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Stevens Geophysics Inc.
Technical Report

Date: 11/2021

Subject: Interpretation of Magnetotelluric, Magnetic and Gravity Geophysical Datasets, on the Titan property, NW Ontario.

Prepared for: Impala Platinum Canada Ltd., Thunder Bay, ON

Prepared by: Kevin Stevens, P.Geo. #268

Scope of Work:

The data collection, review and interpretation of the geophysical data sets from the Titan property is composed of two activities:

1- Magnetotelluric (MT) QAQC during data acquisition and MT data processing and results,
2- MT Data interpretation and integration with magnetic and gravity toward the generation of drill target(s).

Magnetotelluric Survey Area:

Quantec Geoscience Ltd., Ontario, collected 11 magnetotelluric measurements along a north west to southeast profile across the Titan exploration property (Figure 1). The sites were nominally 500 m apart over the western edge of the main magnetic and gravity anomalies. MT acquisition procedures are outlined in the Quantec report (2021). MT impedance data were estimated for frequencies covering near surface to depths exceeding 5km (10,000 to 0.01Hz). Data quality is excellent for all sites, and frequency range with only some noise and data loss on the lowest frequency decade.

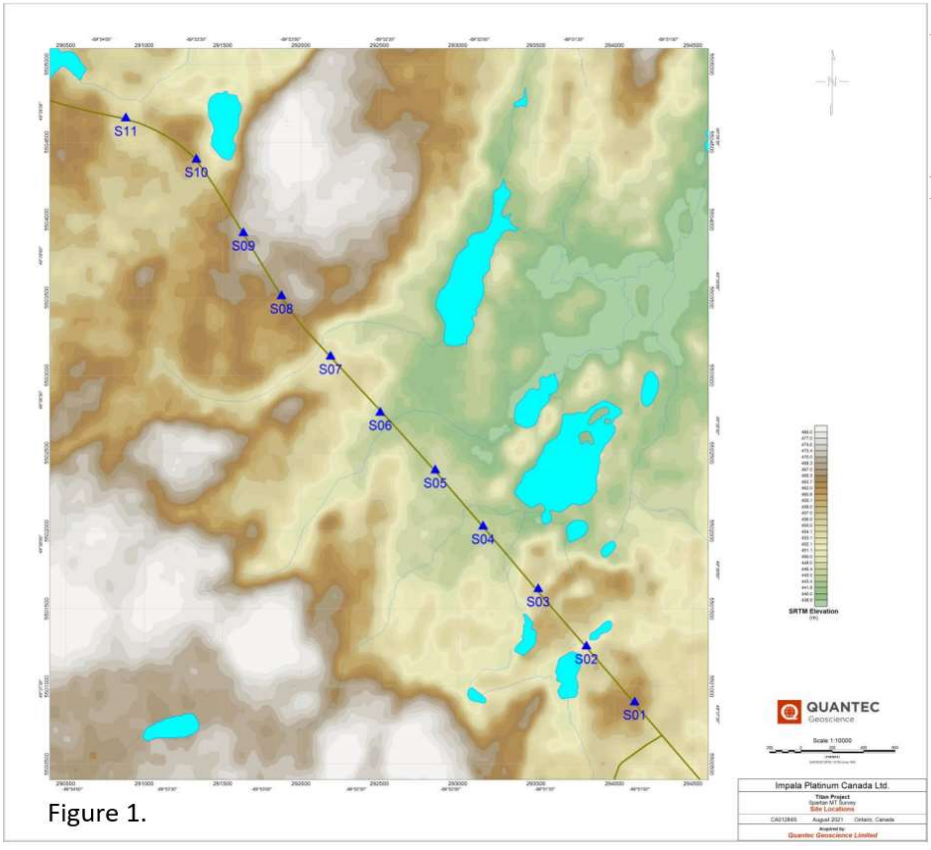
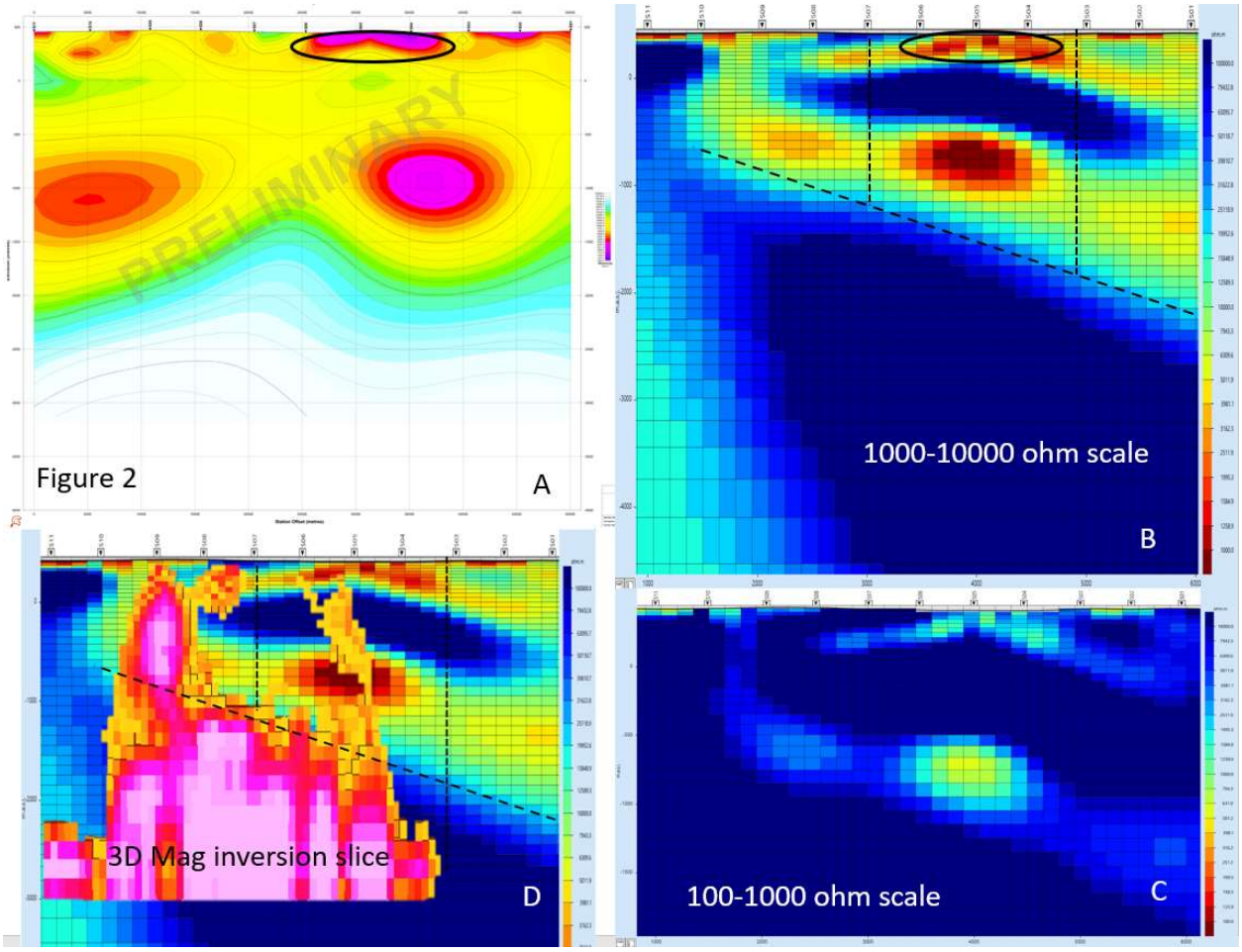


