EL31251_2019_A_04_App3_Review_Goldmember

GOLDMEMBER PROSPECT

Review of previous exploration, interpretation of new gravity data & drillsite recommendations

The Goldmember prospect is located in the south central part of EL31251, 170 kilometres east of Alice Springs. The prospect as described here is defined as a gravity anomaly comprising two lobes of maximum amplitude 0.8 milliGals, as shown in Figure 1. After subtracting a local regional background the residual gravity anomaly is more equidimensional in shape; refer Figure 3. The Goldmember prospect as originally named and investigated by Mithril is about one kilometre to the east.

Multiple geophysical and geochemical datasets have been acquired by previous explorers, notably Mithril Resources Ltd, who conducted rock chip and soil sampling and drilled two RC holes. Gempart (NT) Pty Ltd completed a detailed ground gravity survey in 2018 encompassing the prospect area. Interpretation of the gravity data has identified a high density target which should be drilled to test for possible mineralisation of economic value. Potential orebody models include IOCG, skarn and pegmatites, and target elements include Cu, Au, Ni, Mo, W and REE's.

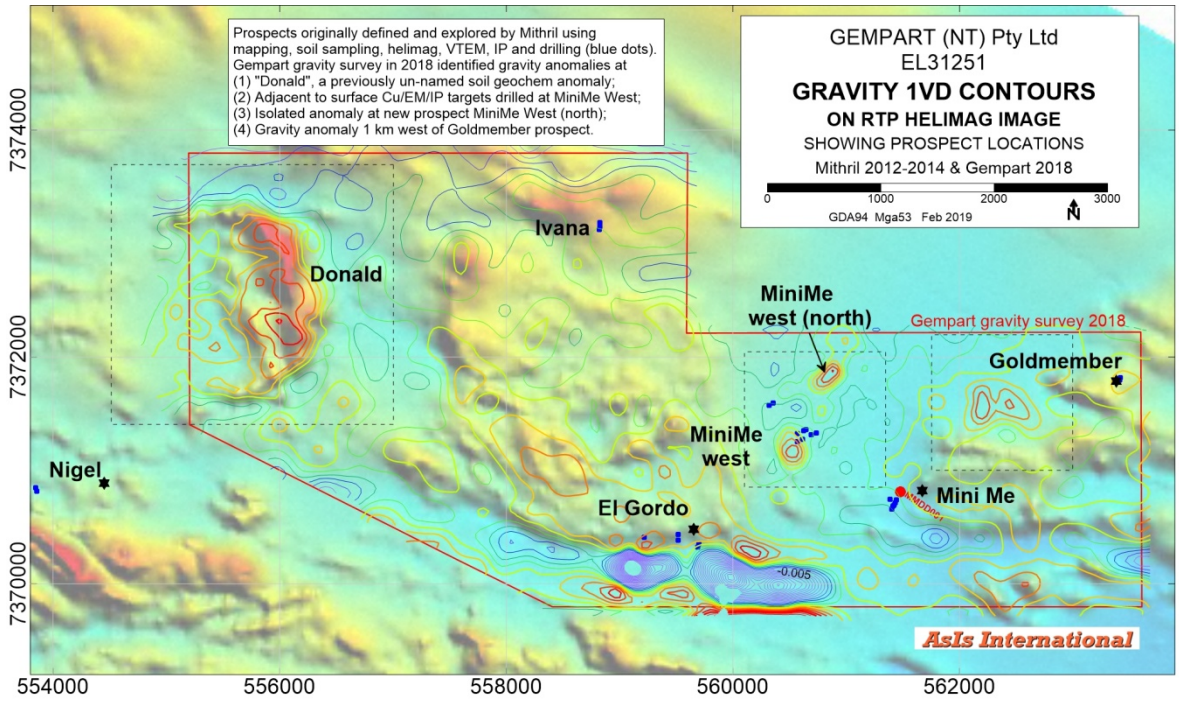

Figure 1. Location of Goldmember prospect on EL31251.

Geology

The latest available published geology is from the Illogwa 1:250,000 mapsheet published in 1985. It is understood the NTGS have been conducting further mapping in recent years. The prospect area is in the Arunta Block, and comprises outcrop/subcrop of the (?) Albarta Metamorphics, a division of the Palaeoproterozoic Strangways Metamorphic Complex. The rocks are described as quartzofeldspathic gneiss, biotite and muscovite-biotite schist, massive and compositionally layered amphibolite; minor calc-silicate rock, hornblende gneiss, magnetite-quartzite, granitic gneiss, porphyroblastic feldspar gneiss and biotite

gneiss. Geoscience Australia quote the maximum intrusion age as 1771+/-3Ma, and a metamorphic age of 567+/-9Ma.

Exploration by Mithril 2012-2014

Mithril carried out soil sampling initially on a 200x400 metre grid in 2012-2013. Assays on the -5mm +1.6mm fraction were determined for As, Ba, Ca, Co, Cr, Cu, Fe, Mg, Mn, Ni, P, Pb, and Zn. Refer Lockhead, A., McKinnon-Matthews, J., 2012, and Mizow, D., 2013.

The Mithril Goldmember prospect, located one kilometre east of the gravity anomaly, **is** a small outcrop of intense secondary silica and iron alteration (ferricrete and silcrete) that returned elevated values of copper, gold and arsenic at surface. There were no assays of particular significance in the surrounding soil samples.

Plans showing data acquisition locations and summary of exploration results are included at Figures 2 and 3 respectively.

Mithril acquired a substantial amount of airborne geophysical data including airborne EM and magnetics/radiometrics over a large area encompassing many prospects, including the Goldmember prospect.

A versatile time domain electromagnetic (VTEM) survey was flown by Geotech Airborne Pty Ltd in October 2012 (Mizow, D., 2012). Flightlines oriented at 030-210 degrees were spaced at 300 metres with Tx-Rx loop at a mean terrain clearance of 50 metres. Interpretation by K. Blundell identified two low amplitude early time anomalies, consistent with a formational contact, possibly faulted.

