



Preliminary test-work findings; progress with copper assets



Highlights

- Specialist consultant, ANSTO¹, performed metallurgical test-work on six samples from the Fence Gossan, Reefs, and Tors Tanks Prospects (BHA Project's East Zone) which produced the following preliminary findings:
 - ❖ The Total Rare Earth Element plus Yttrium (TREY) grades for the six samples ranged from 227 to 1,632 ppm TREY;
 - ❖ The proportion of high-value Magnetic Rare Earth Oxides (MREO; Nd+Pr+Dy+Tb) to Total REO (TREO) across the six samples ranged from 22% to 27%; and
 - ❖ The best TREY extraction, using a direct leach process at pH 1, was 30%
- The Board is reviewing next steps, including trialing alternate leach tests proposed by ANSTO¹ to improve extraction results
- Entech Mining² are finishing the pit optimisation and mine design study for the Big One Deposit (MRE: 2.1Mt @ 1.1% Cu for 21,886t copper metal – inferred)³
- CCZ's geology team are close to completing an update on the 2017 Mineral Resource Estimate (MRE) for Cangai Copper Mine⁴ which will factor in results from drilling campaigns post 2017

Castillo Copper's Chairman Ged Hall commented: "The Board is pleased the work by ANSTO ratified the earlier assay results and high MREO to TREO ratio. However, the Board is now reviewing ANSTO's recommendations on how to improve the metallurgical results from the BHA Project's East Zone. The Board's focus is now on the Australian copper assets, with critical reports due on Cangai Copper Mine and Big One Deposit that could aid materially in securing development partners."

METALLURGICAL TEST-WORK FINDINGS

Castillo Copper Limited's ("CCZ") Board received specialist consultant, ANSTO's¹, preliminary report on metallurgical test-work undertaken on six samples from the Fence Gossan, Reefs, and Tors Tanks Prospects (BHA Project's East Zone) which delivered the following findings:

- The TREY grades for the six samples ranged from 227 to 1,632 ppm TREY which is consistent with earlier assay results; and
- The proportion of high-value MREO (Nd+Pr+Dy+Tb) to TREO across the six samples ranged from 22% to 27% and aligns with earlier calculations (Figure 1).

FIGURE 1: RARE EARTH ELEMENT COMPOSITION OF HEAD SAMPLES (PPM)

Elements	TT-002RC	TT-005DD	FG-003RC	FG-004RC	RT-001RC	RT-001RC A
La	199	283	335	215	47	206
Ce	450	423	488	411	90	410
Pr	49	75	62	47	10	47
Nd	203	316	220	174	37	174
Sm	43	67	36	32	7	29
Eu	10	16	6	5	1	2
Gd	44	66	28	21	5	18
Tb	7	10	4	3	1	1
Dy	37	53	20	17	4	3
Ho	7	9	3	3	1	0
Er	18	26	10	8	2	0
Tm	2	3	1	1	0	0
Yb	14	21	8	7	2	0
Lu	2	3	1	1	0	0
Y	169	261	88	71	20	7
LREE	901	1097	1105	847	184	837
HREE	185	274	117	96	23	53
Magnets	296	454	305	241	52	226
TRE+Y	1254	1632	1309	1014	227	897
MREO	347	532	358	282	61	265
TREYO	1509	1958	1570	1218	273	1076
MREO/TREO (%)	23.0	27.1	22.8	23.2	22.7	24.7

LRE = La, Ce, Pr, Nd; HRE = Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu; Magnets = Pr, Nd, Tb, Dy; MREO = magnet oxides (Note, under ANSTO's definition MREO comprises 4 elements, not six (Gd and Sm not counted)); TREO = Total oxides Source: ANSTO

For the metallurgy, all tests were calculated using the solid head and the leach liquor analysis. The best TREY extraction, using a direct leach process at pH 1, was 30% (Figure 2).

To potentially improve on these results, the Board is reviewing recommendations put forward by ANSTO which includes:

- Assess a wider variety of samples to validate the leach results across the East Zone; and
- Consider additional leach tests using hydrochloric acid to assess whether increased REE dissolution can be achieved using an alternative lixiviant for an increased leach duration time.

FIGURE 2: SUMMARY OF LEACH EXTRACTIONS (0.5 M (NH₄)₂SO₄ SOLUTION)

Sample ID	TT-002RC		TT-005DD		FG003RC		FG-004RC		RT-001RC		RT-001RC A	
Head TREY (ppm)	1254		1632		1309		1014		227		897	
Test ID	CCZ-1	CCZ-7	CCZ-2	CCZ-8	CCZ-3	CCZ-9	CCZ-4	CCZ-10	CCZ-5	CCZ-11	CCZ-6	CCZ-12
pH	4	1	4	1	4	1	4	1	4	1	4	1
Duration (h)	0.5	2	0.5	2	0.5	2	0.5	2	0.5	2	0.5	2
	Extraction (%)											
La	1	2	1	2	1	3	2	4	11	33	2	3
Ce	1	2	1	3	1	3	2	5	11	33	2	4
Pr	1	2	1	2	1	3	2	5	12	32	2	3
Nd	1	3	1	3	1	3	2	6	11	36	2	4
Sm	1	4	1	3	1	4	3	6	10	32	2	5
Eu		4	2	3		4	5	5	20	39		12
Gd	1	9	1	4	2	7	2	6	9	33	1	5
Tb		10	2	5		6		7		35		
Dy	1	17	2	4	2	12	3	5	6	17		7
Ho		20	3	5		13		8				
Er	1	26	2	5	2	16	3	6		11		
Tm		29		7		19						
Yb	2	29	2	7	3	17	4	4				
Lu		33		7		18						
Y	2	27	2	5	3	18	2	5	5	11	4	14
LRE	1	2	1	3	1	3	2	5	11	34	2	4
HRE	1	13	2	4	2	8	3	6	7	24	1	5
Magnets	1	5	1	3	1	4	2	6	11	34	2	4
TREY	1	7	1	3	1	5	2	5	10	31	2	4
TREY-Ce	1	10	1	3	1	6	2	5	9	29	2	4

Source: ANSTO

Test methodology

A diagnostic desorption test was completed on each sample under the following conditions:

- 0.5 M (NH₄)₂SO₄ as lixiviant;
- pH 4;
- 0.5 h;
- Ambient temperature (~22 °C); and
- 4 wt% solids density.

All diagnostic leach tests were carried out on pulverised samples (80 g) at high L/S ratio, where there are no effects of adsorption and co-precipitation. These tests indicate the maximum extraction that could be achieved under ideal test conditions (at more practical lower L/S ratios, extraction could be less). Where required, 1 M H₂SO₄ was added to maintain the pH at 4 throughout the test duration.

At the completion of the test, the slurry was filtered to separate the leach liquor (PF) and the leached residue. The PF was analysed by ICP-OES at ANSTO for gangue elements, and at ALS Brisbane by ICP-MS for the REs and Sc, Th and U. The residue was washed on the filter with DI water (200 mL), dried and weighed. The water wash and residues were retained but not analysed.

A diagnostic leach test was conducted on each pulverised sample under the following acid leach conditions:

- •0.5 M (NH₄)₂SO₄ as lixiviant;
- •pH 1;
- •2 h;
- •50 °C; and
- •4 wt% solids density.

The test procedure was like the foregoing method, Throughout the 2h test, the pH was maintained at pH 1 where necessary by addition of concentrated H₂SO₄. No intermediate thief samples were taken.

At the completion of the test, the slurry was filtered to separate the PF and the leached residue. The PF was analysed by ICP-OES at ANSTO for gangue elements, and at ALS by ICP-MS for the REs and Sc, Th and U. The residue was washed on the filter with DI water (200 mL), dried and weighed. The residues were analysed by XRF at ANSTO for major gangue elements and by lithium tetraborate fusion digest/ICPMS at ALS for the REs, Sc, Th and U. The wash was retained but not analysed.

