ASX Announcement 18 February 2020

MAKUUTU RARE EARTH PROJECT

INITIAL METALLURGICAL RESULTS OF UP TO 75% RECOVERIES

ORO VERDE LIMITED
(ASX code: OVL)

An emerging resource company focused on defining a world-class Rare Earths project

KEY PROJECTS –
Uganda
Makuutu Rare Earths Project
Nicaragua
San Isidro Gold Project

BOARD OF DIRECTORS
Executive
Marc Steffens
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Key Highlights:

- **Multiple, sizeable areas of mineralisation achieved excellent metallurgical recoveries;**
- **Metallurgical recoveries of up to 75% TREE-Ce (Total Rare Earth minus Cerium) were achieved using simple extraction techniques;**
- **Recoveries for high value HREE consistently higher than LREE recoveries;**
- **Recoveries compare favourably to other known ionic clay hosted rare earth projects;**
- **Deleterious elements Uranium and Thorium are consistently low across the deposit meaning radioactive tailings and/or concentrates are expected to be immaterial; and**
- **These positive initial metallurgical results indicate a practicable development scenario comprising:**
  - **multiple, semi-portable satellite leaching plants located adjacent to mining areas**
  - **small central finishing plant for production of a saleable mixed rare earth product**

Oro Verde Limited ("Oro Verde" or "the Company") (ASX: OVL) is pleased to provide preliminary metallurgical assessments and anticipated project configuration on the Makuutu Rare Earths Project.

Commenting on the metallurgical results and envisaged development pathway, Oro Verde Technical Director Dr Marc Steffens said:

"The initial metallurgy program indicates that a simple process route is suitable for treating Makuutu mineralisation. Multiple, sizeable areas of mineralisation achieved metallurgical recoveries that exceeded our expectations by using low acid additions and we expect that the next phase of project development will further enhance these outcomes.

"Based on results that we have achieved to date, it appears the Makuutu Project compares very favourably to other clay-hosted rare earths project located outside of China such as the BioLantanidos Project in Chile that has recently

secured substantive investment for project development. [1] *These assets are very strategic assets for future rare earth supply, as seen by various governmental agencies actively seeking to secure Rare Earth resources for their consumption, as well as Chinese state moves to restrict rare earths production from Chinese ionic clay sources."*

"We are excited to be able to take this project to the next level and are accelerating our efforts based on the highly successful initial drilling program and these metallurgical results. This year we will be executing a substantive body of work – under the direction and management of the Company's newly appointed Project Manager, Tim Harrison – to develop the project and ultimately work toward achieving a commercial outcome for the Company and its shareholders."

Metallurgical Process Development

An initial phase of metallurgical test-work and engineering analysis has been undertaken to broadly gauge the metallurgical and process requirements to recover rare earths from Makuutu mineralisation. The key findings of this work are summarised in Table 1.

Collectively the findings demonstrate the potential for processing ionic clay rare earth mineralisation with low reagent consumptions, and also highlight potential to develop a simple recovery process. The results are preliminary and substantive further testing and development work is necessary to adequately define and optimise the appropriate processing scheme for Makuutu mineralisation, however the initial results are highly encouraging and provide a substantive base for a rigorous process development program.

Table 1. Summary of Key Outcomes from Process Development Testwork and Analysis.

Parameter	Result	Significance
Desorption Salts (leaching)	Demonstrated desorption of rare earths using ammonium sulfate (a common fertiliser) and sodium chloride (table salt).	Cheap reagents and low consumption. Low-cost natural salt sources located near may be suitable.
Salt requirement	Demonstrated that low salt concentrations (~13-70 g/L ammonium sulfate) are effective in desorbing rare earths.	Recycling of salt solution expected to be a part of the process, reducing impact on fresh reagent requirement.
Desorption pH	Demonstrated desorption of ionic clay rare earths can occur at pH between 3.0 – 5.0. Diagnostic tests indicate some mineralisation may require lower pH for higher rare earth extraction.	Natural pH of solutions is ~pH 5, thus anticipated acid requirement is low.
Desorption kinetics	Desorption kinetics are rapid, with agitation assisted desorption complete within 15 minutes.	Suggests smaller process footprint and equipment required (low residence times).
Beneficiation	Potential to beneficiate mineralisation by screening.	Potential to upgrade the process plant feed grades
Viability of Static Leach	Demonstrated desorption of rare earths without any agitation applied (static leach).	Indicates that static leach options may be viable and should be examined further.
Reagent recycle	Preliminary analysis of solution chemistries indicates that reagent can be recycled using membrane systems.	Availability of low-cost power at project site to allow effective washing and recycling of salt reagent to reduce fresh reagent requirement.

[1] Market Announcement, 2/10/2019, "Hochschild acquires the BioLantanidos Ionic Clay Rare Earth deposit in Chile". Available: http://www.hochschildmining.com/en/investors/news.
Market Presentation, 11/9/2018, Susaeta, A. "BioLantanidos Minera – Ion Clay Extraction and Processing".

Initial Metallurgical Evaluation

High-level metallurgical tests were undertaken on select intervals of core with the aim of broadly identifying areas to target initial project development efforts and also gaining insights for further testwork and optimisation.

This initial testwork was based on selected intervals of core from 29 holes RRMDD 001 - 033[2], which were generally spaced on a wide 400 x 400 m pattern. Samples were selected to broadly assess metallurgical performance of mineralisation from differing geological characteristics and regolith zones covering a range of depths from surface. The test-work was undertaken at ALS Metallurgy laboratories in Perth, Western Australia, and reviewed by Mr Hayden Buswell of Southern Cross Mining consultants.