Figure 1.

Magnetotelluric Survey Results:

The 11 MT sites from the Titan property provided excellent data quality in the near surface to depth, largely showing very resistive rocks in the upper kilometre but a range of <1000-100000 ohmm in the rock mass. The data exhibits mostly 1D/2D nature so it can be used to estimate the subsurface 2D resistivity profile at this location. After minor data editing and detailed modelling of the apparent resistivity and phase curves, a 2D inversion product of the whole data set was used



to recover an estimate of the subsurface resistivity and is shown in Figure 2b, opposite the inversion result provided by Quantec (2a). Two inversion sections are shown on the right side of Figure 2, b/c. The scale on the upper section is the same 1000-100000 ohmm as used in 2a. Figure 2c shows the same 2D MT inversion result as 2b, recontoured at 100-10000 ohmm scale. This highlights the lowest resistivity features only and also illustrates the structure/faults potentially recovered between the resistivity lows. The near surface areas of low resistivity as exemplified near sites 4,5,6 are consistently recovered as are the two main isolated low resistivity areas at 500-1000m depths. The MT inversions (b/c) further indicate a possible SE dipping low resistivity layer or series of isolated low resistivity areas in contact with a more resistive basement >1500m. Two subvertical structures/faults may be indicated by the slight lateral changes in resistivity (vertical dashed,2b). The base of the deep dipping region of sharp lower to higher resistivity is also identified. The picture in the lower left , Figure 2d, shows the 2D MT inversion product overlayed with a 3D magnetic inversion model sections estimated location.

The wide range in resistivity contrasts measured, the isolation of discrete low resistivity layers/regions and the excellent quality of data collected across the entire frequency range of measurement indicate very positive evidence for the application of large scale resistivity assessment of the Titan property using the MT method.

