



## Significant clay-hosted rare earth elements discovery at Broken Hill



### Highlights

- Assays from seven drill-holes across the Fence Gossan (FG) and Tors Tank (TT) Prospects, confirm a significant shallow clay-hosted Rare Earth Element (REE) discovery – up to 2,410ppm Total Rare Earth Oxides (TREO), with high-value Magnet REOs representing up to 29.9% of the grade – the best intercepts comprise:
  - ❖ 20m @ 1,780ppm TREO (28.9% Magnet REO) from surface including 4m @ 2,410ppm TREO from 16m (FG\_003RC)
  - ❖ 7m @ 1,048ppm TREO (29.9% Magnet REO) from 12m (TT\_002RC)
  - ❖ 19m @ 847ppm TREO (29.6% Magnet REO) from surface (TT\_003RC)
  - ❖ 8m @ 773ppm TREO (24.0% Magnet REO) from 48m (FG\_004RC)
  - ❖ 4m @ 732ppm TREO (27.1% Magnet REO) from 24m (TT\_001RC)
  - ❖ 19m @ 661ppm TREO (28.0% Magnet REO) from surface (FG\_002RC)
  - ❖ 32m @ 636ppm TREO (25.7% Magnet REO) from 52m (FG\_003RC)
  - ❖ 28m @ 614ppm TREO (27.8% Magnet REO) from 4m (FG\_004RC)
- Assays from FG\_001RC are still pending, however, results for FG\_002-4RC delineate an initial 800m strike event starting near FG's eastern boundary:
  - ❖ Further, with REE mineralisation open in all directions, and FG circa 4km long by 1km wide (W-E), the Board has ordered follow up geological mapping, sampling and auger drilling to target extending the known strike event to the west
- While cobalt assays met expectations, the new discovery has pivoted the Board's strategic focus for the current drilling campaign and beyond to fully understanding the extent of REE mineralisation across the BHA Project's East Zone

**Castillo Copper's Chairman Ged Hall commented:** "With global demand for REEs on an upward trajectory, the Board is delighted the assays confirm a new shallow clay hosted REE discovery within the BHA Project's East Zone. In particular, the Board notes drill-hole FG\_003RC which intersected an aggregate 52m of REE mineralisation. This is a game-changing event for the group, as exploration efforts moving forward are going to focus on extending known REE mineralisation, especially at the Fence Gossan and Iron Blow Prospects in due course."

## Clay-hosted REE discovery at BHA Project's East Zone

Castillo Copper Limited's ("CCZ") Board is delighted to report that assays from seven drill-holes across the Fence Gossan (FG) and Tors Tank (TT) Prospects, within the BHA Project's East Zone (Appendix A), confirmed a significant shallow clay-hosted REE discovery. Notably, the results returned up to 2,410ppm TREO, with high-value Magnet REO representing up to 29.9% of the grade.

Figure 1 summarises the best assayed intercepts for TREO:

