8 April 2024 **ASX: MDI**

EXPLORATION UPDATE – NEW DRILL TARGETS BARKLY COPPER-GOLD SUPER PROJECT

HIGHLIGHTS:

- **Yet more compelling new drill targets established;**
- **Multiple modelled large dense 'shoots' spread across six prospects - (an indicator of potential sulphide or iron oxide minerals concentrations expected with MDIs IOCG or Sediment Hosted Cu-Zn-Pb-Ag targets);**
- **Eight new drill-ready targets and another three priority targets to undergo further surveys ahead of drilling;**
- **Range of target depths – from 230m - 550m.**

Middle Island Resources Limited (ASX: **MDI** or "**Middle Island**") is pleased to update shareholders on our Barkly Super-Project exploration programme which has progressed well.

The work is targeting prospective areas for IOCG and Sediment Hosted Cu-Zn-Pb-Ag deposits at Tennant Creek and Barkly. The Company's exploration holdings in the region covers some 6,918 sq kms.

Modelling of detailed gravity survey data collected or collated across priority targets identified in 2023 has been completed. The modelling has established well-defined density anomalies ('shoots') that are consistent with the densities, size, and geometries of known examples of the target deposit types.

Six areas have advanced to Prospect status, with well-defined drill targets (Figure 1). Eight new high priority drill targets have been identified in the project drill schedule. A total of 14 conceptual exploration drillholes have been planned.

The new drill targets are 'blind' beneath post-mineralisation cover and, as such, each and every one presents an opportunity for a significant new discovery. Target depths range from 230m - 550m.

A summary of the targets is provided in Appendix 1.

Priority focused drilling plans are being finalised for the 2024 field season. Initial drilling will focus on shallower targets.

Commenting on the Company's exploration programme, MDI Chief Executive Officer, Roland Bartsch said:

"'Ultimately new mineral discoveries are made through drilling. We have systematically developed robust drill targets in an underexplored district where the opportunities have been hidden by cover. It's

exciting to be at a point to start delivering drill hole plans. That said, the targets outlined here are just a start. It's a large project and other equally significant targets are in the pipeline with more likely to be identified and worked up.

The systematic approach adopted is integral to MDI's exploration strategy to add value through growth of scientific understanding and concepts, which in turn is directed at securing adequate funding to enable resources and future drilling to be focused not only on the perceived top targets, but to ensure prospects are not abandoned prematurely in the face of the many disappointments typical in exploration. This approach is directed at maximising the potential for exploration drilling success."

RELEASE AUTHORISED BY THE MDI BOARD:

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Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, costs, dividends, production levels or rates, prices, resources, reserves or potential growth of Middle Island, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.

Competent Persons Statement

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Roland Bartsch, BSc(Hons), MSc, MAIG. Mr Bartsch is a full-time employee of the Company and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Bartsch consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

APPENDIX 1: EXPLORATION UPDATE

Exploration Drill Targeting

In 2023, MDI identified a total of 55 exploration targets within its Barkly Super-Project tenements for further assessment.

Detailed infill ground gravity surveys were completed over eight priority targets in late 2023. Surveys were completed by Daishsat Geodetic Surveyors. Across six areas existing survey data was infilled to 100m x 100m stations to provide sufficient resolution to resolve drillholes to test the targets; the other two areas were completed at 100m x 400m with the aim of developing proof of concept.

The gravity data was processed, and gravity 3D density inversion modelling was completed by Southern Geoscience Consultants. Modelling was also completed on ground gravity surveys (also at 100m x 400m station spacing) from previous explorers over two areas on EL32109 and EL32760. Further background on the gravity surveys and modelling is provided in Appendix 2.

From a targeting perspective, modeled high rock density is used as a proxy for the potential concentration of key minerals with higher specific gravities that may indicate alteration (eg magnetite, hematite), and presence of sulphide minerals associated with copper, gold, zinc and lead mineralisation being sought. The targeting further considered deposit conceptual model parameters evidenced by magnetic and structural model signatures.

As a result of the modeling, six areas have advanced to Prospect status with well-defined drill targets (Figure 1 and 2) in addition to the previously established Crosswinds Prospect.

Within the Georgina and EL32760 Project areas (Figure 1), the modelling has established well-defined density anomalies (‘shoots’) that are consistent with densities, size, and geometries consistent with larger known Tennant Creek IOCG deposits or IOCG variants in other districts (Figures 3 -7).

Within the Barkly Project area (Figure 1) the detailed work focused on advancing Sediment-Hosted Cu-Zn-Pb-Ag (SedH) target concepts. At two targets, the models have confirmed the presence of linear dense horizons encasing well defined density anomalies (‘shoots’). The potentially stratabound/stratiform nature of the ‘shoots’ and structural position near basin margin growth faults is consistent with the SedH exploration concept (Figures 8 -11).

In total, eight new high priority drill targets have been identified in the project drill schedule. A total of 14 conceptual exploration drillholes have been planned. Targets are ‘blind’ beneath post-mineralisation Georgina Basin cover ranging from 100m - 350m deep and top of target depths 230m – 550m. At the Redrock and Tumbleweed prospects additional detailed gravity surveying is however planned to refine proposed drill locations.

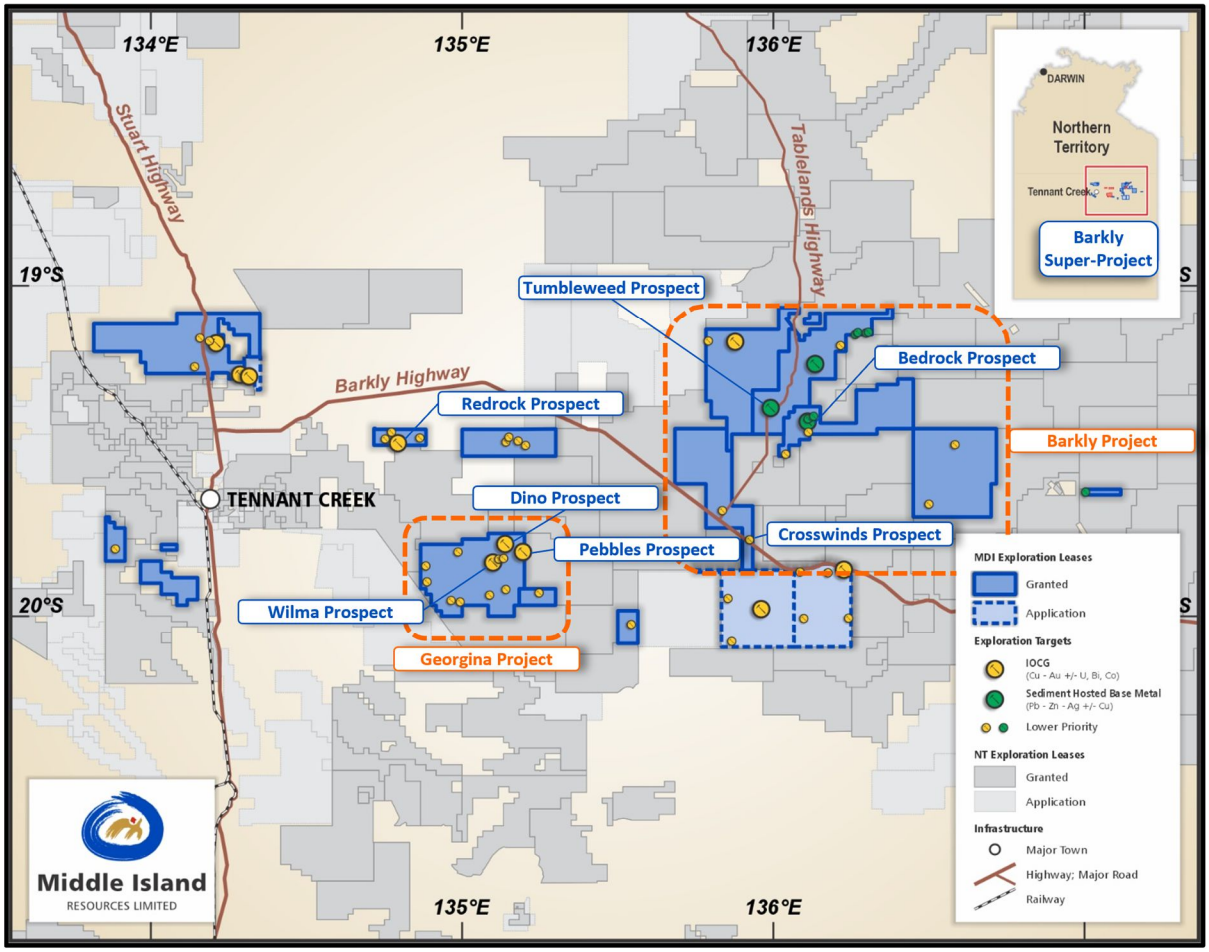

Figure 1. Barkly Super-Project, project areas, tenements and exploration prospect locations.

