

24 March 2023

# Surveys Completed at Lyons in Preparation for Drilling

- Heritage and Flora Surveys completed at Lyons
- Heritage avoidance surveys allow access for:
  - 10,000m RC drilling program targeting large scale Carbonatite targets and high-grade Ironstones
  - Two diamond holes jointly funded under DMIRS EIS scheme to be drilled into deeper Carbonatite targets
- Site works for drill access have commenced
- Geological and geophysical team mobilising to site for rock chip sampling and ground magnetics on new recently defined ironstone targets
- Field camp established for exploration programs

Mr Brian Thomas, Lanthanein Technical Director commented *“Final preparations for upcoming drilling and field programs are now complete with the heritage avoidance surveys allowing the Company to prepare for the arrival of the drill rigs to make the larger breakthrough discovery that could potentially transform the Company. Additional drilling of the existing discoveries at Lyons 12, 13 & 27 which are ~2km from Hastings Technology Metals’ Frasers and Simons Find pits will allow the progress to a potential resource estimation. Drilling the multiple new ironstone trends under shallow cover only recently identified from our review of geophysics will add significantly to the exploration and resource potential. We also planning to diamond drill test the magnetic rims of two of the large-scale Carbonatites.*

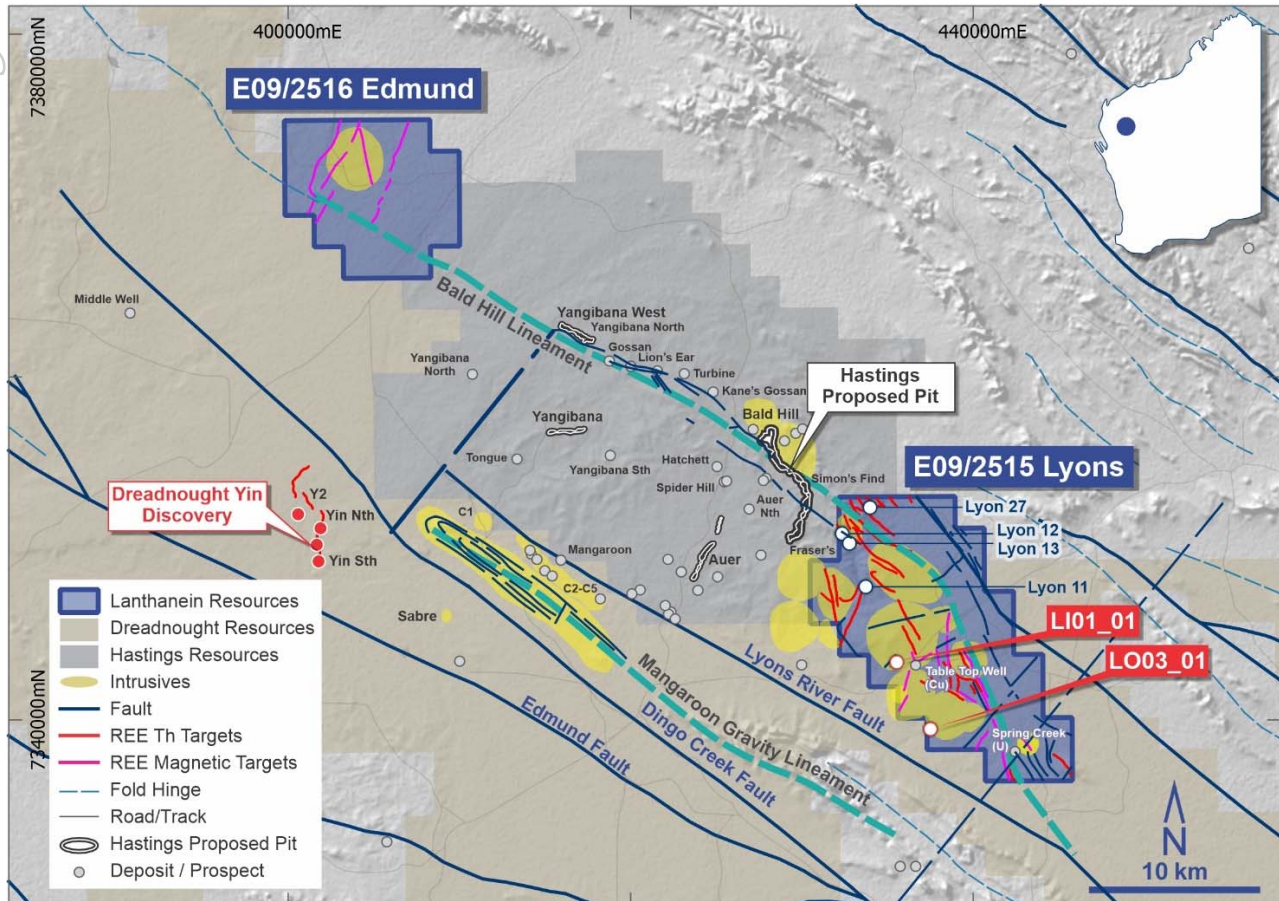
*The establishment of field camp shown in the photos below, allows us to run and more sustainably support the plus 10,000m RC drill program over the coming months. “We look forward to building on the discoveries made to date with the high-grade outcropping ironstones at Lyons 12, 13 & 27 and updating the market with results as drilling progresses.”*