The Board of Castillo Copper Limited authorised the release of this announcement to the ASX.

Dr Dennis Jensen
Managing Director

Competent Person's Statement

The information in this report that relates to Exploration Results for "BHA Project, East Zone" is based on information compiled or reviewed by Mr Mark Biggs. Mr Biggs is a director of ROM Resources, a company which is a shareholder of Castillo Copper Limited. ROM Resources provides ad hoc geological consultancy services to Castillo Copper Limited. Mr Biggs is a member of the Australian Institute of Mining and Metallurgy (member #107188) and has sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, and Mineral Resources. Mr Biggs holds an AusIMM Online Course Certificate in 2012 JORC Code Reporting. Further, Mr Biggs consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

References

- 1) ANSTO. Available at: <https://www.ansto.gov.au/services/resources-sector/minerals>
- 2) Entech Mining. Available at: <https://entechmining.com.au>
- 3) CCZ ASX Release – 28 February 2022 & 20 February 2023
- 4) CCZ ASX Release – 28 September 2018 (Annual Report 2018), 3 September 2018, 19 February 2020, 28 April 2020 & 9 March 2023

About Castillo Copper

Castillo Copper Limited is an Australian-based explorer primarily focused on copper across Australia and Zambia. The group is embarking on a strategic transformation to morph into a mid-tier copper group underpinned by its core projects:

A large footprint in the in the Mt Isa copper-belt district, north-west Queensland, which delivers significant exploration upside through having several high-grade targets and a sizeable untested anomaly within its boundaries in a copper rich region.

Four high-quality prospective assets across Zambia's copper-belt which is the second largest copper producer in Africa.

A large tenure footprint proximal to Broken Hill's world-class deposit that is prospective for cobalt-zinc-silver-lead-copper-gold and platinumoids.

Cangai Copper Mine in northern New South Wales, which is one of Australia's highest grading historic copper mines.

The group is listed on the LSE and ASX under the ticker "CCZ."

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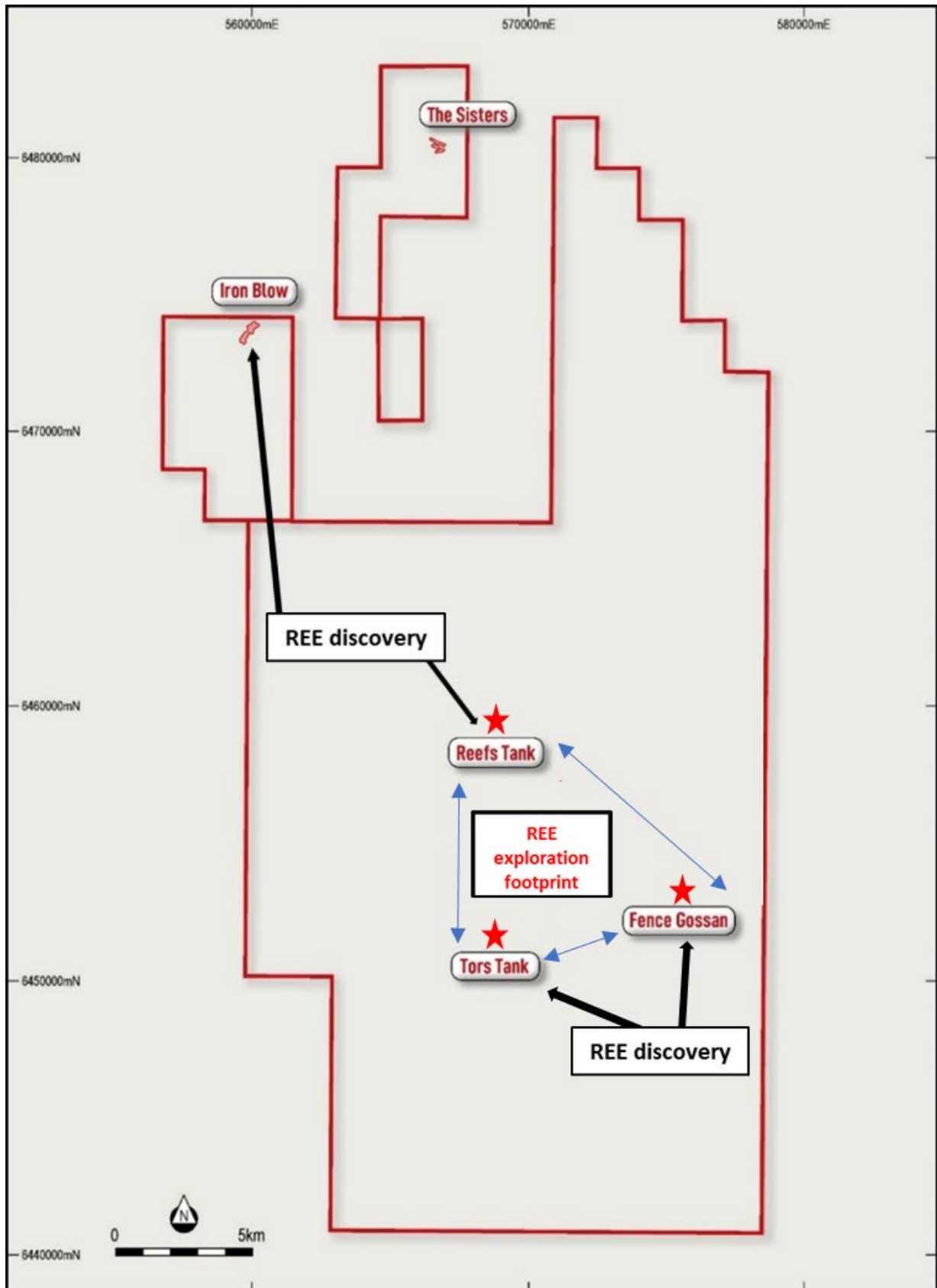
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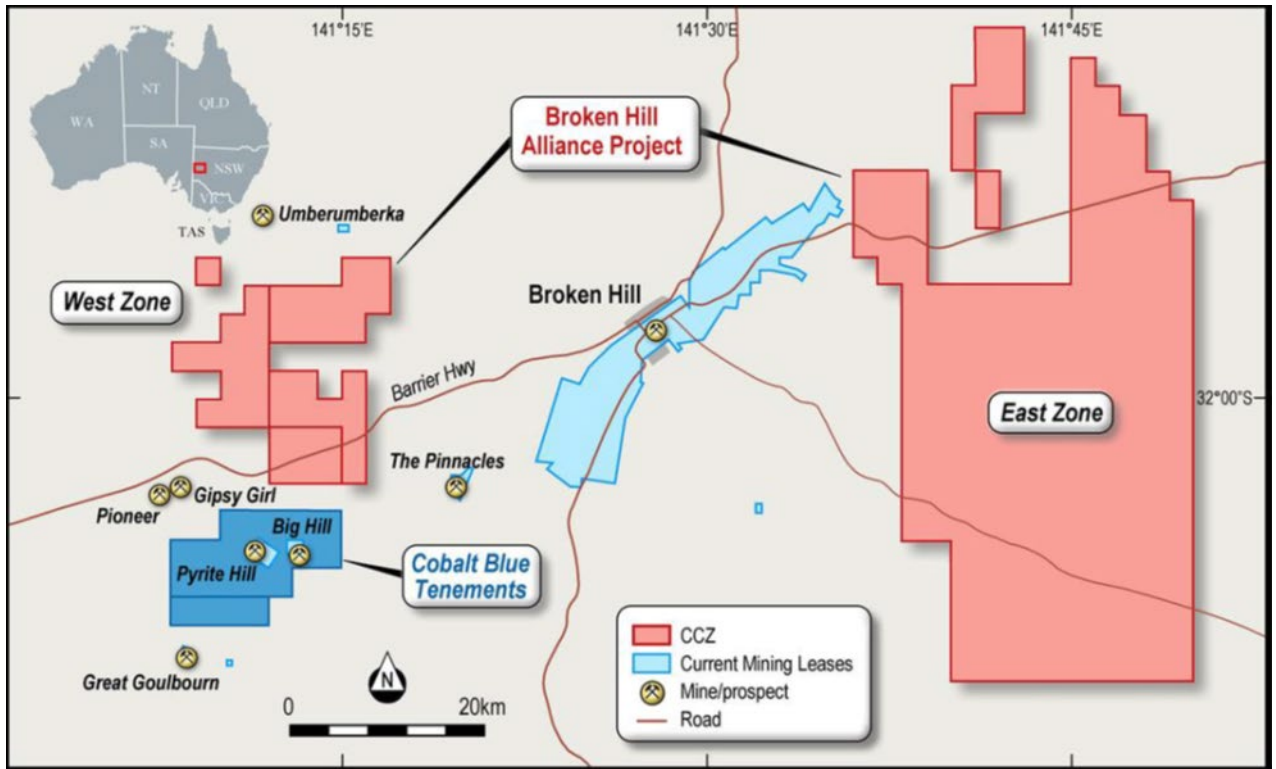
APPENDIX A: BHA PROJECT'S EAST ZONE