Low-level helicopter-borne magnetics and radiometrics data were acquired by Daishsat Surveys in March 2012 (Lockhead, A., McKinnon-Matthews, J., 2012). Flightlines oriented 035-215 degrees were flown at a spacing of 100 metres with sensor at a mean terrain clearance of 30 metres. There are no magnetic anomalies coincident with the gravity anomaly, indicative of a low-magnetite system.

The response in the K, U and Th channels of the airborne radiometric data is benign.

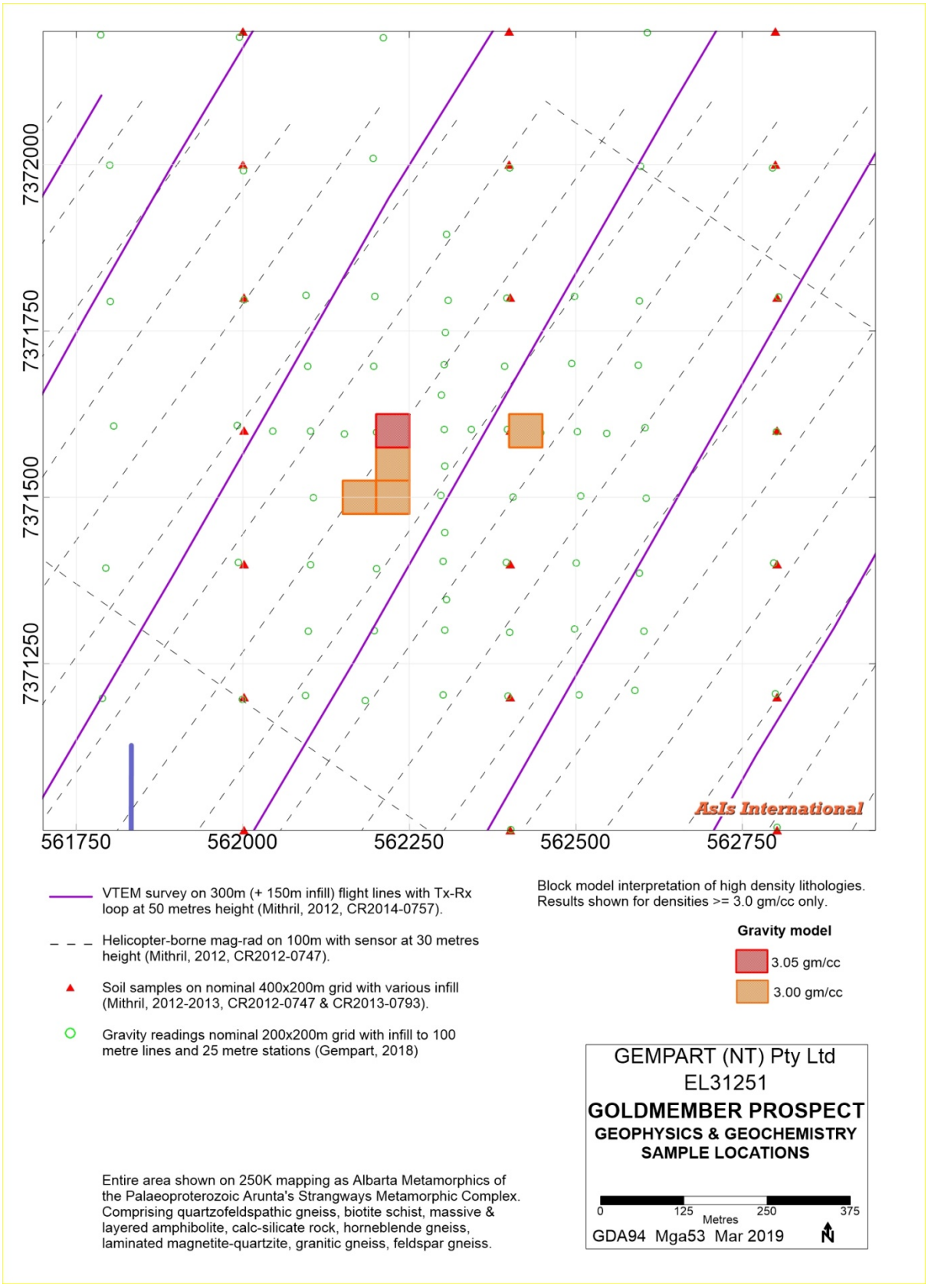

Figure 2. Location of Mithril soil samples, airborne geophysical traverses and Gempart gravity readings.

Two shallow RC holes were drilled in 2012 on the Mithril Goldmember prospect. Ironstones were intersected in both holes. Maximum assay was 0.23% Cu and 0.018 g/t Au from a two metre wide ironstone. The dominant lithologies were sheared granites and gneisses.

Table 1. Goldmember prospect. RC drillholes completed by Mithril 2012.

HOLE_ID	EAST_MGA_Z53	NORTH_MGA_Z53	RL	AZI_MAG	DIP	LENGTH
MIRC-010	563420	7371818	346	125	-60	60
MIRC-011	563413	7371797	346	90	-60	37

Exploration by Gempart 2018

A ground gravity survey was conducted over an area encompassing the Goldmember prospect area in November 2018. Contractor Daishsat Surveys acquired readings on a nominal 200x200 metre grid, with infill readings on 100 metre lines and station spacing 100 or 50 metres.