The samples selected are shown in Figures 3 and 4, within the Makuutu Central Zone. Further details are provided in Appendices 1 and 2.

Given the aims of this work are high-level in nature, simple bottle-roll leaching tests were undertaken using ammonium sulfate as the lixiviant at pH 3.5. The results of the tests on various clay intervals were used to calculate interval-weighted average extractions in the clay mineralisation in each hole. From these tests it was found that:

- Testing demonstrated high rare earth recoveries of up to 45 – 75% TREE-Ce[3] even with very low acid addition in 3 holes, which trended towards the Western side of the drilled area,
- A recovery greater than 30% TREE-Ce with very low acid addition was achieved in 16 holes,
- Only 3 holes returned REE recovery of less than 10% TREE-Ce, demonstrating only a small amount was generally not responsive,
- Importantly, testwork that was undertaken in parallel to these preliminary results, owing to the short timeframe in which the testing program was undertaken, has indicated that using a lower pH and allowing a longer leach time will allow markedly improved recoveries by capturing rare earths present in a colloidal phase. This optimisation will be pursued in future test-work, and with results up to 75% recoveries already, the outlook for further improvement is highly encouraging,
- Heavy rare earth elements (HREE) generally and consistently achieve higher recovery compared to the Light rare earth elements (LREE), with average HREE recovery typically being double the average LREE recovery. With HREE typically higher value than LREE, this will equate to a higher value finished product.

These collective results demonstrate the metallurgical potential and justify the further pursuit of defining the Makuutu Rare Earth Project. The results also provide insight to processing requirements, which will be used as a foundation for further, more expansive, metallurgical testwork planned for 2020 that is needed to adequately define the metallurgical requirements of the project.

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[2] Holes not tested were RRMDD 022 (anomalously thin clay intercept) and holes RRMDD 022 and RRMDD 025 (did not meet TREO grade criteria).

[3] Metallurgical recovery has been calculated using the assayed TREE-Ce in solutions and residues after leaching/desorption, not the extraction efficiency of the 'recoverable' portion, as is reported by owners of other projects. The latter method of reporting inflates actual recovery values by discounting the non-desorbable component in the head sample.

Anticipated Project Configuration

The preliminary metallurgical results are highly promising, with the majority high recoveries from low reagent (salt and acid) use enabling the consideration of a very low-CAPEX leaching operation to liberate the rare earth minerals for sale. The company is currently exploring a project configuration that consists of several low-CAPEX satellite leaching/desorption plants from which concentrated rare earth streams will be transferred to a central plant for finishing and packaging. A conceptual arrangement of this configuration is presented in Figure 3.

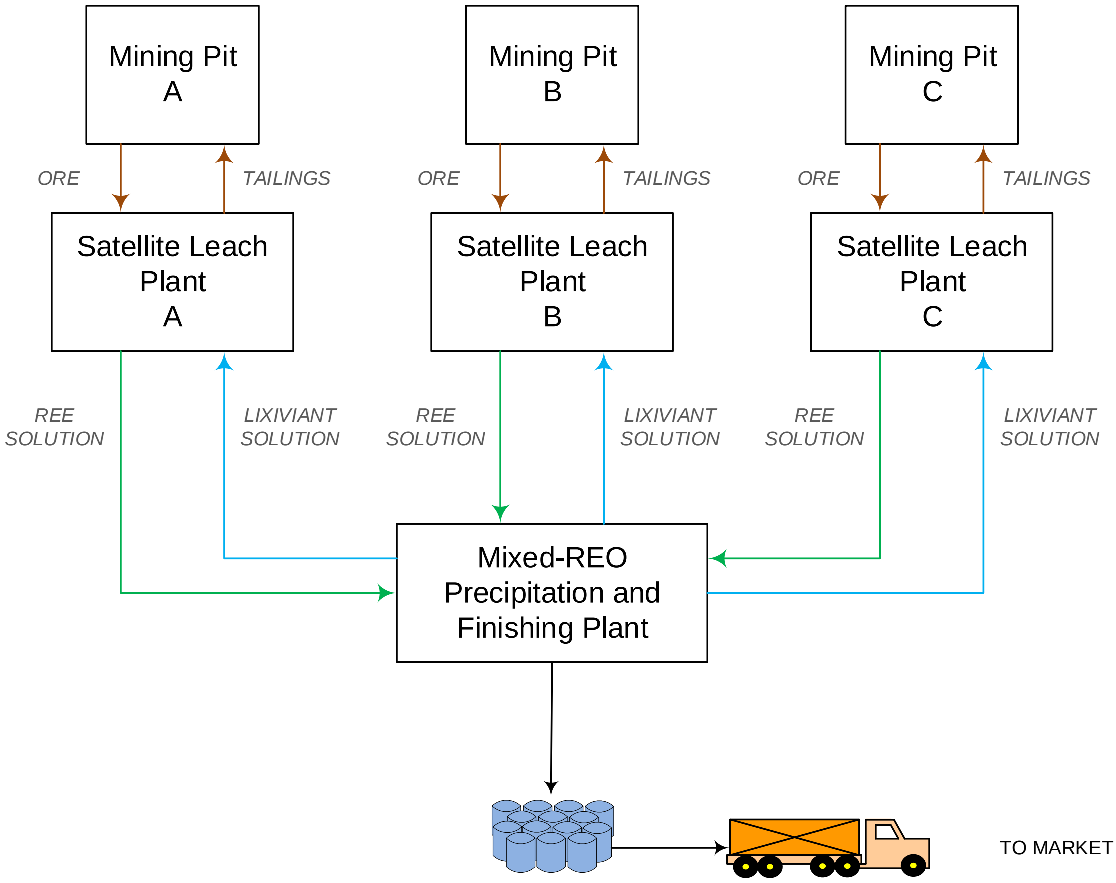

Figure 1. **Conceptual Arrangement of the Envisaged Makuutu Rare Earth Project.**

