3 March 2021

MINERAL RESOURCE ESTIMATE INCREASED THREEFOLD AT MAKUUTU

- **Significant 210% increase to Mineral Resource at a cut-off grade of 200 parts per million Total Rare Earth Oxide minus CeO_2:**

  315 Million tonnes at 650 parts per million Total Rare Earth Oxide

- **Heavy Rare Earth Oxides (26%) and Critical Rare Earth Oxides (35%) account for a substantial component of the Resource mineralisation**
- **Prospective mineralisation on EL00147, to be tested with a drilling program commencing this month over the highly prospective radiometric anomaly**
- **Scoping Study now being revised to reflect the large-scale and high-margin potential of Makuutu Rare Earths Project**

The Board of Ionic Rare Earths Limited ("IonicRE" or "The Company") (ASX: IXR) is pleased to advise of a substantial 210% increase to the Mineral Resource Estimate ("MRE") at its 51% owned Makuutu Rare Earths Project ("Makuutu"), which is estimated at 315 Million tonnes at 650 ppm Total Rare Earth Oxide ("TREO") with a cut-off grade of 200 parts per million ("ppm") TREO minus CeO_2.

This updated MRE places Makuutu amongst the world's largest ionic adsorption clay ("IAC") deposits, and as such, a globally strategic resource for low-cost, high-margin and long-term security of critical and heavy rare earth ("HREO") supply.

The Makuutu MRE has been updated based on the following key inputs:

1. 279 drill holes for 4,754 metres of drilled between October 2019 and October 2020;
2. Includes 54 infill drill holes completed on a 200 metre grid on the Makuutu Central area increasing resource confidence to Indicated status in that area;
3. Includes 8 infill drill holes on a 100 metre grid on the Makuutu Central area evaluating short range variability in head grade and extraction;
4. 487 insitu dry bulk density measurements from drill core samples; and
5. Marginal cut-off grade parameters based on Makuutu Rare Earth Element ("REE") extraction metallurgical test results, project-based cost estimates and REO product pricing reflecting current and forecast REO prices.

Table 1: Makuutu Resource above 200ppm TREO-CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc_2O_3 (ppm)
Indicated Resource	66	820	570	590	230	300	30
Inferred Resource	248	610	410	450	160	210	30
Total Resource	**315**	**650**	**440**	**480**	**170**	**230**	**30**

Rounding has been applied to 1Mt and 10ppm which may influence averaging calculation.
All REO are tabulated in Appendix 1 with formulas defining composition of (Light Rare Earth Oxides ("LREO"), HREO and Critical Rare Earth Oxides ("CREO").
Sc_2O_3 formula provided in Appendix 1.

Commenting on this significant MRE upgrade, IonicRE's Managing Director, Mr Tim Harrison said:

"This is a fantastic result for the Company and materially exceeds the long-held expectation that the Company has had since first acquiring the interest in Makuutu back in August 2019. In just over 18 months, we have been able to advance the highly encouraging Exploration Target to now confirm Makuutu to be one of the largest ionic adsorption clay deposits outside of China, with one of the largest publicly reported TREO mineral resource estimates globally."

"The magnitude of this Mineral Resource will provide a platform for the Company to now look to finalise the Makuutu Scoping Study, which will reflect the significant nature of the resource, underpinning what we anticipate will be a long-term, low-capital and high-margin critical and heavy rare earth producing asset."

"Makuutu has additional areas of mineralisation which have not been classified at this stage. I believe it is reasonable to expect, with a high level of confidence, that additional drill programs have the potential for further increases to the resource. The Company is commencing further targeted drilling this month, and it is expected that, combined with the potential of EL00147, additional material resource increases remain highly probable. Combined, the overall potential for a long-life, low-cost, high-margin critical and heavy rare earth opportunity at Makuutu is high."

Resource Limits

The MRE was conducted over eleven (11) low plateaus defined by radiometric eU/eTh anomalism on mineral licences RL00007, RL1693 and EL1766. Figure 1 shows the 11 areas from A to I where drilling and resource estimation was focused along with the Makuutu Central Zone ("MCZ"). The highly prospective EL000147 was not included in this MRE as the exploration license was only acquired in January 2021.

The MRE only includes clay and saprolite regolith types with surface hardcap material excluded while processing alternatives are tested for this material. This is consistent with the Company's knowledge of other IAC deposits, especially the southern Chinese deposits.

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The initial metallurgical response highlighted by results of testing the clay and saprolite samples appears consistent with other global IAC deposits, including the southern Chinese deposits which are responsible for the global production of more than 95% of the worlds HREO production.

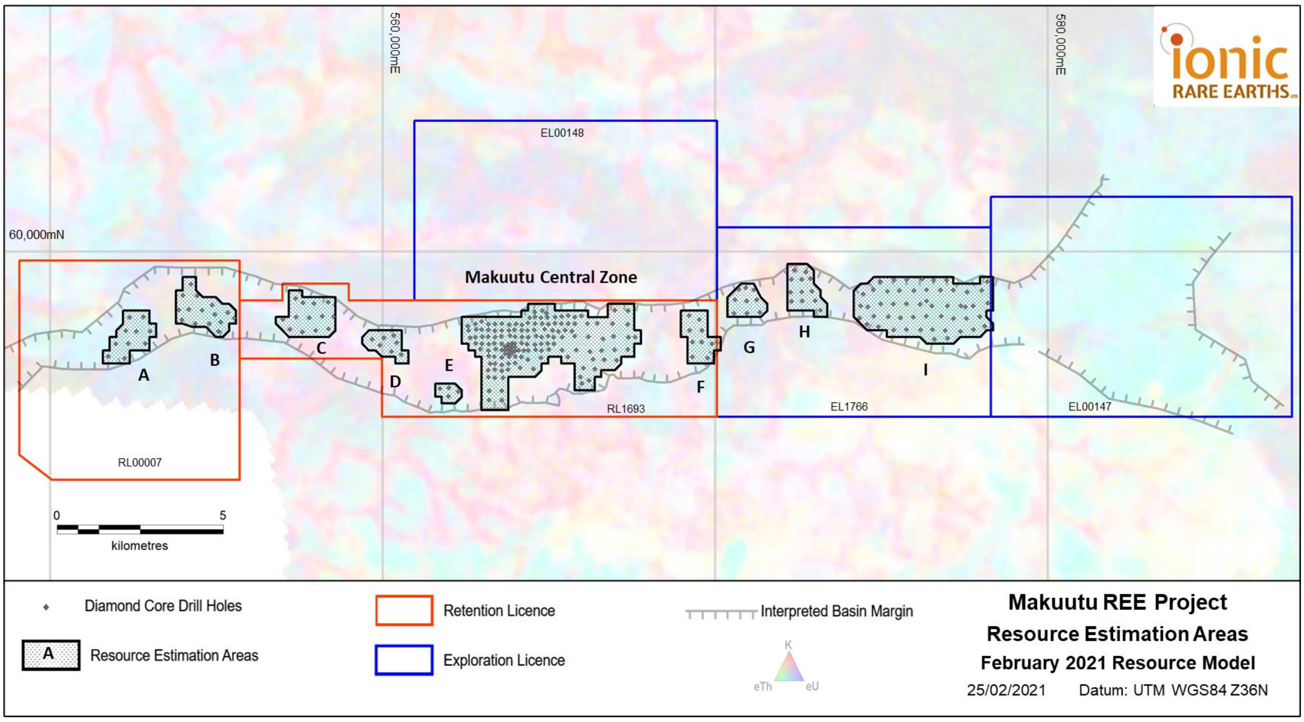

Figure 1: Plan view of resource estimation areas, drill hole locations and mineral licences on ternary radiometric image

Resource Areas

The MRE has determined classified resources in nine (9) of the eleven (11) drilled areas.

Indicated Resources are constrained to the Central Zone where the 200 metre x 200 metre drill spacing has provided adequate data for this level of confidence. The Inferred Resource areas are drilled on a 400 metre x 400 metre spacing and will require further infill drilling to increase resource confidence.

Areas C and E have failed to convert to resources at this time, with mineralisation lacking sufficient continuity at the 400 metre x 400 metre drill spacing to be classified. These areas can be tested with closer spaced drilling in the future to provide more confidence in the continuity of mineralisation, which will have the potential to add further resource. The disruption to the continuity in these areas is primarily due to unmineralised sand units, intercalated with mineralised clays, resulting in insufficient mineralised intersections to provide resource estimate confidence. As such, Exploration Targets have been maintained for these areas and future core drilling will look to convert these to additional resource.

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The reported resources by each of the areas is listed in Table 2 with the resource areas shown by resource classification in Figure 2.

Table 2: Mineral Resources by Area

Classification	Indicated Resource			Inferred Resource			Total Resource		
Area	**Tonnes (millions)**	**TREO (ppm)**	**TREO-CeO_2 (ppm)**	**Tonnes (millions)**	**TREO (ppm)**	**TREO-CeO_2 (ppm)**	**Tonnes (millions)**	**TREO (ppm)**	**TREO-CeO_2 (ppm)**
Central Zone	66	820	570	51	730	500	118	780	540
A				12	570	390	12	570	390
B				25	410	280	25	410	280
C				-	-	-	-	-	-
D				6	560	400	6	560	400
E				-	-	-	-	-	-
Central Zone East				37	740	520	37	740	520
F				11	570	390	11	570	390
G				6	660	450	6	660	450
H				4	780	560	4	780	560
I				96	550	350	96	550	350
Total Resource	**66**	**820**	**570**	**248**	**610**	**410**	**315**	**650**	**440**

Rounding has been applied to 1Mt and 10ppm which may influence averaging calculations.

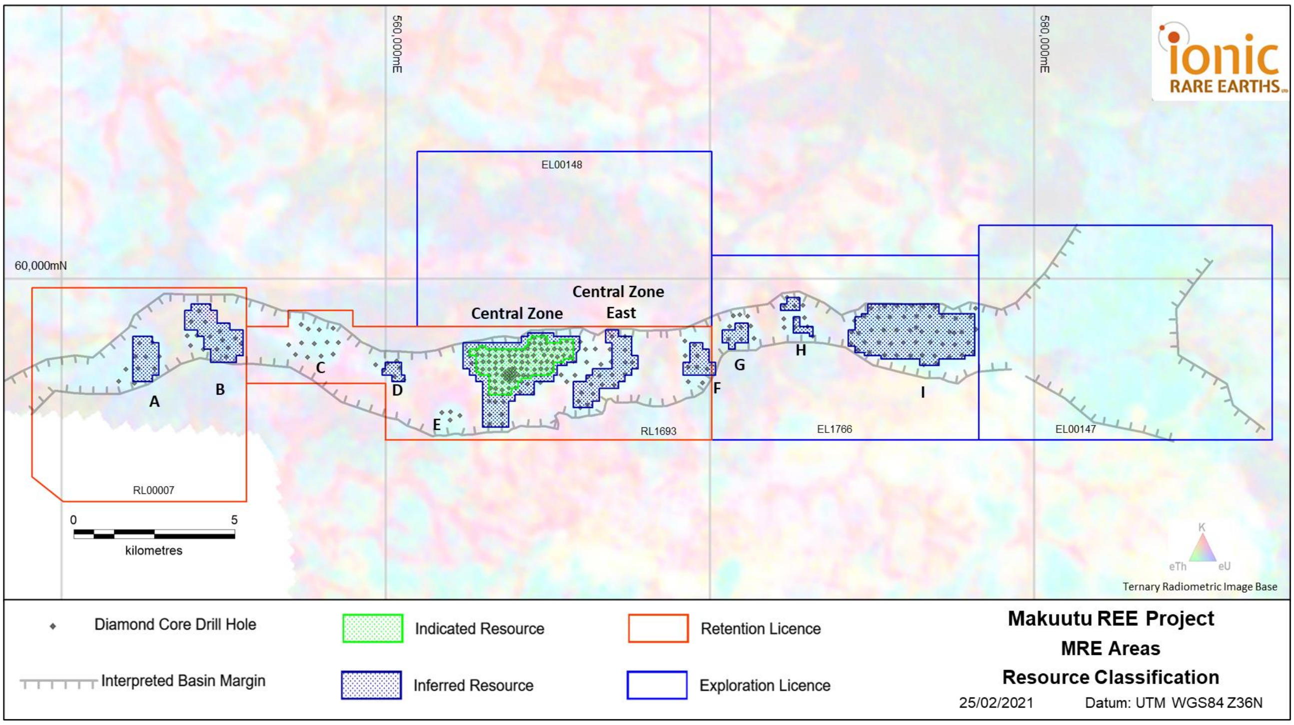

Figure 2: Mineral Resource Estimate (MRE) areas by classification

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Summary of Material Information Used to Estimate the Mineral Resource

The following is a summary of material information used to estimate the Mineral Resource, as required by Listing Rule 5.8.1 and JORC 2012 Reporting Guidelines. The MRE was prepared by independent specialist resource and mining consulting group, Cube Consulting Pty Ltd ("Cube").