FIGURE A1: BHA PROJECT'S EAST ZONE - REE EXPLORATION FOOTPRINT



Source: CCZ geology team

FIGURE A2: BHA PROJECT



Source: CCZ geology team

APPENDIX B: ANSTO METALLURGICAL TESTING

CCZ identified clay-hosted REE mineralisation at its Fence Gossan, Tors and Reefs Tanks Prospects¹, which are within the BHA Project's East Zone, located about 30km from Broken Hill.

Initial flotation tests showed REE minerals can be separated from the clays by flotation to produce a higher-grade concentrate (2-3 times REE enrichment). CCZ wants to develop an understanding of the potential to extract the REEs contained in the clay zones.

CCZ contacted² ANSTO and requested a work program to characterise the REE/clay mineralisation with respect to RE leachability for six samples ranging from fresh pegmatite to highly weathered clay (see Figure B1). The MREO grades of the samples to be supplied vary from 362 - 603 ppm.

FIGURE B1 SAMPLE DESCRIPTIONS

Drillhole	Sample Number(s)	From (m)	To (m)	Thick. (m)	Comments*
TT_002RC	CCZ03888-92	14.00	19.00	5.00	MREO = 466 ppm; highly weathered clay
TT_005DD	CCZ04936-49	5.00	18.00	13.00	MREO = 603 ppm; highly weathered clay
FG_003RC	CCZ04513-30	2.00	20.00	18.00	MREO = 459 ppm; Also, Preliminary Met ALS Perth sample; highly weathered clay
FG_004RC	CCZ04686-91	7.00	13.00	6.00	MREO = 427 ppm; highly weathered clay
RT_001RC	CCZ03819-21	14.00	17.00	3.00	MREO = 466 ppm; highly weathered clay
RT_001RC	CCZ04869	64.00	65.00	1.00	MREO = 362 ppm; fresh pegmatite

*MREO = Magnetic REEs (ANSTO definition: Pr, Nd, Tb, Dy)

Source: ANSTO

A key early question for CCZ is to establish the proportion of ionically adsorbed REEs, and the potential for increased extraction of the REEs by a simple direct acid leaching approach.

Clay rare earth deposits

The so-called REE ionic clay deposits (IAD) are commercially leached in China and Myanmar as a major source of heavy REE. A feature of the IADs is the REEs are present as physically adsorbed ions which can be readily solubilised by displacing the REE ions with an appropriate cation. Typical desorption conditions are contact with 0.3-0.5 ammonium sulfate (AS) at pH 4-5 for ~ 30 minutes at ambient temperature, 20-30 wt% solids. Under these conditions up to 70% extraction (typically 40-60%) of TRE+Y can be obtained, with very little dissolution of gangue elements, which makes for simple downstream processing to produce a mixed REE carbonate.

¹ ASX Announcements 23rd November 2022, and 16th and 28th February 2023.

² Phone call from Mark Biggs (ROM Resources, 24th February 2023).

Over the last few years, there have been numerous reports of elevated concentrations of REEs associated with clays, but in most cases the deposits have not proven to be of the classic ionic clay type, and a lower pH has been found to be necessary to dissolve the REE's. Under these circumstances, the economics of the process will depend on RE extraction, acid consumption and the concentrations of dissolved gangue elements.

An initial indication of potential economic viability can be obtained by leaching under desorption conditions (pH 4) and a lower pH to determine REE extraction³ versus gangue dissolution.

Objectives and scope

The main objective of the work program is to assess the leachability of REEs from clay samples over a range of pHs.

The specific tasks in the scope were:

- Drying of as-received samples and preparation for compositing, assay and leach tests.
- Head assays on six samples (XRF, fusion digest/MS).
- Carry out a diagnostic leach on the 6 samples using ammonium sulfate (AS) at pH 4.
- Carry out a diagnostic leach tests on 6 samples using ammonium sulfate at pH 1 (in sulfuric acid).
- Provision of a data pack, with a summary note and discussion of the main findings.