**Lanthanein Resources Ltd (ASX: FNT) (Lanthanein or the Company)** is pleased to announce that two surveys in preparation for the upcoming exploration programs at the Lyons Rare Earths Project in Western Australia (**Lyons Project**) are now complete. The proposed drill programs will target new high-grade ironstones similar to those previously drilled at Lyons 11, 12, 13 and 27 (Figure 1, and 2).

Further rock chip sampling, ground magnetics, high resolution satellite spectral interpretation and drilling programs are planned to investigate additional targets not yet followed up, including thorium and magnetic anomalies throughout the Lyons Project and the high priority structural

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target along the major Bald Hill lineament which transects both the Edmund and Lyons Project Areas.



**Figure 1: Lanthanein's Lyons and Edmund Projects located within close proximity of Dreadnought Resources' Yin discovery and Hastings Technology Metals' Yangibana REE mine**

The Bald Hill lineament is the major control on rare earth mineralisation at Hastings Technology Metals Yangibana mine and represents a very high priority target for Lanthanein. Potential remains for further discoveries of ironstones and carbonatites (Figure 1) within the Company's tenure where no historical REE exploration has occurred.

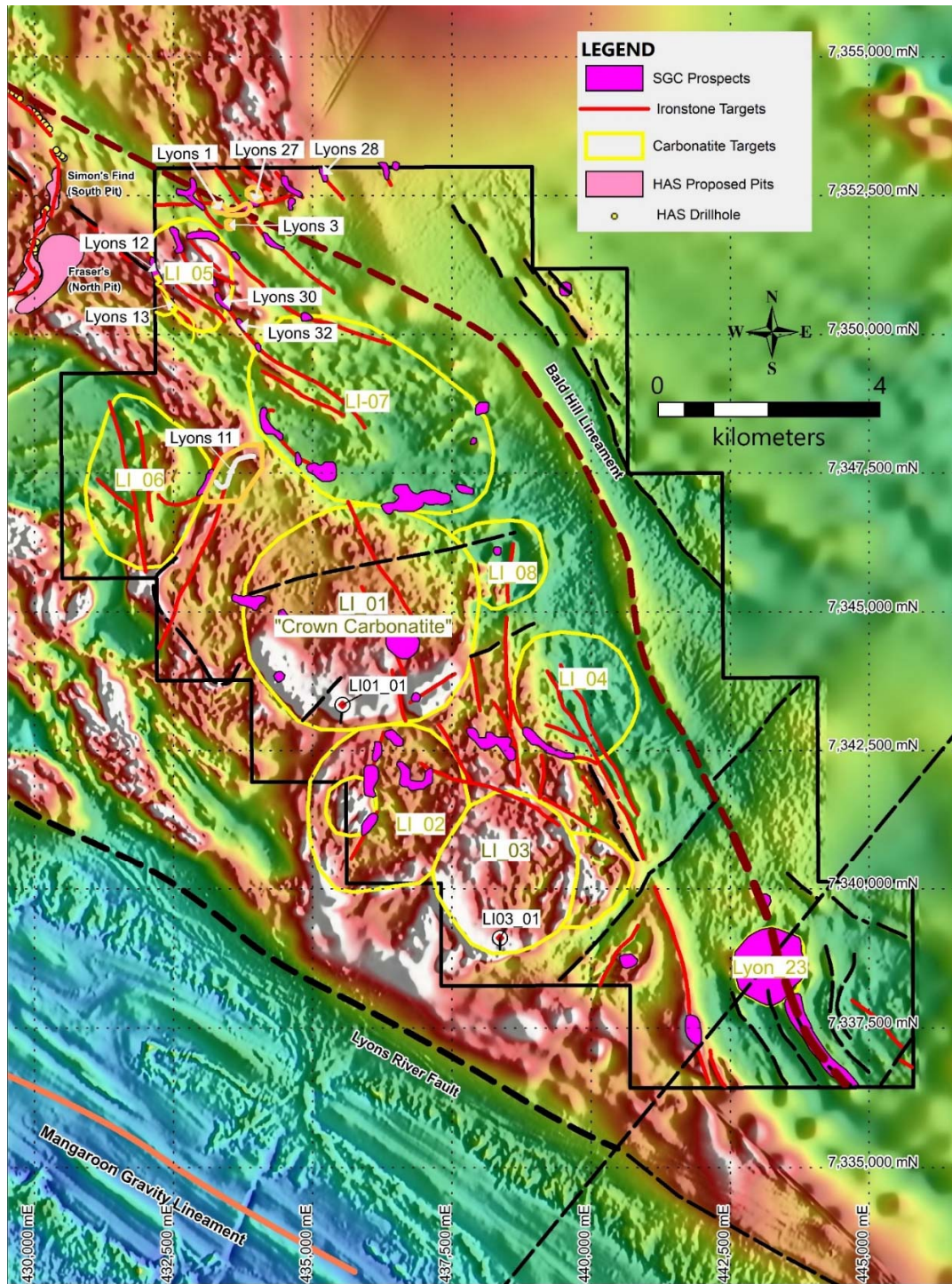
The Company recently received approval for \$200,000 in co-funding from the Department of Mines Industry Regulation and Safety (DMIRS) for two deeper diamond holes (LI01\_01 & LI03\_01) to investigate potential for large tonnage REE carbonatites similar to Lynas Corporation's Mount Weld deposit in Western Australia.

Carbonatites are becoming increasingly important due to potential to host economic quantities of Th, U, Nb, P, Y and rare earth elements, which are strategically important for modern technology. Within the Lyons Block and along the Bald Hill Lineament, numerous carbonatite intrusions have been modelled from the airborne magnetics (Figure 2) with a similar dimension to the Mt. Weld carbonatite.

Two drill holes to 450m depth are proposed to test the outer magnetic rim of two of the larger carbonatite intrusives including LI-03 at 3km diameter and LI-01 at 4km diameter (Figures 3 and 4). Fenitic alteration (incl. magnetite and Th) are found to be associated with the outer rim of these intrusive bodies.