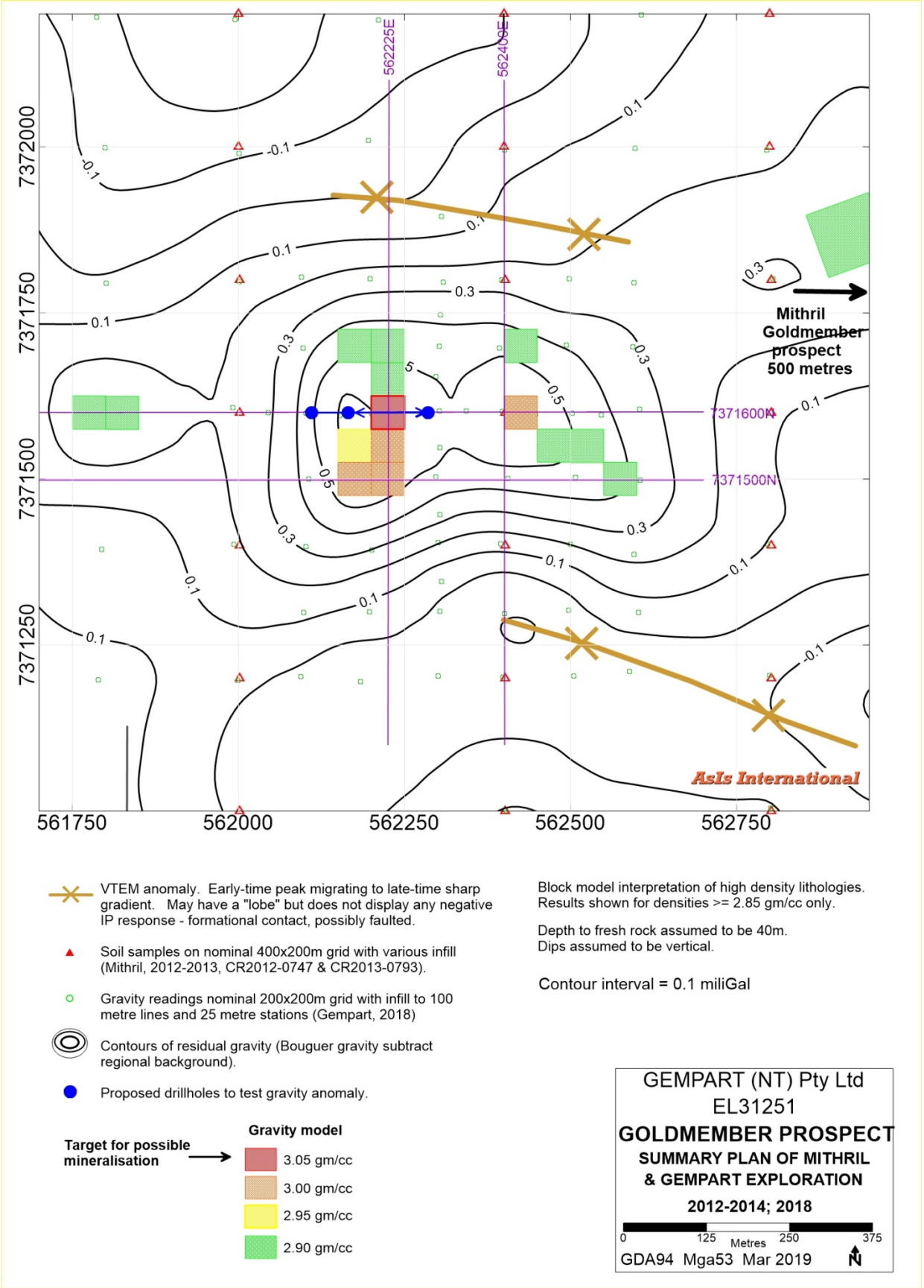

Figure 3. Goldmember prospect. Summary plan of Mithril & Gempart exploration.

Interpretation

In order to construct a geological model and define the anomalous mass causing the gravity anomalies, the gravity data were subject to detailed quantitative interpretation. The aeromagnetic data were not modelled as there is insufficient signal to allow any meaningful interpretation. The process was:

1. Derive profiles on 100 metre spaced NS and EW traverses from the gridded gravity. In places this was closed up to 50 metre spacing.
2. Assuming depth of weathering is typically 40 metres, forward model the gravity.
3. Interpret lithologies and structures from the data and model.

The results suggest the western part of the anomaly contains a core of higher density material about 150 metres long and 50 metres wide striking generally north-south. Dips are interpreted to be vertical. The highest inferred density is 3.05 gm/cc. The interpreted model on gravity and magnetics is shown at Figures 4 and 5. Interpreted geological sections are shown at Figures 6, 7, 8 and 9. The section in Figure 7 shows proposed drillholes to test the source of the gravity anomaly.

Figure 10 is a Landsat-7 image of the prospect area. The area of the gravity anomaly appears to have a different surface expression.

