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Abstract

In the spring of 2019, Canadian Exploration Services Limited (CXS) performed a detailed 3D distributed induced polarization (3D IP) survey for Battery Mineral Resources Limited over the McAra Project in Dufferin Township. Tom Weis a geophysical consultant for BMR integrated the 3D IP models (produced by CXS) with the previous airborne data to interpret new exploration targets.

BATTERY MINERAL RESOURCES LTD.

McAra Project – South Grid
3DIP Interpretation

C Jason Ploeger, P.Geo. **April 20, 2020**

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1. SURVEY DETAILS

1.1 Project Name

This project is known as the **McAra Project – South Grid**

1.2 Client

Battery Mineral Resources Limited

14579 Government Road
Larder Lake, Ontario
P0K1L0

1.3 Overview

In the spring of 2019, Canadian Exploration Services Limited (CXS) performed a detailed 3D distributed induced polarization (3D IP) survey for Battery Mineral Resources Limited over the McAra Project in Dufferin Township. Tom Weis a geophysical consultant for BMR integrated the 3D IP models (produced by CXS) with the previous airborne data to interpret new exploration targets.

1.4 Objective

The objective of the interpretation was to obtain recommendations for targeting further exploration programs.

1.5 Survey Work Being Interpreted

Survey/Physical Activity	Dates	Total Days in Field	Total Line Kilometres
Airborne Magnetometer and Spectrometer Surveys	2016-2018		
Line Cutting	March 16 to March 22, 2019	7	14.2
3D Distributed IP	April 2 to April 11, 2019	10	14.15

Table 1: Previous Surveys Being Interpreted

1.6 New Work Being Reported On

Survey/Physical Activity	Dates	Performed By
Interpretation	January 30 to February 28, 2020	Thomas V Weis and Associates Inc. of Colorado

Table 2: Previous Surveys Being Interpreted

1.7 Summary of Results, Conclusions & Recommendations

Four IP targets, one resistivity target and one magnetic target have been identified from the McAra South geophysical data sets.

The McAra South area geophysics is dominated by the intersection of two diabase units. The older Proterozoic age Nipissing diabase intrusive which strikes N-S and the younger WNW diabase dike/structure. These intrusive bodies show up clearly in the 2016/2018 helicopter magnetic data set.

The IP responses of interest occur along the edge of the Nipissing intrusive body. This is exactly where historic cobalt mineralization has been found.

The resistivity data set maps the Nipissing diabase and the WNW diabase dike as resistivity lows which are interpreted here to be a function of alteration (and not weathering).

It is recommend to Extend the 3-D grid to the North and East from the current grid. Add one grid to the North and one grid to the east.

1.8 Co-ordinate System

Projection: UTM zone 17N
Datum: NAD83
UTM Coordinates near center of grid: 503500 Easting, 5242951 Northing

2. SURVEY LOCATION DETAILS

2.1 Location

The McAra Project – South Grid is in Dufferin Township, approximately 37 kilometres southwest of Gowganda, Ontario or 33 km southeast of Shining Tree, Ontario.

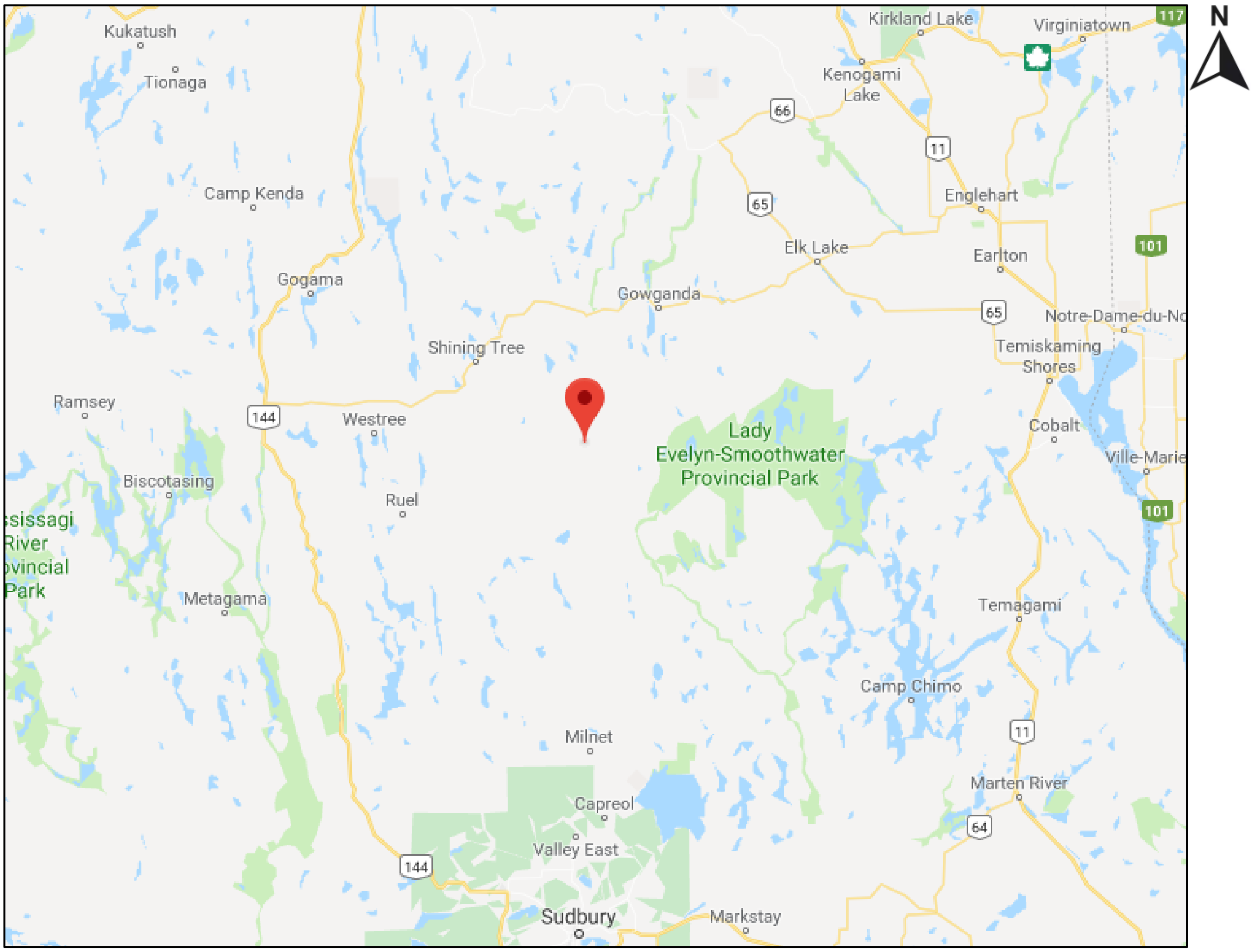

Figure 1: Location of the McAra Project - South Grid (Map data ©2020 Google)

2.2 Access

Access to the property was attained with a 4x4 truck via Beauty Lake Road. Beauty Lake Road heads south from Hwy 560, approximately 23 kilometres west of Elk Lake, Ontario. Beauty Lake Road was travelled for approximately 60 kilometres to the survey grid.

2.3 MINING CLAIMS

The survey area covers a portion of mining claims 182648, 125201, 125200, 218509, 238087, 125202, 344131, 304733, 137530, 201678, 312262 and 201677 located in Dufferin Township, within the Larder Lake Mining Division.

Cell Number	Provincial Grid Cell ID	Ownership of Land	Township
182648	41P07E346	Battery Mineral Resources Limited	Dufferin
125201	41P07E347	Battery Mineral Resources Limited	Dufferin
125200	41P07E348	Battery Mineral Resources Limited	Dufferin
218509	41P07E349	Battery Mineral Resources Limited	Dufferin
238087	41P07E366	Battery Mineral Resources Limited	Dufferin
125202	41P07E367	Battery Mineral Resources Limited	Dufferin
344131	41P07E368	Battery Mineral Resources Limited	Dufferin
304733	41P07E369	Battery Mineral Resources Limited	Dufferin
137530	41P07E386	Battery Mineral Resources Limited	Dufferin
201678	41P07E387	Battery Mineral Resources Limited	Dufferin
312262	41P07E388	Battery Mineral Resources Limited	Dufferin
201677	41P07E389	Battery Mineral Resources Limited	Dufferin

Table 3: Mining Lands and Cells Information

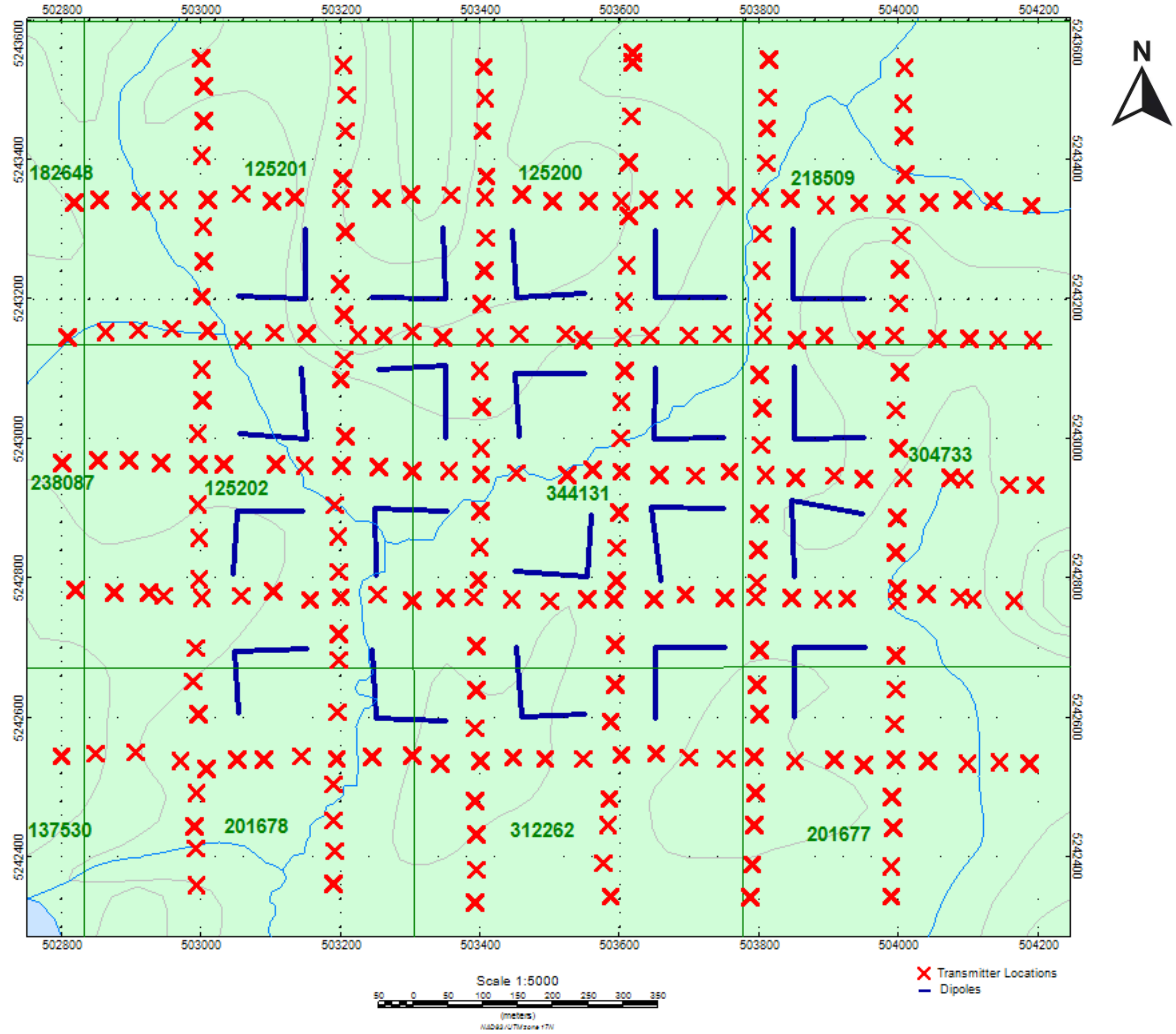

Figure 2: Operational Claim Map with 3D IP Electrode Sites – Red=Transmit Locations – Blue=Read Dipole

2.4 Property History

Some historical exploration has been carried out over the years 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).

- **1984: Golden Shield Resc Ltd, Mcfinley Red L Gold Mines Ltd (File 41P06SE0002)**

Geochemical Assaying and Geological Mapping – Browning Townships

Field mapping and assaying of 128 samples consisting mostly of middle Lorraine quartzites and pebble conglomerates occurred. Late cross cutting quartz veins in upper Lorraine quartzites and in diabase sills contain sub-economic concentrations of gold (0.08 to 0.10 oz. Au/Ton).

- **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 McAra 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:

Most of the Dufferin township is covered by flat lying sediments of the Huronian Supergroup. These are mainly quartzites and quartz-pebble conglomerates of the Lorrain Formation. Intruding these sedimentary sequences are dykes and sills of Nipissing diabase. Massive to foliated granodiorite to granite outcrops may also be found in the area.

Archean basement rock is found as isolated outliers northwest of McKee Lake in Dufferin township and extend to the north into the southern part of North Williams township. These formations which consist mostly of mafic metavolcanic and metasedimentary rocks host most of the mineralization found in the area. Intruding these units and underlying the Huronian is a body of dark red, coarse grained granite.

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
April 20, 2020

APPENDIX B

REFERENCES

Bauer, R.L., Czeck, D.M., Hudleston, P.J., and Tikoff, B., 2011, Structural geology of the subprovince boundaries in the Archean Superior Province of northern Minnesota and adjacent Ontario. In: Miller, J.D., Hudak, G.J., Wittkop, C., McLaughlin, P.I. (Eds.), Archean to Anthropocene: Field Guides to the Geology of the Mid-Continent of North America: Geological Society of America Field Guide 24, p. 203–241.

Bleeker, W., 2015, Synorogenic gold mineralization in granite-greenstone terranes: the deep connection between extension, major faults, synorogenic clastic basins, magmatism, thrust inversion, and long-term preservation, In: Targeted Geoscience Initiative 4: Contributions to the Understanding of Precambrian Lode Gold Deposits and Implications for Exploration, (ed.) B. Dubé and P. Mercier-Langevin; Geological Survey of Canada, Open File 7852, p. 24–47.

Claerbout, J.F., Kuras, O., Meldrum, P.I., Ogilvy, R.O. and Hollands, J., 2006. Electrical resistivity tomography applied to geologic, hydrogeologic, and engineering investigations at a former waste-disposal site. Geophysics, **71**, B231-B239.

Corfu, F., and Andrews, A.J., 1986, A U-Pb age for mineralized Nipissing diabase, Gowganda, Ontario: Canadian Journal of Earth Sciences, v. 23, p.107–109.

Google. (2020). *Location of the McAra Project – South Grid.*

Kenma, A., Binley, A., Ramirez, A. and Daily, W., 2000. Complex resistivity tomography for environmental applications. Chemical Engineering Journal, **77**, 11-18.

Loke, M. H., 2018. Tutorial: 2-D and 3-D electrical imaging surveys. (available for download from www.geotomosoft.com)

Loke, M. H. (1996-2018). Rapid 3-D Resistivity & IP inversion using the least-squares method (For 3-D surveys using the pole-pole, pole-dipole, dipole-dipole, rectangular, Wenner, Wenner-Schlumberger and non-conventional arrays) On land, aquatic, cross-borehole and time-lapse surveys. Geotomo Software Sdn Bhd.

Loke, M.H. and Dahlin, T., 2010. Methods to Reduce Banding Effects in 3-D Resistivity Inversion. Near Surface 2010 – 16th European Meeting of Environmental and Engineering Geophysics 6 – 8 September 2010, Zurich, Switzerland, A16.

Mercier-Langevin, P., Gibson, H.L., Hannington, M.D., Goutier, J., Monecke, T., Dubé, B. and Houlé, M.G., 2014, A special issue on Archean magmatism, volcanism, and ore deposits: part 2. Volcanogenic massive sulfide deposits preface: Economic Geology, v. 109(1), p.1-9.

MNDM & OGSEarth. (2018). *OGSEarth*. Ontario Ministry of Northern Development and Mines.

Ploeger, C Jason, 2019, Q2620-Battery-McAra-South-3DIP-Report, Canadian Exploration Services Limited

Potter, E.G. and Taylor, R.P., 2009, The lead isotope composition of ore minerals from precious metal-bearing, polymetallic vein systems in the Cobalt Embayment, northern Ontario: metallogenetic implications: Economic Geology, v. 104(6), p.869-879.

Stott, G.M., 2011, A Revised Terrane Subdivision of the Superior Province of Ontario: Ontario Geological Survey, Miscellaneous Release – Data, 278 p.

