtered out (Figure 16).

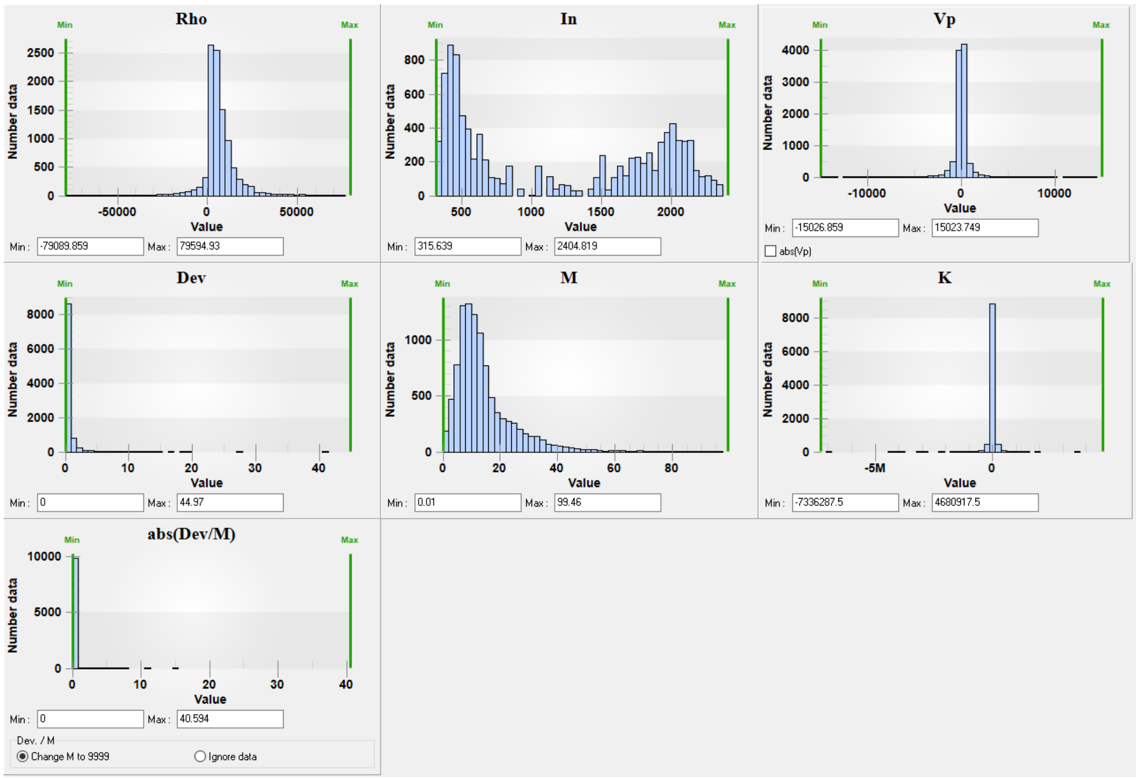


Figure 16: Filtering options

3D viewing of the raw calculated chargeability and resistivity results was observed in Geosoft Oasis (Figures 17-19; Y=North). Calculated report points from acquisition were recorded at a maximum depth of approximately 650 metres depth.

A total of 8348 filtered data points was collected from this 3D IP survey configuration over a period of 8 days.

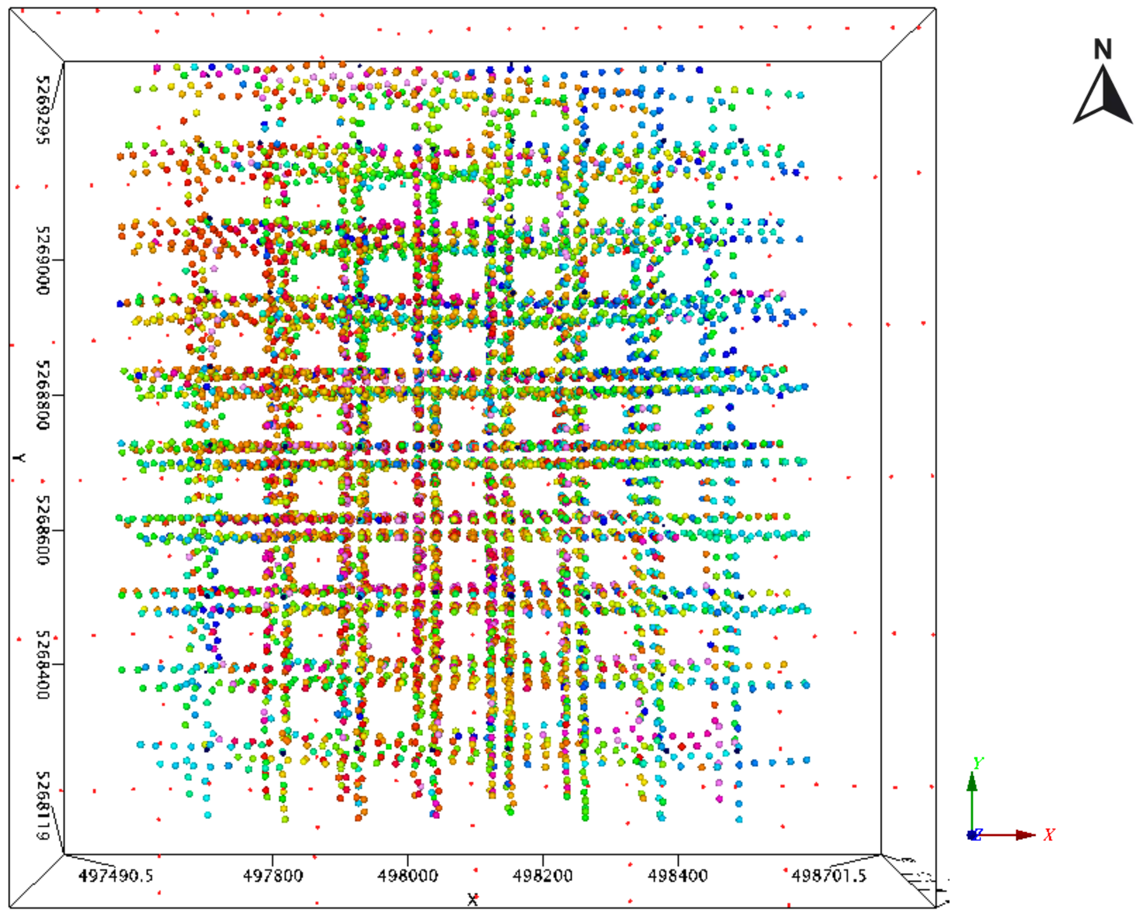


Figure 17: Measured chargeability data points with injection sites (red dots).

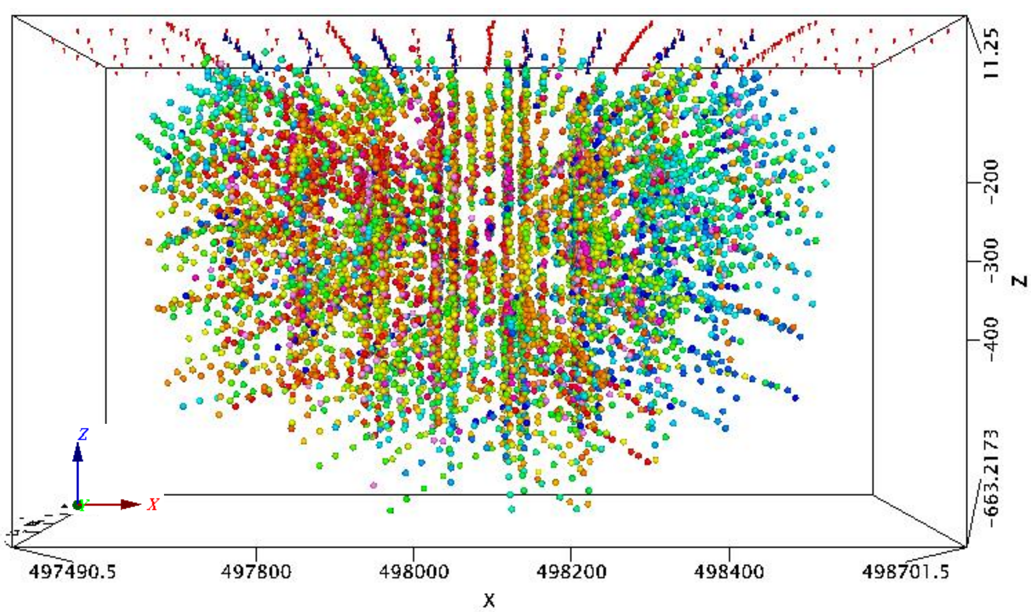


Figure 18: Side view of the complete measured chargeability dataset facing north with the survey layout on top

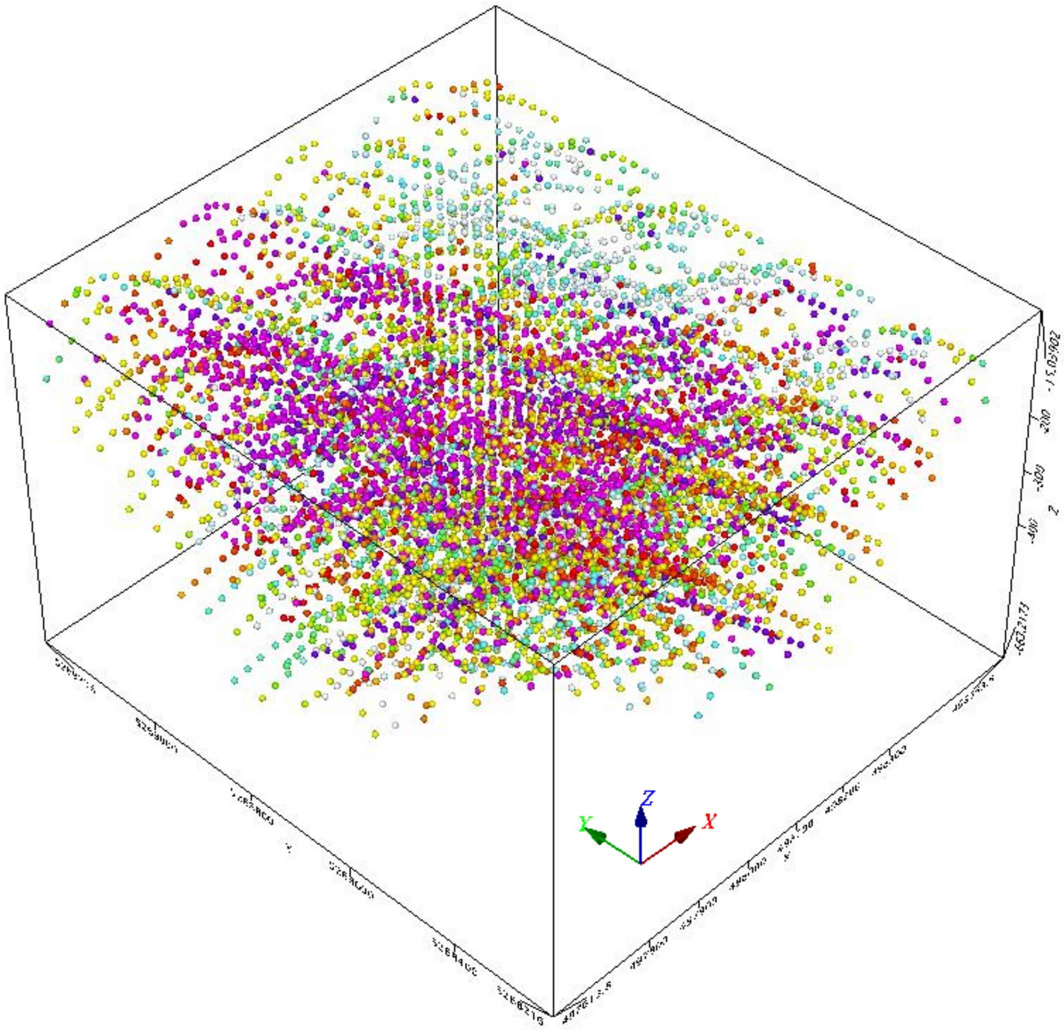


Figure 19: Angled view of the complete set of resistivity data points

6.3 INVERSION

Inversions of the filtered data was done in RES3DINV Professional version 3.15.11. RES3DINV is a 3D inversion software specifically used for resistivity and induced polarization data. From the finalized Prosys file an export to a RES3DINV format was created with specific selections depending on the survey type completed. The selections seen in Figure 20 are standard 3D distributed IP array settings. Depending on the intended survey array type, including the remote may or may not be used. For example, in this case there was a single remote electrode placed as far from the survey grid as possible to achieve an offset pole-dipole array scenario, thus it was not necessary to include the remote. Topography was included.

Figure 20: Export settings selection from Prosys to RES3DINV

Model grid settings were chosen based on the infinite locations and the dipole lengths. A uniform cell size was chosen to be ¼ or 1/5 of the dipole length, in this survey case a cell size of 25m was used (Figure 21). To reduce edge artifacts a few cells extension was added. Manual edits to the cell uniformity may be necessary depending on the location of the infinite. In this case manual edits were not made. Twelve model layers were used with depths to 15, 30, 50, 75, 100, 130, 160, 200, 245, 295, 350, and 410 metres.

The theoretical maximum depth obtained from the Fullwave Designer was 450 metres. Calculated report points from acquisition were recorded at a maximum depth of approximately 650 metres depth. However, a maximum depth of 410 metres was used because resolution and sensitivity decrease as depth increases. Sensitivity values represent how well the model is constrained, with higher sensitivities providing less uncertainty and greater validity.

Important inversion parameters used for the creation of the model are described in Table 9[2].

[2] Refer to the RES3DINV manual and tutorial by Dr. M.H. Loke.