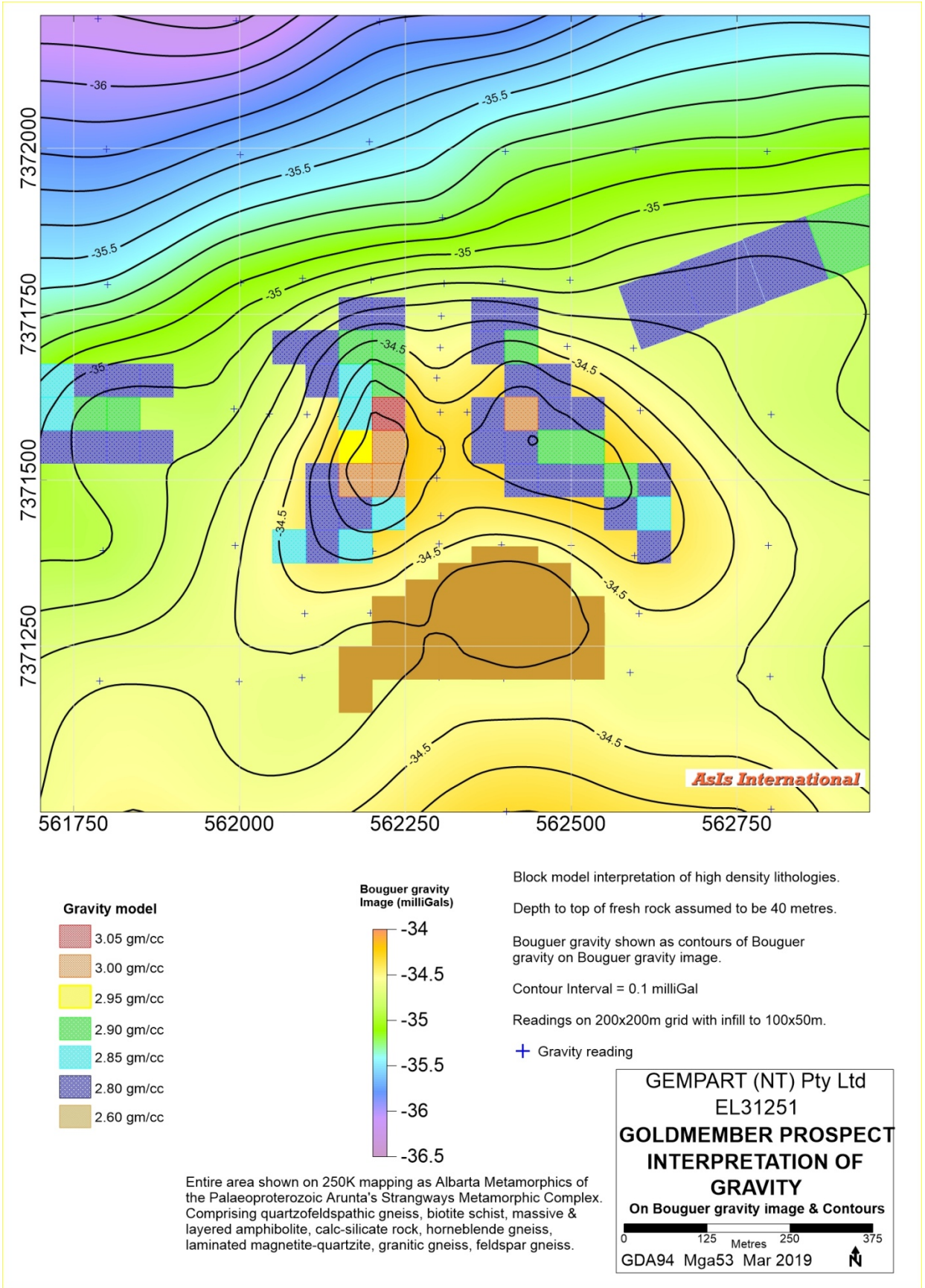

Figure 4. Goldmember prospect. Interpretation of gravity on gravity image.

