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Cobra Resources PLC
11 July 2024

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11 July 2024

Cobra Resources plc
("Cobra" or the "Company")

ISR Bench Scale Study Update

Further metallurgical success at world leading ISR rare earth project

Cobra(LSE: COBR), an exploration company advancing a strategy to lower the cost of critical rare earth production at the Boland Project in South Australia, is pleased to announce that diagnostic tests being carried out as part of ongoing in situ recovery ("ISR") bench scale testing of a high-grade core sample, have produced positive preliminary metallurgical results.

ISR is a low capital, and low disturbance mining process that utilises unique geological conditions to bypass traditional mining and processing methods with low environmental risk. ISR has been used for many years to produce uranium in South Australia from similar geological environments.

TheAustralian National Scientific and Technical Organisation ("ANSTO") is undertaking mineral-recovery trials on rare earth mineralisation recovered from Cobra's recently installed ISR wellfield to demonstrate the value of applying ISR to Cobra's unique ionic rare earth mineralisation. Testing has yielded low impurity levels and low acid consumption which support a pathway for cost-effective recovery.

For further context to the technical information discussed in this announcement with comparative analysis, please view the Q&A on Cobra's Investor Hub here:
https://investors.cobraplc.com/link/6rkjLe

Highlights:

- **Strong ionic recoveries from a high-grade sample:**41% recoveries of Rare Earths ("REEs") from a sub-sample grading **2,688** ppm Total Rare Earth Oxide ("TREO") magnet rare earths Nd2O3 + Pr6O11 total **532** ppm and Dy2O3 + Tb2O3 total **83** ppm at pH 3, ambient temperature

- **Low-cost metallurgical characteristics:**Low impurities and low acid consumption support a simple low-capital flowsheet for purification and precipitation - favourable for project economics

- **Low levels of deleterious radioactive elements:**in Pregnant Liquor Solution ("PLS") of 0.24 mg/L U and <0.01 mg/L Th, important for product transport and oxide separation

- **Ability to increase recoveries through ISR:**low acid consumption and low levels of impurities enable optimisation to further maximise REE recovery. This is being tested by increasing leach time of the bench scale ISR test and making lixiviant adjustments

Rupert Verco, CEO of Cobra, commented:

"These initial recoveries are very pleasing. Managing impurities and acid consumption are significant factors of rare earth processing costs and these results provide a pathway for cost-effective recovery - particularly when coupled with ISR mining.

Achieving recoveries of 41% from such a high head grade of 2,688 ppm TREO in this diagnostic test is highly encouraging for optimising recoveries from the bench scale ISR tests being performed on a core sample exceeding 4,506 ppm TREO. There is plenty of room to optimise these recoveries considering the low level of impurities, low acid consumption and the minimal costs involved in ISR mining.

Our overarching objective is to produce metals which are critical to energy efficiency through a mining process with the lowest environmental risk and the lowest possible cost. We aim to demonstrate the value of this by confirming recovery via ISR and maximising metallurgical confidence. We look forward to bringing further metallurgy results to the market in the coming weeks."

Next Steps

Considering these favourable results, the following adjustments to Cobra's work programme have been made:

1. **Extended duration of ISR bench scale study:** to determine maximum recovery / impurity limits with results anticipated over the coming weeks

2. **Commencement of a second ISR bench scale ISR study:** on core from CBSC0002 to achieve repeatability and increase the volume of pregnant liquor for flowsheet development

3. **Further diagnostic leach tests:** across installed wellfield holes to enable economic assessment of the complete wellfield and all zones of mineralisation

4. **Resource drilling:** planning and design have been completed. The commencement of resource drilling has been delayed enabling metallurgical results to be interpreted and evaluated against existing drilling ensuring the most desirable areas of the palaeochannel are targets

5. **Flowsheet advancement**: pregnant liquor produced from both bench scale ISR tests to be used to advance both membrane desorption and traditional REE purification and precipitation processes

Further information relating to diagnostic leach test results are presented in the appendices.

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The person who arranged for the release of this announcement was Rupert Verco, Managing Director of the Company.