Mineral Tenement and Land Tenure Status

The Makuutu Rare Earths Project is in the Republic of Uganda. The Project includes five (5) mineral tenements covering in excess of 242 km^2, comprising of two (2) granted Retention Licences (RL1693 and RL0007) and three (3) Exploration Licence (EL1766, EL00147 and EL00148). All licences are in good standing with no known impediments. Figure 1 shows the licence areas and Table 3 lists the details of each licence:

Table 3: Makutu Rare Earths Project Tenement Details.

Licence ID	Licence Type	Application Date	Granted Date	Expiry / Renewal Date	Area (km^2)
RL 1693	Retention	11/07/2017	02/11/2017	01/11/2022	43.78
EL 1766	Exploration	07/04/2017	06/07/2018	05/07/2021	47.02
RL 0007	Retention	27/03/2019	27/11/2019	27/11/2022	43.38
EL00147	Exploration	19/10/2020	28/12/2020	27/12/2023	60.30
EL00148	Exploration	21/10/2020	28/12/2020	27/12/2023	48.15

The Makuutu Rare Earths Project is 100% owned by Rwenzori Rare Metals Limited ("RRM"), a Ugandan registered company. IonicRE currently has earned a 51% shareholding in RRM and may increase its shareholding to 60% by meeting further commitments as follows:

1. IonicRE to fund to completion of a Bankable Feasibility Study ("BFS") to earn an additional 9% interest for a cumulative 60% interest in RRM.
2. Milestone payments, payable in cash or IonicRE shares at the election of the Vendor, as follows:
   - US$375,000 on production of 10 kg of mixed rare-earth product from pilot or demonstration plant activities; and
   - US$375,000 on conversion of existing licences to mining licences.

At any time should IonicRE not continue to invest in the project and project development ceases for at least two months RRM has the right to return the capital sunk by IonicRE and reclaim all interest earnt by IonicRE.

Geology

The Makuutu deposit is interpreted to be an ionic adsorption REE clay-type deposits like those in south China, Myanmar, Madagascar, Chile and Brazil.

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The mineralisation is contained within the tropical lateritic weathering profile of a basin filled with sedimentary rocks including shales, mudstones and sandstones potentially derived from the surrounding granitic and mafic rocks. These rocks are considered the original source of the REE which were then accumulated in the sediments (via ionic bonds within the clay) of the basin as the surrounding rocks have degraded. These sediments then form the protolith that was subjected to prolonged tropical weathering.

The weathering developed a lateritic regolith with a surface indurated hardcap, followed downward by clay rich zones that grade down through saprolite and saprock to unweathered sediments (Figure 3). The thickness of the regolith is between 10 and 20 metres from surface.

The REE mineralisation is concentrated in the weathered profile where it has dissolved from its primary mineral form, such as monazite and xenotime, then ionically bonded (adsorbed) or colloidally bonded on to fine particles of aluminosilicate clays (e.g. kaolinite, illite, smectite). The adsorbed and colloidal REE is the target for extraction and production of REO at Makuutu.

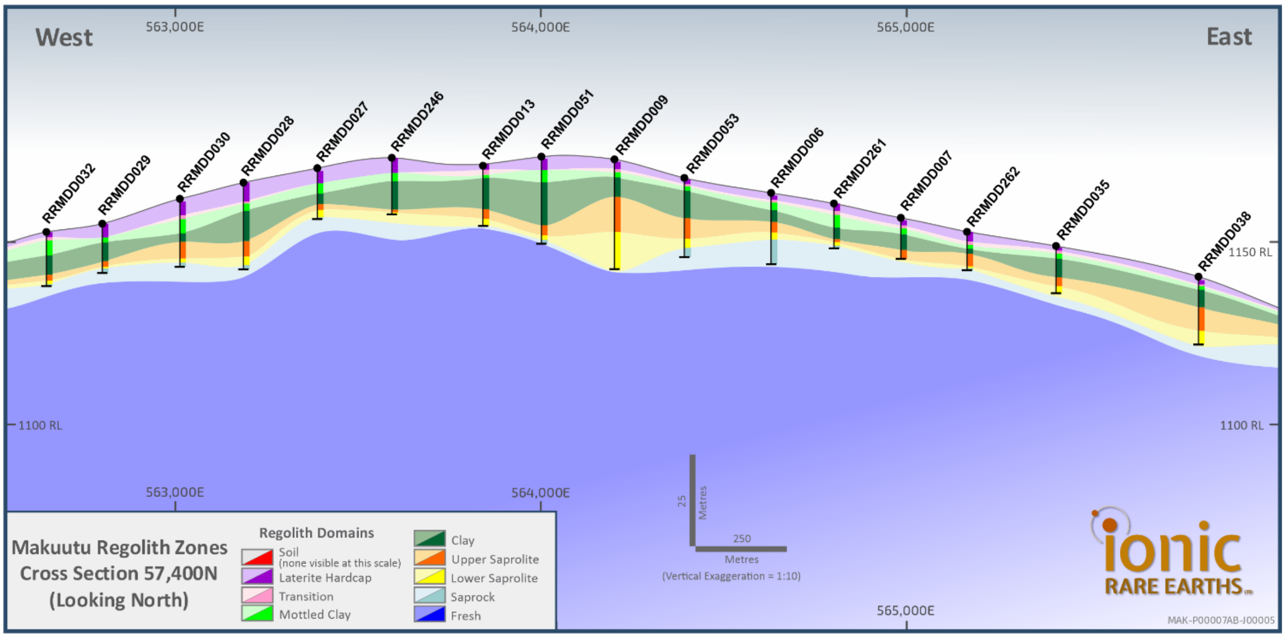

Figure 3: Cross Section 57,400N (Looking North) Regolith Zonation (10x vertical exaggeration)

Drilling Techniques and Hole Spacing

Drilling completed at the Makuutu and used to support the MRE includes 279 diamond core (DDH) holes for a total of 4,754 m (average depth is 17.0 m). All diamond holes are drilled from surface and oriented vertically. Drilling used a HQ triple tube size (~61.1 mm diameter) with the triple tube techniques used to maximise core recovery. Drill core was collected from a core barrel and placed in appropriately marked core trays. Down hole core run depths were measured and marked with core blocks. Core was measured for core loss and core photography and geological logging completed.

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Sampling

Sample lengths were determined by geological boundaries with a maximum sample length of 1 metre applied in clay zones and up to 2 metres in laterite zones where core recovery was occasionally low. Where the core contained continuous lengths of soft clay a carving knife was used to cut the core. When the core was too hard to knife cut it was cut using an electric core saw. Using either method, core was initial cut in half then one half was further cut in half to give quarter core. Quarter core was submitted to ALS for chemical analysis using industry standard sample preparation and analytical techniques. Half core was collected for metallurgical test work.

Certified reference materials ("CRM"), analytical blanks, and field duplicates were used as part of the QAQC procedures and were each inserted at a rate of 1:25 samples. Alternate method analysis has been conducted on a selection of sample pulps using Laser Ablation MS technique at Bureau Veritas Minerals laboratory in Perth WA.

Sample Analysis

All DDH samples were dispatched by air freight direct to ALS laboratory Perth, Australia. Sample preparation included whole sample crushing to 70% less than 2mm, Boyd rotary slitting to generate a 750g sub-sample, and pulverising to achieve better than 85% passing 75 microns. Analysis for REE suite was via Lithium Borate Fusion ICP-MS (ALS code ME-MS81), with elements analysed at ppm levels. This method is considered a total analysis.

Estimation Methodology

The geological interpretation utilised lithological logging data, and assay data to guide and control the Mineral Resource estimation. Leapfrog™ implicit modelling software was utilised to generate three-dimensional wireframes of the applicable regolith units. Estimation domains were based on grouping of the regolith domains into five zones as defined by regolith rheology, and by comparison of regolith statistics:

- Domain 1,2,3 – Cover zone (Soil, Hardcap and Transition regolith zones)
- Domain 4 – Mottled zone (Mottled regolith zone)
- Domain 5 – Clay zone (Clay regolith zone)
- Domain 6,7 – Saprolite zone (Upper and Lower Saprolite regolith zones)
- Domain 8,9 – Basement zone (Saprock and Fresh Rock regolith zones)

Drill hole sample data was flagged using domain codes generated from three-dimensional mineralisation domains. Sample data was composited to one-metre downhole lengths using a best fit-method. No residuals were generated. Statistical analysis was carried out on data from all estimated domains, with hard boundary techniques employed within each estimation domain.

Analysis of the composite data indicated the presence of outlier values indicating grade capping was required for Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, U, Y and Yb. Capped values were generally selected above the 99th percentile.

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A total of 15 REE grade attributes (Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu), the associated element Sc, and 2 deleterious elements (U, and Th) were estimated. Final estimated values are converted to stoichiometric oxide values by calculation using published ratios to support reporting of rare earth oxides (REO). The grade estimation process was completed using Maptek Vulcan software using Ordinary Kriging (OK) together with dynamic anisotropy to guide the grade interpolation parallel to the regolith boundaries. For estimation domains with insufficient sample data a variogram model from a comparable domain was assigned.

Interpolation parameters were derived using standard exploratory data analysis techniques of statistical and continuity analysis. Appropriate interpolation strategies were developed on a domain basis using kriging neighbourhood analysis ("KNA") with a minimum number of 8 composites and a maximum number of 20 composites, with an octant search applied with a restriction on the number of composites per octant set to five. Blocks were estimated in a three-pass strategy with first pass maximum search distances of 520 and 5,600 metres depending on estimation variable and domain. The second pass relaxed the minimum samples to four and removed the octant restriction, while the third pass increased the respective search distances by a factor of two. A cross section looking north with estimated TREO block grades is presented in Figure 4.