**FIGURE 1: BEST ASSAYED INTERCEPTS – FENCE GOSSAN / TORS TANK PROSPECTS**

- ❖ 20m @ 1,780ppm TREO (28.9% Magnet REO) from surface including 4m @ 2,410ppm TREO from 16m (FG\_003RC)
- ❖ 7m @ 1,048ppm TREO (29.9% Magnet REO) from 12m (TT\_002RC)
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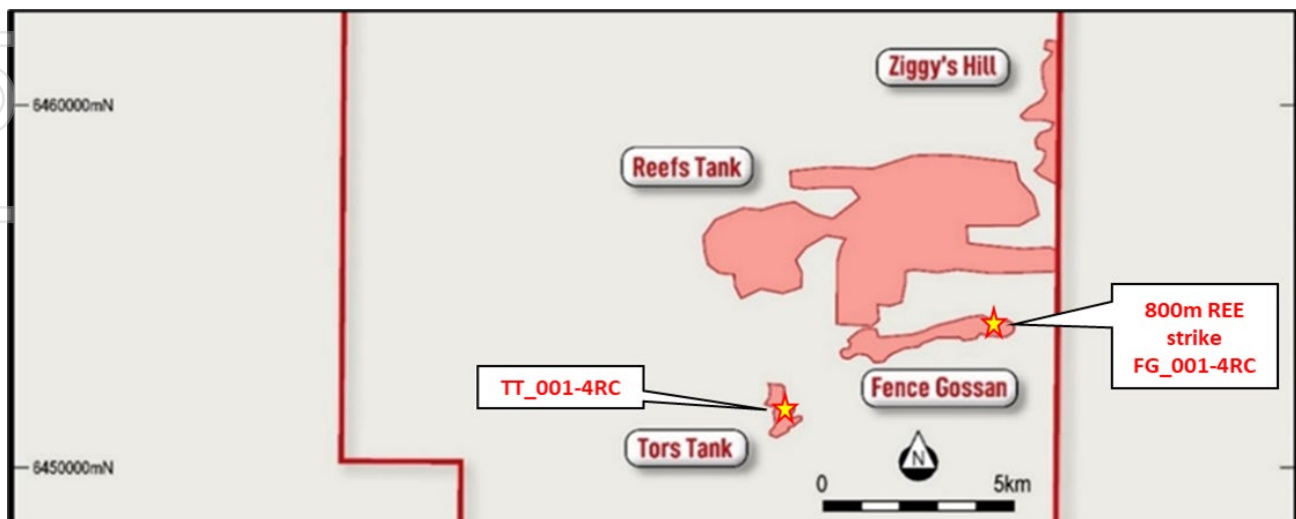
Note: Refer to Appendix B & C for full results and TREO conversion factor. TT\_004RC both TREO layers <500ppm  
Source: CCZ geology team

### Fence Gossan – 800m strike event

As shown in Figure 2 below, drill-holes FG\_001-4RC were located at the eastern end of the prospect, spaced 200m apart in a west-east direction (refer Appendix B for TREO results plan). Subject to the receipt of assays for FG\_001RC, the results for FG\_002-4RC already delineate an initial 800m REE strike event.

With REE mineralisation open in all directions, the Board has ordered the full extent of FG's area (circa 4km long by 1km wide) to be geologically mapped, surface sampled, and auger drilled. The core objective is to extend the known strike event to the west and identify new targets for drill-testing.

**FIGURE 2: FENCE GOSSAN – KEY FOCUS TO EXTEND KNOWN REE MINERALISATION**



Source: CCZ geology team

In terms of underlying geology, there are significant magnetite zones at FG which are directly associated with pegmatites up to 19m thick (refer Figure 3). The final assays returned for FG\_002-4RC broadly confirmed the REE mineralisation, especially from 0 to 20m, is hosted within clay weathered from pegmatite.

**FIGURE 3: PEGMATITE LAYERS PRESENT DRILLHOLES FG\_001RC-004RC**

	FG_001RC			FG_002RC			FG_003RC			FG_004RC		
	Start	End	Thick	Start	End	Thick	Start	End	Thick	Start	End	Thick
<b>Band1</b>	1	17	16	1	10	9	1	20	19	--	--	--
<b>Band2</b>	25	32	7	13	14	1	87	101	15	--	--	--
<b>Band3</b>	--	--	--	36	38	2	--	--	--	--	--	--
<b>Total</b>			<b>23</b>			<b>12</b>			<b>34</b>			<b>0</b>

Notes:

1. Pegmatite layers recorded represent qualitative estimation during geological logging.
2. Band 1 consists of interbanded, highly weathered pegmatite and clay weathered from pegmatite.