Information in this announcement relates to exploration results that have been reported in the following announcements:

- Wudinna Project Update: "ISR bench scale update - Exceptional head grades revealed", dated 18 June 2024
- Wudinna Project Update: "Re-Assay Results Confirm High Grades Over Exceptional Scale at Boland", dated 26 April 2024
- Wudinna Project Update: "Drilling results from Boland Prospect", dated 25 March 2024
- Wudinna Project Update: "Historical Drillhole Re-Assay Results", dated 27 February 2024
- Wudinna Project Update: "Ionic Rare Earth Mineralisation at Boland Prospect", dated 11 September 2023
- Wudinna Project Update: "Exceptional REE Results Defined at Boland", dated 20 June 2023

Competent Persons Statement

The information in this report that relates to metallurgical results is based on information compiled by Cobra Resources and reviewed by Mr. James Davidson who is the Director of Process Engineering at Wallbridge Gilbert Aztec and a Fellow of the Australian Institute of Mining and Metallurgy (F AusIMM). Mr. Davidson has sufficient experience that is relevant to the metallurgical testing which was 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. Davidson consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

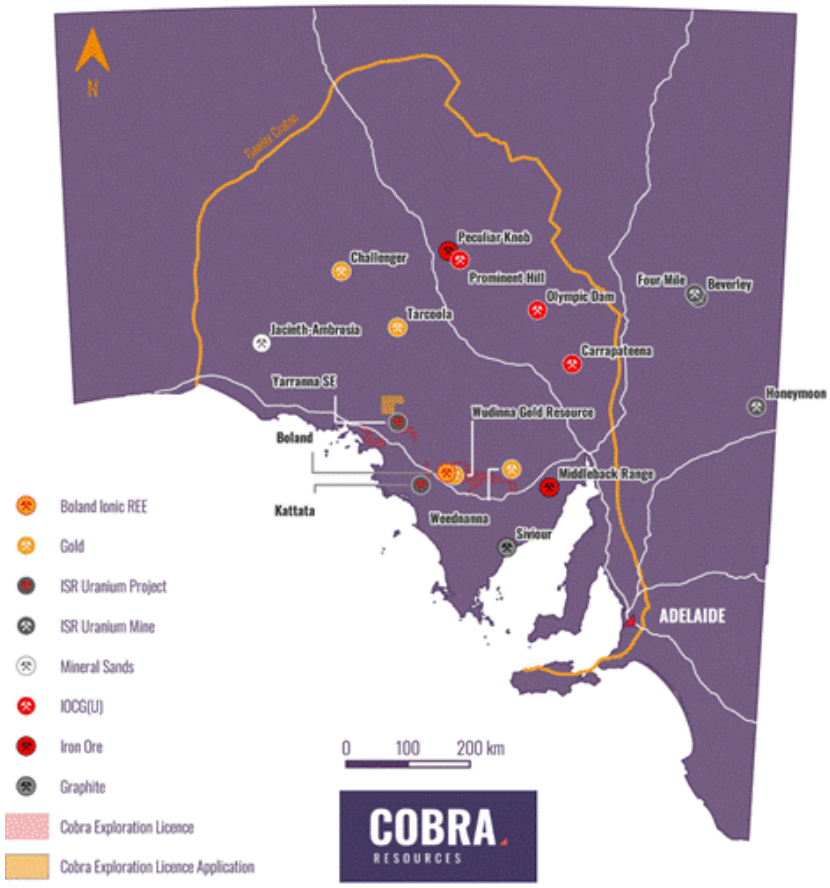
Information in this announcement has been assessed by Mr Rupert Verco, a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Verco is an employee of Cobra and has more than 16 years' industry experience which is relevant to the style of mineralisation, deposit type, and activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves of JORC. This includes 12 years of Mining, Resource Estimation and Exploration.

About Cobra

In 2023, Cobra discovered a rare earth deposit with the potential to re-define the cost of rare earth production. The highly scalable Boland ionic rare earth discovery at Cobra's Wudinna Project in South Australia's Gawler Craton is Australia's only rare earth project amenable for in situ recovery (ISR) mining - a low cost, low disturbance method. Cobra is focused on de-risking the investment value of the discovery by proving ISR as the preferred mining method which would eliminate challenges associated with processing clays and provide Cobra with the opportunity to define a low-cost pathway to production.

Cobra's Wudinna tenements also contain extensive orogenic gold mineralisation, including a 279,000 Oz gold JORC Mineral Resource Estimate, characterised by potentially open-pitable, high-grade gold intersections.