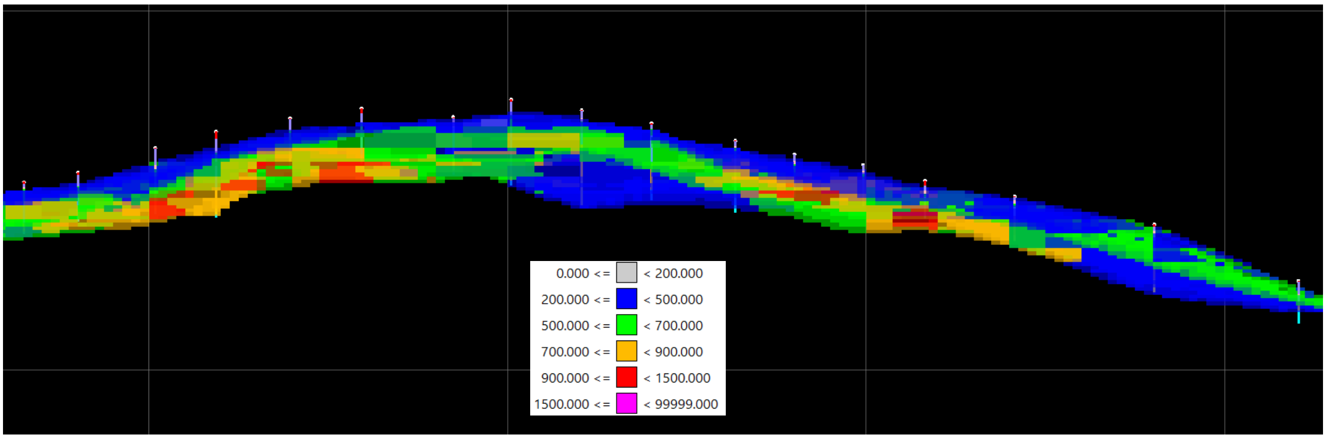

Figure 4: Makuutu Rare Earths Project – Cross section 57,400N (looking north) with TREO block grades (10x vertical exaggeration)

The model has a block size of 200 m (X) by 200 m (Y) by 4 m (Z) with sub-celling of 25 m (X) by 25 m (Y) by 1m (Z). Within the Central Main area drilling has been completed at an average of 200 m (X) by 200 m (Y), with the parent cells in this area reduced to 100 m (X) by 100 m (Y) by 4 m (Z) with sub-celling of 25 m (X) by 25 m (Y) by 1m (Z). Grades were estimated into the parent cells.

The block model was validated using a combination of visual and statistical techniques including global statistics comparisons, correlation coefficients comparisons, and trend plots.

Resource Classification

A range of criteria was considered by Cube when addressing the suitability of the classification boundaries. These criteria include:

- Geological continuity and volume;
- Drill spacing and drill data quality;
- Modelling technique; and
- Estimation properties, including search strategy, number of informing composites, average distance of composites from blocks and kriging quality parameters.

Blocks have been classified in both the Indicated (21%) and Inferred (79%) categories, primarily based on drill data spacing in combination with other model estimate quality parameters.

The Indicated Resource is constrained to the Makuutu Central Zone where drill spacing is at or closer than 200 metres (Figure 5).

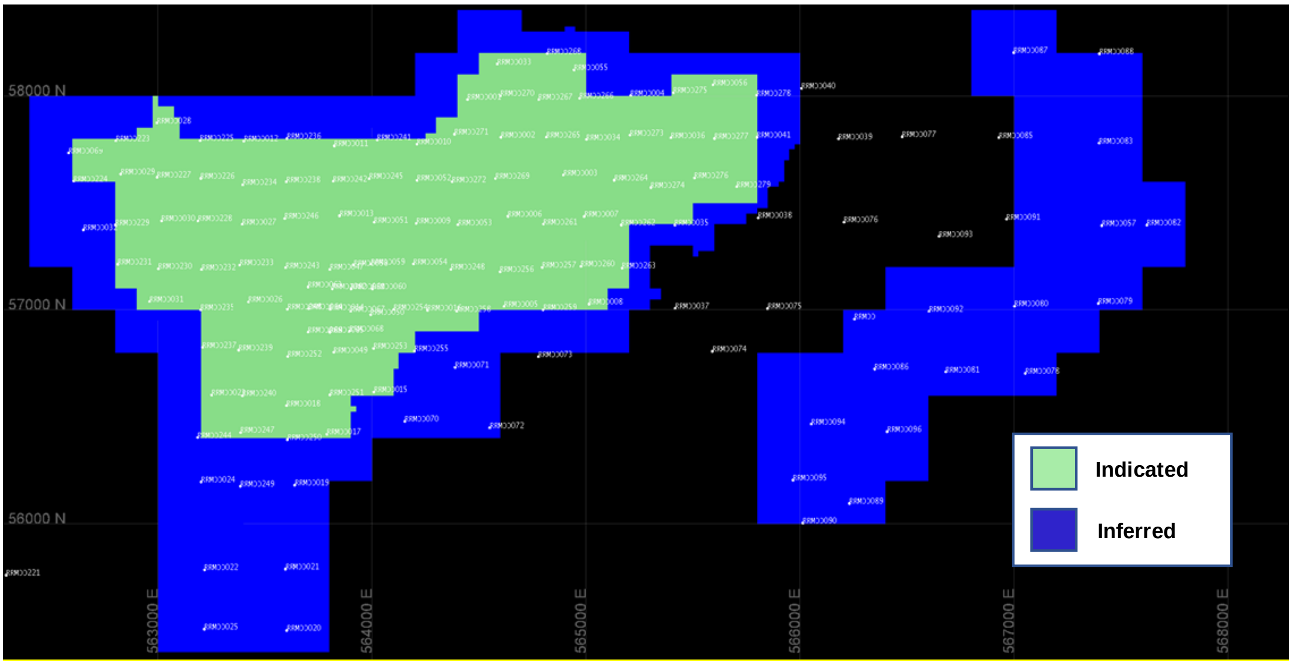

Figure 5: Makuutu Rare Earths Project – Indicated Mineral Resource Limits – Makuutu Central Zone

Cut-off Grade

The Mineral Resource has been reported above a 200 ppm TREO minus CeO_2 cut-off. Selection of the cut-off has considered metallurgical recoveries and distribution of recovered elements. Based on these results a consensus basket price for the predicted contained REO product has been determined, and together with other cost inputs, an indicative marginal cut-off grade has been defined. The applied cut-off has been reviewed against that reported from peer projects with similar mineralisation styles and proposed processing options and is considered comparable.

Reporting of Mineral Resources have been assessed against a resource limiting optimisation shell using appropriate cost, metallurgical recovery, and price assumptions. Material within the optimised

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pit shell has, in the opinion of the Competent Person, met the conditions for reporting of a Mineral Resource with reasonable prospects of economic extraction.

Mining and Metallurgy

Development of this Mineral Resource assumes mining using standard equipment and methods. The assumed mining method is conventional truck and shovel, open pit mining at an appropriate bench height.

Preliminary metallurgical test work on mineralisation at the Project has been superseded by results of optimisation test work which indicate metallurgical recoveries of up to 75% TREE-Ce (Total Rare Earth Element minus Cerium) were achieved using simple extraction techniques. The optimisation testwork has since provided a more consistent and reproducible set of data and as such the individual REE extraction parameters applied to the Project has increased, supporting the reduction of the cut-off grade. These results are considered adequate to achieve reasonable expectations of economic metallurgical processing of the project mineralisation.

Current Makuutu Rare Earths Project Work Program

IonicRE will now progress key activities at Makuutu to advance the Project to completion of the BFS by October 2022 and will:

- Initiate the Phase 2 metallurgical variability testwork across Makuutu to determine overall step change in metallurgical extractions with the optimised conditions;
- Initiate the next stage of site-based activities including geotechnical and sterilisation programs for project development;
- Initiate the next stage of Environmental and Social Impact Study (ESIA) at the Makuutu, which includes an enhanced community and stakeholder engagement; and
- Additional evaluation studies across the Projects which has the potential to unlock additional value at Makuutu including extraction studies on the hardcap material that has presently been excluded from the reported Mineral Resource.

In addition, a reconnaissance rotary air blast ("RAB") drilling program is scheduled to commence in March across the Makuutu Rare Earths Project, including initial drilling on the recently granted untested Exploration License 00147.

The Company continues to advance discussions with global parties regarding the Makuutu Rare Earths Project, given its strategic importance as a potential long-life, low-cost and high-margin source of critical and heavy rare earths.

EL00147 Exploration Target

In January 2021 the Company was granted two further exploration licences (EL00147 and EL00148). EL00147 covers the eastern extension of the REE mineralised trend as defined by airborne radiometric eU/eTh anomalism and is untested for REE. The exploration target ranges for EL00147, announced 5th January 2021, are:

60 – 270 million tonnes grading 550 – 900 ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The exploration target areas are shown in relation to the MRE areas in Figure 6.

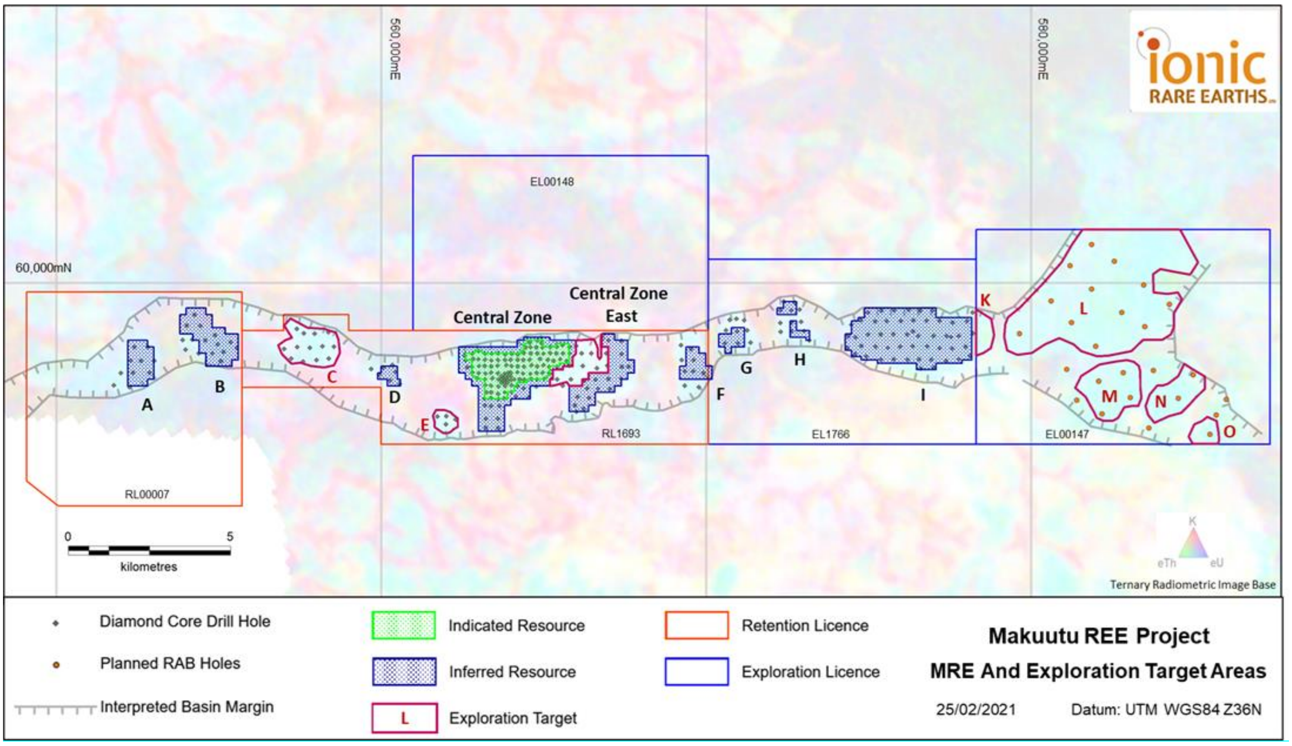

Figure 6: Makuutu Rare Earths Project Area with MRE and Exploration Target

Areas C and E Exploration Target

In RL 1693, areas C and E drilled in the 2020 drilling program (Figure 6) and modelled in the MRE failed to achieve resource confidence due to lack of continuity of mineralisation with intercalated sand and clay units.