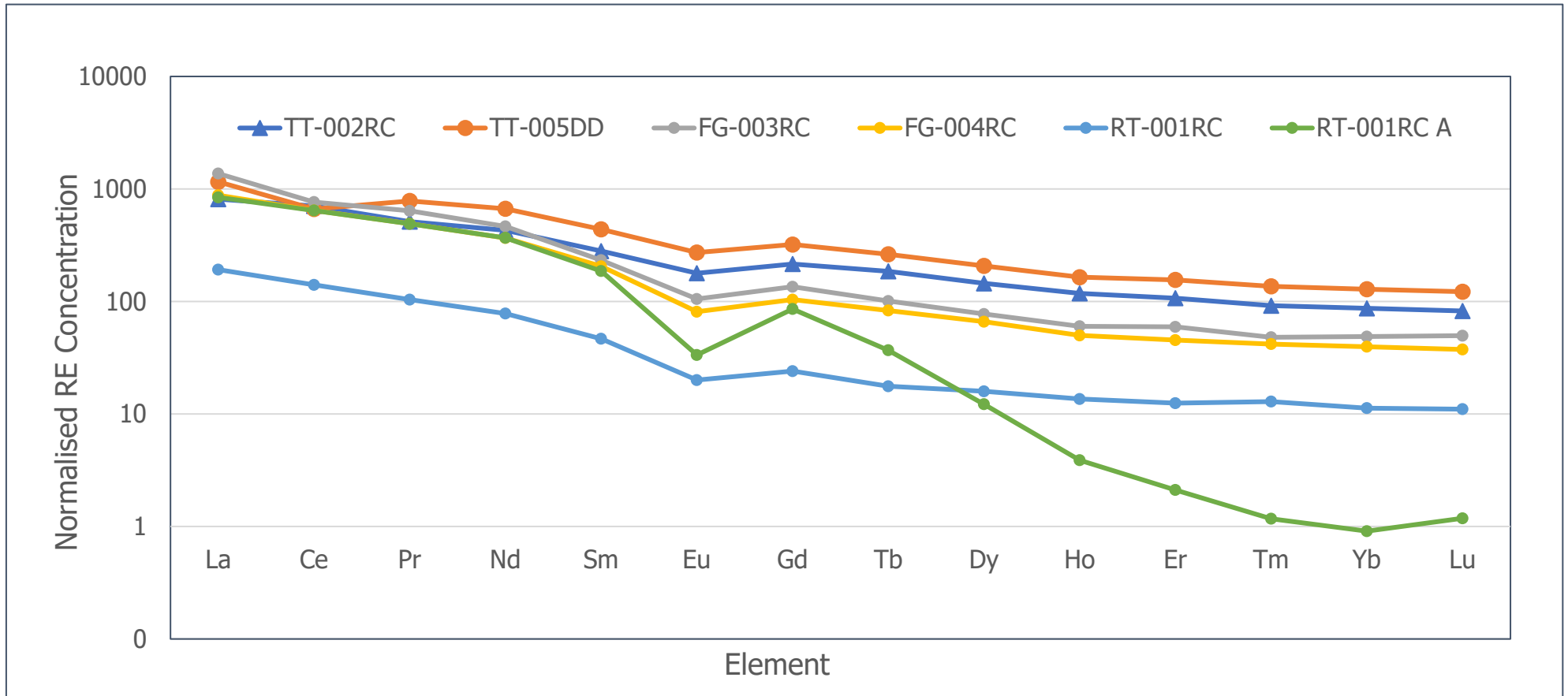
Chondrite plot

A method for providing confidence in the accuracy of the analysis of samples containing REEs is to produce a Chondrite plot. Normalisation against Chondrite meteorite concentrations removes the normal 'saw tooth' distribution obtained from the concentration profile and readily highlights differences in the relative concentrations of individual REE's in each mineral phase or sample (and analytical accuracy). The Chondrite plots should produce a smooth plot across the REE series if the sample being examined has not experienced preferential removal of elements. The Chondrite plots for the six CCZ composites are shown in Figure B2.

The plots show a smooth transition in normalised concentration from element to element which provides confidence in the analytical accuracy. The Eu anomaly is normal and is indicative of weathering through the geological history of the deposit (and is seen in clays, monazite, xenotime, or bastnasite deposits). The slight variation in Ce is common and may be an indication of dominant Ce mineralogy in certain samples. The slopes of the plots indicate that the distributions of REEs are similar in all the composites except for RT 001RC A (fresh Pegmatite). The slope of RT-001RC A indicates a significantly lower HRE/LRE ratio than the other five samples.

³ Total REE extraction is not necessarily the best indicator as the individual REs will likely dissolve to different extents, and the value of the individual REs varies significantly (the most valuable are Nd, Pr, Tb, Dy).

FIGURE B2: CHONDRITE PLOT OF HEAD SAMPLES



Source: ANSTO 2023

FIGURE B3: RARE EARTH ELEMENT COMPOSITION OF HEAD SAMPLES (PPM)

Elements	TT-002RC	TT-005DD	FG-003RC	FG-004RC	RT-001RC	RT-001RC A
La	199	283	335	215	47	206
Ce	450	423	488	411	90	410
Pr	49	75	62	47	10	47
Nd	203	316	220	174	37	174
Sm	43	67	36	32	7	29
Eu	10	16	6	5	1	2
Gd	44	66	28	21	5	18
Tb	7	10	4	3	1	1
Dy	37	53	20	17	4	3
Ho	7	9	3	3	1	0
Er	18	26	10	8	2	0
Tm	2	3	1	1	0	0
Yb	14	21	8	7	2	0
Lu	2	3	1	1	0	0
Y	169	261	88	71	20	7
LREE	901	1097	1105	847	184	837
HREE	185	274	117	96	23	53
Magnets	296	454	305	241	52	226
TRE+Y	1254	1632	1309	1014	227	897
MREO	347	532	358	282	61	265
TREYO	1509	1958	1570	1218	273	1076
MREO/TREO (%)	23.0	27.1	22.8	23.2	22.7	24.7

Notes:

1. LREE = La, Ce, Pr, Nd; HREE = Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu.
2. Magnets = Pr, Nd, Tb, Dy; MREO = magnet oxides.
3. TREO = Total oxides.

Source: ANSTO

FIGURE B4: GANGUE COMPOSITION OF HEAD SAMPLES

Elements	Unit	TT-002RC	TT-005DD	FG-003RC	FG-004RC	RT-001RC	RT-001RC A
Al	wt%	8.65	8.50	8.68	10.3	9.14	11.1
Ca	wt%	0.93	0.29	0.50	0.45	0.66	3.03
Cu	wt%	1.15	0.106	0.009	0.002	0.002	0.006
Fe	wt%	10.1	13.2	3.44	1.26	2.46	6.87
K	wt%	0.70	0.94	1.08	0.90	1.53	3.48
Mg	wt%	0.95	1.14	1.13	1.13	0.95	2.39
Mn	wt%	0.47	0.25	0.02	0.005	0.009	0.07
Na	wt%	1.55	0.85	4.23	6.34	4.18	2.59
P	wt%	0.05	0.07	0.04	0.11	0.05	0.05
Sc	ppm	57	48	24	29	15	10
Si	wt%	25.1	24.2	30.3	29.5	30.6	22.9
Th	ppm	2	4	17	21	18	102
U	ppm	8	14	19	10	3	8
TREE+Y	ppm	1254	1632	1309	1014	227	897

Source: Indratti (2023)

APPENDIX C: JORC CODE, 2012 EDITION TABLE 1 - ANSTO METALLURGICAL TESTING

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<p>Sampling techniques</p>	<p><i>Nature and quality of sampling (e.g., 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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p> <p><i>In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30g 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.</i></p>	<p>The samples described in Table B1 were derived from the EL 8434 October 2022 drilling program, as follows:</p> <p>Diamond Drilling (DDH)</p> <p>Diamond drilling of HQ diameter (TT_005DD) was completed to 137.7m r in the completed program and was located 5m away from a RC hole already drilled (TT_003RC).</p> <p>Reverse Circulation ('RC') Drilling</p> <p>RC drilling at Fence Gossan with samples submitted for analysis using the above-mentioned methodologies was used to obtain a representative sample by means of riffle splitting.</p> <p>Four (4) reverse circulation (RC) holes for a total of 516m have been completed at the Fence Gossan Prospect.</p> <p>Four (4) RC holes were completed at Reefs Tank for a total of 564m.</p> <p>At Tors Tank, four (4) RC holes for a total of 625.7m (including the cored hole) were completed.</p> <p>The RC drilling technique was used to obtain a representative sample by means of a cone or riffle splitter with samples submitted for assay by mixed acid digestion and analysis via ICP-MS + ICP-AES with anticipated reporting a suite of 48 elements (sulphur >10% by LECO)</p>

<p>Drilling techniques</p>	<p><i>Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., 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.).</i></p>	<p>Drilling consisted of reverse circulation, and HQ diamond coring. One cored hole of HQ (61mm) diameter was completed at Tors Tank (TT005DD) after all the RC holes had been completed.</p> <p>Diamond drilling will be completed with standard diameter, conventional HQ and NQ with historical holes typically utilizing RC and percussion pre-collars to an average 30 metres (see Drillhole Information for further details).</p>
<p>Drill sample recovery</p>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p>Reverse Circulation ('RC') Drilling - Reverse circulation sample recoveries were visually estimated during drilling programs. Where the estimated sample recovery was below 100% this was recorded in field logs by means of qualitative observation.</p> <p>Reverse circulation drilling employed sufficient air (using a compressor and booster) to maximise sample recovery.</p> <p>Historical cored drillholes by North Broken Hill, CRA , and Pasmenco were well documented and generally have >90% core recovery.</p> <p>No relationship between sample recovery and grade has been observed.</p>
<p>Logging</p>	<p><i>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.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p>The drilling that did occur was completed to modern-day standards. In this program at all three areas holes were completed to varying depths ranging from 100-220m.</p> <p>No downhole geophysical logging took place; however, measurements of magnetic susceptibility were taken at the same 1m intervals as the PXRf readings were taken.</p>