Regional map showing Cobra's tenements in the heart of the Gawler Craton



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Appendix 1: Diagnostic leach results

Preliminary metallurgical testing being performed by the Australian Nuclear Science and Technology Organisation ("ANSTO") aimed at demonstrating the suitability for ISR mining - a low cost, low-disturbance method - has yielded low impurity levels and low acid consumption with robust recoveries providing scope for further optimisation. The objectives of metallurgical testing are outlined below:

Diagnostic tests are aimed to:

i. Confirm the quantity of recoverable ionic REE mineralisation
ii. Determine the quantity of acid consumed
iii. Measure the anticipated level of impurities
iv. Enable optimising adjustments to parallel bench scale ISR tests

The parameters of the diagnostic leach test were:

- Reagent: 0.5M Ammonium Sulphate

- Sulphuric Acid addition to maintain pH3
- Ambient Temperature
- Duration: 24 Hours

The results reported in this announcement are derived from the diagnostic test

The composite sample subject to the diagnostic leach test was from CBSC003 (26.7m to 27.2m) the sub-sample calculated head grade and subsequent recoveries are presented in table 1 below:

Table 1: Diagnostic leach sample head grade and subsequent recoveries

	Pr_6O_{11} ppm	Nd_2O_3 ppm	Tb_2O_3 ppm	Dy_2O_3 ppm	MREO %	HREO %	TREO ppm
Sub-sample (80g) Grade	114	417	11.3	71.6	23%	29%	2,688
Recovery	41%	39%	31%	30%	38%	37%	41%

A favourable characteristic of ionic mineralisation is the low level of impurities and radioactive deleterious elements that are recovered.

Desorption at benign acidities between pH 3-4 reduces the leaching of key impurities such as aluminium, iron and silica. A key metric to measure the level of impurities is the apparent ratio of rare earths to impurities within a pregnant solution. When the ratio of REEs to impurities in solution is low, the metallurgical process for purification become complex, and the rate of REE recovery through purification decreases.

Diagnostic leach results demonstrate that the level of REEs in solution far exceed the level of impurities, supporting a low-cost, low-temperature single-step for impurity removal.

Table 2: Diagnostic leach impurity ratios and levels of radioactive deleterious elements in solution

TREY:Al	TREY:Fe	TREY:Si	U mg/L	Th mg/L
13	9.7	>7.9	0.24	<0.01

TREY = La+Ce+Pr+Nd+Sm+Eu+Gd+Tb+Dy+Ho+Er+Tm+Yb+Lu+Y
Al - Aluminium
Fe - Iron
Si - Silica
U - Uranium
Th - Thorium

Appendix 2:ISR bench scale test CBSC003 26.7m - 27.2m

The diagnostic leach sample is a sub-sample of CBSC003 26.7m - 27.2m, a length of core that is currently subject to bench scale ISR tests. The head grade of the sample is 4,506 ppm TREO calculated from the sample composites presented in Table 3

Table 3: Sample composites of the sample subject to the bench scale ISR test

Depth from (m)	Depth to (m)	Pr_6O_{11}	Nd_2O_3	Tb_2O_3	Dy_2O_3	MREO %	HREO	HREO %	TREO
26.7	26.8	317	1,277	35	207	24%	2,286	29%	7,764

26.8	26.9	290	1,144	30	177	23%	1,990	28%	7,187
26.9	27	206	710	18	105	21%	1,129	23%	4,869
27	27.1	84	328	9	56	22%	610	28%	2,144
27.1	27.2	53	211	6	36	22%	401	29%	1,371
26.7	**27.2**	**183**	**708**	**19**	**112**	**23%**	**1,239**	**28%**	**4,506**

MREO = Pr_6O_{11} + Nd_2O_3 + Tb_2O_3 + Dy_2O_3

HREO = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_2O_3 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3

Bench scale ISR test is designed to emulate the ISR process to determine:

i. The rate in which the lixiviant can percolate through the pore space of the mineralised sample
ii. The subsequent time required to adjust sample pH
iii. The rate and quantity in which rare earths are liberated to solution

The results of the initial bench scale ISR study are expected over the coming weeks

Appendix 3: Interpretation of results

- **Strong un-optimised recoveries from a high-grade sample:**38% recoveries of Magnet Rare Earths ("MREO") from a sample grading **2,688** ppm Total Rare Earth Oxide ("TREO") magnet rare earths Nd2O3 + Pr6O11 total **528** ppm and Dy2O3 + Tb2O3 total **83** ppm