Next Steps

The company is currently planning details of the ensuing drilling and development program. The development program over the next 12 months will consist of the various development activities and will culminate in the delivery of a feasibility assessment and preparation of practicalities for a pilot or demonstration plant. The work plan going forward will include the following activities:

- In-fill drilling of already drilled areas to provide further resource definition and also provide sample for additional metallurgical testing;
- Exploration drilling in areas that are only sparsely drilled or are yet to be drilled;
- Calculation of Mineral Resource Estimates;
- Metallurgical process development testwork to support preliminary engineering;
- Resource development and mining studies;
- Environmental and social assessments;
- Product marketing and engagement with off-take partners; and
- Feasibility assessments with completion of a scoping study.

Project Overview

The Makuutu Rare Earth Project, located in Uganda, is significant in size and is understood to be potentially one of the largest ionic clay deposits outside of China. Drilling at the project site to date totals 47 diamond core holes and 109 historic RAB holes, with the Company working toward validating its previously announced exploration target of (ASX: 4 September 2019):

270 - 530 million tonnes grading 0.04 – 0.1% (400 – 1,000 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 Makuutu Rare Earth Project contains ionic clay-hosted rare earth mineralisation, like those found in China, which are the source of the majority of the world's heavy rare earths production, and vastly different to hard rock-hosted rare earths projects. Mineralisation at Makuutu occurs from surface to depths of 15-20 metres where simple shallow mining methods will be applicable. The processing of ionic clays is also simple, where the clay undergoes a simple desorption process – akin to washing – in which rare earths are desorbed from the ore into a salt solution, concentrated and precipitated to create a mixed rare earth product. Tailings (the washed clay) are expected to be returned to the mined open pits and areas progressively rehabilitated. The process is expected to have a small environmental footprint.

The project area is well supported with infrastructure, which is illustrated in Figure 2. There is substantive nearby hydroelectric generation capacity with electrical grid infrastructure nearby to the project area, the project area is readily accessible with existing road and rail infrastructure nearby that connects to Kampala and Port of Mombasa, and the area has cell phone coverage. Additionally, nearby centres present a pool for a professional workforce.

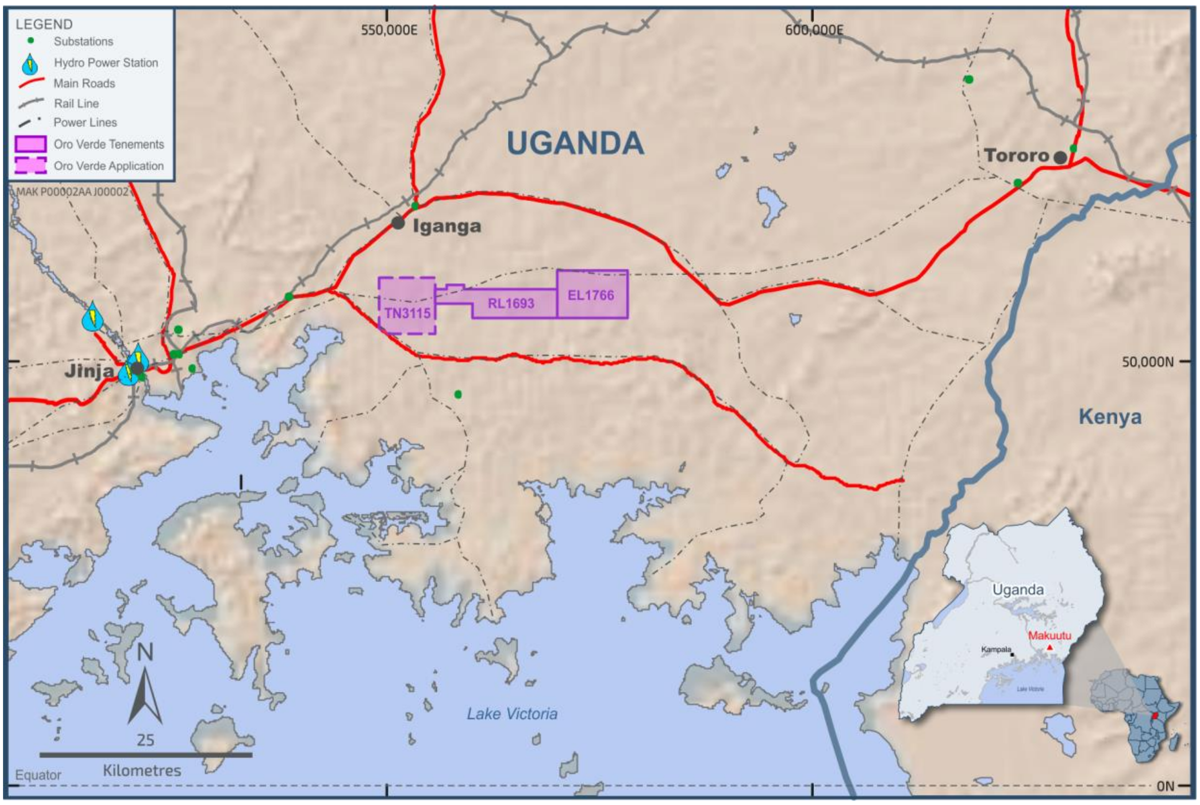

Figure 2. Map Showing Infrastructure Nearby to the Project.

