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11 April 2023

Exceptional Results Confirm Ultra High Bright Kaolin at Koolya

- **Brightness (ISO B) analysis completed with exceptional results up to 94.57% (sample KAC543)**
- **Kaolin assays show very low contained deleterious elements**
- **Best visual result of 30m of kaolin from 4m depth in KAC014 (see Figure 1 below)**
- **XRD analysis to define Kaolinite/Halloysite content to be completed Q2, 2023**
- **Anomalous Rare Earth vales of up to 1220pmm TREO**

Figure 1. High quality Kaolin intersected 30m of bright white kaolin from 4m depth (KAC014).

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Mr Brian Thomas, Lanthanein Technical Director commented "The exceptional brightness results in samples from our first pass Aircore drilling at Koolya Project is a great result. There is a significant areal extent of high quality bright white kaolin to support the potential for a significant kaolin resource and high purity alumina feedstock project to be delineated with further drilling.

These recent results are in line with our expectations following the exceptional visual results in drill samples. High purity kaolin is of growing importance as a critical feedstock in the processing of High Purity Alumina (HPA) which is being used in Li-ion batteries, LED lighting, Semiconductors and Sapphire glass. Samples are also currently being analysed by X-Ray Diffraction (XRD) to quantify the Kaolinite/Halloysite content. Halloysite can be used in nano technologies for a range of industry applications including carbon sequestration, agriculture, energy, and health.

We are also greatly encouraged by the presence of REEs with values of up to 1220ppm TREO. Exploring for critical minerals and rare earths is of paramount importance for our company as we aim to find the future facing minerals used in the global clean energy transition."

Lanthanein Resources Ltd (ASX: LNR) (**Lanthanein** or the **Company**) is pleased to announce the brightness results from the first pass Aircore drilling program at Koolya Kaolin Project in Western Australia (**Koolya Project**). A wide spaced drill program completed in December 2022, with drillholes spaced 500m apart, covered 15km of prospective kaolin rich granite and intersected widespread kaolin of varying thickness, with a best result of 30m thick bright white kaolin from 4m depth (KAC014).

Analysis was completed on the samples to quantify the specific characteristics (Table 1) such as ISO Brightness, Alumina content, and rare earth elements (REE). Further analysis will be undertaken to better quantify the presence of Kaolinite and Halloysite using XRD analysis. A total of 10 samples had ISO-Brightness > 79.35 and four samples > 800ppm TREO (Table 1 and 2).

Following these positive results further infill and step out drilling will be undertaken in Q2 & 3 to assist with the generation a mineral resource estimate by Q4, 2023.