Stott, G.M., Corkery, M.T., Percival, J.A., Simard, M., and Goutier, J., 2010, A revised terrane subdivision of the Superior Province. In: Summary of Field Work and Other Activities, Open File Report 6260: Ontario Geological Survey, pp. 20–21 to 20–10.

Weis, T., 2020, Geophysical Interpretation for McAra South: Geophysical Report. Thomas V Weis and Associates Inc

Young, G.M., Long, D.G., Fedo, C.M., and Nesbitt, H.W., 2001, Paleoproterozoic Huronian basin: product of a Wilson cycle punctuated by glaciations and a meteorite impact: Sedimentary Geology, v. 141, p. 233-254.

APPENDIX C

INTERPRETATIONS REPORTS BY THOMAS V WEISS AND ASSOCIATES INC.

Thomas V Weis and Associates Inc.

7767 South Poplar Way

Centennial, Colorado 80112 USA

Geophysical Report

Subject: McAra South, Geophysical Report.

Date: 28th February, 2020

Client: Battery Mineral Resources Corporation

Summary

A 3-D IP/resistivity survey was run at BMR's McAra South property in Ontario Canada by CXS Ltd. The prospect was identified by Mike Hendrickson from the 2016/2018 McAra Airborne magnetic survey. It occurs along a WNW striking dike/structure (similar to at the main McAra prospect) where it intersects a N-S magnetic high interpreted to be a Nipissing diabase intrusion. Like the McAra Prospect, McAra South is located on the east side of a large depth extent, mafic intrusive complex, which may be the source of Nipissing diabase dikes and sills in the area. Field checking and sampling of the prospect area detected cobalt mineralization. The cobalt mineralization is predicted to occur along the edges of the Nipissing diabase rocks. Although the cross-cutting WNW striking diabase dike is thought to be younger than the mineralization, the structure hosting the WNW striking dike is interpreted to be long lived and may have been important at the time of mineralization. For example both the McAra and McAra South prospects occur near bends in the WNW dike filled structure. If strike-slip motion occurred along the structure the bends may have opened space for mineralization to be deposited.

Both the younger WNW striking dike and the N-S striking Nipissing diabase intrusion are resistivity lows in the 3-D CXS data set. This is counter intuitive as these diabase dikes and sills are expected to be resistivity highs. Since the area is glaciated, deep weathering of the near

surface diabase intrusives is interpreted to be unlikely. The resistivity lows are interpreted to be due to alteration associated with mineralization.

Anomalous weak to moderate amplitude IP anomalies are located at the edges of the N-S striking Nipissing diabase intrusive near its intersection with the WNW striking diabase dike/structure.

Six geophysical exploration targets have been identified at the McAra South prospect. They consist of four chargeability (IP) anomalies, one resistivity (Rho) low anomaly at the intersection of the N-S Nipissing diabase intrusive and the WNW diabase dike/structure, and one magnetic feature at a bend in the WNW striking diabase dike/structure. If right lateral strike-slip motion occurs along this structure the bend may cause dilation similar to that occurring at the main McAra prospect. A list of the six targets and a series of maps showing their locations are provided below.

Note that the maps presented here are in geotiff format and can be dropped directly into the field geologists GIS package. This is not the case for the screen dumps of the 3-D voxel models which are also presented in this report. The IP and resistivity digital voxels are provided with this report and the geologists can import them into Leap Frog or similar 3-D viewing packages.

Location Map

The location of the 2019 CXS 3-D IP/resistivity survey is shown in Figure 1 plotted on the combined 2016/2018 Precision helicopter magnetic RTP data set. The red dashed circle shows the location of the McAra South prospect. The black arrow points to the main McAra prospect.

Figure 2 shows the location of the McAra South prospect (red polygon) plotted on the first vertical integral (1vi) of the RTP data set. Note that the McAra South prospect occurs on the eastern flank of the large magnetic high interpreted to be due to a deep rooted mafic intrusive body.

Figure 3 is an enlargement of the McAra to McAra South area from Figure 2 (1vi image). The point of this figure is to show that both McAra and McAra South occur at bends in the WNW striking dike/structure. These bends are interpreted to cause the opening of space in these areas. The open space may host cobalt mineralization. There is evidence that the WNW structures are long lived features and not strictly young, post mineral features.

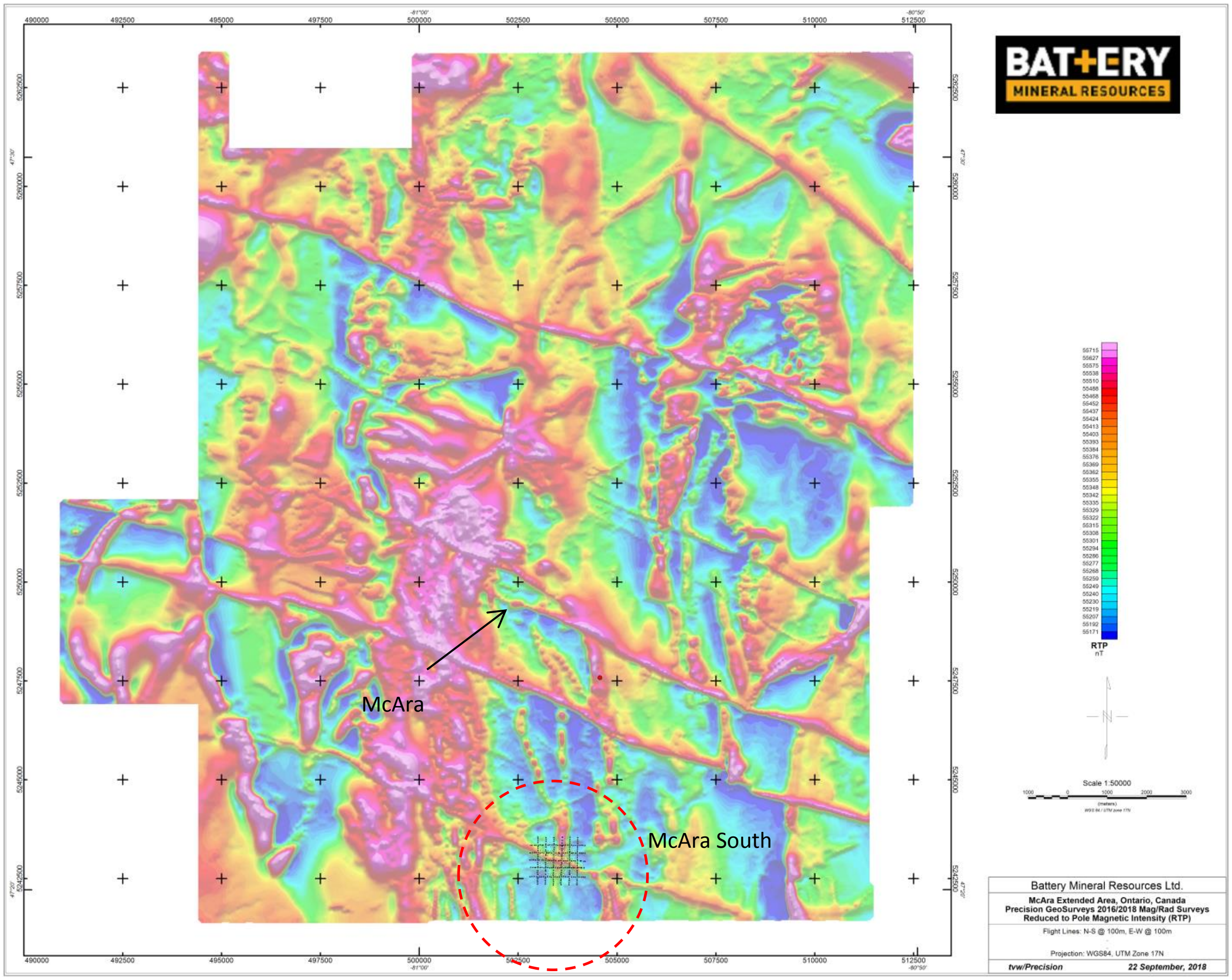

Figure 1 – The location of McAra South prospect (red dashed circle) plotted on the 2016-2018 McAra regional helicopter magnetic (RTP) image. The black arrow points towards the main McAra prospect. Note that NW and NS striking linear magnetic highs (dikes) connect the two prospect areas.

Figure 4 shows the CXS 3-D IP/resistivity array plotted on a Google Earth image at McAra South. The black dots are current injection (Tx) stations. The white dots are potential field (Rx) receiver stations. The red polygon indicates that portion of the 3-D model that is used for interpretation in this report.

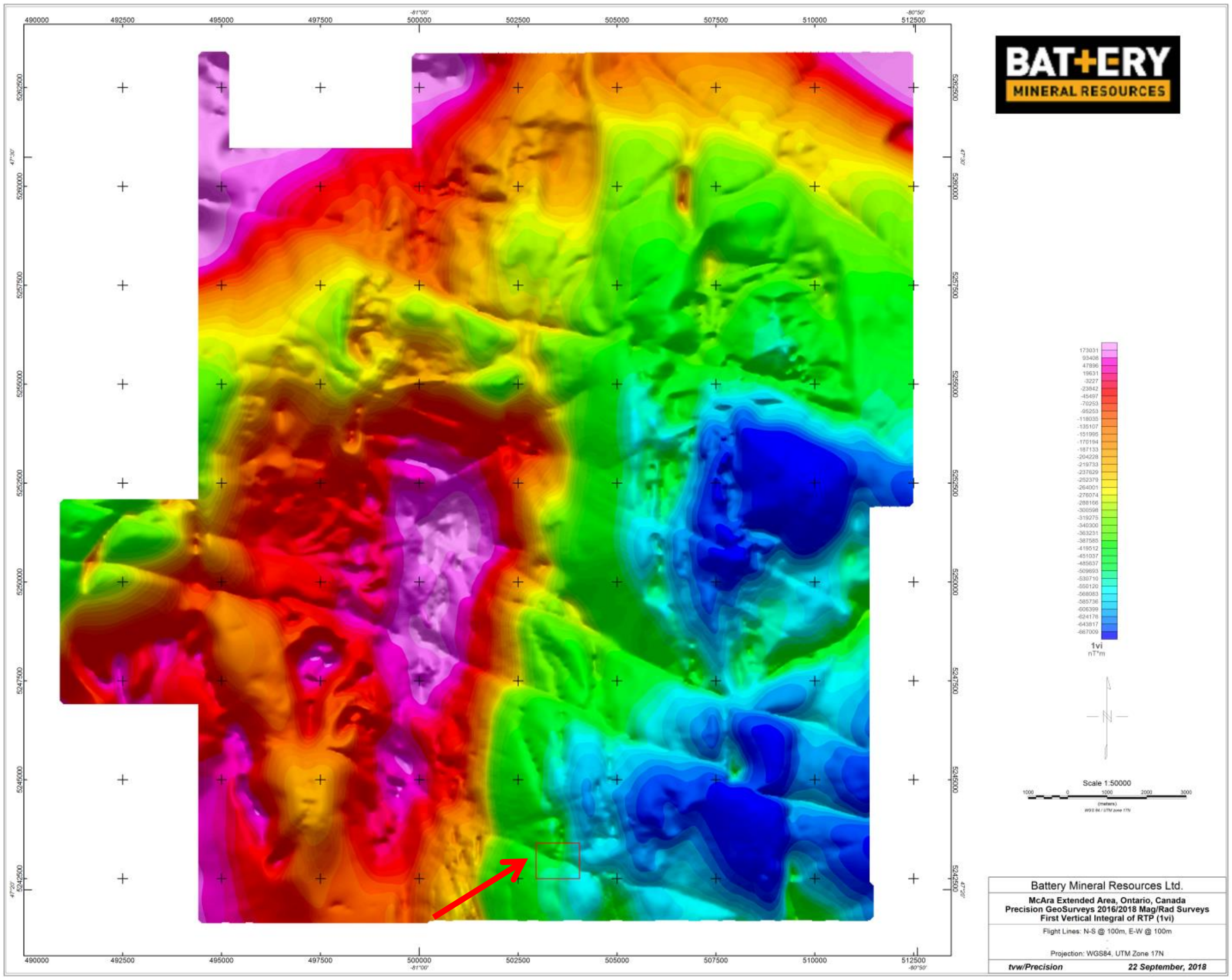

Figure 2 – The McAra South survey location polygon plotted on top of the first vertical integral (1vi) of the RTP data set. All magnetic features which show up in this image are interpreted to have deep roots and be major geologic features.

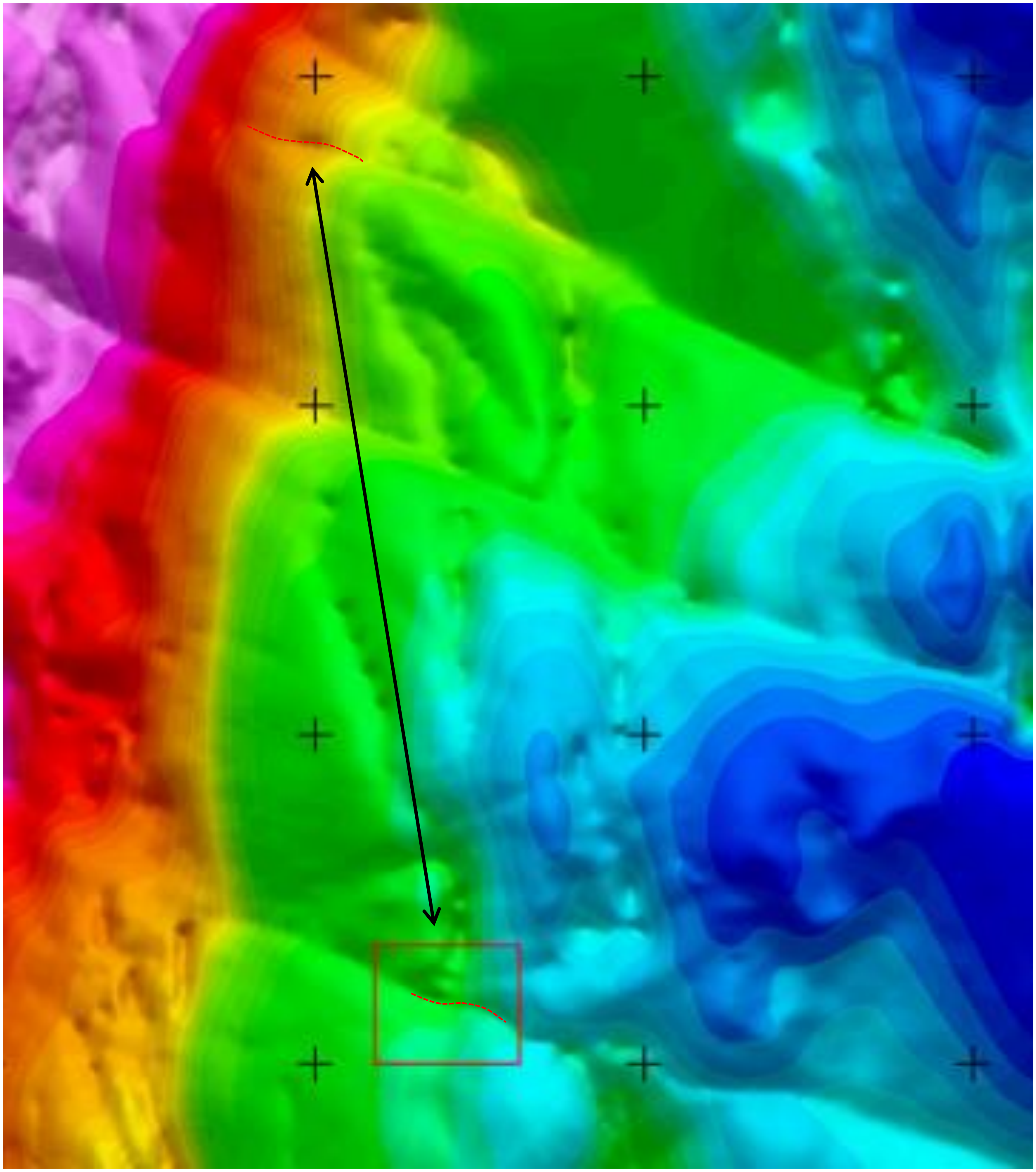

Figure 3 – An enlargement of Figure 2 (1vi image) showing the location of both the McAra and McAra South areas. The red dashed lines show bends in the WNW striking diabase dikes/structures which are interpreted to result in dilation and open space. This open space may host cobalt mineralization.