<p>Sub-sampling techniques and sample preparation</p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality, and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>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.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>Core samples will be hand-split or sawn with re-logging of available historical core indicating a 70:30 (retained: assayed) split was typical. The variation of sample ratios noted are considered consistent with the sub-sampling technique (hand-splitting).</p> <p>No second half samples were submitted for analysis, but duplicates have been taken at a frequency of 1:20 in samples collected.</p> <p>It is considered water planned to be used for core cutting is unprocessed and unlikely to have introduced sample contamination.</p> <p>Procedures relating to the definition of the line of cutting or splitting are not available. It is expected that 'standard industry practice' for the period was applied to maximize sample representivity.</p> <p>Quarter core will be submitted to ALS for chemical analysis using industry standard sample preparation and analytical techniques.</p> <p>The sample interval details and grades quoted for cored intervals described in various maps in the main section are given in previous ASX releases (Castillo Copper 2022a, b, c, 2023a).</p>										
<p>Quality of assay data and laboratory tests</p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>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.</i></p> <p><i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>The following rare earth elements were analysed using ME-MS61R Sample Decomposition is by HF-HNO₃-HClO₄ acid digestion, HCl leach (GEO-4A01). The Analytical Method for Silver is shown below:</p> <table border="1" data-bbox="1267 1070 2024 1171"> <thead> <tr> <th>Element</th> <th>Symbol</th> <th>Units</th> <th>Lower Limit</th> <th>Upper Limit</th> </tr> </thead> <tbody> <tr> <td>Silver</td> <td>Ag</td> <td>ppm</td> <td>0.01</td> <td>100</td> </tr> </tbody> </table> <p>Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES) Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)</p> <p>A prepared sample (0.25 g) is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids. The residue is topped up with dilute hydrochloric acid and analysed by inductively coupled plasma</p>	Element	Symbol	Units	Lower Limit	Upper Limit	Silver	Ag	ppm	0.01	100
Element	Symbol	Units	Lower Limit	Upper Limit								
Silver	Ag	ppm	0.01	100								

atomic emission spectrometry. Following this analysis, the results are reviewed for high concentrations of bismuth, mercury, molybdenum, silver, and tungsten and diluted accordingly.

Samples meeting this criterion are then analysed by inductively coupled plasma-mass spectrometry. Results are corrected for spectral interelement interferences.

Four acid digestions can dissolve most minerals: however, although the term “near total” is used, depending on the sample matrix, not all elements are quantitatively extracted.

Results for the additional rare earth elements will represent the acid leachable portion of the rare earth elements and as such, cannot be used, for instance to do a chondrite plot.

Geochemical Procedure

Element geochemical procedure reporting units and limits are listed below:

Element	Sym	Units	Lower Limit	Upper Limit
Aluminum	Al	%	0.01	50
Arsenic	As	ppm	0.2	10 000
Barium	Ba	ppm	10	10 000
Beryllium	Be	ppm	0.05	1 000
Bismuth	Bi	ppm	0.01	10 000
Calcium	Ca	%	0.01	50
Cadmium	Cd	ppm	0.02	1 000
Cerium	Ce	ppm	0.01	500

Cobalt	Co	ppm	0.1	10 000
Chromium	Cr	ppm	1	10 000
Cesium	Cs	ppm	0.05	500
Copper	Cu	ppm	0.2	10 000
Iron	Fe	%	0.01	50
Gallium	Ga	ppm	0.05	10 000
Germanium	Ge	ppm	0.05	500
Hafnium	Hf	ppm	0.1	500
Indium	In	ppm	0.005	500
Potassium	K	%	0.01	10
Lanthanum	La	ppm	0.5	10 000
Lithium	Li	ppm	0.2	10 000
Magnesium	Mg	%	0.01	50
Molybdenum	Mo	ppm	0.05	10 000
Sodium	Na	%	0.01	10
Niobium	Nb	ppm	0.1	500
Nickel	Ni	ppm	0.2	10 000
Phosphorous	P	ppm	10	10 000
Lead	Pb	ppm	0.5	10 000
Rubidium	Rb	ppm	0.1	10 000
Rhenium	Re	ppm	0.002	50
Sulphur	S	%	0.01	10
Antimony	Sb	ppm	0.05	10 000

Scandium	Sc	ppm	0.1	10 000
Selenium	Se	ppm	1	1 000
Tin	Sn	ppm	0.2	500
Strontium	Sr	ppm	0.2	10 000
Tantalum	Ta	ppm	0.05	100
Tellurium	Te	ppm	0.05	500
Thorium	Th	ppm	0.2	10 000
Titanium	Ti	%	0.005	10
Thallium	Tl	ppm	0.02	10 000
Uranium	U	ppm	0.1	10 000
Vanadium	V	ppm	1	10 000
Tungsten	W	ppm	0.1	10 000

Method ME-MS81

This method involves a lithium borate fusion prior to acid dissolution and ICP- MS analysis provides the most quantitative analytical approach for a broad suite of trace elements. Options for adding the whole rock elements from an ICP - AES analysis on the same fusion, or base metals from a separate four acid digestion, are available.

Lower and upper detection limits are given below:

		<table border="1"> <thead> <tr> <th>Element</th> <th>Symbol</th> <th>Units</th> <th>Lower Limit</th> <th>Upper Limit</th> </tr> </thead> <tbody> <tr> <td>Yttrium</td> <td>Y</td> <td>ppm</td> <td>0.1</td> <td>500</td> </tr> <tr> <td>Zinc</td> <td>Zn</td> <td>ppm</td> <td>2</td> <td>10 000</td> </tr> <tr> <td>Zirconium</td> <td>Zr</td> <td>ppm</td> <td>0.5</td> <td>500</td> </tr> <tr> <td>Dysprosium</td> <td>Dy</td> <td>ppm</td> <td>0.05</td> <td>1 000</td> </tr> <tr> <td>Erbium</td> <td>Er</td> <td>ppm</td> <td>0.03</td> <td>1 000</td> </tr> <tr> <td>Europium</td> <td>Eu</td> <td>ppm</td> <td>0.03</td> <td>1 000</td> </tr> <tr> <td>Gadolinium</td> <td>Gd</td> <td>ppm</td> <td>0.05</td> <td>1 000</td> </tr> <tr> <td>Holmium</td> <td>Ho</td> <td>ppm</td> <td>0.01</td> <td>1 000</td> </tr> <tr> <td>Lutetium</td> <td>Lu</td> <td>ppm</td> <td>0.01</td> <td>1 000</td> </tr> <tr> <td>Neodymium</td> <td>Nd</td> <td>ppm</td> <td>0.1</td> <td>1 000</td> </tr> <tr> <td>Praseodymium</td> <td>Pr</td> <td>ppm</td> <td>0.03</td> <td>1 000</td> </tr> <tr> <td>Samarium</td> <td>Sm</td> <td>ppm</td> <td>0.03</td> <td>1 000</td> </tr> <tr> <td>Terbium</td> <td>Tb</td> <td>ppm</td> <td>0.01</td> <td>1 000</td> </tr> <tr> <td>Thulium</td> <td>Tm</td> <td>ppm</td> <td>0.01</td> <td>1 000</td> </tr> <tr> <td>Ytterbium</td> <td>Yb</td> <td>ppm</td> <td>0.03</td> <td>1 000</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Laboratory inserted standards, blanks and duplicates were analysed per industry standard practice. There was no evidence of bias from these results. 	Element	Symbol	Units	Lower Limit	Upper Limit	Yttrium	Y	ppm	0.1	500	Zinc	Zn	ppm	2	10 000	Zirconium	Zr	ppm	0.5	500	Dysprosium	Dy	ppm	0.05	1 000	Erbium	Er	ppm	0.03	1 000	Europium	Eu	ppm	0.03	1 000	Gadolinium	Gd	ppm	0.05	1 000	Holmium	Ho	ppm	0.01	1 000	Lutetium	Lu	ppm	0.01	1 000	Neodymium	Nd	ppm	0.1	1 000	Praseodymium	Pr	ppm	0.03	1 000	Samarium	Sm	ppm	0.03	1 000	Terbium	Tb	ppm	0.01	1 000	Thulium	Tm	ppm	0.01	1 000	Ytterbium	Yb	ppm	0.03	1 000
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<p>Verification of sampling and assaying</p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<ul style="list-style-type: none"> Two of the drillholes have been twinned, at Tors Tank where TT_005DD was drilled next to TT_003RC. Conversion of elemental analysis (REE parts per million) to stoichiometric oxide (REO parts per million) was undertaken by ROM geological staff using the below element to stoichiometric oxide conversion factors (https://www.jcu.edu.au/news/releases/2020/march/rare-earth-metals-an-untapped-resource) <p>Table C1-1: Element -Conversion Factor -Oxide Form</p>																																																																																