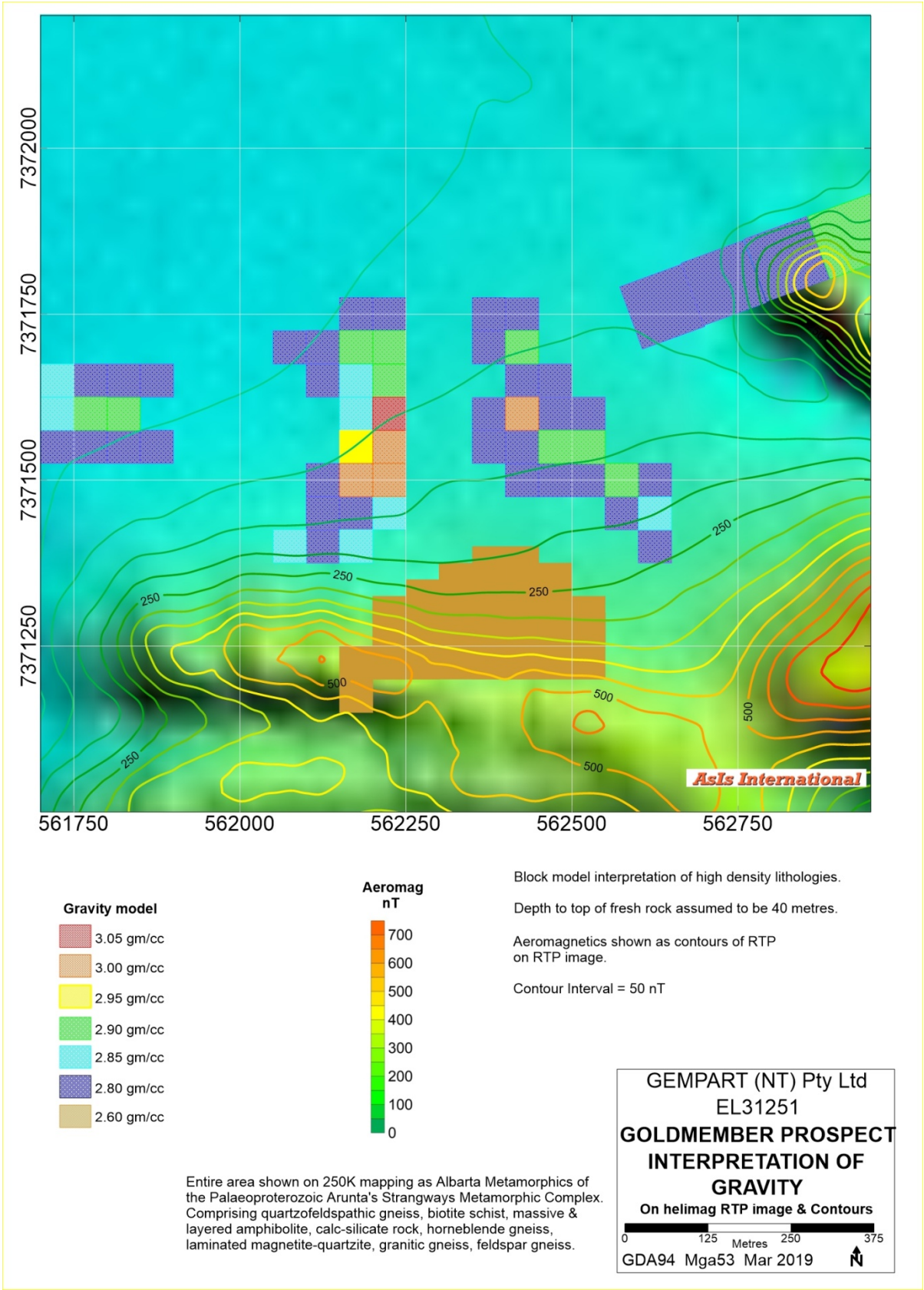

Figure 5. Goldmember prospect. Interpretation of gravity on magnetics image.

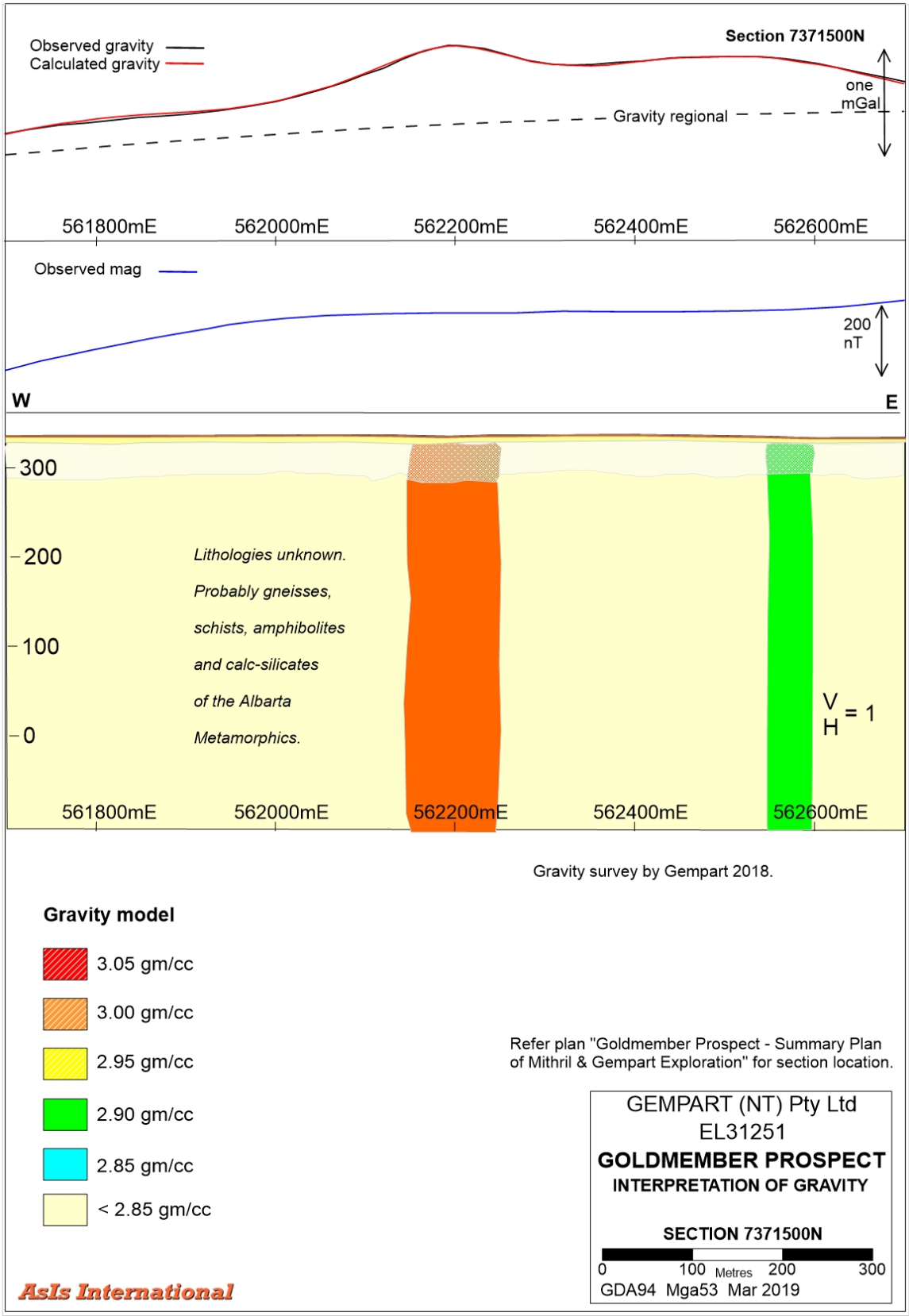

Figure 6. Goldmember prospect. Interpretation of gravity on section 7371500N.

