

SEVENTH ANNUAL REPORT

GR461 - EXPLORATION LICENCES EL 25566 & 31383

Titleholder : Gempart (NT) Pty Ltd

FOR THE PERIOD 23/08/2022 to 22/08/2023

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ABSTRACT

Gempart's Musgraves Project is located in the Musgraves Province in the extreme southwest corner of the Northern Territory. Tenement comprised four granted titles EL25566, EL27912, EL27913 and EL31383 with group reporting status GR461. EL27912 and EL27913 were surrendered in July 2019. This document reports on exploration undertaken in the sixth year of tenure for EL25566 and EL31383.

Primary commodities sought are gold, base metals, nickel, PGE's, and REE's. Little modern exploration data exists from government information or past explorers. There are no prospects, mineral occurrences or drillholes within the relinquished area. The geology appears to be predominantly granitoid rocks of the Mesoproterozoic Umutju Granite Suite.

Work since grant has included an external exploration potential review, two VTEM surveys for total 732 line km, three ground gravity surveys for total 1,731 stations, a helicopter-borne magnetic-radiometric survey for total 4,700 line km, and two field trips with 130 pXRF readings. Subsequent to ongoing data review, ground checking and two rounds of relinquishment, three prospects remain for ground EM follow-up. The prospects are two coincident gravity/magnetic anomalies, called Mag Anomaly #1 and SGC prospects, and a VTEM anomaly called VTEM Anomaly 1400a prospect.

An Agreement for ground EM surveys at all prospects was concluded in March 2021; after substantial delays the contractors mobilised and completed the surveys in November 2022.

The surveys collectively comprised of 136 receiver sites for a total of 8.8 km of moving loop data and 552 receiver sites for a total of 25.35 km of fixed-loop data. The EM data at all sites included noise and IP effects. However sufficient information was obtained to allow interpretation of conductors at all prospects. At Mag Anomaly #1 prospect conductive bodies were identified coincident or near-coincident with gravity/magnetic models from ground gravity and aeromagnetics. At SGC prospect very weak conductors were interpreted near gravity and magnetic models derived from a seven milliGal gravity anomaly and aeromagnetics. At VTEM Anomaly 1400a prospect anomalies recorded on 500m line-spaced VTEM traverses were confirmed in the ground data.

The ground EM has upgraded the prospectivity of all three prospects. The next phase of exploration is sub-surface sampling, and traverses of air-core drilling have been planned to obtain bedrock samples for geochemical assay.

1. INTRODUCTION

1.1 LOCATION AND ACCESS

The Musgrave Ranges Project area is located approximately 500km WSW of Alice Springs and adjacent the Surveyor Generals Corner at the junction of NT/WA/SA. Refer Figure 1. Other than the rare aboriginal outstation there are no populated settlements. Vehicular access is via the unsealed road from Ayers Rock to Docker River, thence various unsealed roads connecting outstations.

Drainage comprises minor creeks mostly in the eastern part of the tenement area. Typically, these watercourses flow after rains but may be dry for most of the year.

Topographically it is flat. Elevation varies only 100 metres across most of the tenement area, from 620 to 700 metres. Outcropping granitoids form isolated hills to 750 metres height in the central part of the area, rising to a maximum of 950 metres at Mount Samuel in the eastern part.

The climate is arid. The rainfall is erratic and punctuates extended dry spells.

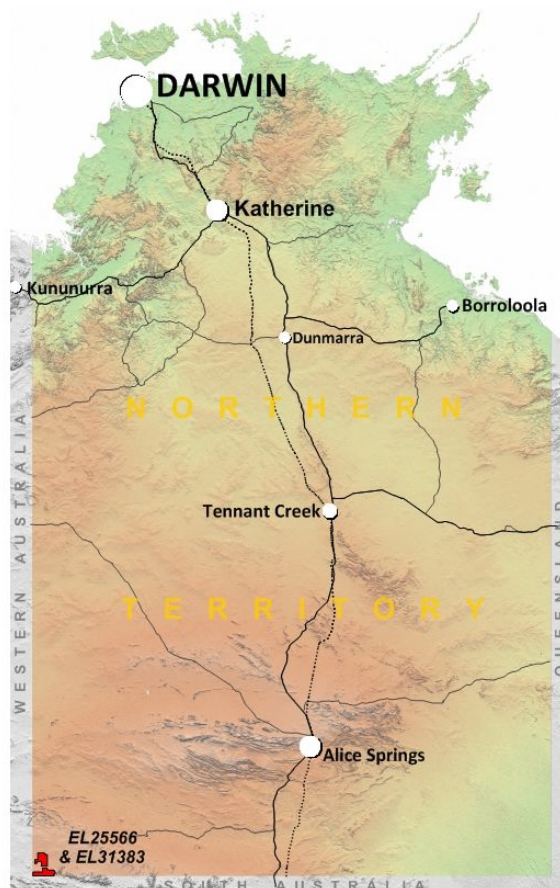


Figure 1: Regional location Map of EL25566 and EL31383.

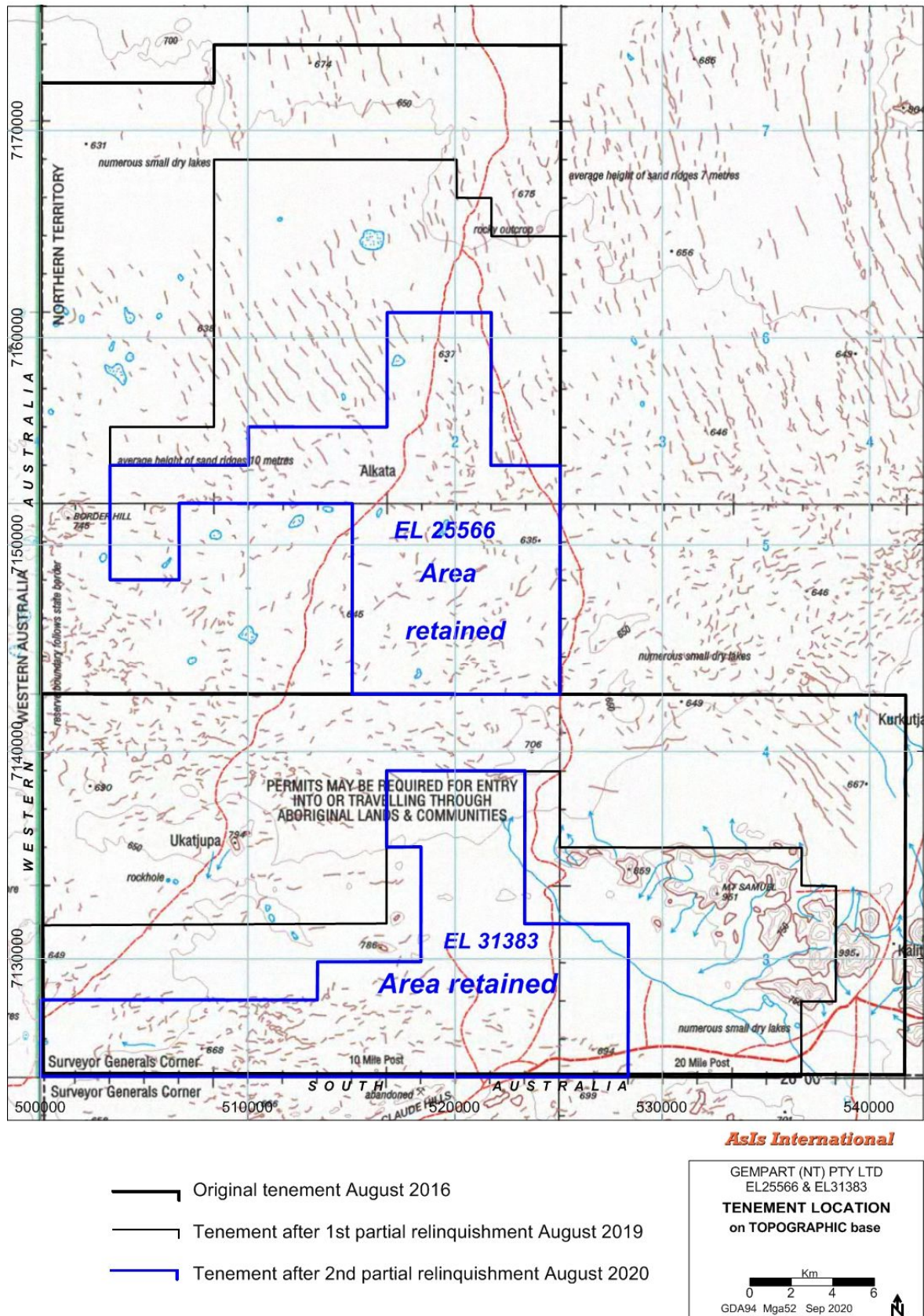


Figure 2: Tenement location Map of EL25566 and EL31383.

2. TENURE

2.1 MINERAL TITLE

EL25566 and EL31383 were granted for a period of six years on 23rd August 2016 to Gempart (NT) Pty Ltd. These two EL's, in conjunction with EL27912 and EL27913, have group reporting status as GR461. EL27912 and EL27913 were surrendered in 2019.

An application for Waiver of Reduction was accepted after the first two years of tenure. A 50% reduction was applied on 22nd June 2019, and second reduction in September 2020. At the expiry of six years the tenements were renewed.

Table 1: Exploration tenure

Tenement	Name	Event	Area (Sq km)	Blocks	Date
ELA25566 and EL31383 ELA25442	Border Hill	Application	924	300	23-Aug-06
	Mount Cockburn	Application	1540	500	04-Jul-06
ELA27912	Mount Cockburn	Revised application	1021	333	30-Nov-15
EL25566	Border Hill	Grant	774	250	23-Aug-16
EL31383	Mount Cockburn	Grant	764	250	23-Aug-16
EL25566	Border Hill	Waiver of	774	250	23-Aug-18
EL31383	Mount Cockburn	Reduction	764	250	23-Aug-18
EL25566	Border Hill	Partial	388	125	22-Jun-19
EL31383	Mount Cockburn	relinquishment	383	125	22-Jun-19
EL25566	Border Hill	Partial	195	63	02-Sep-20
EL31383	Mount Cockburn	relinquishment	190	63	02-Sep-20
EL25566	Border Hill	Waiver of	195	63	23-Aug-21
EL31383	Mount Cockburn	reduction	190	63	23-Aug-21
EL25566	Border Hill	Renewal	195	63	23-Aug-22
EL31383	Mount Cockburn	retained	190	63	23-Aug-22

2.2 LAND TITLE

The project area is located entirely within Freehold land of the Petermann Aboriginal Land Trust. They are subject to a Mining and Exploration Deed signed on behalf of Traditional Owners by CLC and Gempart (NT)P/L under terms and conditions set out in the 1976 Land Rights Act (ALRA) which remain confidential for the duration of the Agreement.

3. GEOLOGY

The following description is largely derived from the published explanatory notes for the Petermann Ranges 1:250,000 sheet [3, 8]¹.

3.1 REGIONAL GEOLOGY

The project area is within the Mesoproterozoic Musgrave Province, a crystalline basement terrain extending across common borders of SA, WA and NT covering a total of 120, 000 km².

During the Musgravian Orogeny (1220-1120Ma), large volumes of felsic magma were intruded and assigned to the Pitjantjatjara Supersuite. This was followed by the 1085-1040Ma Giles Event which included the variably deformed mafic-ultramafic layered intrusions of the Giles Complex and the associated bimodal volcanics and rift sequences of the Tjauwata Group.

The 560-530Ma Petermann Orogeny was a major intracratonic event resulting in reactivation of several crustal scale east-west trending shears/faults/thrusts, and the development of widespread mylonitic shear fabrics resulting in the final exhumation of Musgrave Province from beneath Centralian Superbasin.