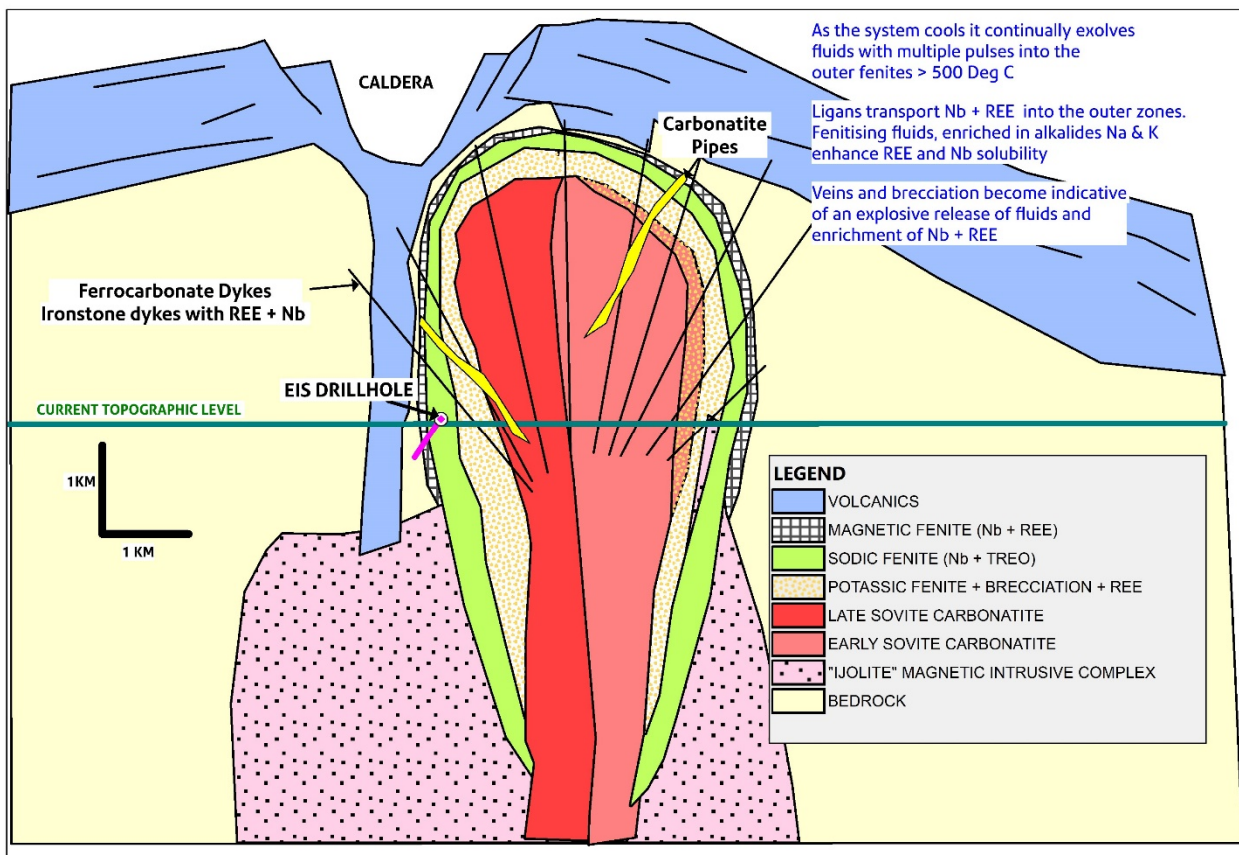
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A hybrid cross-sectional model (Figure 3) shows the outer magnetite halo from an initial carbonatite intrusive that continually exsolves fluids, building up Nb and REE in the outer magnetic and Sodic fenites. These modelled geophysical magnetic 'crowns' or 'cylinders' (Figure 4) are interpreted to represent a similar carbonatite model. These outer fenite aureoles will be drill tested next month for Niobium (Nb) and rare earths (REE) which have initially developed from inner source alkaline silicate intrusives.

