

16 January 2025

## ISA NORTH PROJECT EXPLORATION UPDATE

### HIGHLIGHTS

- Ground gravity and drone magnetic surveys refine Nardoo Cu-Au drill targets
- Machine Learning model determines target geophysical expression likely caused by hydrothermal magnetite; a key component of Iron Oxide Copper-Gold alteration systems
- Centre for Ore Deposits & Earth Sciences (CODES) to apply cutting-edge Mineral Geochemistry Vectoring at Isa North

**Strategic Energy Resources Limited ("SER" or "the Company")** is pleased to announce an update on the 100% owned Isa North Project in NW Queensland which captures the projected northern extension of the mineralised Mount Gordon – Gunpowder Fault Zone, host to multiple large mineral deposits which lie on or adjacent to this fault system including the Mt Isa, Mt Oxide and Gunpowder copper deposits and the Hilton and George Fisher lead-zinc-silver deposits. The Project covers over 976km<sup>2</sup> and is surrounded by majors including Fortescue Metals Group (ASX: FMG), Rio Tinto (ASX: RIO) and Anglo American (LSE: ALL) (Fig 1).

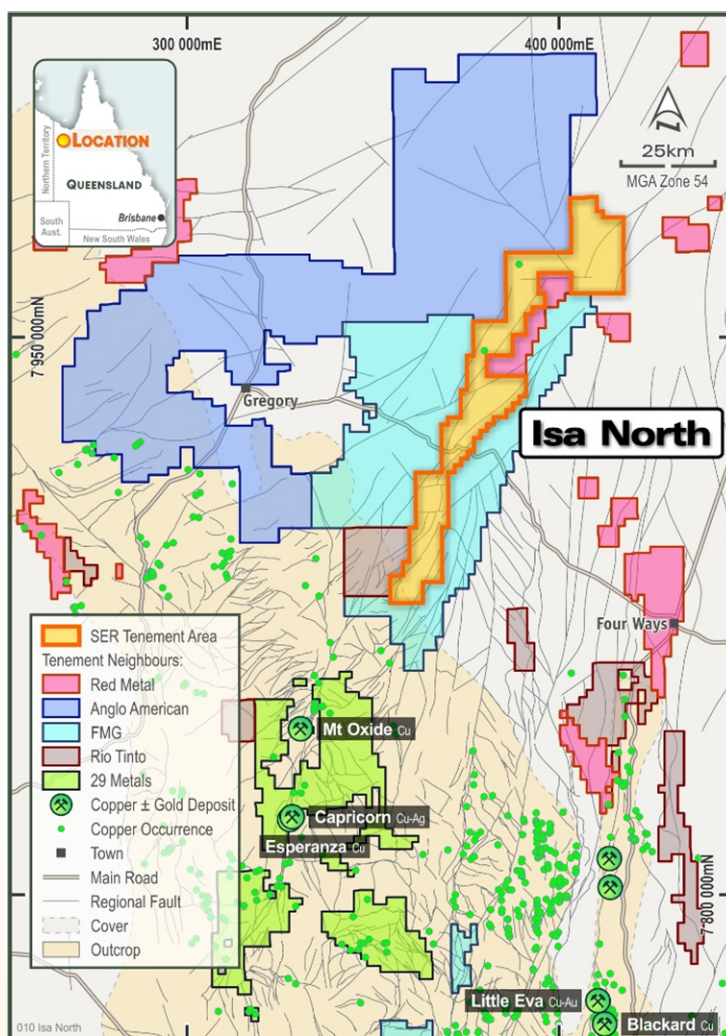


Figure 1: Isa North Project area.