The Musgrave Province underwent at least one phase of intense deep weathering and erosion prior to deposition of Mesozoic clastic sediments along its eastern margin. Intense chemical weathering of sediments and basement has resulted in a deep weathering profile persisting up to 90 metres below the present day surface. The typically composite weathering profile is characterised by kaolinisation, and mottled, pallid, ferruginous or siliceous zones.

During the Quaternary, the onset of aridity with episodes of alluvial and aeolian activity resulted in the present landscape of alluvial plains, sand plains, aeolian dunes and dunefields.

Figure 3 shows the published mapped geology.

¹ Numbers in brackets refer to references.

3.2 GEOLOGY WITHIN THE TENEMENT AREA

The dominant outcrop within the relinquished tenement area is granitoids of the Umutju Granite Suite, comprising mostly Walytjatjata Granite (Pguw) with minor Mantapayika Granite (Pgum) in the north.

The Walytjatjata Granite is a porphyritic granite comprising coarsely porphyritic clinopyroxene –bearing granite with distinctive large round blue grey phenocrysts of K-feldspar constituting up to 40% of the rock. Mafic minerals can make up to 20% of rock forming elongated aggregates. The primary igneous mineral assemblage contains clinopyroxene and ilmenite largely consumed by a secondary mineral assemblage associated with development of mylonitic fabrics. A granite with coarse grey blue phenocrysts near Mt Cockburn returned a Pb-Pb zircon age of 1175Ma.

The Mantapayika Granite occurs as scattered outcrops north of Mann Ranges ranging from undeformed granite to migmatite. It is typically porphyritic with rounded blue grey K-feldspar and/or plagioclase phenocrysts. Mafic mineralogy comprises hornblende, garnet, ilmenite and biotite forming discrete clusters. It has a Pb-Pb age of 1120Ma.

Discrete zones of Mantapayika Granite have undergone partial melting during high strain forming migmatite containing gneissic layering.

Giles Complex rocks outcrop immediately south of the southern margin of EL31383. These comprise a suite of massive layered mafic to ultramafic intrusions emplaced within granulite terrain. On EL31383 a medium to coarse grain pyroxenite with minor gabbro crops out on a hill on the South Australian border forming the north east extension of the Claude Hills peridotite-gabbro intrusion, currently hosting 33 million tonnes averaging 0.81%Ni, 0.07%Co and 39% Fe₂O₃ of nickeliferous ochre.

3.3 ECONOMIC MINERAL POTENTIAL

The Musgraves Block is a relatively complex metamorphic region that may contain base metals, gold, cobalt, copper, lead, silver, nickel, platinum, thorium, bismuth, lithium, tin, tungsten, molybdenum and rare earths.

Within the area being relinquished, no mineral occurrences are documented; however very little exploration has been conducted in the area.

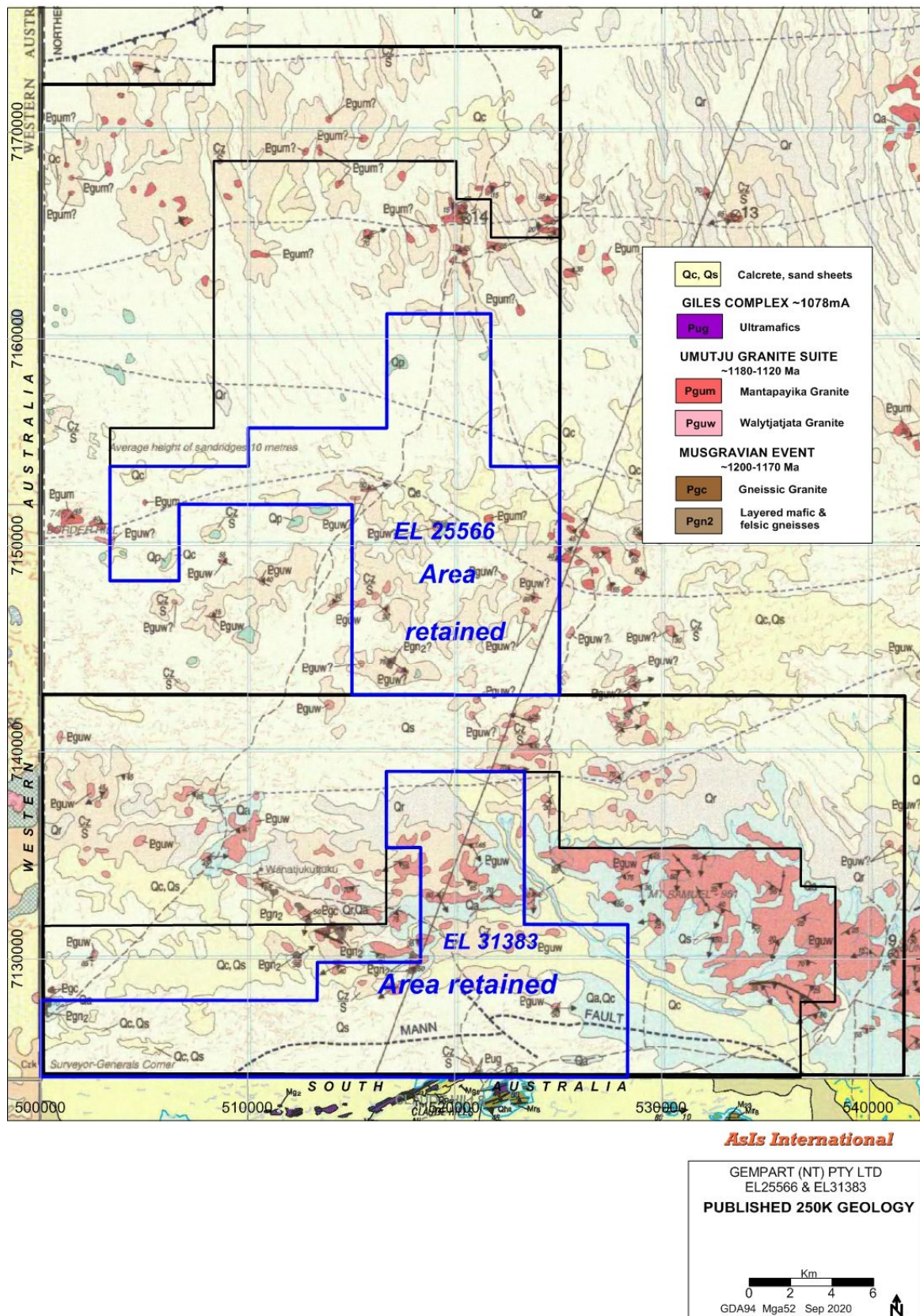


Figure 3. 1:250 000 scale Outcrop Geology.

4. PREVIOUS EXPLORATION

The tenement areas have been subject of very little previous exploration. There are no historical mineral exploration titles, and other than regional gravity observations carried out by the BMR in 1962 there is no record in the Northern Territory Geological Service public domain databases of on-ground exploration of any kind.

5. EXPLORATION COMPLETED

5.1 EXPLORATION RATIONALE

This is a greenfields exploration project. The area has been subject of very little historical and no modern exploration, hence the scope of current investigations for deposits of possible commercial value is a blank canvas. There is potential for a host of mineralization types including gold, base metals and REE's within the Mesoproterozoic rocks of the Musgrave Province, including nickel and PGE's within ultramafics of the Giles Complex.

5.2 EXPLORATION COMPLETED FROM AUGUST 2016 TO AUGUST 2021

Following is an itemised summary of work completed in the first six years of tenure. An exploration summary plan is included at Figure 4.

Work completed in the first year of tenure to August 2017 comprised:

1. Commissioning of an exploration potential review.
2. Acquisition of ground gravity on 1,000x500m grid, plus infill, on EL25566. Total 332 stations.
3. Acquisition of airborne EM (VTEM) data at 500m line spacing over two areas, one on EL25566 and one on EL31383. Respective totals 420 line km over 207 square km, and 312 line km over 153 square km.

Work completed in the second year of tenure to August 2018 comprised:

1. Delivery of Musgrave and Petermann Ranges Project Review by consultant geologist.
2. Interpretation of the ground gravity data acquired in 2017 on EL25566, and review of regional gravity data.
3. Interpretation of the VTEM data acquired in 2017 on EL25566 and EL31383.
4. Field reconnaissance including 85 pXRF readings.

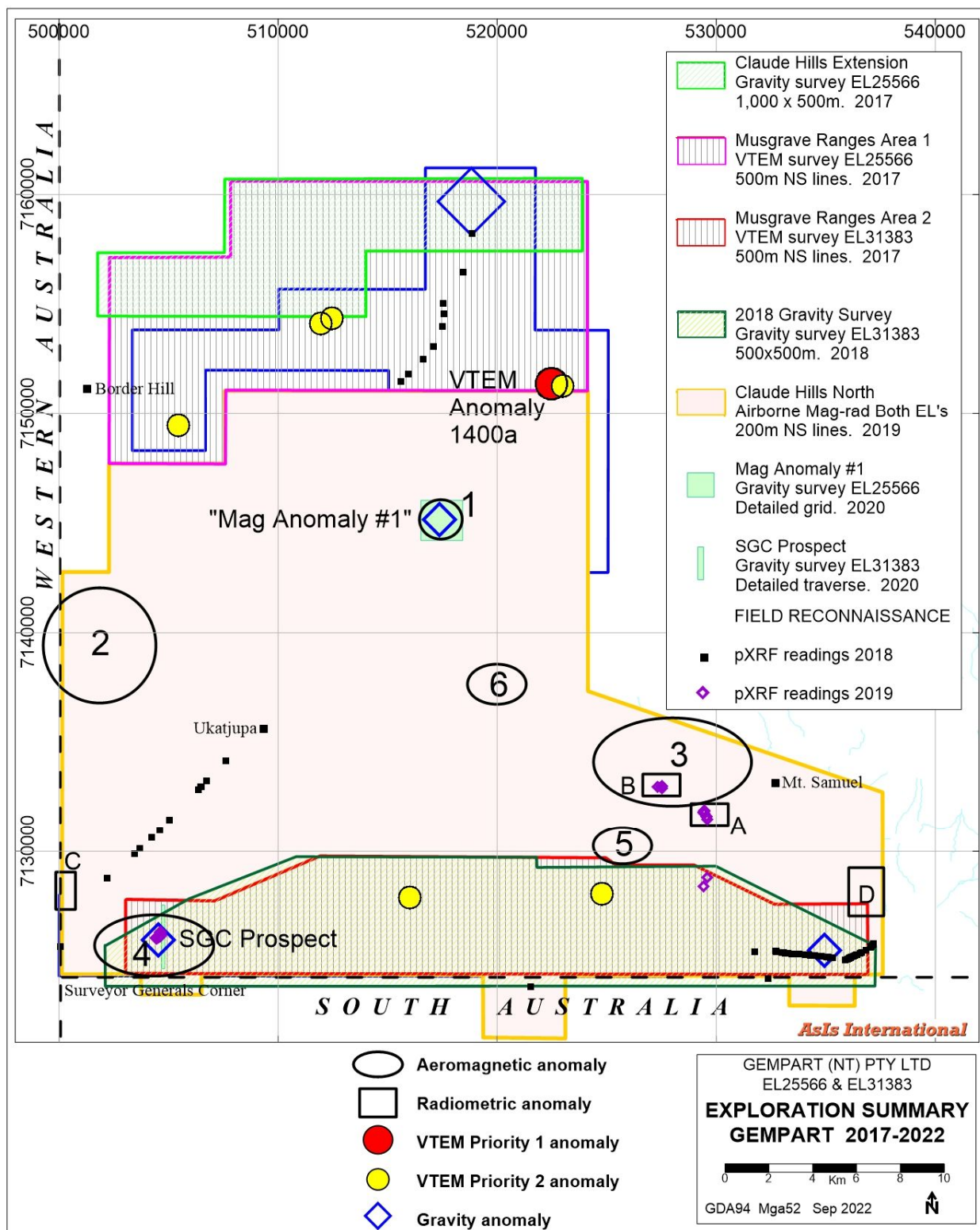


Figure 4. EL's 25566 and 31383 Exploration summary Gempart 2016-2022.