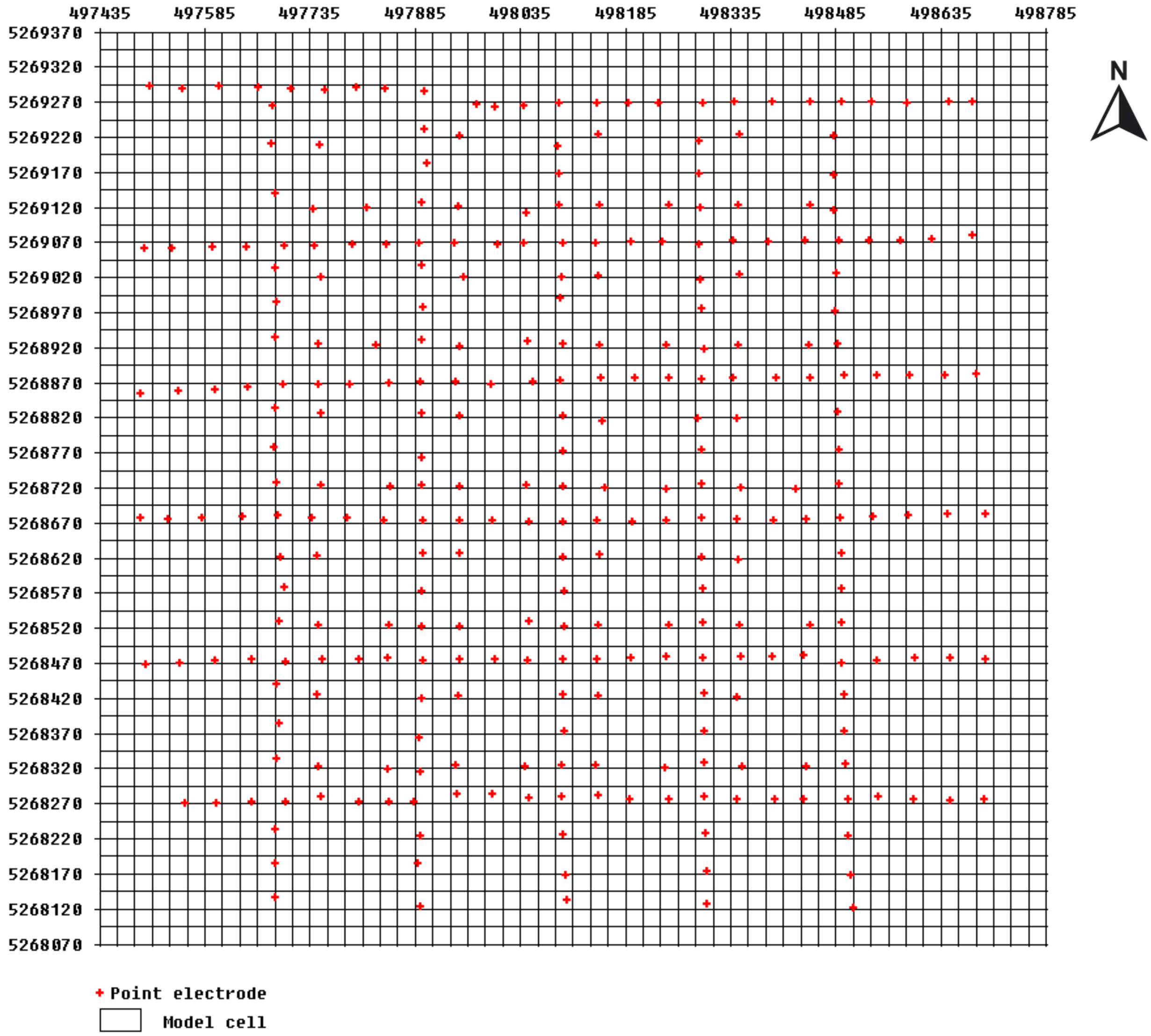


Figure 21: 25m model cell size – model viewer in RES3DINV

Parameter	Description
Refined Topography	Estimates topography of each interior node individually to take non-linear topography variations within each model block into account.
Higher Damping of 1st layer	Useful to avoid unusually large resistivity variations in the top layer (Loke and Dahlin 2010).
Diagonal Filter Components	Reduces effects of produced structures with boundaries aligned along the horizontal and vertical directions.
Robust Data Constraint	Attempts to minimize the absolute difference between the measured and calculated apparent resistivity values (Claerbout and Muir 1971). Less sensitive to very noisy data point.
Robust Model Constraint	Produces models with regions of more uniform resistivity values with sharper boundaries.
Incomplete Gauss-Newton	An approximate solution of the least-squares equation that uses an iterative linear conjugate-gradient method.
Reference Model	An additional constraint on the model to limit the deviation of the model resistivity from a homogenous reference model. This is normally the average of the apparent resistivity values.
Logarithm of Apparent Resistivity	In 2D systems it is ~impossible to determine whether the measured potential has the same sign as the transmitted current, thus it was assumed apparent resistivity is always positive and the logarithm is used. However, negative apparent resistivity values not caused by noise are observed in 3D distributed IP systems, especially with near-surface large resistivity contrasts and topography. Thus, the logarithm of apparent resistivity is not used because negative apparent resistivity values are real and kept throughout the inversion for a more accurate model. (Loke, 2018)
Forward Modeling Method	The finite-element method with a medium extended 4 horizontal node mesh between electrodes is used for datasets with topography and for improved accuracy.
Non-Linear IP Complex Method	The non-linear method calculates apparent IP using a complex resistivity formula. This method treats the conductivity as a complex quantity with real and imaginary components (Kenma et al. 2000). The complex conductivity and complex potential are calculated. These components are calculated in a two-step inversion process during each iteration. First the resistivity model is calculated, then the IP model is calculated.
IP Model Transformation	The “range-bound” transformation method is used to ensure the model IP values produced by the inversion program does not exceed the lower or upper limits of 0-400 mV/V.

Table 10: Inversion Parameter Descriptions (© (1996-2018) M.H.Loke)

7. RESULTS, INTERPRETATION & CONCLUSIONS

7.1 RESULTS

The inversion was run through many iterations, until an error convergence of less than 1% was achieved. This produced an absolute error of 5.578% and 1.617% for the resistivity and IP models, respectively. Iteration 24 was the chosen version. Eight of the twelve depth sections of the IP and resistivity from the RES3DINV viewer of iteration 24 is shown in the next two figures, respectively. From top left to top right and bottom left to bottom right the blocks are at depths: 30-50m, 50-75m, 75-100m, 100-130m, 130-160m, 160-200m, 200-245m, and 245-295m.

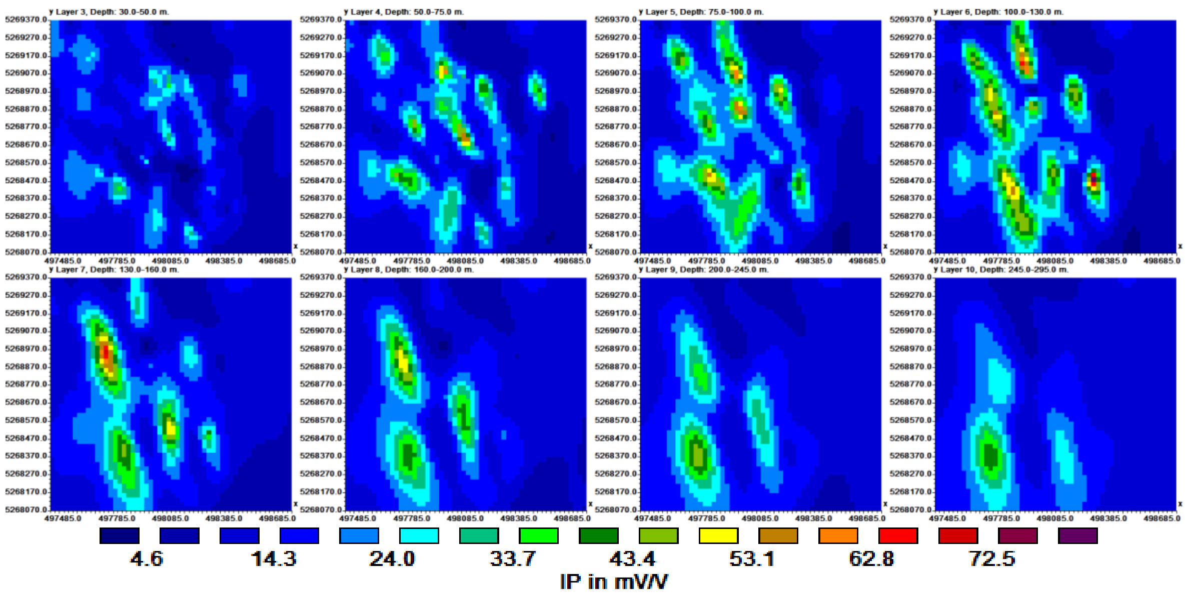


Figure 22: 8 IP depth sections ranging from 30-295m as viewed in RES3DINV

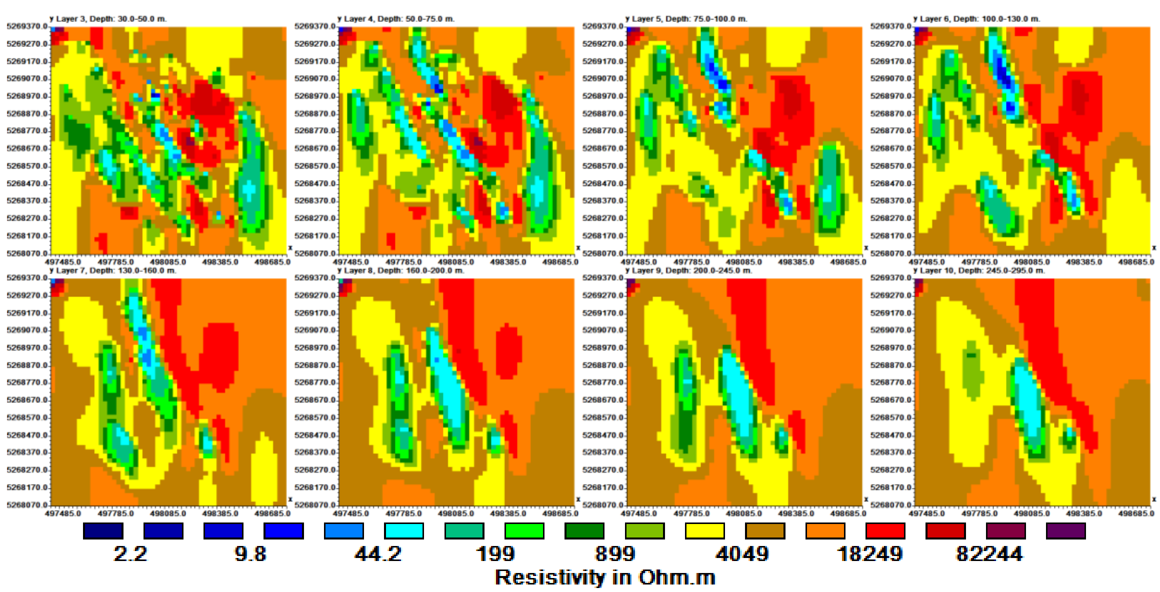


Figure 23: 8 resistivity depth sections ranging from 30-295m as viewed in RES3DINV

A final XYZ was output from iteration 24 of the inversion and provided the resistivity, conductivity, chargeability, and sensitivity values at the centre and the corner of the model blocks. In this case resolution was also calculated. This was imported and modelled in Geosoft Oasis.

A horizontal slice of the chargeability and resistivity from the final inversion model overlaid in Google Earth is seen in the following two figures.

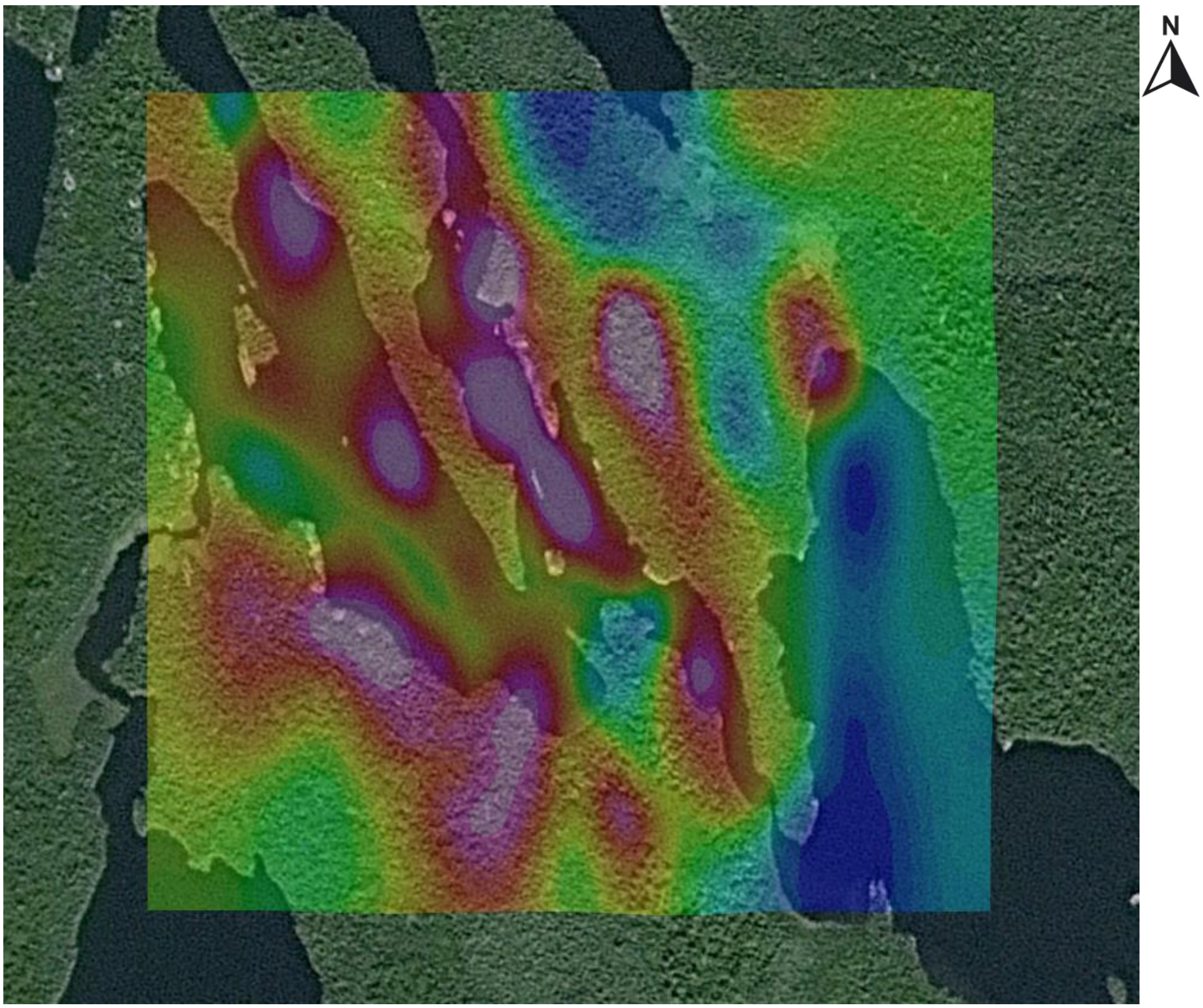


Figure 24: Chargeability grid (300m MSL) overlaying Google Earth. (©2018 Google, Image ©2019 CNES/Airbus)

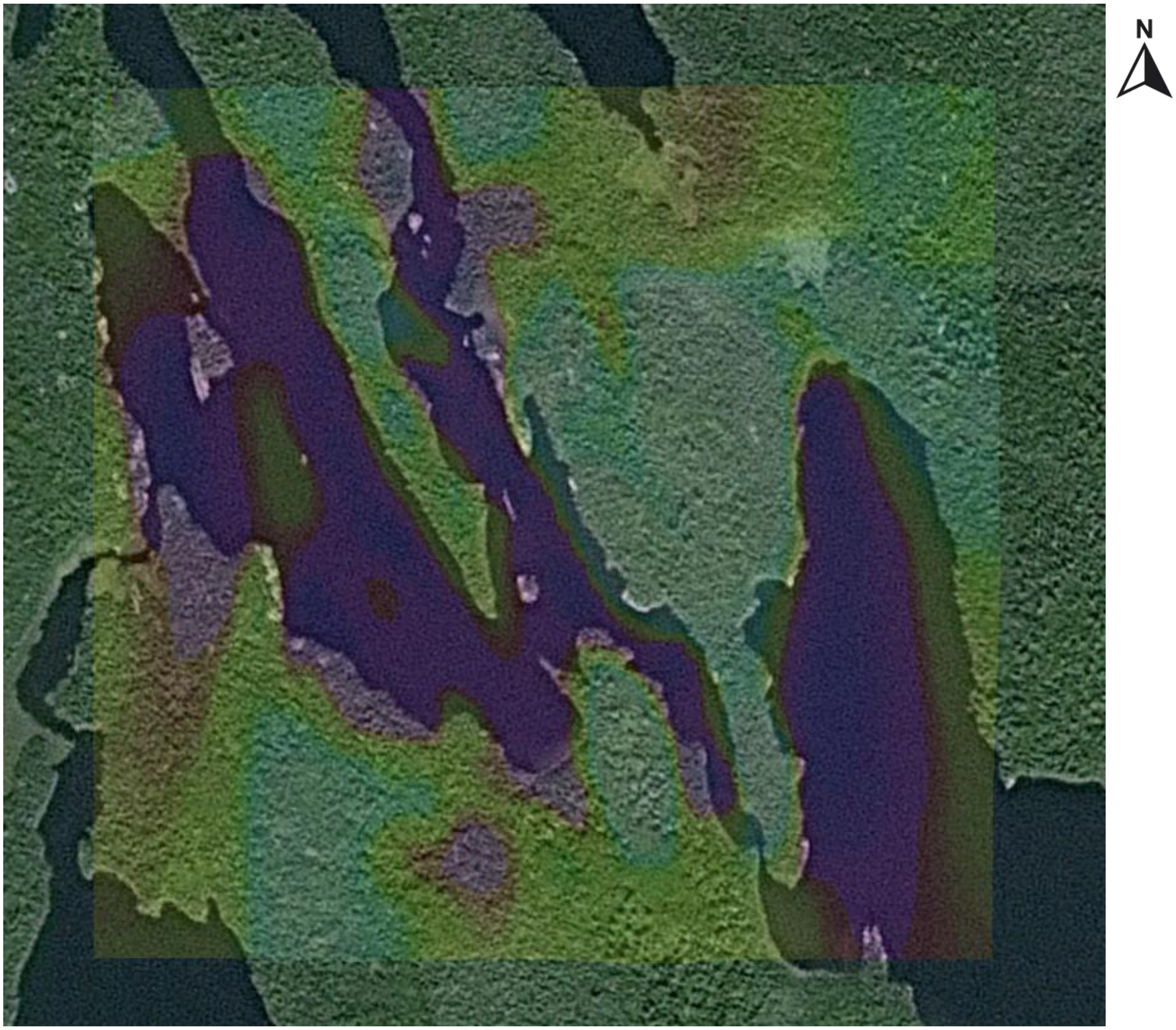


Figure 25: Resistivity grid (300m MSL) overlaying Google Earth. (©2018 Google, Image ©2019 CNES/Airbus)

7.2 INTERPRETATIONS[3]

Targeting of the 3D Distributed IP array was based on favourable geology. It is noted that the Nipissing Diabase should come in contact with volcanic and metasedimentary units in this region. The survey was designed to examine this potential contact for possible mineralization.