The Company has acquired a 20% interest in the project and is working toward acquiring up to a further 40% interest via an "earn-in" process through the expenditure of funds, bringing its total potential interest in the project to 60%.

Key project highlights:

1. Ion Adsorption Clay deposits are currently the lowest cost sources of rare earths in the world,
2. Favourable concentration of high demand rare earths – Tb, Dy, Pr and Nd,
3. Simple open pit mining, and
4. Simple processing to produce a high-value concentrate.

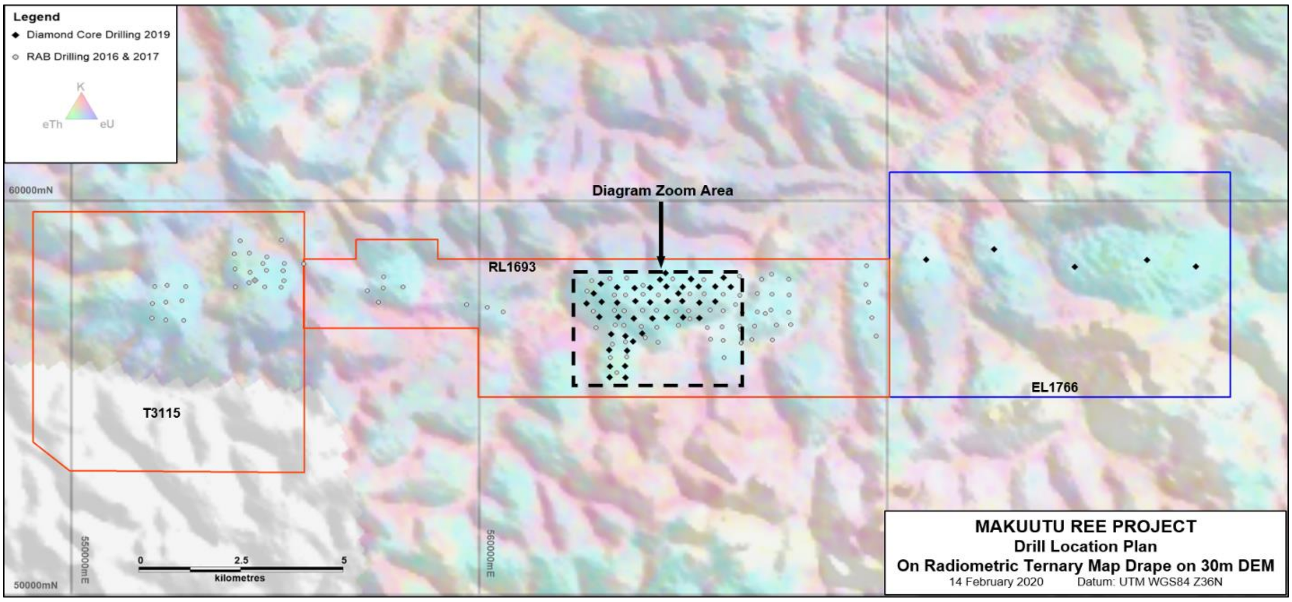

Figure 3. Makuutu Rare Earths Project Area.