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Commenting on the progress at Isa North, SER Managing Director, Dr David DeTata said:

*“The Gunpowder Fault is a major structural trend within the Mt Isa Western Succession that hosts multiple copper mines and is the logical place to explore for the next major copper discovery in the region. SER holds over 50km of the undercover extension of the Gunpowder Fault and the recent collection of high-resolution gravity and magnetic data at the Nardoo Prospect, combined with our cutting-edge Machine Learning study has confirmed multiple standout drill targets that are worthy of drill testing in search of a major discovery.”*

## PROJECT BACKGROUND

The Isa North Project was identified in 2021 as part of a broader review of the Mt Isa Mineral Province that focused on identifying the undercover extension of a known mineralised terrain that has the potential to host a major copper-gold discovery. The mineralised Mount Gordon – Gunpowder Fault Zone was identified and subsequently acquired from Newcrest Mining in return for a First of Refusal to any future transaction on the project; a 1% Net Smelter Royalty (NSR) capped at 10 years of production and access to technical data concerning the project<sup>1</sup>. The Isa North project has multiple favourable geological characteristics which make it highly prospective for IOCG mineralisation including: a major mineralised fault zone, evidence of extensive hydrothermal alteration undercover, and numerous significant magnetic and gravity anomalies (Fig 2).

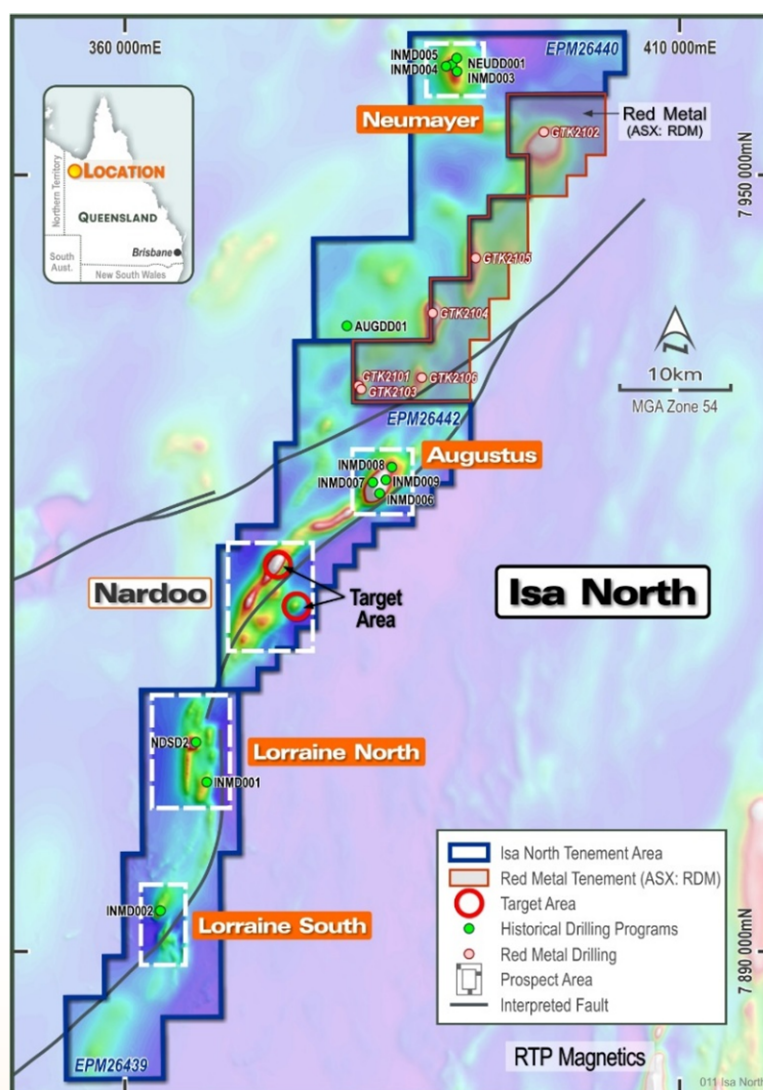


Figure 2: RTP Magnetic image of the Isa North project area

<sup>1</sup> See SER Announcement: 4<sup>th</sup> May 2021

The undercover extensions of the Gunpowder fault have been explored since the 1990s for magnetic IOCG mineralisation. Three phases of basement testing diamond drilling have been completed at the project by WMC (1994), Mt Isa Metals (2008) and most recently Newcrest Mining (2018) which ultimately led to nine diamond drill holes (INMD001-INMD009) being completed on the Isa North Project (see JORC Table).