Closer spaced drilling has the potential to define the mineralisation in these areas. Exploration target ranges for these zones are:

Area C: 14 – 27 million tonnes grading 450 – 675 ppm TREO

Area E: 5 – 10 million tonnes grading 450 – 675 ppm TREO

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The combined Area C and E exploration target ranges are:

19 – 35 million tonnes grading 450 – 675 ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

This exploration target is based upon the following:

- Minimum tonnes are 50% of modelled unclassified tonnes in the February 2021 MRE;
- Maximum tonnes is 100% of the modelled unclassified tonnes in the February 2021 MRE February 2021 MRE;
- Minimum grade is the modelled average grade of the unclassified tonnes in the February 2021 MRE; and
- Maximum grade is 150% modelled average grade of the unclassified tonnes in the February 2021 MRE.

Central East Unclassified Exploration Target

In RL 1693, a portion of the Central East area, as illustrated in Figure 6, was not able to be classified during the MRE due to a lack of continuity of mineralisation at the 400 metre drill spacing. Further infill drilling has the potential to reclassify material from this area with and exploration target of:

8 – 17 Million tonnes grading 600 ppm – 820ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

This exploration target is based upon the following:

- Minimum tonnes are 50% of modelled unclassified tonnes in the February 2021 MRE;
- Maximum tonnes is 100% of the modelled unclassified tonnes in the February 2021 MRE February 2021 MRE;
- Minimum grade is the 90% of the modelled average grade of the unclassified tonnes in the February 2021 MRE; and
- Maximum grade is 110% of the modelled average grade of the classified tonnes of the Central East resource area in the February 2021 MRE.

Makuutu Hardcap and Transition Zones RL00007, RL1693 and EL1766 Exploration Target

In addition to the RL 1693 and EL00147 exploration targets, the Hardcap material in the resource area has to date been the subject of preliminary REE extraction testwork determining potentially economical processing routes. This testwork has shown promising improvement over the past 12 months, however at this time, is below the threshold for consideration of Reasonable Prospects of Eventual Economic Extraction (“RPEEE”).

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As such this warrants exclusion of the hardcap from the MRE, however maintaining an exploration target for this material of:

0 – 120 million tonnes grading 530 – 900 ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The Hardcap Exploration Target ranges have been determined from:

- Minimum tonnes if extraction testwork determines there is no reasonable prospects of economic extraction;
- Maximum tonnes is 100% of the modelled Hardcap and Transition regolith zone from the February 2021 MRE. Hardcap or Transition domains are not reported in this Mineral Resource estimate;
- Minimum grade is 75% of modelled Hardcap regolith zone grade from the February 2021 Project MRE; and
- Maximum grade is 100% of modelled Hardcap regolith zone grade from the February 2021 Project mineral resource modelling.

Addendums

Appendix 1: Makuutu Rare Earths Project June 2020 Mineral Resource Estimate Tabulations

Appendix 2: Makuutu Rare Earths Project RRMDD Diamond Core Hole Details

JORC Code, 2012 Edition – Table 1 Report.

Authorised for release by the Board.

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About Makuutu Rare Earths Project

The Makuutu Rare Earths Project is an ionic adsorption clay ("IAC") hosted Rare Earth Element ("REE") deposit located 120 km east of Kampala in Uganda and is well serviced by existing high quality infrastructure including roads, rail, power infrastructure and cell communications. The installed infrastructure is illustrated in Figure 7.

The deposit stretches 37 km in length and has demonstrated potential for a long life, low-cost capital source of critical and heavy rare earths. These IAC deposits are prevalent in southern China which have been the source of the world's lowest cost critical and heavy REE production, however these deposits are gradually being exhausted and Makuutu represents one of only a handful of such deposits outside of southern China.

The Makuutu deposit is shallow, with less than 3 m of cover over a 12 m thick clay zone which results in low-cost bulk mining methods with low strip ratio. Processing is via simple acidified salt desorption heap leaching, breaking the chemical ionic bond which washes the rare earths (in a chemical form) from the ore into a pregnant leach solution ("PLS"). The PLS is concentrated up using membrane technology, from which the rare earths are precipitated as a mixed rare earth carbonate product; a product which attracts both a higher payability and achieves a high basket price due to the dominant high value critical and heavy rare earths which make up over 70% of the product basket.

The Project has the potential of generating a high margin product with an operation life exceeding 30 years. The Project is also prospective for a low-cost Scandium co-product.

Existing Infrastructure

One of the Makuutu Rare Earths Project's competitive advantages is its proximity to existing infrastructure. The Makuutu site is approximately 10km from Highway 109 which is a sealed bitumen road connecting to Kampala, to Kenya and on to the Port of Mombasa. All weather access roads connecting the site to the adjacent sealed bitumen highway are already existing. A rail line lies within 10 kilometres north of the Makuutu site near the town of Iganga. There are four hydroelectric power plants located within 65 km of the project area, with total installed generating capacity of approximately 810 MW, providing an abundant supply of cheap power to the Project.

Water will be sourced at the project by harvesting water from the Makuutu site, given the Project location in a positive rainfall environment, and a net positive process water balance will require membrane processes to be used to process site discharge water for reagent recovery. Excess water management will be a key focus of the Project the ensure environmental standards are met and reagent consumption is minimised.

A workforce of semi-skilled and artisanal workers is available in nearby towns and population centres. The closest major population centre is Iganga, which has a population of 50,000. The town of Mayuge is approximately 10 km from the Project site and the intent is to source local operations staff from the immediate districts and train staff accordingly. The operation is to be staffed by a residential workforce. No fly in – fly out is envisaged, and the number of expatriate staff is intended to be low, and to be phased out over time. Industrial facilities are available in the city of Jinja, approximately 40 km from the Project area. Additional industrial facilities are available on the outskirts of Kampala.

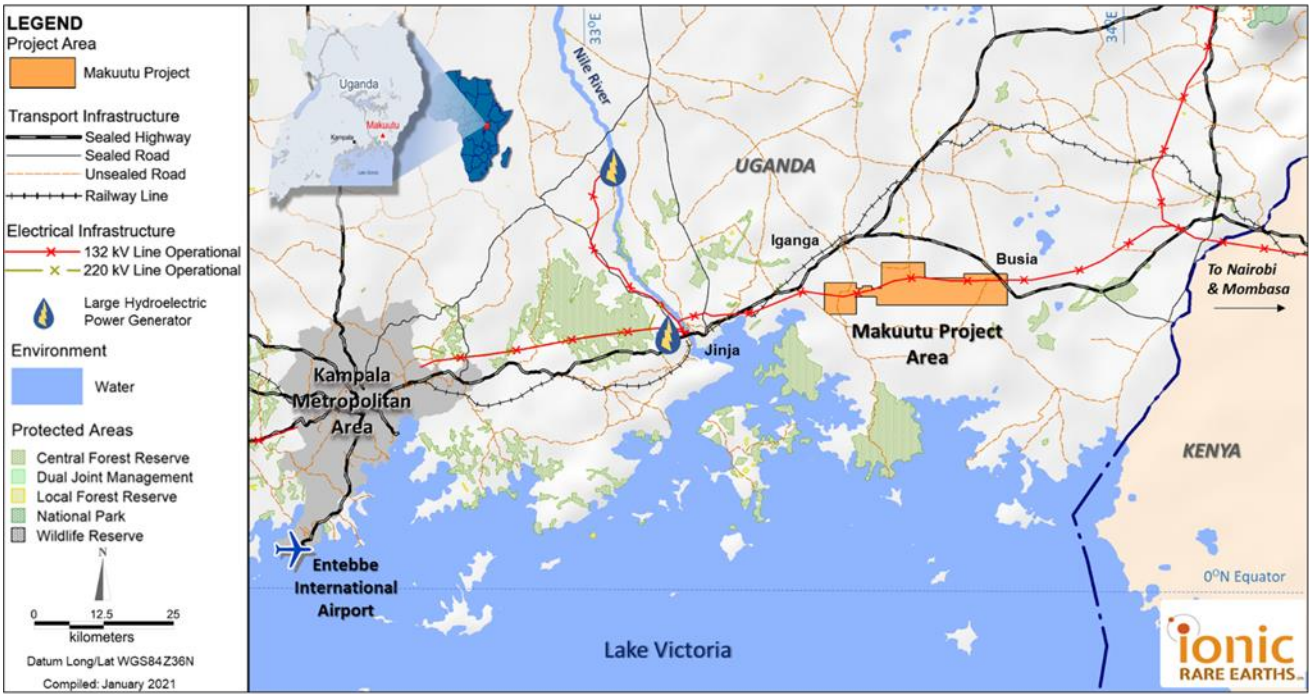

Figure 7: Makuutu Rare Earths Project Location with major existing infrastructure

Competent Person Statements

The information in this report that relates to Mineral Resources is based on information compiled by Mr Daniel Saunders, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Saunders is a full-time employee of Cube Consulting Pty Ltd, acting as independent consultants to Ionic Rare Earths Limited. Mr Saunders has sufficient experience that is relevant to the style of mineralisation and type of deposit 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 Saunders consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this Report that relates to exploration results including drilling, sampling, assay and bulk density data applied to the mineral resource estimate for the Makuutu Project is based on information compiled by Mr. Geoff Chapman, who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr. Chapman is a Director of geological consultancy GJ Exploration Pty Ltd that is engaged by to Ionic Rare Earths Limited. Mr. Chapman has sufficient experience relevant to the style of mineralisation and type of deposit 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' (JORC Code).

Mr. Chapman consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The information in this Report that relates to the Exploration Target Ranges for Areas C, E Central East and the Hardcap and Transition regolith zones on RL00007, RL1693 and EL1766 is based on information compiled by Mr. Geoff Chapman, who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). Mr. Chapman is a Director of geological consultancy GJ Exploration Pty Ltd that is engaged by Ionic Rare Earths Limited. Mr. Chapman has sufficient experience relevant to the style of mineralisation and type of deposit 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' (JORC Code). Mr. Chapman consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

Information in this report that relates to previously reported Exploration Targets and Exploration Results has been crossed-referenced in this report to the date that it was originally reported to ASX. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcements.

Forward Looking Statements

This announcement has been prepared by Ionic Rare Earths Limited and may include forward-looking statements. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Ionic Rare Earths Limited. Actual values, results or events may be materially different to those expressed or implied in this document. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward looking statements in this document speak only at the date of issue of this document. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Ionic Rare Earths Limited does not undertake any obligation to update or revise any information or any of the forward looking statements in this document or any changes in events, conditions or circumstances on which any such forward looking statement is based.

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Appendix 1: Makuutu Rare Earths Project March 2021 Mineral Resource Estimate Tabulations

Table 4: Makuutu Rare Earth Resource Tabulation at 200ppm TREO- CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	La_2O_3 (ppm)	CeO_2 (ppm)	Pr_6O_{11} (ppm)	Nd_2O_3 (ppm)	Sm_2O_3 (ppm)	Eu_2O_3 (ppm)	Gd_2O_3 (ppm)	Tb_4O_7 (ppm)	Dy_2O_3 (ppm)	Ho_2O_3 (ppm)	Er_2O_3 (ppm)	Tm_2O_3 (ppm)	Yb_2O_3 (ppm)	Lu_2O_3 (ppm)	Y_2O_3 (ppm)
Indicated	66	160	250	40	140	30	5	20	3	20	4	10	2	10	1	130
Inferred	248	120	200	30	100	20	3	20	2	10	3	10	1	10	1	90
Total	**315**	**130**	**210**	**30**	**110**	**20**	**4**	**20**	**3**	**10**	**3**	**10**	**1**	**10**	**1**	**100**

Notes: Tonnes are dry tonnes rounded to the nearest 1Mt.
All material REO grades are rounded to the nearest 10 ppm except Eu_2O_3, Tb_4O_7, Ho_2O_3, Tm_2O_3, Lu_2O_3 which are immaterial to overall resource grade.