Discuss any adjustment to assay data.

Ce	1.2284	CeO ₂
Dy	1.1477	Dy ₂ O ₃
Er	1.1435	Er ₂ O ₃
Eu	1.1579	Eu ₂ O ₃
Gd	1.1526	Gd ₂ O ₃
Ho	1.1455	Ho ₂ O ₃
La	1.1728	La ₂ O ₃
Lu	1.1371	Lu ₂ O ₃
Nd	1.1664	Nd ₂ O ₃
Pr	1.2083	Pr ₆ O ₁₁
Sm	1.1596	Sm ₂ O ₃
Tb	1.1762	Tb ₄ O ₇
Tm	1.1421	Tm ₂ O ₃
Y	1.2699	Y ₂ O ₃
Yb	1.1387	Yb ₂ O 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:

TREO (Total Rare Earth Oxide) = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃ + Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Y₂O₃ + Lu₂O₃.

TREO-Ce = TREO – CeO₂

LREO (Light Rare Earth Oxide) = La₂O₃ + CeO₂ + Pr₆O₁₁ + Nd₂O₃ + Sm₂O₃

HREO (Heavy Rare Earth Oxide) = Eu₂O₃ + Gd₂O₃ + Tb₄O₇ + Dy₂O₃ + Ho₂O₃ + Er₂O₃ + Tm₂O₃ + Yb₂O₃ + Y₂O₃ + Lu₂O₃

CREO (Critical Rare Earth Oxide) = Nd₂O₃ + Eu₂O₃ + Tb₄O₇ + Dy₂O₃ + Y₂O₃

MREO (Magnetic Rare Earth Oxide) = Pr₆O₁₁ + Nd₂O₃ + Tb₄O₇ + Dy₂O₃. (as advised by ANSTO)

		<p>Previously, Castillo Copper had reported MREO (Magnetic Rare Earth Oxide) as = $\text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Sm}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3$.</p> <p>Total Rare Earth Oxides (TREO) Example Calculation:</p> <p>To calculate TREO an oxide conversion “factor” is applied to each rare-earth element assay. The “factor” equates an elemental assay to an oxide concentration for each element. Below is an example of the factor calculation for Lanthanum (La):</p> <ul style="list-style-type: none"> ○ Relative Atomic Mass (La) = 138.9055 ○ Relative Atomic Mass (O) = 15.9994 ○ Oxide Formula = La_2O_3 ○ Oxide Conversion Factor = $1 / ((2 \times 138.9055) / (2 \times 138.9055 + 3 \times 15.9994))$ Oxide Conversion Factor = 1.173 (3dp) <p>None of the historical data has been adjusted.</p>						
<p>Location of data points</p>	<p><i>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.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p>All drillholes and samples have been converted to MGA94 (Zone 54). The holes were originally surveyed with handheld GPS, and were subsequently resurveyed by a more accurate DGPS survey from GMC Surveying. It is thus estimated that locational accuracy therefore varies between 0.1-0.2m</p> <p>The quality of topographic control (a combination of drone survey over the Fence Gossan area and GSNSW 1 sec DEM for the remainder) is deemed adequate for the purposes of the exploration drilling program.</p>						
<p>Data spacing and distribution</p>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>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.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<p>The average sample spacing from the current drilling program across the tenure varies per prospect, and sample type, as listed in Table C1-2, below:</p> <p style="text-align: center;">Table C1-2: EL 8434 Drillhole Spacing</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #f4a460;">Prospect</th> <th style="background-color: #f4a460;">Drillholes Completed</th> <th style="background-color: #f4a460;">RMS Drillhole Spacing (m)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Prospect	Drillholes Completed	RMS Drillhole Spacing (m)			
Prospect	Drillholes Completed	RMS Drillhole Spacing (m)						

The Sisters	Not yet	
Iron Blow	Not Yet	
Tors Tank	4	127
Fence Gossan	4	208
Ziggy's Hill	n/a	n/a
Reefs Tank	1	n/a

The Datamine software allows creation of fixed length samples from the original database given a set of stringent rules.

Sample locations were previously shown by plans in Castillo Copper (2023a).

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.

Historical drill holes at the BHAЕ are typically drilled vertically for auger and RAB types (drilled along section lines) and angled at -55° or -60° to the horizontal and drilled perpendicular to the mineralised trend for RC and DDH.

Drilling orientations are adjusted along strike to accommodate folded geological sequences. All Fence Gossan holes were designed to drill toward grid south at an inclination of 60 degrees from horizontal.

The drilling orientation is not considered to have introduced a sampling bias on assessment of the current geological interpretation.

Geological mapping by various companies has reinforced that the strata dips variously between 5 and 65 degrees.

Sample security

The measures taken to ensure sample security.

Sample security procedures are considered 'industry standard' for the current period.

Samples obtained during drilling completed between 4/10/22 to the 10/10/22 were transported by exploration employees or an independent courier directly from Broken Hill to ALS Laboratory,

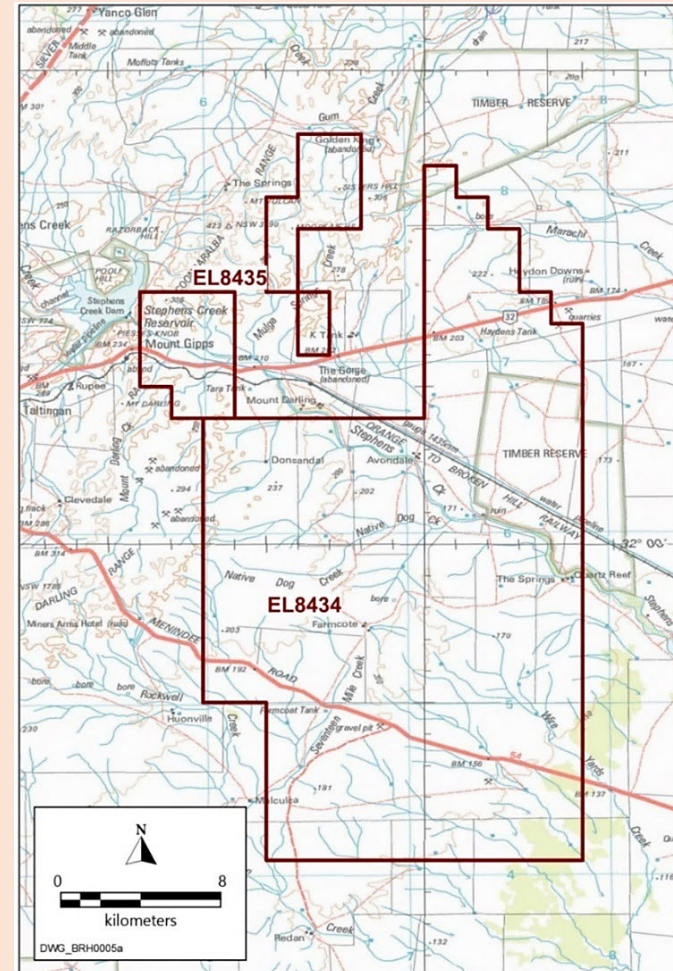
		<p>Adelaide. Samples selected for metallurgical testing were then shipped to ANSTO in Sydney NSW.</p> <p>The Company considers that risks associated with sample security are limited given the nature of the targeted mineralisation.</p>
<p>Audits or reviews</p>	<p><i>The results of any audits or reviews of sampling techniques and data.</i></p>	<p>No external audits or reviews have yet been undertaken. The reporting of head grades by ANSTO internal laboratory work matches that previously reported by ALS work conducted on behalf of Castillo Copper (Biggs 2023; Castillo Copper 2023a).</p>