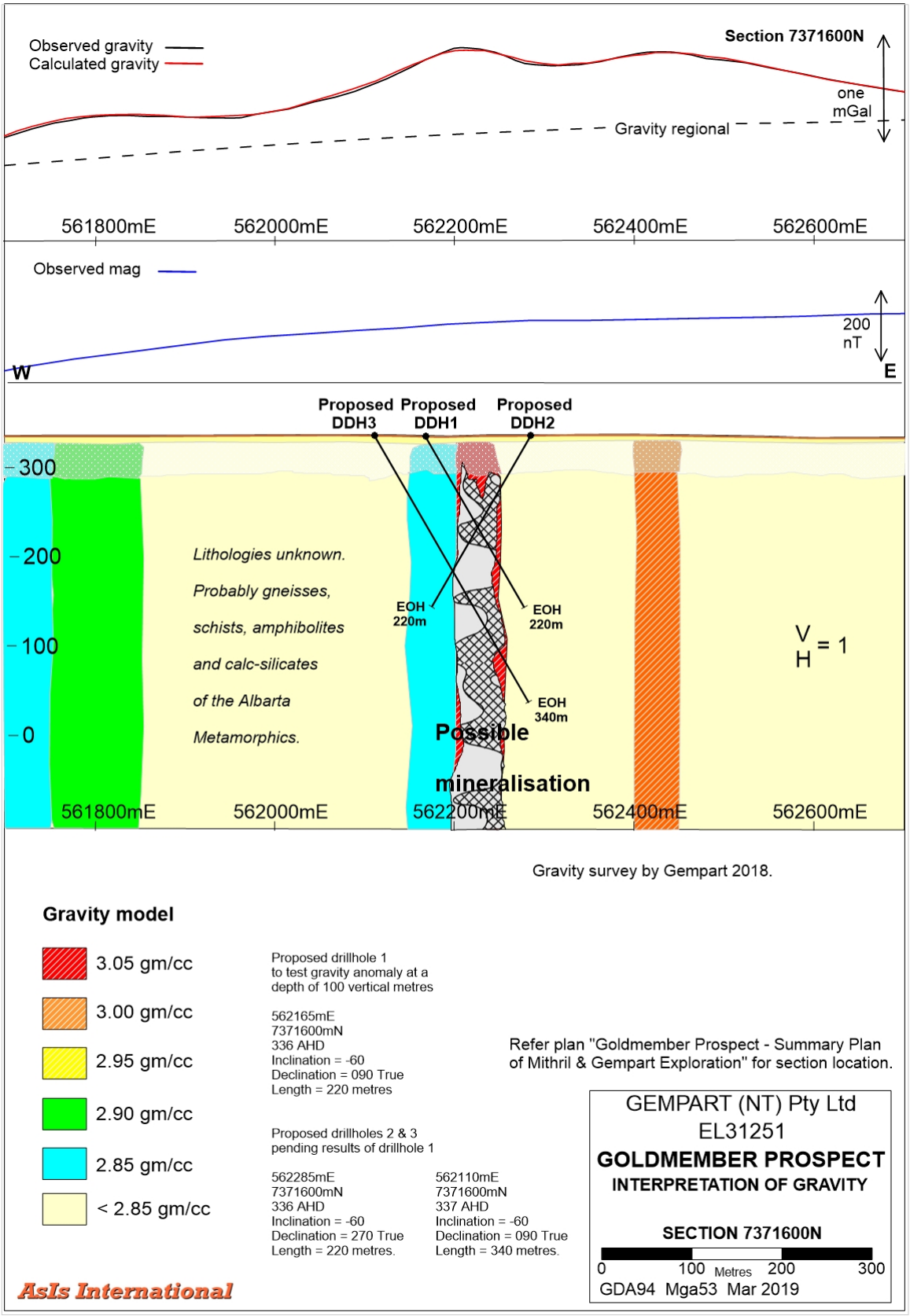

Figure 7. Goldmember prospect. Interpretation of gravity and proposed drillholes on section 7371600N.