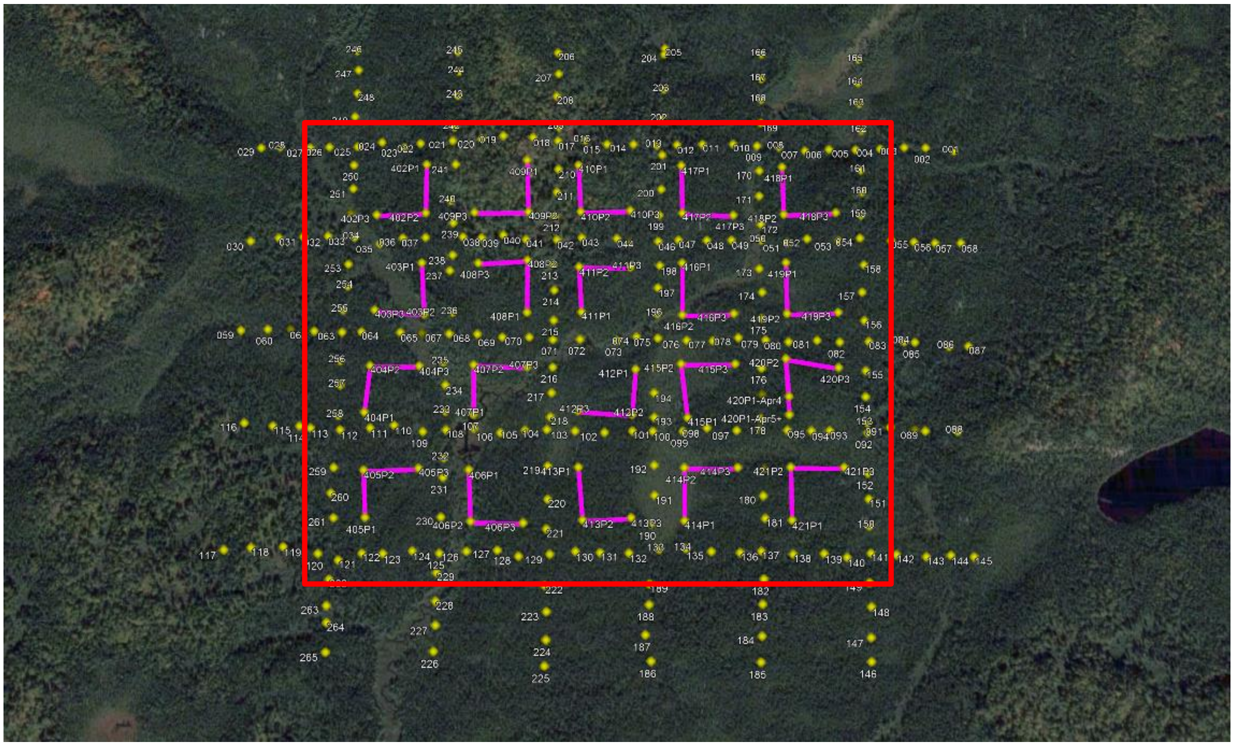

Figure 4 – The CXS 3-D IP/resistivity array used at the McAra South prospect area. The yellow dots are current injection points. The purple elbows show the receiver arrays. The red polygon indicates the portion of the 3-D array where the inversion model is used for interpretation in this report.

Geophysical Data Sets

The three geophysical data sets used for mapping lithology, alteration and evidence of possible mineralization are the magnetic data, resistivity data and chargeability data sets.

Magnetic

The helicopter magnetic data set is used as the base map for the McAra South geophysical interpretation. Figure 5 shows an enlargement of the RTP image with the McAra South 3-D IP/resistivity grid plotted on top. The key magnetic feature at McAra South is the intersection of the younger (but possible long lived) WNW striking dike/structure and the N-S striking Nipissing diabase intrusive (dike/sill). The dashed red arrow shows an intrusive dike connection between the McAra and McAra South prospects. The importance of this connection is uncertain.

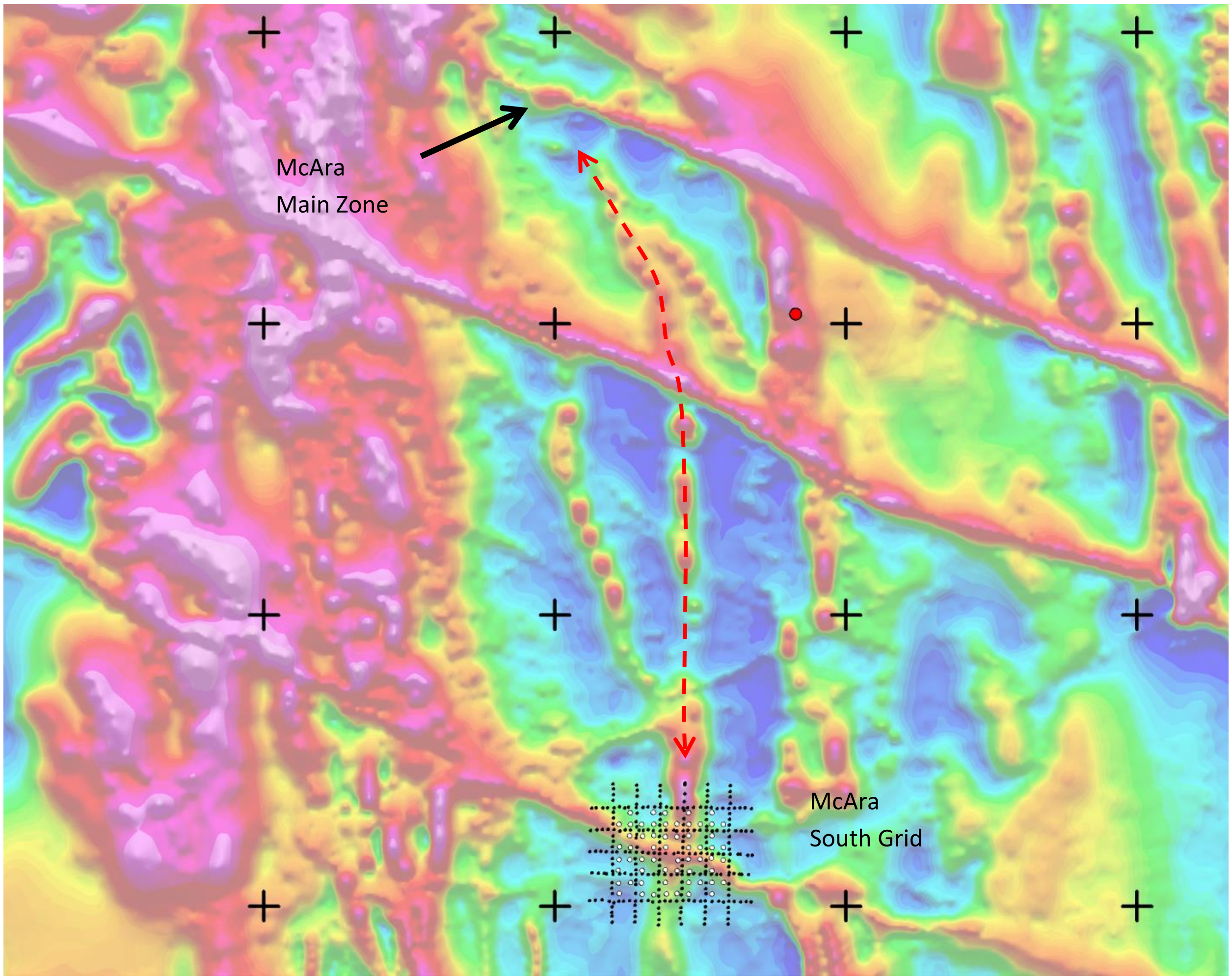

Figure 5 – An enlargement of the McAra regional helicopter magnetic (RTP) data set with the McAra South CXS 3-D IP/resistivity grid plotted on top. Note McAra South occurs at the intersection of a WNW dike/structure and a N-S Nipissing intrusive dike/sill. The dashed red double arrow shows that there is an intrusive connection between the McAra and McAra South prospect areas.

Figure 6 shows the detailed magnetic data set (RTP) covering the immediate McAra South prospect with the electrode array plotted on top. The current injection points (Tx) are shown as black dots. The potential electrode stations are shown as white dots. As previously mentioned the magnetic response in the prospect area is characterized by the intersection of a N-S striking Nipissing intrusive (black boundaries) intersecting a WNW striking (red dashed line) deformed dike/structure. The 3-D IP/resistivity grid is centered on this intersection.

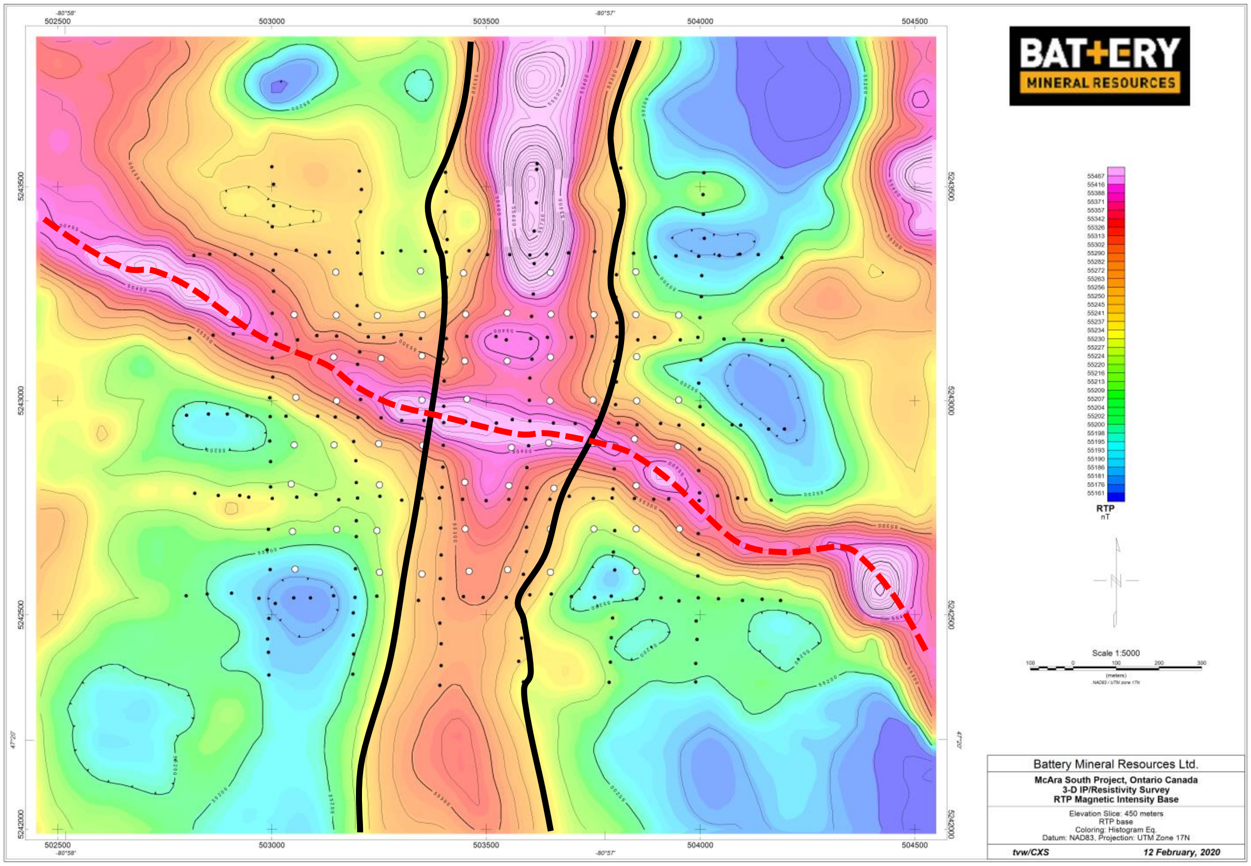

Figure 6 – The detailed helicopter magnetic (RTP) image covering the McAra South prospect. The black lines outline the interpreted N-S striking Nipissing diabase intrusive. The red dashed line highlights the axis of the younger (?) WNW striking diabase dike/structure. Note the 3-D IP/resistivity electrode array is centered on the intersection of these two intrusives.

IP Voxel Screen Dumps

A series of 3-D IP voxel screen dumps is shown here to provide a quick view of the chargeability response and its relationship to the magnetic RTP image at McAra South. The RTP image is faded so that the IP voxel can be seen through it.

Figure 7 shows the entire, unclipped IP voxel viewed down and to the NW. Two small, near surface IP responses occur on the north side of the block along the edges of the N-S striking Nipissing diabase intrusive.

Figure 8 shows the IP voxel with z (elevation) clipped at 350 meters and the RTP magnetic image faded over the top of it. This elevation slice is approximately 25 meters deep. Note the shallow IP responses occur to the north along the edges of the Nipissing diabase where it intersects the WNW younger (?) diabase dike. The strongest IP response occurs along the edges of the Nipissing diabase. A series of weaker IP responses occur along the edges of the WNW diabase dike.

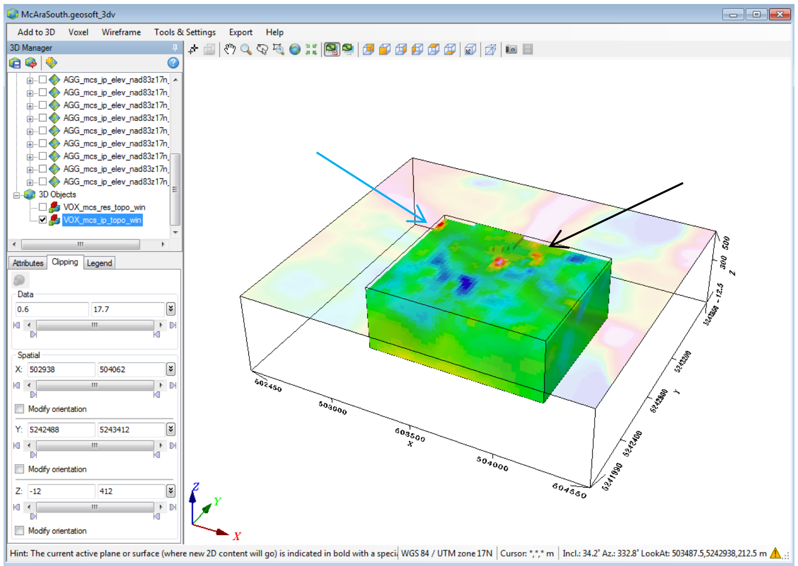

Figure 7 – The unclipped IP voxel viewed down and to NW. Note the two small IP highs (hot colors) in the center/north area of the block (black arrow). These IP responses occur at the edges of the Nipissing intrusive. A third small IP anomaly occurs at the NW corner of the block. It is located along the edge of the WNW striking diabase dike (blue arrow).

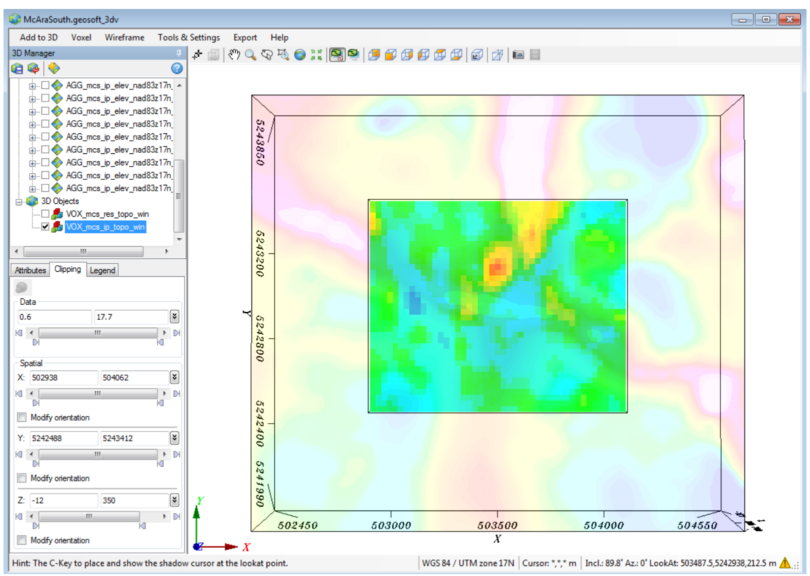

Figure 8 – The 3-D IP voxel clipped at Z equals 350 meters elevation. The magnetic RTP image is faded so that the voxel can be viewed through it. The shallow IP responses occur to the north along the edges of the Nipissing diabase body.

Figure 9 shows the 3-D IP voxel with z (elevation) clipped at 250 meters and the RTP magnetic image faded over the top of it. This elevation slice is approximately 125 meters deep. The anomalous IP response to the north is getting larger and is located along the edge of the Nipissing diabase (see black arrow). An anomalous IP response is starting to show up to the south (see black arrow) and is located along the edges of the Nipissing diabase to the south of the intersection with the WNW striking diabase dike. A gap in the IP response occurs where the WNW striking diabase dike/structure cuts through the NS striking Nipissing diabase intrusion.