Exploration work completed in the third year of tenure to August 2019 comprised:

1. Acquisition and interpretation of ground gravity on a nominal 500 x500m grid, on EL31383. Total 1,005 stations.
2. Acquisition and interpretation of helicopter-borne magnetics and radiometrics data over a substantial part of both EL's [1]. Total 4,700 line km.
3. Further field reconnaissance including 45 pXRF readings.

Work completed in the fourth year of tenure to August 2020 comprised:

1. Acquisition and interpretation of a detailed ground gravity survey at prospect "Mag Anomaly #1" on EL25566. Total 336 stations.
2. Acquisition of infill gravity at "SGC" prospect on EL31383. Total 58 stations.
3. Review of all prospects with recommendations for further work and selection of areas for relinquishment.

Work completed in the fifth year of tenure to August 2021 comprised:

1. Planning of moving loop (MLEM) ground EM surveys at three prospects:
 - 1.1 "Mag Anomaly #1"
 - 1.2 "SGC Prospect"
 - 1.3 "VTEM Anomaly 1400a" prospect

An Agreement for acquisition of ground EM data at the three prospects was concluded with Merlin Geophysical Solutions in March 2021, with mobilisation proposed for July-August.

Work completed in the sixth year of tenure to August 2022 comprised:

1. Review and contour/image plans of airborne radiometric data generated over the three prospect areas:
 - 1.1 "Mag Anomaly #1"
 - 1.2 "SGC Prospect"
 - 1.3 "VTEM Anomaly 1400a" prospect

Covid restrictions on travel, especially between states, seriously compromised movement of geophysical contractors. Mobilisation of the EM crew was re-scheduled to late 2022.

5.3 EXPLORATION COMPLETED FROM AUGUST 2022 TO AUGUST 2023

In the current and seventh year of tenure from August 2022 to August 2023 the ground EM crew contracted in early 2021 finally mobilised to site and completed the ground EM surveys at three prospect areas. Prospect locations are shown at Figure 5. Survey supervision and data interpretation was undertaken by Montana GIS P/L.

Summary statistics of the ground EM surveys are presented hereunder.

Contractor: Merlin Geophysical Solutions, Perth, WA.

Survey date: 9th – 23rd November 2022.

Transmitter: Zonge GTT-10.

Receiver: EMIT_SmartEM24.

Receiver sensor: EMIT_Smartfluxgate.

Configuration: Fixed loop – readings at 25m or 50m on lines 50, 100 or 200 metres apart.

Moving loop (mostly slingram) – readings at 50m on lines 100 metres apart.

Table 2: Ground EM surveys summary statistics of readings acquired.

Prospect	Moving loop stations	Moving loop line km	Fixed loop stations	Fixed loop line km
Mag Anomaly #1	136	8.8	81	2.45
SGC			161	7.6
VTEM Anomaly 1400a			310	15.3

Receiver sites are plotted in plans at Figures 6-8. The results from each survey area are summarised below. Details of data acquisition and interpretation results are included in the cited appendices.

5.3.1 Mag Anomaly #1 prospect

The prospect was originally identified as a small, discrete magnetic anomaly of amplitude 1,500 nT. Detailed ground gravity confirmed a coincident two milliGals anomaly. Sporadic outcrops of sheared gneissic rocks occur in the area.

Initial EM data acquired using in-loop moving receiver mode revealed a strong IP overprint. The grid was subsequently completed with seven traverses using moving loop Slingram mode, followed by four traverses with a fixed-loop transmitter to investigate an EM anomaly.

The final datasets are noisy and contain IP effects, making quantitative modelling challenging. In summary, five conductors were identified in the Slingram data, and three conductors in the fixed-loop data. The interpreted conductors are shown in plan form at Figure 9, and in sections at Figures 10-13. The conductor labelled “TargetB” interpreted from Slingram data has the highest conductivity-thickness of 100 Siemen and is near-coincident with the most magnetic source and highest density source as interpreted from aeromagnetics and gravity. The conductor labelled “Target” interpreted from fixed-loop data is generally coincident with conductor “TargetB” albeit with a lower conductivity-thickness of 65 Siemen.

The prospect is now a combined magnetic-gravity-EM target. Due to the paucity of outcrop and complete lack of any previous surface or drillhole exploration, a mineralisation model is open to interpretation. Further work is initially envisaged to be geochemical assays of bedrock samples obtained with air-core drilling.

The detailed interpretation report is included as Appendix 1 and all data and interpretation products included in Appendix 4.

5.3.2 SGC prospect

The prospect was originally identified as a distinct gravity anomaly one kilometre in length and amplitude seven milliGals. It is coincident with an aeromagnetic anomaly of length two kilometres and amplitude 1,000 nT. One line over the centre of the gravity anomaly with readings at 25 metre intervals was subsequently acquired to confirm the amplitude and shape of the anomaly. Detailed interpretation suggests the response is consistent with very shallow near-coincident sources of density 3.5 gm/cc and magnetic susceptibility 0.2 SI.

The prospect is located within the area of the VTEM survey flown by Gempart in 2017 at 500 metre line spacing. Although detailed analysis of the VTEM data shows no response, the ground EM survey was carried out to further investigate the stand-out seven milliGal gravity anomaly. Nine traverses of fixed-loop data were acquired. There is no outcrop; the area is a sand plain with calcrete at the prospect location.

The observed data does not display any later time anomalies sourced by strong conductors. However a conductor of conductivity-thickness 115 Siemen is interpreted at a depth of 250 metres at the western part of the prospect. Refer plan at Figure 14, and sections at Figures 15-17. The south dip of the interpreted conductor is consistent with the dips interpreted from the gravity and aeromagnetic data. A response consistent with a very poor conductor coincident with the interpreted sources of highest density and magnetic susceptibility can be identified in the early time data. This interpreted conductor has been assigned a vertical dip, although the signal is too weak to allow a definitive interpretation of model geometry.

The ground EM survey has revealed that conductive bodies, albeit of low tenure, are present at the SCG prospect. Irrespective of the EM response, it remains a priority exploration target due to the very high gravity anomaly. Further work is initially envisaged to be geochemical assays of bedrock samples obtained or air-core drilling.

The detailed interpretation report is included as Appendix 2 and all data and interpretation products included in Appendix 5.

5.3.3 VTEM Anomaly 1400a prospect

The prospect was originally identified as the only Ppriority 1 anomaly selected from the Musgraves Ranges Area 1 VTEM survey flown for Gempart in 2017. The anomaly is coincident with a 250 nT aeromagnetic anomaly, although there is general magnetic relief with anomalies of not dissimilar amplitude in the region. Outcrop of Mantapayika Granite is peripheral to the prospect area.

Fixed-loop data were acquired on 12 traverses using four transmitter loops. Significant IP effects and noise are evident in the data. Two conductors of moderate conductivity-thickness have been interpreted from the data. Refer plan at Figure 18, and sections at Figures 19 and 20. Both dip to the NNE and are generally consistent in location and geometry with the conductor originally interpreted from the VTEM data. The depth to top of the interpreted conductors is also consistent with the depth of the weakly-magnetic sources interpreted from the aeromagnetics.

This prospect is a genuine EM target i.e. it was identified from airborne EM and confirmed with ground EM. Further work is initially envisaged to be geochemical assays of bedrock samples obtained with air-core drilling.

The detailed interpretation report is included as Appendix 3 and all data and interpretation products included in Appendix 6.

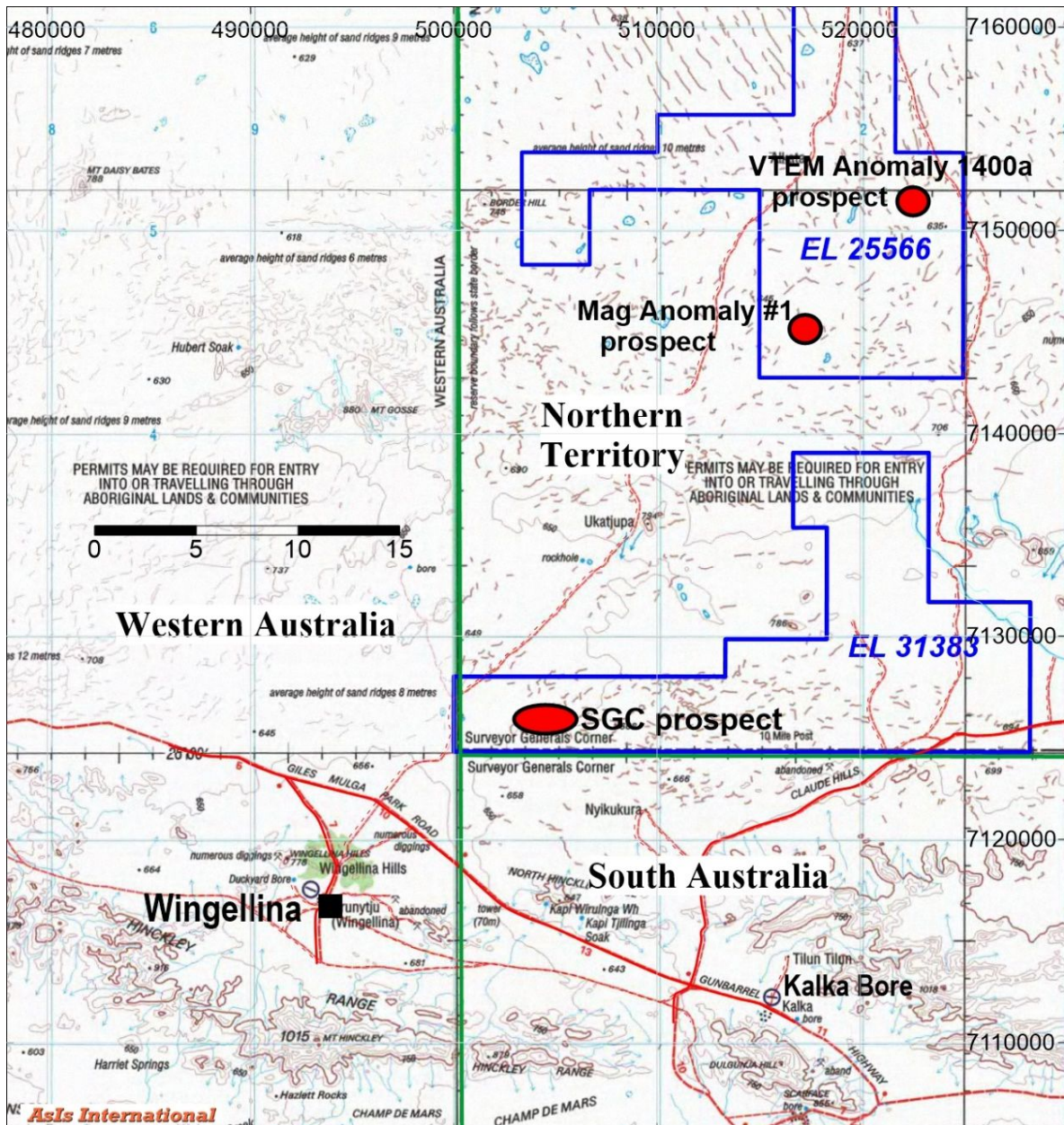


Figure 5. Ground EM survey prospect location plan.