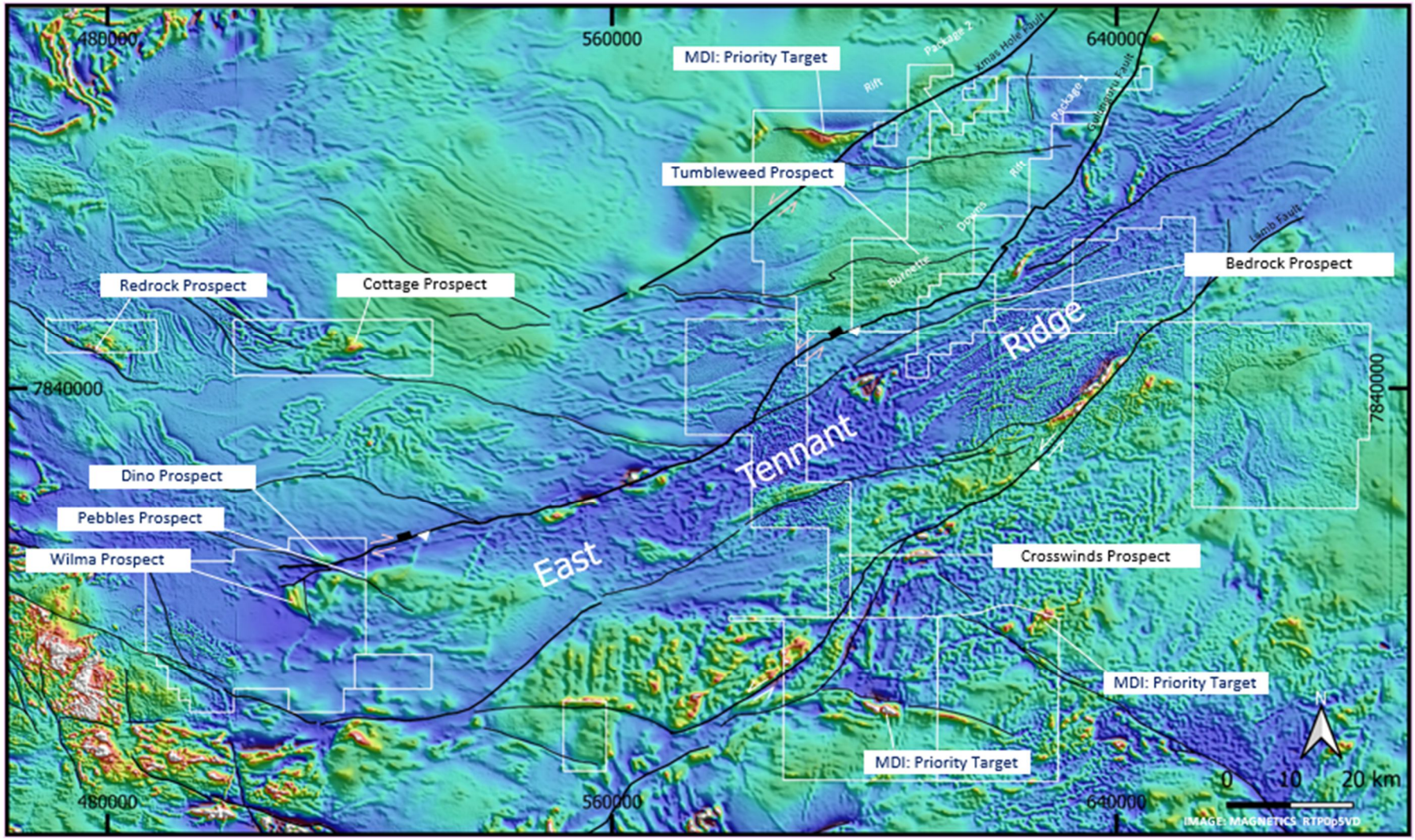

Figure 2. Barkly Super-Project, magnetic image showing priority prospects and targets - large high amplitude magnetic and/or related gravity anomalies (probable magnetite - hematite constructive alteration zones or potential sulphide concentrations for gravity only) are distributed along major fault corridors - deep crustal faults with interpreted multiple stages of extension, and reactivation during shortening events.