Both the inverted chargeability and resistivity data were modelled in 3D. Some chargeability responses were detected, and the resistivity response was dominated

[3] Note for all interpretation figures North is in the Y-direction.

by the conductive overburden related to the lake system.

Below is an example of the 3D chargeability model at 25mV/V superimposed on a 100 metre MSL chargeability slice (Figures 26 and 27). From this two moderate chargeability anomalies can be identified.

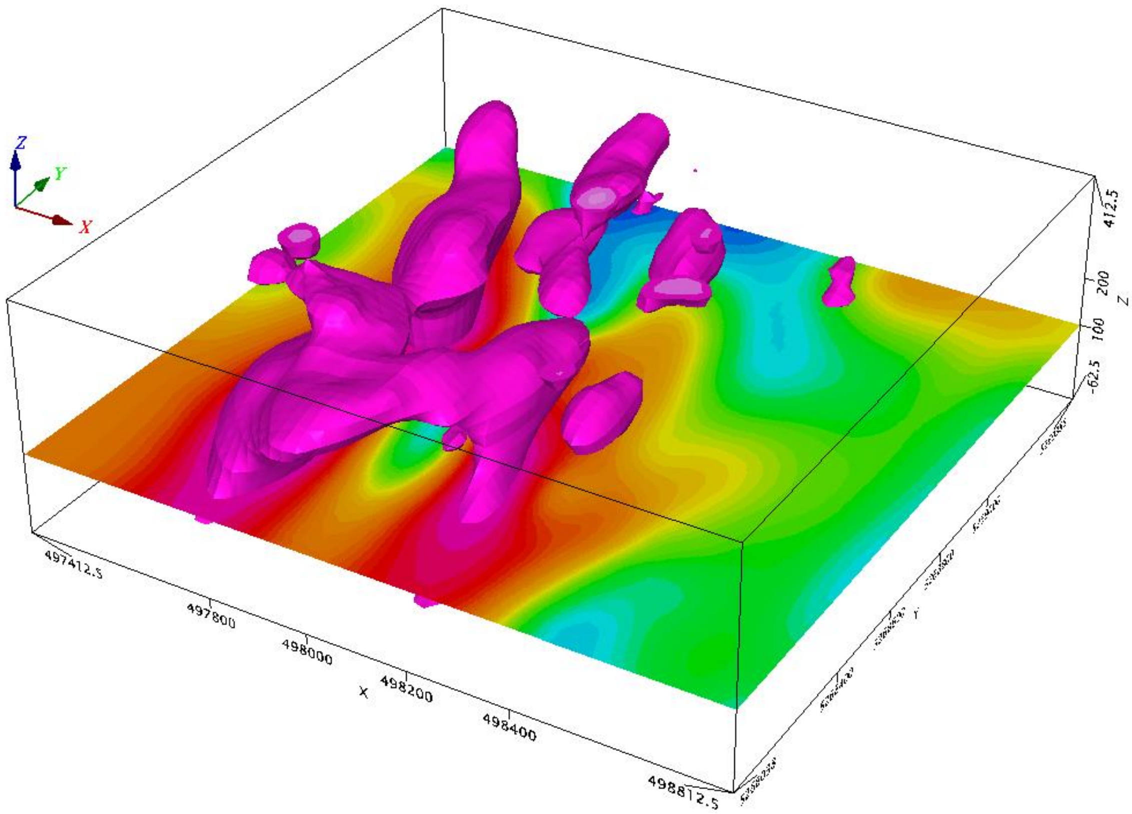


Figure 26: 3D chargeability model (pink=25+mV/V) with a 100m MSL chargeability slice

These two chargeability anomalies appear as parallel linear features that strike across the entire survey area at approximately 335 degrees (Figure 27; 1 and 2). The central region of the survey indicates a possible east-west lateral shift and sub-sequent drop in the chargeability data in the vicinity of the shift (Figure 27; 3). This may indicate the presence of an east-west dike crossing the survey area.

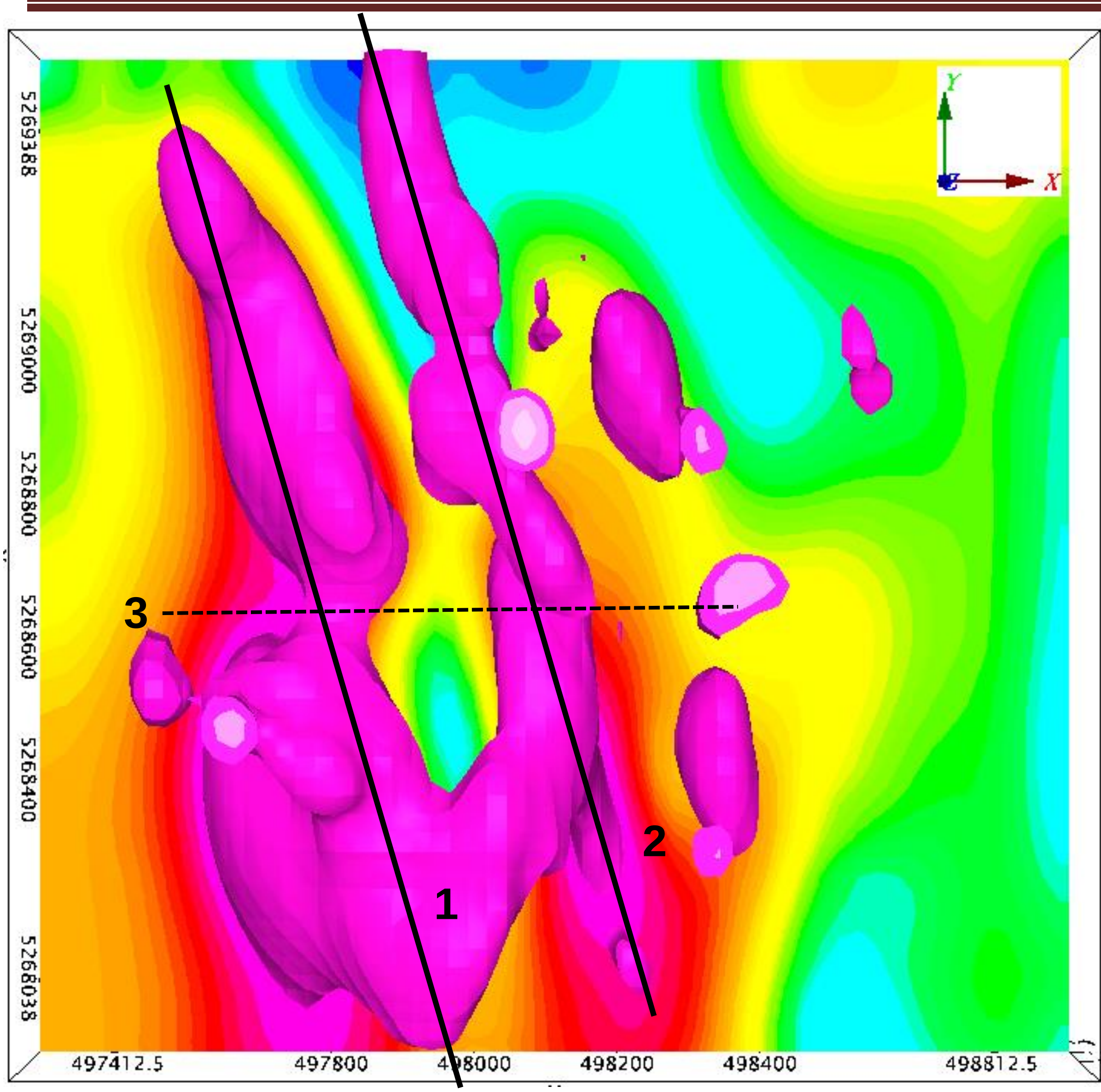


Figure 27: Top view of the 3D chargeability isosurfaces (pink=25mV/V) with a 100m MSL chargeability slice with interpretations

The survey also indicates the presence of some shallow chargeability anomalies. These are visible at the 350m MSL level seen in Figure 28.

The first of these shallow chargeability anomalies is the most interesting (Figure 28; 1). This anomaly appears to be a longer linear anomaly which parallels the two deeper main anomalies; however, exhibits a larger signature at each end of it. This most likely represents a shallow sulphide system which plunges to the north as it can be seen on the deeper model. This anomaly appears to come to surface and can most likely be identified through prospecting areas near 498308E 5268652N, and 498169E 5269016N, and 498042E 5269030N.

The second of the shallow interesting anomalies occurs near the south-central part of the survey area (Figure 28; 2). A resistivity low correlates with this anomaly, which may indicate a more massive type system. This is near the edge of the survey area so it may not be as constrained due to the lower density of data points. The source of this most likely can be identified by prospecting the region near 498036E 5268201N.

Three other discrete chargeability anomalies occur in the upper portions of the survey. These occur at 498241E 5268136N, 497821E 5268405N, and 497600E 5268502N. They all appear shallow and can most likely be identified through prospecting.

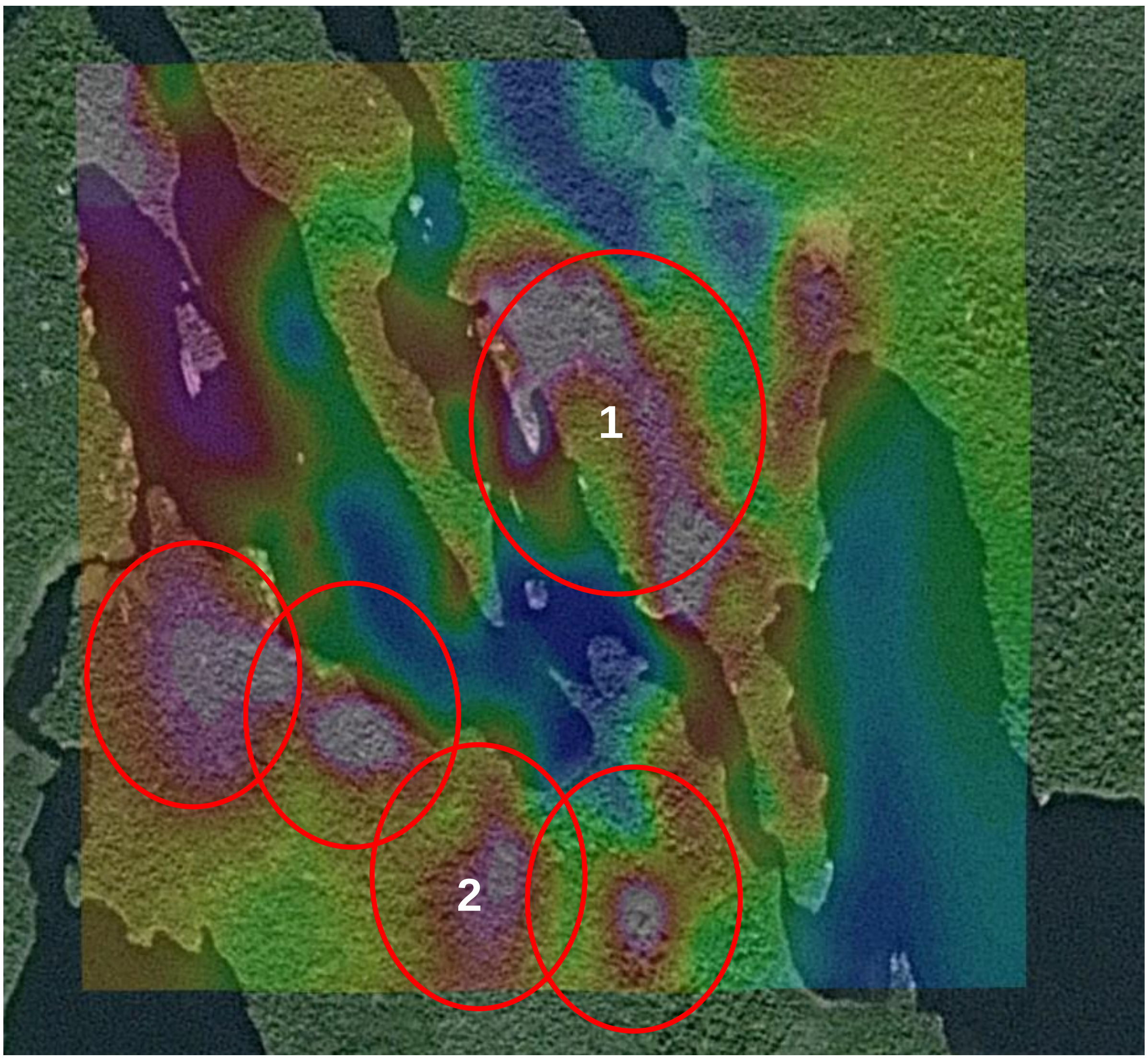


Figure 28: 350 MSL chargeability slice with interpretations overlaid on Google Earth (©2018 Google, Image ©2019 CNES/Airbus)

Figures 29 and 30 shows the resistivity model on the resistivity 200m MSL plane. The resistivity indicates the presence of conductive overburden related to the lakes and swamps.

Two other parallel resistivity low systems are highlighted in the survey. These two low resistivity anomalies appear as parallel linear features that strike across the entire survey area at approximately 335 degrees (Figure 30; 1 and 2).

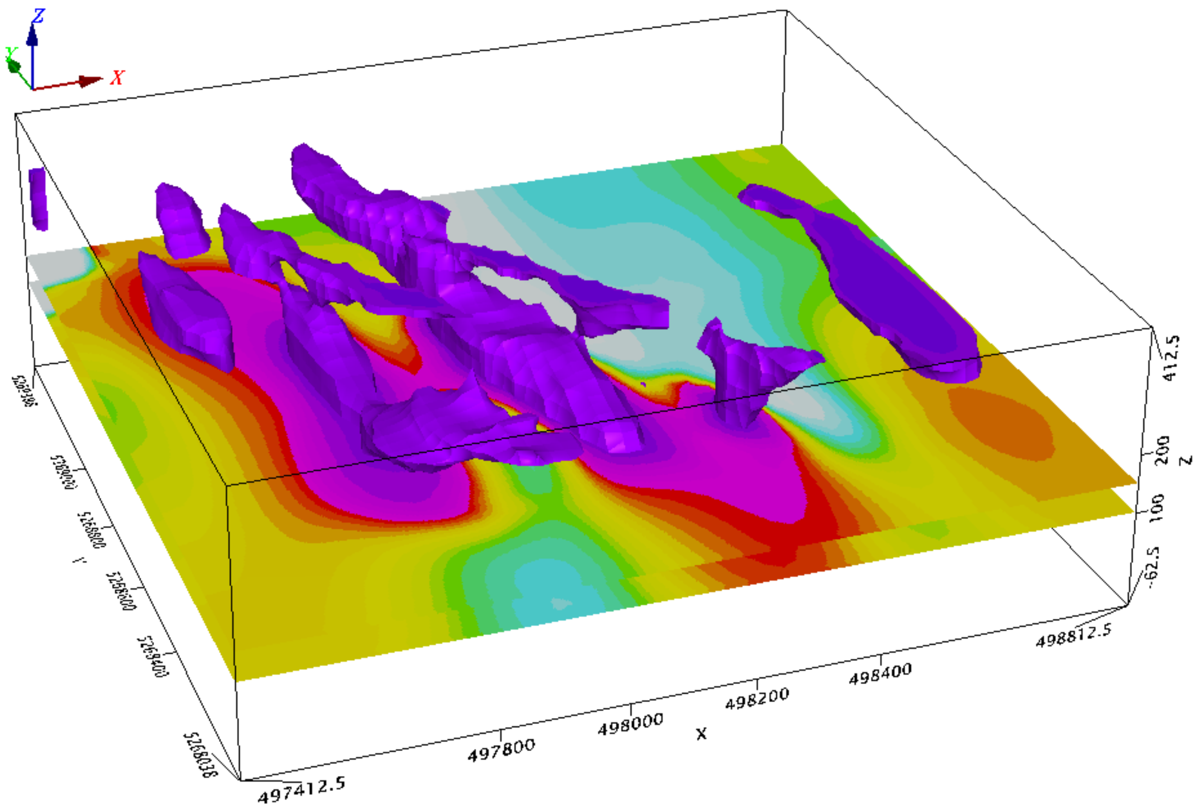


Figure 29: 3D resistivity model (purple = <500 ohm.meters) with a 200m MSL resistivity slice