Source: CCZ geology team

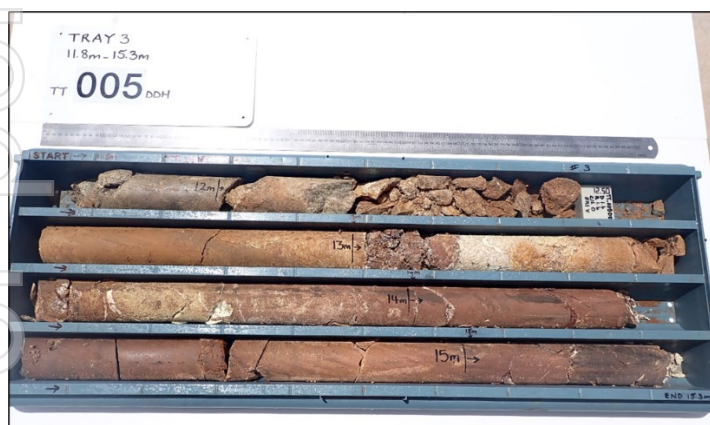
### Tors Tank – Diamond core

Three of the drill-holes intersected REE mineralisation at TT from relatively shallow depths (refer Figure 1 & Appendix B & C). Notably, the intersected geology is interpreted to be consistent with observations by previous explorers including Broken Hill North Group<sup>1</sup>. Furthermore, the drilling intersected a geological sequence comprising clay, amphibolite, schist, gneiss, and pegmatite that appears to be dipping moderately.

The Board is waiting on assays for TT\_005DD – an HQ fully cored diamond hole – completed to 137m that is next to TT\_003RC (19m @ 847ppm TREO from surface – Figure 1) prior to formulating next steps.

Figure 4 shows clay and fresh pegmatites from TT\_005DD, while Figure 5 shows core being cut prior to being sent to the laboratory for analysis.

**FIGURE 4: TORS TANK TT\_005DD CORE SHOWING CLAY AND FRESH PEGMATITES**



Location: 6460000mN, 5700000mE  
Source: CCZ geology team





**FIGURE 5: CUTTING CORE FROM TT\_005DD**



Source: CCZ geology team

### **Iron Blow Prospect – Geological nexus**

The REE assays for FG and TT confirm a geological nexus to the Iron Blow Prospect, which is circa 15km north-west. This conclusion is based on recent re-assays of diamond core from drill-hole DD90\_IB3 (sourced from the NSW core library) which intersected fresh pegmatite that hosted REE mineralisation – on a cumulative basis – over 35m<sup>12</sup>.

The best intersections were:

- ❖ 8m @ 1,460ppm TREO from 150m<sup>2</sup>
- ❖ 12m @ 297ppm TREO from 199m<sup>2</sup>
- ❖ 6.4m @ 290ppm TREO from 189m<sup>2</sup>
- ❖ 4.8m @ 311ppm TREO from 232m<sup>2</sup>

However, to gain an understanding of the geology above 150m, further core has been cut (from 4m to 82m) which has been sent to the laboratory for detailed analysis<sup>2</sup>. Once returned this should provide solid insights into the underlying geology over circa 250m (from DD90\_IB3), especially if there is shallower REE mineralisation.

In turn, this will build the case to identify and drill-test priority targets at the Iron Blow Prospect to determine the extent of REE mineralisation apparent.

### **Cobalt mineralisation – Assays in line with expectations**

While cobalt was the initial driving force behind the current drilling campaign, discovering the REE mineralisation potential has shifted the strategic focus, especially with global demand for REEs on an upward trajectory.

Nonetheless, cobalt is an important critical mineral and complements the REE potential now evolving across the BHA Project's East Zone.

Overall, the assay results across FG and TT showed six out of the seven drill-holes intersected cobalt mineralisation above 150ppm Co which is in line with expectations (Figure 6). Note, the current inferred Mineral Resource Estimate is 64.4Mt @ 318ppm Co for 21,556t contained cobalt metal (based on data from Reefs Tank and Fence Gossan only)<sup>3</sup>.

The Board is waiting for the full complement of assay results from the current drilling campaign to determine if known mineralisation has been extended and to what degree.