Table 5: Makuutu Rare Earth Project Resource Tabulation of REO Reporting Groups at 200ppm TREO- CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO- CeO_2 (ppm)	CREO (ppm)	HREO (ppm)	LREO (ppm)	NdPr (ppm)	Sc_2O_3 (ppm)	U_3O_8 (ppm)	ThO_2 (ppm)
Indicated	66	820	570	300	230	590	180	30	20	30
Inferred	248	610	410	210	160	450	130	30	10	30
Total	**315**	**650**	**440**	**230**	**170**	**480**	**140**	**30**	**10**	**30**

Notes: All ppm rounded from original estimate to the nearest 10 ppm which may lead to differences in averages from Table 4
Y_2O_3 is included in the TREO, HREO and CREO calculation.
TREO (Total Rare Earth Oxide) = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Y_2O_3 + Lu_2O_3$.
CREO[1] (Critical Rare Earth Oxide) = $Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3$
HREO (Heavy Rare Earth Oxide) = $Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3$, + $Y_2O_3 + Lu_2O_3$
LREO (Light Rare Earth Oxide) = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3$
NdPr = $Nd_2O_3 + Pr_6O_{11}$
U_3O_8 and ThO_2 and Th are deleterious elements being reported in accordance with JORC (2012) Guidelines.

[1] U.S. Department of Energy, Critical Materials Strategy, December 2011

Appendix 2: Makuutu Rare Earths Project RRMDD Diamond Core Hole Details (Datum UTM WGS84 Zone 36N)

Drill Hole ID	UTM East (m.)	UTM North (m.)	Elevation (m.a.s.l.)	Drill Type	Hole Length EOH (m.)	Azimuth	Inclination
RRMDD001	564447	57983	1158	HQ DD	21.60	0	-90
RRMDD002	564602	57807	1163	HQ DD	15.40	0	-90
RRMDD003	564894	57630	1161	HQ DD	15.60	0	-90
RRMDD004	565209	58002	1150	HQ DD	15.60	0	-90
RRMDD005	564617	57016	1154	HQ DD	21.40	0	-90
RRMDD006	564635	57437	1164	HQ DD	20.10	0	-90
RRMDD007	564992	57437	1157	HQ DD	11.60	0	-90
RRMDD008	565014	57028	1144	HQ DD	13.60	0	-90
RRMDD009	564207	57405	1172	HQ DD	30.10	0	-90
RRMDD010	564210	57775	1164	HQ DD	14.50	0	-90
RRMDD011	563824	57766	1164	HQ DD	29.70	0	-90
RRMDD012	563401	57788	1169	HQ DD	19.40	0	-90
RRMDD013	563848	57440	1171	HQ DD	16.10	0	-90
RRMDD014	563804	57003	1170	HQ DD	14.10	0	-90
RRMDD015	564009	56616	1154	HQ DD	14.20	0	-90
RRMDD016	564259	56999	1162	HQ DD	21.69	0	-90
RRMDD017	563789	56419	1152	HQ DD	20.00	0	-90
RRMDD018	563601	56553	1159	HQ DD	13.80	0	-90
RRMDD019	563639	56181	1153	HQ DD	14.30	0	-90
RRMDD020	563602	55502	1163	HQ DD	20.10	0	-90
RRMDD021	563596	55789	1153	HQ DD	18.10	0	-90
RRMDD022	563217	55785	1158	HQ DD	17.60	0	-90
RRMDD023	563250	56602	1155	HQ DD	23.60	0	-90
RRMDD024	563201	56196	1155	HQ DD	15.00	0	-90
RRMDD025	563216	55508	1163	HQ DD	11.60	0	-90
RRMDD026	563422	57037	1164	HQ DD	16.10	0	-90
RRMDD027	563394	57400	1170	HQ DD	14.10	0	-90
RRMDD028	562995	57874	1163	HQ DD	17.90	0	-90
RRMDD029	562826	57635	1159	HQ DD	15.00	0	-90
RRMDD030	563017	57416	1162	HQ DD	18.50	0	-90
RRMDD031	562961	57040	1154	HQ DD	11.60	0	-90
RRMDD032	562651	57374	1152	HQ DD	14.50	0	-90
RRMDD033	564585	58149	1154	HQ DD	17.00	0	-90
RRMDD034	565002	57796	1158	HQ DD	12.50	0	-90
RRMDD035	565415	57396	1148	HQ DD	12.50	0	-90
RRMDD036	565397	57804	1154	HQ DD	15.00	0	-90
RRMDD037	565416	57008	1136	HQ DD	8.30	0	-90
RRMDD038	565804	57430	1141	HQ DD	19.00	0	-90
RRMDD039	566180	57799	1132	HQ DD	9.50	0	-90
RRMDD040	566007	58035	1136	HQ DD	16.50	0	-90
RRMDD041	565799	57806	1149	HQ DD	13.20	0	-90
RRMDD042	572635	58755	1106	HQ DD	15.40	0	-90
RRMDD043	574614	58303	1119	HQ DD	15.60	0	-90
RRMDD044	576391	58482	1142	HQ DD	15.60	0	-90
RRMDD045	577560	58312	1143	HQ DD	21.40	0	-90
RRMDD046	570971	58486	1107	HQ DD	20.10	0	-90
RRMDD047	563803	57189	1174	HQ DD	27.00	0	-90
RRMDD048	563605	57004	1168	HQ DD	24.00	0	-90
RRMDD049	563822	56802	1164	HQ DD	18.50	0	-90
RRMDD050	563994	56977	1169	HQ DD	19.00	0	-90
RRMDD051	564010	57409	1175	HQ DD	24.00	0	-90
RRMDD052	564210	57605	1169	HQ DD	19.00	0	-90
RRMDD053	564401	57397	1169	HQ DD	21.70	0	-90

RRMDD054	564194	57215	1173	HQ DD	28.50	0	-90
RRMDD055	564944	58121	1149	HQ DD	17.20	0	-90
RRMDD056	565593	58051	1150	HQ DD	24.00	0	-90
RRMDD057	567410	57394	1119	HQ DD	16.50	0	-90
RRMDD058	563914	57209	1176	HQ DD	22.70	0	-90
RRMDD059	563994	57214	1176	HQ DD	19.50	0	-90
RRMDD060	564001	57098	1172	HQ DD	28.50	0	-90
RRMDD061	563902	57099	1173	HQ DD	23.50	0	-90
RRMDD062	563814	57098	1173	HQ DD	26.70	0	-90
RRMDD063	563701	57107	1171	HQ DD	27.00	0	-90
RRMDD064	563704	57005	1170	HQ DD	18.60	0	-90
RRMDD065	563802	56896	1166	HQ DD	15.00	0	-90
RRMDD066	563702	56896	1166	HQ DD	14.00	0	-90
RRMDD067	563901	56994	1170	HQ DD	16.20	0	-90
RRMDD068	563895	56901	1166	HQ DD	15.00	0	-90
RRMDD069	562582	57733	1153	HQ DD	15.00	0	-90
RRMDD070	564154	56479	1146	HQ DD	12.00	0	-90
RRMDD071	564388	56731	1154	HQ DD	25.50	0	-90
RRMDD072	564550	56449	1143	HQ DD	21.00	0	-90
RRMDD073	564778	56781	1139	HQ DD	16.50	0	-90
RRMDD074	565591	56807	1120	HQ DD	10.50	0	-90
RRMDD075	565849	57007	1126	HQ DD	10.10	0	-90
RRMDD076	566206	57410	1125	HQ DD	12.00	0	-90
RRMDD077	566478	57809	1115	HQ DD	8.30	0	-90
RRMDD078	567052	56703	1124	HQ DD	24.00	0	-90
RRMDD079	567394	57030	1121	HQ DD	12.00	0	-90
RRMDD080	567003	57017	1127	HQ DD	13.70	0	-90
RRMDD081	566681	56711	1128	HQ DD	12.50	0	-90
RRMDD082	567621	57397	1111	HQ DD	9.80	0	-90
RRMDD083	567398	57779	1115	HQ DD	14.00	0	-90
RRMDD084	566254	56957	1118	HQ DD	6.00	0	-90
RRMDD085	566929	57805	1117	HQ DD	9.20	0	-90
RRMDD086	566349	56724	1129	HQ DD	12.00	0	-90
RRMDD087	566999	58202	1114	HQ DD	11.60	0	-90
RRMDD088	567399	58197	1122	HQ DD	25.50	0	-90
RRMDD089	566231	56096	1137	HQ DD	12.50	0	-90
RRMDD090	566013	56004	1143	HQ DD	29.90	0	-90
RRMDD091	566965	57424	1123	HQ DD	19.50	0	-90
RRMDD092	566603	56994	1127	HQ DD	13.30	0	-90
RRMDD093	566649	57344	1118	HQ DD	9.00	0	-90
RRMDD094	566052	56466	1134	HQ DD	27.00	0	-90
RRMDD095	565967	56205	1140	HQ DD	13.40	0	-90
RRMDD096	566407	56431	1129	HQ DD	26.50	0	-90
RRMDD097	569240	58054	1106	HQ DD	16.20	0	-90
RRMDD098	569542	57929	1108	HQ DD	13.20	0	-90
RRMDD099	569255	57603	1109	HQ DD	10.30	0	-90
RRMDD100	569621	57603	1109	HQ DD	16.50	0	-90
RRMDD101	569613	57258	1115	HQ DD	11.00	0	-90
RRMDD102	569348	57253	1114	HQ DD	23.00	0	-90
RRMDD103	569791	56766	1126	HQ DD	15.70	0	-90
RRMDD104	569926	57199	1110	HQ DD	22.50	0	-90
RRMDD105	569349	56803	1123	HQ DD	22.00	0	-90
RRMDD106	570587	58116	1112	HQ DD	15.50	0	-90
RRMDD107	570621	58517	1105	HQ DD	10.60	0	-90
RRMDD108	570737	58832	1099	HQ DD	11.00	0	-90
RRMDD109	570940	58876	1099	HQ DD	10.70	0	-90
RRMDD110	571185	58822	1098	HQ DD	10.70	0	-90