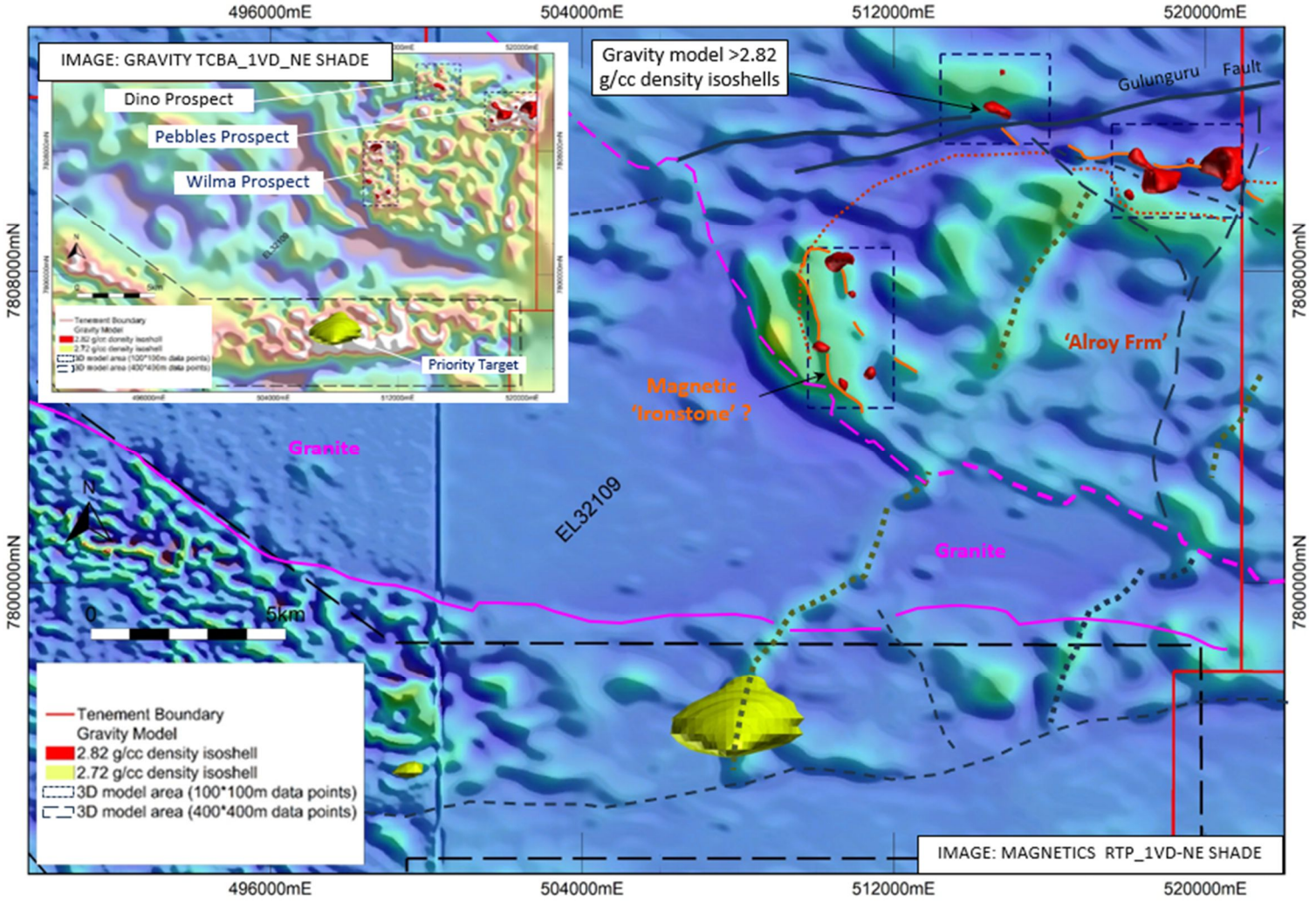

Figure 3. Georgina Project area magnetic and gravity (inset) images showing prospects and modelled density anomalies ('shoots') in red. At Wilma the main 'shoots' step across magnetic units (possible ironstones). At Dino the 'shoot' is immedaitely within the Gulunguru Fault and the broader gravity anomaly overlaps with the magnetic high (green) to its north. The Pebbles anomaly, the largest and highest amplitude, is complex, situated in faulted contact of modrately magnetic interpreted Alroy Formation rocks adjacent to the Gulunguru Fault.

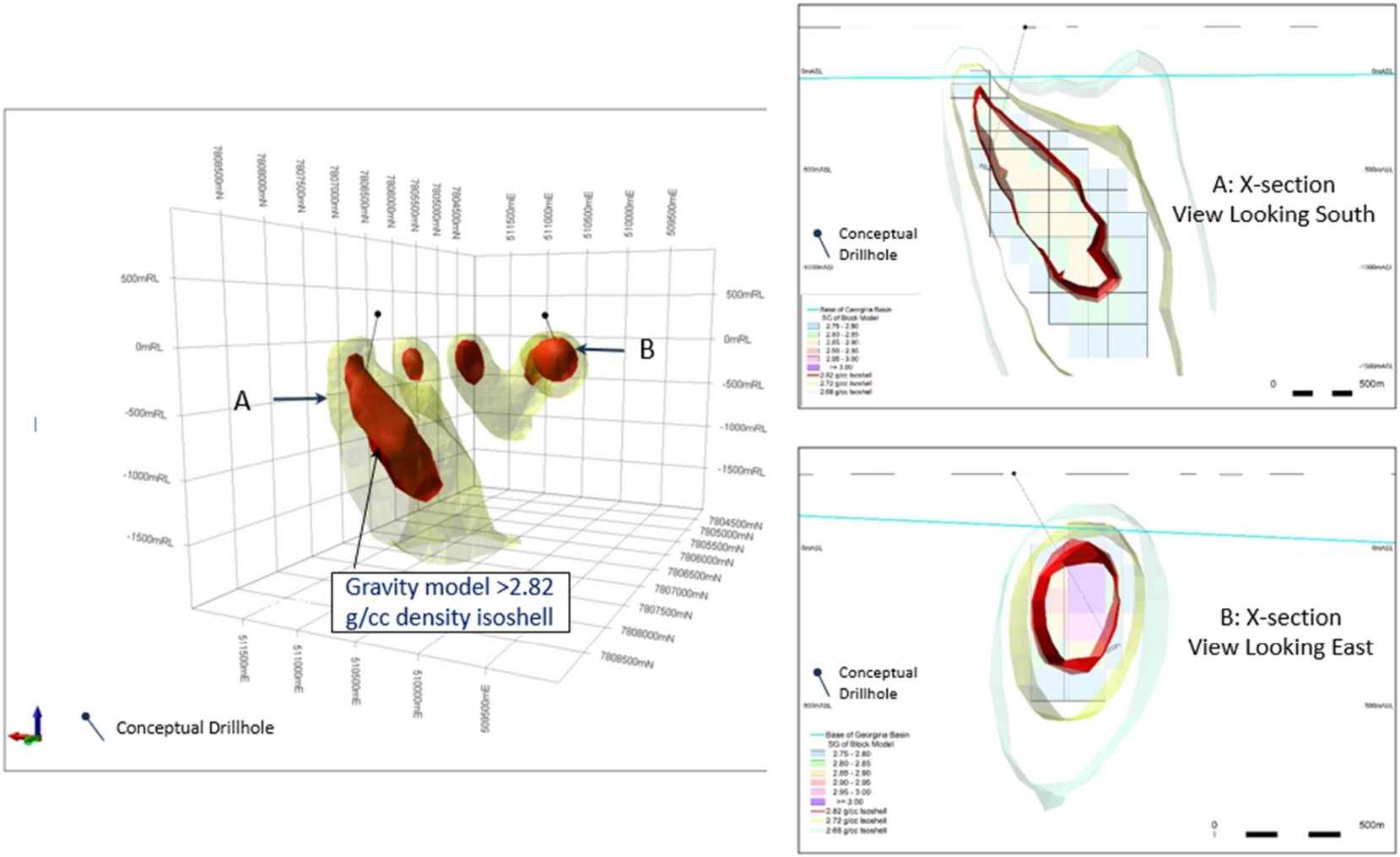

Figure 4. Wilma Prospect gravity 3D inversion density model (left). Isoshells of the anomaly peaks define 'shoots' with densities, size and geometries consistent with larger known Tennant Creek IOCG deposits or variants in other districts. Cross-sections A and B illustrate the two shoots that step across the magnetic 'ironstones' (see Figure 4); modelled maximum densities are 2.89 and 3.11g/cc (100m block model), top of anomaly depth is 295m and 230m, strike lengths of 500m to 250m and down plunge extents 1200m to 400m respectively.