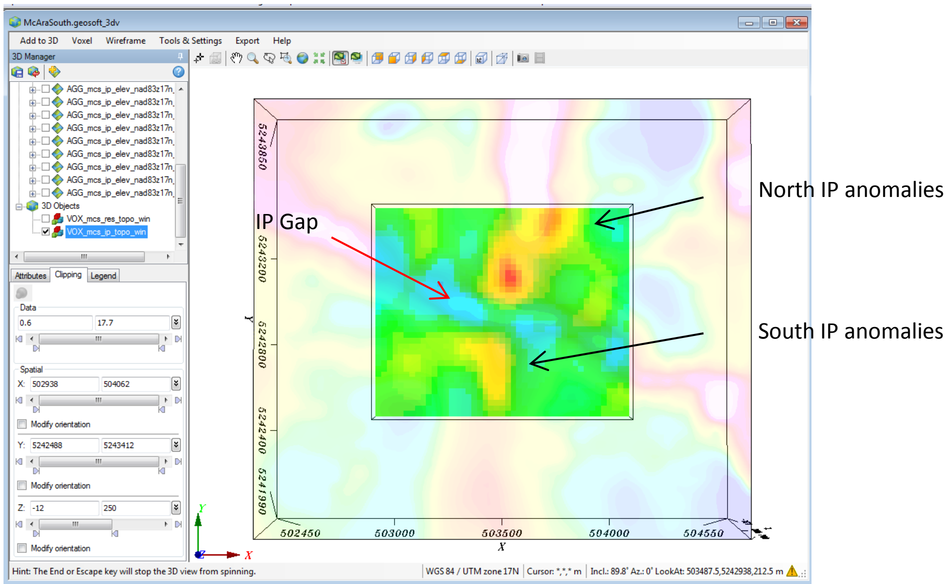

Figure 9 – The 3-D IP voxel clipped at Z equals 250 meters elevation. Note the northern IP anomalies are getting larger and still occur along the edges of the NS striking Nipissing diabase intrusive. The southern IP anomaly is starting to be visible and also occurs along the edge of the NS striking Nipissing diabase intrusion. Note there is a gap in the IP response where the WNW striking diabase dike/structure cuts through the Nipissing intrusive.

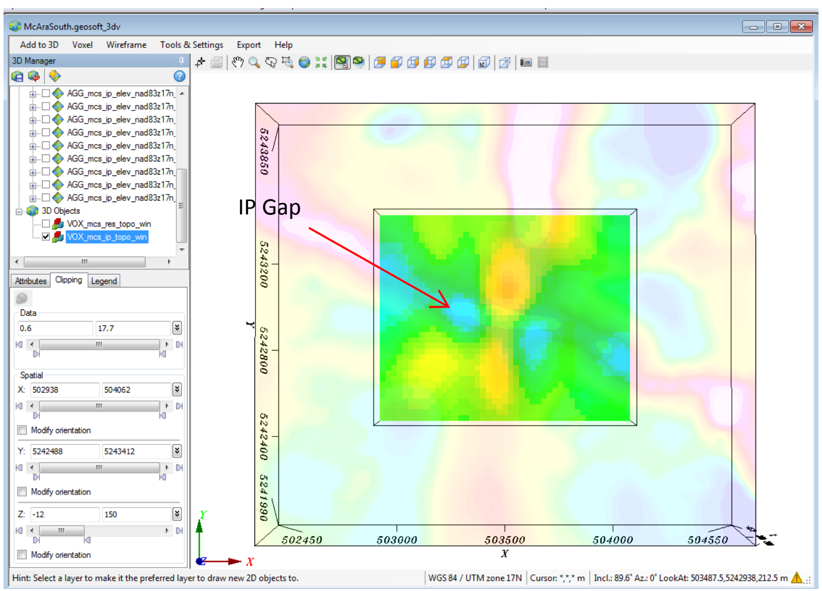

Figure 10 – The 3-D IP voxel clipped at Z equals 150 meters elevation.

Figure 10 shows the 3-D IP voxel with z (elevation) clipped at 150 meters and the RTP magnetic image faded over the top of it. This elevation slice is approximately 225 meters deep. The northern most anomaly is starting to weaken at this depth. The southern anomalies are strengthening and getting larger at depth. The IP gap associated with the WNW striking young diabase dike still occurs at this depth.

Figure 11 shows the 3-D IP voxel clipped (Y coordinate) in section view at the south edge of the model. Note a deep IP anomaly occurs at the southern edge of the survey block.

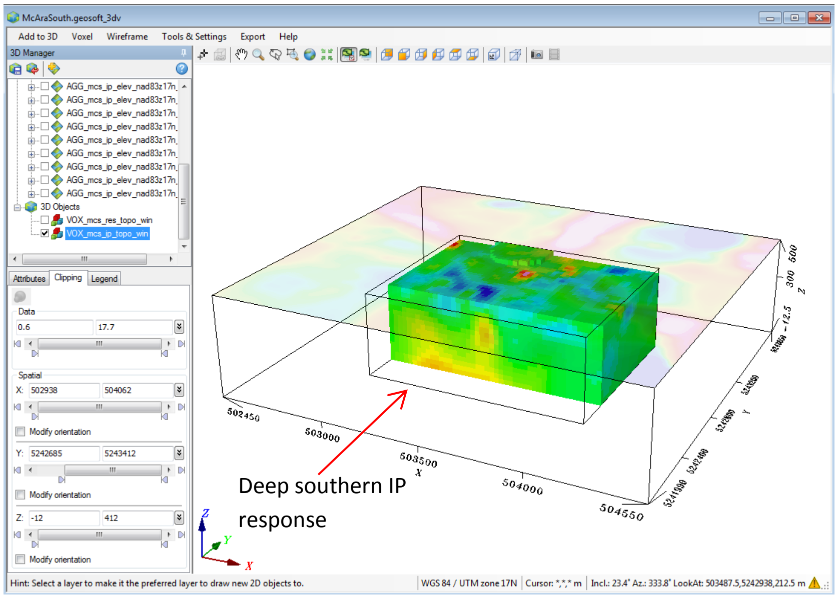

Figure 11 – The 3-D IP voxel clipped (Y coordinate) in section view at the south edge of the model. Note deep IP response at the southern edge of the voxel model.

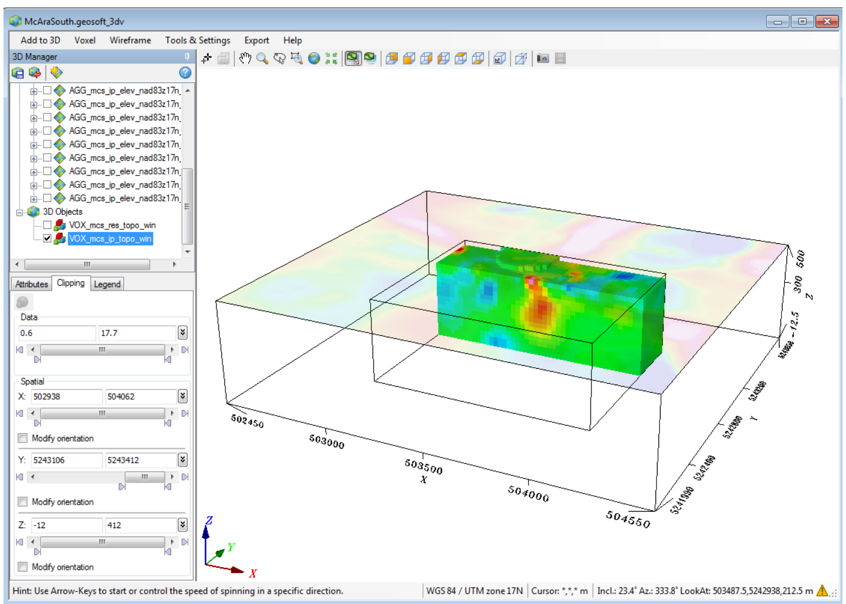

Figure 12 – The 3-D IP voxel clipped (Y coordinate) in section view at the north edge of the model. Note the IP response at the northern edge of the voxel tends to be shallower and depth extent limited.

Figure 12 shows the 3-D IP voxel clipped (Y coordinate) in section view at the north edge of the model. The northern IP response tends to be shallower and depth extent limited.

Figure 13 shows a vertical downward view of the IP response clipped to show response between 9.4 and 17.7 mV/V. The WNW striking diabase dike is indicated by the red dashed line. This figure shows the close relationship between the IP response and the Nipissing diabase intrusion. Note the offset of the Nipissing intrusive at the WNW structure indicates a right lateral strike slip motion. The bend in the WNW structure may result in space opening in the vicinity of the blue dashed ellipse.

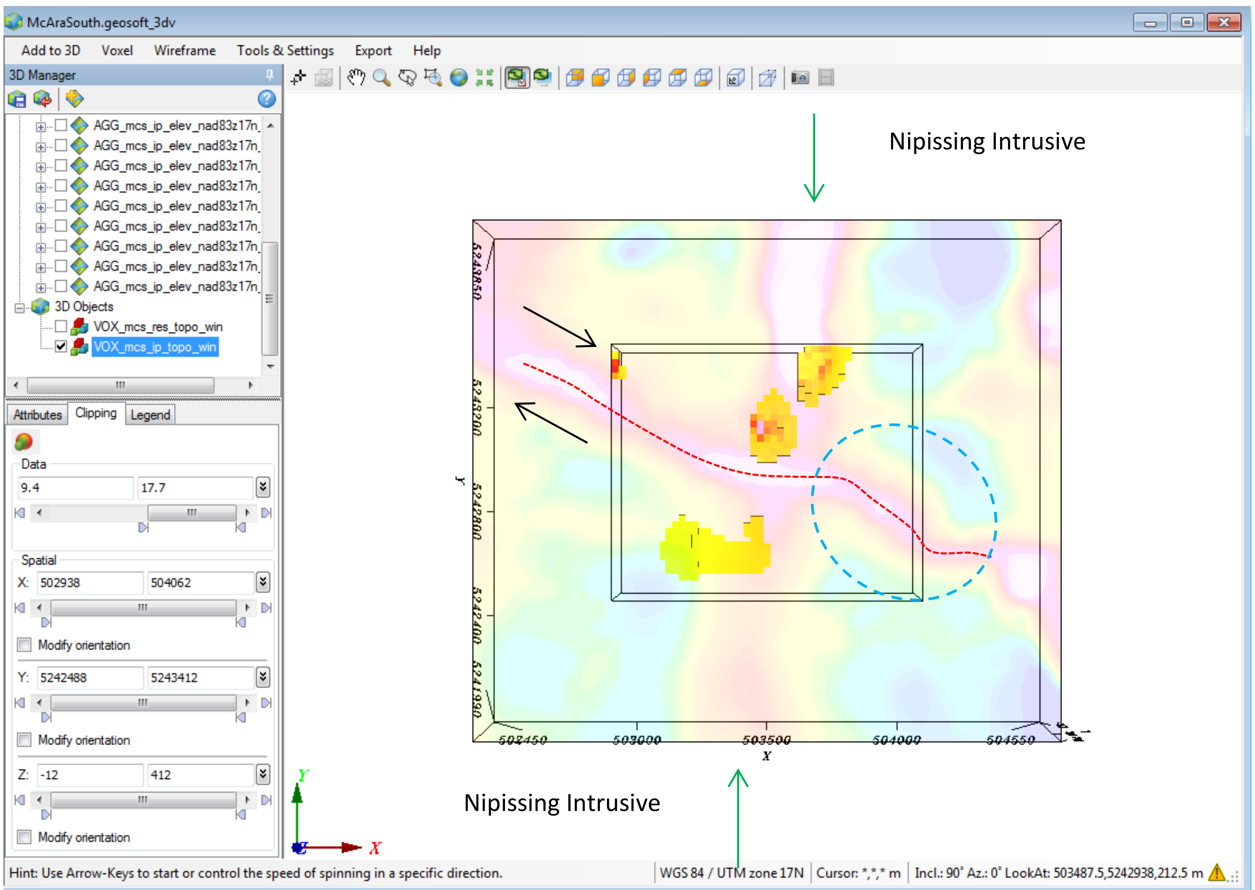

Figure 13 – The 3-D IP voxel clipped to show chargeability values between 9.4 and 17.7 mV/V. Note the close relationship between the IP response and the edges of the interpreted Nipissing diabase intrusion. The red dashed line shows the axis of the WNW striking diabase dike/structure. The blue ellipse indicates an area where the space may be opened if right lateral strike slip motion occurs along the WNW striking structure.

IP elevation slices plotted on RTP base map

A series of IP elevation slices are plotted on top of the RTP magnetic image and contours. The magnetic contours show through the IP images allowing the reader to note the spatial relationship between IP response and magnetic response.

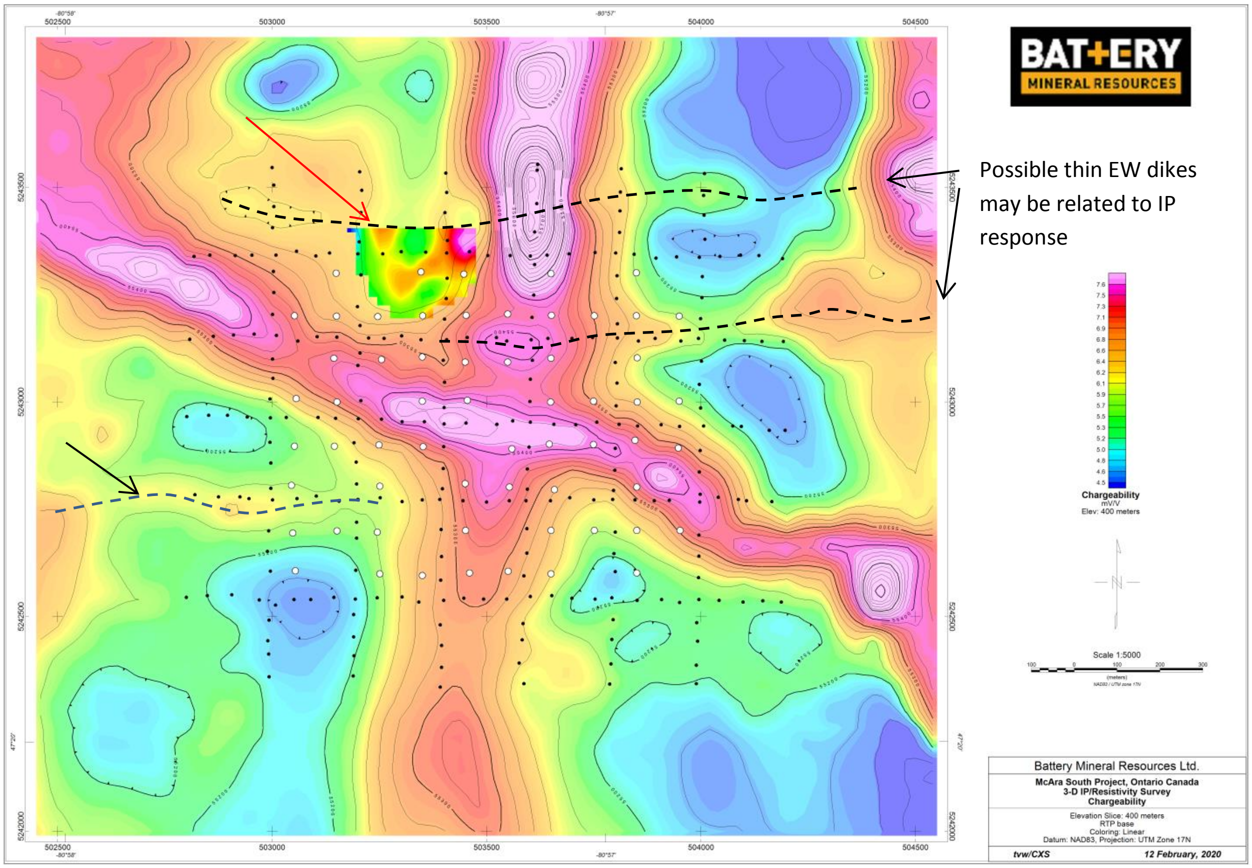

Figure 14 – The 400 meter elevation IP slice plotted on the RTP magnetic image. Only a small hill occurs in the center of the 3-D voxel (red arrow). Note the shallow IP response occurs in a gap/divot in the N-S striking Nipissing Diabase intrusion. This IP response could be associated with classic Cobalt mineralization along the edge of the Nipissing diabase rocks. The source of this IP anomaly should be visible at the surface. It is shallow. Note the black dashed lines are interpreted as thin diabase dikes (Nipissing or younger) that may be related to IP response in the McAra South area.

Figure 14 shows the 400 meter IP elevation slice which covers a small area at the northern edge of the grid. The small IP high occurs in a magnetic low within and immediately adjacent to the N-S striking Nipissing diabase intrusive. The source of this IP high should occur at the surface or below shallow soil cover. Notice the black dashed lines in this image are interpreted to be thin diabase dikes which imply an EW structural fabric in this area. These thin dikes are coincident with anomalous IP responses.

Figure 15 shows the shallowest complete IP voxel slice at 350 meters elevation plotted on the RTP magnetic image. At this shallow depth (approximately 25 meters) the IP anomalies occur in the northern half of the McAra South grid. They are located along the edges of the Nipissing diabase intrusive.