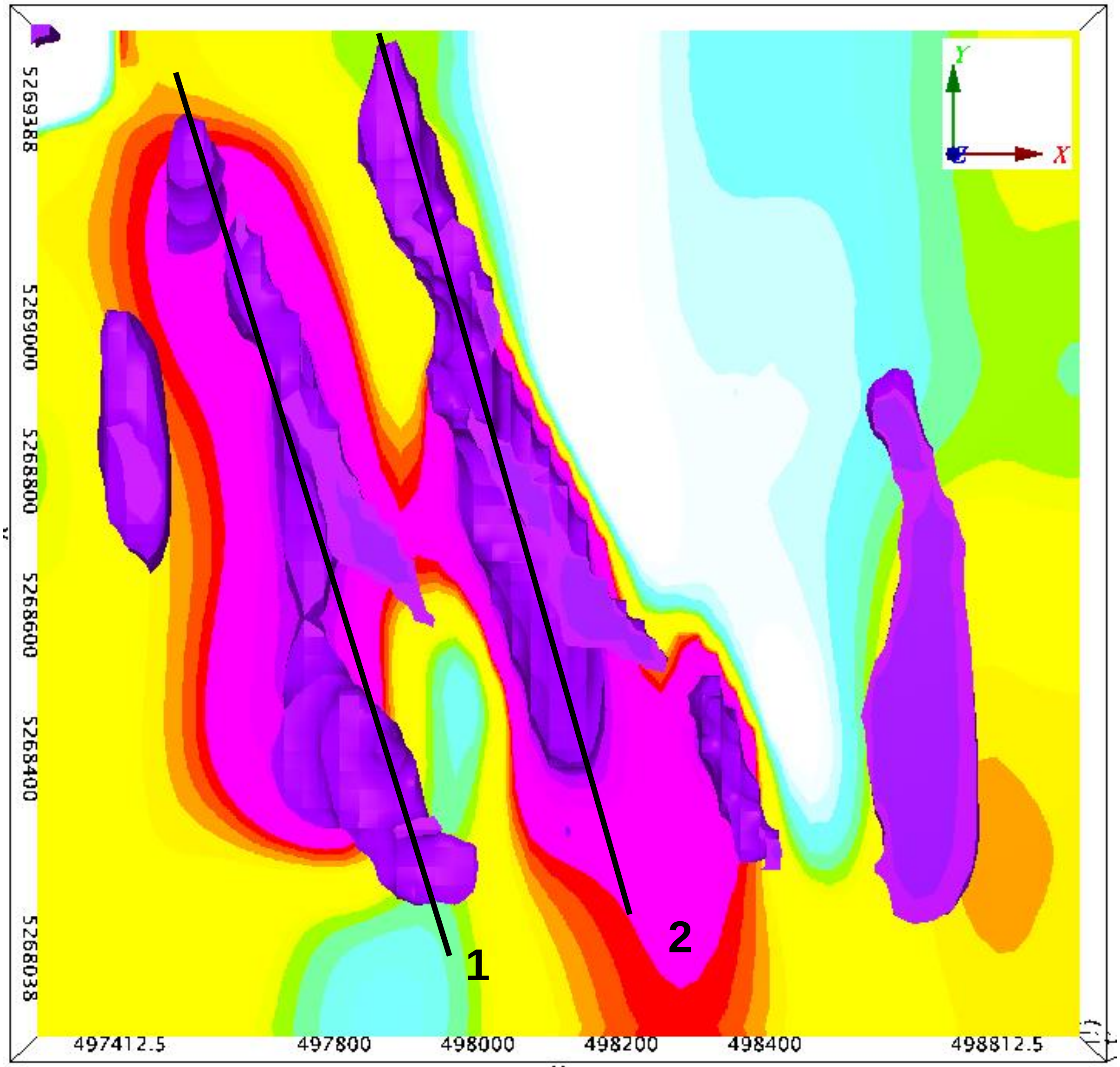


Figure 30: 3D resistivity model (purple = <500 ohm.meters) with a 200m MSL resistivity slice

The chargeability and resistivity models are merged in Figure 31. A correlation between the high chargeability and low resistivity deeper responses emerges, which fall below the system of lakes. Because of the correlation between the lakes and the anomalies another inversion was run omitting all dipoles which had an electrode in the water. In this inversion the high chargeable and low resistivity anomalies were still produced, which indicates this is a real source. Determining the true source of these anomalies is difficult without diamond drilling unless something can be identified along strike. With the water bodies and linear tendency of these anomalies, the response is classified as likely structural unless other evidence emerges.

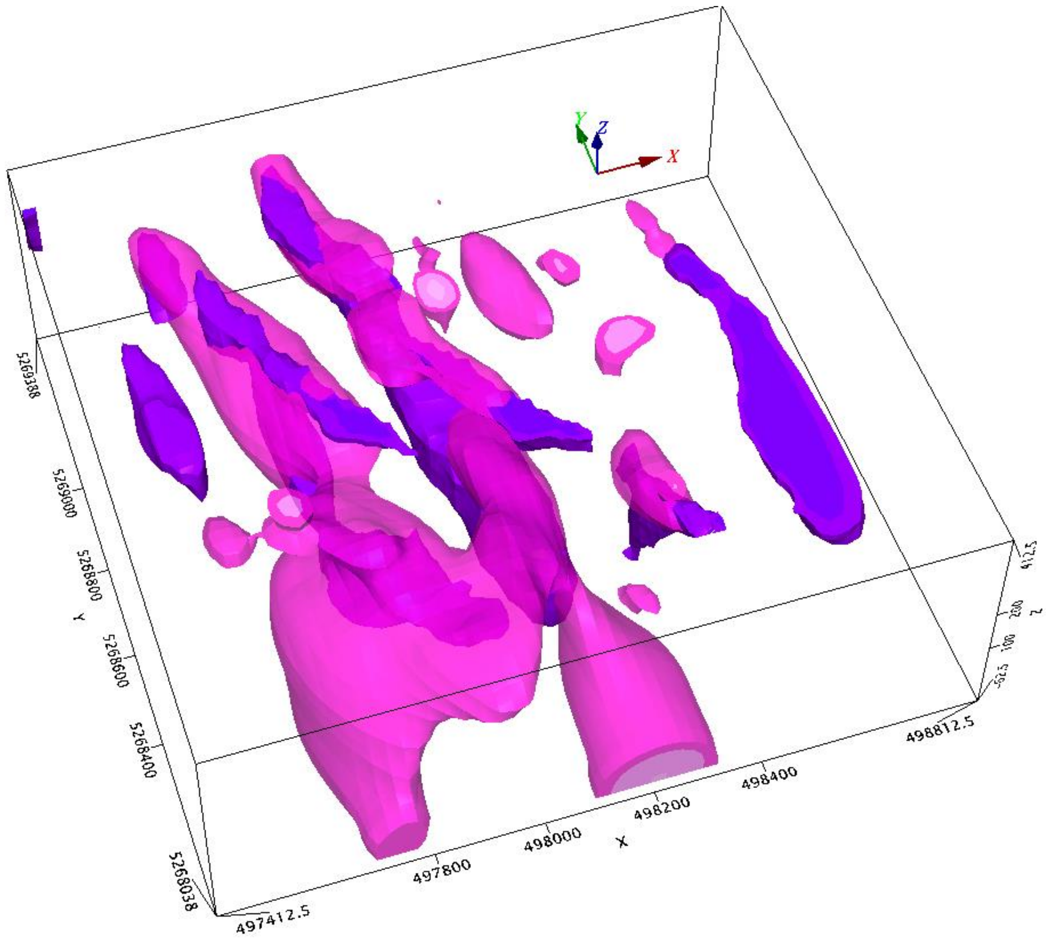


Figure 31: 3D resistivity isosurface (purple <5000 ohm.m) with 3D chargeability isosurface (pink >25 mV/V)

7.3 Recommendations

It is recommended that historic work be compiled. This compilation overlaid on the present geophysical maps may provide information on the sources of the anomalies and allow for better identification and correlation to the expected geophysical signatures.

The near surface chargeability anomalies should be systematically investigated through prospecting to determine if they can be explained through a surface expression.

7.4 Conclusions

The 3D IP survey highlighted multiple chargeability and low resistivity anomalies, which may be related to a structural source. Numerous shallow, smaller, and constrained chargeability anomalies were also identified from the survey. These chargeability anomalies should be systematically investigated through prospecting.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, C. Jason Ploeger, hereby declare that:

1. I am a professional geophysicist with residence in Larder Lake, Ontario and am presently employed as a Geophysicist and Geophysical Manager of Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I am a Practicing Member of the Association of Professional Geoscientists, with membership number 2172.

3. I graduated with a Bachelor of Science degree in geophysics from the University of Western Ontario, in London Ontario, in 1999.

4. I have practiced my profession continuously since graduation in Africa, Bulgaria, Canada, Mexico and Mongolia.

5. I am a member of the Ontario Prospectors Association, a Director of the Northern Prospectors Association and a member of the Society of Exploration Geophysicists.

6. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Ltd.**

7. I am responsible for the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

C. Jason Ploeger, P.Geo., B.Sc.
Geophysical Manager
Canadian Exploration Services Ltd.

Larder Lake, ON
March 25, 2019

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Melanie Postman, hereby declare that:

1. I am a Geoscientist-in-Training with residence in Larder Lake, Ontario and am presently employed as a Junior Geophysicist with Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I graduated with a Bachelor of Science Honors specialization degree in geophysics for professional registration from the University of Western Ontario, in London Ontario, in 2017.

3. I am a member of the Association of Professional Geoscientists Ontario as a Geoscientist-in-Training (Member ID 10710).

4. I have previous geophysical work experience during and following my education.

5. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Ltd.**

6. I am responsible for assisting with the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my opinion based on my consideration of the information available to me at the time of writing this report.

Melanie Postman, GIT, B.Sc.
Junior Geophysicist

Larder Lake, ON
March 25, 2019

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Mandy Lim, hereby declare that:

1. I am a Geoscientist-in-Training with residence in Virginiatown, Ontario and am presently employed as a Junior Geophysicist with Canadian Exploration Services Ltd. of Larder Lake, Ontario.
2. I graduated with a Bachelor of Science Honours specialization degree in earth sciences, with focus on geophysics from Memorial University of Newfoundland, in St. John's, Newfoundland, in 2018.
3. I am a member of the Professional Engineers and Geoscientists Newfoundland and Labrador as a Geoscientist-in-Training under registration number G4352.
4. I have previous geological and geophysical work experience during my education.
5. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Ltd**.
6. I am responsible for assisting with the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my opinion based on my consideration of the information available to me at the time of writing this report.

Mandy Lim, GIT, B.Sc.
Junior Geophysicist

Larder Lake, ON
March 25, 2019

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Andrew Salerno, hereby declare that:

1. I am a soon-to-be Geoscientist-in-Training with residence in Virginiatown, Ontario and am presently employed as a Junior Geologist with Canadian Exploration Services Ltd. of Larder Lake, Ontario.

2. I graduated with a Bachelor of Science Honors specialization in geology from the University of Waterloo, in Waterloo, Ontario, in 2018.

3. I am currently undergoing the application process to register as a Geoscientist-in-Training to later become a practicing member of the Association of Professional Geoscientists.

4. I do not have nor expect an interest in the properties and securities of **Battery Mineral Resources Ltd.**

5. I am responsible for assisting with the final processing and validation of the survey results and the compilation of the presentation of this report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Andrew Salerno, B.Sc.
Junior Geologist
(non-Professional)

Larder Lake, ON
March 25, 2019

APPENDIX B

IRIS V-FullWaver Receiver[4]

2 CHANNELS IP FULL WAVE RECORD

• 2 simultaneous dipoles
• Several weeks recording
• Time stamped data

V-Full Waver: this logger for electrical signal is a new concept of compact and low consumption unit designed for advanced Time Domain Induced Polarization, Resistivity and SP measurements. It can work in all field conditions, small, discrete, autonomous and can record continuously without operator.

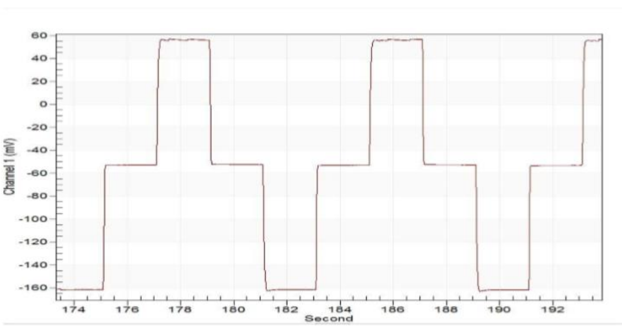
Compactness: light, discrete and easy to setup on the field, even on remote areas. Autonomous two dipoles logger, no need of the operator during acquisition. V-Full Waver allows a high productivity for dipole-dipole, gradient, extended pole-pole and other arrays. A network of several tens of channels can be quickly installed on the field for deep exploration and advanced processing (perpendicular dipoles, remote reference...)

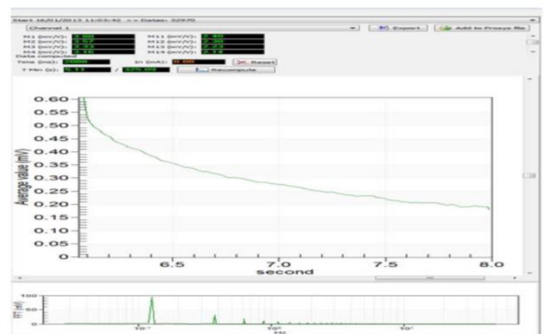
Internal GPS: an integrated GPS, very accurate and providing PPS signal (one pulse per second) allows to store all time series with time information. This is crucial to process data from several V-Full Waver loggers installed in a same area. This is also useful to correlate with injection dipole waveform, in case this has also been recorded with a I-Full Waver logger.

[4] Information obtained from http://www.iris-instruments.com/Pdf_file/V_fullwaver.pdf

High resolution: samples are recorded every 10 (ten) milliseconds (100 Hz sampling frequency). Data from several recorders can be merged and processed together with the Full Wave Viewer program delivered with the system. All data is synchronized through the GPS-PPS time stamping. A post acquisition processing permits to improve the signal-to-noise ratio. This also allows good quality IP data for deep investigations and for noisy areas.

Internal memory: the memory can store up to one month recording time. Then data can directly be transferred to a USB key in a few seconds.





TECHNICAL SPECIFICATIONS

• Max. input voltage: 15 V
• Protection: up to 1 000 V
• Accuracy: 0.2 % typical
• Resolution: 10 µV
• Sampling rate: 10 milli seconds (100 Hz)
• Induced Polarization (chargeability) measured every 10 milliseconds (200 IP windows for a 2 sec pulse)
• Input impedance: 100 MΩ
• Low pass filter Cut off frequency: 10 Hz
• Upper frequency which can be resolved: 50 Hz
• Frequency resolution: up to 34 micro Hz
• Internal GPS with PPS (one pulse per second)
• Time resolution: 250 micro seconds (time stamped samples)
• Battery test
• Contact resistance check

GENERAL SPECIFICATIONS

• LCD display, graphic and alpha numeric with 16 lines of 40 characters
• Data flash memory: one-month recording
• After acquisition: possibility of data storage on a USB key (8 GB or more).
• Power supply: internal Li-Ion rechargeable battery; optional external 12V standard car battery can be also used

- Autonomy: 20 operating hours with the internal Li-Ion battery
- Weather proof IP 67
- Shock resistant resin NK-7, case with handle
- Operating temperature: -20 °C to +70 °C
- Dimensions: 31 x 25 x 15 cm
- Weight: 2.8 kg

APPENDIX B

IRIS I-FullWaver Current Monitor[5]

IP Fullwave Record

- Recording injected current
- Several weeks recording
- Time stamped data

Fullwaver: this logger for electrical signal is a new concept of compact and low consumption unit designed for advanced Time Domain Induced Polarization, Resistivity and SP measurements. It can work in all field conditions, small, discrete, autonomous and can record continuously without operator. I-Fullwaver is connected in series on the AB injection line, it measures and logs very accurately the injected current IAB.

