

14 December 2023

Lady Grey Lithium Project Site Visit

- Site visit has confirmed outcropping quartz core pegmatite potentially related to the Earl Grey pegmatite mineralised system
- Excellent access with graded dual lane road to Earl Grey Mine and existing tracks from historical gold exploration programs
- Drilling planned to test highly prospective LCT pegmatite 400m west of Earl Grey Lithium Mine in early 2024
- Extensive soil sampling and auger program across priority areas within the 77km² granted tenement on the Forrestania Greenstone Belt host to Covalent Lithium's (SQM & Wesfarmers) Earl Grey Mine, 189Mt @1.53% Li₂O¹
- The Company plans to undertake project-wide evaluation of lithium hosting pegmatite potential with a drilling program planned for February-March 2024.



Figure 1: Aerial perspective of Lady Grey Lithium Project and Early Grey Lithium Mine in the Forrestania Greenstone Belt of Western Australia.

Lanthanein Resources Limited (ASX: LNR) (“Lanthanein” or the “Company”) is pleased to announce that a recent site visit and on ground due diligence has been completed at the Lady Grey Lithium Project (“Lady Grey”) directly adjacent to Covalent Lithium’s (SQM & Wesfarmers) Earl Grey Mine, 189Mt @1.53% Li₂O¹ at Mount Holland in the Forrestania Greenstone Belt. The site visit by two Company Directors, Tom Langley and Anees Sabet, confirmed the presence of an outcropping quartz core pegmatite located 400m west of the Earl Grey Lithium mine. Importantly the geochemical results to date indicate elevated tantalum associated with the outcropping pegmatite being a key indicator of a potentially fertile LCT pegmatite mineral system.

Mr Brian Thomas, Technical Director of Lanthanein commented: “The recent site visit confirms the exploration potential of the highly prospective Lady Grey Project which covers ~77km² of the Forrestania greenstone belt, immediately adjacent to one of the largest operating lithium mines in Western Australia. Following confirmation of heritage clearance, plans for evaluation and field work will commence immediately to assess potential for lithium pegmatites. There is excellent access to the project with existing tracks and grid lines allowing for expedited exploration programs to occur throughout the next few months.”