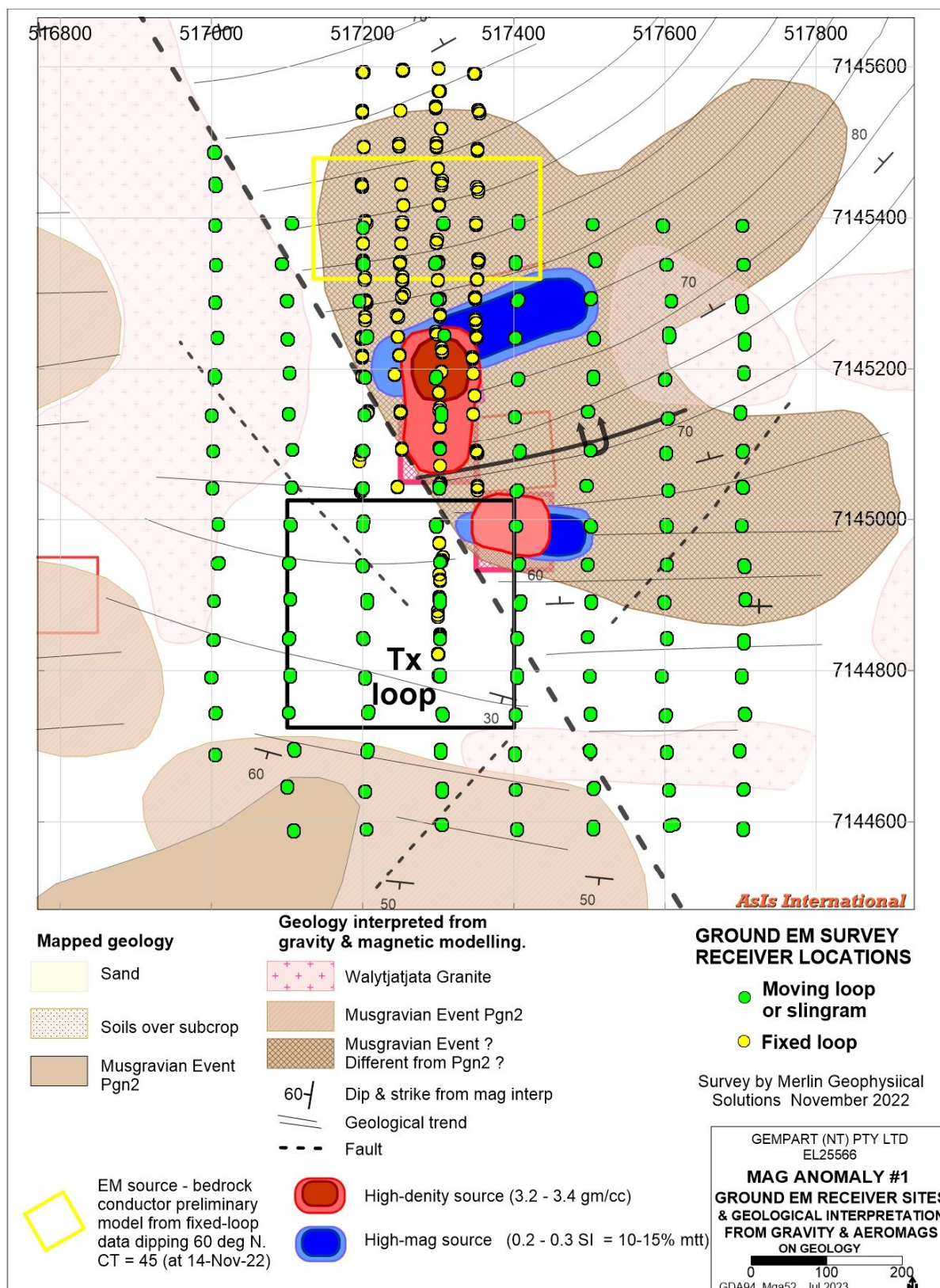


Figure 6. Mag Anomaly #1 Prospect – Ground EM receiver sites.

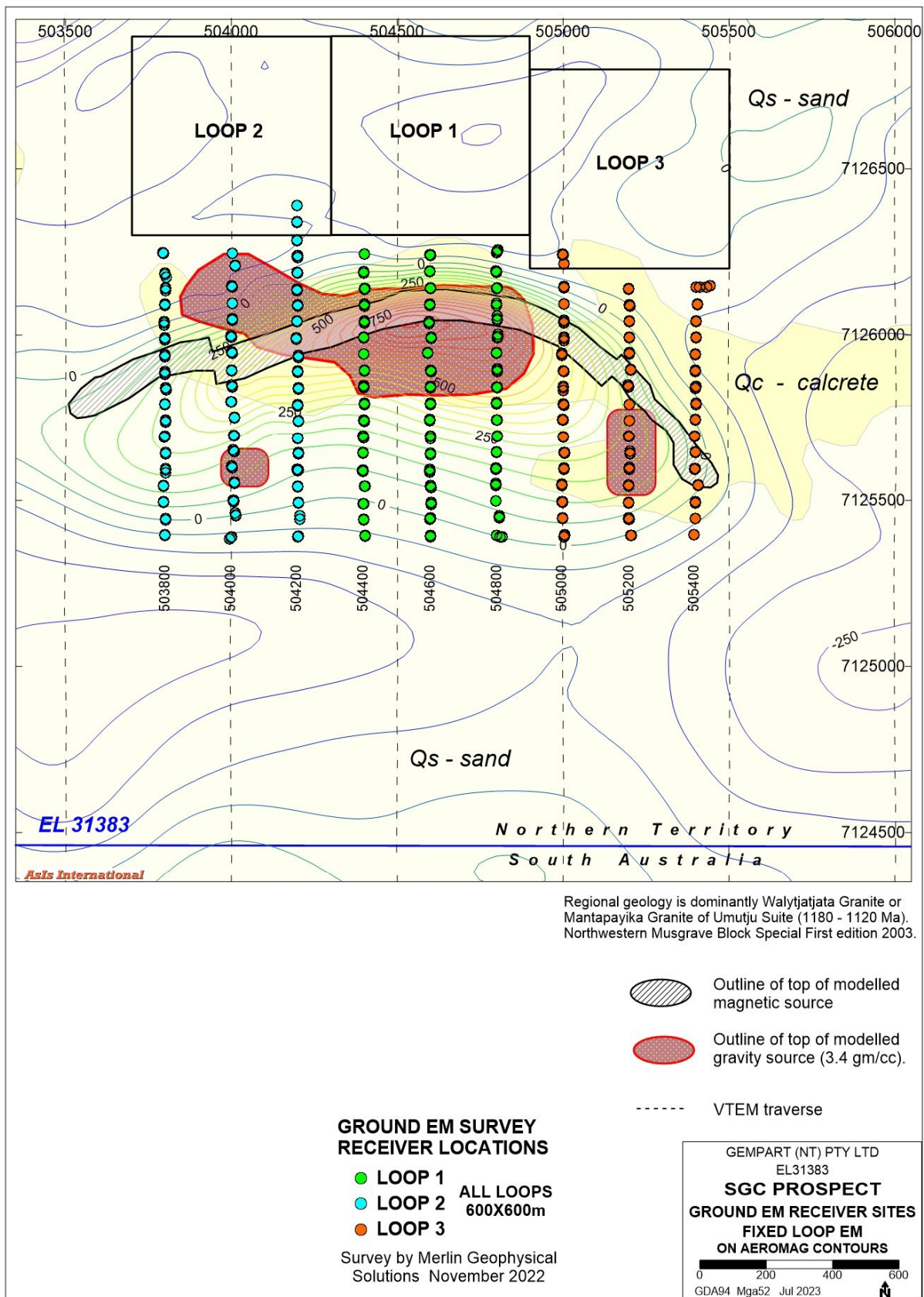


Figure 7. SGC Prospect – ground EM receiver sites.

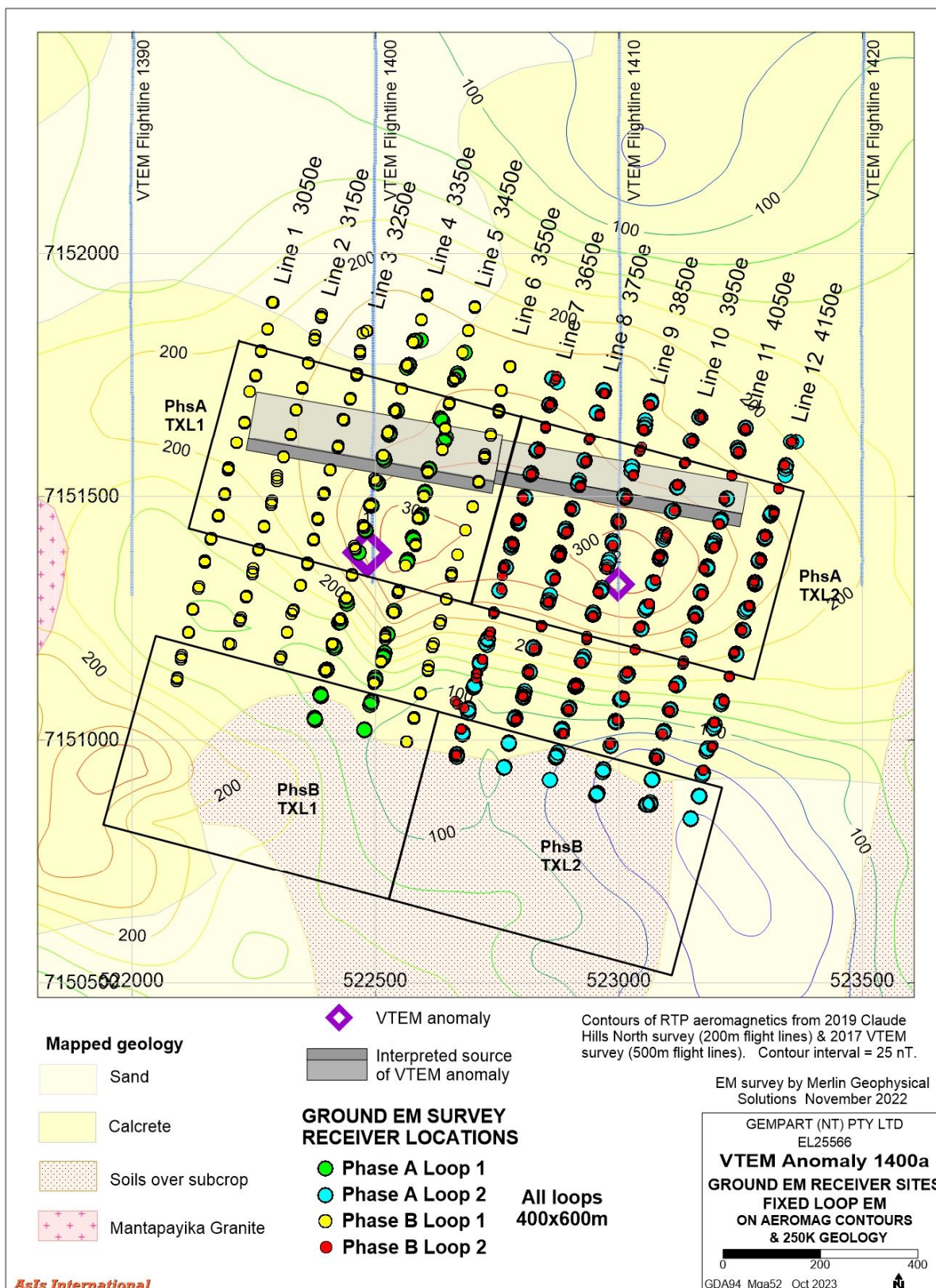


Figure 8. VTEM Anomaly 1400a Prospect – Ground EM receiver sites.