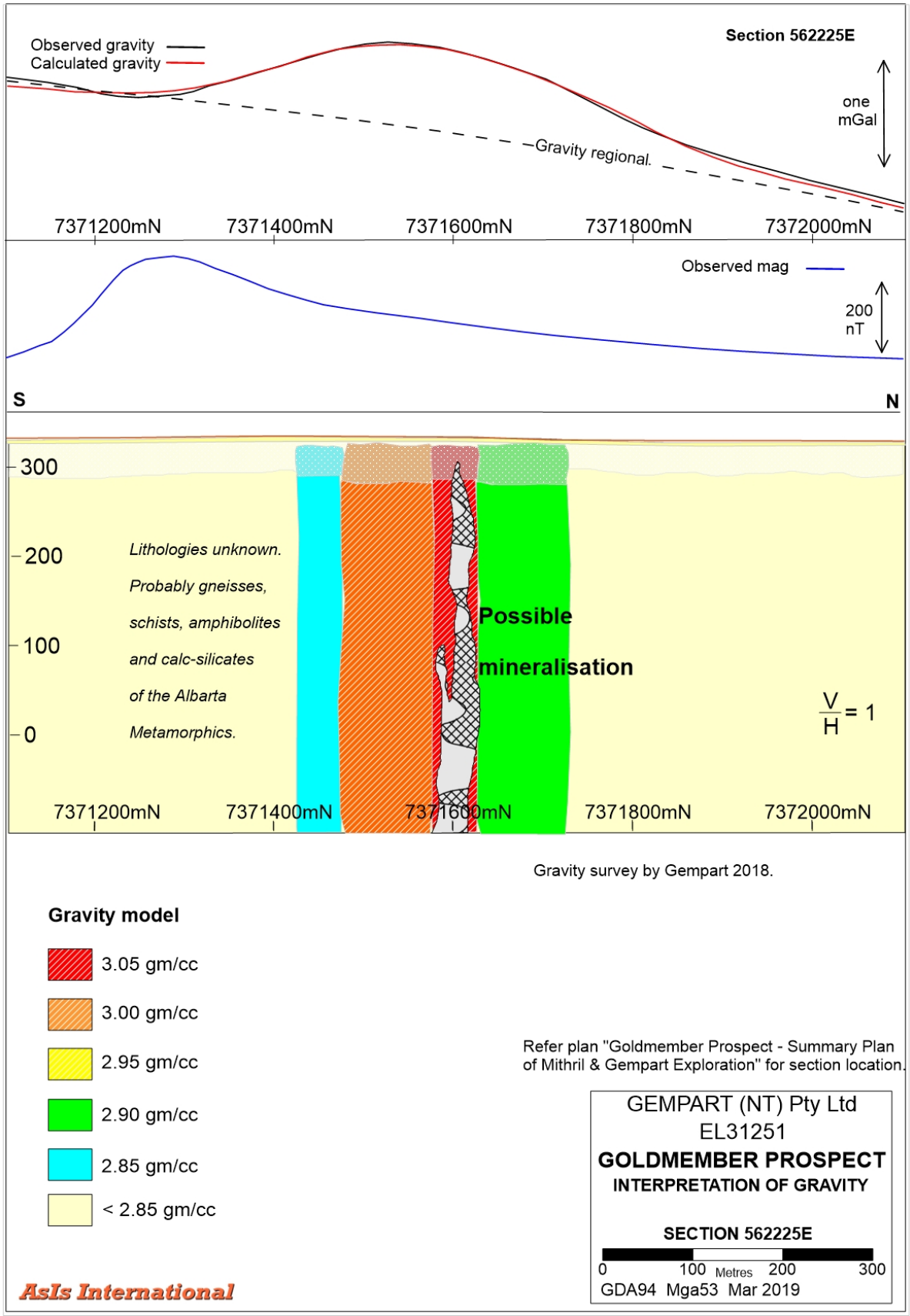

Figure 8. Goldmember prospect. Interpretation of gravity on section 562225E.

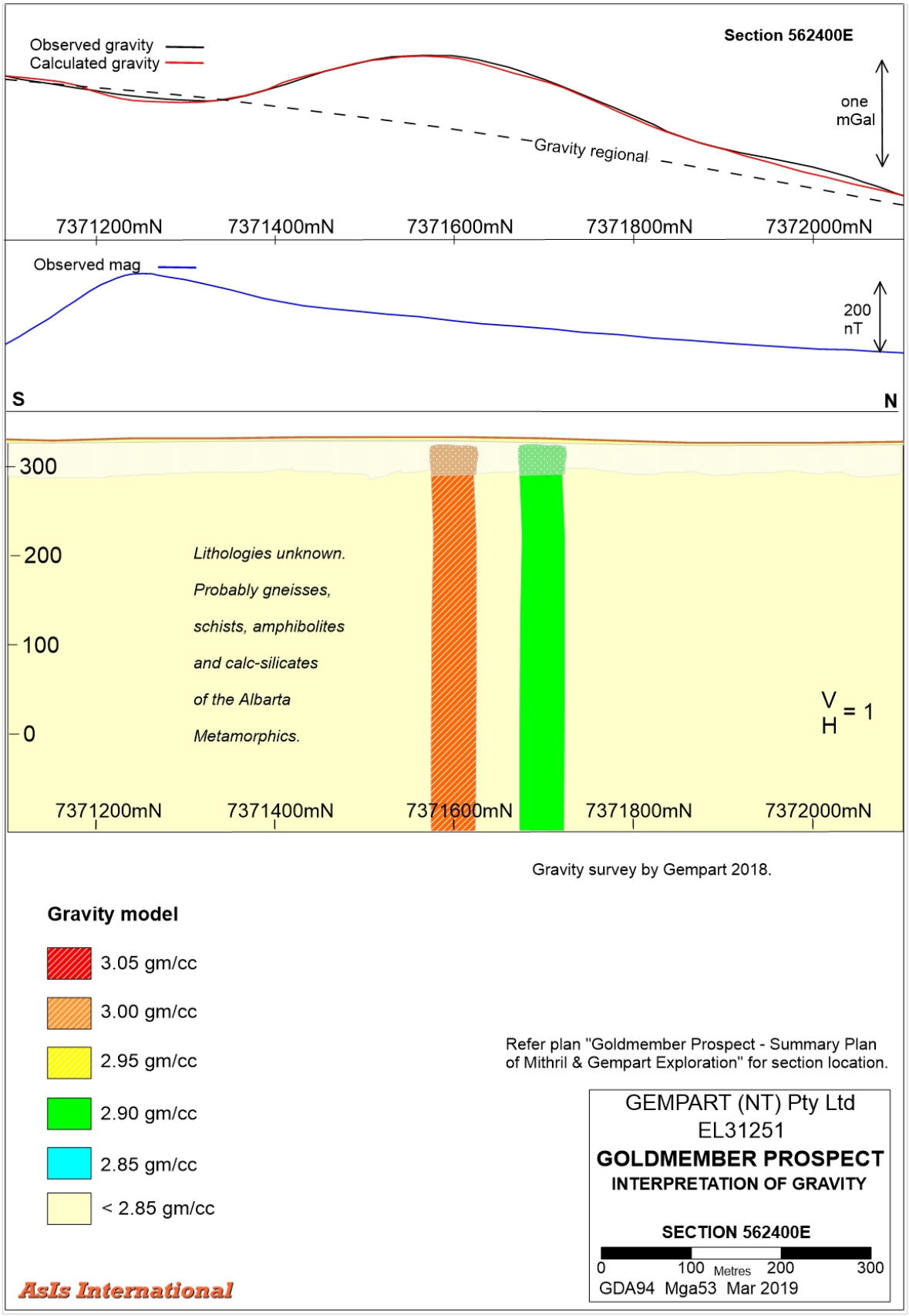

Figure 9. Goldmember prospect. Interpretation of gravity on section 562400E.