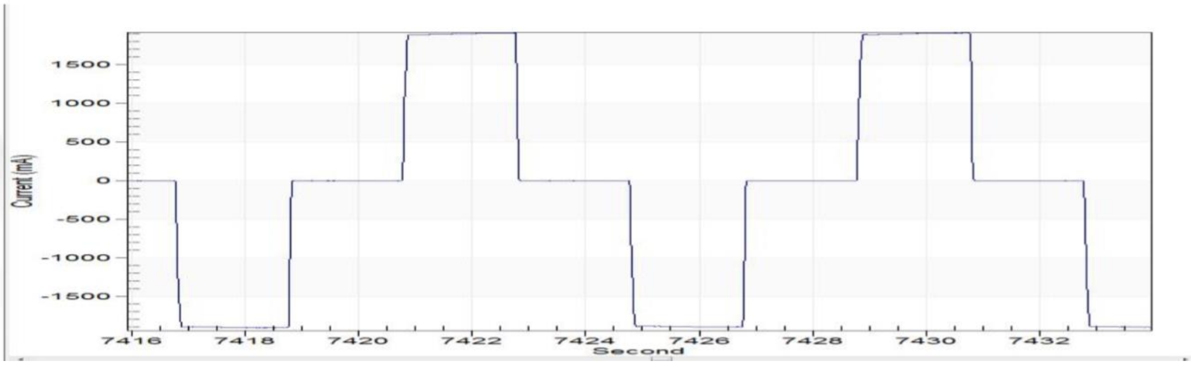
Compactness: light, discrete and easy to setup on the field, even on remote areas. This autonomous logger does not need any operator during the acquisition. I-Fullwaver is connected close to the transmitter or close to any injection electrode

Integrated GPS: an integrated gps, very accurate and providing PPS signal (one pulse per second) allows to store all time series with time information. This is crucial to correlate and process data with V-Fullwaver receiver loggers installed in a same area. This information displays the behaviour of the transmitter, its regulation specifications and the value of Iab in order to compute accurately the apparent resistivity.

[5] Information obtained from http://www.iris-instruments.com/Pdf_file/I_fullwaver.pdf

High resolution: samples are recorded every 10 (ten) milliseconds (100 Hz sampling frequency). Data from several recorders (for current and received voltages) can be merged and processed together with the FullWaveViewer program delivered with the system. All data is synchronized through the GPS-PPS time stamping. A post acquisition processing allows to improve the signal-to-noise ratio, giving good quality IP data for deep investigations in noisy areas.

Internal memory: the memory can store up to three months recording time. Then data can directly be transferred to a USB key in a few seconds.



TECHNICAL SPECIFICATIONS

- Current range: +/- 25 000 mA
- Current resolution: 0.1 mA
- Accuracy: +/- 1 mA
- Protection: up to 50 A and 3 000 V
- Magnetic sensor
- Magnetization offset (offset memory): up to 0.05%
- Offset calibration
- Sampling rate: 10 milliseconds (100 Hz)
- Integrated GPS with PPS (one pulse per second)
- Time resolution: 250 micro seconds (time stamped samples)
- Battery test

GENERAL SPECIFICATIONS

- LCD display, alpha numeric with 4 lines of 20 characters
- Data flash memory: three months recording
- After acquisition: possibility of data storage on a USB key (8 Gb or more).
- Power supply: internal Li-Ion rechargeable battery; optional external 12V standard car battery can be also used
- Autonomy: 20 operating hours with the internal Li-Ion battery.
- Weather proof IP 67
- Shock resistant resin NK-7, case with handle
- Operating temperature: -20 °C to +70 °C
- Dimensions: 31 x 25 x 15 cm
- Weight: 3.0 kg

APPENDIX B

GGD II 5kW

SPECIFICATIONS

- Protection against short circuits even at 0 ohms
- Output Voltage range: 150V to 2400V in 14 steps
- Power source is a standard 220/240V, 20/60 Hz source
- Displays electrode contact, transmitting power and current

ELECTRICAL CHARACTERISTICS

- Standard Time Base of 2 seconds for time domain – 2 seconds on, 2 seconds' off
- Optional Time Base of DC, 0.5, 1, 2, 4 or 8 seconds
- Output Current Range, 0.030 to 10A
- Output Voltage Range, 150 to 2400V in 14 steps
- Ability to Link 2 GDD transmitters to double power output

CONTROLS

- Switch ON/OFF
- Output Voltage Range Switch: 150V, 180V, 350V, 420V, 500V, 600V, 700V, 840V, 1000V, 1200V, 1400V, 1680V, 2000V and 2400V

DISPLAYS

- Output Current LCD: reads +- 0.0010A

- Electrode Contact Displayed when not Transmitting
- Output Power Displayed when Transmitting
- Automatic Thermostat controlled LCD heater for LCD
- Total Protection Against Short Circuits
- Indicator Lamps Indicate Overloads
-

GENERAL SPECIFICATIONS

- Weather proof
- Shock resistant pelican case
- Operating temperature: -40 °C to +65 °C
- Dimensions: 26 x 45 x 55 cm
- Weight: 40 kg

APPENDIX C

REFERENCES

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APPENDIX D

DIGITAL DATA

The digital data contains

- PDF copy of this report
- PDF copy of the maps
- Raw data in binary format
- Raw data in CSV format
- Ascii XYZ of inversion results
- RES3DINV INV output of inversion results
- Text document of electrode GPS Coordinates
- KMZ of final survey layout
- Packed Oasis maps
- Oasis databases
- 3D Oasis voxels created

APPENDIX E

LIST OF MAPS (IN MAP POCKET)

Grid Sketch (1:5000)

1) Q2594-Battery-ShiningTree-North-3DIP-Layout-Claims

IP Plan Map (1:5000)

2) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-400MSL
3) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-350MSL
4) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-300MSL
5) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-250MSL
6) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-200MSL
7) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-150MSL
8) Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-100MSL
9) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-400MSL
10) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-350MSL
11) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-300MSL
12) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-250MSL
13) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-200MSL
14) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-150MSL
15) Q2594-Battery-ShiningTree-North-3DIP-INV-RES-100MSL

TOTAL MAPS = 15

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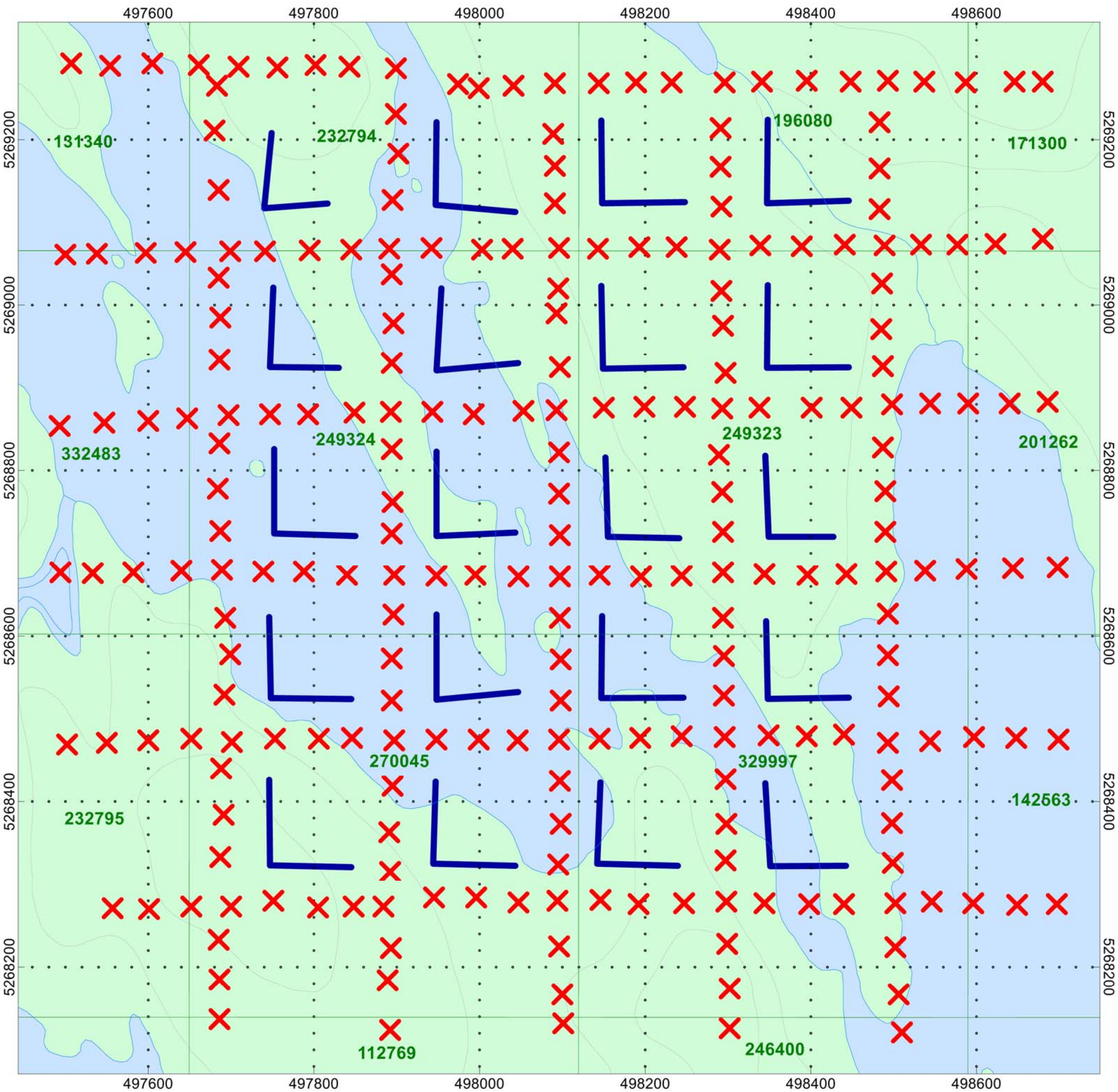


Scale 1:5000

50 0 50 100 150 200 250 300

(meters)

NAD83 / UTM zone 17N

Transmitter Locations

Dipoles

BATTERY MINERAL RESOURCES

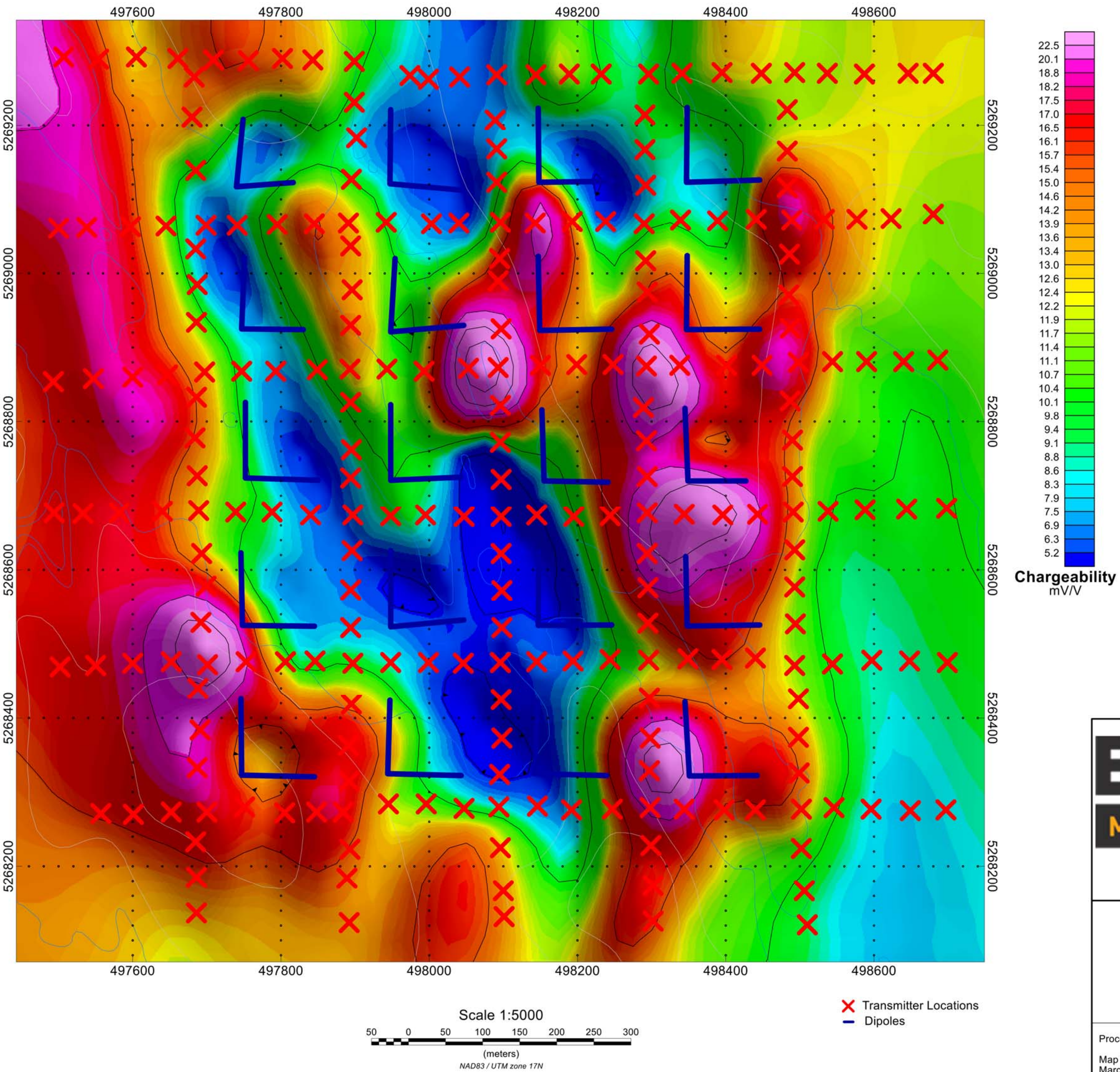
Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Survey Layout
Operational Claim Fabric

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-Layout-Claims



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 400m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 5 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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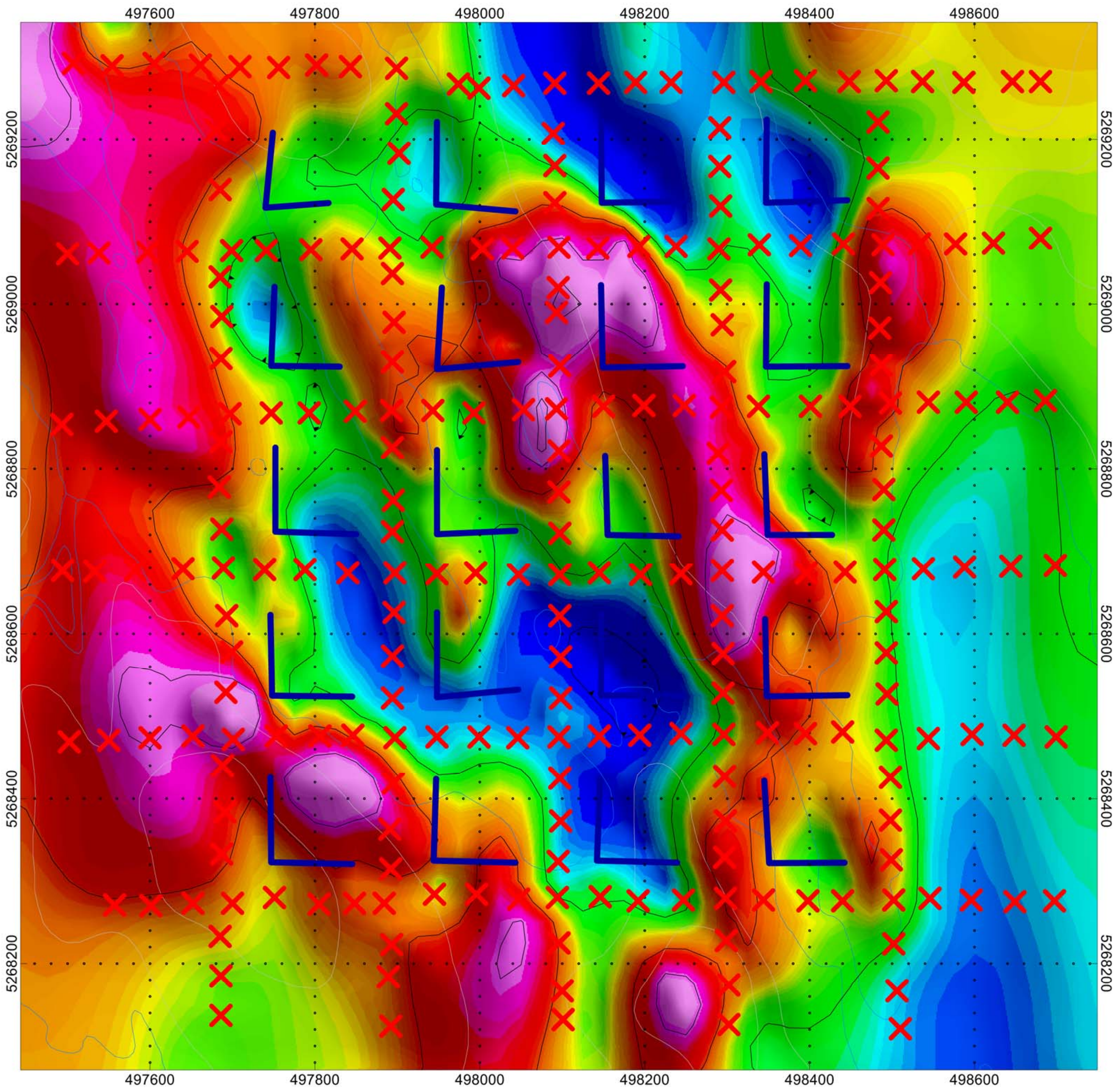
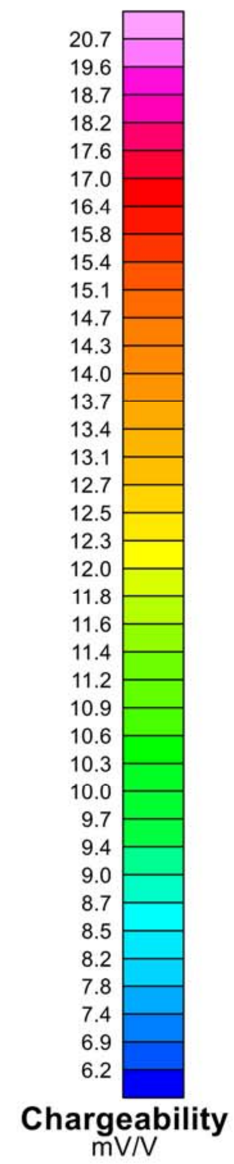
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-400MSL