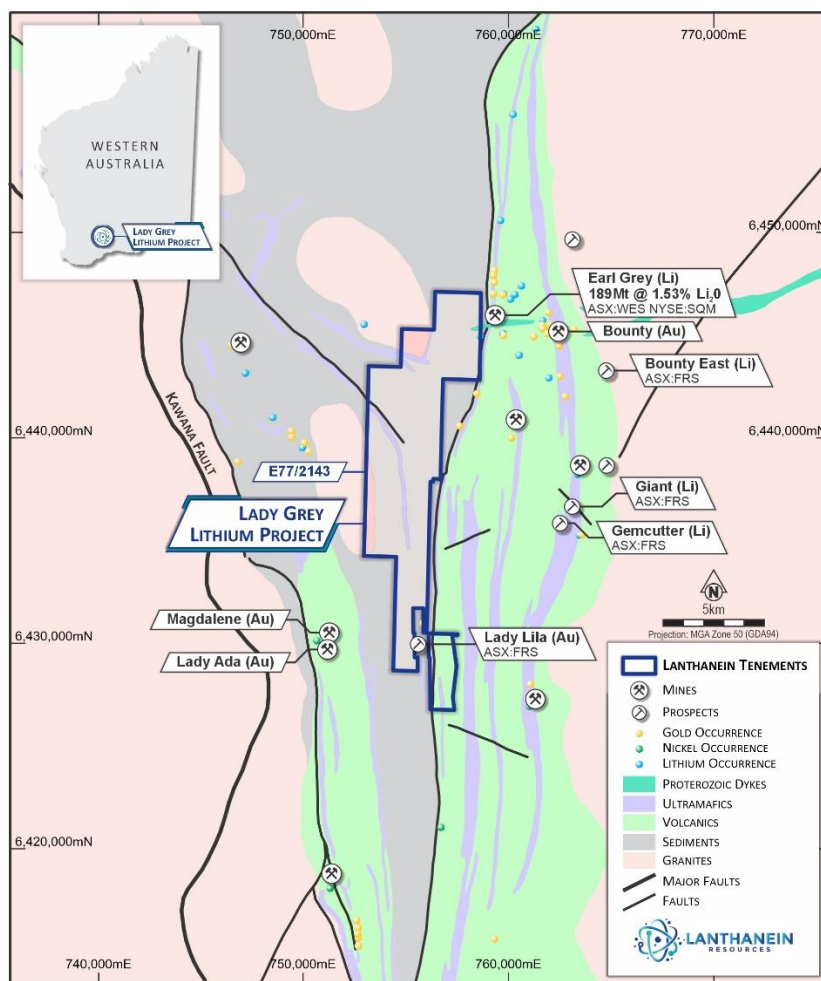


Figure 2: Location of the Lady Grey Project relative to infrastructure of Earl Grey Lithium Mine in the Forrestania Greenstone Belt of Western Australia.

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Lady Grey Lithium Exploration and Project Potential

The Lady Grey Project is located on the Southern Cross - Forrestania Greenstone Belt a proven Tier 1 lithium mining district. Neighbours are major miners / developers including Covalent Lithium (Wesfarmers-SQM JV) – 189Mt @ 1.53% Li₂O at the Earl Grey Mine (Earl Grey pegmatite)¹. IGO acquired WSA's high grade nickel mines at Flying Fox & Spotted Quoll, and are exploring for lithium, and Historic Bounty gold mine that produced ~1Moz gold.

The Earl Grey pegmatite sill is exposed only in the south-western corner of the Earl Grey deposit. The sill dips gently northward, sub-horizontally under the historic Earl Grey gold mine with Covalent Lithium's pegmatite being thickest against the western fault, thinning to stringer mineralisation along the eastern side of the deposit, indicating that the direction of injected pegmatite intrusion is most likely west to east. Rock samples from sampling program in November 2022 returned elevated Li (up to 298 ppm), Cs (up to 46 ppm), Rb (up to 1463 ppm) and Ta (up to 783 ppm), see Tables 1, 2 and Figures 3, 4 (refer ASX release 6 December 2023).

Quartz sub-crop and float in the general area of the elevated soil and rock geochemistry may represent 'quartz cores' commonly present in complex zoned rare-element pegmatites, Figure 4. In conjunction to the anomalous soil geochemistry a large coherent >2km long high >0.3%K radiometric signal is present that may be structurally related to the outcropping Earl Grey pegmatite. Mapped continuation into Lanthanein tenure of the Split Rocks Unit host to the Earl Grey pegmatite with the potential for shallow flat-lying LCT pegmatites.

Interpretation and planning underway to target zones of potential pegmatite accumulation and associated lithium mineralisation.

Current priorities

- Drilling early 2024 (February - March);
- POW approved for 193 Aircore and 50 RC drillholes;
- Heritage clearances for expanded drill programs;
- Extensive soil geochemistry program across other targets; and
- Strong news flow expected through to late 2024.