Exploration tested four separate target areas with four holes drilled at the Augustus Prospect (INMD006-INMD009) returning strong IOCG alteration and pathfinder geochemistry but low levels of Cu and Au. Three holes were drilled at the Neumayer Prospect (INMD003-INMD005) with weak pathfinders identified and results not improving on historical drillhole NEUDD001. One hole at Lorraine South (INMD002) intersected weak pathfinders and one hole at Lorraine North (INMD001) targeting a magnetic anomaly on a gravity gradient intersected strong calc-sodic alteration, elevated IOCG pathfinders in localised hydrothermal breccia and carbonate veins. A fifth target area at Nardoo remained untested due to land access which has been secured<sup>2</sup>.

Since acquiring the project, a detailed geophysical review has been completed and unconstrained geophysical inversions of magnetic and gravity datasets were produced to model the geometry of the responses across the project area. The review identified several new drill targets based on the modelling, structural setting and key rock relationships identified from existing Newcrest drill core at Lorraine North & South, Augustus and Neumayer.

## **MACHINE LEARNING MODEL CONFIRMS PROSPECTIVITY OF REGION**

In 2022 Caldera Analytics (Caldera) designed and built a Machine Learning (ML) model capable of classifying basement lithology based solely on ground gravity and aero-magnetic surveys across the Mt Isa Inlier target area<sup>3</sup>. The development of the model was funded by a Geological Survey of Queensland (GSQ) Collaborative Exploration Initiative (CEI) grant<sup>4</sup>. The model has the potential to remove interpretational bias, quantify the uncertainty of an interpretation and ultimately for the identification of IOCG drill targets. Caldera has continued to refine and enhance the ML modelling framework since 2022, by incorporating additional datasets along with numerous improvements to the underlying deep learning model architecture.

The ML model assigns a probability of the underlying basement lithology, with a probability of hydrothermal magnetite of 40% and above as a notable target. As a comparative benchmark, during independent validation testing Ernest Henry and E1 scored a probability of 67% and 45% respectively. Numerous high priority hydrothermal magnetite targets were identified within the Isa North Project area using the ML model, with the N8 target at the Nardoo Prospect scoring a probability of 61% hydrothermal magnetite, with the lowest probability of other magnetic lithology groups and is a priority target at Isa North (Table 1).

## **DETAILED GEOPHYSICS REFINE NARDOO DRILL TARGETS**

In preparation for drill testing at Nardoo, a detailed ground gravity survey and drone magnetics survey were completed over a cluster of magnetic and gravity features at Nardoo. The gravity survey consisted of 181 new gravity stations reducing the current spacing of 1km to less than 250m to improve the resolution over the target area (Fig. 3). The drone magnetic survey was flown at 50m line spacing at a height of 30m (average) over a portion of the Nardoo Cluster of targets to increase the resolution of magnetic data. The drone data was subsequently merged into the existing magnetic data, and inversion modelling was undertaken which identified

<sup>2</sup> See SER Announcement: 26<sup>th</sup> October 2022

<sup>3</sup> See SER Announcement: 31<sup>st</sup> May 2022

<sup>4</sup> Queensland Government - CEI recipients and reports, Round 5, 2021



in greater detail multiple discrete highly magnetic bodies, at drill testable depths, east of the main NE striking magnetic shear zone (Fig. 3).