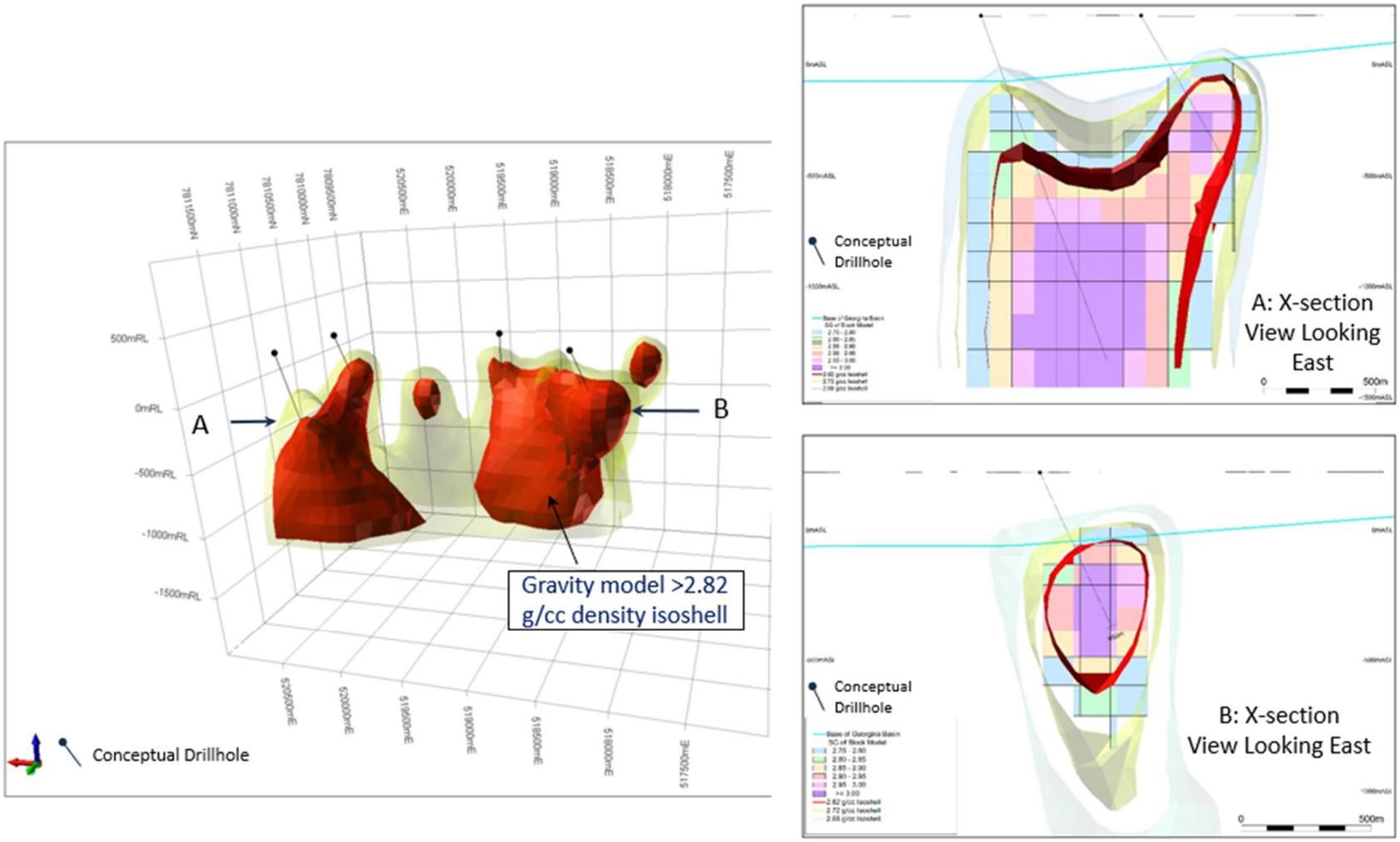

Figure 5. Pebbles Prospect gravity 3D inversion density model (left). The gravity anomalies are the largest and highest amplitude in the tenure. The modelled densities, size and geometries are consistent with a larger IOCG system. The two larger zones display 'shoots' that extend closer to surface illustrated in x-sections A and B; modelled maximum densities are 3.26 and 3.20g/cc (100m block model), top of anomaly depth is 280m and 270m, strike lengths of 1100m to 1400m and down plunge extents at least 1400m to 650m respectively.

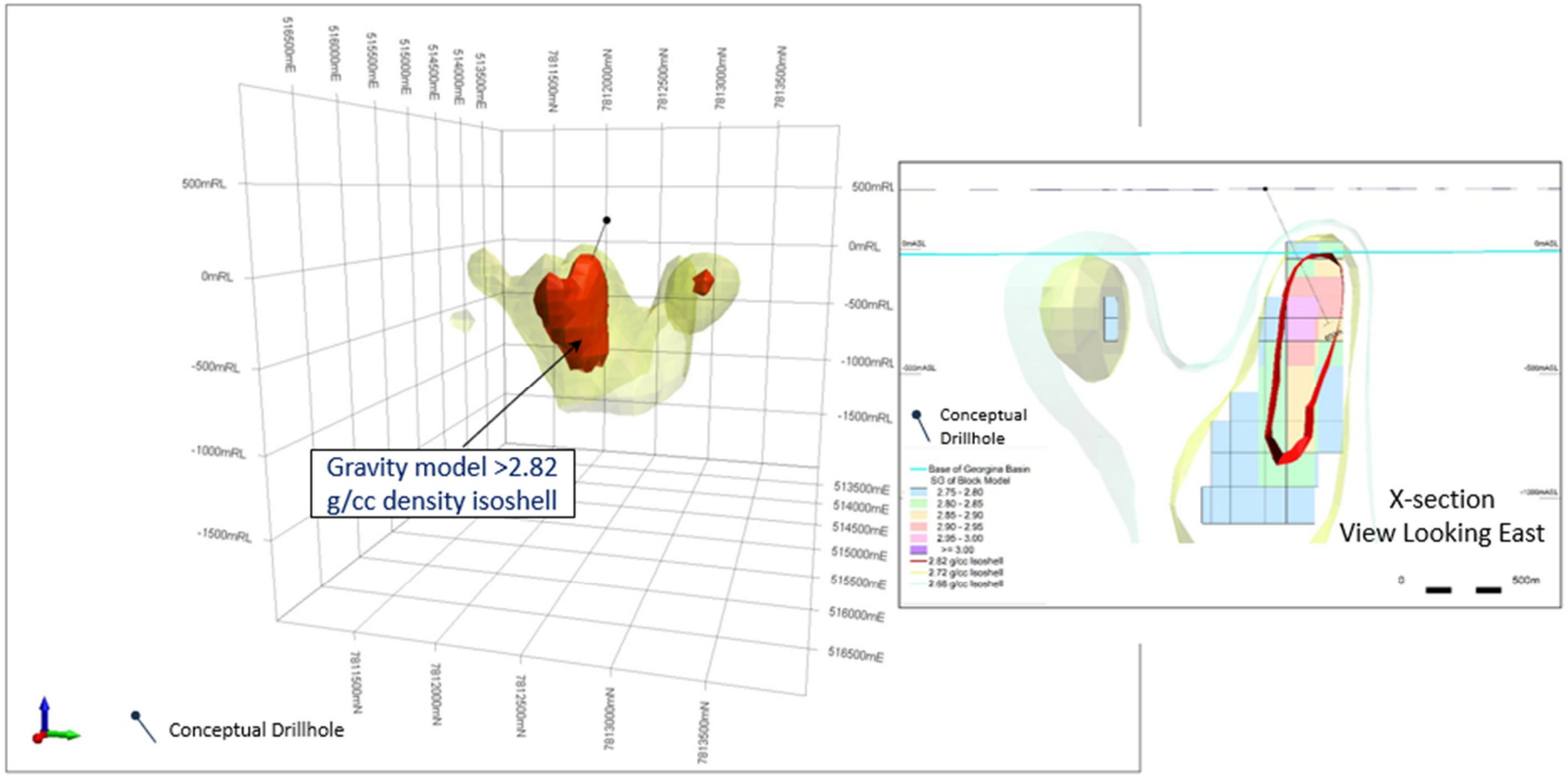

Figure 6. Dino Prospect gravity 3D inversion density model (left) and representative cross-section. Modelled maximum density is 2.99g/cc (100m block model) and top of anomaly depth is 260m; strike lengths are in the order of 750m and down plunge extent 900m.