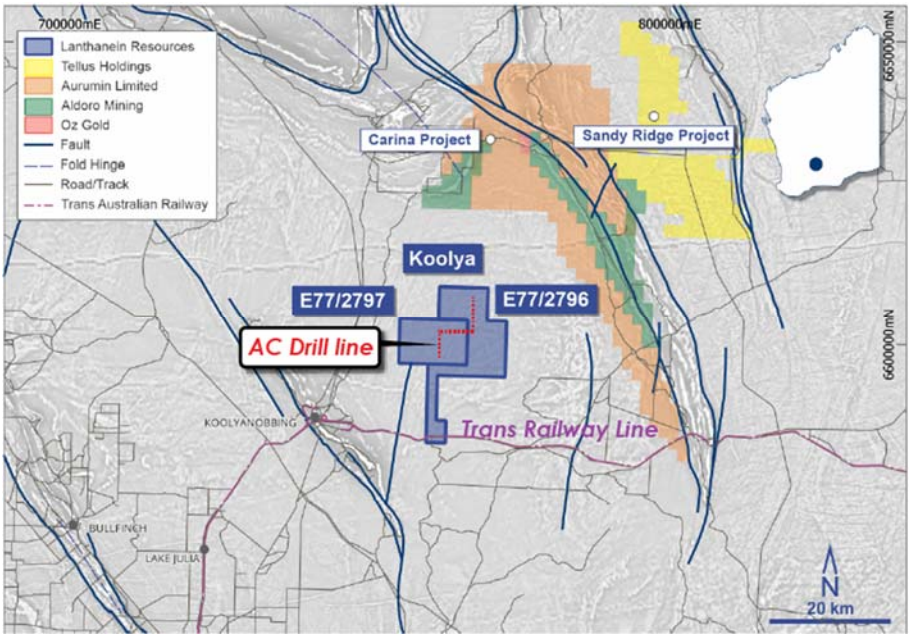

Figure 2. Koolya Project location showing the Trans Railway line running through southern area of project.

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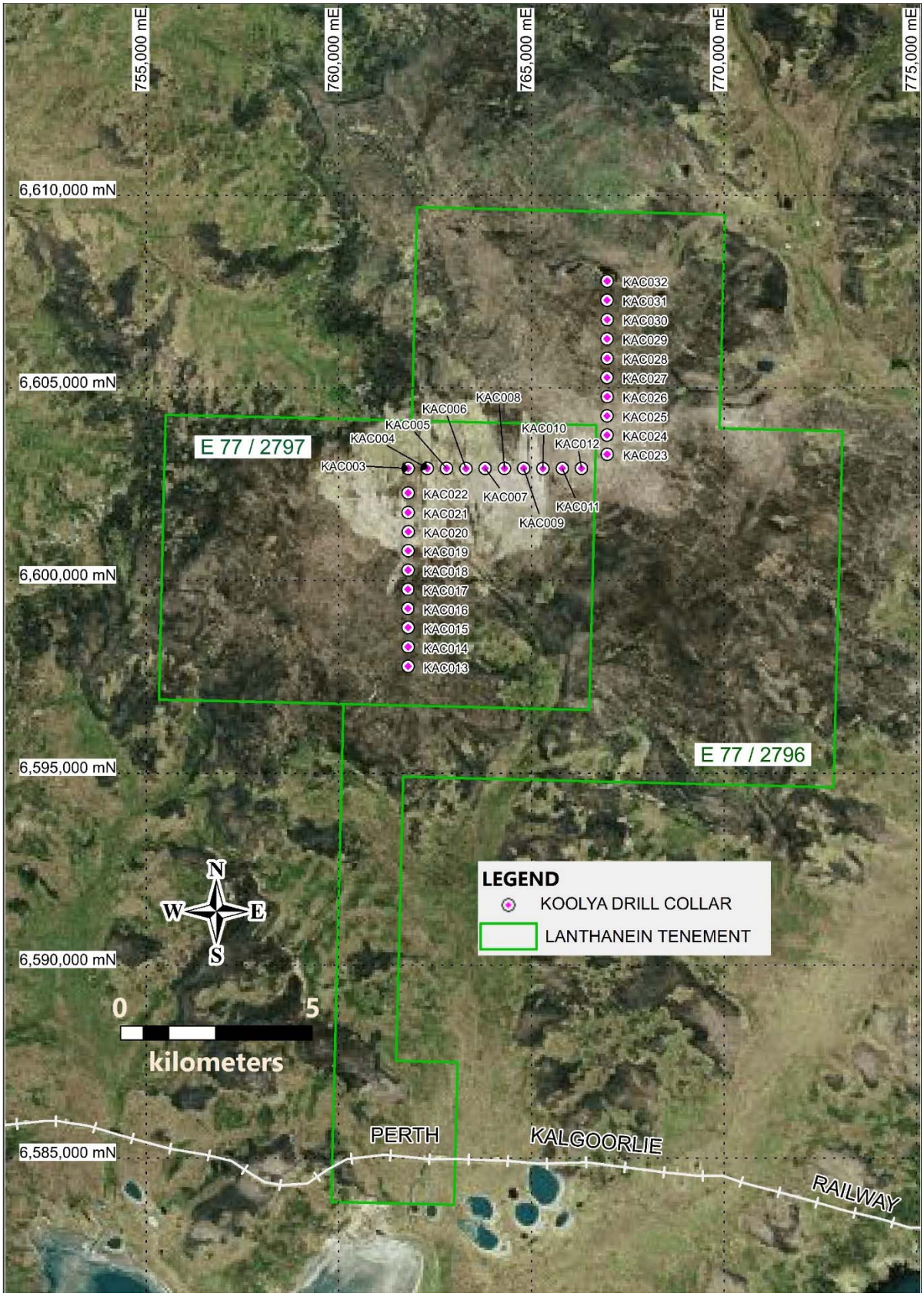