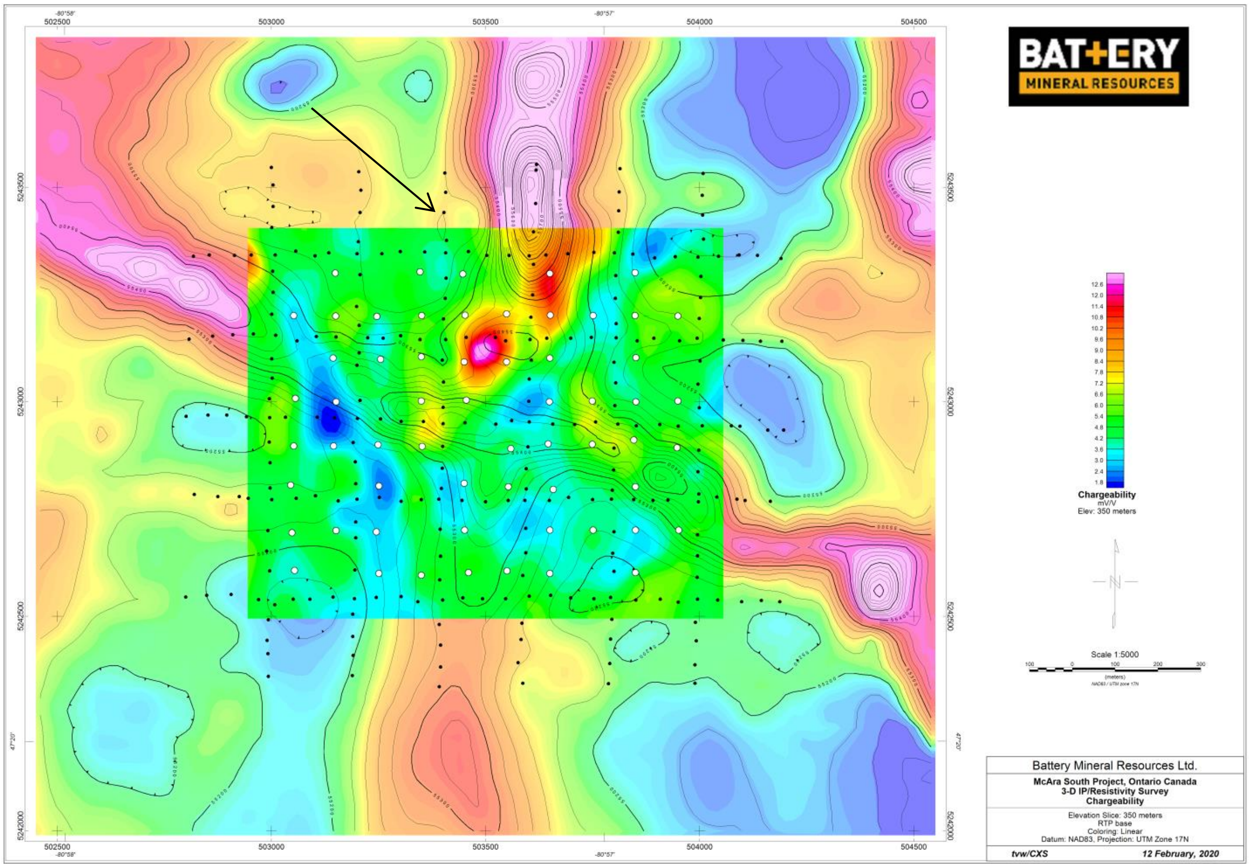

Figure 15 – The 350 meter IP elevation slice plotted on the RTP magnetic image. The shallow IP response in the magnetic low (black arrow) is gone. Two anomalous IP responses occur along the edge of the northern Nipissing diabase intrusive. Note that the magnetic contours show through the IP image. This allows the reader to see how the anomalous IP responses are located with the respect to the magnetic data.

Figure 16 shows the 300 meter IP elevation slice (approximate 75 meters depth). The northern anomalous IP responses are getting larger and still occur along the edge of the Nipissing intrusive. A weak southern IP response is starting to be visible at this depth. Two IP targets, Target-A and Target-B are selected from this IP elevation slice.

Figure 17 shows the 200 meter IP elevation slice plotted on the RTP magnetic data set. IP Target C is picked from this elevation slice grid. A deeper IP anomaly is starting to appear in the SW corner of the CXS survey block. Interestingly this IP response also seems to fall adjacent to a weak, thin magnetic dike.

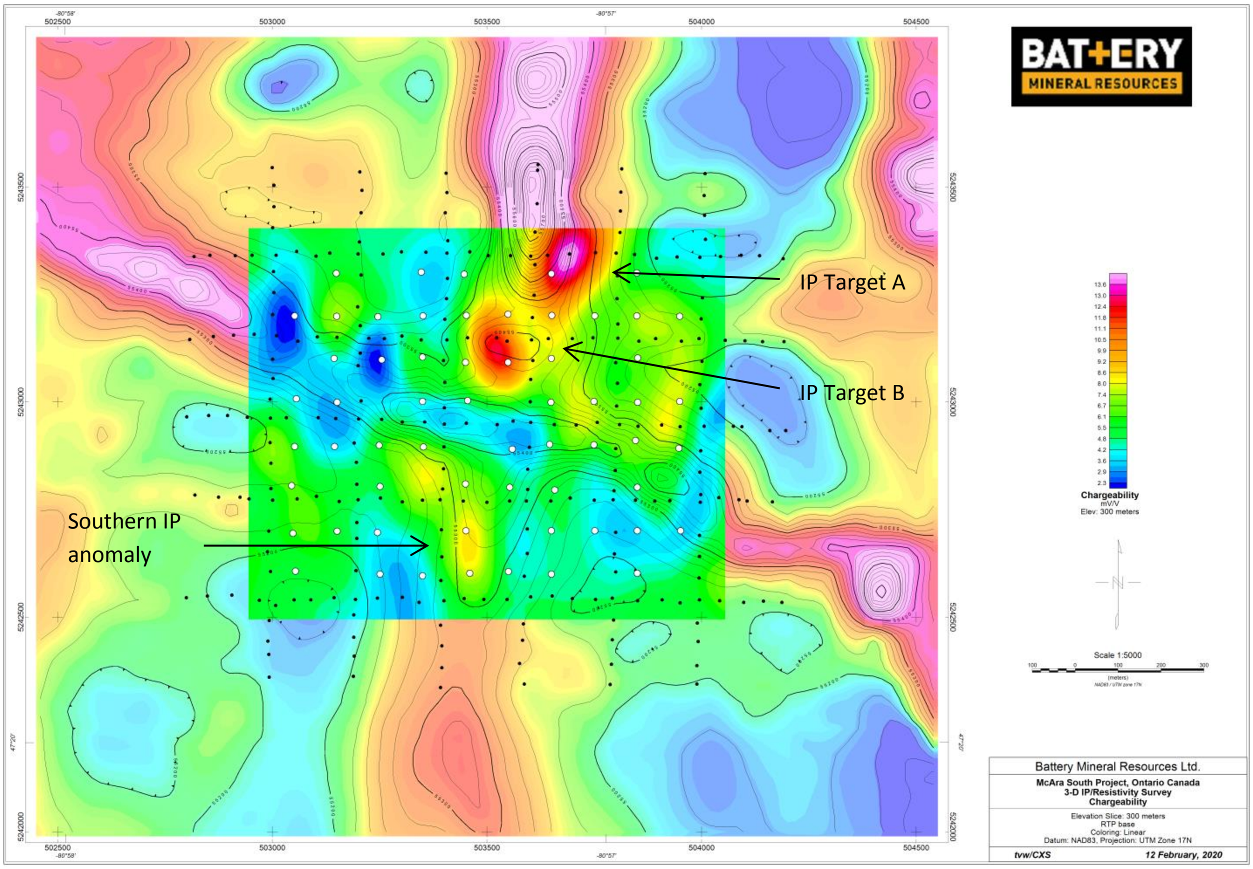

Figure 16 – The 300 meter elevation IP slice plotted on the RTP magnetic image. The northern IP anomalies are getting larger. A weak southern IP anomaly is visible at this elevation.

Figure 18 shows the 100 meter IP elevation slice plotted on the RTP magnetic base. This is at a depth of approximately 275 meters below surface. The SW anomaly becomes significant at this depth and is picked as IP Target D. Its relationship to the thin EW magnetic dike is obvious in this figure. The red dashed ellipse in Figure 18 may be associated with an EW striking, thin, weakly magnetic dike. When it cuts through the highly magnetic Nipissing rocks it shows up as a low. When it passes out into less magnetic rocks it shows up as a high.

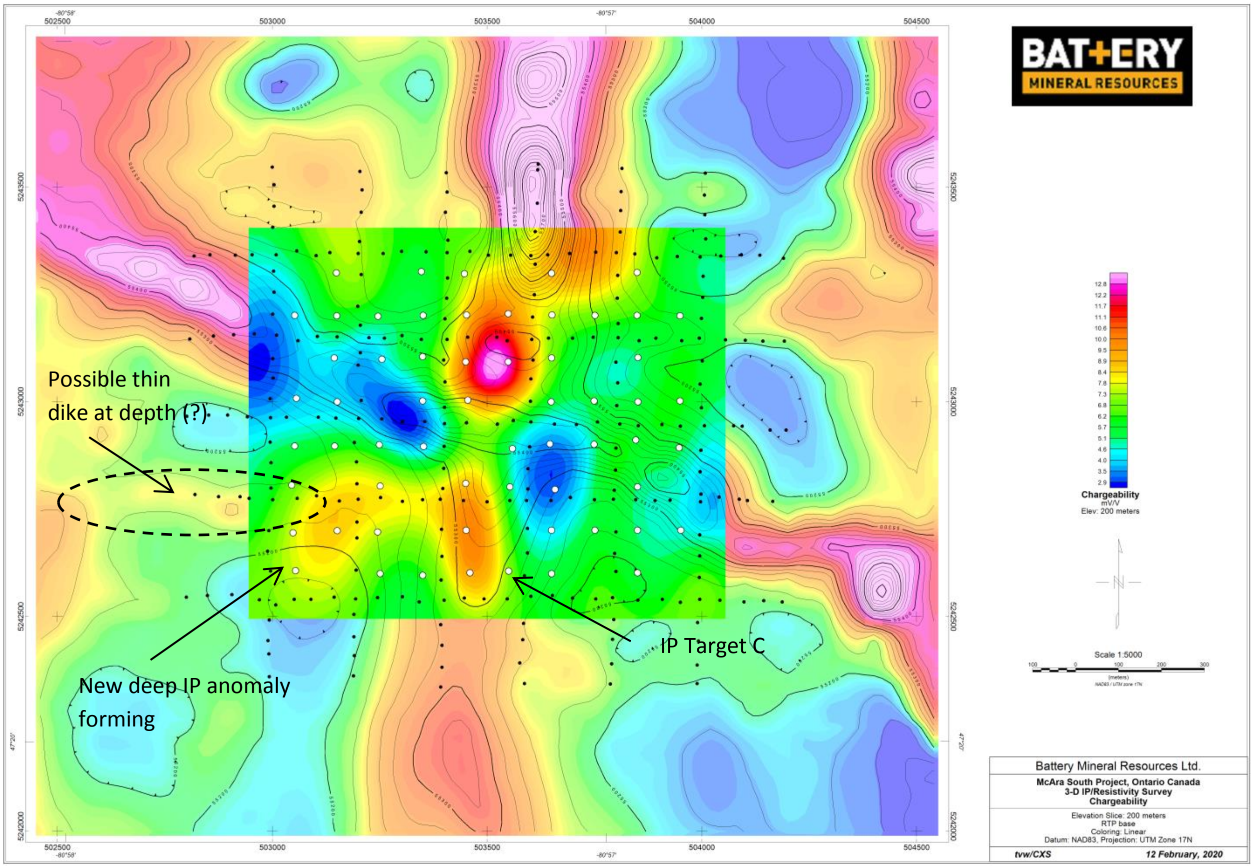

Figure 17 – The 200 meter IP elevation slice cut from the 3-D IP voxel model. The northern IP anomaly on the east side of the Nipissing diabase intrusive continues to weaken at depth. The central and southern anomalies are strengthening and broadening. This 200 meter elevation slice is where the IP Target C is identified. Note a deeper IP anomaly is starting to appear in the SW corner of the grid. It is associated with a thin E-W striking magnetic high interpreted to be a diabase dike.

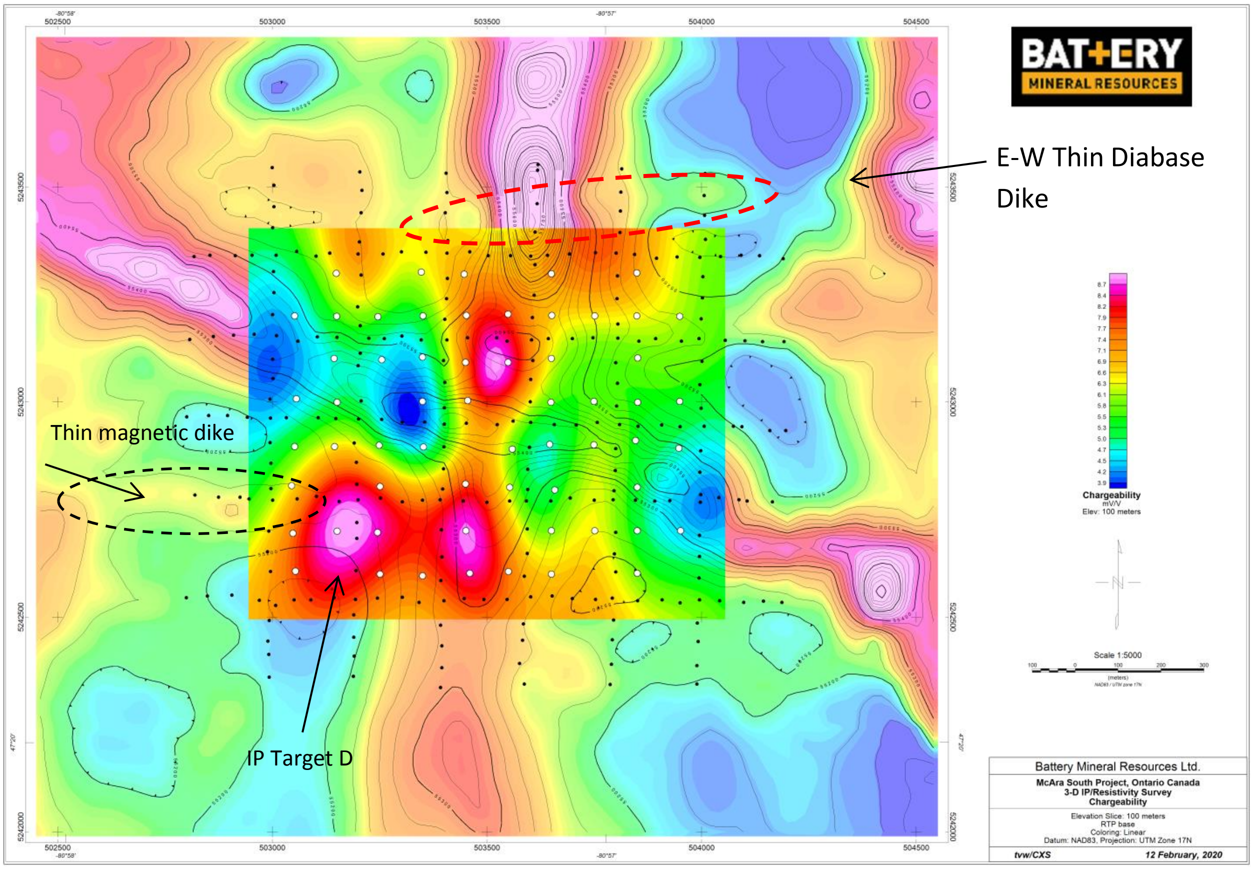

Figure 18 – The 100 meter IP elevation slice cut from the 3-D IP voxel model. The southern anomalies grow with depth and the northern anomalies weaken. The deep target, IP Target D, is identified on the 100 meter elevation slice. This target is estimated to be 250 to 300 meters deep.

Resistivity

The 3-D resistivity data set has an unexpected response in the McAra South area. Both the N-S striking Nipissing diabase intrusive and the WNW striking younger diabase dike are resistivity lows. Two possible explanations for this counter intuitive response are: 1) weathering of the mafic intrusions and 2) alteration of the intrusions in this area. As the area is glaciated Canadian Shield the alteration scenario is selected here as the most likely.

A second observation from the resistivity data set is that the shallow resistivity response (25 meters depth) shows a combination of NE-SW striking low resistivity drainage response and WNW low resistivity dike response. At slightly greater depths (75 meters depth) only the dike response is present.