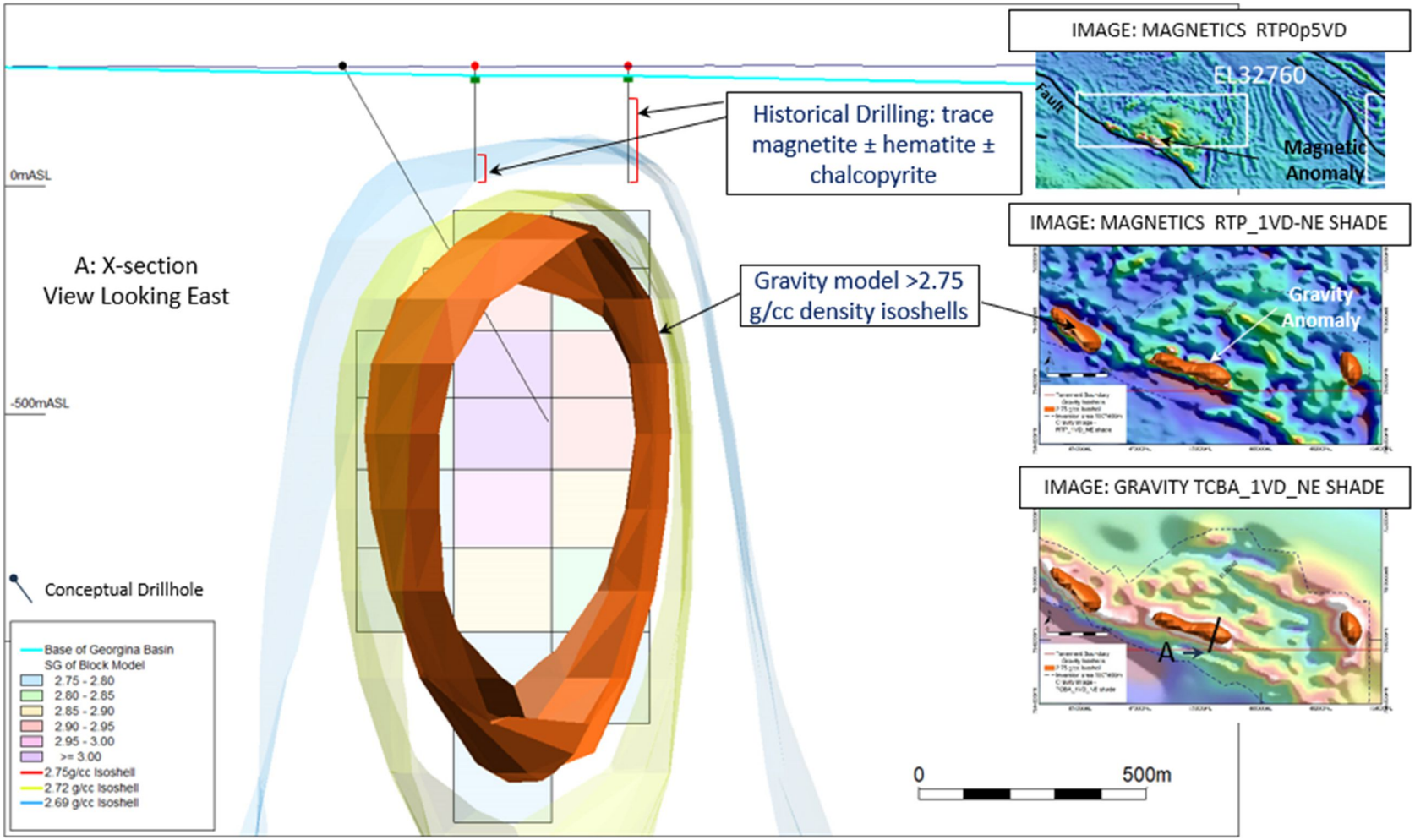

Figure 7. Redrock Prospect; inset maps show gravity 3D model maximum density isoshells draped on magnetic and gravity images. The central anomaly (x-section A) is coincident with a magnetic high on a regional fault bend. Modelled maximum densities for this shoot is 3.07g/cc (200m block model) and top of anomaly depth is 320m; strike length is 2700m and down dip extent 1200m. Historical drilling by an earlier explorer did not test the target but intersected alteration including traces of copper sulphides (chalcopyrite) consistent with being in the periphery of a ICOG system.

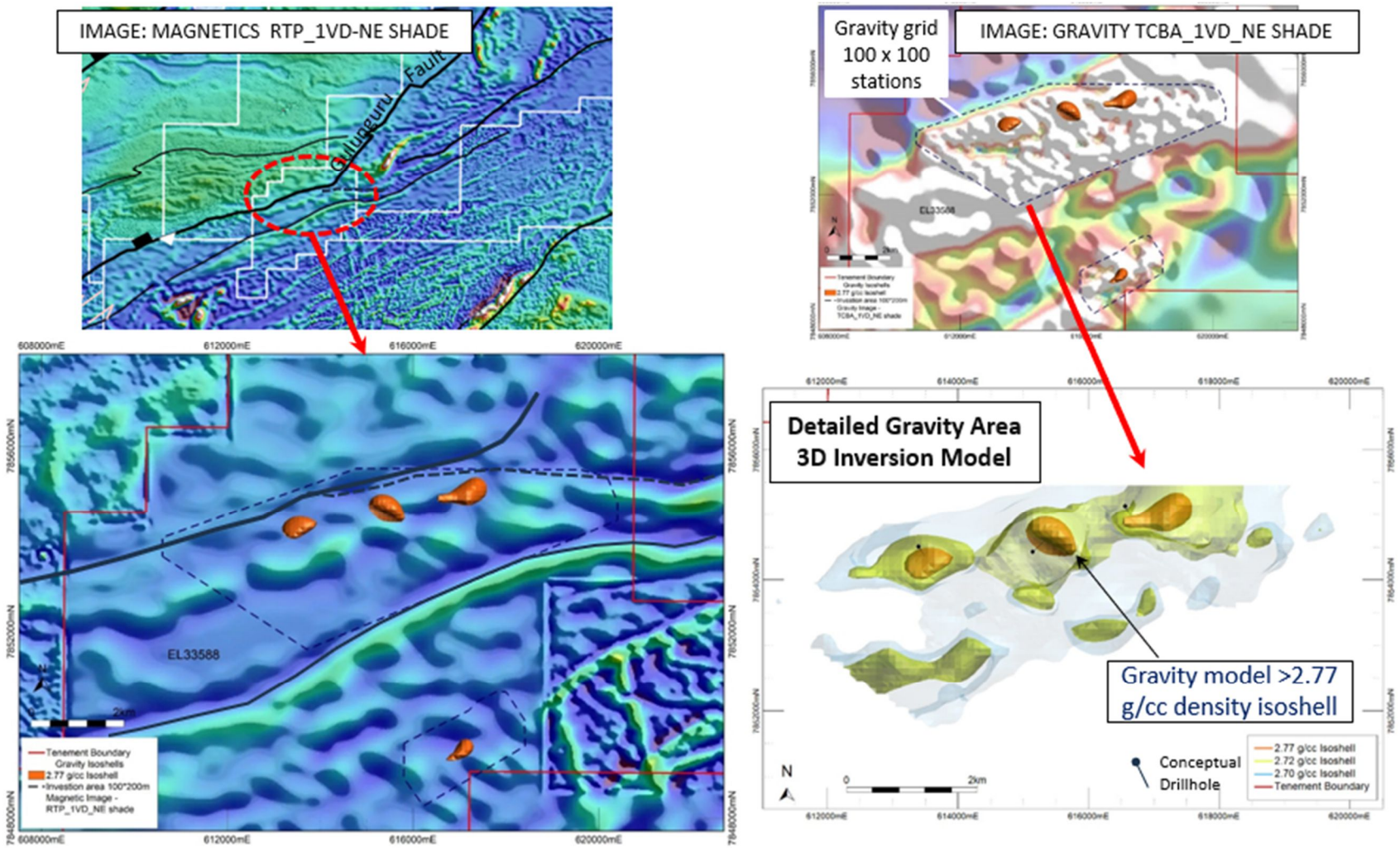

Figure 8. Bedrock Prospect; plan view of gravity 3D inversion models (bottom right) and images of gravity and magnetics with modelled density 'shoots' (red) superimposed. The modelled density highs sit within a fault bound block on the margin of the graben that sits west of the Gulunguru Fault. The broader gravity highs are regionally anomalous and appear to be stratiform/stratabound with discrete higher density 'shoots'.