SECTION 2: REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
<p>Mineral tenement and land tenure status</p>	<p><i>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.</i></p> <p><i>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.</i></p>	<p>EL 8434 is located about 28km east of Broken Hill whilst EL 8435 is 16km east of Broken Hill. Both tenures are approximately 900km northwest of Sydney in far western New South Wales (Figures C2-1 and C2-2 in Appendix A, above).</p> <p>EL 8434 and EL 8435 were both granted on the 2nd of June 2016 to Squadron Resources for a term of five (5) years for Group One Minerals. On the 25th of May 2020, Squadron Resources changed its name to Wyloo Metals Pty Ltd (Wyloo). In December 2020 the tenure was transferred from Wyloo Metals to Broken Hill Alliance Pty Ltd a 100% subsidiary company of Castillo Copper Limited. Both tenures were renewed on the 12th of August 2021 for a further six (6) years and are due to expire on the 2nd of June 2027.</p> <p>EL 8434 lies across two (2) 1:100,000 geology map sheets Redan 7233 and Taltingan 7234, and two (2) 1:250,000 geology map sheets, SI54-3 Menindee, and SH54-15 Broken Hill in the county of Yancowinna. EL 8434 consists of one hundred and eighty-six (186) units in the Adelaide and Broken Hill 1:1,000,000 Blocks covering an area of approximately 580km².</p> <p>EL 8435 is located on the 1:100,000 geology map sheet Taltingan 7234, and the 1:250,000 geology map sheet SH/54-15 Broken Hill in the county of Yancowinna. EL 8435 consists of twenty-two (22) units (Table 1) in the Broken Hill 1:1,000,000 Blocks covering an area of approximately 68km².</p> <p>Access to the tenures from Broken Hill is via the sealed Barrier Highway. This road runs north-east to south-west through the northern portion of EL 8434, passes the southern tip of EL 8435 eastern section and through the middle of the western section of EL 8435. Access is also available via the Menindee Road which runs north-west to south-east through the southern section of the EL 8434. The Orange to Broken Hill</p>

Rail line also dissects EL 8435 western section the middle and then travels north-west to south-east slicing through the eastern arm of EL 8434 (Figure C2-1).

Figure C2-1: EL 8434 and EL 8435 General Location Map



Exploration done by other parties

Acknowledgment and appraisal of exploration by other parties.

Explorers who were actively involved over longer historical periods in various parts of EL8434 were: - North Broken Hill Ltd, CRAE Exploration, Major Mining Ltd and Broken Hill Metals NL, Pasminco Exploration Ltd,

Normandy Exploration Ltd, PlatSearch NL/Inco Ltd/ EGC Pty Ltd JV and the Western Plains Gold Ltd/PlatSearch/EGC Pty Ltd JV.

A comprehensive summary of work by previous explorers was presented in Leyh (2009). However, more recently, follow-up field reconnaissance of areas of geological interest, including most of the prospective zones, was carried out by EGC Pty Ltd over the various licenses. This work, in conjunction with a detailed interpretation of aeromagnetic, gravity plus RAB / RC drill hole logging originally led to the identification of at least sixteen higher priority prospect areas. All these prospects were summarized in considerable detail in Leyh (2008). Future work programs were then also proposed for each area. Since then, further compilation work plus detailed geological reconnaissance mapping and sampling of gossans and lode rocks has been carried out.

A total of 22 prospects were then recognised on the exploration licence with at least 12 occurring in and around the tenure.

With less than 45% outcropping Proterozoic terrain within the licence, this makes it very difficult to explore and is in the main very effectively screened from the easy application of more conventional exploration methodologies due to a predominance of extensive Cainozoic cover sequences. These include recent to young Quaternary soils, sands, clays and older more resistant, only partially dissected, Tertiary duricrust regolith covered areas. The depth of the cover ranges from a few metres in the north to over 60 metres in some areas on the southern and central license.

Exploration by EGC Pty Ltd carried out in the field in the first instance has therefore been heavily reliant upon time consuming systematic geological reconnaissance mapping and reliable geochemical sampling. These involve a slow systematic search over low outcropping areas, poorly exposed subcrop and float areas as well as the progressive development of effective regolith mapping and sampling tools. This work has been combined with a vast amount of intermittently acquired past exploration data. The recent data compilation includes an insufficiently detailed NSWGS regional mapping scale given the problems involved,

plus some regionally extensive, highly variable, low-level stream and soil BLEG geochemical data sets over much of the area.

There are also a few useful local detailed mapping grids at the higher priority prospects, and many more numerous widespread regional augers, RAB, and percussion grid drilling data sets. Geophysical data sets including ground magnetics, IP and EM over some prospect areas have also been integrated into the exploration models. These are located mainly in former areas of moderate interest and most of the electrical survey methods to date in this type of terrain continue to be of limited application due to the high degree of weathering and the often prevailing and complex regolith cover constraints.

Between 2007 and 2014 Eaglehawk Geological Consulting has carried out detailed research, plus compilation and interpretation of a very large volume of historic exploration data sourced from numerous previous explorers and dating back to the early 1970's. Most of this data is in non-digital scanned form. Many hard copy exploration reports (see references) plus several hundred plans have been acquired from various sources, hard copy printed as well as downloaded as scans from the Geological Survey of NSW DIGS system. They also conducted field mapping, costean mapping and sampling, and rock chip sampling and analysis.

Work Carried out by Squadron Resources and Whyloo Metals 2016-2020

Research during Year 1 by Squadron Resources revealed that the PGE-rich, sulphide-bearing ultramafic rocks in the Broken Hill region have a demonstrably alkaline affinity. This indicates a poor prospectivity for economic accumulations of sulphide on an empirical basis (e.g., in comparison to all known economic magmatic nickel sulphide deposits, which have a dominant tholeiitic affinity). Squadron instead directed efforts toward detecting new Broken Hill-Type (BHT) deposits that are synchronous with basin formation. Supporting this modified exploration rationale are the EL's stratigraphic position, proximity to the Broken Hill line of lode, abundant mapped alteration (e.g., gahnite and/or garnet

bearing exhalative units) and known occurrences such as the “Sisters” and “Iron Blow” prospects.

The area overlies a potential magmatic Ni-Cu-PGE source region of metasomatised sub-continental lithospheric mantle (SCLM) identified from a regional targeting geophysical database. The exploration model at the time proposed involved remobilization of Ni-Cu-PGE in SCLM and incorporation into low degree mafic-ultramafic partial melts during a post-Paleoproterozoic plume event and emplacement higher in the crust as chonoliths/small intrusives - Voisey's Bay type model. Programs were devised to use geophysics and geological mapping to locate secondary structures likely to control and localise emplacement of Ni-Cu-PGE bearing chonoliths. Since EL8434 was granted, the following has been completed:

- Airborne EM survey.
- Soil and chip sampling.
- Data compilation.
- Geological and logistical reconnaissance.
- Community consultations; and
- Execution of land access agreements.