RRMDD111	571273	58520	1102	HQ DD	12.00	0	-90
RRMDD112	570988	58117	1114	HQ DD	21.00	0	-90
RRMDD113	571375	58136	1106	HQ DD	11.30	0	-90
RRMDD114	572403	59404	1104	HQ DD	10.40	0	-90
RRMDD115	572313	59134	1103	HQ DD	8.50	0	-90
RRMDD116	572296	58748	1104	HQ DD	6.50	0	-90
RRMDD117	572312	58474	1104	HQ DD	7.40	0	-90
RRMDD118	572641	58492	1108	HQ DD	11.20	0	-90
RRMDD119	572936	58774	1104	HQ DD	10.50	0	-90
RRMDD120	572635	59138	1104	HQ DD	16.80	0	-90
RRMDD121	573189	58211	1114	HQ DD	24.60	0	-90
RRMDD122	572892	59157	1100	HQ DD	8.30	0	-90
RRMDD123	572752	59361	1101	HQ DD	11.50	0	-90
RRMDD124	573032	58496	1108	HQ DD	7.20	0	-90
RRMDD125	574373	57976	1111	HQ DD	15.00	0	-90
RRMDD126	574398	58337	1115	HQ DD	25.10	0	-90
RRMDD127	574792	58029	1122	HQ DD	16.50	0	-90
RRMDD128	574483	58685	1114	HQ DD	16.00	0	-90
RRMDD129	575231	58013	1130	HQ DD	17.50	0	-90
RRMDD130	575607	57979	1136	HQ DD	17.30	0	-90
RRMDD131	575988	58009	1141	HQ DD	11.70	0	-90
RRMDD132	576376	58027	1142	HQ DD	8.00	0	-90
RRMDD133	576204	58384	1143	HQ DD	12.70	0	-90
RRMDD134	576394	58827	1140	HQ DD	20.00	0	-90
RRMDD135	576008	58806	1139	HQ DD	20.90	0	-90
RRMDD136	575781	58400	1139	HQ DD	12.20	0	-90
RRMDD137	575389	58394	1132	HQ DD	16.00	0	-90
RRMDD138	575573	58805	1132	HQ DD	11.00	0	-90
RRMDD139	575216	58785	1126	HQ DD	9.60	0	-90
RRMDD140	574780	58824	1116	HQ DD	13.00	0	-90
RRMDD141	575004	58393	1126	HQ DD	18.00	0	-90
RRMDD142	574996	59063	1115	HQ DD	18.00	0	-90
RRMDD143	575412	59127	1122	HQ DD	14.20	0	-90
RRMDD144	575798	59138	1129	HQ DD	18.50	0	-90
RRMDD145	576253	59147	1137	HQ DD	20.00	0	-90
RRMDD146	576604	59118	1138	HQ DD	22.50	0	-90
RRMDD147	576546	58345	1141	HQ DD	13.70	0	-90
RRMDD148	576799	58812	1134	HQ DD	18.00	0	-90
RRMDD149	576986	59117	1132	HQ DD	27.40	0	-90
RRMDD150	577196	58812	1133	HQ DD	19.00	0	-90
RRMDD151	576567	57619	1146	HQ DD	11.50	0	-90
RRMDD152	576825	58024	1145	HQ DD	12.80	0	-90
RRMDD153	576950	57605	1150	HQ DD	18.50	0	-90
RRMDD154	577019	58346	1141	HQ DD	20.70	0	-90
RRMDD155	577422	58341	1144	HQ DD	24.00	0	-90
RRMDD156	576214	57608	1142	HQ DD	17.20	0	-90
RRMDD157	577587	57958	1146	HQ DD	21.40	0	-90
RRMDD158	575786	57619	1133	HQ DD	14.50	0	-90
RRMDD159	577201	57960	1150	HQ DD	16.70	0	-90
RRMDD160	575405	57612	1123	HQ DD	14.80	0	-90
RRMDD161	577800	57625	1136	HQ DD	20.80	0	-90
RRMDD162	577412	57572	1146	HQ DD	22.50	0	-90
RRMDD163	574595	57785	1114	HQ DD	12.50	0	-90
RRMDD164	578145	57725	1128	HQ DD	19.20	0	-90
RRMDD165	577999	58012	1136	HQ DD	17.40	0	-90
RRMDD166	578233	58423	1130	HQ DD	19.20	0	-90
RRMDD167	574940	57714	1119	HQ DD	19.00	0	-90

RRMDD168	578054	58807	1129	HQ DD	17.30	0	-90
RRMDD169	576623	57329	1150	HQ DD	16.30	0	-90
RRMDD170	578219	59071	1118	HQ DD	12.00	0	-90
RRMDD171	577794	58341	1140	HQ DD	21.10	0	-90
RRMDD172	577607	58753	1135	HQ DD	18.00	0	-90
RRMDD173	577016	57371	1148	HQ DD	20.50	0	-90
RRMDD174	555545	57973	1155	HQ DD	19.00	0	-90
RRMDD175	555143	57846	1165	HQ DD	15.90	0	-90
RRMDD176	554961	58082	1164	HQ DD	25.20	0	-90
RRMDD177	554794	57802	1170	HQ DD	27.00	0	-90
RRMDD178	555076	57569	1168	HQ DD	23.50	0	-90
RRMDD179	554577	58202	1164	HQ DD	21.10	0	-90
RRMDD180	554370	57804	1167	HQ DD	20.10	0	-90
RRMDD181	555354	58143	1158	HQ DD	17.00	0	-90
RRMDD182	553975	57916	1156	HQ DD	15.00	0	-90
RRMDD183	554883	58364	1160	HQ DD	21.70	0	-90
RRMDD184	554426	58648	1155	HQ DD	26.90	0	-90
RRMDD185	553878	58216	1154	HQ DD	10.90	0	-90
RRMDD186	554002	58658	1155	HQ DD	15.00	0	-90
RRMDD187	554243	58992	1152	HQ DD	16.10	0	-90
RRMDD188	553012	57579	1155	HQ DD	12.50	0	-90
RRMDD189	552804	58008	1158	HQ DD	12.70	0	-90
RRMDD190	552394	57995	1168	HQ DD	18.50	0	-90
RRMDD191	552278	57586	1173	HQ DD	24.40	0	-90
RRMDD192	552599	57571	1169	HQ DD	11.30	0	-90
RRMDD193	552861	57205	1162	HQ DD	14.00	0	-90
RRMDD194	552362	57206	1172	HQ DD	16.30	0	-90
RRMDD195	551759	56815	1153	HQ DD	8.00	0	-90
RRMDD196	552245	56762	1162	HQ DD	22.00	0	-90
RRMDD197	551983	57192	1171	HQ DD	12.90	0	-90
RRMDD198	554173	58233	1160	HQ DD	12.80	0	-90
RRMDD199	557012	57938	1162	HQ DD	18.00	0	-90
RRMDD200	557409	58005	1165	HQ DD	11.20	0	-90
RRMDD201	557800	57979	1170	HQ DD	19.30	0	-90
RRMDD202	557223	57639	1166	HQ DD	12.00	0	-90
RRMDD203	557594	57558	1165	HQ DD	23.80	0	-90
RRMDD204	558003	57598	1164	HQ DD	21.80	0	-90
RRMDD205	558192	58025	1165	HQ DD	17.20	0	-90
RRMDD206	558539	58016	1152	HQ DD	17.00	0	-90
RRMDD207	557619	58427	1169	HQ DD	18.90	0	-90
RRMDD208	557394	58564	1165	HQ DD	16.70	0	-90
RRMDD209	557951	58407	1171	HQ DD	12.50	0	-90
RRMDD210	558378	58457	1161	HQ DD	10.20	0	-90
RRMDD211	558385	57648	1157	HQ DD	17.00	0	-90
RRMDD212	559693	57328	1151	HQ DD	19.00	0	-90
RRMDD213	560060	57372	1153	HQ DD	20.80	0	-90
RRMDD214	560432	57229	1148	HQ DD	18.20	0	-90
RRMDD215	560344	57446	1151	HQ DD	22.00	0	-90
RRMDD216	559936	57148	1150	HQ DD	15.40	0	-90
RRMDD217	560568	56867	1146	HQ DD	15.00	0	-90
RRMDD218	560277	56966	1149	HQ DD	20.40	0	-90
RRMDD219	562009	55869	1154	HQ DD	23.60	0	-90
RRMDD220	561733	55851	1152	HQ DD	18.90	0	-90
RRMDD221	562291	55761	1154	HQ DD	11.20	0	-90
RRMDD222	561997	55621	1157	HQ DD	20.00	0	-90
RRMDD223	562803	57790	1158	HQ DD	14.60	0	-90
RRMDD224	562606	57601	1154	HQ DD	16.50	0	-90

RRMDD225	563197	57791	1168	HQ DD	23.30	0	-90
RRMDD226	563200	57615	1168	HQ DD	24.20	0	-90
RRMDD227	562996	57620	1163	HQ DD	17.00	0	-90
RRMDD228	563186	57416	1166	HQ DD	24.00	0	-90
RRMDD229	562801	57396	1155	HQ DD	13.70	0	-90
RRMDD230	563002	57192	1159	HQ DD	21.00	0	-90
RRMDD231	562812	57213	1153	HQ DD	19.00	0	-90
RRMDD232	563203	57189	1163	HQ DD	17.00	0	-90
RRMDD233	563381	57209	1167	HQ DD	22.30	0	-90
RRMDD234	563396	57585	1170	HQ DD	14.30	0	-90
RRMDD235	563200	57000	1158	HQ DD	19.00	0	-90
RRMDD236	563602	57801	1167	HQ DD	14.00	0	-90
RRMDD237	563208	56824	1155	HQ DD	21.30	0	-90
RRMDD238	563599	57599	1172	HQ DD	27.40	0	-90
RRMDD239	563377	56812	1160	HQ DD	23.00	0	-90
RRMDD240	563395	56599	1158	HQ DD	12.00	0	-90
RRMDD241	564024	57795	1159	HQ DD	19.50	0	-90
RRMDD242	563819	57601	1172	HQ DD	18.80	0	-90
RRMDD243	563596	57198	1172	HQ DD	22.60	0	-90
RRMDD244	563186	56403	1153	HQ DD	14.60	0	-90
RRMDD245	563986	57613	1171	HQ DD	17.50	0	-90
RRMDD246	563593	57427	1173	HQ DD	15.60	0	-90
RRMDD247	563386	56428	1156	HQ DD	17.60	0	-90
RRMDD248	564368	57189	1168	HQ DD	18.60	0	-90
RRMDD249	563385	56176	1156	HQ DD	16.20	0	-90
RRMDD250	563605	56394	1156	HQ DD	17.00	0	-90
RRMDD251	563803	56603	1158	HQ DD	15.00	0	-90
RRMDD252	563606	56783	1163	HQ DD	11.50	0	-90
RRMDD253	564007	56820	1164	HQ DD	19.50	0	-90
RRMDD254	564101	57002	1168	HQ DD	15.50	0	-90
RRMDD255	564198	56808	1160	HQ DD	24.20	0	-90
RRMDD256	564598	57178	1161	HQ DD	23.30	0	-90
RRMDD257	564795	57199	1155	HQ DD	16.50	0	-90
RRMDD258	564396	56994	1161	HQ DD	18.60	0	-90
RRMDD259	564799	57001	1146	HQ DD	18.00	0	-90
RRMDD260	564977	57204	1151	HQ DD	19.80	0	-90
RRMDD261	564801	57401	1160	HQ DD	12.00	0	-90
RRMDD262	565164	57397	1153	HQ DD	10.60	0	-90
RRMDD263	565169	57195	1148	HQ DD	13.70	0	-90
RRMDD264	565132	57606	1157	HQ DD	17.70	0	-90
RRMDD265	564815	57807	1161	HQ DD	18.00	0	-90
RRMDD266	564970	57989	1154	HQ DD	18.00	0	-90
RRMDD267	564779	57983	1157	HQ DD	18.50	0	-90
RRMDD268	564818	58198	1150	HQ DD	18.00	0	-90
RRMDD269	564577	57614	1165	HQ DD	13.30	0	-90
RRMDD270	564600	58000	1158	HQ DD	29.50	0	-90
RRMDD271	564385	57821	1163	HQ DD	20.70	0	-90
RRMDD272	564374	57598	1167	HQ DD	18.00	0	-90
RRMDD273	565205	57816	1155	HQ DD	16.50	0	-90
RRMDD274	565303	57572	1154	HQ DD	12.00	0	-90
RRMDD275	565408	58015	1150	HQ DD	12.80	0	-90
RRMDD276	565507	57617	1153	HQ DD	15.00	0	-90
RRMDD277	565600	57801	1153	HQ DD	15.30	0	-90
RRMDD278	565797	58003	1147	HQ DD	10.50	0	-90
RRMDD279	565705	57575	1148	HQ DD	18.50	0	-90