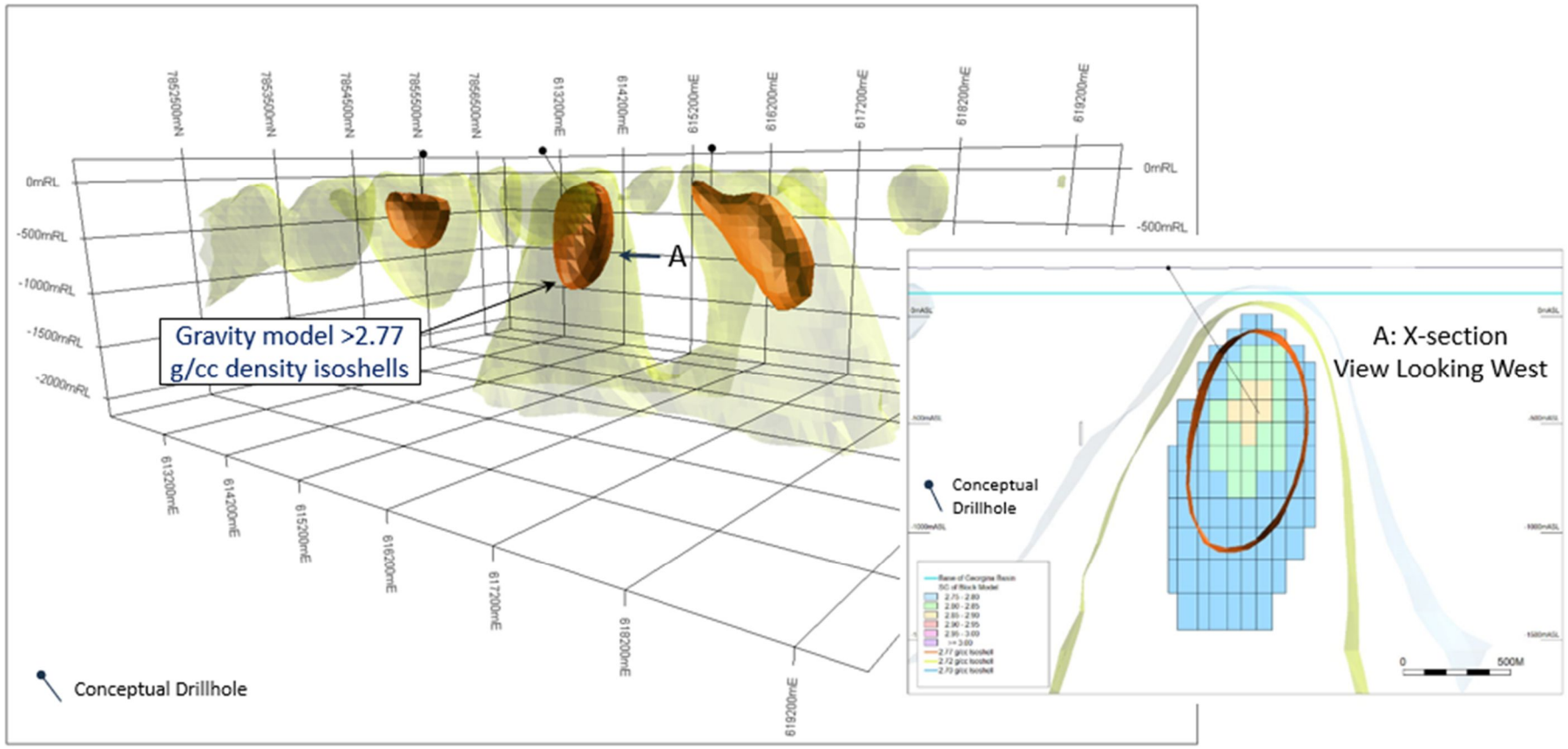

Figure 9. Bedrock Prospect gravity 3D inversion density model (left) and representative cross-section. Modelled maximum density is 2.87g/cc (100m block model) and top of anomaly depth is 290m; strike lengths of the 'shoots' are in the order of 800m to 650m and down plunge extents range from 1000m to 1500m.

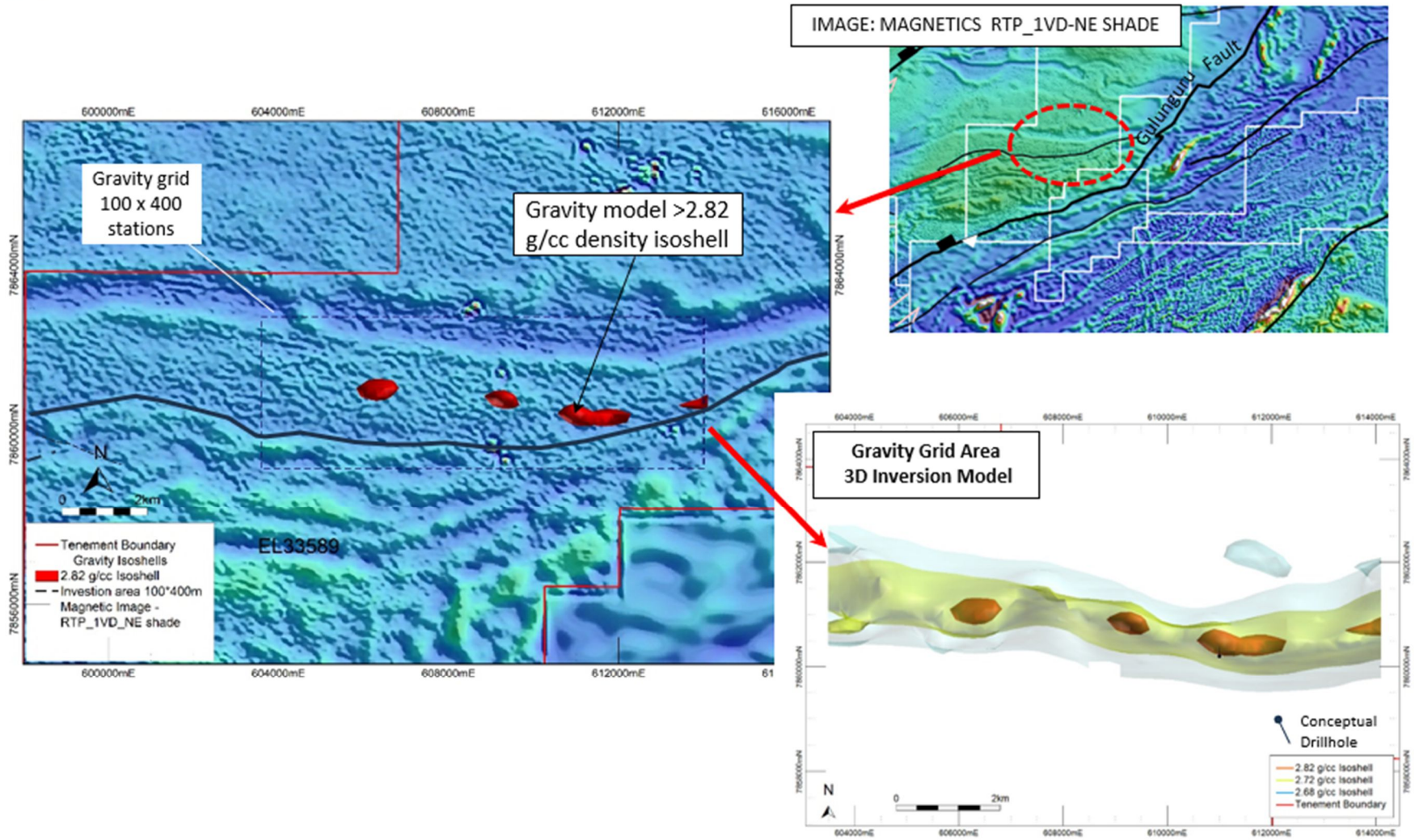

Figure 10. Tumbleweed Prospect; plan view of gravity 3D inversion models (bottom right) and images of magnetics illustrating the relationship with the modelled density 'shoots'. The target sits within the graben west of the Gulunguru Fault near the basin margin and interpreted major growth faults. The broader modelled density high is anomalous to the surrounding sequence, is linear over 10's of km and appears to be stratiform/stratabound with discrete higher density 'shoots'.