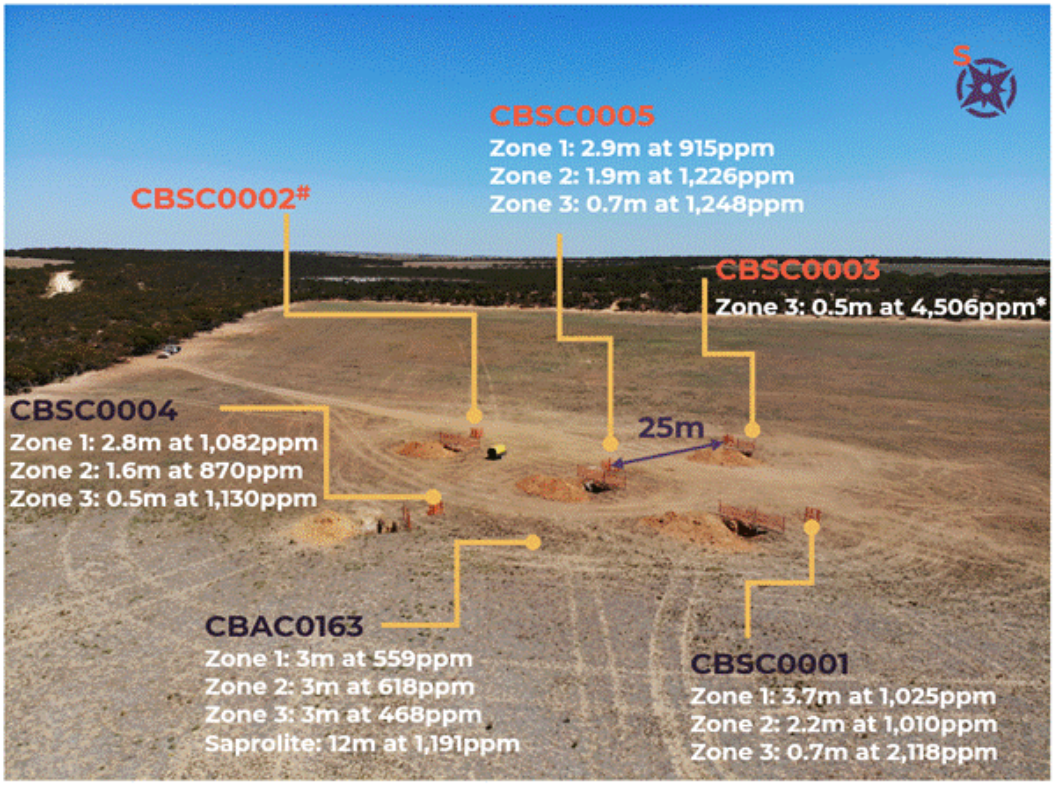
- **Low-cost metallurgical characteristics: acid consumption:**over 24 hours total sulphuric acid (H_2SO_4) consumption of 8.8 kg/t - equivalent to ~A$2/t (£1.06/t)[1]

- **Low levels of impurity: TREY:Al**ratio of 13:1, **TREY:Fe** ratio of 9.7:1 **TREY:Si** ratio of 7.9:1 - these results are considered very favourable for low-cost purification via a low temperature single step impurity removal

- **Low levels of deleterious radioactive elements:**in Pregnant Liquor Solution ("PLS") of 0.24 mg/L U and <0.01 mg/L Th, an important aspect for product transport and oxide separation

- **Un-optimised recoveries with upside:**owing to the low level of impurities and the low acid consumption, the ability to increase REE recoveries is being evaluated by increasing the length of the bench scale ISR study and making adjustments to the lixiviant. These results are expected in the coming weeks.

Figure 1: Aerial photograph of the Boland Project wellfield with significant intersections



**Partially assayed*

#Stored for metallurgical testing, pending assay

Appendix 4: Cobra's Boland rare earth discovery

- Ionic clay-hosted rare earths present as a low-capital, low operating cost source of heavy and magnet rare earth metals

- Processing of clay ores induces several operating challenges, including productivity loss, material handling, dewatering, reagent use and reclamation

- Ionic rare earth mineralisation at Boland exists in permeable geology in an environment that permits ISR, thus bypassing the challenges associated with processing of clay ores

- ISR is the preferred method of recovery used in the uranium industry, where[1]:

    - o Global ISR production accounted for ~60% of mined uranium in 2022
    - o Capital expenditure for ISR is 1-15% of conventional mines
    - o Operating costs of ISR is generally 30-40% lower than traditional mines
    - o Environmental impact and rehabilitation cost is significantly lower than traditional mines

- South Australia is home to Australia's only three operating ISR uranium mines and has a regulatory framework that supports ISR mining

- Bench-scale leach studies under ISR conditions are currently underway at ANSTO, a first for ionic REE projects outside of China

- Cobra has installed a wellfield to rapidly advance the project towards an infield pilot study

- Cobra aims to demonstrate that the cost of production at Boland can be materially reduced via ISR, providing operating resilience to volatile rare earth markets which has stalled the commencement of many rare earth projects

- Re-assaying of historic uranium focused drilling is being used to confirm the scale of rare earth mineralisation. These results confirm the presence of rare earth mineralisation over a strike of 12 km,

where mineralisation is open in most directions. Follow-up drilling will aim to infill these results to support a maiden Mineral Resource Estimate ("MRE") at Boland