**FIGURE 6: COBALT ZONES DRILL-HOLES TORS TANK AND FENCE GOSSAN**

Hole	From (m)	To (m)	Width (m)	Layer	Ag (g/t)	Co (ppm)	Cu (ppm)	Zn (ppm)	Comments
TT_001RC	20	28	8	1	0.20	199	1,029	165	
TT_001RC	36	39	3	2	0.07	156	772	52	
TT_002RC	12	19	7	1	0.51	308	2,205	171	
TT_003RC	8	19	11	1	0.12	216	647	142	
TT_004RC	4	8	4	1	0.05	243	342	127	
TT_004RC	24	40	16	2	0.13	157	991	47	
FG_001RC									Assay Results yet to be returned
FG_002RC	-	-	-						No cobalt zones above 150ppm intersected
FG_003RC	64	72	8	1	0.05	265	301	78	
FG_004RC	40	52	12	1	0.04	158	427	102	

Notes:

1. Assays represents 4m composite results which are slated for individual 1m analyses.
2. Lower cut-off for reporting set to 150ppm.

Source: CCZ geology team

**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 and Mineral Resource Estimates 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. Mr Biggs also 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) Leyh:

- a. Leyh, W.R., 1976, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29th June 1976, North Broken Hill Limited, Report GS1976-198, Jul 76, 88pp
- b. Leyh, W.R., 1977a, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29th December 1976, North Broken Hill Limited, Report GS1976-198, Feb 1977, 24pp
- c. Leyh W.R., 1977b, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 5th March 1977, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)
- d. Leyh W.R., 1977c, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 23rd May 1977, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)
- e. Leyh W.R., 1978, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 27 October 1978, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)
- f. Leyh W.R., 1978 Progress Report on Exploration Licenses 1099 and 1100 for the six months to 27 October 1978, North Broken Hill Limited for the NSW Geological Survey, (GS1978-407)
- g. Leyh, W.R., 1990, Exploration Report for the Third Six Monthly Period ended 12th June 1990 for EL 3238 (K Tank), Broken Hill District, New South Wales for the six months period, Pasminco Limited, Report GS1989-226, Jun 90, 22pp
- h. Leyh, W.R., and Lees T.C., 1977, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29th June 1977, North Broken Hill Limited, Report GS1976-198, Jul 77, 35pp
- i. Leyh, W.R., and Larson P.D., 1981, Final Report for the Third Six Monthly Period ended 12th June 1990 for EL 3238 (K Tank), Broken Hill District, New South Wales for the six months period, Pasminco Limited, Report GS1989-226, Jun 90, 22pp

### 2) CCZ ASX Release – 31 August and 31 October 2022

### 3) CCZ ASX Release – 9 August 2022

# 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 platinoids.

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."