Voxel Screen dumps

Figure 19 shows the shallow, 350 meter elevation resistivity slice, with a strong NE-SW low resistivity structural trend (red arrows). Figure 20 shows a Google Earth image with the

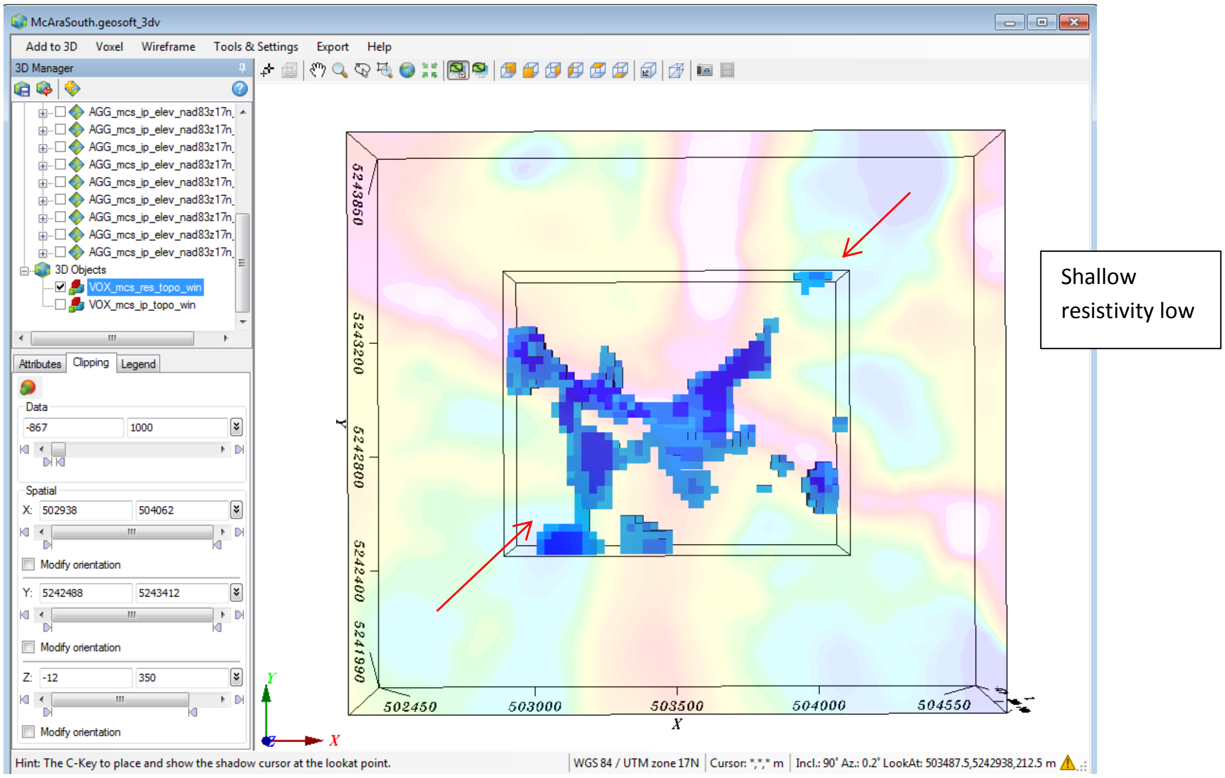

Figure 19 – The 350 meter resistivity elevation slice with resistivity clipped at 1000 ohm-m. Note shallow response.

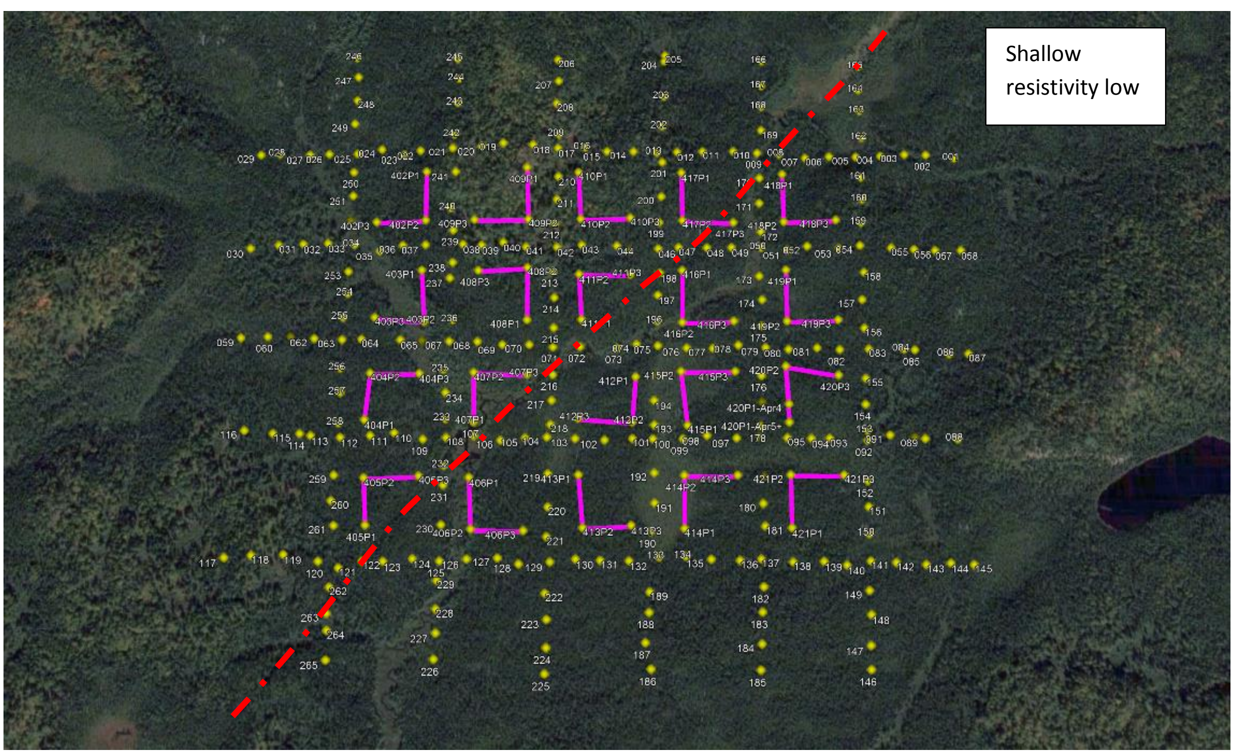

Figure 20 – The Google Earth image showing the shallow structure (red dashed line) causing the low resistivity feature in Figure 19.

corresponding structure shown by a red dashed line. At 300 meters elevation (Figure 21) the NE-SW structurally controlled resistivity low is gone. It is a shallow near surface feature.

Figure 21 shows the low resistivity response for both the N-S Nipissing diabase intrusive and the WNW younger diabase dike (red arrows). The depth of this elevation slice is approximately 75 meters.

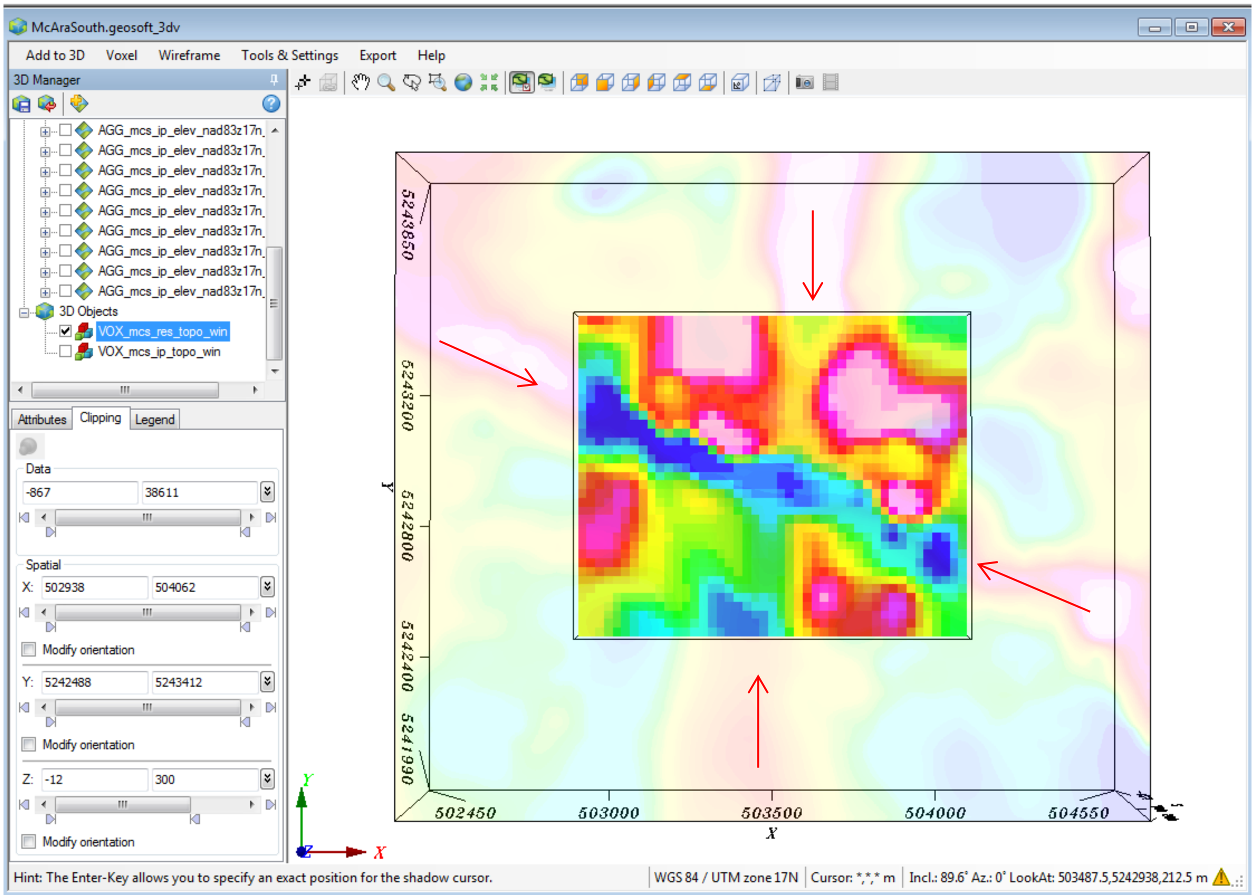

Figure 21 – The 300 meter resistivity elevation slice showing the strong resistivity low directly coincident with the WNW striking magnetic diabase dike/structure. The N-S Nipissing intrusion also shows up as a weaker low.

Figure 22 shows the 300 meter resistivity elevation slice with the resistivity data clipped at 3000 ohm-m. All values higher than 3000 ohm-m are removed. The strongest resistivity low occurs along the younger WNW striking diabase dike/structure. The Nipissing intrusive located to the south of the WNW striking dike is moderately low resistivity. The Nipissing intrusive to the north of the WNW striking dike is only weakly resistive and its response does not show up below 3000 ohm-m in this figure. It does show up in Figure 21 however.

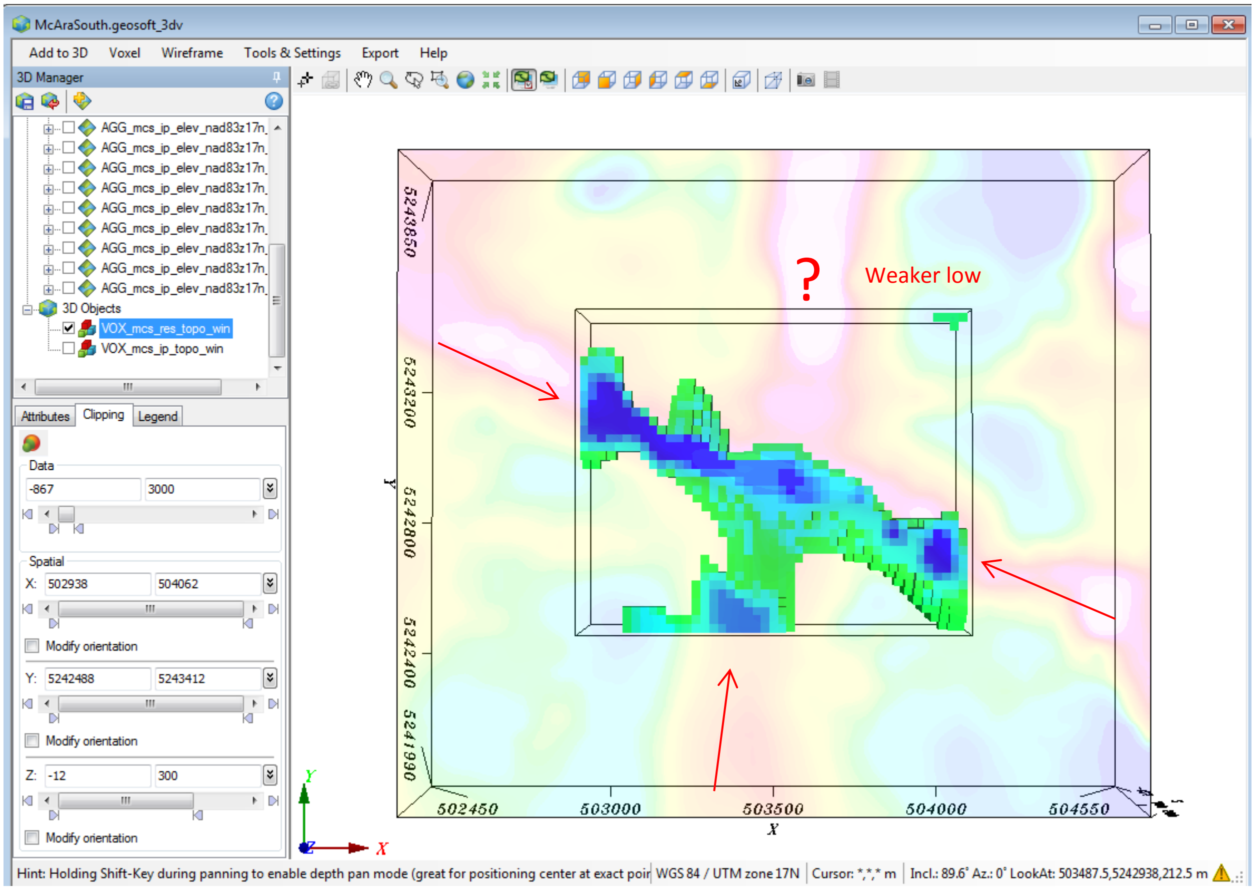

Figure 22 – The 3-D resistivity voxel clipped at 300 meters elevation and at 3000 ohm-m.

Resistivity Plotted on Magnetic Base

Two resistivity elevation slices, 350 meters elevation (shallow) and 250 meters elevation (deeper) are presented here plotted on the RTP magnetic base map.

Figure 23 shows the shallow 350 meter elevation slice with an approximate depth of 25 meters below surface. Note the NE-SW near surface structural response shows up clearly at this shallow depth of investigation.

Figure 24 shows a deeper 250 meter resistivity elevation slice. The strong WNW striking resistivity low associated with the younger diabase dike/structure shows up clearly. The moderate to weak N-S striking resistivity low associated with the Nipissing diabase intrusive also clearly shows up in this image. The intersection of the WNW and N-S resistivity lows are selected as a structural target in this interpretation.