MT/Magnetic/Gravity Data integration and Results:

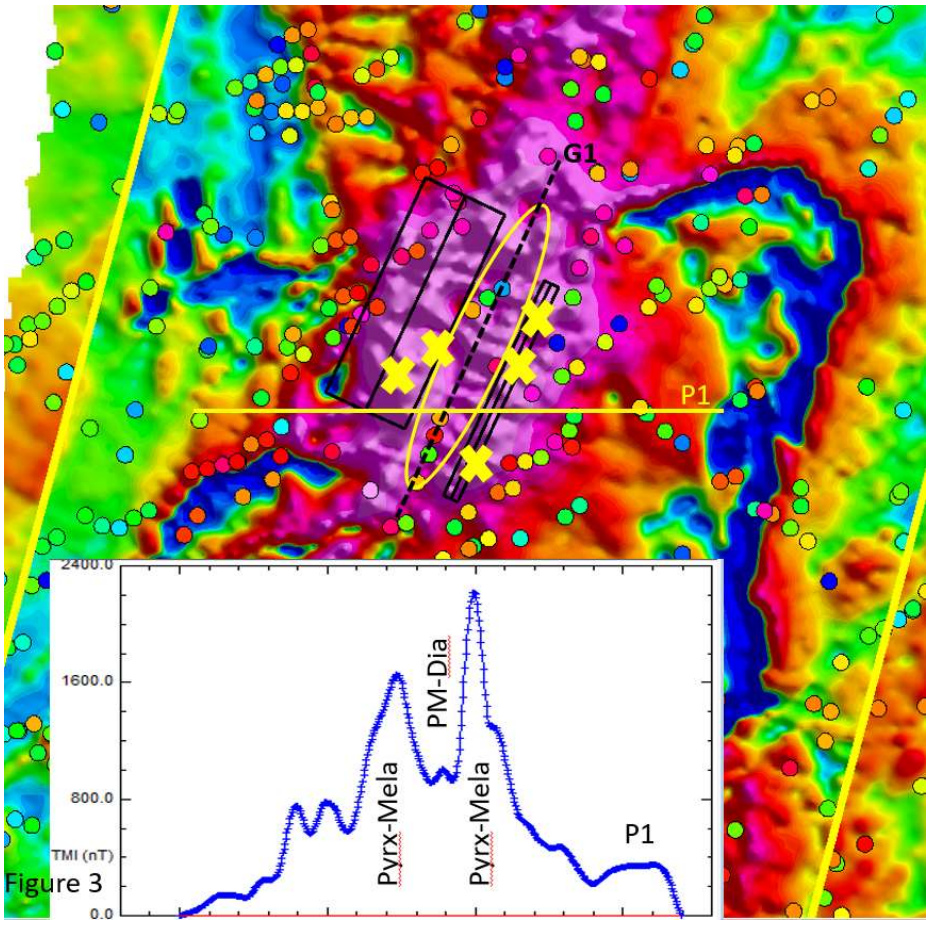


Figure 3

Frequency domain airborne electromagnetics (FDEM) and airborne magnetics as well as a Sanders Geophysics airborne gravity survey data were interpreted from the Titan property. Figure 3. shows background total magnetic intensity, and the FDEM airborne EM picks (GDS1105). The P1 profile is a magnetic profile as shown in the insert. The near surface and strongly magnetic west and east sides of the central pyroxenite intrusion have quite different magnetic intensities and thicknesses. The east side is much higher in measured magnetic field strength and thinner in profile, and a simple block model (black outlines) suggests a larger volume lower susceptibility rocks on the west side and a more dyke like (thinner), higher susceptibility on the east side (200-300m wide). However the reduced susceptibility in the central part of the profile and present along an axis to the NNE, is interpreted to be caused by a combination of intruding Nipigon diabase (early Proterozoic-reverse polarized, as illustrated by the annular highly reversely magnetized sill ring edge) and the pyroxenite/melanograbbro (normal polarization) thereby reducing the overall central magnetic signature. This would suggest a large volume of diabase maybe present in the central area and the feeder area could have a thicker diabase component. Nonetheless the east magnetic lobe remains the highest amplitude, narrow profile, probably nearest surface exposure of the highly magnetic rocks that could be associated with the pyroxenite-melagabbro target rocks (yellow crosses). The gravity data can be modelled with a central elongated body (yellow outline) and high density

contrast (0.8 to 1 g/cc) where the top is essentially the same elevation as the magnetic sources and the central axis runs in the middle of the central mag low (G1). This indicates a narrow but elongated area of high density rocks associated with the mixture of diabase and pyroxenite-melagabbro.