Appendix 5: Further information relating to the Boland Project and reported results

- In February 2024, Cobra drilled five sonic core holes and installed screened and cased wells to advance ISR mining of ionic rare earths
- On 25 March 2024, the Company announced the assay results of three of the five holes drilled, revealing three consistent zones of mineralisation
- Core from two holes were preserved and transported to ANSTO for metallurgical testing. Samples have been kept air-tight and refrigerated to prevent changes in oxidation and therefore sampling and assaying can only occur directly before the commencement of metallurgical testing
- Zone three represents the deepest and highest-grade zone of mineralisation. The wellfield has been designed and installed to pilot test ISR from zone three
- Further core from CBSC0003 and CBSC0002 is being prepared for further metallurgical testwork to support flow sheet optimisation
- Drilling results have been reported via a four-acid digest method, which is a partial digest that represents the ionic / leachable portion of REE mineralisation. Samples prepared for and subject to metallurgical testing have been assayed via lithium borate fusion; a complete digest of REE-bearing minerals. Results from Boland are 10-15% higher when reported via lithium borate fusion
- Recoveries reported in this announcement have been reported against head grades calculated via lithium borate fusion assays and are therefore a reflection of the recoverable quantity of the total rare earth oxide grade

Appendix 6:JORC Code, 2012 Edition - Table 1

Section 1 Sampling Techniques and Data

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*	**2023** RC · Samples were collected via a Metzke cone splitter mounted to the cyclone. 1m samples were managed through chute and butterfly valve to produce a 2-4 kg sample. Samples were taken from the point of collar, but only samples from the commencement of saprolite were selected for analysis. · Samples submitted to Bureau Veritas Laboratories, Adelaide, and pulverised to produce the 50 g fire assay charge and 4 acid digest sample. AC · A combination of 2m and 3 m samples were collected in green bags via a rig mounted cyclone. An PVC spear was used to collect a 2-4 kg sub sample from

	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.	each green bag. Samples were taken from the point of collar. · Samples submitted to Bureau Veritas Laboratories, Adelaide, and pulverised to produce the 50 g fire assay charge and 4 acid digest sample. **2024** SONIC · Core was scanned by a SciAps X555 pXRF to determine sample intervals. Intervals through mineralized zones were taken at 10cm. Through waste, sample intervals were lengthened to 50cm. Core was halved by knife cutting. XRF scan locations were taken on an inner surface of the core to ensure readings were taken on fresh sample faces. · Samples were submitted to Bureau Veritas for 4 acid digest ICP analysis.
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).*	2023 · Drilling completed by Bullion Drilling Pty Ltd using 5 ¾" reverse circulation drilling techniques from a Schramm T685WS rig with an auxiliary compressor. · Drilling completed by McLeod Drilling Pty Ltd using 75.7 mm NQ air core drilling techniques from an ALMET Aircore rig mounted on a Toyota Landcruiser 6x6 and a 200psi, 400cfm Sullair compressor. 2024 · Sonic Core drilling completed Star Drilling using 4" core with a SDR12 drill rig. Holes were reamed to 6" or 8" to enable casing and screens to be installed
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.*	Aircore & RC · Sample recovery was generally good. All samples were recorded for sample type, quality and contamination potential and entered within a sample log. · In general, sample recoveries were good with 10 kg for each 1 m interval being recovered from AC drilling. · No relationships between sample recovery and grade have been identified. · RC drilling completed by Bullion Drilling Pty Ltd using 5 ¾" reverse circulation drilling techniques from a Schramm T685WS rig with an auxiliary compressor · Sample recovery for RCwas generally good. All samples were recorded for sample type, quality and contamination potential and entered within a sample log.

		· In general, RCsample recoveries were good with 35-50 kg for each 1 m interval being recovered. · No relationships between sample recovery and grade have been identified. Sonic Core · Sample recovery is considered excellent.
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.*	Aircore & RC · All drill samples were logged by an experienced geologist at the time of drilling. Lithology, colour, weathering and moisture were documented. · Logging is generally qualitative in nature. · All drill metres have been geologically logged on sample intervals (1-3 m). Sonic Core · Logging was carried out in detail, determining lithology and clay/ sand content. Logging intervals were lithology based with variable interval lengths. · All core drilled has been lithologically logged.
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.*	2021-onward · The use of an aluminum scoop or PVC spear to collect the required 2-4 kg of sub-sample from each AC sample length controlled the sample volume submitted to the laboratory. · Additional sub-sampling was performed through the preparation and processing of samples according to the lab internal protocols. · Duplicate AC samples were collected from the green bags using an aluminium scoop or PVC spear at a 1 in 25 sample frequency. · Sample sizes were appropriate for the material being sampled. · Assessment of duplicate results indicated this sub-sample method provided good repeatability for rare earth elements. · RC drill samples were sub-sampled using a cyclone rig mounted splitter with recoveries monitored using a field spring scale.