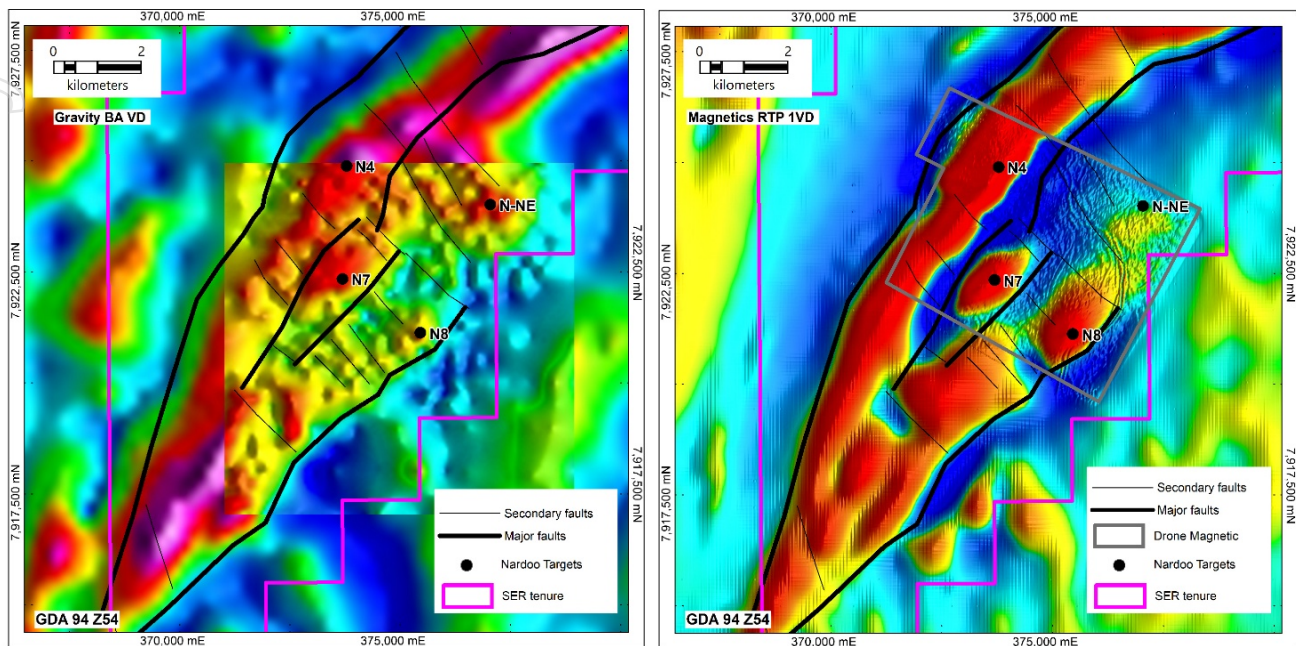


Figure 3: Left: Gravity BA VD image and Right: Magnetic RTP 1VD image covering the Nardoo Prospect region

## NARDOO DRILL TARGETS

The Nardoo Prospect is located within an inflection of the interpreted undercover extensions of the Mount Gordon - Gunpowder fault. The prospect is structurally complex, with anomalies bounded by splays in the regional fault. The Nardoo Prospect's structural setting is considered to have similarities to the geological setting at the Ernest Henry Deposit<sup>5</sup>. No previous drilling has been conducted at the Nardoo Prospect.

The recent upgraded geophysical datasets combined with the ML modelling has identified multiple significant targets along the interpreted extension of the Gunpowder fault (Table 1). The fault kinks from a N/S strike to a NE/SW strike through the Nardoo Prospect area with several magnetic anomalies along this trend both along strike and as offset bullseyes. There is no historical drilling between the Augustus Prospect (northern end) and NSD2 (southern end) (Fig 2). Mineral systems and geophysical targeting has identified the Nardoo Prospect as a highly favourable structural setting and of significant magnetic response to host an IOCG mineralisation body.

Four geophysical targets have been highlighted as high priority from the Nardoo Cluster (Table 1). The targets are located along and adjacent to the northern extension of the Gunpowder fault, with N4 the strongest magnetic response coincident with the fault, N7 and N8 are coincident magnetic and gravity bullseye targets located within the structural kink of the fault and possibly offset by secondary NW striking structures whilst N-NE target is a structural offset density target.

The introduction of highly magnetic and dense magnetite-rich K-Fe-S-Cu hydrothermal fluid into the host volcanics could explain the geophysical responses and is SER's targeted model for IOCG mineralisation.

<sup>5</sup> Austin, JR, Walshe, JL, Gazley, MF, Ibrahim T, Patterson, BO, leGras, M, 2016. The Ernest Henry Cu-Au deposit: Integrated Petrophysical and Geochemical analyses. CSIRO, Australia, pp. 56.