Figure 4 shows a plan view of the Titan property 3D geophysical model, the magnetic model blocks (blue) within the 3D susceptibility volume is shown as a magnetic isosurface at 0.033 SI and depth color contoured so that the highest magnetic susceptibilities recovered, where they are closest to the surface are highlighted (Figure 4a). Figure 4b shows where the 3D isosurface overlays the block models therefore indentifyng where the underlying positively magnetized pyroxenite rocks interpreted to be closest to the surface but beneath the diabase blanket. The east side the area opposite historic holes RR04-02/03 would be a location where the near surface approach could occur and the magnetic expression is strongest. To the northwest the target location is coincident with some weak near surface

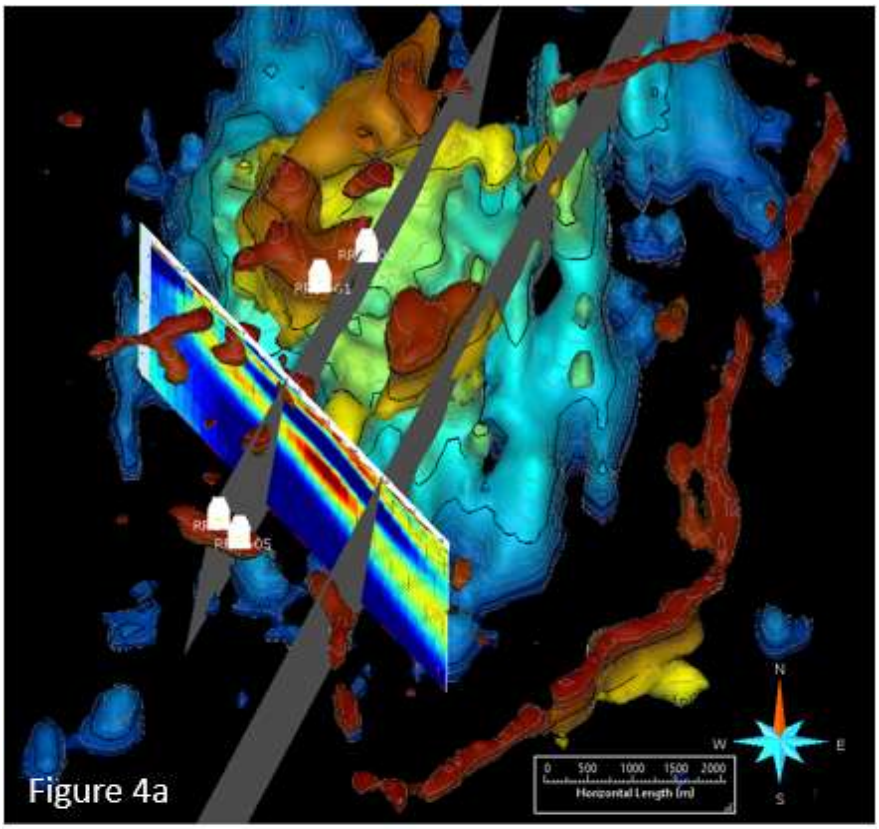


Figure 4a

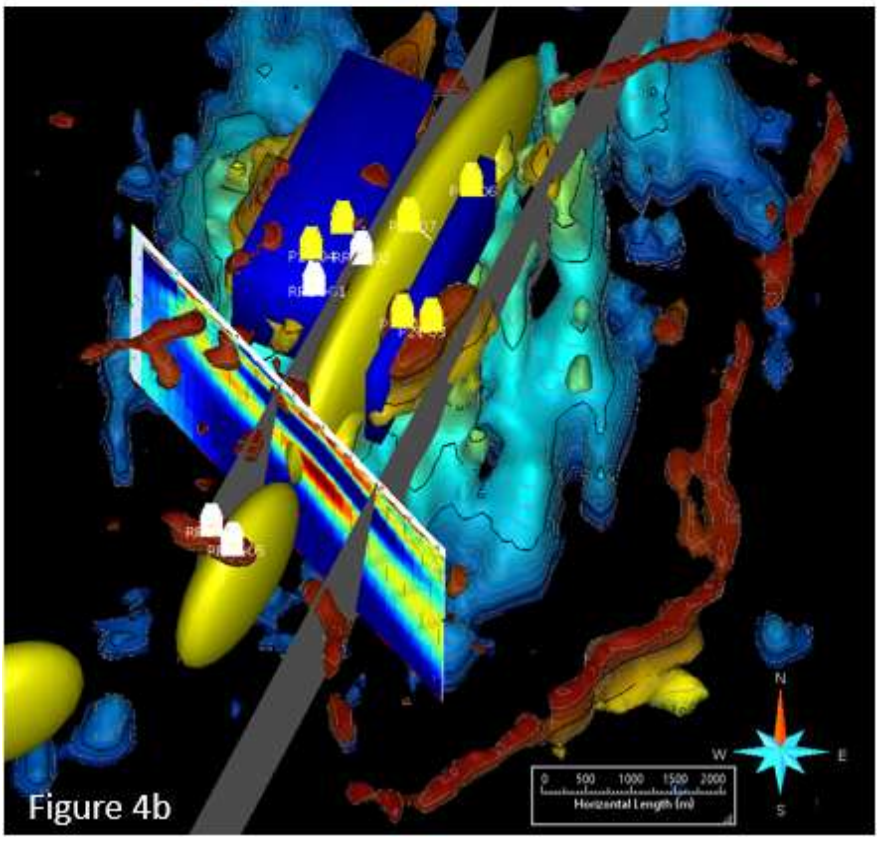


Figure 4b

airborne anomalies. Although most of the weaker airborne anomalies are surface responses there are a higher proportion of stronger conductors (red dots Figure 3) in this area when compared to the area immediately surrounding the intrusion. RR-04-01/02 appear to be too short in length to penetrate the thinnest cover diabase rocks. The diabase thickness will lead to drilling 150-200m of the diabase blanket on the west side and maybe less on the east side in the central area. The 3D isometric view from the south, also shows the shallow and deep MT anomalies on the east side lining up with a projection of the dyke like magnetic block body, and to depth as well as the south end of the central density model. The proximity of the MT sites to the south end of the magnetic body suggest the MT field maybe responding to it but off section.