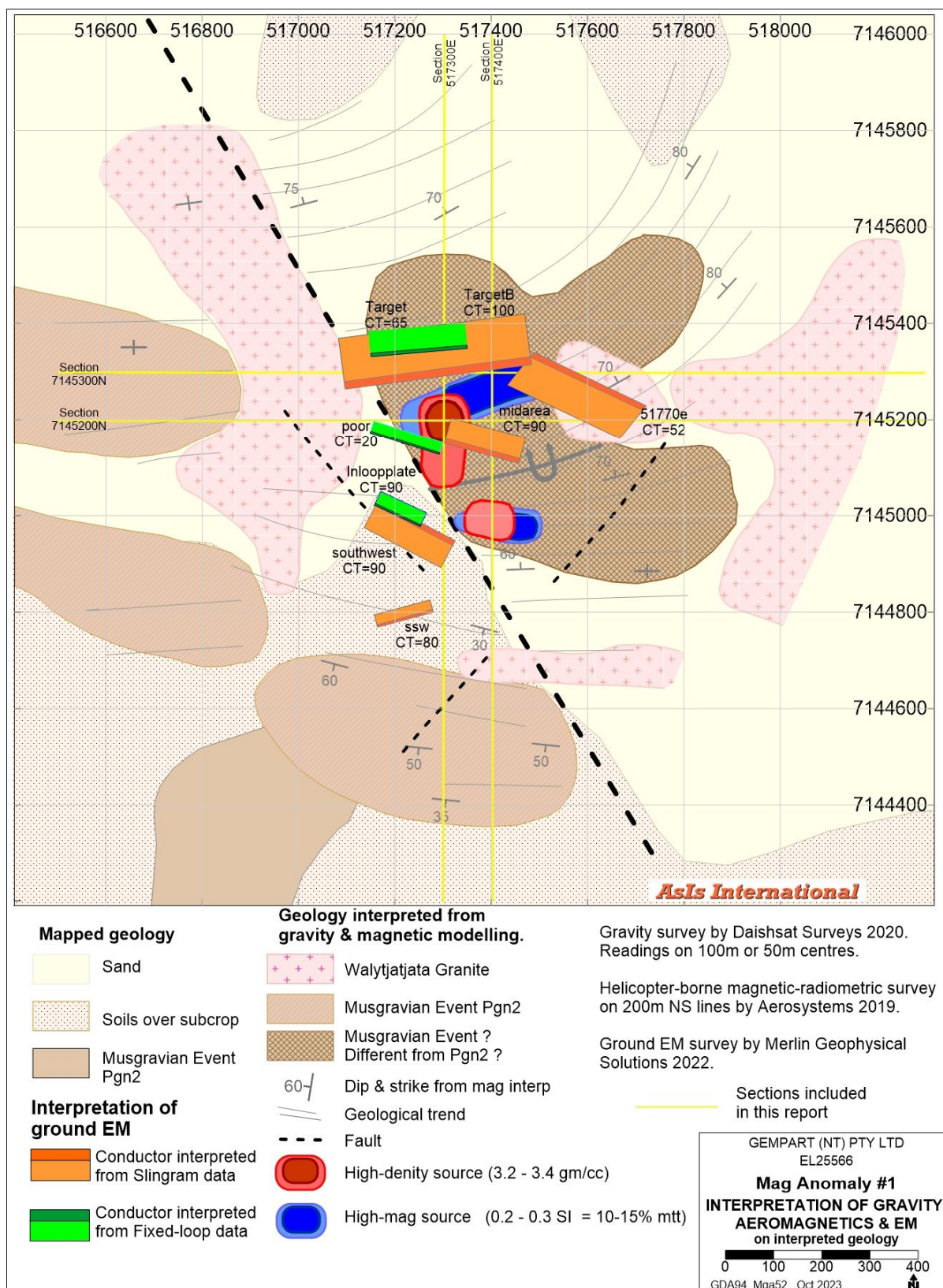


Figure 9. Mag Anomaly #1 Prospect – Geophysical interpretation plan.

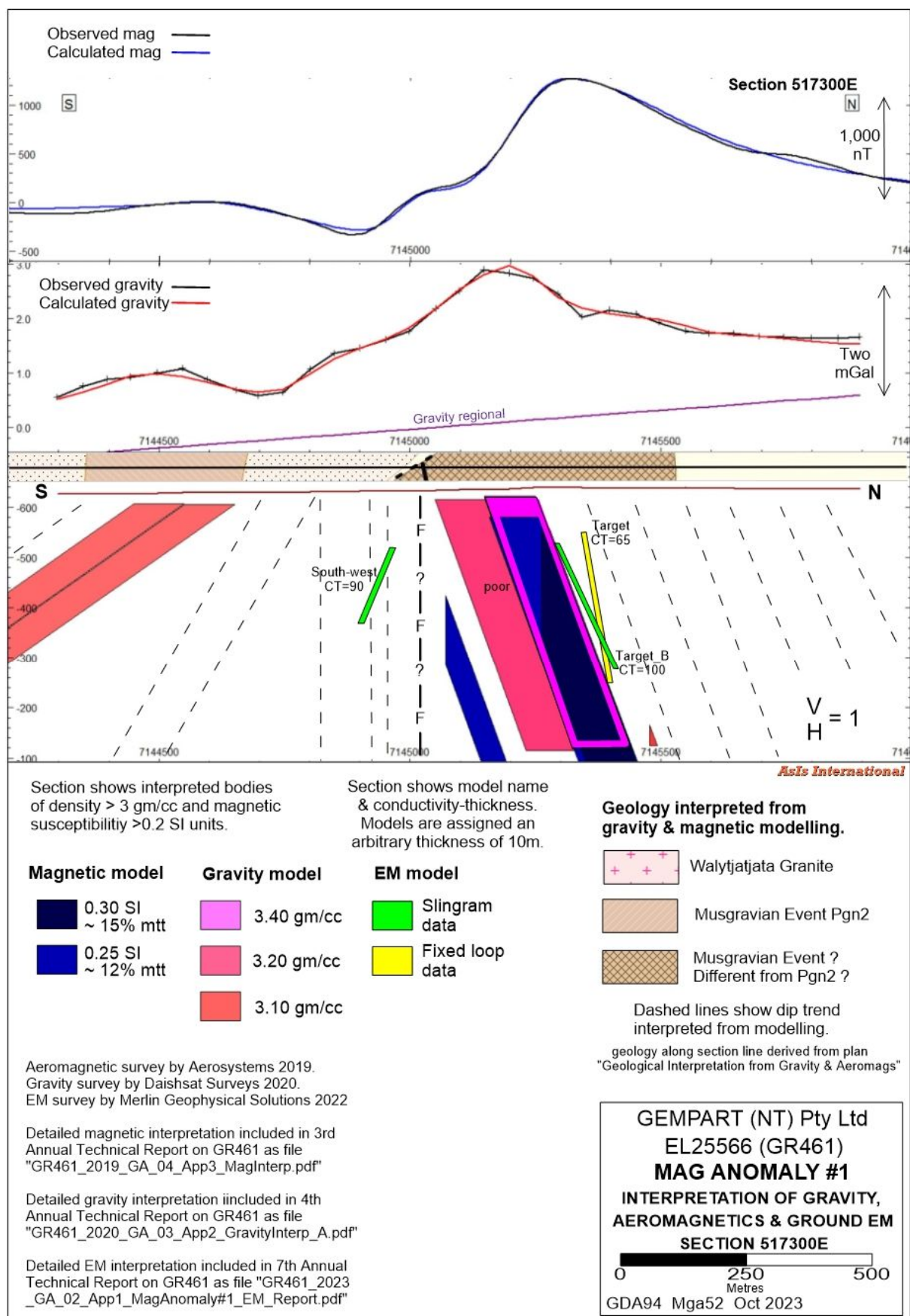


Figure 10. Mag Anomaly #1 Prospect – Geophysical interpretation section 517300E.

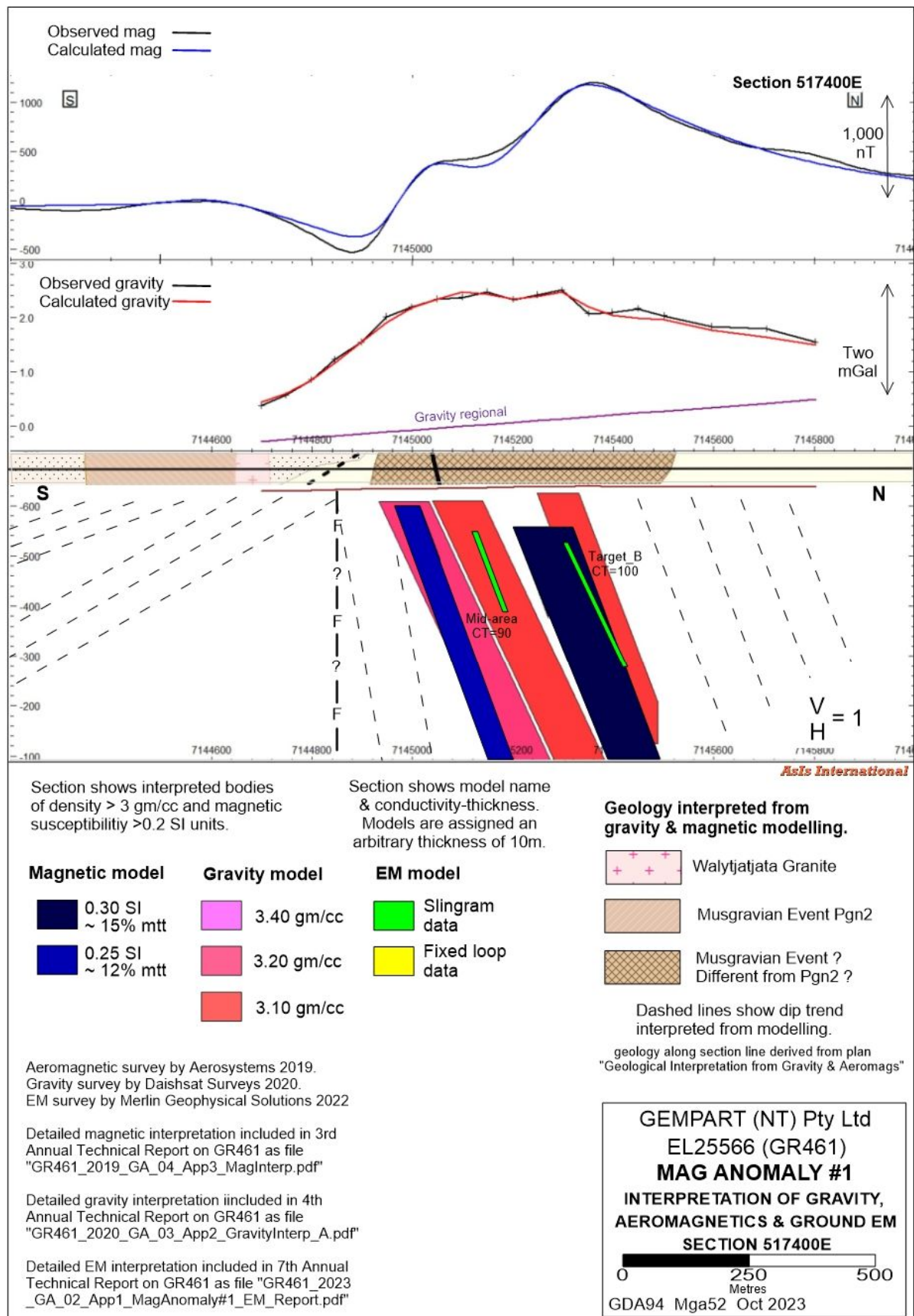


Figure 11. Mag Anomaly #1 Prospect – Geophysical interpretation section 51400E.