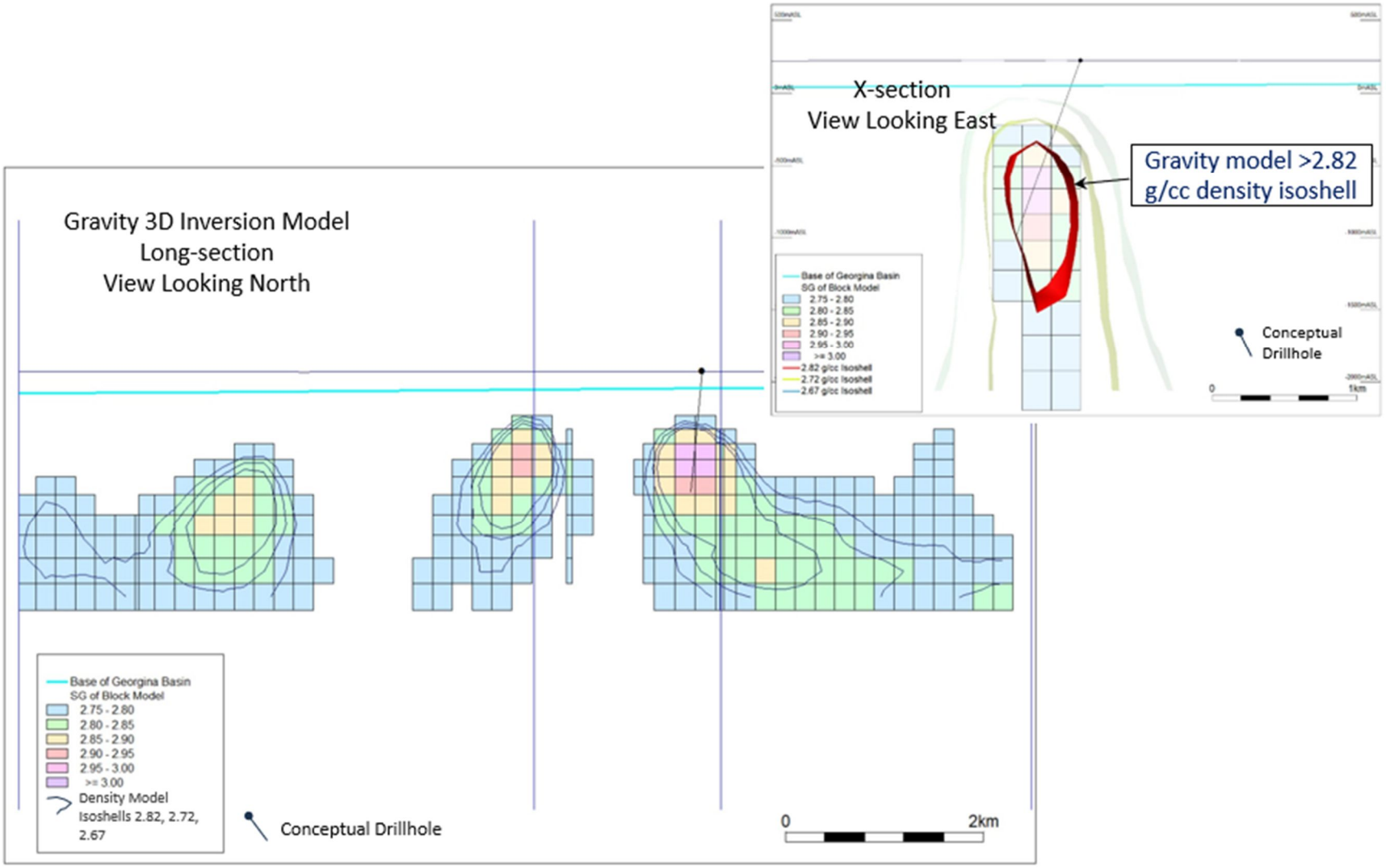

Figure 11. Tumbleweed Prospect, long-section through the gravity 3D inversion density model (left) and cross-section through the main peak (top right). Modelled maximum density is 2.97g/cc (approx. 200m square blocks applied), top of the strongest anomaly depth is 550m and strike lengths are in the order of 480m and down plunge extent 2000 m.

References

McKay G, 2006. EL24007 Annual Report for period ending October 7, 2006, Red Metal Limited, report to NT NTDME CR2006-0437.

McKay G, 2005. EL24007 Annual Report for period ending October 7, 2005, Red Metal Limited, report to NT NTDME CR2005-0402.

William A, 2023. Barkly West 2023 Gravity Surveys Processing and Logistics Report (and accompanying data), Daishsat Geodetic Surveyors, report for Barkly Operation Ltd, 23031 – EL32109.

William A, 2023. Barkly South 2023 Gravity Surveys Processing and Logistics Report (and accompanying data), Daishsat Geodetic Surveyors, report for Barkly Operation Ltd, 23031 – EL33589.

William A, 2023. Barkly East 2023. Gravity Surveys Processing and Logistics Report (and accompanying data), Daishsat Geodetic Surveyors, report for Barkly Operation Ltd, 23031 – EL33589.

William A, 2023. Barkly East 2023. Gravity Surveys Processing and Logistics Report (and accompanying data), Daishsat Geodetic Surveyors, report for Barkly Operation Ltd, 23031 – EL33588.

Southern Geoscience Consultants, 2024. Barkly (EL32109 NE) 3D Gravity Density Model Results for Middle Island Resources: report for Barkly Operation Ltd.

Southern Geoscience Consultants, 2024. Barkly (EL32109 SW) 3D Gravity Density Model Results for Middle Island Resources: report for Barkly Operation Ltd.

Southern Geoscience Consultants, 2024. Barkly (EL33588) 3D Gravity Density Model Results for Middle Island Resources: report for Barkly Operation Ltd.

Southern Geoscience Consultants, 2024. Barkly (EL333589 N) 3D Gravity Density Model Results for Middle Island Resources: report for Barkly Operation Ltd.

Southern Geoscience Consultants, 2024. Barkly (EL333589 S) 3D Gravity Density Model Results for Middle Island Resources: report for Barkly Operation Ltd.

APPENDIX 2: TABLE 1 OF THE 2012 EDITION OF THE JORC CODE

The table below is a description of the assessment and reporting criteria used in reporting the Exploration Results that reflects those presented in Table 1 of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves.

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	*not applicable, no new sampling or drilling reported*
Drilling techniques	*not applicable, no new drilling reported*
Drill sample recovery	*not applicable, no new drilling reported*
Logging	*not applicable, no new drilling reported*
Sub-sampling techniques and sample preparation	*not applicable, no new sampling or drilling reported*
Quality of assay data and laboratory tests	*not applicable, no new sampling or drilling reported*
Verification of sampling and assaying	*not applicable, no new sampling or drilling reported*
Location of data points	All data and surveys are presented in GDA94 / MGA Zone 53. For the new (2023) Daishsat gravity surveys, Leica GX1230 GNSS receivers were used for gravity station positional acquisition.
Data spacing and distribution	Ground gravity survey station spacings vary. Wilma, Pebbles, Dino, Bedrock Prospects – 100 x 100m spaced infill survey stations (by Daishsat 2023 for MDI) Rockhead Prospect – 100 x 400m spaced infill survey stations (by Daishsat 2023 for MDI) Initial gravity surveys at Wilma, Pebbles, Dino Bedrock and Redrock prospects were collected at various spacings 800 x 800 and 400 x 400m by Daishsat commencing in 2020 for Strategic Energy Resources Limited). These data were integrated into the detailed infill grids for modelling.

Criteria	Commentary
	Tumbleweed Prospect – 100m x 400m spaced survey stations (by Daishsat 2023 for MDI) Redrock Prospect – 100m x 400m spaced survey stations (by Haines 2005 & 2008 for Red Metal Ltd)
Orientation of data in relation to geological structure	Gravity grid survey lines are orientated north – south across the dominant north-westerly and south-easterly regional structural grain. Detailed grids have been infilled to 100m x 100m spacing to remove any directional bias and provide detailed target resolution for drill planning.
Sample security	*not applicable, no new sampling or drilling reported*
Audits or reviews	Gravity data has been collected by independent contractors with recent (2023) detailed infill surveys by Daishsat Geodetic Surveyors. Gravity data processing and modelling was completed by independent experts Southern Geoscience Consultants. Interpretations of the data have been completed by MDI's technical team. No external audits or reviews of the data, models and interpretations have been completed.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	Barkly Copper-Gold Super Project (Barkly Project) comprises 16 exploration licences (13 granted & 3 applications; Figure 1). All tenements are in good standing. The granted tenements are predominantly in the 3nd to 5th years of their terms and are in good standing. The Exploration Licences are 100% owned by Middle Island. No joint ventures apply. There are no agreements in place with the native title holders. No significant historic sites or national parks are located within the reported exploration prospect or target areas.
Exploration done by other parties	*Barkly Project Area (EL33588 – Bedrock & Tumbleweed Prospects)* Limited previous work by previous explorers. MDI acquired the western portion of EL33588 from Strategic Energy Resources (SER) in 2023. SER had, commencing in 2020, completed coarsely spaced ground gravity surveys (400m x 400m). MDI identified initial targets for further assessment/infill surveys using the SER data. No previous exploration drilling has tested the target basement rocks in the area of the Bedrock Prospect. The closest drillhole to both the Bedrock and Tumbleweed Prospects is one stratigraphic hole NDIBK09, drilled as part of the MinEx CRC National Drilling Initiative East Tennant Campaign, that is located ~ 12km to the SW of the Bedrock target area in EL33588. *Georgina Project Area (EL32109 - Wilma, Pebbles & Dino Prospects)*