## Directors

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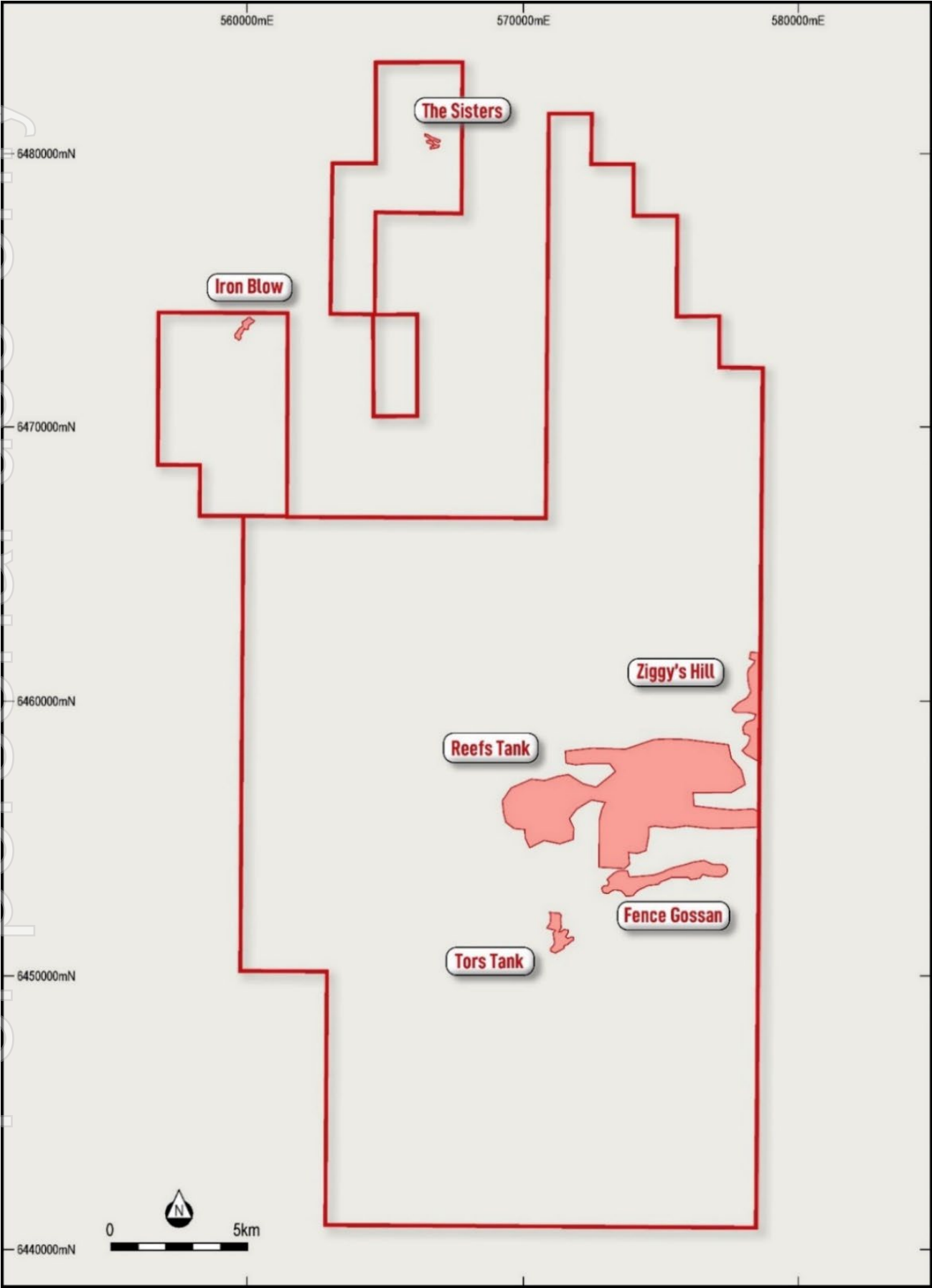
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# APPENDIX A: PROSPECTS IN BHA PROJECT'S EAST ZONE