		· Manual re-splitting of RC samples through a riffle splitter was undertaken where sample sizes exceeded 4 kg. · RC field duplicate samples were taken nominally every 1 in 25 samples. These samples showed good repeatability for REE. Sonic Drilling · Field duplicate samples were taken nominally every 1 in 25 samples where the sampled interval was quartered. · Blanks and Standards were submitted every 25 samples · Half core samples were taken where lab geochemistry sample were taken. · In holes where column leach test samples have been submitted, full core samples have been submitted over the test areas.
Quality of assay data and laboratory tests	· *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* · *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* · *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	· Samples were submitted to Bureau Veritas Laboratories, Adelaide for preparation and analysis. · Multi element geochemistry were digested by four acid ICP-MS and analysed for Ag, Ce, Cu, Dy, Er, Eu, Gd, Ho, La, Lu, Mg, Na, Nd, P, Pr, Sc, Sm, Tb, Th, Tm, U, Y and Yb. · For the sonic samples Ag was removed from the analytical suite and V was included · Field gold blanks and rare earth standards were submitted at a frequency of 1 in 25 samples. · Field duplicate samples were submitted at a frequency of 1 in 25 samples · Reported assays are to acceptable levels of accuracy and precision. · Internal laboratory blanks, standards and repeats for rare earths indicated acceptable assay accuracy. · Samples retained for metallurgical analysis were immediately vacuum packed and refrigerated. · These samples were refrigerated throughout transport. Metallurgical Test Work performed by the Australian Nuclear Science and Technology Organisation (ANSTO). ANSTO laboratories prepared a 80g sample from the homogenized core section CBSC003 26.7-

		27.2m. The sample was · Standard desorption conditions: · 0.5M (NH4)2SO4 as lixiviant · pH 3 · 30 minutes, 2 hrs, 6 hrs, 12 hrs & 24 hours · Ambient temperature of 22°C; and · 4 wt% solids density · Prior to commencing the test work, a bulk 0.5 M (NH4)2SO4 solution was prepared as the synthetic lixiviant and the pH adjusted to 3 using H2SO4. · Each of the leach tests was conducted on 80 g of dry, un-pulverised sample and 1920 g of the lixiviant in a 2 L titanium/ stainless steel baffled leach vessel equipped with an overhead stirrer. · Addition of solid to the lixiviant at the test pH will start the test. 1 M H2SO4 was utilised to maintain the test pH for the duration of the test, if necessary. The acid addition was measured. · At the completion of each test, the final pH was measured, the slurry was vacuum filtered to separate the primary filtrate. · The primary filtrate was analysed as follows: • ICP-MS for Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Mn, Nd, Pb, Pr, Sc, Sm, Tb, Th, Tm, U, Y, Yb (ALS, Brisbane); • ICP-OES for Al, Ca, Fe, K, Mg, Mn, Na, Si (in-house, ANSTO); · The water wash was stored but not 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.*	· Sampling data was recorded in field books, checked upon digitising and transferred to database. · Geological logging was undertaken digitally via the MX Deposit logging interface and synchronised to the database at least daily during the drill programme. · Compositing of assays was undertaken and reviewed by Cobra Resources staff. · Original copies of laboratory assay data are retained digitally on the Cobra Resources server for future reference. · Samples have been spatially verified through the use of Datamine and Leapfrog geological software for pre 2021 and post 2021 samples and assays. · Twinned drillholes from pre 2021 and post 2021 drill programmes showed acceptable spatial and grade repeatability. · Physical copies of field sampling books are retained by Cobra Resources for