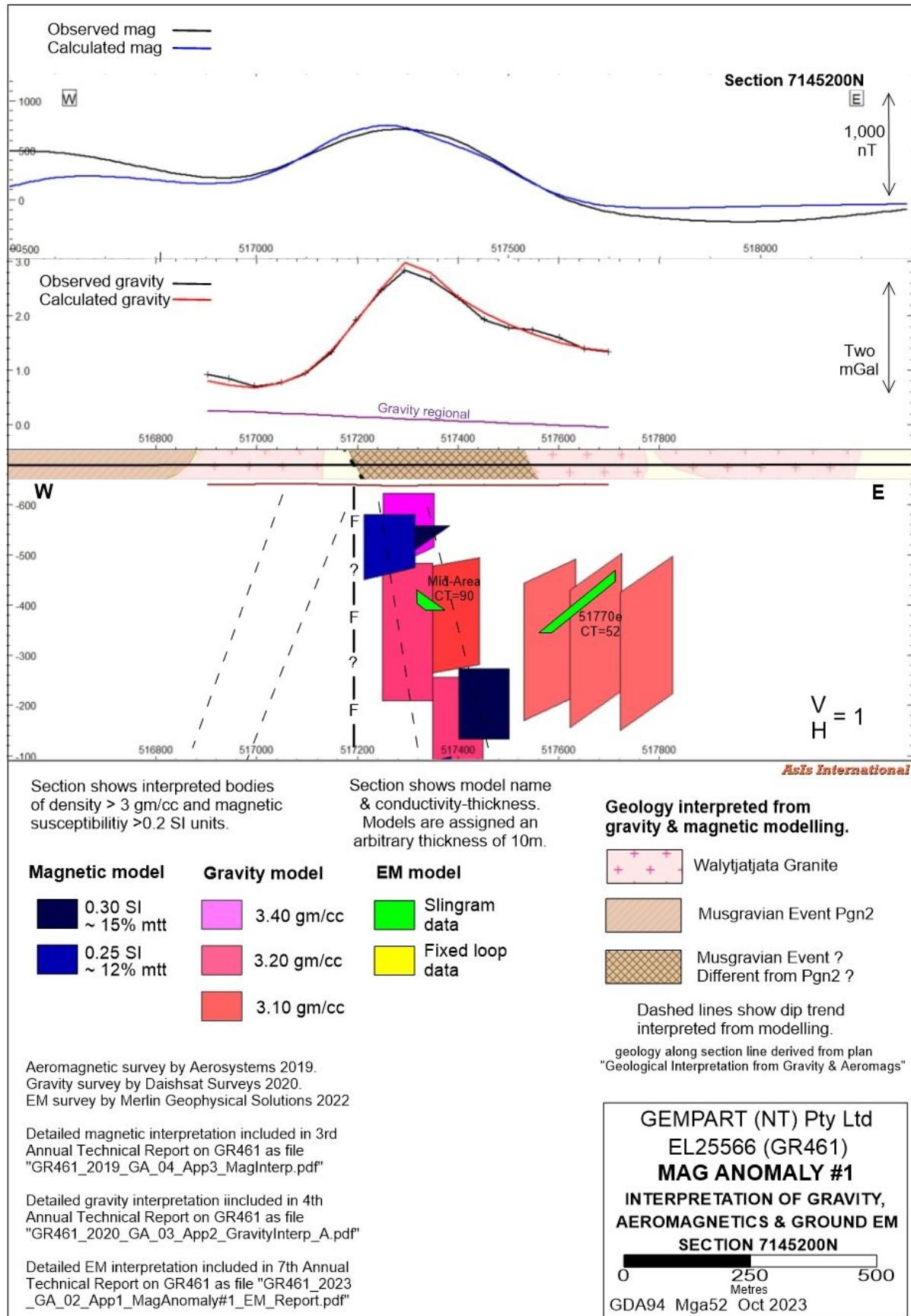


Figure 12. Mag Anomaly #1 Prospect – Geophysical interpretation section 7145200N.

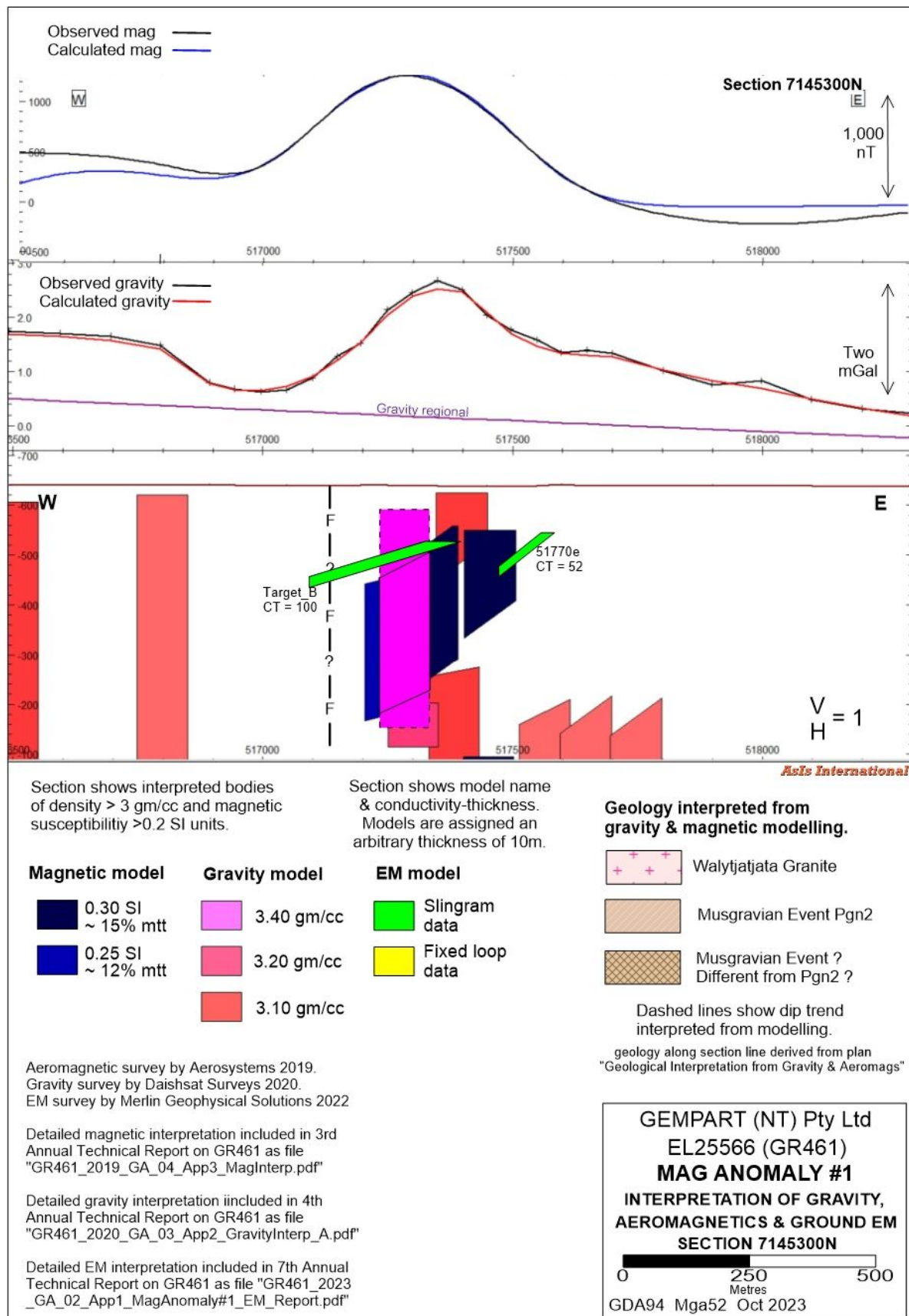


Figure 13. Mag Anomaly #1 Prospect – Geophysical interpretation section 7145300N.

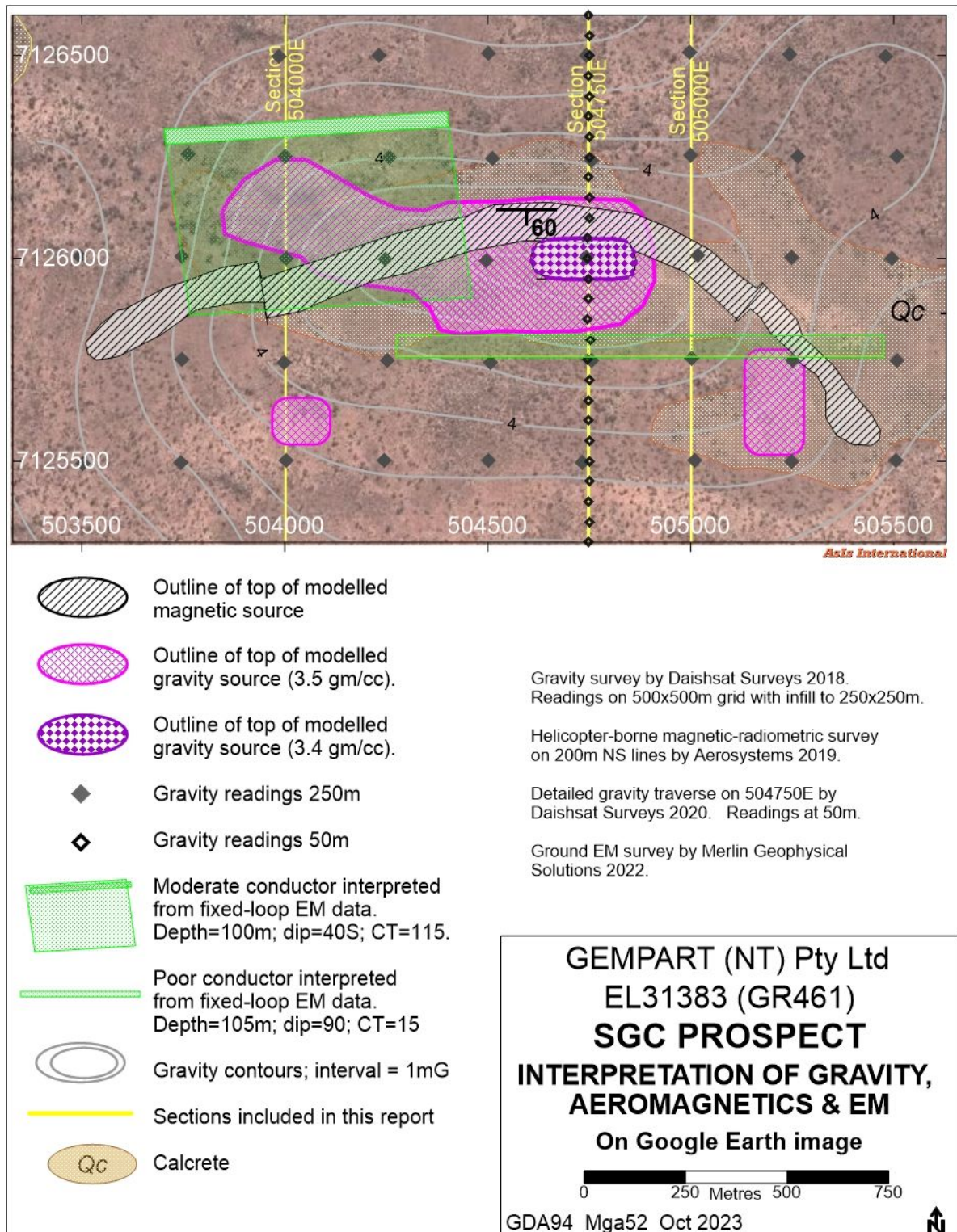


Figure 14. SGC Prospect – Geophysical interpretation plan.