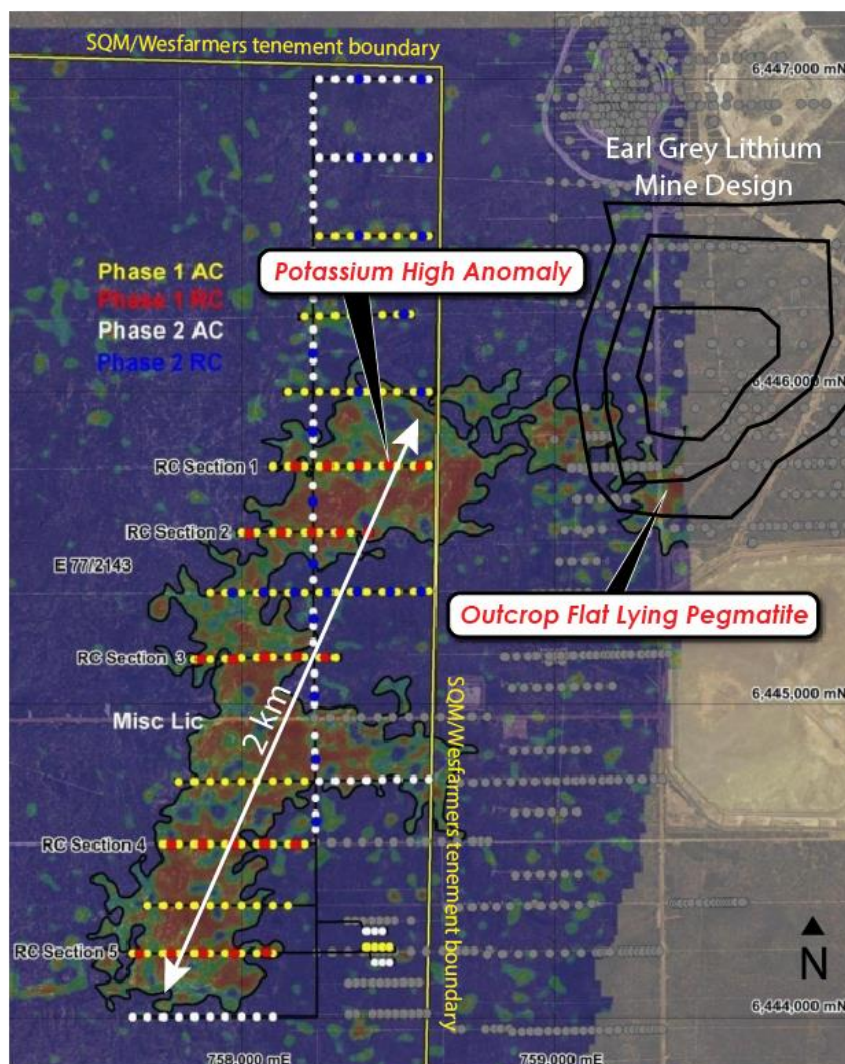


Figure 3: Map showing >2km strike extent of large coherent Potassium anomaly potentially structurally related to Earl Grey pegmatites and proposed drill programs drill collar locations.

Table 1: Rock Chip Samples – Assay Results (refer ASX release 6 December 2023)

Sample ID's	Al %	Be ppm	Cs ppm	K %	Li ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm
BT301	8.04	6	30.1	3.19	105	56	933.1	109	210.2
BT302	8.87	9	16.3	3.74	176	33	975.0	66	78.0
BT303	8.35	4	1.7	0.12	193	BD	10.2	26	10.8
BT305	6.31	6	6.0	0.33	139	18	83.7	18	23.7
BT306	6.94	9	1.6	0.12	63	26	11.8	11	75.9
BT307	0.16	BD	0.1	0.06	BD	BD	1.9	BD	0.3
BT308	7.84	48	46.0	3.35	298	38	1463.0	123	208.7
BT309	9.59	35	37.9	4.10	277	70	1360.6	124	783.0
BT311	0.16	BD	0.4	0.09	207	BD	5.3	BD	3.7

Table 2: Rock Chip Samples – Visual Descriptions (GDA94 MGAz50)

Sample ID	MGA_East	MGA_North	Description
BT301	757806	6444417	Coarse grained quartz-muscovite float. Interpreted as pegmatoidal texture.
BT302	757777	6444200	Coarse grained quartz-muscovite float. Interpreted as pegmatoidal texture.
BT303	757809	6444135	Weathered outcrop/subcrop cream clay with quartz veinlets - possible weathered pegmatite i.e. K-feldspar-quartz
BT305	757789	6444118	Weathered quartz-clay-mica rock- possible pegmatite
BT306	757813	6444094	Weathered quartz-clay-mica rock- possible pegmatite
BT307	757790	6444472	Fine grained grey quartz - possible pegmatite quartz core
BT308	757850	6444550	Quartz-muscovite with slightly schistose fabric - interpreted as pegmatoidal texture
BT311	757800	6444150	Milky quartz massive texture