Figure 3. Drill Lines with Drill Hole Locations.

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Table 1: Mineralised Intervals (Top 10 Al_2O_3 and ISO-B), > 800ppm TREO

Hole ID	Sample ID	From (m)	To (m)	Al_2O_3 %	Fe_2O_3 %	SiO_2 %	TiO_2 %	TREO ppm	Brightness (ISO-B)
KAC030	KAC046	9	10	34.29	2.02	49.18	2.02	15.36	65.56
KAC012	KAC212	16	17	32.24	1.21	55.07	0.45	7.72	81.9
KAC030	KAC047	10	11	29.62	2.22	55.19	1.59	10.33	59.33
KAC030	KAC044	7	8	29.59	1.32	56.92	0.74	5.97	78.7
KAC018	KAC482	8	9	28.84	2.64	56.79	0.95	45.35	68.72
KAC030	KAC042	5	6	28.55	0.99	59.39	0.56	17.01	78.35
KAC015	KAC539	13	14	28.2	2.66	56.85	1.25	11.43	70.05
KAC018	KAC484	10	11	28.07	2.34	57.84	1.24	80	59.05
KAC014	KAC567	17	18	27.43	2.56	57.87	1.45	35.44	74.96
KAC018	KAC483	9	10	27.22	2.2	59.14	0.83	115.45	56.75
KAC014	KAC566	16	17	25.35	2.67	59.99	1.31	19.93	81.74
KAC012	KAC208	12	13	25.1	1.13	64.7	0.29	55.09	81.56
KAC007	KAC311	7	8	24.85	1.24	64.53	0.3	21.49	79.35
KAC012	KAC211	15	16	24.57	1.16	64.28	0.33	81.02	81.83
KAC026	KAC123	11	12	23.4	0.64	66.37	0.27	29.26	83.53
KAC015	KAC534	8	9	23.27	0.92	66.31	0.24	16.9	81.41
KAC029	KAC065	7	8	23.1	0.97	66.62	0.3	148.97	82.12
KAC030	KAC050	13	14	22.76	1.13	67.72	0.22	17.3	81.57
KAC026	KAC127	15	16	22.6	0.63	67.68	0.28	108.42	82.62
KAC012	KAC218	22	23	20.36	1.36	68.32	0.41	925.89	N/A
KAC030	KAC054	17	18	19.63	0.91	70.94	0.23	1068.04	N/A
KAC014	KAC575	25	26	19.24	0.91	71.92	0.16	856.25	N/A
KAC030	KAC055	18	19	19	0.85	71.89	0.22	1220.82	N/A

Table 2: Drill Collar Data (GDA94 MGAz50)

Hole ID	Easting	Northing	RL	Dip	Azimuth	EOH (m)
KAC003	761796	6602912	476	-90	0	18
KAC004	762295	6602914	472	-90	0	18
KAC005	762795	6602912	469	-90	0	27
KAC006	763294	6602910	458	-90	0	18
KAC007	763796	6602912	465	-90	0	24
KAC008	764297	6602912	468	-90	0	21
KAC009	764797	6602911	469	-90	0	18
KAC010	765294	6602909	463	-90	0	18
KAC011	765796	6602912	457	-90	0	21
KAC012	766299	6602915	454	-90	0	30
KAC013	761798	6597775	450	-90	0	12
KAC014	761795	6598278	456	-90	0	36
KAC015	761798	6598781	458	-90	0	24