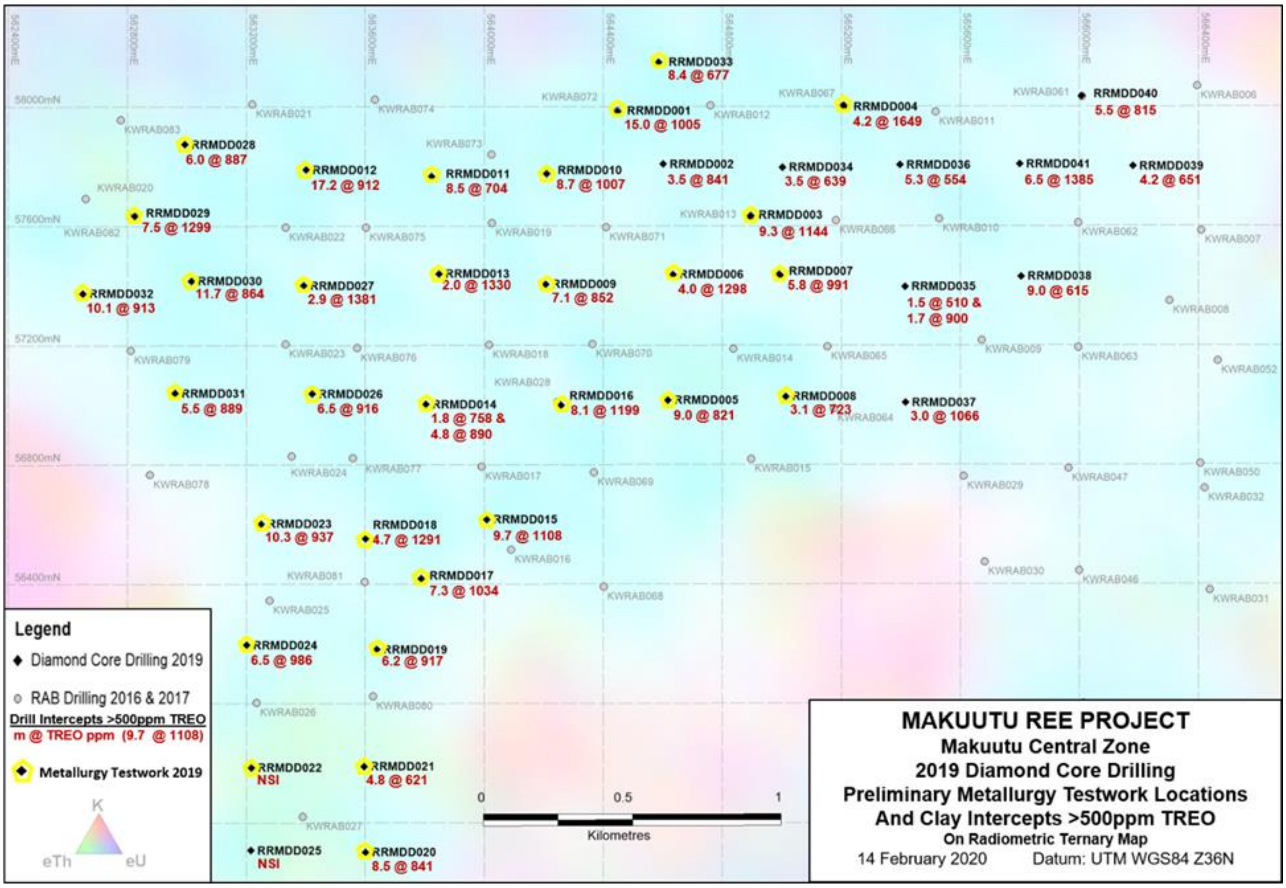

Figure 4. Makuutu Central Zone metallurgical testwork sample locations.

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Authorised for release by Brett Dickson, Company Secretary.

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Competent Persons Statement

The information in this announcement and that relates to metallurgy testwork is based on information reviewed by Mr Hayden Buswell who is a director of Southern Cross Mining and a consultant to Oro Verde Ltd. Mr Buswell is a member of AusIMM. Mr Buswell 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 by the JORC Code 2012. Mr Buswell consents to the inclusion in this announcement of the matters based on their information in the form and context in which it appears.

Appendix 1. Makuutu 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	Metallurgy Testwork
RRMDD001	564,447	57,983	1,158	DD	21.60	0	-90	Yes
RRMDD002	564,602	57,807	1,163	DD	15.40	0	-90	No
RRMDD003	564,894	57,630	1,161	DD	15.60	0	-90	Yes
RRMDD004	565,209	58,002	1,150	DD	15.60	0	-90	Yes
RRMDD005	564,617	57,016	1,154	DD	21.40	0	-90	Yes
RRMDD006	564,635	57,437	1,164	DD	20.10	0	-90	Yes
RRMDD007	564,992	57,437	1,157	DD	11.60	0	-90	Yes
RRMDD008	565,014	57,028	1,144	DD	13.60	0	-90	Yes
RRMDD009	564,207	57,405	1,172	DD	30.10	0	-90	Yes
RRMDD010	564,210	57,775	1,164	DD	14.50	0	-90	Yes
RRMDD011	563,824	57,766	1,164	DD	29.70	0	-90	Yes
RRMDD012	563,401	57,788	1,169	DD	19.40	0	-90	Yes
RRMDD013	563,848	57,440	1,171	DD	16.10	0	-90	Yes
RRMDD014	563,804	57,003	1,170	DD	14.10	0	-90	Yes
RRMDD015	564,009	56,616	1,154	DD	14.20	0	-90	Yes
RRMDD016	564,259	56,999	1,162	DD	21.69	0	-90	Yes
RRMDD017	563,789	56,419	1,152	DD	20.00	0	-90	Yes
RRMDD018	563,601	56,553	1,159	DD	13.80	0	-90	Yes
RRMDD019	563,639	56,181	1,153	DD	14.30	0	-90	Yes
RRMDD020	563,602	55,502	1,163	DD	21.60	0	-90	Yes
RRMDD021	563,596	55,789	1,153	DD	18.10	0	-90	Yes
RRMDD022	563,217	55,785	1,158	DD	17.60	0	-90	Yes
RRMDD023	563,250	56,602	1,155	DD	23.60	0	-90	Yes
RRMDD024	563,201	56,196	1,155	DD	15.00	0	-90	Yes
RRMDD025	563,216	55,508	1,163	DD	11.60	0	-90	No
RRMDD026	563,422	57,037	1,164	DD	16.10	0	-90	Yes
RRMDD027	563,394	57,400	1,170	DD	14.10	0	-90	Yes
RRMDD028	562,995	57,874	1,163	DD	17.90	0	-90	Yes
RRMDD029	562,826	57,635	1,159	DD	15.00	0	-90	Yes
RRMDD030	563,017	57,416	1,162	DD	18.50	0	-90	Yes
RRMDD031	562,961	57,040	1,154	DD	11.60	0	-90	Yes
RRMDD032	562,651	57,374	1,152	DD	14.50	0	-90	Yes
RRMDD033	564,585	58,149	1,154	DD	17.00	0	-90	Yes
RRMDD034	565,002	57,796	1,158	DD	12.50	0	-90	No
RRMDD035	565,415	57,396	1,148	DD	12.50	0	-90	No
RRMDD036	565,397	57,804	1,154	DD	15.00	0	-90	No
RRMDD037	565,416	57,008	1,136	DD	8.30	0	-90	No
RRMDD038	565,804	57,430	1,141	DD	19.00	0	-90	No
RRMDD039	566,180	57,799	1,132	DD	9.50	0	-90	No
RRMDD040	566,007	58,035	1,136	DD	16.50	0	-90	No
RRMDD041	565,799	57,806	1,149	DD	13.20	0	-90	No
RRMDD042[4]	572,636	58,752	1106	DD	11.20	0	-90	No
RRMDD043[1]	574,615	58,301	1125	DD	12.50	0	-90	No
RRMDD044[1]	576,391	58,482	1145	DD	15.00	0	-90	No
RRMDD045[1]	577,588	58,310	1147	DD	18.50	0	-90	No
RRMDD046[1]	570,974	58,487	1103	DD	12.00	0	-90	No