Airborne EM Survey

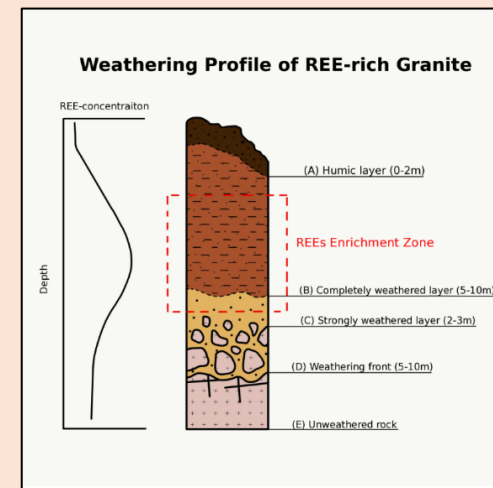
Geotech Airborne Limited was engaged to conduct an airborne EM survey using their proprietary VTEM system in 2017. A total of 648.92-line kilometres were flown on a nominal 200m line spacing over a portion of the project area. Several areas were infilled to 100m line spacing.

The VTEM data was interpreted by Southern Geoscience Consultants Pty Ltd, who identified a series of anomalies, which were classified as high or low priority based on anomaly strength (i.e., does the anomaly persist into the latest channels). Additionally, a cluster of VTEM anomalies at the “Sisters” prospect have been classified separate due to

		<p>strong IP effects observed in the data. Geotech Airborne have provided an IP corrected data and interpretation of the data has since been undertaken.</p> <p>Soil and Chip sampling</p> <p>The VTEM anomalies were followed up by a reconnaissance soil sampling programme. Spatially clustered VTEM anomalies were grouped, and follow-up soil lines were designed. Two (2) VTEM anomalies were found to be related to culture and consequently no soils were collected. Two (2) other anomalies were sampled which were located above thick alluvium of Stephens Creek and were therefore not sampled. A line of soil samples was collected over a relatively undisturbed section at Iron Blow workings and the Sisters Prospect.</p> <p>One hundred and sixty-six (166) soil samples were collected at a nominal 20cm depth using a 2mm aluminum sieve. Two (2) rock chips were also collected during this program. The samples were collected at either 20m or 40m spacing over selected VTEM anomalies. The samples were pulverised and analysed by portal XRF at ALS laboratories in Perth.</p> <p>Each site was annotated with a “Regolith Regime” such that samples from a depositional environment could be distinguished from those on exposed Proterozoic bedrock, which were classified as an erosional environment. The Regolith Regime groups were used for statistical analysis and levelling of the results. The levelled data reveals strong relative anomalies in zinc at VTEM anomaly clusters 10, 12 and 14 plus strong anomalous copper at VTEM 17.</p>
<p>Geology</p>	<p><i>Deposit type, geological setting, and style of mineralisation.</i></p>	<p>As the strata is tightly folded, the intersected cobalt-rich layers are overstated in terms of apparent thickness, however the modelling software calculates a true, vertical thickness. Cobalt mineralisation is commonly associated with shears, faults, amphibolites, and a quartz-magnetite rock within the shears, or on or adjacent to the boundaries of the Himalaya Formation. In general, most of the cobalt and rare earth element - rich layers have a north-northwest to north strike.</p>

REE enrichment generally occurs as a 5 to 10-metre-thick zone between the completely weathered layer and strongly weathered layer and it is targeted for commercial mining (Figure D2-2). Compared to other REE deposits, regolith-hosted rare earth element deposits are substantially low-moderate grade (containing 0.05-0.3 wt.% extractable REEs). Nevertheless, due to its easy extraction method, low processing costs and large abundance, the orebodies are generally economic to be extracted (Duuring, (2020); Kanazawa and Kamitani (2006); and Murakami, H.; Ishihara (2008)).

Figure C2-2: Weathering Profile over REE – Rich Granite



https://en.wikipedia.org/wiki/Regolith-hosted_rare_earth_element_deposits

Weathering profile of regolith hosted REE deposits shown above, the legend is: (A) Humic layer. (B) Completely weathered layer. (C) Strongly weathered layer. (D) Weathering front. (E) Unweathered rock.

Most of the REE found in cerium monazite ($Ce(PO_4)$) which always contains major to minor amounts of other REE (Nd, La, Pr, Sm etc) replacing Ce. Also, the mineral often contains trace

		<p>amounts of U and Th (coupled with Ca). This will be collaborated with XRD and/or SEM analysis.</p>
<p>Drill hole Information</p>	<p><i>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:</i></p> <ul style="list-style-type: none"> ○ <i>easting and northing of the drill hole collar</i> ○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> ○ <i>dip and azimuth of the hole</i> ○ <i>down hole length and interception depth</i> ○ <i>hole length.</i> <p><i>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.</i></p>	<p>Header information about all drillholes and surface samples completed at Reefs Tank, Tors Tank and Fence Gossan have been tabulated in this release in Appendix B.</p>
<p>Data aggregation methods</p>	<p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>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.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>No metal equivalents have been reported. Rare earth element results have been converted to rare earth oxides as per standard industry practice (Castillo Copper 2022c, 2023a).</p> <p>No compositing of assay results has taken place, but rather menu options within the Datamine GDB module have been used to create fixed length 1m assay intervals from the original sampling lengths.</p> <p>The rules follow very similarly to those used by the Leapfrog Geo software in creating fixed length samples.</p>

<p>Relationship between mineralisation widths and intercept lengths</p>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., ‘down hole length, true width not known’).</i></p>	<p>A database of all the historical borehole sampling has been compiled and validated. It is uncertain if there is a strong relationship between the surface sample anomalies to any subsurface anomalous intersections due to the possible masking by variable Quaternary and Tertiary overburden that varies in depth from 0-15m. The mineralisation appears to be secondary enrichment in the regolith clays and extremely weathered material derived from quartzo-feldspathic pegmatites.</p>
<p>Diagrams</p>	<p><i>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.</i></p>	<p>Current surface anomalies are shown on maps released on the ASX (Castillo Copper 2022a, 2022b, 2022c and 2023a). All historical surface sampling has had their coordinates converted to MGA94, Zone 54.</p>
<p>Balanced reporting</p>	<p><i>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.</i></p>	<p>All recent laboratory analytical results have been recently reported (see Castillo Copper 2022a, b, c, 2023a) for assay results.</p> <p>Regarding the surface and sampling, no results other than duplicates, blanks or reference standard assays have been omitted.</p>
<p>Other substantive exploration data</p>	<p><i>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.</i></p>	<p>Historical explorers have also conducted airborne and ground gravity, magnetic, EM, and IP resistivity surveys over parts of the tenure area but this is yet to be fully georeferenced (especially the ground IP surveys). Squadron Resources conducted an airborne EM survey in 2017 that covers Iron Blow and The Sisters, but not the southern cobalt and REE prospect areas.</p>
<p>Further work</p>	<p><i>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p>	<p>It is recommended that:</p> <ul style="list-style-type: none"> Assess a wider variety of samples to validate the leach results across the deposit.

Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.

- Consider QEMSCAN mineralogy to identify possible REE phases. This would confirm the reason for low extractions and inform the likelihood of increased dissolution under more aggressive acid leach conditions. It would also inform the possibility of upgrading the REE content by beneficiation (e.g., screening); and
- Consider additional leach tests using hydrochloric acid to assess whether increased REE dissolution can be achieved using an alternative lixiviant for an increased leach duration time but noting that a moderate acidity is still likely to be required, which would likely prove to be uneconomic.

TABLE 1 REFERENCES

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