Transmitter Locations

Dipoles

Scale 1:5000

50 0 50 100 150 200 250 300

(meters)

NAD83 / UTM zone 17N

BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 350m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 5 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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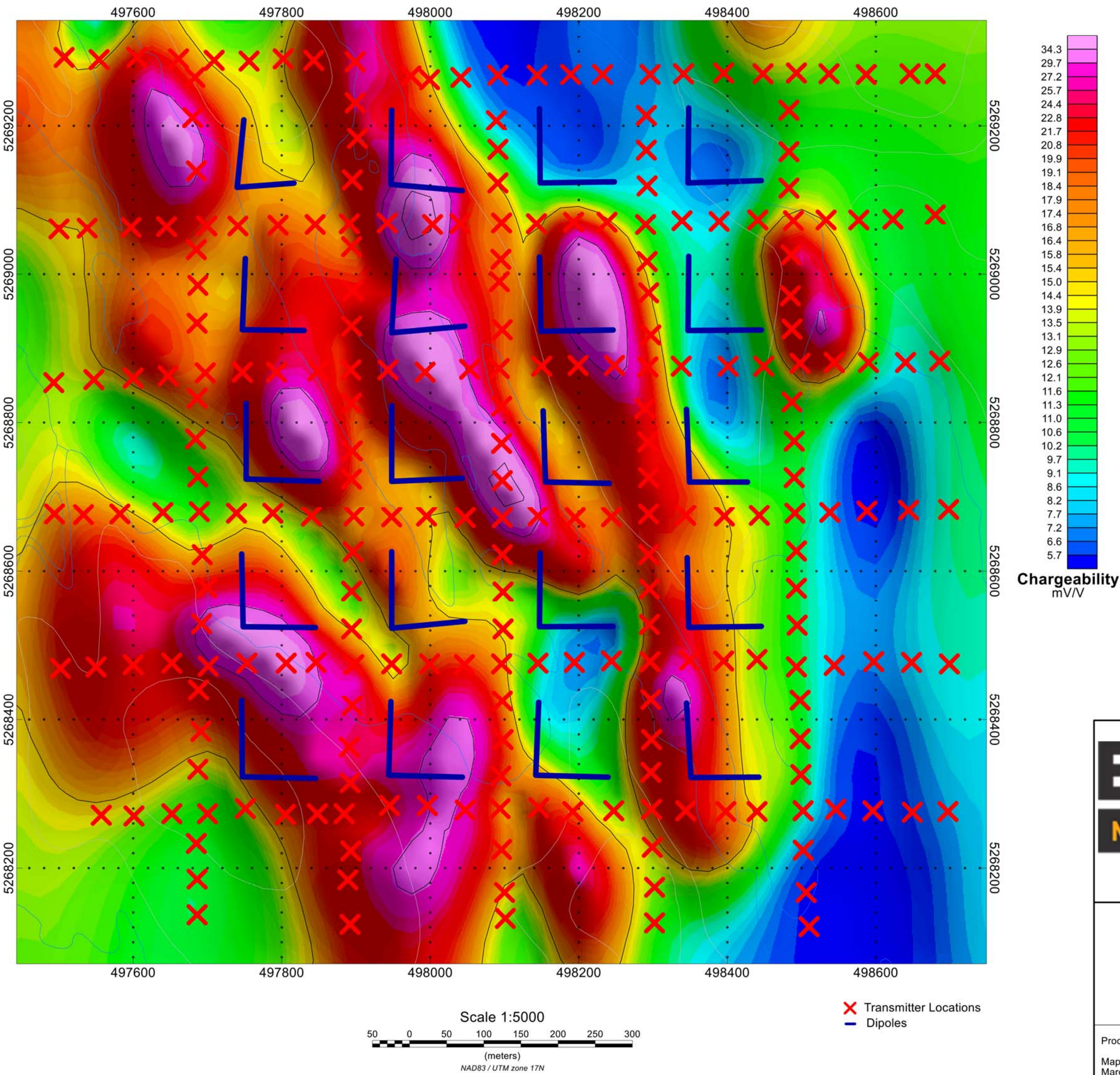
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-350MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 300m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 15 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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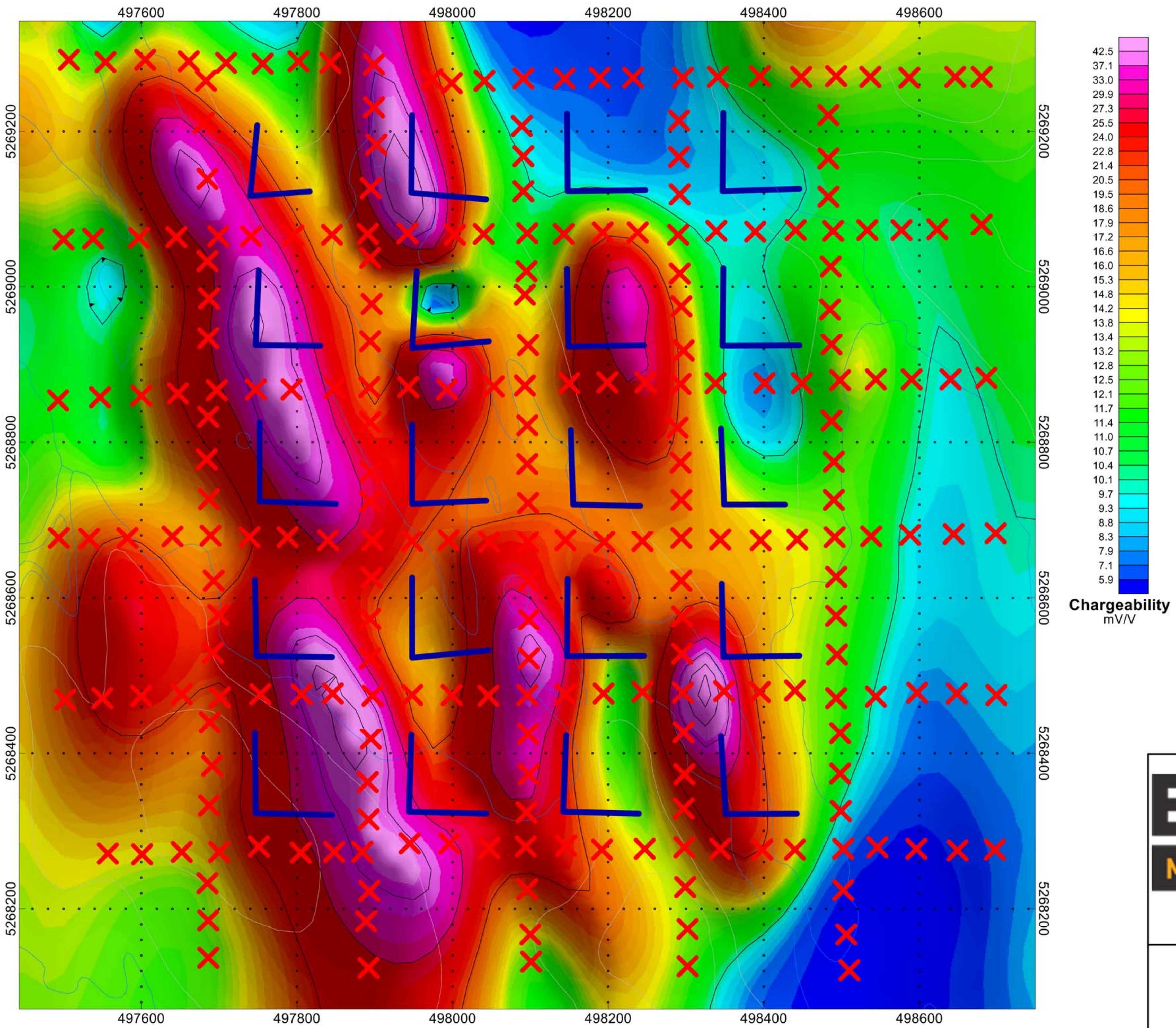
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-300MSL



Scale 1:5000

50 0 50 100 150 200 250 300

(meters)

NAD83 / UTM zone 17N

Transmitter Locations

Dipoles

BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 250m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 10 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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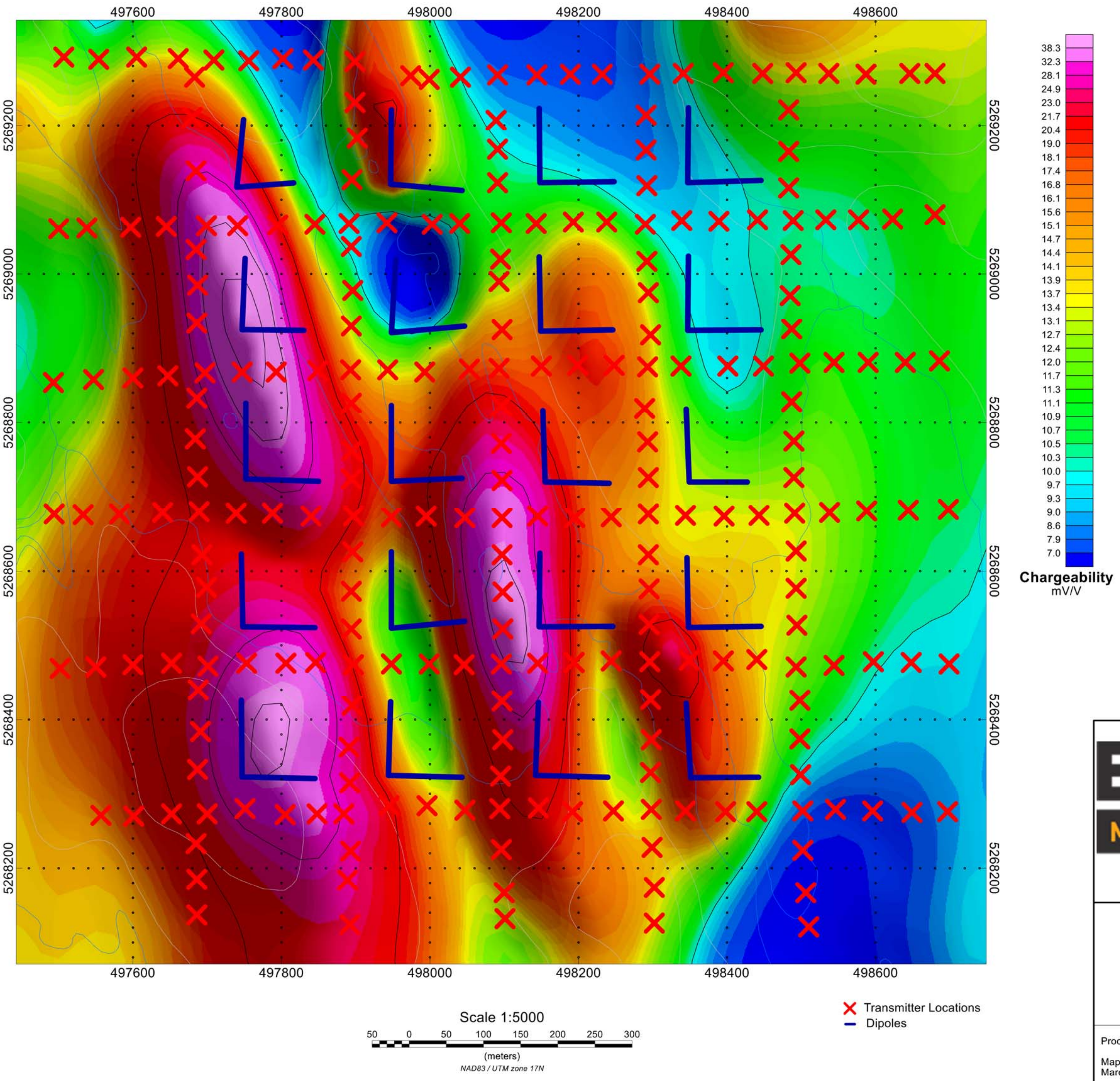
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-250MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 200m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 10 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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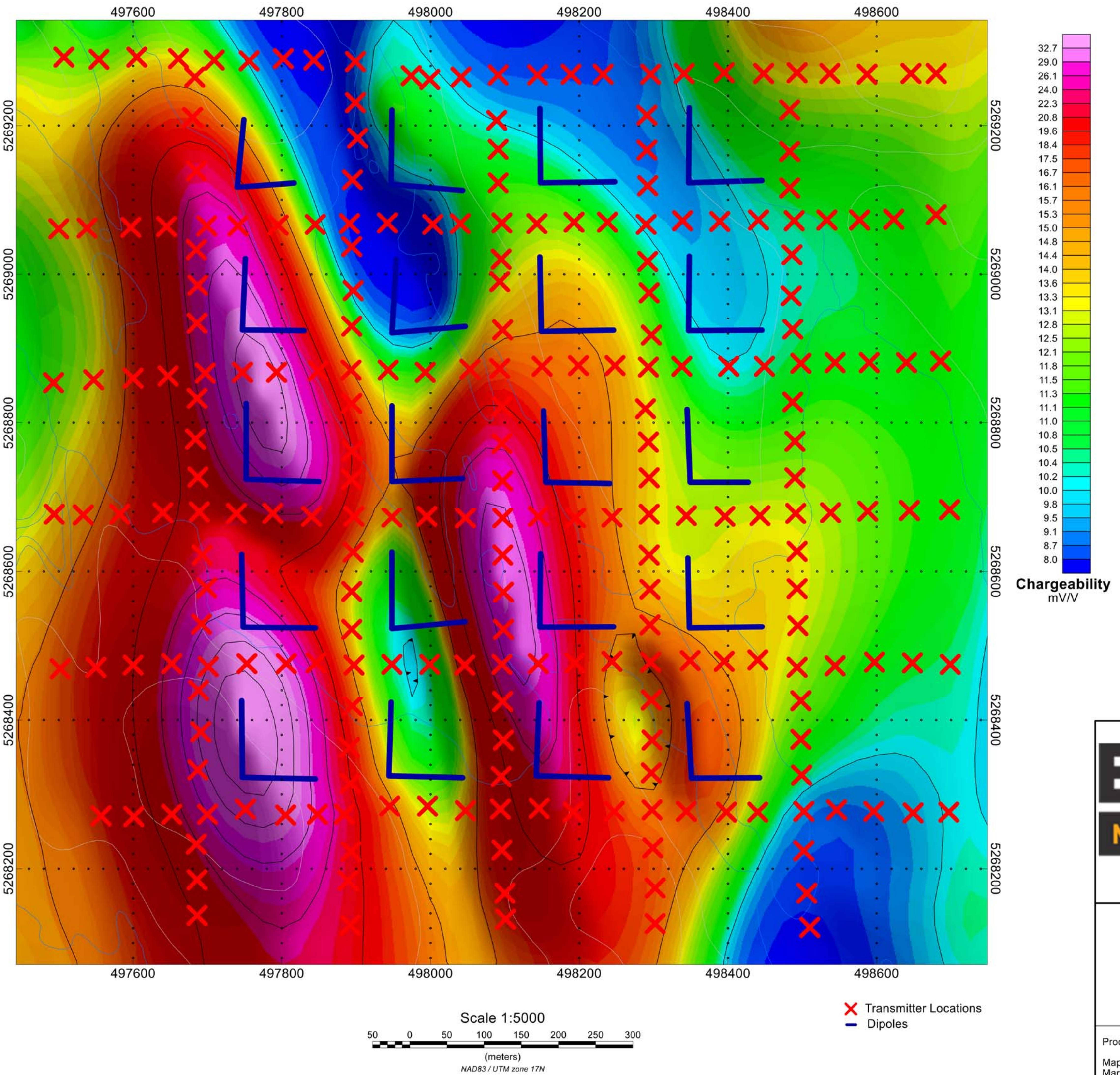
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-200MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 150m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 5 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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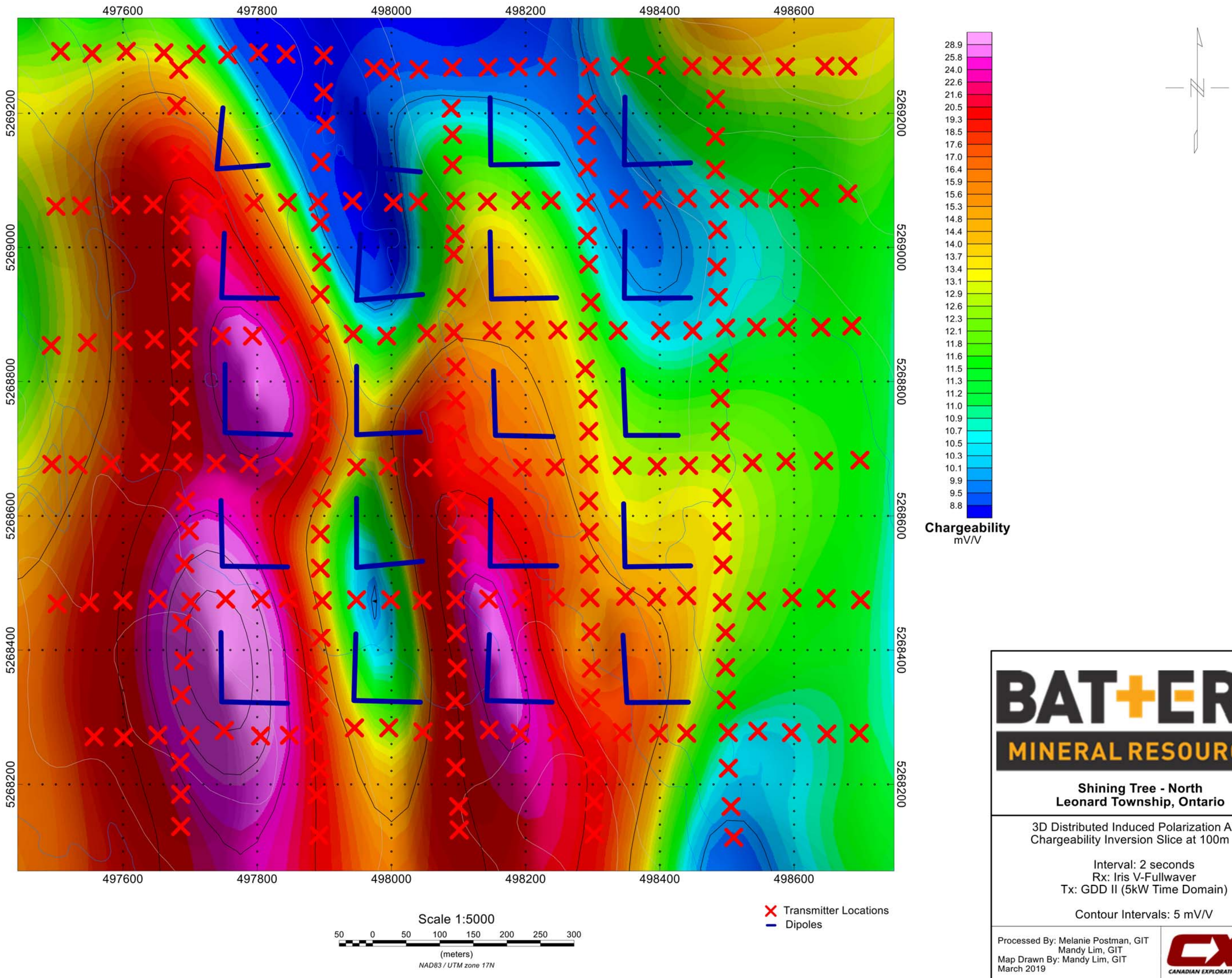
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-150MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Chargeability Inversion Slice at 100m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 5 mV/V