Of additional interest, as shown in Appendix A1, the 3D shape modelling of the gravity field measured over the property uses a simple 3-body model that illustrates the distribution of the dense rocks relative to the observations. The three dense bodies are nearest surface just NE of the MT section and trend deeper and smaller SW.

Summary:

The 3D magnetic, AEM and gravity data collected on the central Titan property have been combined with the base geologic information toward outlining drill target areas. The data compilation and modelling wrt to the local geological information resulted in the following observations:

- The MT data exhibited excellent data quality and the data content revealed underlying rocks exhibiting a large resistivity range (<100 to >10,000 ohmm), high resolvability in the 0-2km range in the form of possible layering, discrete low resistivity features, and the inferred locations of possible faults/structures. This is very positive evidence for the application of large scale resistivity assessment of the Titan property using the MT method.

- The magnetic and gravity data indicate a large central magnetic and dense region (0.8-1.0 g/cc density contrast with host) that subdivides into several more discrete magnetic areas with the same magnetic body. The magnetic diabase lies as a sill-like blanket over the region. The magnetic signature of the diabase has combined with the magnetic signature of less affected parts of the pyroxenite-melagabbro in the central part of the property, which results in a reduced magnetic signature at the center of the most dense parts of the intrusion.

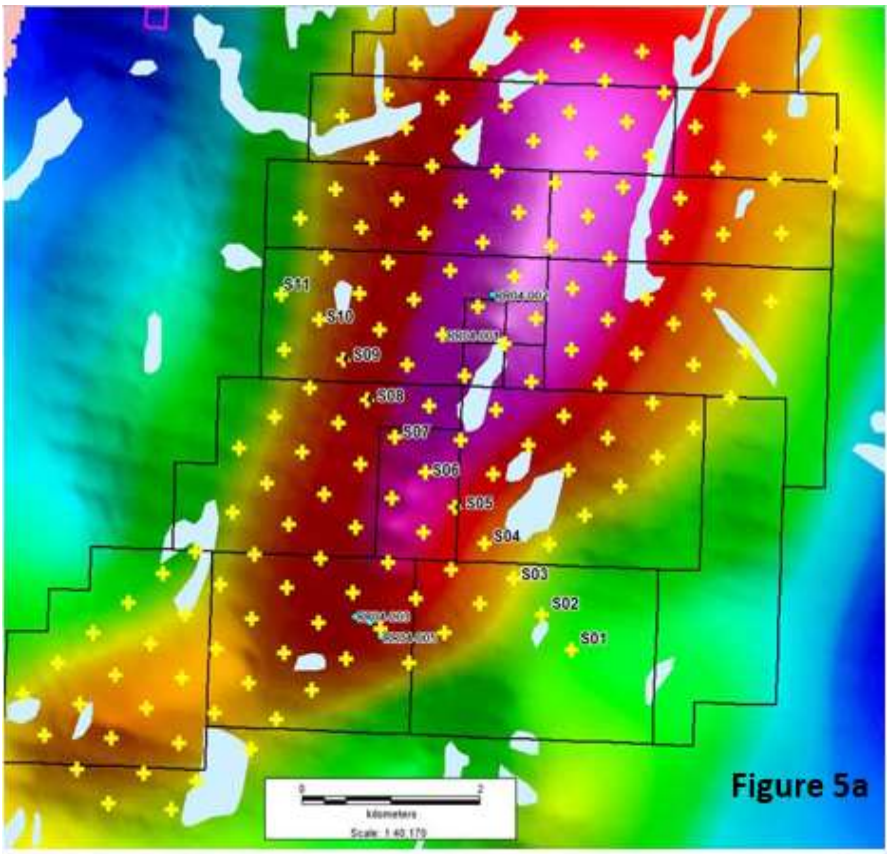
- As well as additional resistivity data collection (ie MT), an initial drillhole placement could prioritize those locations where the high normally polarized magnetic content approaches closest to the surface and at the loaction of the main central gravity peak.