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Hole ID	Easting	Northing	RL	Dip	Azimuth	EOH (m)
KAC016	761793	6599277	455	-90	0	21
KAC017	761791	6599775	450	-90	0	14
KAC018	761796	6600274	447	-90	0	18
KAC019	761797	6600776	446	-90	0	12
KAC020	761799	6601271	450	-90	0	12
KAC021	761795	6601770	455	-90	0	18
KAC022	761796	6602275	461	-90	0	23
KAC023	766965	6603281	447	-90	0	21
KAC024	766961	6603778	445	-90	0	21
KAC025	766958	6604276	445	-90	0	18
KAC026	766963	6604775	446	-90	0	24
KAC027	766960	6605274	449	-90	0	15
KAC028	766965	6605771	451	-90	0	18
KAC029	766962	6606272	450	-90	0	21
KAC030	766967	6606774	444	-90	0	22
KAC031	766960	6607276	441	-90	0	15
KAC032	766965	6607775	438	-90	0	21

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

For additional information please visit our website at www.lanthanein.com

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

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.

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JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	The Aircore drilling program was undertaken by KTE Mining using industry standard air core drilling methods. To date, a total of 30 AC drill holes for 599m have been drilled at the Koolya Project Drill spoil from each 1m from drill rig was collected in buckets in rows adjacent to the rig. An aluminium scoop was used to then sub-sample each spoil pile to create a 2-3kg 1m sample in a calico bag. All samples are submitted to ALS Laboratories in Kalgoorlie to be sent to ALS Perth. Assessment of the Brightness was carried out by Microanalysis Australia in Perth.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	LNR has completed air-core drilling, an industry standard technique. All drill holes were 3 inches in diameter. AC drilling employed rotary blade type bit, with compressed air returning the chip samples through a reverse circulation up the innertube to a cyclone for sampling.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	No water was encountered during the drilling process, all drill samples were dry samples. Sample recovery is expected to have minimal negative impact on the sample representativity. Samples weights were not measured or weighed due to the preliminary nature of the project at the time of drilling Drilling was undertaken using a 'best practise' approach to achieve maximum sample recovery

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Criteria	JORC Code explanation	Commentary
		and quality through the mineralised zones. Best practise sampling procedure included: suitable usage of dust suppression, suitable shroud, lifting off bottom between each metre, cleaning of sampling equipment, ensuring a dry sample and suitable supervision by the supervising geologist to ensure good sample quality. At this stage, no known bias occurs between sample recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	AC chips were logged by a qualified geologist with sufficient experience in the geological terrane and relevant styles of mineralisation using an industry standard logging system which could eventually be utilised within a Mineral Resource Estimation. Lithology, mineralisation, alteration, veining, weathering and structure were all recorded digitally. Chips were washed each metre and stored in chip trays for preservation and future reference. Chip trays were photographed. Logging is qualitative, quantitative or semi-quantitative in nature.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Single metre samples were collected from the drill spoil using a 'scoop'. Scoop sampling was carried out by contract field assistant. The scoop samples were collected by taking a cross section of the drill spoil, to ensure a representative samples of the full 1m sample was collected. The Competent Person considers scoop sampling acceptable method for representative sample given the low natural inherent variability of the mineralisation. Sample preparation was carried out by ALS Laboratories. 2-3kg samples are submitted to ALS Laboratories (Perth), oven dried to 60ºC to avoid the destruction of Halloysite. The dried sample was then pushed through a 5.6mm screen prior to splitting. A small rotary splitter is used to split 800g sample sizing. The 800g split will be wet sieved at 180µm and 45µm. The <45µm is split for XRF, XRD and brightness analysis. The reserves will be kept by LNR to produce