Table 1: Significant drill targets at the Nardoo Prospect

Target	Gravity (mGal)	Gravity size (m)	Gravity Depth (m)	Gravity Comment	Magnetics (nT)	Magnetic size (m)	K x10E	Magnetic Depth (m)	Magnetics Comment	ML Ranking Hydrothermal Magnetite (>40)	Discussion
N8	0.6	1000 x 400	325	Bullseye 3.5km east of NE trend	1380	450 x 350m	>10,000	475	Bullseye 3.5km east of NE trend	61	Discrete coincident magnetic and gravity body. Gravity appears to show numerous NW oriented breaks.
N4	1	2500 x 700	375	Strong high on NW trend	3300	2600 x 500	>10,000	425	Strong high on NW trend		Spatially large gravity response within even larger magnetic body.
N7	0.7	1300 x 700	375	Bullseye adjacent to NE trend	1715	800 x 350	>10,000	475	Bullseye adjacent to NE trend	41	Gravity target slightly offset to magnetic peak by ~200 m. Possible magnetic remanence.
N-NE	1.1	1300 x 800	325	Gravity only	30	1400 x 900	500	475	Magnetic low N of NW crossing structure		Weak magnetic body evident in derivative products. Gravity response of interest.

## MINERAL GEOCHEMISTRY VECTORING RESEARCH

In 2018 the Centre for Ore Deposit and Earth Sciences (CODES) undertook a 3-year research program funded by Queensland Department of Natural Resources and Mines to study the trace element chemistry of hydrothermal minerals in both IOCG and sediment hosted copper styles of mineralisation across Mt. Isa Inlier<sup>6</sup>. Selected study sites for the program included Ernest Henry, SWAN, and deposits along the Starra Line, together with Lady Annie and the deposits of the Capricorn-Mammoth district. Trace element analyses of minerals from the alteration haloes surrounding these deposits showed distance correlated changes in mineral chemistries, depending on whether a sample was taken from within the mine or from several kilometres away.

SER has formed a research collaboration with CODES to characterise the IOCG alteration present at the Isa North Project for comparison with the known deposits within the Inlier. This joint SER-CODES study will utilise existing drill core, together with newer drilling, to characterise the trace element signature of key hydrothermal minerals in the Isa North project area to provide valuable information about the fertility of the region, as well as provide potential proximity indicators to targets which have been demonstrated in previous studies within the Mt Isa Inlier and elsewhere.

## NEXT STEPS

Site preparations have been completed in anticipation of the proposed drill program at Isa North including Native Title clearance and landholder access to the proposed drill locations. Site visits to assess the area post wet season are imminent in anticipation of earthworks for drilling to commence in mid-2025.

SER also notes the recent \$53m recapitalisation of True North Copper Ltd (ASX:TNC) and stated intention to commence a major drill campaign north of Mt Oxide during the 2025 field season<sup>7</sup>. Any discoveries from this drilling just south of Isa North Project will further confirm the metal fertility of this frontier region.

*The information in this report that relates to Exploration Results is based on information compiled by Mr Stuart Rechner BSc (Geology) MAIG MAusIMM, a Member of the Australian Institute of Geoscientists and the Australasian Institute of Mining and Metallurgy. Mr Rechner is a Director and shareholder of Strategic Energy Resources Ltd. Mr Rechner has sufficient experience which is relevant to the styles of mineralisation and types of deposits under consideration and to the activity being undertaken 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 Rechner consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

<sup>6</sup> Steadman, J.A., Cloutier, J., Hohl, M., Cooke, D.R., Barker, S. and Hong, W., 2021: Mineral Geochemistry Vectoring: Uncovering Northwest Queensland's Hidden Potential - FINAL REPORT. (203p)

<sup>7</sup> See TNC Announcement: 25th November 2024: [Recapitalisation and Equity Raising Presentation](#)

*This announcement is authorised by the Strategic Energy Resources Limited Board.*

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#### **About Strategic Energy Resources**

Strategic Energy Resources is a specialised undercover mineral explorer and project generator focused on the discovery of world class Copper deposits in the Greenfield frontiers of Australia. SER is actively exploring the undercover extensions of the world-class Mt Isa Province in northwest Queensland as part of a Joint Venture with Fortescue at Canobie, and at our Isa North Project. In New South Wales exploration is underway at our South Cobar Project, Mundi and West Koonenberry projects which are located north of Broken Hill.

## JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>• <b>Ground gravity survey</b> using precision Global Navigation Satellite System (GNSS) and geodetic principles to allow first order accuracy in position and height.</li> <li>• Gravity and GNSS base stations established with values derived through ties to Australian Fundamental Gravity Network (AFGN) or Daishsat network base stations.</li> <li>• <b>Drone magnetic survey</b> using PAS-HE Rotary Wing, GNSS PPS time synchronised with geodetic principles to allow first order accuracy in position and height.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• Not applicable – no drilling undertaken</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• Not applicable – no drilling undertaken</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• Not applicable – no drilling undertaken</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• Not applicable – no drilling undertaken</li> </ul>
Quality of assay data and laboratory tests (Equipment used)	<ul style="list-style-type: none"> <li>• <b>Gravity Survey:</b> Scintrex CG-5 Autograv meters: accuracy standard deviation of ~0.025mGal. Gravity meters calibrated regularly on Government and Daishsat Calibration Ranges.</li> <li>• Leica GX1230 GNSS receivers: accuracy ~5mm horizontal and ~10mm vertical</li> <li>• Stations read to ~0.01mGals and reduced to Bouguer Anomalies at 2.67g/cc density</li> <li>• Gravity loops kept under 10 hours to control drift and tares</li> <li>• <b>Drone Magnetic Survey:</b> Scintrex CS-VL Cesium magnetometer: sensitivity 0.00006nT sq rt RMS with noise envelope 0.002nT peak to peak. Magnetometer counter sample frequency 260Mhz, Counter resolution 0.1pT</li> <li>• uBlox GNSS receiver with multi constellation tracking: 10Hz output operating in autonomous mode with sub metre accuracy</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• Not applicable – no drilling undertaken</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• Coordinates were recorded using instrumental GPS in GDA 1994, MGA Zone 54</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• 199 gravity stations collected on 250m, 500m and 1km stations (includes 5% repeat stations)</li> <li>• Drone magnetic survey was flown at 50m line spacing at a height of 30m (average)</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>• Survey data was collected in regular spaced grids which is proven suitable to identify and model any potential IOCG targets</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• Data corrections and validation was undertaken daily by the geophysical contractor</li> </ul>