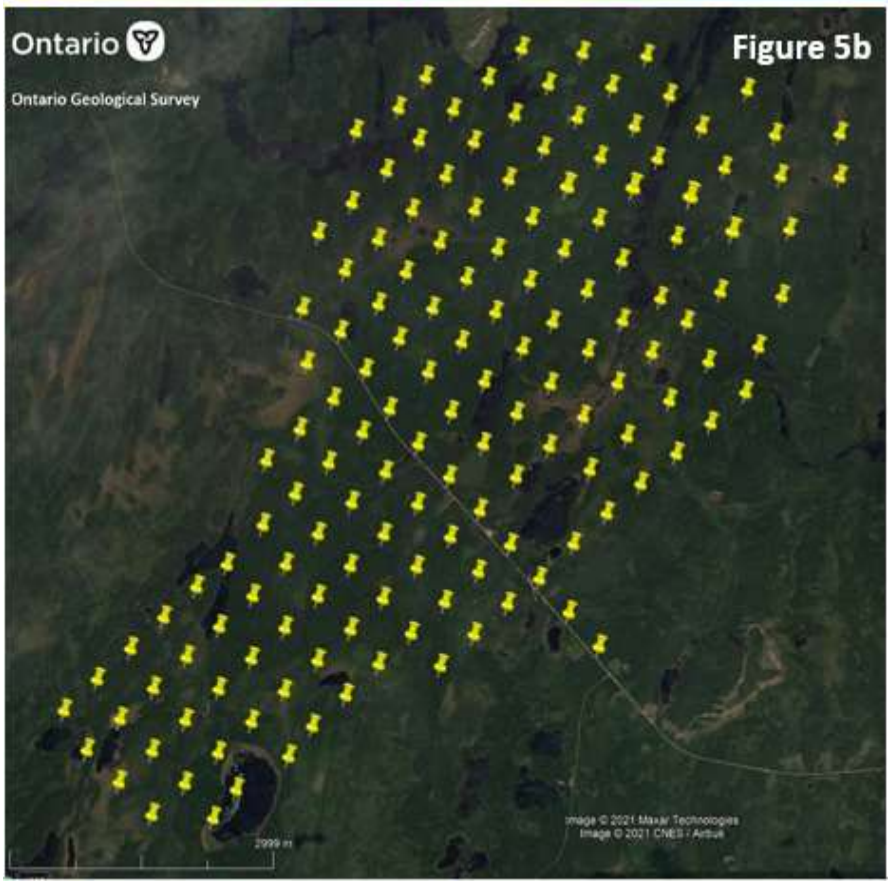
Recommendations:

1) **3D MT survey:**

The footprint of the Titan property intrusion as measured by the SGL gravity survey was used to design a grid of an additional 142 full tensor AMT/MT sites, (10,000Hz to 0.01 Hz), since the lower frequencies are useful when modeling the higher frequency responses (0-2km depth, Figure 5a). The survey covers a large spatial extent. Including the initial 11 sites, this totals 153 full MT sites for resistivity mapping over the area (Figure 5b). Site density is 500x500m centers oriented along NW to SE trending profiles. The survey area is limited to the north as previously defined and it is extended to cover the entire gravity footprint since it appears to be extend to the SW.

The addition of the 3D resistivity distribution recovered from the 3D MT survey would contribute to the database, potentially offering an effective regional target screening ability on the Titan property, along with the regional magnetic and gravity data.