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Criteria	JORC Code explanation	Commentary
		a 0.66g charge for determination of Rare Earth Oxides by Lithium Borate Fusion XRF (ALS Method ME-XRF26 and ME-MS81. No standards were inserted in the samples. ISO-Brightness sample preparation was conducted by Microanalysis Australia. The <45um fraction was pressed into the test holder, making the test surface is blemish free. The sample was analysed using a Datacolour Elrepho instrument.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	**Laboratory Analysis** Lithium Borate fusion is considered a total digest and Method ME-XRF26 is appropriate for REE Oxide and ME-MS81 is considered appropriate for REE determination. Standard laboratory QAQC is undertaken and monitored by the laboratory and by the company upon assay result receival. **Rock Chips** • All samples were submitted to ALS Laboratories in Wangara, Perth where 1-3kg rock chips samples were crushed so that >70% of material passes through -6mm, the sample is then pulverised to >85% passing 75 micron. • A 66-gram aliquot of pulverised sample is fused with 12:22 lithium borate flux containing an oxidizing agent, and poured to form a fused disk. The resultant disk is then analysed by XRF spectrometry specifically for Rare Earths (ALS Method ME-XRF26) • Lithium borate fusion is considered a total digest and Method ME-XRF26 is appropriate for REE determination. • No standards, duplicates or blanks submitted with rock chips.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	Logging and sampling were recorded directly into a digital logging system, verified and eventually stored in an offsite database. Significant intersections are inspected by senior company personnel. No twinned holes have been drilled at this time. No adjustments to any assay data have been

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Criteria	JORC Code explanation	Commentary
		undertaken.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Collar position was recorded using a Garmin handheld GPS which has an accuracy of +/- 5m. • GDA94 Z50s is the grid format for all xyz data reported. • No downhole surveys have been completed – all holes are vertical and shallow.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	The drillhole spacing for the program is suitable as a 'first pass' for establishing a general trend of grade continuity for the kaolinite and any impurities. See drill table for hole positions. Data spacing at this stage is not suitable for Mineral Resource Estimation.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Vertical drilling generally achieved a very high angle of intercept with the flat lying, stratabound mineralisation. No sample bias is known at this time.
Sample security	• *The measures taken to ensure sample security.*	All geochemical samples were collected, bagged, and sealed by competent exploration contractor and delivered to ALS Laboratories in Kalgoorlie.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	The program is continuously reviewed by senior company personnel.

Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites,*	Lanthanein Resources Ltd entered into a conditional agreement to acquire all of the shares in Dalkeith Capital Pty Ltd (Dalkeith) which holds two granted exploration licences in the Yilgarn Region of Western Australia. The acquisition was completed on 4 January 2022.

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	wilderness or national park and environmental settings. • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Koolya Project consists of 2 granted Exploration Licenses (E77/2796 and E77/2797). • All tenements are 100% owned by Dalkeith Capital. • The Koolya Project covers 1 Native Title Determinations including the Marlinyu Ghoorlie (WAD38/2022). • The Koolya Project is located over Crown Land.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	There has been no historical exploration over the project area.
Geology	• *Deposit type, geological setting and style of mineralisation.*	Kaolin deposits are developed in situ by lateritic weathering of the feldspar rich granites such as the Yilgarn Craton Granites. The resultant kaolin deposits are sub horizontal zone of kaolinised granite resting with a fairly sharp contact on unweathered granite. The kaolinised zone is overlain by loosely consolidated Tertiary and Quaternary sediments. Halloysite is a derivative of kaolin where the mineral occurs as nanotubes. Halloysite has a wide variety of industrial uses beyond simple kaolin and commands a significant premium above average kaolin price.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	An overview of the drilling program is given within the text within this document.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade*	No pXRF readings or metal equivalents are reported.

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	results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Drillhole angle relative to mineralisation has been almost perpendicular, with vertical drillholes through the flat horizontal mineralisation related to the regolith. Generally, the stratabound intercepts are close to true width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Refer to figures within this report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• The accompanying document is a balanced report with a suitable cautionary note.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	All material results are reported in this release.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this*	Additional RC drilling Diamond Drilling Metallurgical test work Resource Modelling

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	information is not commercially sensitive.	