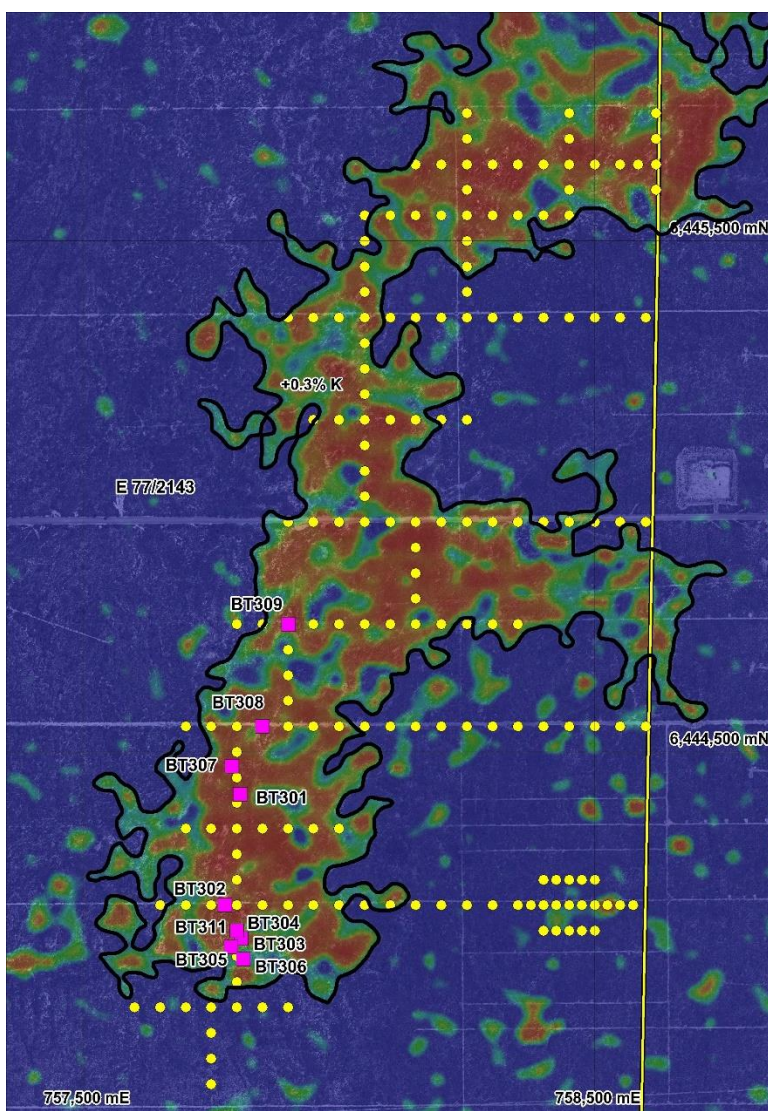


Figure 4: Locations of rock chip samples taken in November 2022 located within >2km strike extent of large coherent Potassium anomaly potentially structurally related to Earl Grey pegmatites

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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

LANTHANEIN RESOURCES LTD

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

¹ David Chapman, Geoscience Australia, Australia Resource Reviews, Lithium 2018. Comprising 66Mt @ 1.58% Li₂O Measured, 106Mt @ 1.52% Li₂O Indicated and 17Mt @ 1.11% Li₂O Inferred

Forward-Looking Statements

Certain information contained in this presentation may contain “forward-looking statements”. Forward-looking statements may include, but is not limited to, information with respect to the future financial and operating performance of Lanthanein, its subsidiaries and affiliates, the estimation of Mineral Reserves and Mineral Resources, realization of Mineral Reserve and Mineral Resource estimates, costs and timing of development of Lanthanein’s projects, costs and timing of future exploration, timing and receipt of approvals, consents and permits under applicable legislation, results of future exploration and drilling and adequacy of financial resources. Forward-looking statements are often characterized by words such as “plan”, “expect”, “budget”, “target”, “project”, “intend”, “believe”, “anticipate”, “estimate” and other similar words or statements that certain events or conditions “may” or “will” occur.

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 Non-Executive Director 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.