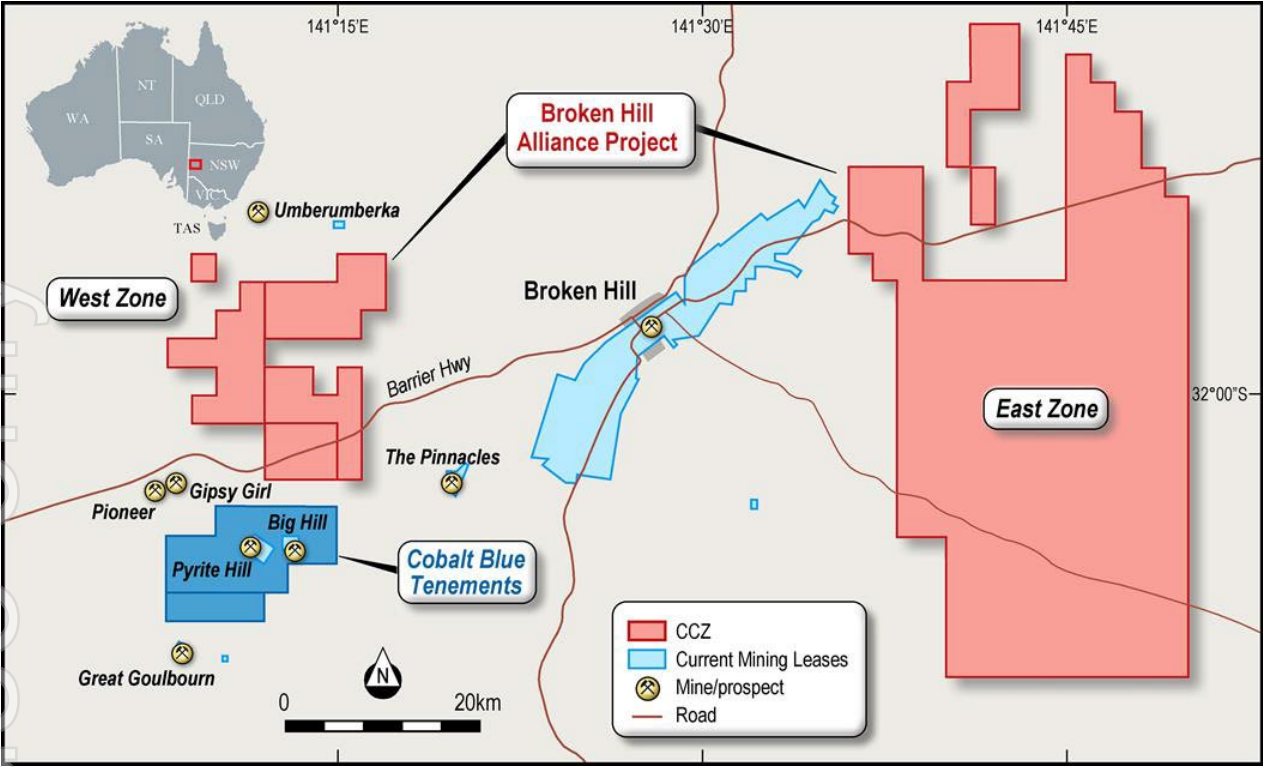
FIGURE A1: PROSPECTS AT BHA PROJECT EAST ZONE