Appendix 2. Makuutu Project Preliminary Metallurgy Testwork Sample Intervals

Drill Hole ID	From Metres	To Metres	Length	Regolith Zone
RRMDD001	6.38	6.60	0.22	Clay
RRMDD001	7.60	7.87	0.27	Clay
RRMDD001	8.87	9.37	0.50	Clay
RRMDD001	10.06	10.27	0.21	Clay
RRMDD001	11.24	11.67	0.43	Clay
RRMDD001	12.60	13.10	0.50	Clay
RRMDD001	13.75	14.12	0.37	Clay
RRMDD001	15.12	15.60	0.48	Clay
RRMDD001	16.23	16.73	0.50	Clay
RRMDD001	17.60	18.10	0.50	Upper saprolite
RRMDD003	4.67	5.17	0.50	Mottled clay
RRMDD003	7.35	7.85	0.50	Clay
RRMDD003	8.65	9.15	0.50	Clay
RRMDD003	10.15	10.65	0.50	Clay
RRMDD003	11.65	12.15	0.50	Upper saprolite
RRMDD004	7.18	7.43	0.25	Mottled clay
RRMDD004	7.43	8.22	0.79	Clay
RRMDD004	8.94	9.81	0.87	Clay
RRMDD005	10.38	11.10	0.72	Clay
RRMDD005	14.05	14.60	0.55	Clay
RRMDD005	15.70	16.40	0.70	Clay
RRMDD006	4.30	5.17	0.87	Clay
RRMDD006	6.03	6.67	0.64	Clay
RRMDD006	6.67	7.10	0.43	Upper saprolite
RRMDD007	4.08	4.78	0.70	Clay
RRMDD007	6.78	7.78	1.00	Clay
RRMDD007	9.10	9.98	0.88	Upper saprolite
RRMDD008	6.05	6.80	0.75	Upper saprolite
RRMDD008	6.80	7.70	0.90	Clay
RRMDD008	8.25	9.20	0.95	Clay
RRMDD008	11.20	12.05	0.85	Upper saprolite
RRMDD009	4.40	4.65	0.25	Hardcap
RRMDD009	5.65	6.65	1.00	Clay
RRMDD009	9.65	10.30	0.65	Clay
RRMDD010	1.00	2.00	1.00	Clay
RRMDD010	9.44	10.44	1.00	Upper saprolite
RRMDD010	11.10	12.10	1.00	Mottled clay
RRMDD011	8.10	8.39	0.29	Clay
RRMDD011	10.04	10.37	0.33	Upper saprolite
RRMDD011	12.37	13.37	1.00	Mottled clay
RRMDD011	14.45	15.10	0.65	Clay
RRMDD011	16.06	16.41	0.35	Upper saprolite
RRMDD011	18.10	19.08	0.98	Mottled clay
RRMDD011	20.70	21.70	1.00	Clay
RRMDD012	0.70	1.70	1.00	Clay
RRMDD012	4.22	5.22	1.00	Clay
RRMDD012	8.25	9.25	1.00	Clay
RRMDD012	10.71	11.62	0.91	Clay

[4] Elevation is not considered accurate. Recorded with handheld GPS.

Drill Hole ID	From Metres	To Metres	Length	Regolith Zone
RRMDD012	12.39	12.70	0.31	Clay
RRMDD012	13.79	14.79	1.00	Clay
RRMDD012	16.41	17.41	1.00	Upper saprolite
RRMDD013	5.35	6.35	1.00	Upper saprolite
RRMDD013	12.40	12.90	0.50	Upper saprolite
RRMDD014	2.70	3.60	0.90	Hardcap
RRMDD014	8.35	9.35	1.00	Mottled clay
RRMDD014	11.17	12.10	0.93	Clay
RRMDD015	4.74	5.74	1.00	Clay
RRMDD015	8.93	9.43	0.50	Clay
RRMDD016	1.50	2.50	1.00	Clay
RRMDD016	3.66	4.41	0.75	Clay
RRMDD016	6.41	7.41	1.00	Clay
RRMDD016	9.41	10.33	0.92	Clay
RRMDD017	1.50	2.95	1.45	Clay
RRMDD017	4.95	5.95	1.00	Clay
RRMDD017	7.80	8.78	0.98	Upper saprolite
RRMDD018	6.87	7.37	0.50	Clay
RRMDD018	8.20	9.20	1.00	Clay
RRMDD019	3.64	4.53	0.89	Mottled clay
RRMDD019	5.08	5.29	0.21	Clay
RRMDD019	6.40	7.04	0.64	Clay
RRMDD019	8.28	8.76	0.48	Clay
RRMDD019	9.63	9.86	0.23	Upper saprolite
RRMDD019	11.50	12.28	0.78	Upper saprolite
RRMDD020	5.86	6.86	1.00	Clay
RRMDD020	9.83	10.83	1.00	Clay
RRMDD020	12.40	13.40	1.00	Upper saprolite
RRMDD020	13.40	14.40	1.00	Upper saprolite
RRMDD021	9.86	10.28	0.42	Clay
RRMDD022	13.70	14.70	1.00	Clay
RRMDD023	5.10	6.10	1.00	Clay
RRMDD023	7.02	8.10	1.08	Clay
RRMDD023	9.99	10.99	1.00	Clay
RRMDD023	12.99	13.99	1.00	Upper saprolite
RRMDD023	15.99	17.00	1.01	Upper saprolite
RRMDD024	6.30	7.30	1.00	Clay
RRMDD024	9.18	10.18	1.00	Clay
RRMDD024	11.00	11.26	0.26	Clay
RRMDD024	13.26	14.24	0.98	Upper saprolite
RRMDD026	6.08	7.08	1.00	Clay
RRMDD026	8.85	9.85	1.00	Clay
RRMDD026	11.78	12.60	0.82	Upper saprolite
RRMDD027	2.28	3.20	0.92	Hardcap
RRMDD027	7.57	8.57	1.00	Clay
RRMDD027	9.57	10.50	0.93	Upper saprolite
RRMDD028	2.68	3.68	1.00	Hardcap
RRMDD028	5.90	6.90	1.00	Mottled clay
RRMDD028	9.53	10.53	1.00	Clay
RRMDD028	13.40	14.30	0.90	Upper saprolite
RRMDD029	7.00	8.00	1.00	Mottled clay
RRMDD029	9.50	10.50	1.00	Clay