JORC Code, 2012 Edition – Table 1 report

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.*	**Diamond Core Drilling** Drill core was collected from a core barrel and placed in appropriately marked core trays. Down hole core run depths were measured and marked with core blocks. Core was measured for core loss and core photography and geological logging completed. Sample lengths were determined by geological boundaries with a maximum sample length of 1 metre applied in clay zones and up to 2 metres in laterite zones where core recovery was occasionally low. Where the core contained continuous lengths of soft clay a carving knife was used to cut the core. When the core was too hard to knife cut it was cut using an electric core saw. Using either method core was initial cut in half then one half was further cut in half to give quarter core. Quarter core was submitted to ALS for chemical analysis using industry standard sample preparation and analytical techniques. Half core was collected for metallurgical testwork.
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).*	**Diamond Core Drilling** Core size was HQ triple tube with a nominal diameter of 61.1mm. The core was not oriented (vertical holes)
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.*	**Diamond Drilling**

Criteria	JORC Code explanation	Commentary
	• *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.*	Core recovery was calculated by measuring actual core length versus drillers core run lengths. Core recovery ranged from 70% to 100% and averaged 97%. No relationship exists between core 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.*	All (100%) drill core has been geologically logged and core photographs taken. Logging is qualitative with description of colour, weathering status, alteration, regolith zone, major and minor rock types, texture, grain size and comments added where further observation is made. Additional non-geological qualitative logging includes comments for sample recovery, humidity, and hardness for each logged interval.
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.*	**Diamond Drill Core** Where the core contained continuous lengths of soft clay a carving knife was used to cut the core. When the core was too hard to knife cut it was cut using an electric core saw. Sample lengths were determined by geological boundaries with a maximum sample length of 1 metre applied in clay zones and up to 2 metres in laterite zones where core recovery was occasionally low. Samples were collected from core trays by hand and placed in individually numbered bags. These bags were dispatched to ALS for analysis with no further field preparation. Sample weights were recorded prior to sample dispatch. Sample mass is considered appropriate for the grain size of the material being sampled that is generally very fine grained and uniform. Field duplicate sampling was conducted at a ratio of 1:25 samples. Duplicates were created by lengthways halving the ¼ core primary sample into 2 identical portions. Duplicate samples were allocated separate sample

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>numbers and submitted with the same analytical batch as the primary sample.</td></tr>
<tr><td>Quality of assay data and laboratory tests</td><td>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.</td><td>Assay and Laboratory Procedures – All Samples

Samples were dispatched by air freight direct to ALS laboratory Perth Australia. The preparation and analysis protocol used is as follows:

<table>
<tr><th>ALS Code</th><th>Description</th></tr>
<tr><td>WEI-21</td><td>Received sample weight</td></tr>
<tr><td>LOG-22</td><td>Sample Login w/o Barcode</td></tr>
<tr><td>DRY-21</td><td>High temperature drying</td></tr>
<tr><td>CRU-21</td><td>Crush entire sample</td></tr>
<tr><td>CRU-31</td><td>Fine crushing – 70% <2mm</td></tr>
<tr><td>SPL-22Y</td><td>Split sample – Boyd Rotary Splitter</td></tr>
<tr><td>PUL-31h</td><td>Pulverise 750g to 85% passing 75 micron</td></tr>
<tr><td>CRU-QC</td><td>Crushing QC Test</td></tr>
<tr><td>PUL-QC</td><td>Pulverising QC test</td></tr>
</table>

The assay technique used for REE was Lithium Borate Fusion ICP-MS (ALS code ME-MS81). This is a recognised industry standard analysis technique for REE suite and associated elements. Elements analysed at ppm levels:

<table>
<tr><td>Ba</td><td>Ce</td><td>Cr</td><td>Cs</td><td>Dy</td><td>Er</td><td>Eu</td><td>Ga</td></tr>
<tr><td>Gd</td><td>Hf</td><td>Ho</td><td>La</td><td>Lu</td><td>Nb</td><td>Nd</td><td>Pr</td></tr>
<tr><td>Rb</td><td>Sm</td><td>Sn</td><td>Sr</td><td>Ta</td><td>Tb</td><td>Th</td><td>Tm</td></tr>
<tr><td>U</td><td>V</td><td>W</td><td>Y</td><td>Yb</td><td>Zr</td><td></td><td></td></tr>
</table>

Analysis for scandium (Sc) was by Lithium Borate Fusion ICP-AES (ALS code Sc-ICP06).

The sample preparation and assay techniques used are industry standard and provide a total analysis.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		All laboratories used are ISO 17025 accredited. **QAQC** <u>Diamond Drill Core Samples</u> • Analytical Standards CRM AMIS0275 and AMIS0276 were included in sample batches at a ratio of 1:25 to drill samples submitted. This is an acceptable ratio. The assay results for the standards were consistent with the certified levels of accuracy and precision and no bias is evident. • Blanks CRM blanks AMIS0681 and OREAS22e were included in sample batches at a ratio of 1:25 to drill samples submitted for analysis. This is an acceptable ratio. Both CRM blanks contain some REE, with elements critical elements Ce, Nd, Dy and Y present in small quantities. The analysis results were consistent with the certified values for the blanks. No laboratory contamination or bias is evident from these results. • Duplicates Field duplicate sampling was conducted at a ratio of 1:25 samples. Duplicates were created by lengthways halving the ¼ core primary sample into 2 identical portions. Duplicate samples were allocated separate sample numbers and submitted with the same analytical batch as the primary sample. Variability between duplicate results is considered acceptable and no sampling bias is evident. • Alternative Analysis Technique A selection of sample pulps was re-analysed at Bureau Veritas Minerals laboratory Perth W.A. using Laser Ablation MS technique. There is no evidence of systematic analytical bias or errors from these results.

Criteria	JORC Code explanation	Commentary
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.*	No independent verification of significant intersection undertaken. No twinning of diamond core drill holes was undertaken. Sampling protocols for diamond core sampling and QAQC were documented and held on site by the responsible geologist. No procedures for data storage and management have been compiled as yet. Data were collected in the field by hand and entered into Excel spreadsheet. Data are then compiled with assay results compiled and stored in Access database. Data verification is conducted on data entry including hole depths, sample intervals and sample numbers. Sample numbers from assay data are verified by algorithm in spreadsheet prior to entry int the database. Assay data was received in digital format from the laboratory and merged with the sampling data into an Excel spreadsheet format for QAQC analysis and review against field data. Once finalised and validated data is stored in a protected Access database. Data validation of assay data and sampling data have been conducted to ensure data entry is correct. All assay data is received from the laboratory in element form is unadjusted for data entry. Conversion of elemental analysis (REE) to stoichiometric oxide (REO) was undertaken by spreadsheet using defined conversion factors.(Source:https://www.jcu.edu.au/advanced-analytical-centre/services-and-resources/resources-and-extras/element-to-stoichiometric-oxide-conversion-factors)

Criteria	JORC Code explanation	Commentary
		(see conversion table and text below)

Element ppm	Conversion Factor	Oxide Form
Ce	1.2284	CeO_2
Dy	1.1477	Dy_2O_3
Er	1.1435	Er_2O_3
Eu	1.1579	Eu_2O_3
Gd	1.1526	Gd_2O_3
Ho	1.1455	Ho_2O_3
La	1.1728	La_2O_3
Lu	1.1371	Lu_2O_3
Nd	1.1664	Nd_2O_3
Pr	1.2082	Pr_6O_{11}
Sm	1.1596	Sm_2O_3
Tb	1.1762	Tb_4O_7
Tm	1.1421	Tm_2O_3
Y	1.2699	Y_2O_3
Yb	1.1387	Yb_2O_3
Sc	1.5338	Sc_2O_3

Rare earth oxide is the industry accepted form for reporting rare earths. The following calculations are used for compiling REO into their reporting and evaluation groups:

Note that Y_2O_3 is included in the TREO, HREO and CREO calculation.

TREO (Total Rare Earth Oxide) = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Y_2O_3 + Lu_2O_3.

HREO (Heavy Rare Earth Oxide) = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3, + Y_2O_3 + Lu_2O_3

CREO (Critical Rare Earth Oxide) = Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3

Criteria	JORC Code explanation	Commentary
		(From U.S. Department of Energy, Critical Materials Strategy, December 2011) LREO (Light Rare Earth Oxide) = La_2O_3 + CeO2 + Pr_6O_{11} + Nd_2O_3 NdPr = Nd_2O_3 + Pr_6O_{11} HREO% of TREO= HREO/TREO x 100 In elemental form the classifications are: Note that Y is included in the TREE, HREE and CREE calculation. TREE: La+Ce+Pr+Nd+Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Yb+Lu+Y HREE: Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Yb+Y+Lu CREE: Nd+Eu+Tb+Dy+Y LREE: La+Ce+Pr+Nd
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.*	Drill hole collar locations for holes RRMDD001 to RRMDD279 were surveyed a relational DGPS system. The general accuracy for x,y and z is ± 0.2m. Datum WGS84 Zone 36 North was used for location data collection and storage. This is the appropriate datum for the project area. No grid transformations were applied to the data. No downhole surveys were conducted. As all holes were vertical and shallow, the rig setup was checked using a spirit level for horizontal and vertical orientation Any deviation will be insignificant given the short lengths of the holes Topography has been defined by creating a wireframe from drill hole collar locations
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*	Holes RRMDD001 to RRMDD041, RRMDD047 to RRMDD054 and RRMDD223 to 279 were spaced on a nominal 200m x 200m spacing.

Criteria	JORC Code explanation	Commentary
	applied. • *Whether sample compositing has been applied.*	Holes RRMDD058 to RRMDD068 were spaced to conform with previously drilled holes to a 100m x 100m spacing to test short range grade and processing extraction relationships. Drill holes RRMDD69 to RRMDD222 were designed to conform with 400m x 400m grid spacing.
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.*	The Makuutu mineralisation is interpreted to be in a flat lying weathered profile including cover soil, lateritic caprock, clays transitioning to saprolite and saprock. Below the saprock are fresh shales, siltstones and mudstones. Pit mapping and diamond drilling indicate the mineralised regolith to be generally horizontal All drill holes are vertical which is appropriate for horizontal bedding and regolith profile.
Sample security	• *The measures taken to ensure sample security.*	After collection, the samples were transported by Company representatives to Entebbe airport and dispatched via airfreight to Perth Australia. Samples were received by Australian customs authorities in Perth within 48 hours of dispatch and were still contained in the sealed shipment bags. Samples were subsequently transported from Australian customs to ALS Perth via road freight and inspected on arrival by a Company representative.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No audits or reviews have been undertaken

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

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, 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 Makuutu Rare Earths Project is 100% owned by Rwenzori Rare Metals Limited ("RRM"), a Ugandan registered company. IonicRE currently has earned a 51% shareholding in RRM and may increase its shareholding to 60% by meeting further commitments as follows: 1. IonicRE to fund to completion of a Bankable Feasibility Study (BFS) to earn an additional 9% interest for a cumulative 60% interest in RRM. 2. Milestone payments, payable in cash or IonicRE shares at the election of the Vendor, as follows: a. US$375,000 on production of 10 kg of mixed rare-earth product from pilot or demonstration plant activities; and b. US$375,000 on conversion of existing licences to mining licences. At any time should IonicRE not continue to invest in the project and project development ceases for at least two months RRM has the right to return the capital sunk by IonicRE and reclaim all interest earnt by IonicRE.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Previous exploration includes: 1980: Country wide airborne geophysical survey identifying uranium anomalies in the Project area. 1990s: French BRGM and Ugandan DGSM undertook geochemical and geological survey over South-Eastern Uganda including the Project area. Anomalous Au, Zn, Cu, Sn, Nb and V identified. 2006-2009: Country wide high resolution airborne magnetic and radiometric survey identified U anomalism in the Project area. 2009: Finland GTK reprocessed radiometric data and refined the Project anomalies.