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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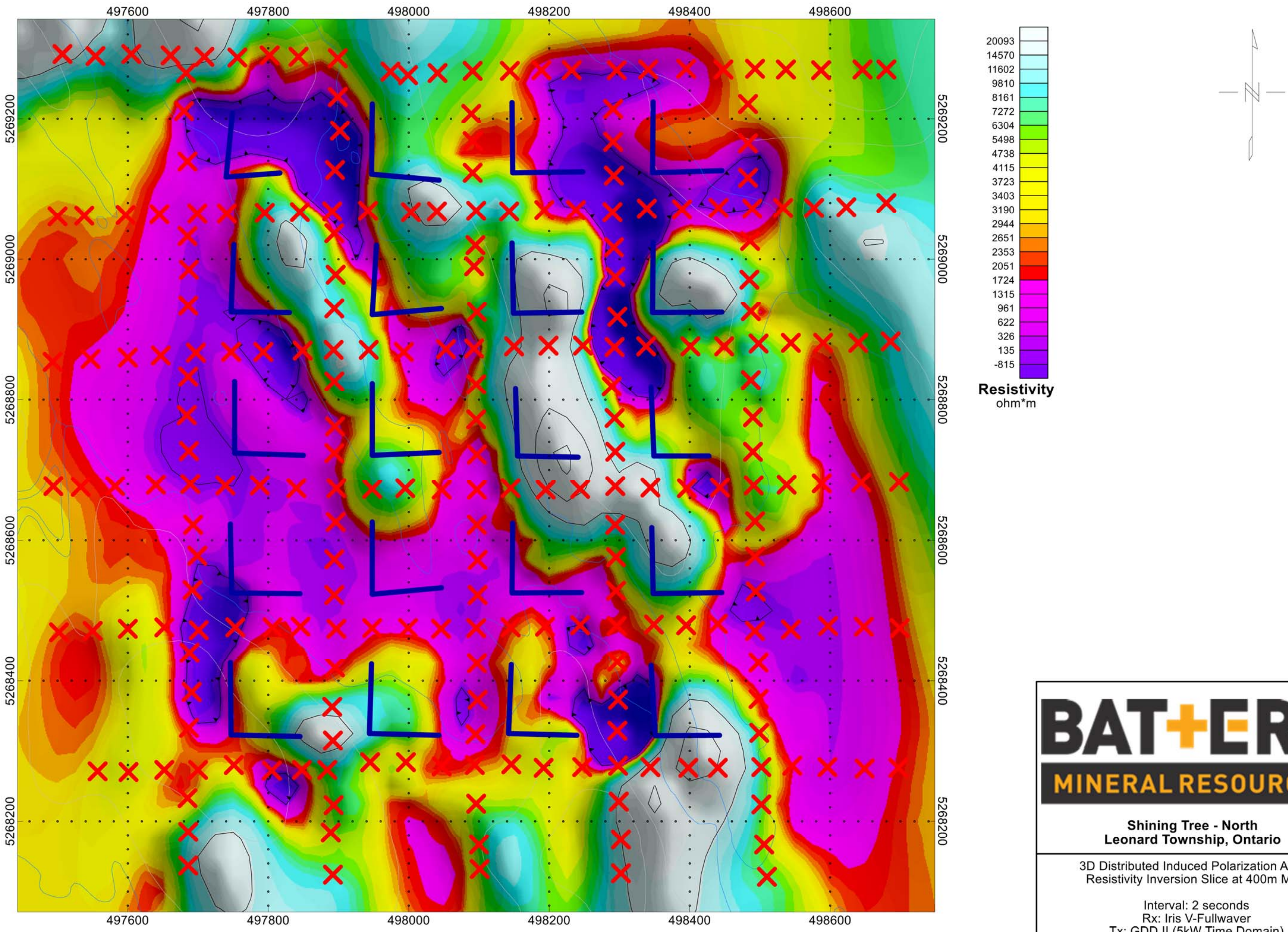
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-CHR-100MSL



Transmitter Locations
Dipoles

Scale 1:5000
50 0 50 100 150 200 250 300
(meters)
NAD83 / UTM zone 17N

BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 400m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 15 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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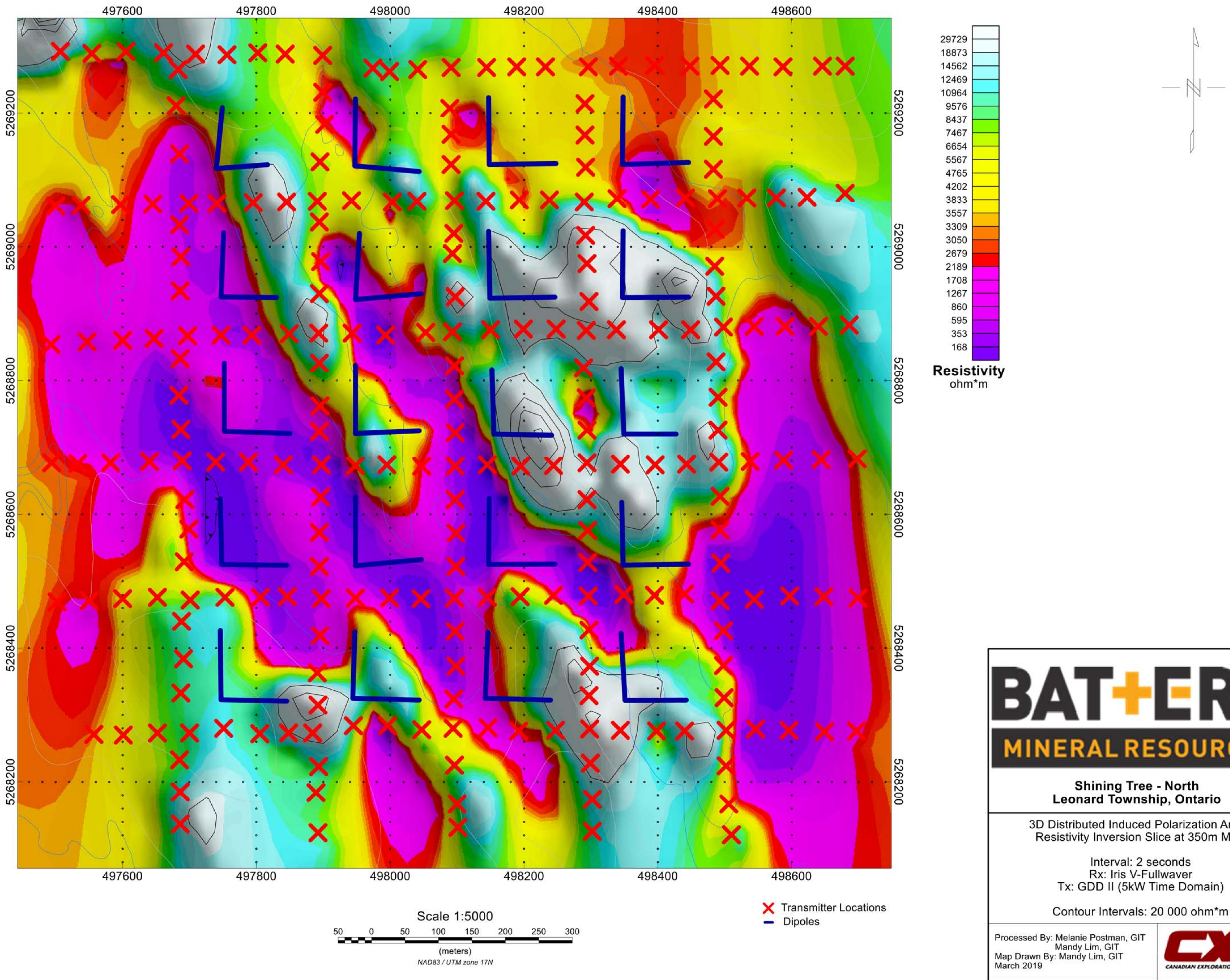
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-400MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 350m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 20 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

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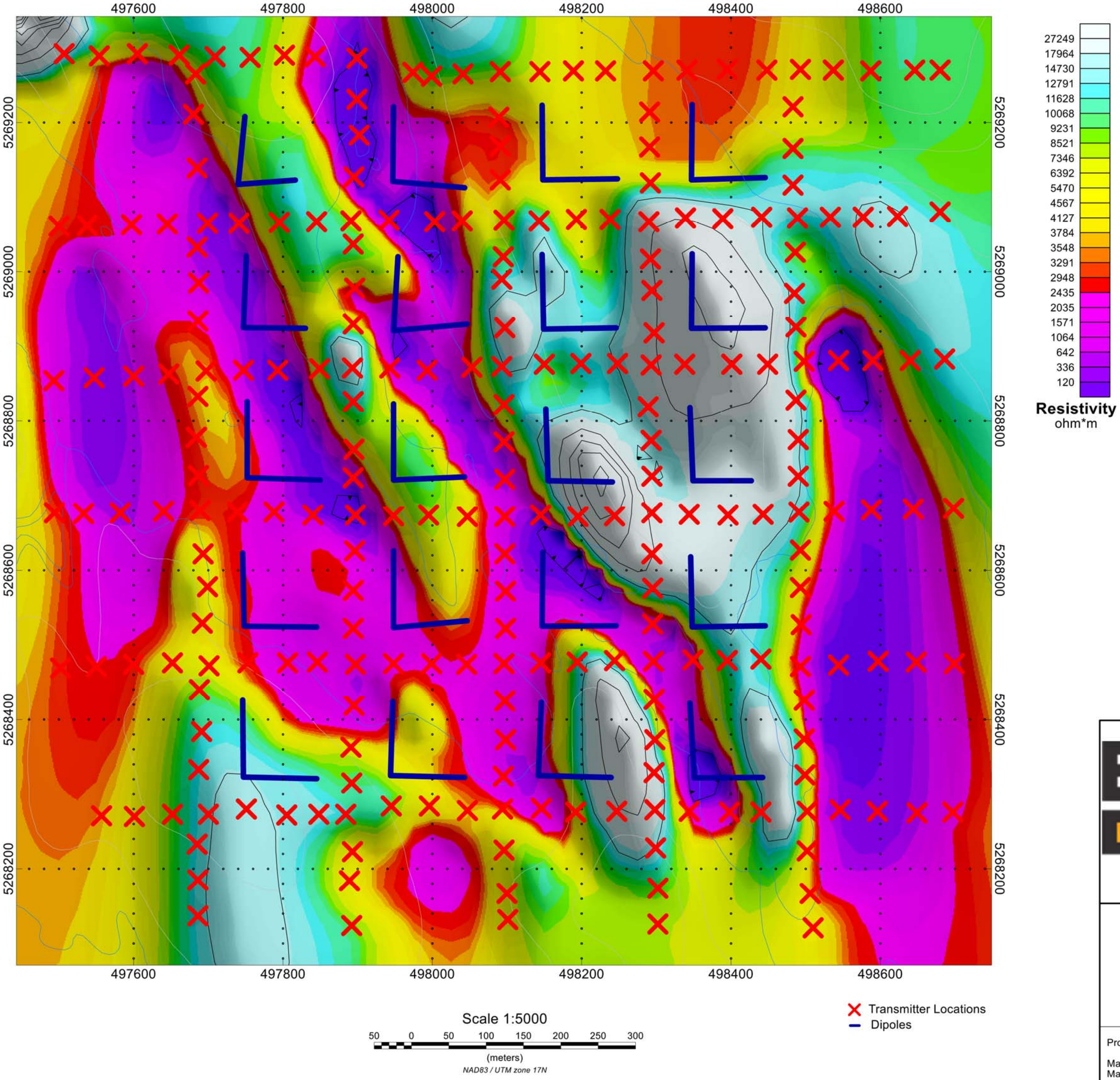
Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-350MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 300m MSL