Criteria	Commentary
	Limited previous work by previous explorers. MDI acquired EL32109 from SER in 2023. SER had, commencing in 2020, completed coarsely spaced ground gravity surveys (800m x 800m and 400m x 400m). MDI identified initial targets for further assessment/infill surveys using the SER data. No drilling has occurred previously on EL32109. The closest drill hole was completed in late 2023 by Inca Minerals Limited at its Alpaca Prospect that's located ~3km to the east of Pebbles. Full results have not been reported by Inca; however significant alteration with pervasive disseminated sulphides that includes traces of copper sulphides have been reported (ICG ASX Announcement, 21 December 2023) *Other Project Areas (EL32760 - Redrock Prospect)* MDI acquired EL32109 from SER in 2023; no new surveys or drilling data were completed by SER. Previous exploration was conducted by Red Metal Limited with ground gravity surveys and drilling completed from 2005 to 2006 (NT NTDME Annual Reports CR2005-0402 and CR2006-0437). The ground gravity data was collected on a 100m x 400m grid that covered the target magnetics highs and fault zones. 5 RC/diamond holes (4 within the EL) were completed by Red Metal targeting observed magnetic and gravity highs (over an approximate 9km strike length) looking for Tennant Creek style IOCG deposits. The holes varied in depth from 174m to 255m. In four holes zones of trace iron and copper sulphides were logged (with the exception of the short RC precollars) no assays are available for the core intervals from the 2 'historical holes" (hole RMTCK03 and RMTCK04) illustrated in Figure 7. The area was surrendered by Red Metal in 2010 having concluded that drilling had sufficiently tested the identified anomalies; MDI's modelling (Figure 7) indicates the holes were too shallow and did not test the gravity targets.
Geology	*General* The Barkly tenements extend from outcropping areas near Tennant Creek and the interpreted eastward extensions of prospective Proterozoic stratigraphy that includes the East Tennant Ridge and Burnette Downs Rift corridor beneath shallow to moderate depth Georgina Basin cover. The Georgina Basin extends east from Tennant Creek across the border to Mt Isa and is sub-divided by several basement highs into sub-basins. The principal basement high, the East Tennant Ridge, runs through the Barkly Project area, where the interpreted depths of post-mineral Georgina Basin sedimentary cover range from 100m -250m along the ridge access, increasing on the flanks of the ridge. The underlaying basement and Paleoproterozoic are relatively unexplored as a result of the veneer of younger sedimentary rocks. The East Tennant corridor has gained recognition as a priority, largely unexplored, IOCG mineral province (Figure 2). IOCG deposits, which are MDI's primary target to date, include large lower grade deposits to smaller high-grade variants. Australian

Criteria	Commentary
	deposit examples include Olympic Dam, Prominent Hill, and Carrapateena in South Australia; Ernest Henry in Queensland, and Warrego and Juno located to the west of the Barkly Project at Tennant Creek. IOCG deposits and alteration surrounding them have elevated levels of iron oxide minerals magnetite and hematite, which give rise to elevated magnetic and gravity (density) signatures that can be mapped readily with geophysical surveys (magnetics and gravity). The copper-gold mineralisation that makes up the deposits occurs as sulphide minerals with a more restricted areal extent that can commonly be mapped by other geophysical techniques (IP, EM, MT). The often-strong geophysical signatures of the alteration and mineralisation lends itself to effective explorations under cover, as is the case at Barkly. Significant examples of 'blind' IOCG deposits discovered beneath substantial sedimentary cover include BHP's Olympic Dam and Oak Dam deposits in South Australia, which are respectively overlain by approximately 400m and 900m of post-mineralisation cover. The corridor is also considered to be prospective for other styles of mineralization including large sediment hosted Cu-Zn-Pb-Ag deposits like those found in the Mt Isa Inlier to the east and southern McArthur Basin to the north. Deposit examples include Cannington, Mount Isa, Hilton, George Fisher, Lady Loretta, Century, Walford Creek and McArthur (HYC). The East Tennant Ridge is fault bound and marks the southern margin to the Burnette Downs rift corridor. Palaeoproterozoic sedimentary strata within the rift grabens and onlapping onto the basement highs include rocks interpreted to be extensions of the superbasins that host many of the listed deposits.
Drill hole Information	No new exploration drill data. All results are from Open File historical exploration annual reports CR2006-0437. No material information has been excluded.
Data aggregation methods	These exploration results are not from Mineral Resources. *Gravity 3D Density Inversion Modelling* Gravity density 3D inversion modelling was completed by Southern Geoscience Consultants. Geosoft Oasis Montaj VOXI Earth Modelling algorithm was used to perform standard density modelling on the data. In the standard gravity modelling, the inversion assigns density (SI) values to each cell in a user-defined 3D mesh that best fits the observed gravity data (g/cm3). The resultant models are then used to generate a range of density isosurfaces. Final products are delivered in a Micromine and MapInfo compatible format using a GDA94 MGA Zone 53 projection. Resulting 3D models are non-unique as there are many possible solutions which may fit the observed data. However, as a first pass result it would be the best estimate.

Criteria	Commentary
	Smooth model inversions are not always able to adequately represent geology with clear/sharp boundaries. These types of inversions often result in a smeared result. To reduce the "smearing" effect observed in the smooth model inversion, an iterative re-weighting (IRI) focus factor of three was used to provide a model with more defined boundaries between modelled high and low susceptibilities. In addition to sharpening these contacts, the IRI focussing can help to provide a more geological plausible inversion by improving the geometry, approximation of true dip of the target and the amplitudes of the recovered values. Gravity Density 3D Modelling Parameters **Inv_Type / Block / Cell Size (m) X Y Z / Volume Dimensions (cells) X Y Z / IRI Focus / Data Fit Error (Absolute Error)** Density A1 100 100 50 25 45 18 2 0.05 Density A2 100 100 50 32 26 16 2 0.05 Density A3 100 100 50 36 26 17 2 0.05 Density ~ 200 200 50 67 62 18 2 0.05 A1 -Wilma Prospect, A2 – Dino Prospect, A3 – Pebbles Prospect **Inv_Type / Block / Cell Size (m) X Y Z / Volume Dimensions (cells) X Y Z / IRI Focus / Data Fit Error (Absolute Error)** Density A1 100 100 50 110 50 21 2 0.05 Density A2 100 100 50 30 26 12 2 0.05 Density ~ 200 200 50 72 76 21 2 0.05 A1 -Bedrock Prospect **Inv_Type / Cell Size (m) X Y Z / Volume Dimensions (cells) X Y Z / IRI Focus / Data Fit Error (Absolute Error)** Density 200 200 100 54 20 14 2 0.05 Tumbleweed Prospect **Inv_Type / Cell Size (m) X Y Z / Volume Dimensions (cells) X Y Z / IRI Focus / Data Fit Error (Absolute Error)** Density 200 200 100 59 36 14 2 0.05 Redrock Prospect
Relationship between mineralisation widths and intercept lengths	Not applicable. No reported mineralisation.

Criteria	Commentary
Diagrams	Please refer to Figures 1 to 11.
Balanced reporting	*General* A full compilation of available data collected by MDI and compiled from previous explorers that are relevant to the prospects described has been referenced in this Table 1.
Other substantive exploration data	Exploration results are not for Mineral Resources. Newly reported gravity survey grids from 2023 were by Daishsat Geodetic Surveyors. Scintrex CG-5 Autograv gravity meters were used for gravity data acquisition and base station control. Survey information: technique employed -post processed DATV gravity; repeats – 3.6 to 5 %; height observations accuracy (SD) 0.019m to 0.045m; gravity observation accuracy (SD) 0.012 to 0.025 mGal.
Further work	Additional work will consist of prospect scale mapping, soil sampling and ground-based geophysics (such as gravity and IP) and RC and diamond exploration drilling.