		future reference. · Elevated pXRF grades were checked and re-tested where anomalous. pXRF grades are semi quantitative.
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.*	Pre 2021 · Collar locations were pegged using DGPS to an accuracy of +/-0.5 m. · Downhole surveys have been completed for deeper RC and diamond drillholes · Collars have been picked up in a variety of coordinate systems but have all been converted to MGA 94 Zone 53. Collars have been spatially verified in the field. · Collar elevations were historically projected to a geophysical survey DTM. This survey has been adjusted to AHD using a Leica CS20 GNSS base and rover survey with a 0.05 cm accuracy. Collar points have been re-projected to the AHD adjusted topographical surface. 2021-onward · Collar locations were initially surveyed using a mobile phone utilising the Avenza Map app. Collar points recorded with a GPS horizontal accuracy within 5 m. · RC Collar locations were picked up using a Leica CS20 base and Rover with an instrument precision of 0.05 cm accuracy. · Locations are recorded in geodetic datum GDA 94 zone 53. · No downhole surveying was undertaken on AC holes. All holes were set up vertically and are assumed vertical. · RC holes have been down hole surveyed using a Reflex TN-14 true north seeking downhole survey tool or Reflex multishot · Downhole surveys were assessed for quality prior to export of data. Poor quality surveys were downgraded in the database to be excluded from export. · All surveys are corrected to MGA 94 Zone 53 within the MX Deposit database. · Cased collars of sonic drilling shall be surveyed before a mineral resource estimate
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.*	· Drillhole spacing was designed on transects 50-80 m apart. Drillholes generally 50-60 m apart on these transects but up to 70 m apart. · Additional scouting holes were drilled opportunistically on existing tracks at spacings 25-150 m from previous drillholes. · Regional scouting holes are drilled at variable spacings designed to test structural concepts

	· *Whether sample compositing has been applied.*	· Data spacing is considered adequate for a saprolite hosted rare earth Mineral Resource estimation. · No sample compositing has been applied · Sonic core holes were drilled at ~20m spacings in a wellfield configuration based on assumed permeability potential of the intersected geology.
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.*	· RC drillholes have been drilled between -60 and -75 degrees at orientations interpreted to appropriately intersect gold mineralisation · Aircore and Sonic drill holes are vertical.
Sample security	· *The measures taken to ensure sample security.*	Pre 2021 · Company staff collected or supervised the collection of all laboratory samples. Samples were transported by a local freight contractor · No suspicion of historic samples being tampered with at any stage. · Pulp samples were collected from Challenger Geological Services and submitted to Intertek Genalysis by Cobra Resources' employees. 2021-onward · Transport of samples to Adelaide was undertaken by a competent independent contractor. Samples were packaged in zip tied polyweave bags in bundles of 5 samples at the drill rig and transported in larger bulka bags by batch while being transported. · There is no suspicion of tampering of samples.
Audits or reviews	· *The results of any audits or reviews of sampling techniques and data.*	· No laboratory audit or review has been undertaken. · Genalysis Intertek and BV Laboratories Adelaide are NATA (National Association of Testing Authorities) accredited laboratory, recognition of their analytical competence.

Appendix 5: Section 2 Reporting of Exploration Results

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.*	· RC drilling occurred on EL 6131, currently owned 100% by Peninsula Resources limited, a wholly owned subsidiary of Andromeda Metals Limited. · Alcrest Royalties Australia Pty Ltd retains a 1.5% NSR royalty over future mineral production from licenses EL6001, EL5953, EL6131, EL6317 and EL6489. · Baggy Green, Clarke, Laker and the IOCG targets are located within Pinkawillinnie Conservation Park. Native Title Agreement has been negotiated with the NT Claimant and has been registered with the SA Government. · Aboriginal heritage surveys have been completed over the Baggy Green Prospect area, with no sites located in the immediate vicinity. · A Native Title Agreement is in place with the relevant Native Title party.
Exploration done by other parties	· *Acknowledgment and appraisal of exploration by other parties.*	· On-ground exploration completed prior to Andromeda Metals' work was limited to 400 m spaced soil geochemistry completed by Newcrest Mining Limited over the Barns prospect. · Other than the flying of regional airborne geophysics and coarse spaced ground gravity, there has been no recorded exploration in the vicinity of the Baggy Green deposit prior to Andromeda Metals' work. · Paleochannel uranium exploration was undertaken by various parties in the 1980s and the 2010s around the Boland Prospect. Drilling was primarily rotary mud with downhole geophysical logging the primary interpretation method.
Geology	· *Deposit type, geological setting and style of mineralisation.*	· The gold and REE deposits are considered to be related to the structurally controlled basement weathering of epidote- pyrite alteration related to the 1590 Ma Hiltaba/GRV tectonothermal event. · Mineralisation has a spatial association with mafic intrusions/granodiorite alteration and is associated with metasomatic alteration of host rocks. Epidote alteration associated with gold mineralisation is REE enriched and believed to be the primary source. · Rare earth minerals occur within the saprolite horizon. XRD analysis by the CSIRO identifies kaolin and montmorillonite as the primary clay phases. · SEM analysis identified REE bearing mineral phases in hard rock: · Zircon, titanite, apatite, andradite and epidote. · SEM analyses identifies the following secondary mineral phases in saprock:

		· Monazite, bastanite, allanite and rutile. · Elevated phosphates at the base of saprock do not correlate to rare earth grade peaks. · Upper saprolite zones do not contain identifiable REE mineral phases, supporting that the REEs are adsorbed to clay particles. · Acidity testing by Cobra Resources supports that pH chemistry may act as a catalyst for Ionic and Colloidal adsorption. · REE mineral phase change with varying saprolite acidity and REE abundances support that a component of REE bursary is adsorbed to clays. · Palaeo drainage has been interpreted from historic drilling and re-interpretation of EM data that has generated a top of basement model. · Ionic REE mineralisation is confirmed through metallurgical desorption testing where high recoveries are achieved at benign acidities (pH4-3) at ambient temperature. · Ionic REE mineralisation occurs in reduced clay intervals that contact both saprolite and permeable sand units. Mineralisation contains variable sand quantities that is expected
Drillhole Information	· *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level - elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* · *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	· Exploration results are not being reported as part of the Mineral Resource area.
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*	· Reported summary intercepts are weighted averages based on length. · No maximum/ minimum grade cuts have been applied. · No metal equivalent values have been calculated. · Gold results are reported to a 0.3 g/t cut-off with a maximum of 2m internal dilution with a minimum grade of 0.1 g/t Au.

	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.*	· Rare earth element analyses were originally reported in elemental form and have been converted to relevant oxide concentrations in line with industry standards. Conversion factors tabulated below: **Element** / **Oxide** / **Factor** Cerium / CeO_2 / 1.2284 Dysprosium / Dy_2O_3 / 1.1477 Erbium / Er_2O_3 / 1.1435 Europium / Eu_2O_3 / 1.1579 Gadolinium / Gd_2O_3 / 1.1526 Holmium / Ho_2O_3 / 1.1455 Lanthanum / La_2O_3 / 1.1728 Lutetium / Lu_2O_3 / 1.1371 Neodymium / Nd_2O_3 / 1.1664 Praseodymium / Pr_6O_{11} / 1.2082 Scandium / Sc_2O_3 / 1.5338 Samarium / Sm_2O_3 / 1.1596 Terbium / Tb_4O_7 / 1.1762 Thulium / Tm_2O_3 / 1.1421 Yttrium / Y_2O_3 / 1.2699 Ytterbium / Yb_2O_3 / 1.1387 · The reporting of REE oxides is done so in accordance with industry standards with the following calculations applied: · TREO = 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 + Lu_2O_3 + Y_2O_3 · CREO = Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3 · LREO = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 · HREO = 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 + Lu_2O_3 + Y_2O_3 · NdPr = Nd_2O_3 + Pr_6O_{11} · TREO-Ce = TREO - CeO_2 · % Nd = Nd_2O_3/ TREO · % Pr = Pr_6O_{11}/TREO · % Dy = Dy_2O_3/TREO · % HREO = HREO/TREO · % LREO = LREO/TREO · XRF results are used as an indication of potential grade only. Due to detection limits only a combined content of Ce, La, Nd, Pr & Y has been used. XRF grades have not been converted to oxide.
Relationship between mineralisation widths and	· *These relationships are particularly important in the reporting of Exploration Results.*	· All reported intercepts at Boland are vertical and reflect true width intercepts. · Exploration results are not being reported for the Mineral Resource area.

intercept lengths	· *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* · *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	
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.*	· Relevant diagrams have been included in the announcement. · Exploration results are not being reported for the Mineral Resources area.
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.*	· Not applicable - Mineral Resource and Exploration Target are defined. · Exploration results are not being reported for the Mineral Resource area.
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.*	· Refer to previous announcements listed in RNS for reporting of REE results and metallurgical testing
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.*	· The metallurgical testing reported in this announcement represents the first phase of bench scale studies to test the extraction of ionic REEs via ISR processes. · Hydrology, permeability and mineralogy studies are being performed on core samples. · Installed wells are being used to capture hydrology base line data to support a future infield pilot study. · Trace line tests shall be performed to emulate bench scale pore volumes.

Appendix 6: Drillhole coordinates

Prospect	Hole number	Grid	Northing	Easting	Elevation
Boland	CBSC0001	GDA94 / MGA zone 53	6365543	534567	102.9
Boland	CBSC0002	GDA94 / MGA zone 53	6365510	534580	104.1
Boland	CBSC0003	GDA94 / MGA zone 53	6365521	534554	102.7
Boland	CBSC0004	GDA94 / MGA zone 53	6365537	534590	105
Boland	CBSC0005	GDA94 / MGA zone 53	6365528	534573	103.2

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