Criteria	JORC Code explanation	Commentary
		2010: Kweri Ltd undertook field verification of radiometric anomalies including scout sampling of existing community pits. Samples showed an enrichment of REE and Sc. 2011: Kweri Ltd conducted ground radiometric survey and evaluated historic groundwater borehole logs. 2012: Kweri Ltd and partner Berkley Reef Ltd conducted prospect wide pit excavation and sampling of 48 pits and a ground gravity traverse. Pit samples showed enrichment of REE weathered profile. Five (5) samples sent to Toronto Aqueous Research Laboratory for REE leach testwork. 2016 – 2017: Rwenzori Rare Metals conduct excavation of 11 pits, ground gravity survey, RAB drilling (109 drill holes) and one (1) diamond drill hole. The historic exploration has been conducted to a professional standard and is appropriate for the exploration stage of the prospect.
Geology	• *Deposit type, geological setting and style of mineralisation.*	The Makuutu deposit is interpreted to be an ionic adsorption REE clay-type deposits similar to those in South China, Chile, Madagascar and Brazil. The mineralisation is contained within the tropical lateritic weathering profile of a basin filled with sedimentary rocks including shales, mudstones and sandstones potentially derived from the surrounding granitic and mafic rocks. These rocks are considered the original source of the REE which were then accumulated in the sediments (via ionic bonds with the clays) of the basin as the surrounding rocks have degraded. These sediments then form the protolith that was subjected to prolonged tropical weathering. The weathering developed a lateritic regolith with a surface indurated hardcap, followed downward by clay rich zones that grade down through saprolite and saprock to unweathered sediments. The thickness of the regolith is between 10 and 20 metres from surface. The REE mineralisation is concentrated in the weathered profile where it has dissolved from its primary mineral form, such as monazite and xenotime,

Criteria	JORC Code explanation	Commentary
		then ionically bonded (adsorbed) or colloidally bonded on to fine particles of aluminosilicate clays (e.g. kaolinite, illite, smectite). The adsorbed and colloidal REE is the target for extraction and production of REO at Makuutu.
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:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *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.*	The material information for drill holes relating to this announcement are contained in Appendix 2.
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 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.*	No metal equivalents values are used.
Relationship between mineralisation widths and	• *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.*	Down hole lengths, true widths are not known. The mineralisation is interpreted to be horizontal, flat lying sediments and weathering profile, with the vertical drilling perpendicular to mineralisation.

Criteria	JORC Code explanation	Commentary
intercept lengths	• *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').*	Any internal variations to REE distribution within the horizontal layering was not defined, therefore the true width is considered not known.
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 diagrams in body of text.
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.*	This report contains all drilling results that are consistent with the JORC guidelines. Where data may have been excluded, it is considered not material.
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.*	Metallurgical leach testing was previously conducted on samples derived from exploration pits, RAB drilling, and one 8.5 tonne bulk pit sample. In 2012, 5 pit samples were sent to the Toronto Aqueous Research Laboratory at the University of Toronto for leachability tests In 2017, 2 pit samples were sent to SGS Laboratory Toronto for leachability tests. 2017/18, 29 samples were collected from 7 RAB drill holes. 20 of these were consigned to SGS Canada and 4 to Aqueous Process Research (APR) in Ontario Canada. The remaining 5 samples were consigned to Bio Lantanidos in Chile. 2018/19, 8.5 tonne bulk sample was consigned to Mintek, South Africa, to evaluate using Resin-in-leach (RIL) technology for the recovery of REE. 2019: 118 samples from 31 holes from the 2019 diamond drilling program had preliminary variation testwork conducted TREE-Ce extraction ranged from 3% to 75%. 2020: Testing of composite samples with lower extractions from the 2019 variation testing using increasing rates of acid addition and leach time. Significant increases in extractions were achieved.

Criteria	JORC Code explanation	Commentary
		2020: Testing of composited samples from two exploration holes east of the Makuutu Central Zone provided an average extraction of TREE-Ce recovery of 41% @ pH1 Testing of samples from the project is ongoing.
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 information is not commercially sensitive.*	Future work programs are intended to evaluate the economic opportunity of the project including extraction recovery maximisation, continued resource definition and estimation, regional exploration on adjoining licences and compilation of a Scoping Study.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	Data collected in the field has been validated against core photography and original data collection files Analytical data is received in digital format from the laboratory and merged with the sampling data into an Excel spreadsheet format for QAQC analysis and review against field data. Once finalised and validated data is stored in a protected Access database. Data validation of original sampling and assay data have been conducted on the database on a 1:10 entries spot check basis. Data has also been correlated against interval lengths and EOH details. Any data entry errors identified have been correct in the database.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	The project site has been visited by the Competent Person for Exploration Results who has observed drilling operations, reviewed drill core, and reviewed sampling and QAQC procedures. The project has not been visited by the Competent Person responsible for the reporting of Mineral Resources.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	The mineral deposit is hosted in a tropical laterite regolith profile derived from generally flat lying sediments. The regolith commences from surface to an average depth of approximately 15 metres. All drilling was geologically logged in the field including rock type and degree of weathering. Following field data collection and receipt of analytical data the deposit has been categorised on a Regolith Zone basis based on visual observation from drill core and multi-element ratio analysis. There is a moderate to high degree of confidence in the interpretation of the regolith units given the flat lying and reasonably consistent nature of the regolith. There is unlikely to be any significant structural disruption to the mineralisation through the resource area.

Criteria	JORC Code explanation	Commentary
		Estimation domains were based on grouping of the regolith domains into five zones as defined by regolith rheology, and by comparison of regolith statistics: • Domain 1,2,3 – Cover zone • Domain 4 – Mottled zone • Domain 5 – Clay zone • Domain 6,7 – Saprolite zone • Domain 8,9 – Basement zone
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The overall defined mineralised zone extends across 11 discrete prospect areas defined by radiometric and topographical features. The overall strike for the eastern-most to western-most prospects is approximately 26 kilometres, with an across strike extent of ~3,000m and an average vertical thickness of 12m. The top of the mineralised zone is defined by a thin surficial soil / hardcap zone that averages 3.5m in thickness. The base of the mineralised zone is defined by the top of the saprock/fresh rock boundary which extends to an average vertical depth of 17m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	A total of 15 rare earth element (REE) grade attributes (Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu) and Sc, and 2 deleterious elements (U, and Th) were estimated. Final estimated values are converted to stoichiometric oxide values by calculation using published ratios to support reporting of rare earth oxides (REO). The grade estimation used the Ordinary Kriging ("OK") technique together with dynamic anisotropy to guide the grade interpolation parallel to the regolith boundaries.

Criteria	JORC Code explanation	Commentary
	• *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	Grade interpolation used 1m composited samples constrained by the estimation domain hard boundaries. An appropriate top cutting strategy (generally above the 99th grade percentile) was used to minimise the influence of isolated high-grade outliers. Interpolation parameters were derived using standard exploratory data analysis techniques of statistical and continuity analysis. Appropriate interpolation strategies were developed on a domain basis using kriging neighbourhood analysis ("KNA"), which included: • Oriented ellipsoidal search radii ranged from 600m to 1500m depending on the estimation domain; • Minimum number of samples = 8; • Maximum number of samples = 20, and • Octant search with a maximum of 4 samples per octant The maximum extrapolation distance from the last data points was no more than 200m, which is half the average drill hole spacing (~400 m) for the deposits. Computer software used for the modelling and estimation were: • Leapfrog Geo v6 was used for geological domain modelling. • Supervisor v8.13 was used for geostatistical analysis. • Maptek Vulcan 2020 was used for grade estimation, block modelling and reporting. The estimation block model definitions are: • Non-rotated block model with an azimuth of 000ºGN; • OK panel size was set at 200m x 200m x 4m (XYZ)

Criteria	JORC Code explanation	Commentary
		○ A smaller parent cell size of 100m x 100m x 4m (XYZ) was used in the Central Main prospect where drilling was completed to 200m x 200m on average • Sub-block size of 25m x 25m x 1m (XYZ); • The bulk of the drilling data is on 400m by 400m grid spacings with the majority of the Central Main prospect infilled to 200m spacing, and • Appropriate search ellipses were derived from KNA with an average search radii of 600m to 1500m and average anisotropy of 30:20:1 (major/semi/minor). Selection of the block size was based on the geometry of the mineralisation, data density, and the likely degree to which selective mining can be successfully applied to the geologically based domain boundaries. Estimations of U and Th elements were completed for the Mineral Resource estimate. Estimates of Sc were also completed. No other deleterious elements or other non-grade variables of economic significance are reported. Correlations between the elements were determined from statistical analysis of the REE and demonstrated strong positive correlations between the majority of REE variables, particularly for the heavy rare earth elements in the primary mineralised domains (domains 4, 5, and 67) The estimation model was validated using the following techniques: • Visual 3D checking and comparison of informing samples and estimated values; • Global statistical comparisons of raw sample and composite grades to the block grades; • Comparison of correlation coefficients between composite and block data;

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		• Validation 'swath' plots by northing, easting and elevation for each domain, and • Analysis of the grade tonnage distribution. No by-product recoveries were considered. No mining production has taken place at the deposit.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnes are estimated on an Insitu Dry Bulk Density basis. No moisture content has been determined by testwork or used in estimation.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	Ionic Rare Earths Ltd have completed numerous metallurgical studies on composite samples of mineralisation at Makuutu as previously announced to the ASX on 18 February 2020, 26 May 2020, and most recently 4 August 2020. These results together with indicative mining and processing costs and other cost inputs supports application of a marginal cut-off grade of 200 ppm TREO (excluding CeO_2). This cut-off is comparable to peer projects with similar mineralisation types and processing assumptions.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Mineralisation is near surface, broadly flat lying, and of grades amenable to conventional open pit mining methods. The assumed mining method would be 'free dig' using truck and shovel.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the*	Processing of the REE mineralisation is considered relatively simple, with the clay undergoing a desorption process in which the REE are desorbed from the mineralisation into a salt solution, concentrated, and precipitated to create a mixed rare earth product.

Criteria	JORC Code explanation	Commentary
	assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	Preliminary metallurgical test work has been completed on core samples from the project area (ASX Releases 18 February 2020, 26 May 2020, 4 August 2020). This reports metallurgical recoveries up to 75% TREE minus Cerium using simple extraction techniques. These recoveries compare favourably to other known ionic clay hosted rare earth projects.
Environmen-tal factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	Tailings (the processed clay) are expected to be returned to the mined open pits and areas progressively rehabilitated.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	Bulk density has been determined from 423 individual drill core measurements using a combination of calliper (176) and Archimedes methods (247) depending on the nature of the material being tested. Samples measured with the calliper method had dimensions recorded in the field using a Verier calliper. Samples were then dried and weighed on an analytical balance. Samples tested using the Archimedes method were dried, coated with water repellent spray then weighed dry and in water using an appropriate analytical balance. Bulk densities for the primary mineralised domains (domain 4, 5, and 67) varied from 1.45 to 1.82. Density for all regolith zones was by direct assignment based on reported measurements.

Criteria	JORC Code explanation	Commentary
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	Classification of the mineral resource considered the interpretation confidence, drilling density, demonstrated continuity, estimation statistics (conditional bias, kriging efficiency) and block model validation results. The Makuutu Mineral Resource has been classified into Indicated (22%) and Inferred (78%) categories. The assigned Mineral Resource classification reflects the Competent Person's view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	No audits or review have been completed for the Mineral Resource estimate.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. The statement relates to the global estimates of tonnes and grades. No production data is available.