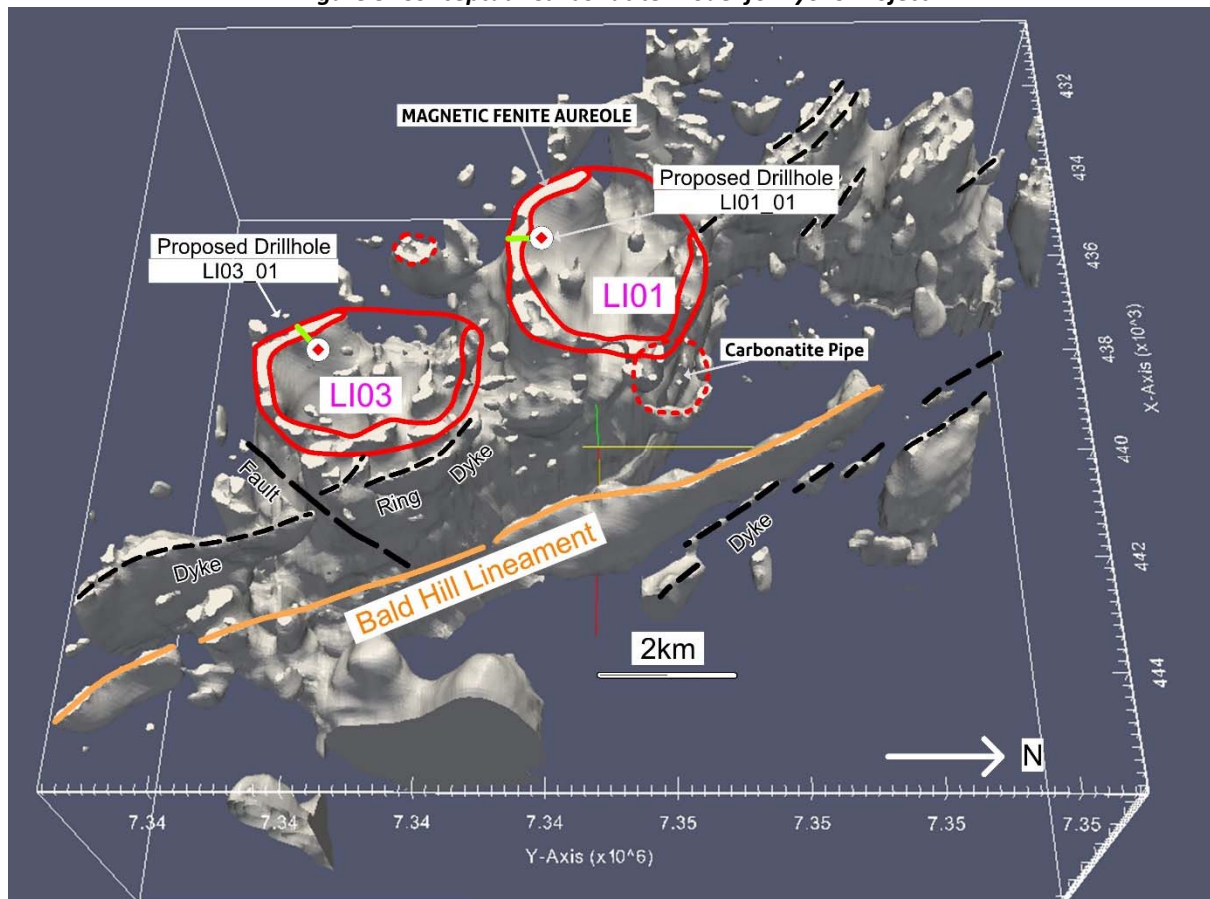


**Figure 2. Interpreted intrusives with RTP filtered magnetic imagery, highlighting relationship with rare earth mineralisation at Hastings, and target areas on Lanthanein's Lyons Project**

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**Figure 3. Conceptual Carbonatite Model for Lyons Project**



**Figure 4. Geophysical Magnetic Model for Lyons Project**

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**Photos 1: Exploration Camp located near the Lyons River**

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This announcement has been authorised for release by the Directors of the Company.

For additional information please visit our website at [www.lanthanein.com](http://www.lanthanein.com)

**LANTHANEIN RESOURCES LTD**

The information referred to in this announcement relates to the following sources:

<sup>1</sup> ASX.HAS: 5 May 2021 "Yangibana Project updated Measured and Indicated Resource tonnes up by 54%" [b07ebf9d-03c.pdf \(investi.com.au\)](https://www.investi.com.au/b07ebf9d-03c.pdf). The HAS Resource estimate comprises 4.9Mt @1.01% TREO in the Measured category, 16.24Mt @0.95% TREO Indicated and 6.27Mt @0.99% TREO Inferred.

<sup>2</sup> ASX.DRE: 28 July 2022 "Assays Confirm Yin as a High Grade Rare Earth Discovery" [5a699d6e-eab.pdf \(investi.com.au\)](https://www.investi.com.au/5a699d6e-eab.pdf)

The Company confirms that it is not aware of any new information or data that materially affects the information in the original reports, and that the format and context in which the Competent Person's findings are presented have not been materially modified from the original reports.

**Competent Person's Statement**

The information in this document that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr. Thomas Langley who is a member of the Australian Institute of Geoscientists (MAIG) and a member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr. Thomas Langley is a consultant of Lanthanein Resources Limited, and is a shareholder, however Mr. Thomas Langley believes this shareholding does not create a conflict of interest, and Mr. Langley has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is 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. Langley consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

**Competent Person's Statement**

The information in this report that relates to Geophysical Exploration Results is based on information compiled by Peter Swiridiuk - Member of the Aust. Inst. of Geoscientists. Peter Swiridiuk is a Technical Consultant and Non-Executive Director for Lanthanein Resources. Peter Swiridiuk has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter Swiridiuk consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Swiridiuk confirms that the entity is not aware of any new information or data that materially affects the information contained in the ASX releases referred to in this report.