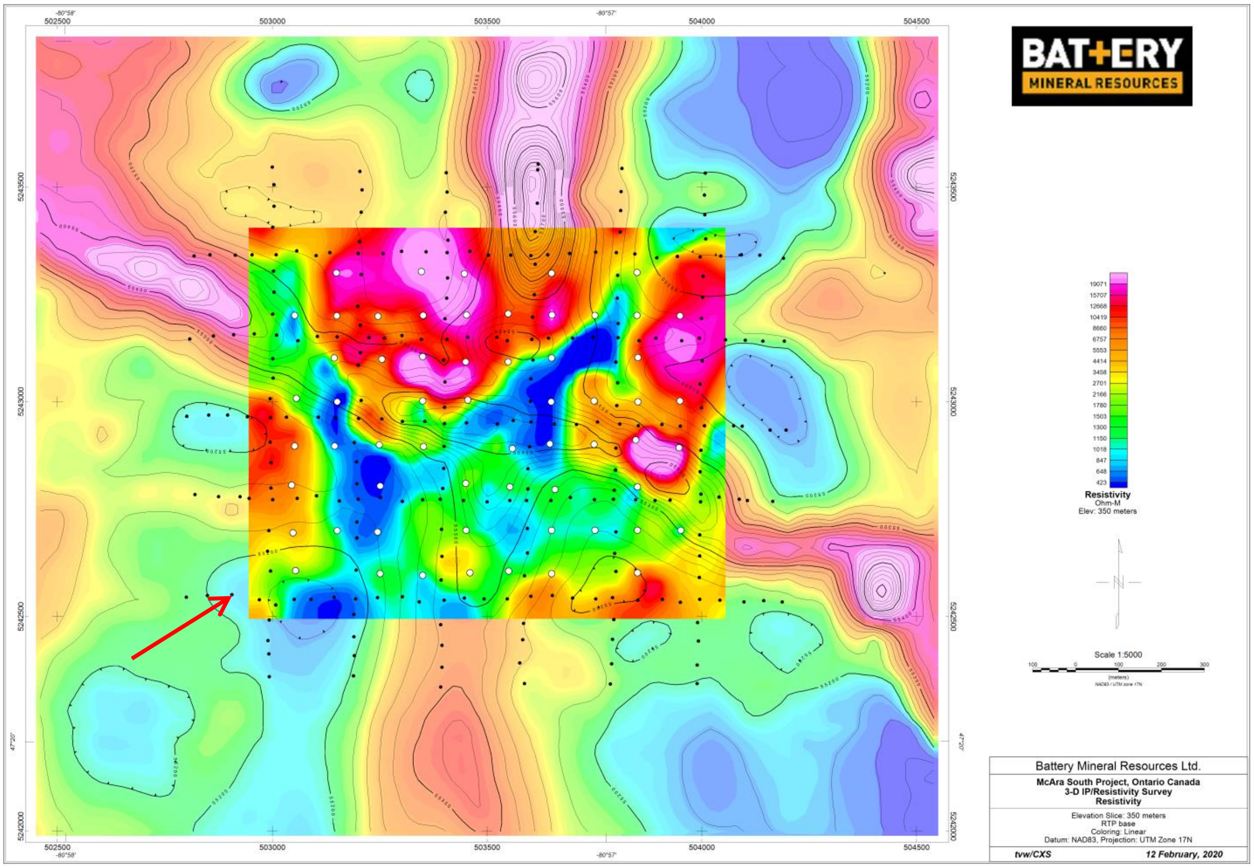

Figure 23 – The shallow 350 meter resistivity elevation slice plotted on the RTP magnetic base map. Note the magnetic contours show up through both data sets for anomaly location purposes. The red arrow indicates the location of the NE-SW near surface resistivity low.

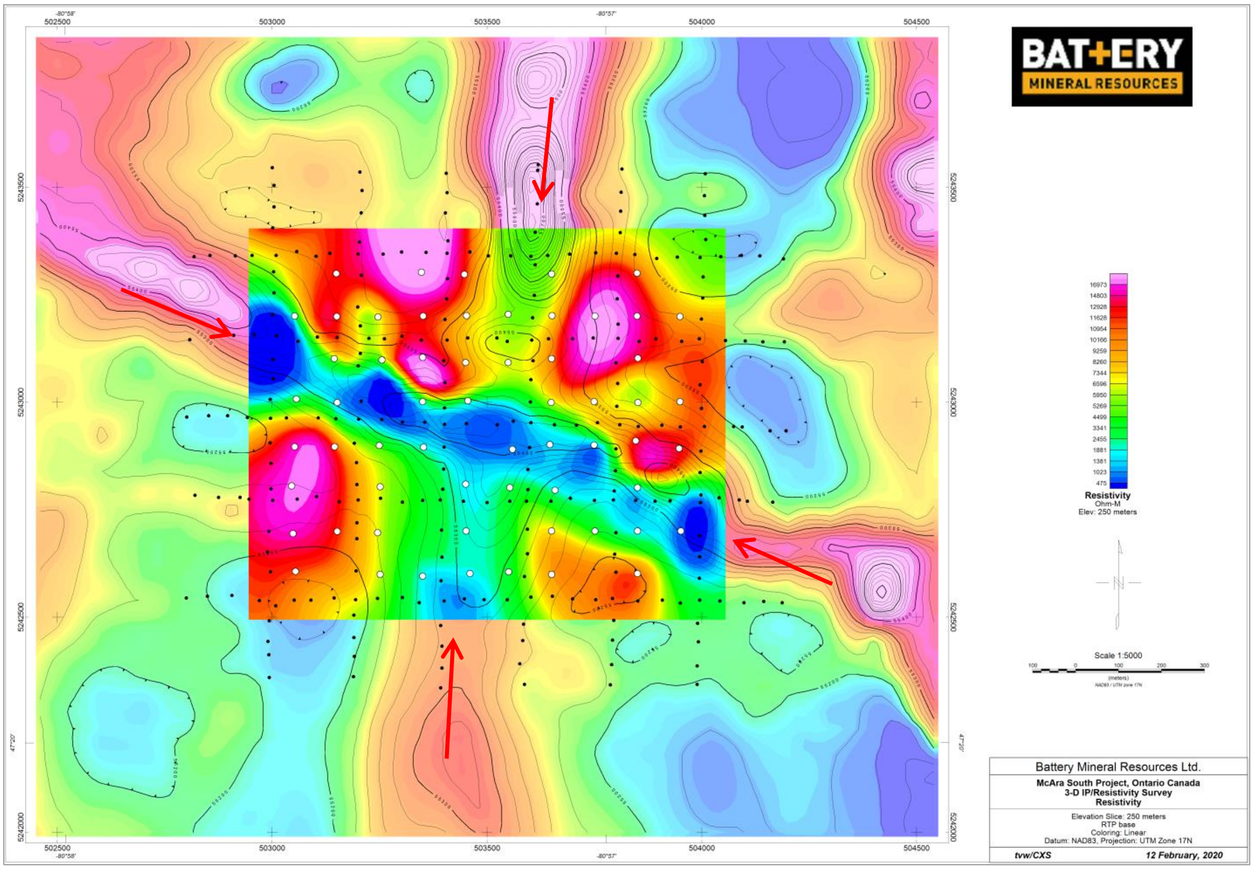

Figure 24 – The deeper 250 meter resistivity elevation slice plotted on the RTP magnetic base map. Note the magnetic contours show up through both data sets for anomaly location purposes. The shallow NE-SW near surface resistivity low is gone. The deeper WNW and N-S intrusive resistivity lows show up clearly at this elevation (red arrows).

Targets

Four IP targets, one resistivity target and one magnetic target are identified in this geophysical interpretation report. They are listed in Table 1 and shown in Figures 25 through 29.

	A	B	C	D	E	F	G
1	DataSet	Target	Easting	Northing	Elevation	Priority	Comment
2	IP	A	503666	5243296	250	1	East side of ns Nipissing Diabase
3	IP	B	503534	5243098	250	2	West side of ns Nipissing diabase
4	IP	C	503464	5242699	150	3	West side of southern ns Nipissing diabase
5	IP	D	503132	5242708	50	6	Southwestern IP anomaly
6	Rho	E	503514	5242872	200	5	Resistivity low @ intersection NS and WNW intrusives
7	Mag	F	504000	5242748	250	4	Dilation bend in magnetic dike response
8							
9							

Table 1 – McAra South geophysical targets.

IP Targets

The IP targets selected in this interpretation report are all chargeability highs located near the edges of the Proterozoic Nipissing diabase intrusive or cross cutting diabase dikes.

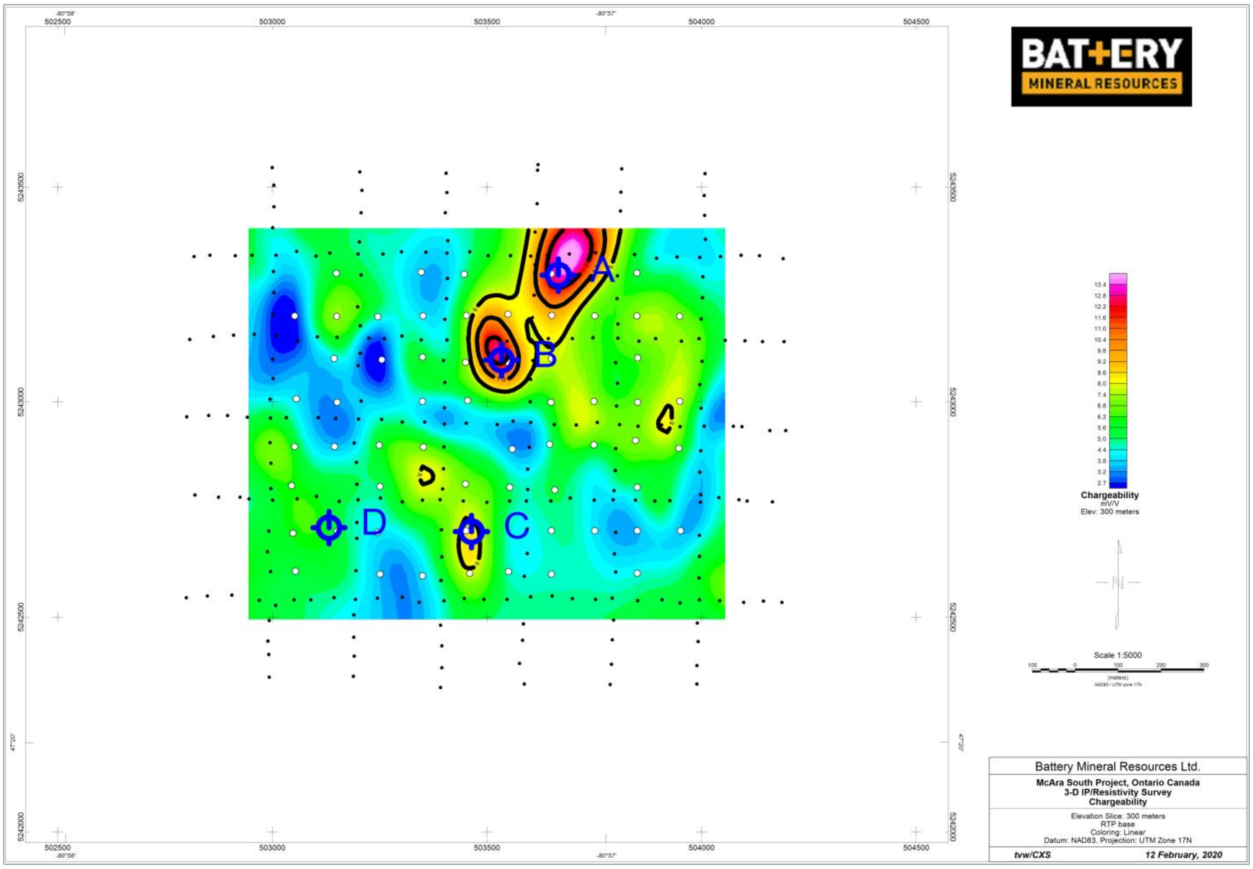

Figure 25 – The 300 meter IP elevation slice used to pick IP Targets A and B.

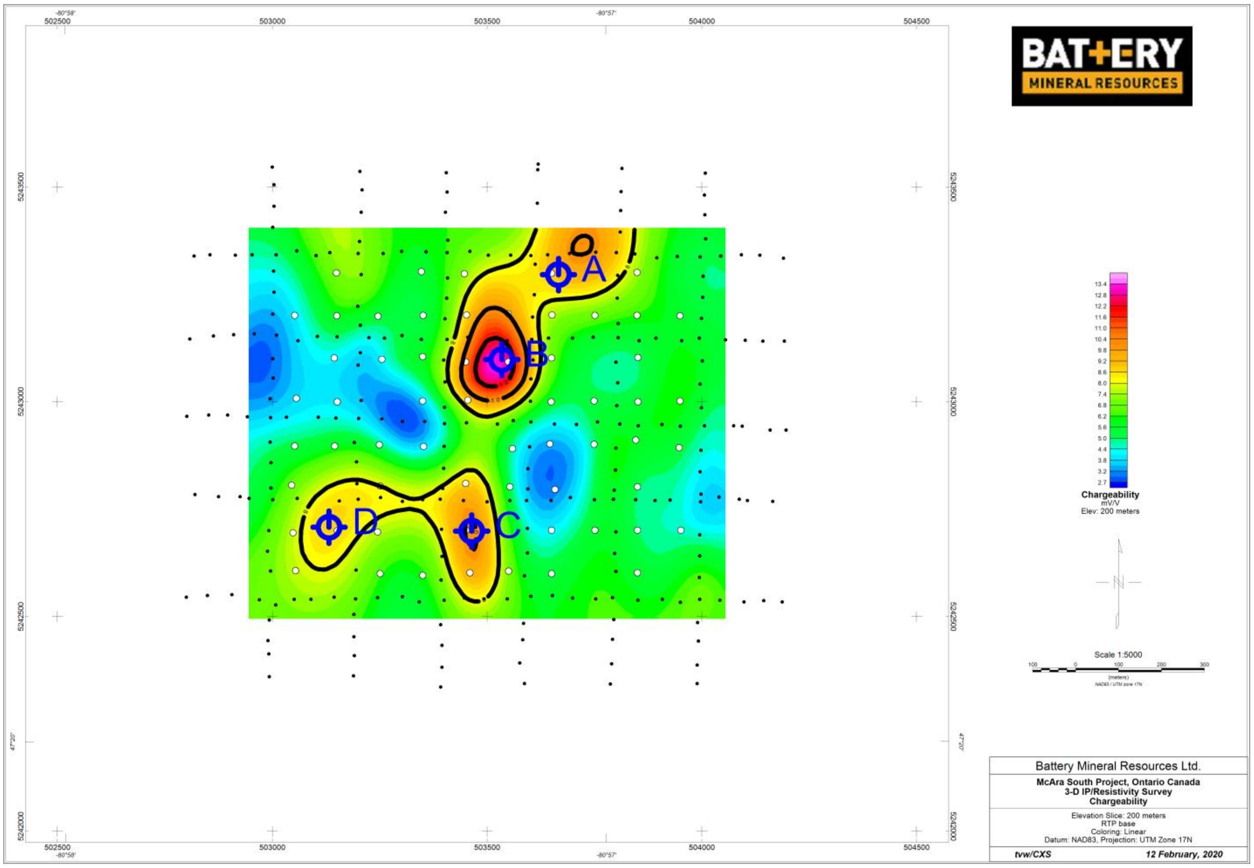

Figure 26 – The 200 meter IP elevation slice used to pick IP Target C.

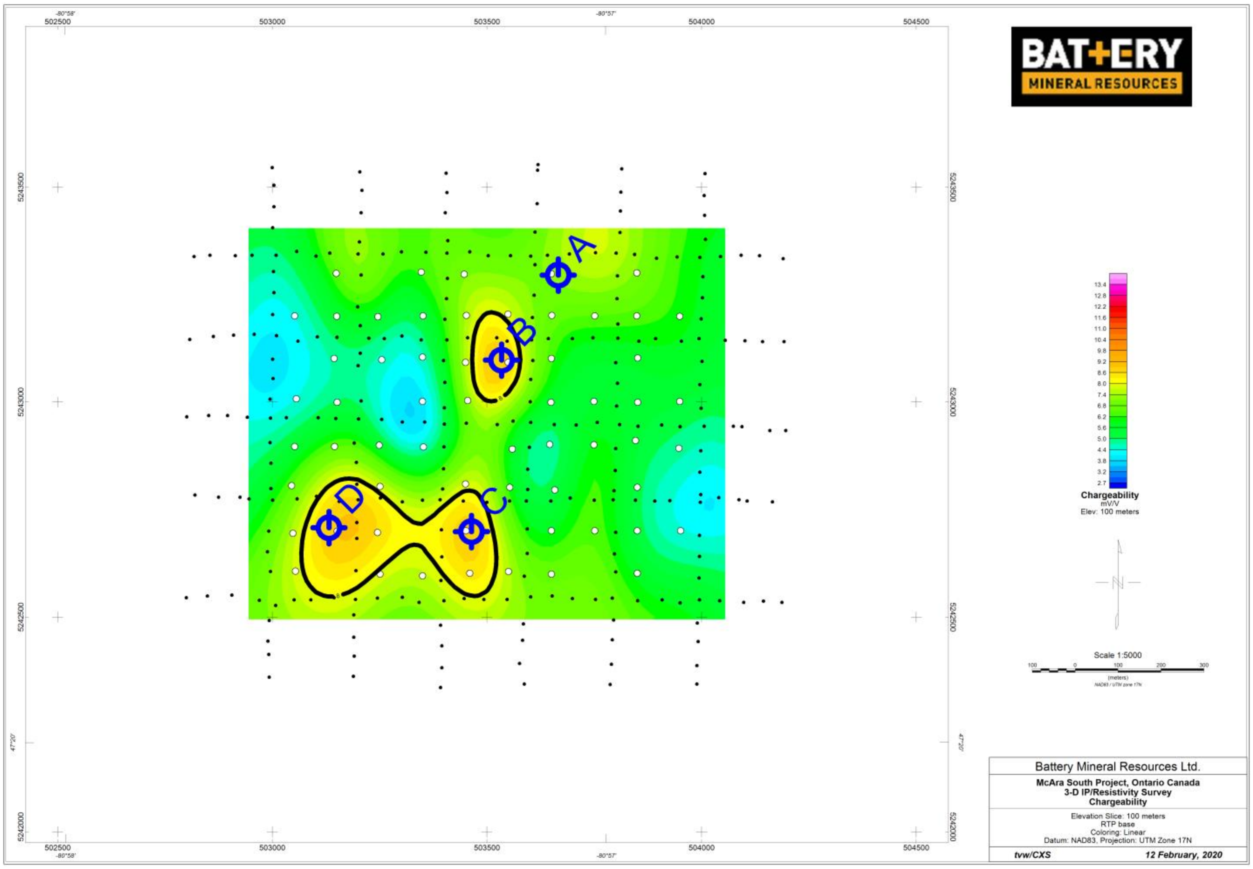

Figure 27 – The 100 meter IP elevation slice used to pick IP Target D

Resistivity Target

The resistivity target selected in this interpretation report is the structural intersection between the N-S striking Nipissing diabase intrusive and the WNW striking younger diabase dike/structure.