Drill Hole ID	From Metres	To Metres	Length	Regolith Zone
RRMDD029	10.50	11.50	1.00	Clay
RRMDD029	12.00	12.75	0.75	Clay
RRMDD030	5.95	6.95	1.00	Mottled clay
RRMDD030	9.55	10.55	1.00	Clay
RRMDD030	11.58	12.58	1.00	Upper saprolite
RRMDD030	14.58	15.62	1.04	Upper saprolite
RRMDD031	4.97	5.97	1.00	Clay
RRMDD031	8.60	9.60	1.00	Upper saprolite
RRMDD032	0.98	1.50	0.52	Hardcap
RRMDD032	3.50	4.46	0.96	Clay
RRMDD032	6.00	6.80	0.80	Clay
RRMDD032	8.80	9.62	0.82	Clay
RRMDD032	10.62	11.62	1.00	Clay
RRMDD033	0.70	1.78	1.08	Mottled clay
RRMDD033	3.52	4.52	1.00	Clay
RRMDD033	6.90	7.40	0.50	Clay
RRMDD033	9.20	10.20	1.00	Clay
RRMDD033	12.92	13.92	1.00	Upper saprolite

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 initially 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. The core was not oriented (vertical)
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	**Diamond Drilling** 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.

Criteria	JORC Code explanation	Commentary
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, 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. Core was cut lengthways into uniform halves, then one half was again halved lengthways to produce equal quarters of the original core. 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. **Geochemical Samples** Geochemical samples used one quarter of the cut core per sampling interval. **Metallurgical Test Samples** Metallurgical test samples were collected from half core of the entire sample interval corresponding with the geochemical samples. Each metallurgical sample interval was collected in numbered plastic bags, directly sealed to maintain moisture and physical condition and weighed. Metallurgical samples were numbered to correlate with the geochemical sample numbers. All individual interval metallurgy samples were transported via airfreight to the ALS Metallurgy laboratory in Perth for analysis with no further field preparation.
Quality of assay data and	• *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,*	**Assay and Laboratory Procedures** The metallurgy testwork samples were analysed by ALS Metallurgy in Perth Australia (ISO 17025 accredited).

Criteria	JORC Code explanation	Commentary
laboratory tests	*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.*	The analysis was conducted on bottle rolled residues and liquors. Using recognised industry standard analysis technique for REE suite and associated elements. The techniques provide a total analysis for the elements of interest. Two analytical techniques were used as follows: **ALS code DZ4**: Sodium peroxide fusion in a zirconium crucible to make a bead which is then digested in HCl/H_2O_2 with ICP-MS finish. Elements analysed and their lower detection limits (LDL) via this method were:

Element	LDL	Unit
Al	0.04	%
Ce	1	ppm
Dy	1	ppm
Er	1	ppm
Eu	1	ppm
Fe	0.02	%
Gd	4	ppm
Ho	0.4	ppm
La	1	ppm
Lu	0.4	ppm
Mg	0.04	%
Mn	100	ppm
Nd	1	ppm
Pr	0.4	ppm
Si	0.1	%
Sm	1	ppm

Criteria	JORC Code explanation	Commentary

Tb	0.4	ppm
Tm	4	ppm
Y	2	ppm
Yb	1	ppm

ALS Code D3: 4 Acid digest with ICP-MS finish. Elements analysed and detection limits were:

Element	LDL	Unit
Ca	50	ppm
Cu	2	ppm
K	0.01	%
na	0.002	%
pb	5	ppm
Sc	2	ppm

QAQC Metallurgy Test Samples

- Analytical Standards and Blanks

CRM AMIS0275 and AMIS0276 and a quartz blank were included in residue analysis at a rate of 1:30 samples. The assay results for the standards were consistent with the certified levels of accuracy and precision and no bias is evident.