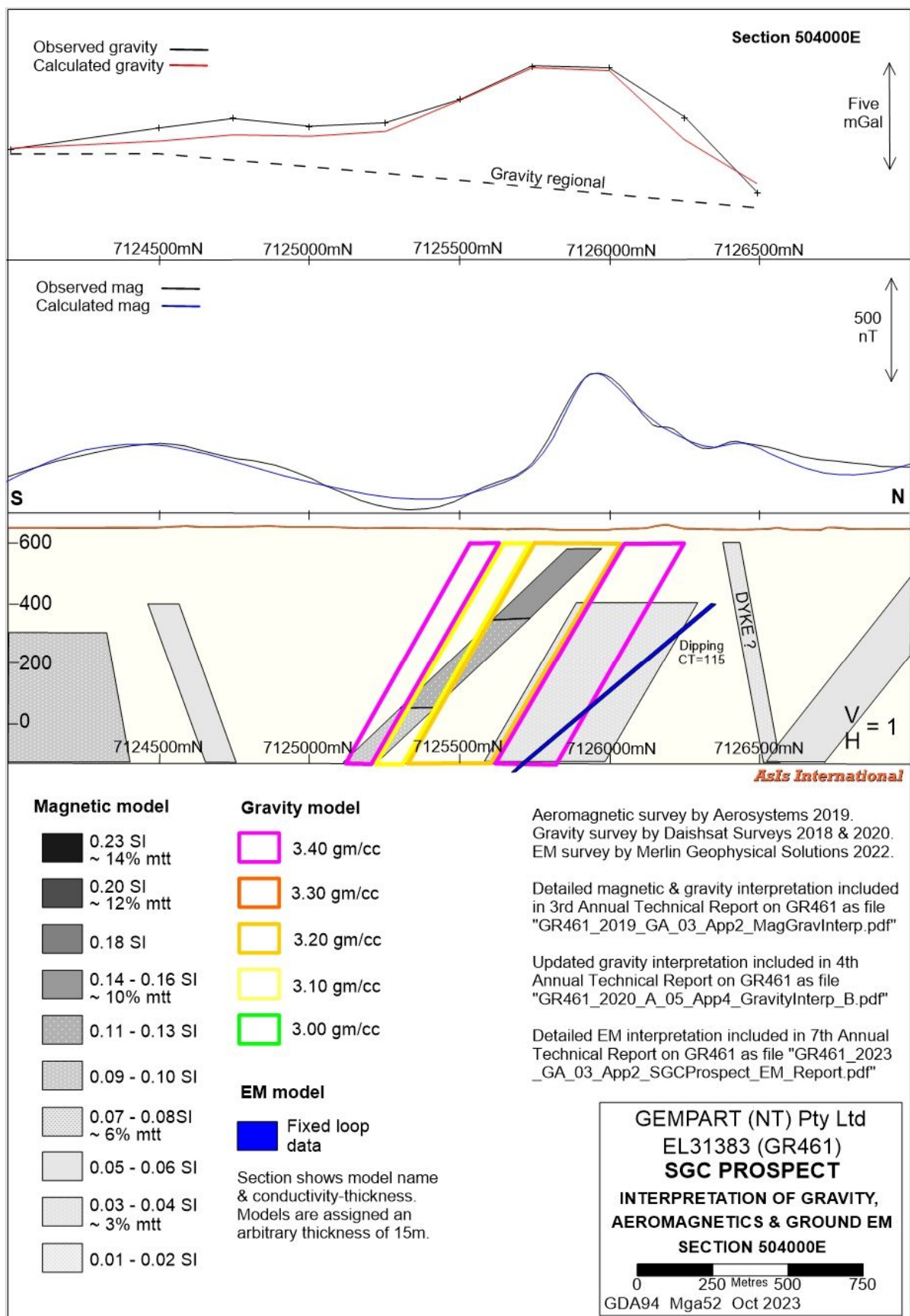


Figure 15. SGC Prospect – Geophysical interpretation section 504000E.