## JORC Code, 2012 Edition – Table 1

### Section 2 Reporting of Exploration Results

Criteria	Commentary																																																																																				
Mineral tenement and land tenure status	<ul style="list-style-type: none"><li>EPM26439, EPM26440 &amp; EPM26442 are granted tenements held 100% by SER</li><li>The project is located 180km north of Mt Isa</li><li>Conduct and Compensation Agreement's with relevant landholders are current</li><li>Exploration Agreement executed with Traditional Owners</li><li>Tenements in good standing with no known impediments</li></ul>																																																																																				
Exploration done by other parties	<ul style="list-style-type: none"><li>In 1994 WMC drilled 3 drillholes including NSD2 which intersected basement at 238m, then intense magnetite calcite alteration from 340m</li><li>In 2009 MIM drilled AUGDD-01 which intersected Proterozoic "granite-feldspar" porphyry basement at 512m vertically below surface followed at 606m by a zone of sheared and brecciated iron-rich rocks containing sulphide mineralisation as disseminations, blebs and stringers over an interval of 61m. Hole NEUDD-01 intersected basement at 591m including calc-silicate and skarn-type minerals likely replacing argillic and calcareous sediments. Intervals of massive magnetite, pervasive sulphide (primarily pyrite) blebs and stringers occur at several intervals throughout the core. In the lower part of the hole, three intervals of tremolite-phlogopite alteration occur.</li><li>In 2018 Newcrest drilled 9 diamond drillholes within the project at 4 targets (Lorraine North and South, Augustus, Neumayer). The drilling confirmed the early alteration phases of the IOCG alteration system, supporting the IOCG prospectivity within the blind magnetic targets within the project.</li></ul>																																																																																				
Geology (Target deposit type)	<ul style="list-style-type: none"><li>SER is targeting IOCG mineralisation hosted in basement rocks of the Western Fold Belt of the Mt Isa Province buried beneath younger sedimentary cover</li><li>There is very limited knowledge of this undercover extension of Mt Isa Province</li></ul>																																																																																				
Drill hole Information	<ul style="list-style-type: none"><li>See table and figures in main body of text</li><li>Drill collar table (GDA94 MGA Zone 54)</li></ul> <table><tr><th>Hole ID</th><th>Easting</th><th>Northing</th><th>RL</th><th>Azimuth</th><th>Dip</th><th>Total depth</th></tr><tr><td>AUGDD01</td><td>380000</td><td>7946400</td><td>50</td><td>0</td><td>-90</td><td>812m</td></tr><tr><td>INMD001</td><td>367366</td><td>7905283</td><td>50</td><td>0</td><td>-90</td><td>381.4m</td></tr><tr><td>INMD002</td><td>363191</td><td>7893690</td><td>50</td><td>0</td><td>-90</td><td>452.1m</td></tr><tr><td>INMD003</td><td>389928</td><td>7969338</td><td>50</td><td>0</td><td>-90</td><td>720.2m</td></tr><tr><td>INMD004</td><td>388951</td><td>7969801</td><td>50</td><td>0</td><td>-90</td><td>735.2m</td></tr><tr><td>INMD005</td><td>389900</td><td>7970535</td><td>50</td><td>0</td><td>-90</td><td>694.3m</td></tr><tr><td>INMD006</td><td>382944</td><td>7931293</td><td>50</td><td>0</td><td>-90</td><td>654.2m</td></tr><tr><td>INMD007</td><td>382334</td><td>7932301</td><td>50</td><td>0</td><td>-90</td><td>555.4m</td></tr><tr><td>INMD008</td><td>384052</td><td>7933668</td><td>50</td><td>0</td><td>-90</td><td>499.6m</td></tr><tr><td>INMD009</td><td>383505</td><td>7932514</td><td>50</td><td>0</td><td>-90</td><td>539m</td></tr><tr><td>NEUDD01</td><td>389465</td><td>7969953</td><td>50</td><td>0</td><td>-90</td><td>947m</td></tr></table>	Hole ID	Easting	Northing	RL	Azimuth	Dip	Total depth	AUGDD01	380000	7946400	50	0	-90	812m	INMD001	367366	7905283	50	0	-90	381.4m	INMD002	363191	7893690	50	0	-90	452.1m	INMD003	389928	7969338	50	0	-90	720.2m	INMD004	388951	7969801	50	0	-90	735.2m	INMD005	389900	7970535	50	0	-90	694.3m	INMD006	382944	7931293	50	0	-90	654.2m	INMD007	382334	7932301	50	0	-90	555.4m	INMD008	384052	7933668	50	0	-90	499.6m	INMD009	383505	7932514	50	0	-90	539m	NEUDD01	389465	7969953	50	0	-90	947m
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Data aggregation methods	<ul style="list-style-type: none"><li>Assays not reported in this announcement</li></ul>																																																																																				
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"><li>Downhole lengths are not considered true widths given limited geological understanding</li></ul>																																																																																				
Diagrams	<ul style="list-style-type: none"><li>See figures in release</li></ul>																																																																																				
Balanced reporting	<ul style="list-style-type: none"><li>This report describes relevant known historical exploration</li></ul>																																																																																				
Other substantive exploration data	<ul style="list-style-type: none"><li>Nil</li></ul>																																																																																				
Further work	<ul style="list-style-type: none"><li>Drill program at the Nardoo Prospect</li></ul>																																																																																				