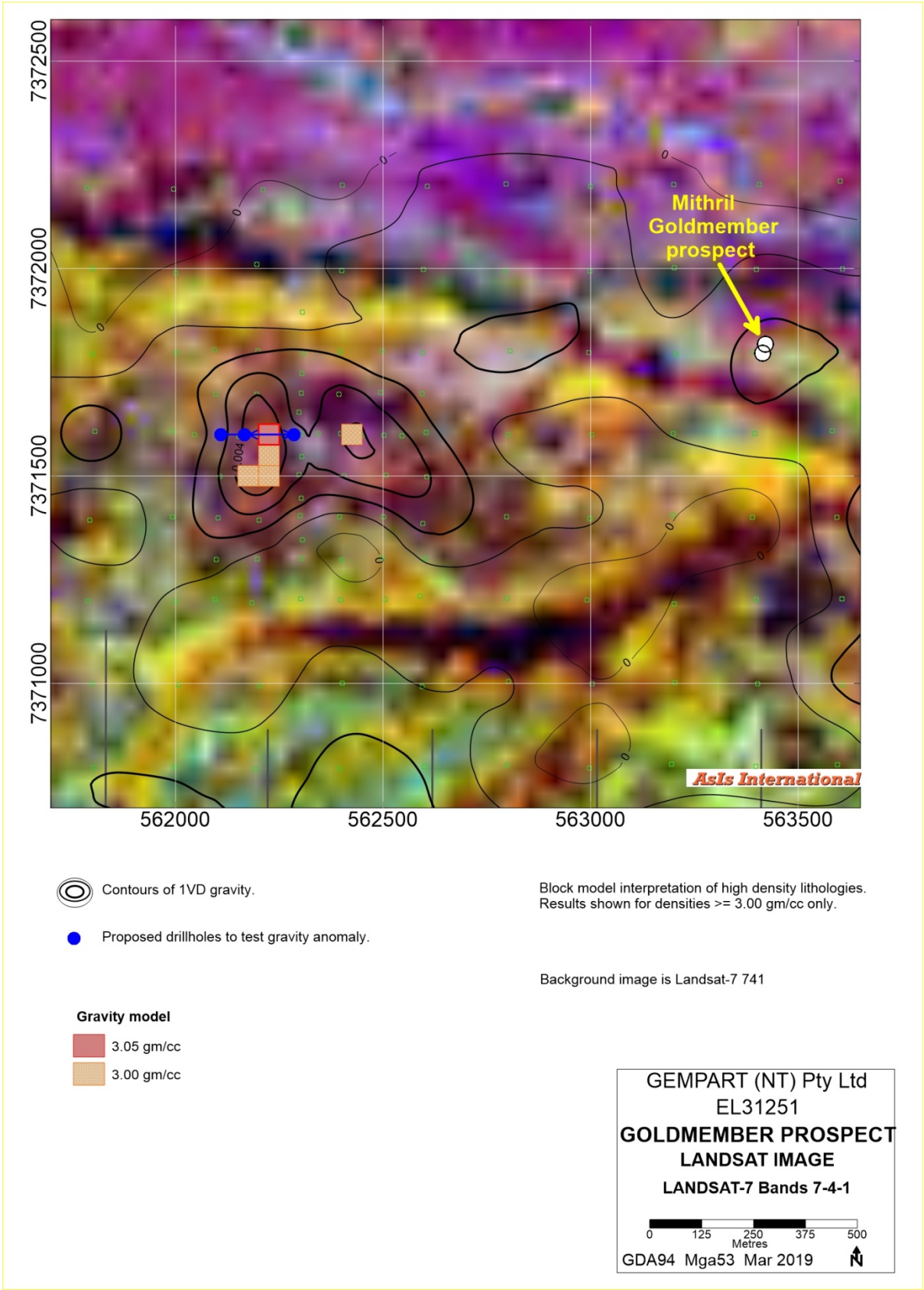

Figure 10. Goldmember prospect. Gravity interpretation on Landsat image.

Discussion of Results

The source may represent an IOCG or skarn model of mineralisation, with magnetite destruction during the Palaeozoic. Deposits of this type in the Strangways Metamorphic Complex include Johnnies Reward, located in the Strangways Range 150 kilometres to the northwest, and Molyhil Mine, 100 kilometres to the north. The former is a magnetite-copper-lead-zinc-gold metamorphic skarn in Cadney metamorphics, a unit at the top of the Strangways Metamorphic Complex. Molybdenum and tungsten mineralisation at Molyhil occurs as a magnetite / sulphide-rich hornfels unit. Allanite-bearing pegmatites with potential for REE's, lithium, thorium uranium and zirconium occur in Cadney metamorphics at Bluey's Folly 80 kilometres to the northwest in the Amarata Range.

Recommendations for further work

It is highly recommended that the modelled source of the observed gravity anomaly be drilled to test for mineralisation. Refer Figure 7 for drill section.

Proposed drillhole 1 to test gravity anomaly at a depth of 100 metres.

Easting : 562165mE
Northing : 7371600mN
RL : 336 AHD
Inclination : -60
Declination : 090 True
Length : 220 metres

Proposed drillholes 2 & 3 pending results of drillhole 1

Easting : 562285mE
Northing : 7371600mN
RL : 336 AHD
Inclination : -60
Declination : 270 True
Length : 220 metres.

Easting : 562110mE
Northing : 7371600mN
RL : 337 AHD
Inclination : -60
Declination : 090 True
Length : 340 metres.

References

Lockhead, A., McKinnon-Matthews, J., 2012. EL 25643 Mount Isabel and EL 25653 Acacia Bore Sammy JV Project Annual technical report for the period 20 August 2011 to 19 August 2012. Mithril Resources Ltd. Northern Territory Geological Survey, Open File Company Report CR2012-0747.

Mizow, D., 2013. EL 25643 Mt Isabel and EL 25653 Acacia Bore Sammy JV Project Group technical reporting status Annual technical report for the period 20 August 2012 to 19 August 2013. Mithril Resources Ltd. Northern Territory Geological Survey, Open File Company Report CR2013-0793.

Mizow, D., 2014. EL 25643 Mount Isabel and EL 25653 Acacia Bore Sammy Project Annual technical report for the period 20 August 2013 to 19 August 2014. Mithril Resources Ltd. Northern Territory Geological Survey, Open File Company Report CR2014-0757.

G. Bubner 27 March 2019

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