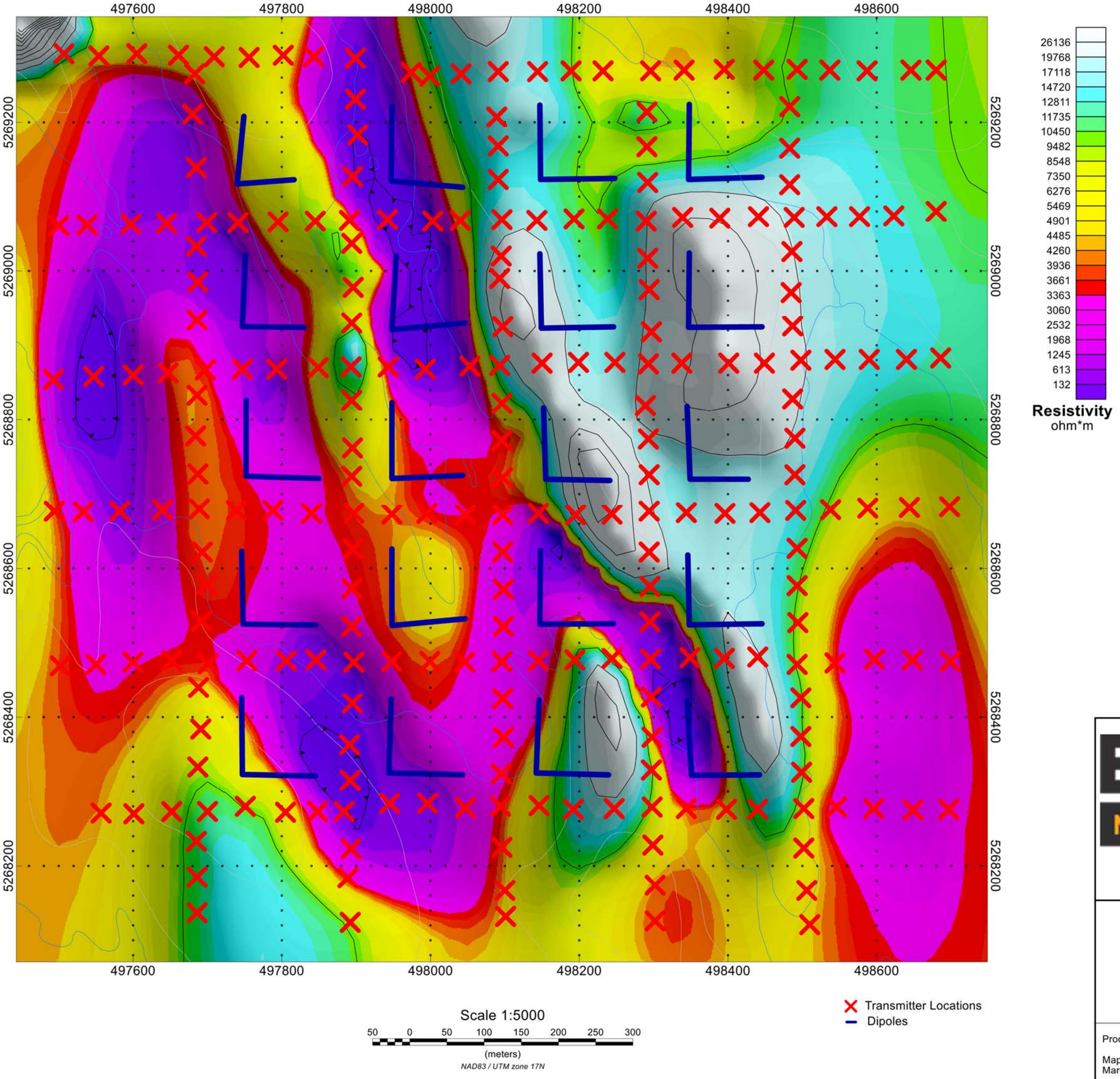
Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 15 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-300MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 250m MSL

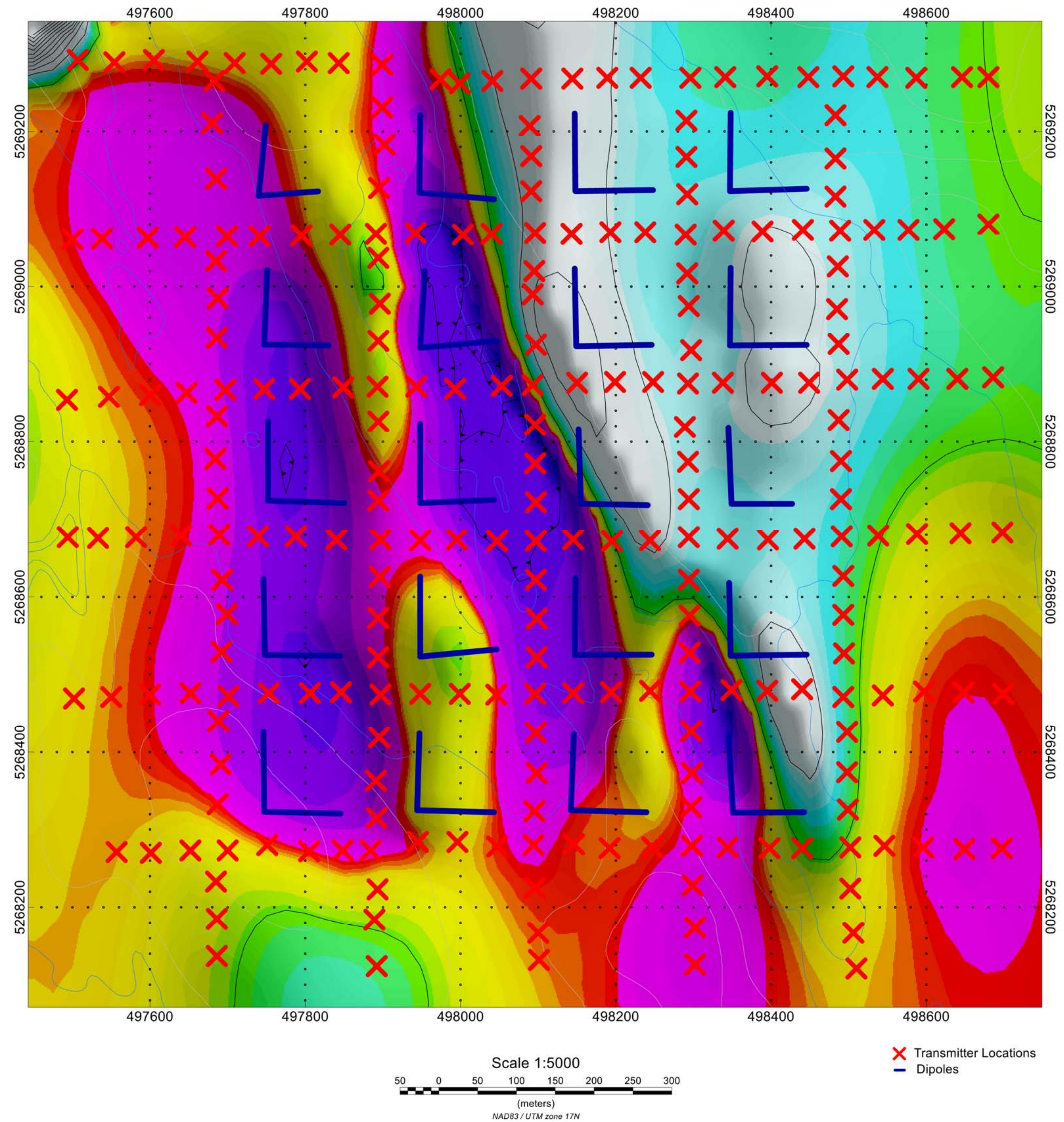
Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

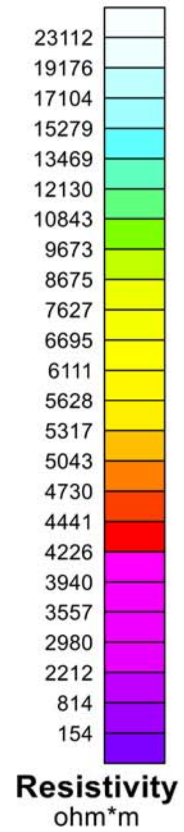
Contour Intervals: 10 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-250MSL





BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 200m MSL

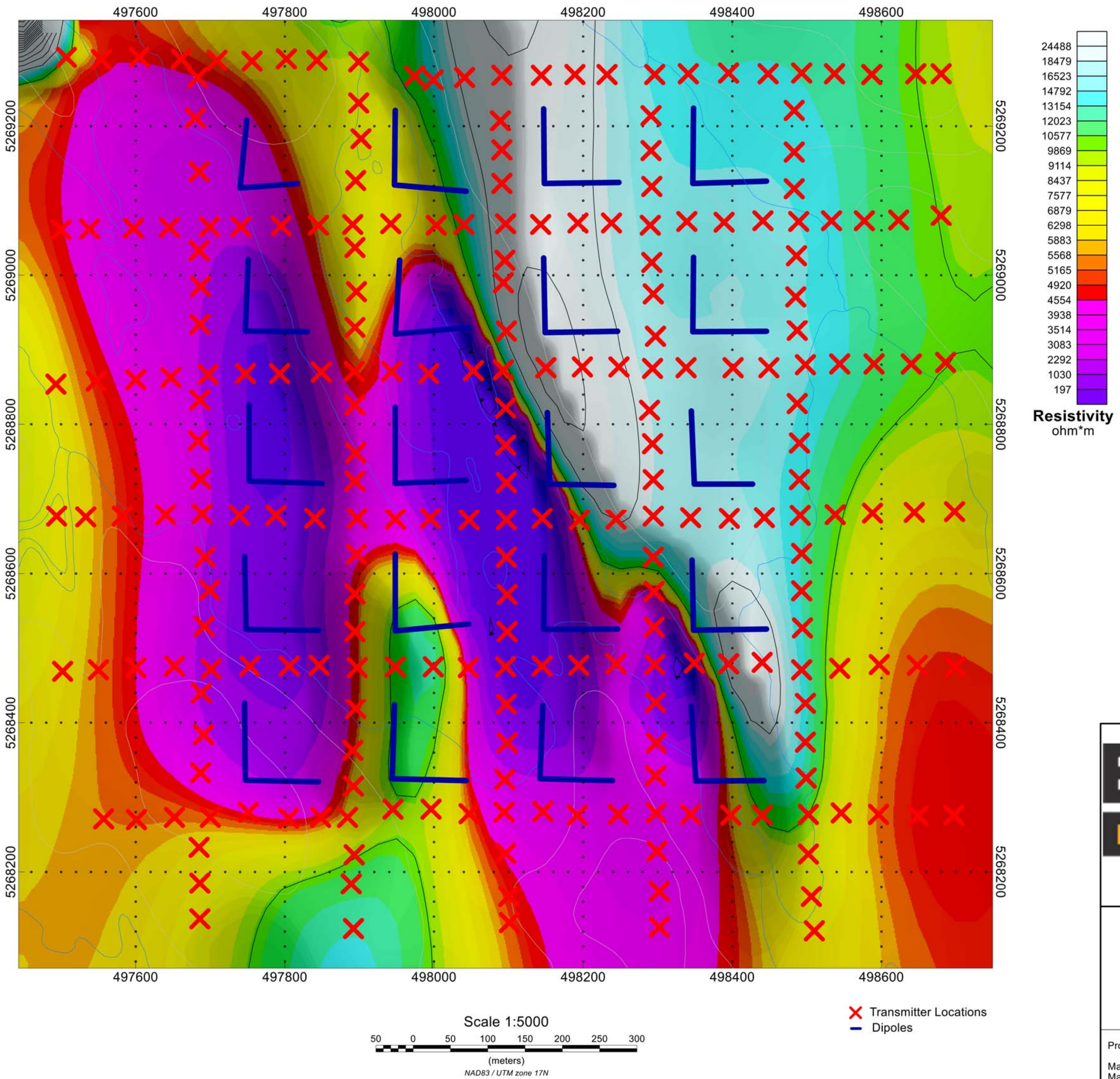
Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 10 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-200MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 150m MSL

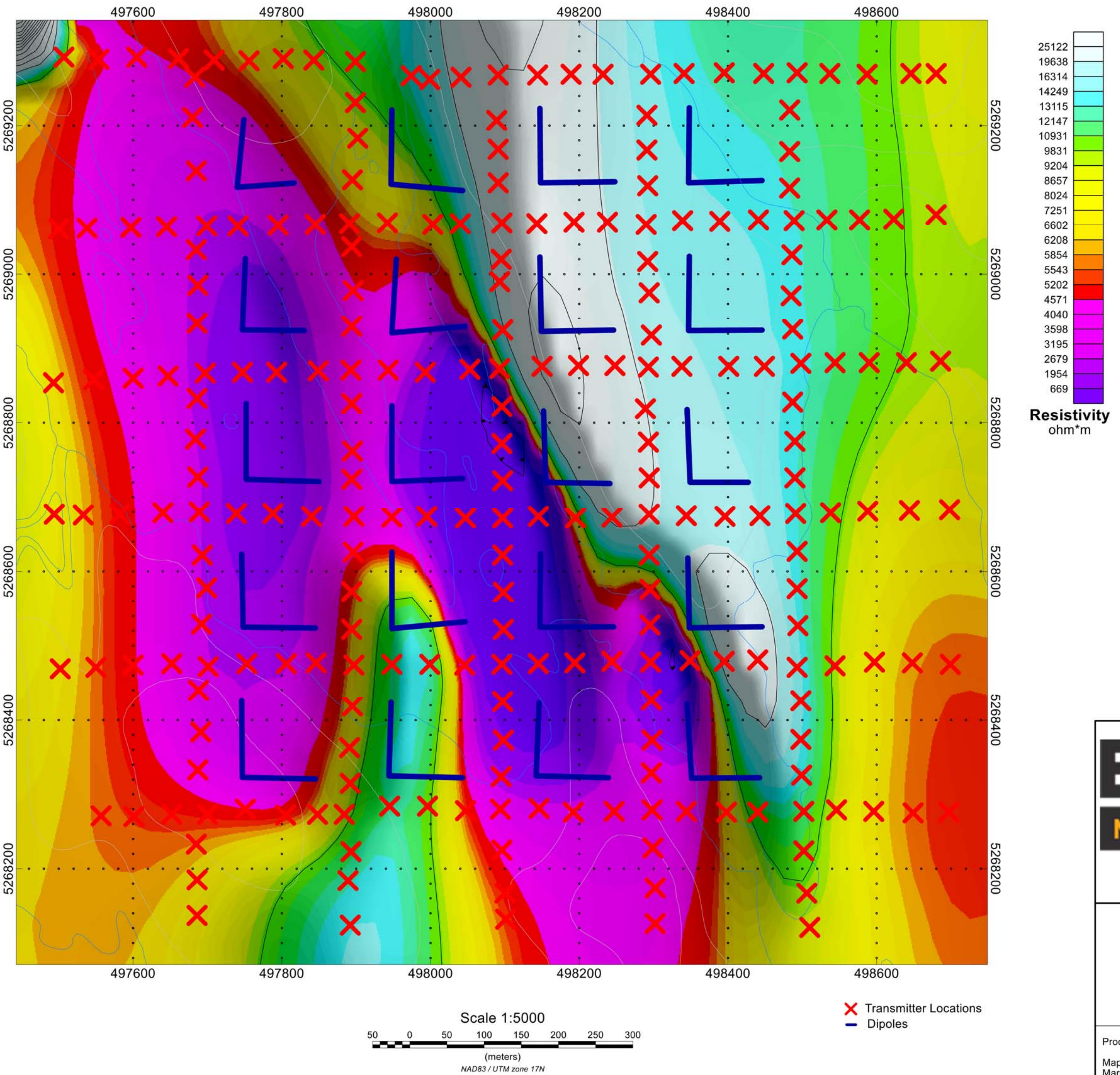
Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 10 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-150MSL



BATTERY MINERAL RESOURCES

Shining Tree - North
Leonard Township, Ontario

3D Distributed Induced Polarization Array
Resistivity Inversion Slice at 100m MSL

Interval: 2 seconds
Rx: Iris V-Fullwaver
Tx: GDD II (5kW Time Domain)

Contour Intervals: 10 000 ohm*m

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Map Drawn By: Mandy Lim, GIT
March 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2594-Battery-ShiningTree-North-3DIP-INV-RES-100MSL