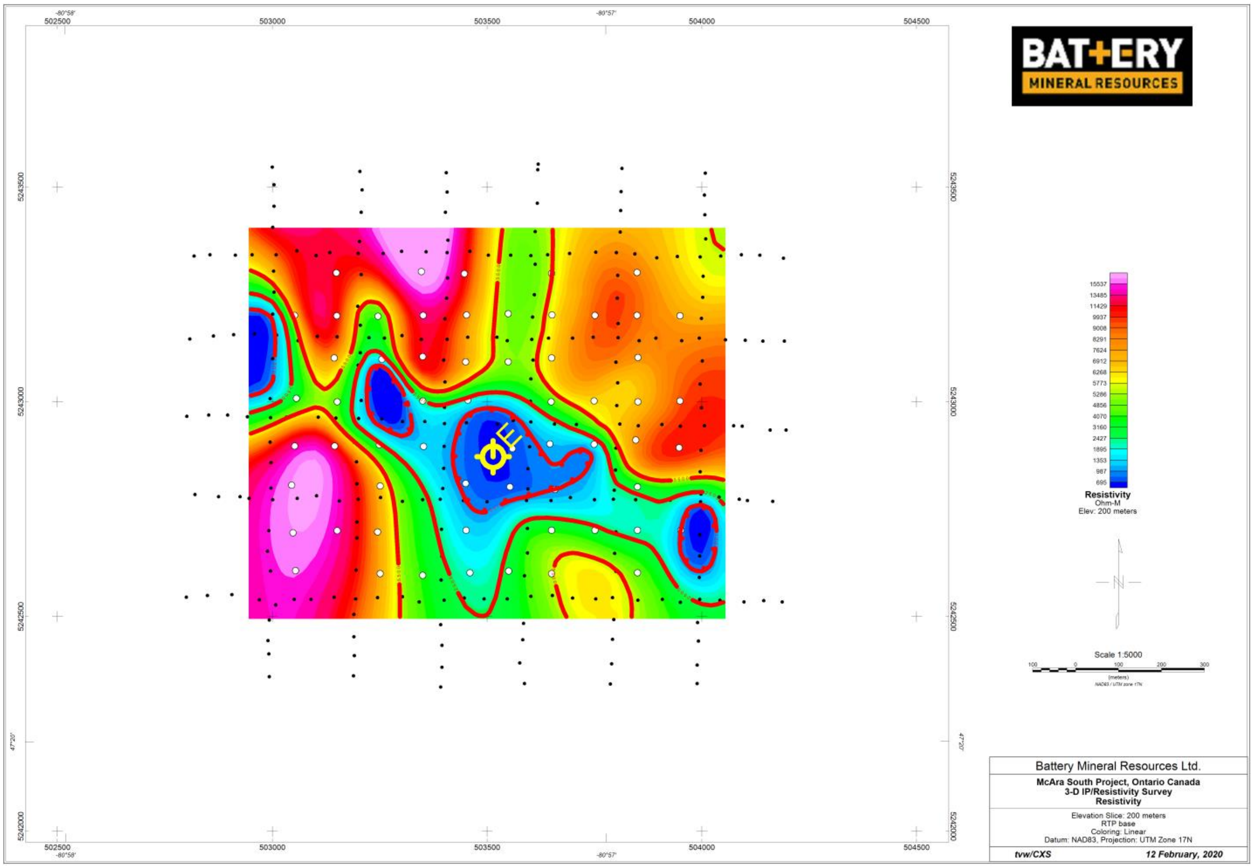

Figure 28 – The 200 meter resistivity Elevation slice used to pick Rho Target E.

Magnetic Target

The magnetic target identified in this report is a bend in a right lateral strike slip structure interpreted as a space opening dilation zone similar to that occurring in the McAra area.

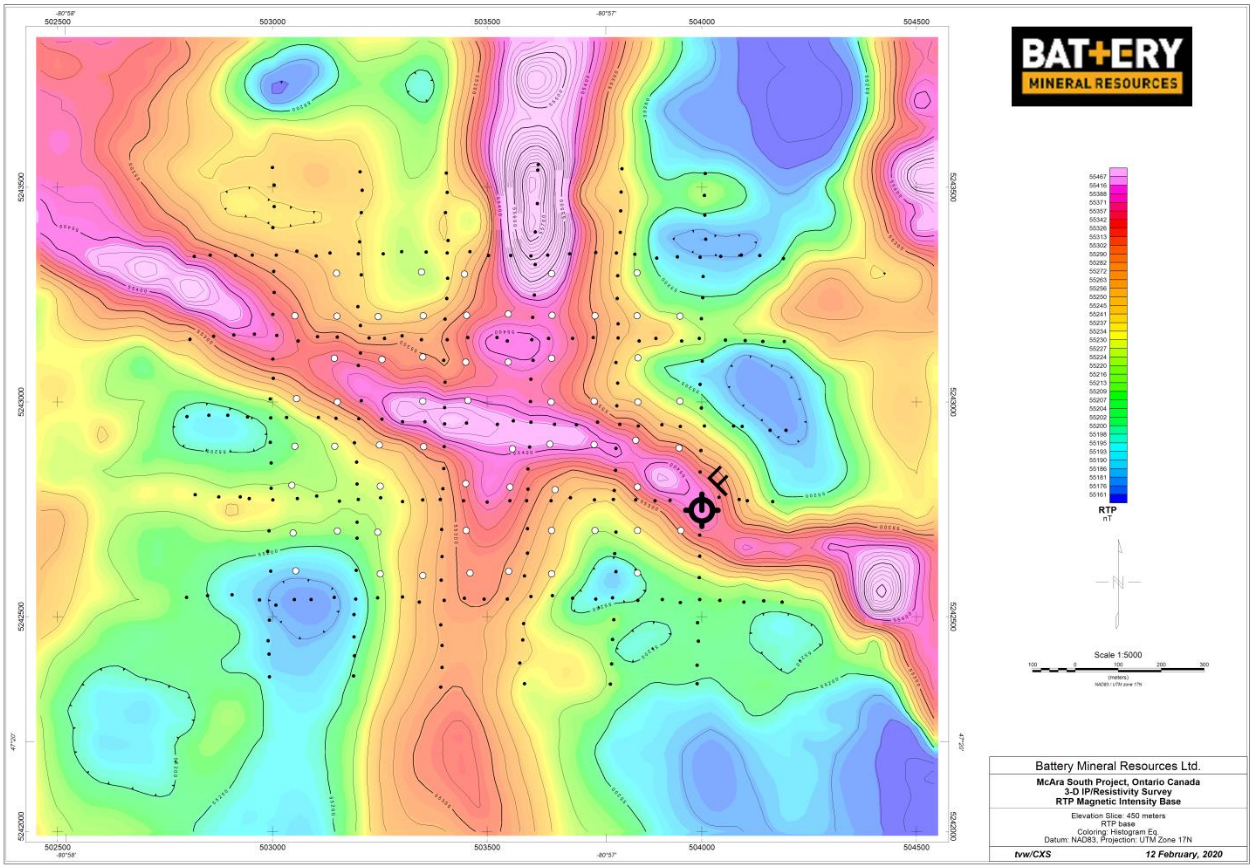

Figure 29– The RTP magnetic image used to pick Mag Target F which is a dilation space opening target based on right lateral strike slip motion along the WNW striking diabase dike/structure. Note there are a series of weak E-W striking dike features mentioned in the report above which might be considered drill targets. I have not selected them here but if they are of geologic interest they should be considered.

Conclusions

Four IP targets, one resistivity target and one magnetic target have been identified from the McAra South geophysical data sets.

The McAra South area geophysics is dominated by the intersection of two diabase units. The older Proterozoic age Nipissing diabase intrusive which strikes N-S and the younger WNW diabase dike/structure. These intrusive bodies show up clearly in the 2016/2018 helicopter magnetic data set.

The IP responses of interest occur along the edge of the Nipissing intrusive body. This is exactly where historic cobalt mineralization has been found (see Figure 30).

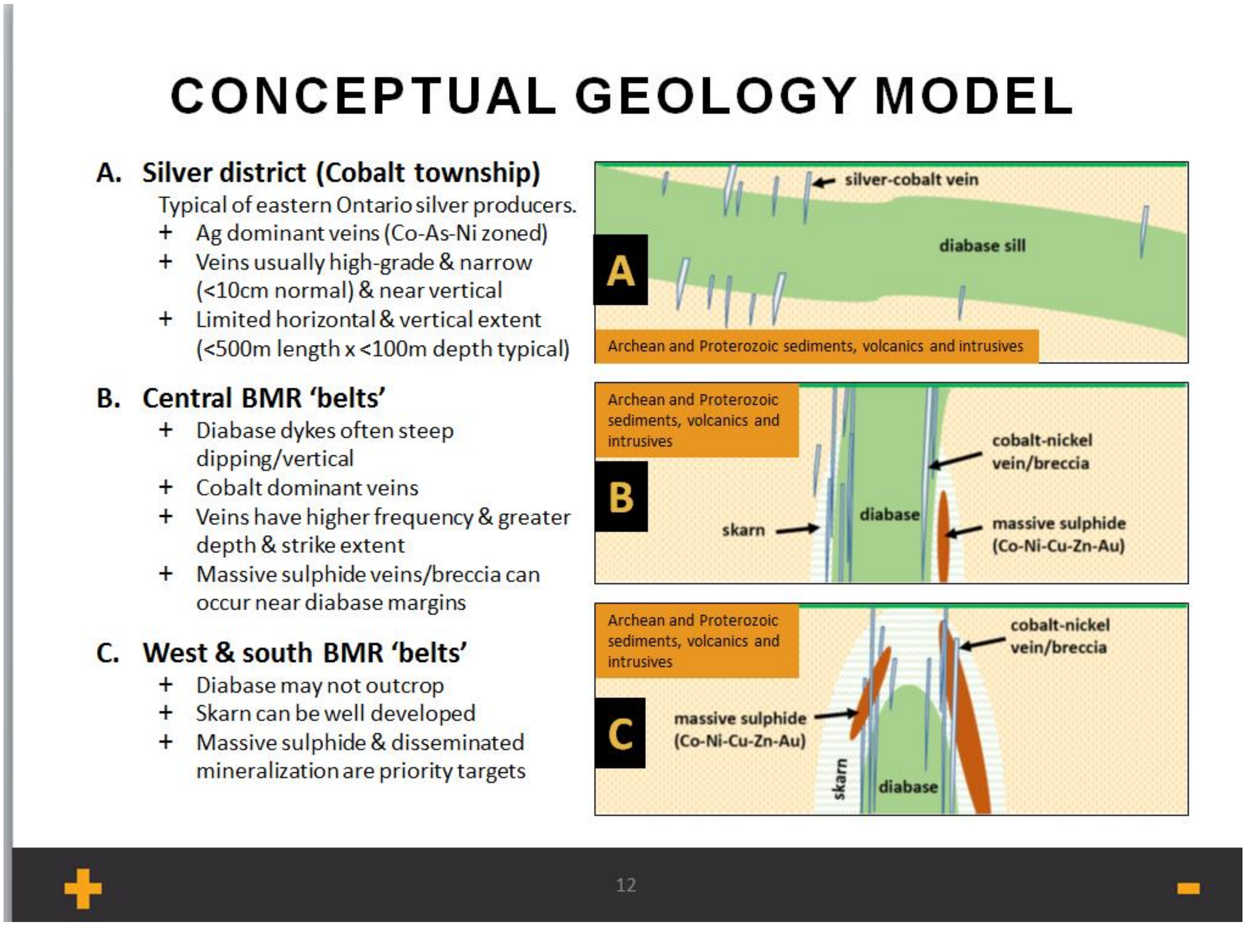

Figure 30 – The geologic model used in this report (provided by BMR).

The resistivity data set maps the Nipissing diabase and the WNW diabase dike as resistivity lows which are interpreted here to be a function of alteration (and not weathering).

Recommendation

Extend the 3-D grid to the North and East from the current grid. Add one grid to the North and one grid to the east.

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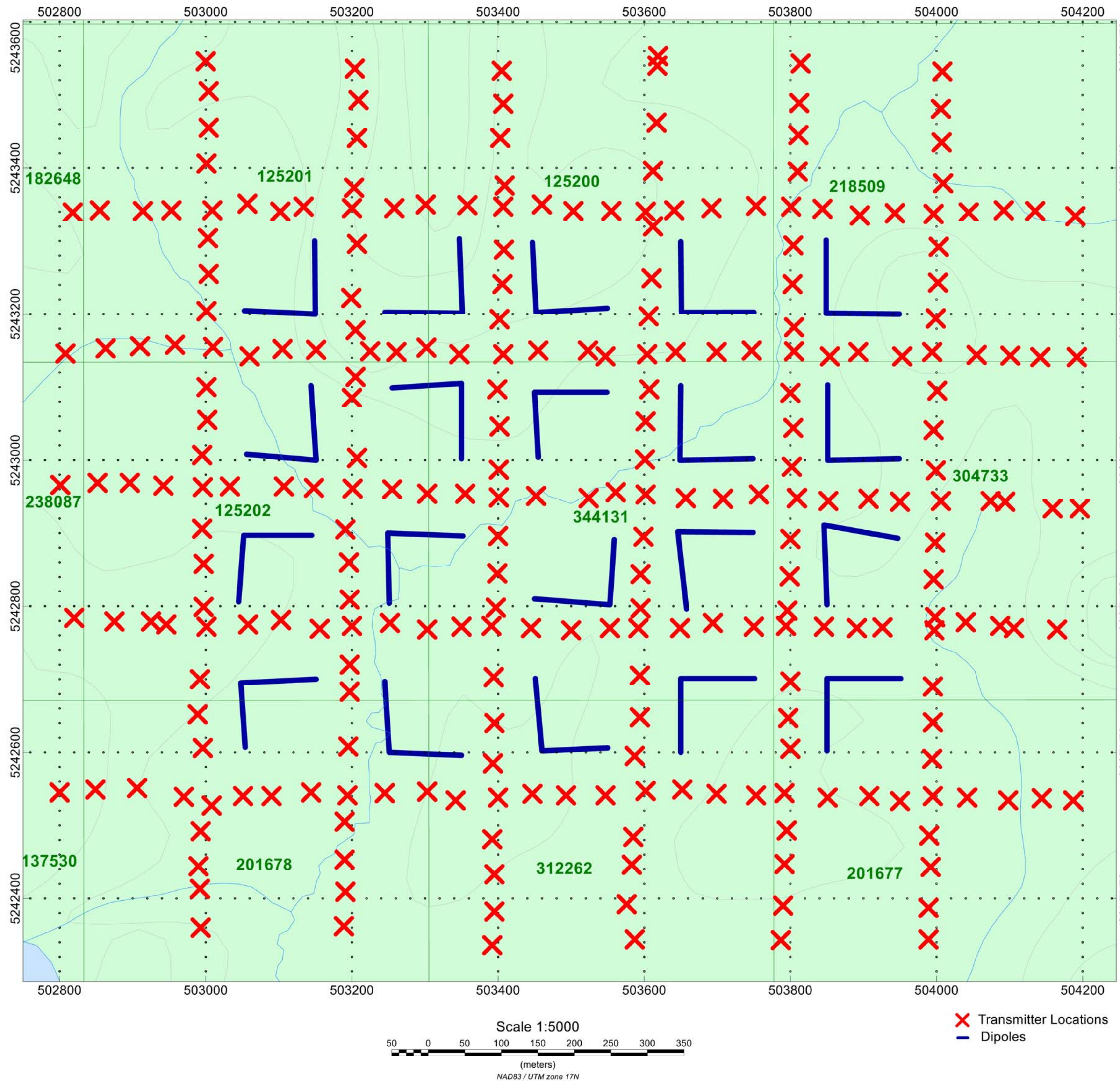

BATTERY MINERAL RESOURCES

McAra Project - South Grid
Dufferin Township, Ontario

3D Distributed Induced Polarization Array
Survey Layout
Operational Claim Fabric

Processed By: Melanie Postman, GIT
Mandy Lim, GIT
Andrew Salerno, BSc
Map Drawn By: Mandy Lim, GIT
April 2019

CXS CANADIAN EXPLORATION SERVICES LTD

Drawing: Q2620-Battery-McAra-South-3DIP-Layout-Claims