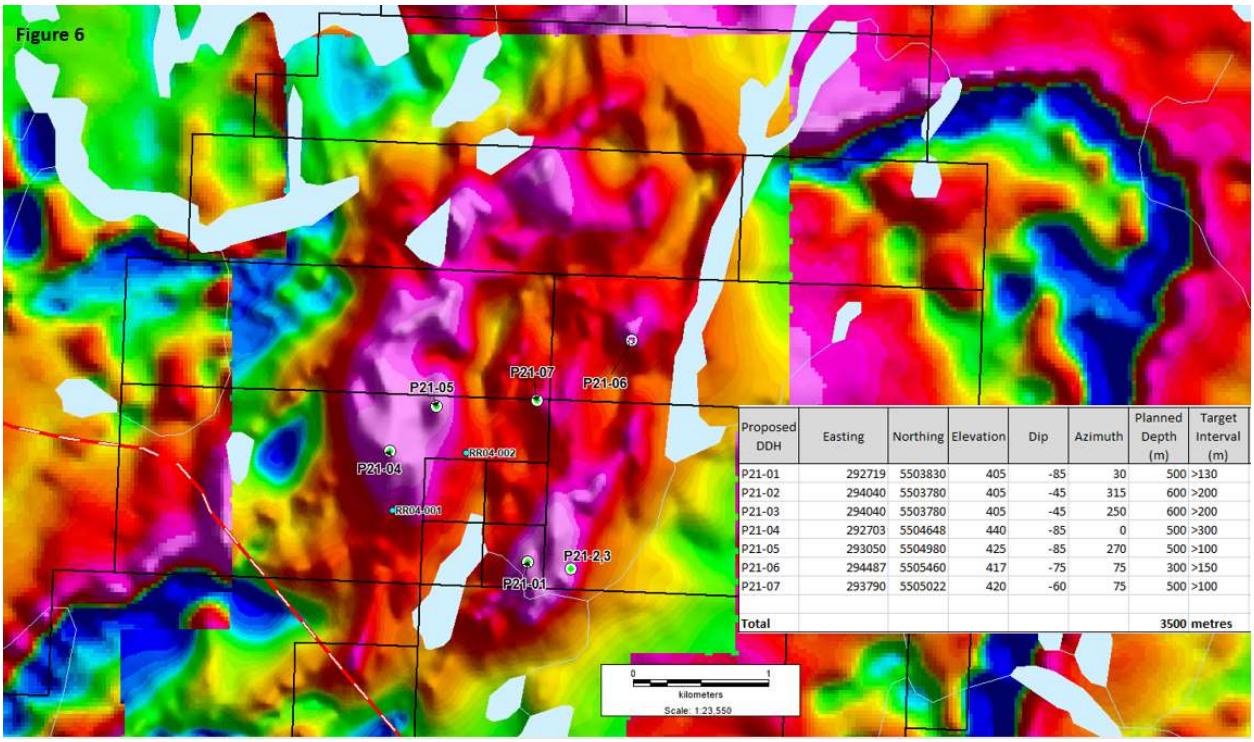


2) Initial Drill Program

Initial drillhole placement targeting shallow magnetic pyroxenite-melanogabbro could prioritize those locations where the highest normally polarized magnetic content approaches closest to the surface coincident with the location of the main central gravity peak or edges. Here are the coordinates for seven drillholes totalling 3500m, proposed for the next drill phase at Titan.

Proposed DDH	Easting	Northing	Elevation	Dip	Azimuth	Planned Depth (m)	Target Interval (m)	Comments
P21-01	292719	5503830	405	-85	30	500	>130	high mag target, subvertical, near IP axes
P21-02	294040	5503780	405	-45	315	600	>200	target intersection 100-200m below surface, north 01, mag, edge gravity
P21-03	294040	5503780	405	-45	250	600	>200	target intersection 100-200m below surface, south 01
P21-04	292703	5504648	440	-85	0	500	>300	central deep mag, west edge gravity
P21-05	293050	5504980	425	-85	270	500	>100	peak mag, near max density axis. Ip axes
P21-06	294487	5505460	417	-75	75	300	>150	NE mag edge gravity
P21-07	293790	5505022	420	-60	75	500	>100	Moderate mag anomaly, isolated AEM,density crest, IP axes
Total						**3500**	**metres**	

Figure 6. shows a composite map of the regional AMAG/EM and local VTEM/magnetic over the central part of the Titan property. Holes 1-3 target the highest amplitude magnetic and high density contrast edge feature interpreted to be related to the nearest surface approach of the top of the pyroxenite/melanogabbro. Subject to the information recovered in the vertical hole 01, holes 2,3 could follow up with inclined holes along magnetic density contact striking north and south of 01.



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P21-02	294040	5503780	405	-45	315	600	>200
P21-03	294040	5503780	405	-45	250	600	>200
P21-04	292703	5504648	440	-85	0	500	>300
P21-05	293050	5504980	425	-85	270	500	>100
P21-06	294487	5505460	417	-75	75	300	>150
P21-07	293790	5505022	420	-60	75	500	>100
Total						3500	metres

Holes 04 and 05 test the west prominent magnetic and density highs, somewhat weaker but broader than the eastern side mafic intrusive signature. Proposed holes 06 and 07 test isolated magnetic highs, central NE, interpreted to be close to surface. Previously mapped IP chargebility anomalies occur along strike north of 01,2,3 and 07. The deep very low resistivity area on the MT section remains an attractive deeper target area at the south edge of the intrusions magnetic and density signatures.