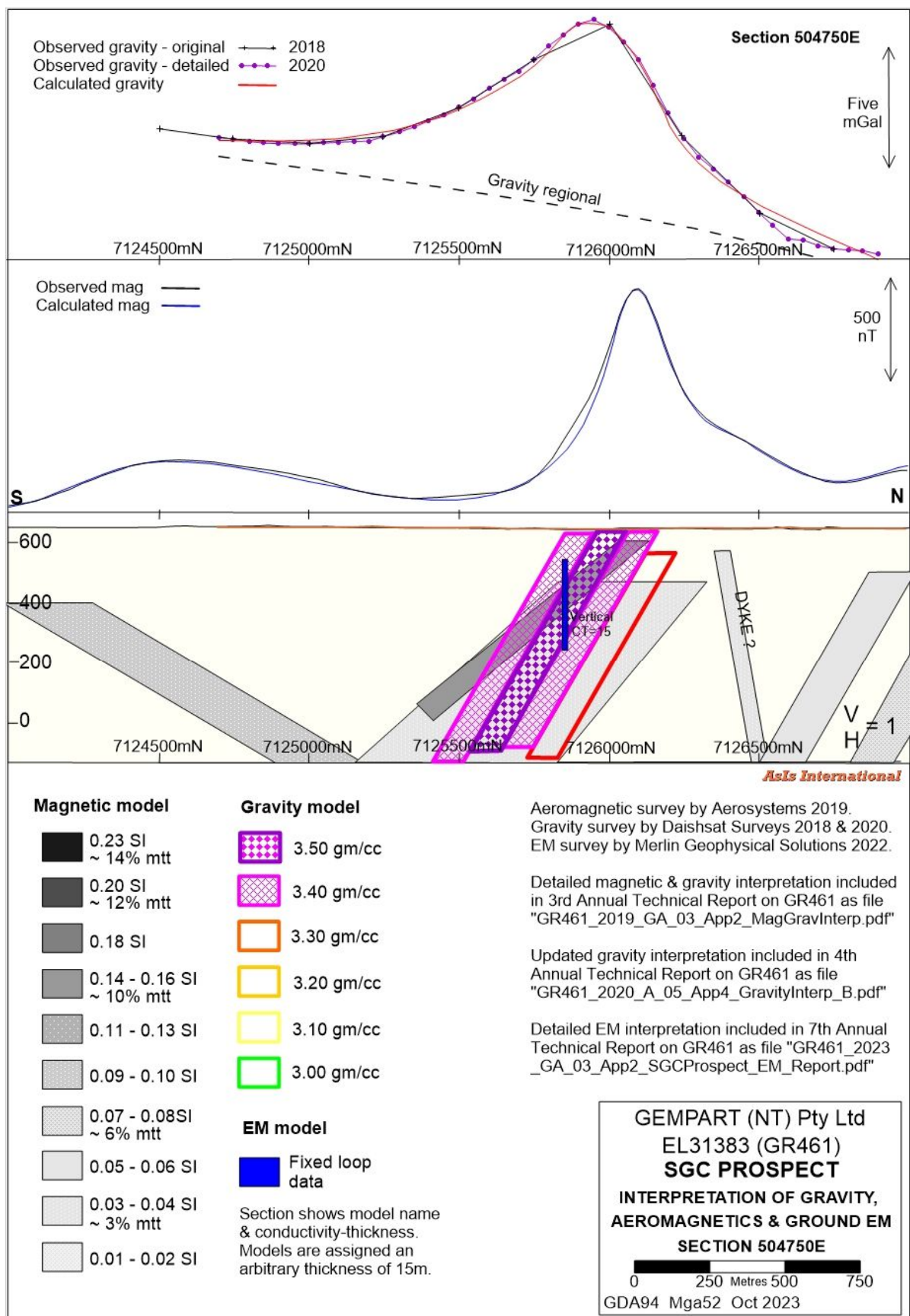


Figure 16. SGC Prospect – Geophysical interpretation section 504750E

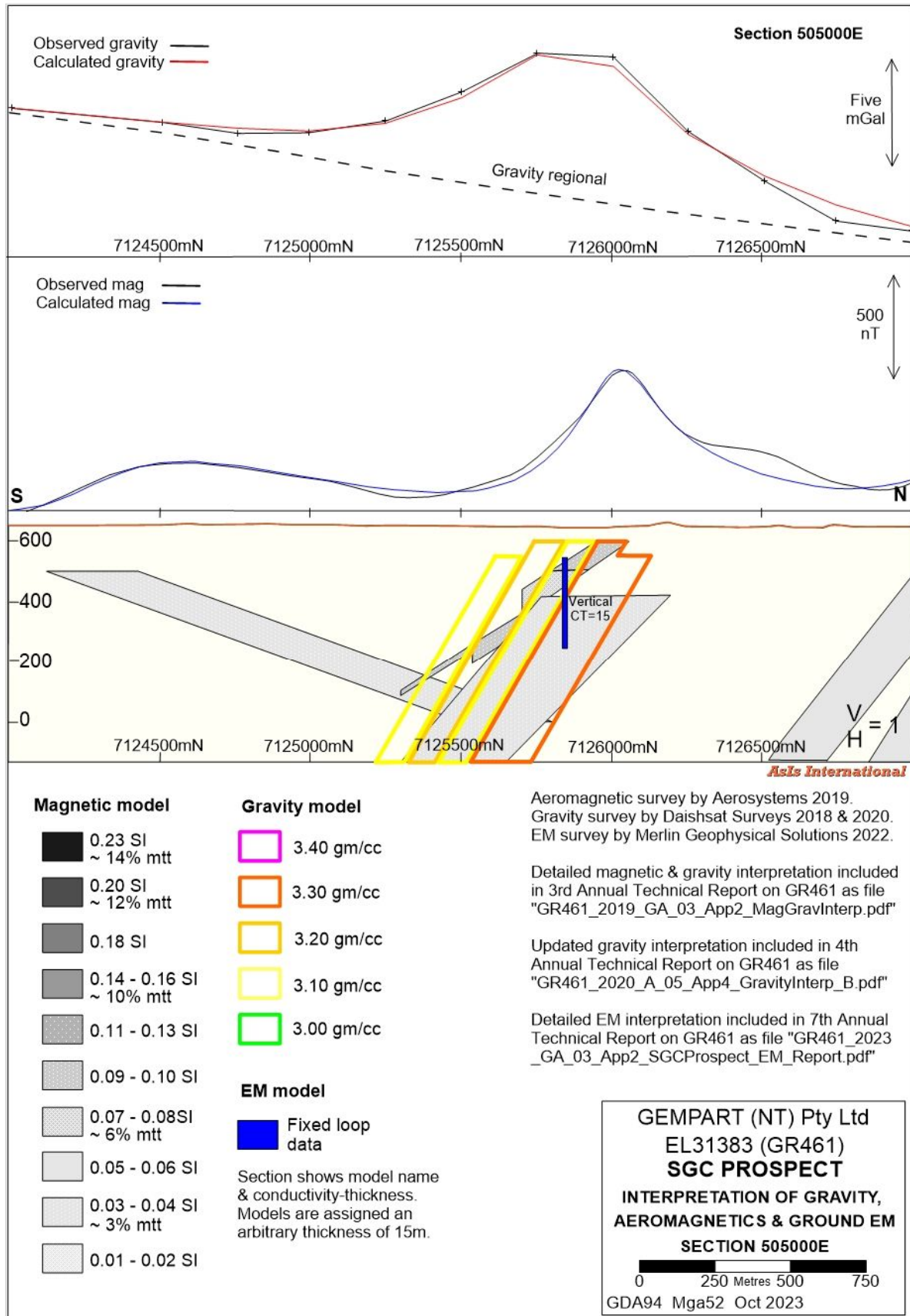


Figure 17. SGC Prospect – Geophysical interpretation section 505000E

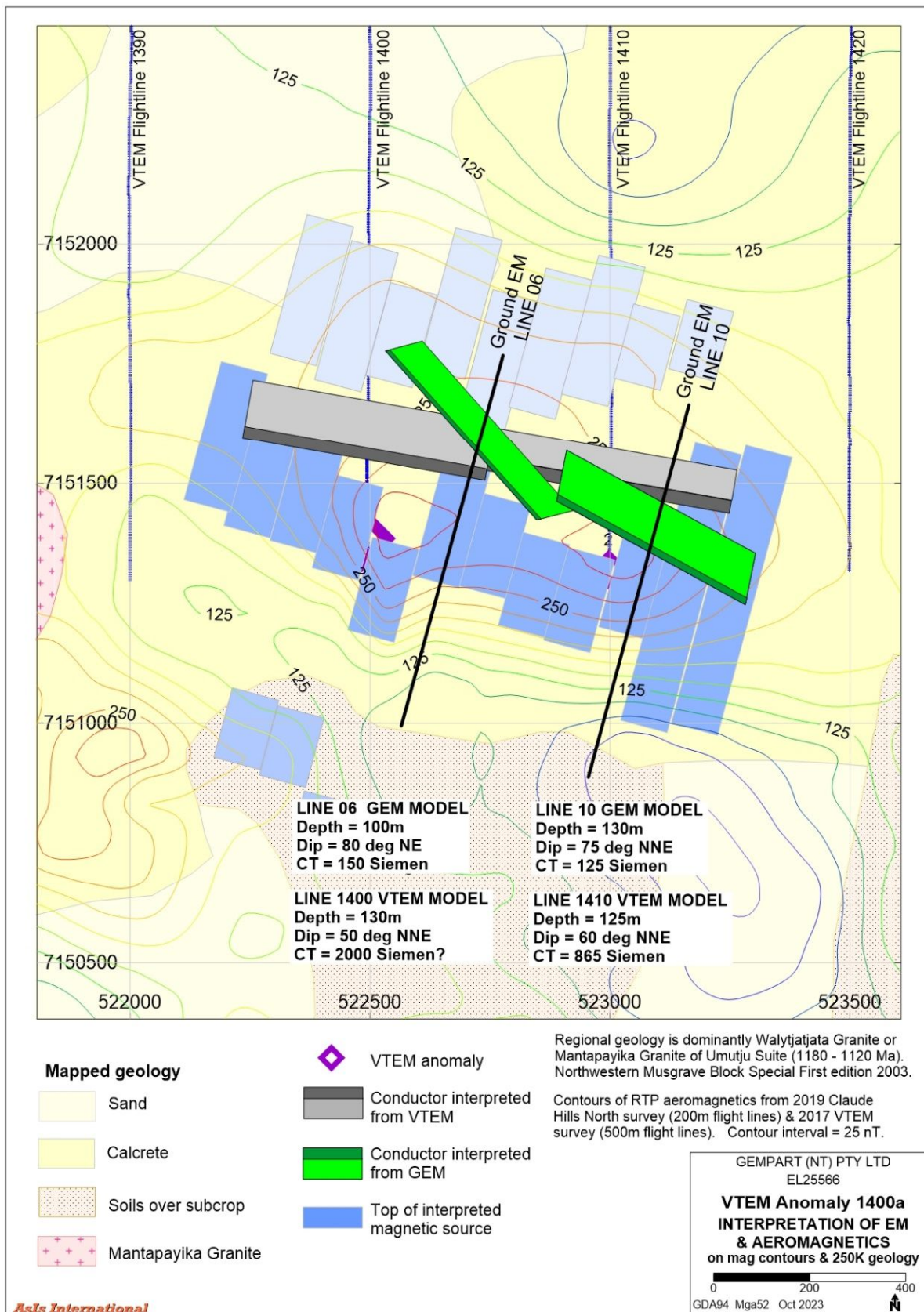


Figure 18. VTEM Anomaly 1400a – Geophysical interpretation plan.

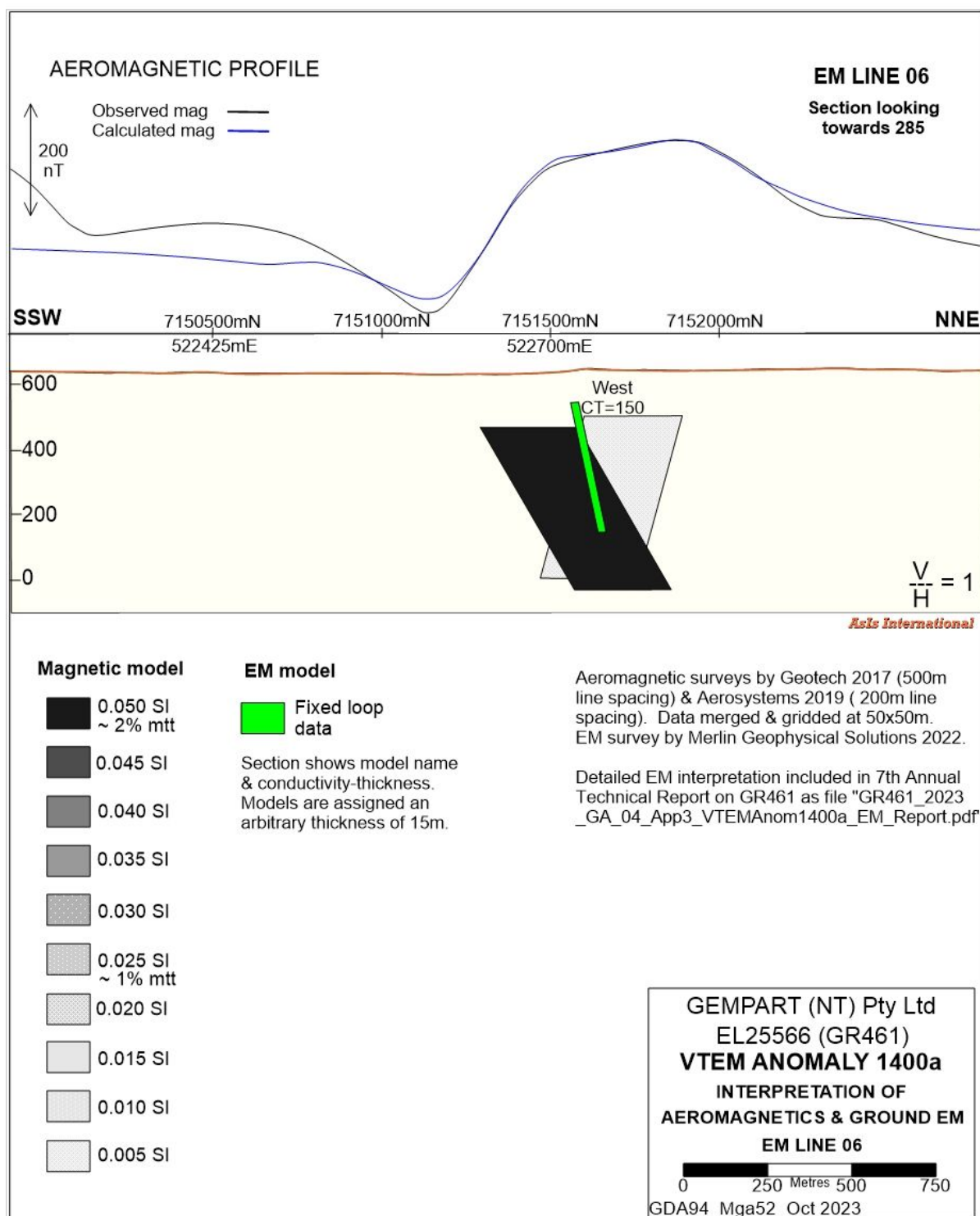


Figure 19. VTEM Anomaly 1400a – Geophysical interpretation section line 06

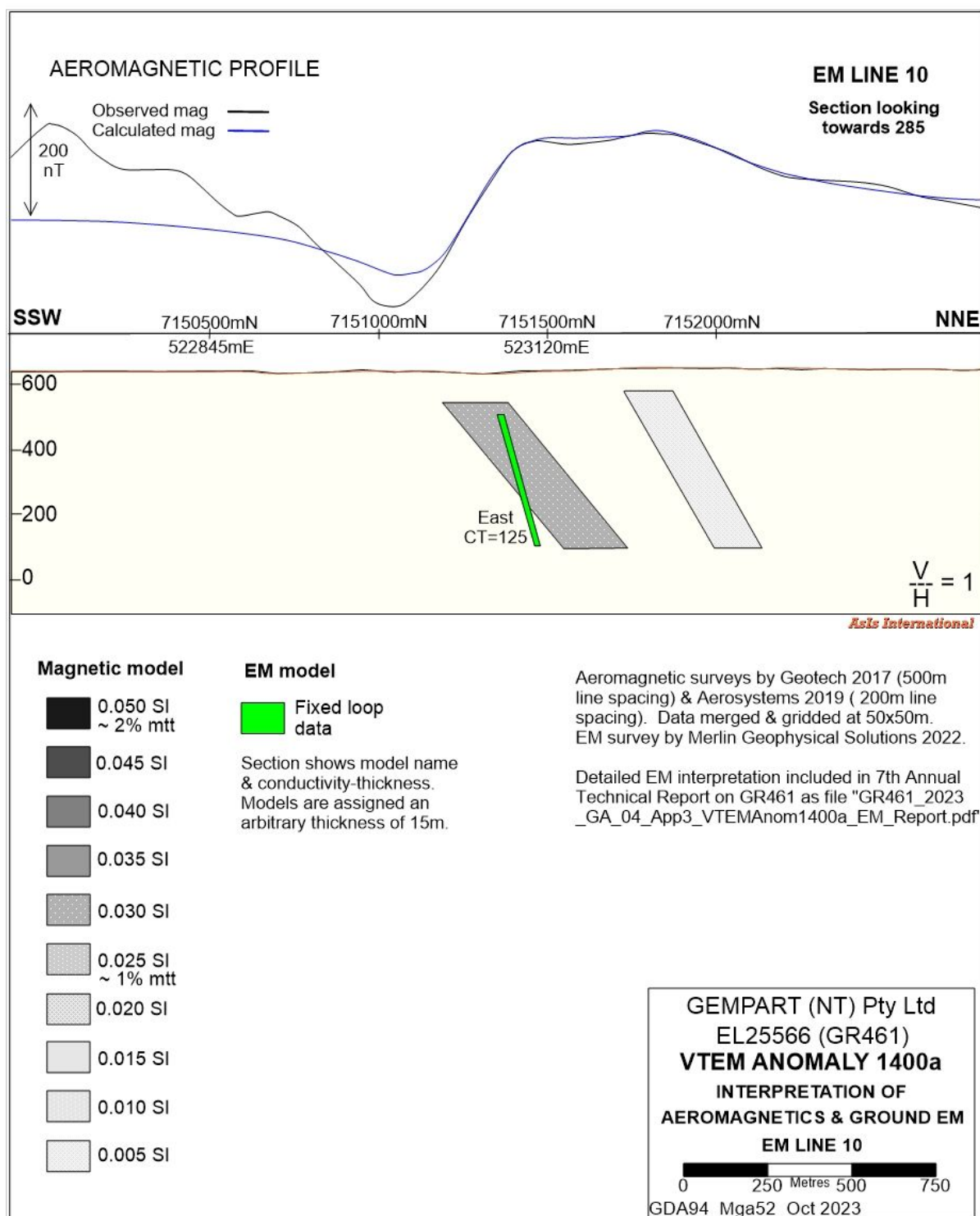


Figure 20. VTEM Anomaly 1400a – Geophysical interpretation line 10.

6. CONCLUSIONS

No modern exploration has been conducted in the region, and the geology comprising mostly Mesoproterozoic granites and gneisses is not well understood. Since grant of title in 2016, Gempart has built multi-disciplinary datasets comprising airborne magnetics-radiometrics, airborne EM, ground gravity, pXRF readings and geological investigations. Numerous prospect areas defined by magnetic, radiometric, magnetic-gravity or airborne EM anomalies have been subject of interpretation and/or detailed modelling. Most have been downgraded after re-assessment incorporating information gleaned from field investigations. Three prospects, two being coincident magnetic/gravity anomalies and one a priority one VTEM anomaly, remain to be followed up.

Ground EM surveys have, after substantial delays, been completed over the three prospect areas. At the Mag Anomaly #1 and VTEM Anomaly 1400a prospects, detailed interpretation has revealed conductors of moderate conductivity-thickness are near-coincident with high density and magnetic susceptibility sources interpreted from gravity and aeromagnetic data. At the SGC prospect which is a stand-out seven milliGals gravity anomaly weak conductive bodies can be identified in the ground EM data.

The results of the ground EM surveys has upgraded the exploration potential of all three prospects. No particular commodity or mineralisation style is invoked due to lack of outcrop and historical drilling. A program of air-core drilling at all prospects has been planned to acquire bedrock samples for geochemical assay.

7. REFERENCES

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