Metallurgical Testwork Procedures

Recovery testwork procedures were as follows:

- Entire half core samples were selected, no subsampling or compositing.
- Samples were individually bottle rolled using the following criteria;

Criteria	JORC Code explanation	Commentary
		<table><tr><th>Process Parameter</th><th>Setpoint</th></tr><tr><td>**Pulp Density**</td><td>5% w/w</td></tr><tr><td>**pH**</td><td>3.5</td></tr><tr><td>**Lixiviant**</td><td>Ammonium Sulfate</td></tr><tr><td>**Lixiviant concentration**</td><td>200gpl (~1.5M)</td></tr><tr><td>**Contact time**</td><td>3.5hrs</td></tr></table> • Individual samples were subjected to multiple phases of filtering and pressing. • Resulting solid residues and liquors were separately analysed
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. All field sampling data were collected in the field by hand and entered into Excel spreadsheet. Metallurgical testwork assay and physical data was received in digital format from the laboratory and merged with the sampling data into an Excel spreadsheet format. Data entry was reviewed and checked for correctness by the Project Metallurgist. All assay data is received from the laboratory in element form is unadjusted for data entry. The following calculations are used for compiling REE into their reporting and evaluation groups in elemental form:

Criteria	JORC Code explanation	Commentary
		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+Lu+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 RRMDD041 were surveyed a relational DGPS system. The general accuracy for x,y and z is ± 0.2m. Hole locations for RRMDD042 – RRMDD046 were surveyed using handheld GPS. The accuracy for this type of device is considered ± 5m in x and y coordinates however the elevation component of coordinates is variable and z accuracy may be low using this type of device. 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 Detailed topographic data was not sourced or used.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Drilling was conducted on a nominal 400m x 400m spacing based on statistical analysis of REE distribution from historic RAB drilling. Metallurgical testwork samples were collected from holes drilled on that spacing. **Preliminary Metallurgical Test Work Sample Selection and Distribution** Preliminary metallurgical test work samples were collected from the initial 33 drill holes of the 2019 drill program. Holes sampled were RRMDD001 to RRMDD033 (excluding RRMDD002 and RRMDD025). Criteria for sample selection were: (a) Samples containing a minimum grade of 300 ppm TREE-Ce, (b) Clay, mottled clay and upper saprolite regolith types,

Criteria	JORC Code explanation	Commentary
		(c) Samples that have no signs of lithification/are amenable to pulping in a bottle roll, and (d) Samples that do not contain TREE concentrations that are considered statistical outliers Approximately 1:3 samples that satisfied these criteria were then selected for testwork. Total number of samples was 118 The samples adequately cover a range of grades, regolith types and depths for preliminary investigations. The drilled area covers approximately 8 km^2 of the total 120 km^2 exploration target area. As such the preliminary test work is limited in representativity of the entire area. Drillhole collar locations are detailed in Appendix 1 of this announcement. Metallurgy testwork sample intervals are listed in Appendix 2 of this announcement. There has been no resource estimate made on the project.
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, all 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.

Criteria	JORC Code explanation	Commentary
		The metallurgical testwork was undertaken under the supervision of the project metallurgist who was present at the ALS Perth testing facility for the majority of the program.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No independent audits or reviews have been undertaken on sampling techniques or data.

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.*	All licences the Makuutu Project licences are located in Republic of Uganda. The Project comprises one (1) granted Retention Licence (RL1693), one (1) Retention Licence application (TN3115), and one (1) Exploration Licence (EL1766). The granted tenements RL1693 and EL1766 are in good standing and no known impediments exist. The application T3115 was formerly a portion of a larger Exploration Licence. Exploration work conducted on this licence included 27 RAB holes, the only diamond drill hole and 19 of the 2012 pits. The application area is excluded from field work until grant of TN3115. All licences are held 100% by Ugandan registered Rwenzori Rare Metals Limited (RRM) which in turn is owned 85% by South African registered Rare Earth Elements Africa Proprietary Limited (REEA) Oro Verde has entered into a binding option agreement with both companies that enables it to acquire up to a 60% direct interest in RRM, and thereby up to a 60% indirect interest in the Project by: 1. The payment of US$10,000 for a 30-day exclusive option period; 2. Upon exercise of the option, the payment of US$100,000 cash and issuing US$150,000 in Oro Verde shares, at a 30-day VWAP in return for an immediate 20% interest in RRM; 3. OVL to contribute US$1,700,000 of expenditure by 1 October 2020 to earn up to a 51% staged interest in RRM as follows

Criteria	JORC Code explanation	Commentary
		(see table below) 4. Oro Verde to fund to completion of a bankable feasibility study to earn an additional 9% interest for a cumulative 60% interest in RRM. 5. During the earn-in phase there are milestone payments, payable in cash or Oro Verde shares at the election of the Vendor, as follows: • US$750,000 on the Grant of Retention licence over RL1693 which is due to expire in November 2020; • 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 Oro Verde 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 Oro Verde and reclaim all interest earnt by Oro Verde.
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.

Spend	Interest earned	Cumulative Interest earned
Exercise of Option US$100,000 as in 2 above	20%	20%
Expenditure contribution of US$650,000	11%	31%
Expenditure contribution of further US$800,000	15%	46%

Criteria	JORC Code explanation	Commentary
		2009: Finland GTK reprocessed radiometric data and refined the Project anomalies. 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, 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 rocks. These granitic rocks are considered the original source of the REE which were then accumulated in the sediments of the basin as the granites 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, then adsorbed on to fine particles of aluminosilicate clays (e.g.

Criteria	JORC Code explanation	Commentary
		kaolinite, illite, smectite). This adsorbed REE is the target for extraction and production of REO. There is insufficient geological study to determine any geological disruptions, such as faults or dykes, that may cause variability in the mineralisation.
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 1.
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.*	Where metallurgy data has been reported as averages this is derived from length weighted average of samples within specific regolith material types in each drill hole. No cutting of data has been conducted. As results are preliminary in nature and not definitive so no detail data has been reported.
Relationship between mineralisatio n 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. Any internal variations to REE distribution within the

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').*	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 summary comments on metallurgical test results. As the results are preliminary in nature and not definitive all data has not been reported.
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. Evaluation of results from these programs and testing from samples generated by the drilling program under this Table 1 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, resource definition and estimation on the known areas of mineralisation, regional exploration on adjoining licences and compilation of a Preliminary Economic Assessment (PEA)