References:

Garden Obonga Area: Ontario Airborne Geophysical Surveys Magnetic and Electromagnetic Data Geophysical Data Set 1105 - Revised OGS-MNDM, Sudbury, Ontario, P3E 6B5 Canada.

Geotech Ltd, 2010, Airborne Magnetic and VTEM survey for Ringbolt Ventures.

Quantec Geoscience Ltd., 2021, Geophysicsl Report For a Spartan MT Survey Over The Titan Property (Ontario) on Behalf of Impala Canada Ltd.

Sanders Geophysics Ltd., 2020. A High Resolution Helicopter-borne Gravimetric Survey Near Thunder Bay, ON.

Appendix 1: 3-Body forward model parameters Titan residual gravity data.

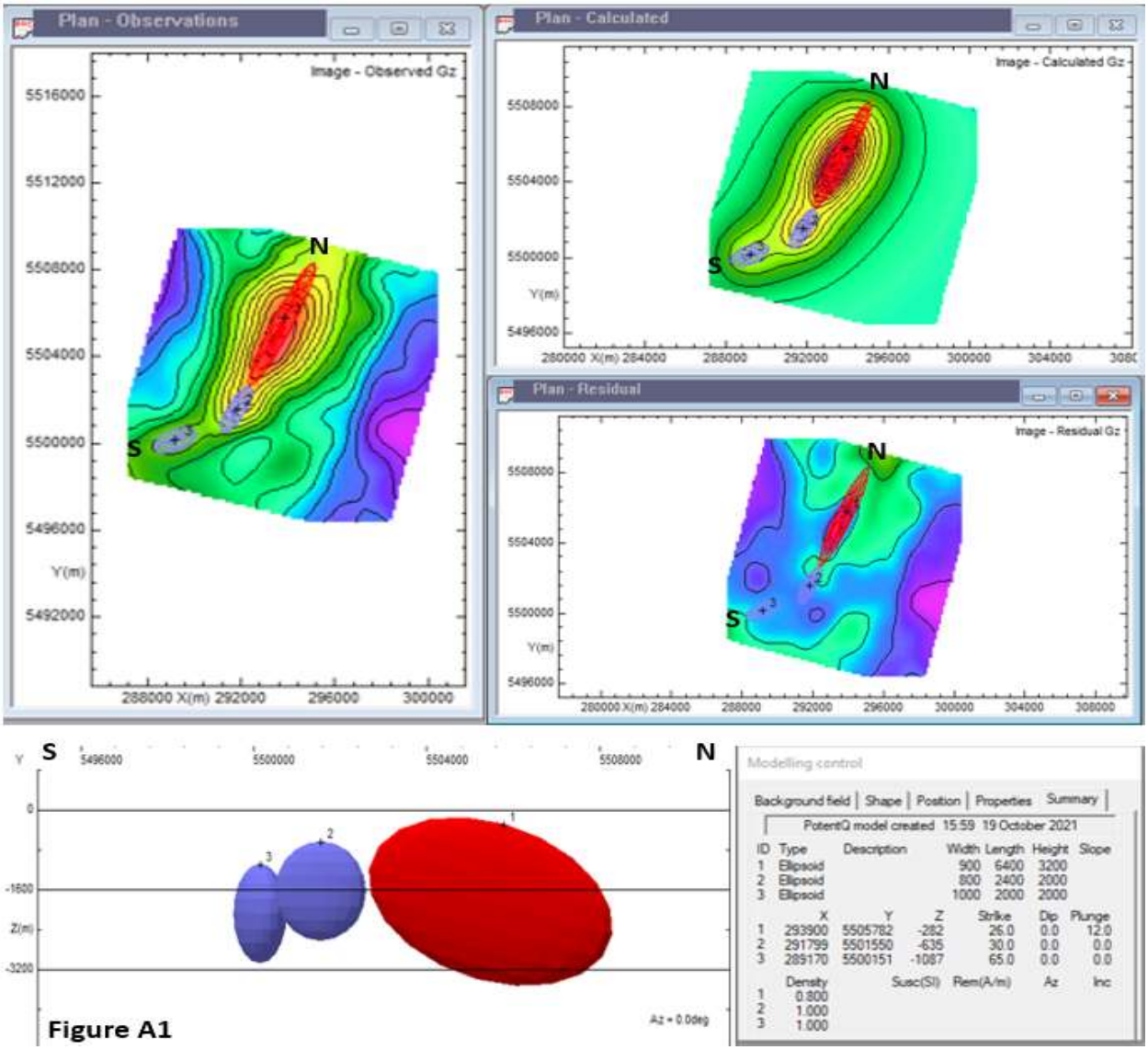

Figure A1