Source: CCZ geology team



FIGURE A2: BHA PROJECT



Source: CCZ geology team

## APPENDIX B: REE RESULTS / TREO CONVERSION FACTOR

FIGURE B1: TORS TANK AND FENCE GOSSAN TABLE OF SIGNIFICANT INTERSECTIONS >500PPM TREO

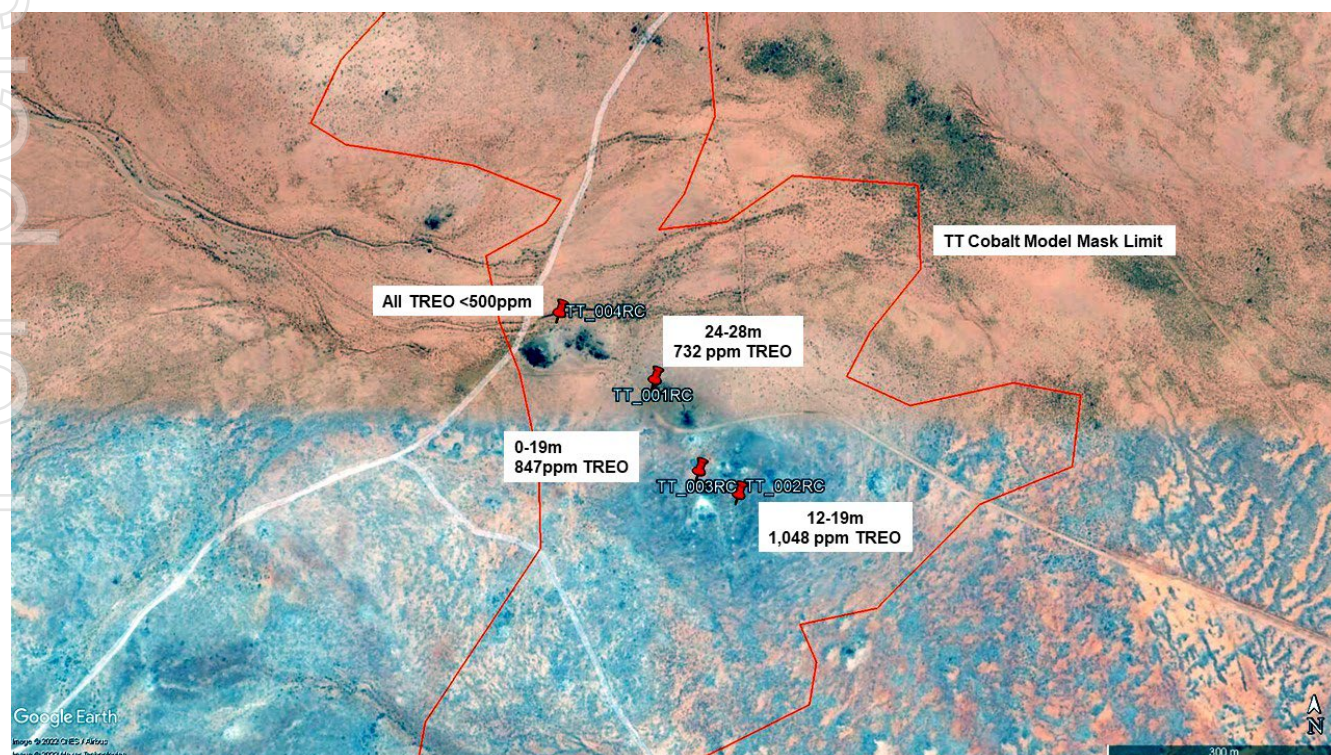
Hole	From (m)	To (m)	Apparent Width (m)	TREO (ppm)	TREO- Ce (ppm)	LREO (ppm)	HREO (ppm)	CREO (%)	MREO (%)
TT_001RC	24	28	4	732.2	527.69	480.31	251.91	40.8%	27.1%
TT_001RC	39	52	13	531.5	288.62	489.73	41.80	21.7%	25.1%
TT_002RC	12	19	7	1,047.5	642.14	788.61	258.90	33.6%	29.9%
TT_003RC	0	19	19	847.0	624.15	506.59	340.45	45.1%	29.6%
TT_004RC	19	24	6	TREO<500					
TT_004RC	56	59	3	TREO<500					
FG_001RC				No assay yet					
FG_002RC	0	19	19	660.8	387.06	579.07	81.68	25.3%	28.0%
FG_003RC	0	20	20	1,779.9	1,133.18	1,472.73	307.20	28.9%	28.8%
FG_003RC	52	84	32	635.5	377.12	537.57	97.91	26.7%	25.7%
FG_004RC	4	32	28	613.9	350.25	541.82	72.08	25.2%	27.8%
FG_004RC	48	56	8	773.1	438.41	626.18	146.97	29.5%	24.0%
FG_004RC	60	64	4	539.8	312.58	454.38	85.45	26.3%	25.5%

Notes:

1. Results from FG\_001RC not returned from the laboratory yet, but geological logging has identified clay and weathered pegmatite from 1 to 17m.
2. TT\_001RC 39-52m also composite reports 6,388 ppm Ba (Barium); TT\_003RC 1,140 ppm Ba.
3. Two of the Lanthanum (La) assay from FG\_003R returned >500ppm and are being re-analysed.
4. Verification has been undertaken by ROM Resources personnel.
5. Sample results from ALS method ME-MS61R, where some REE are not totally soluble, future 1m assays will use ME-ICP81.

Source: ALS

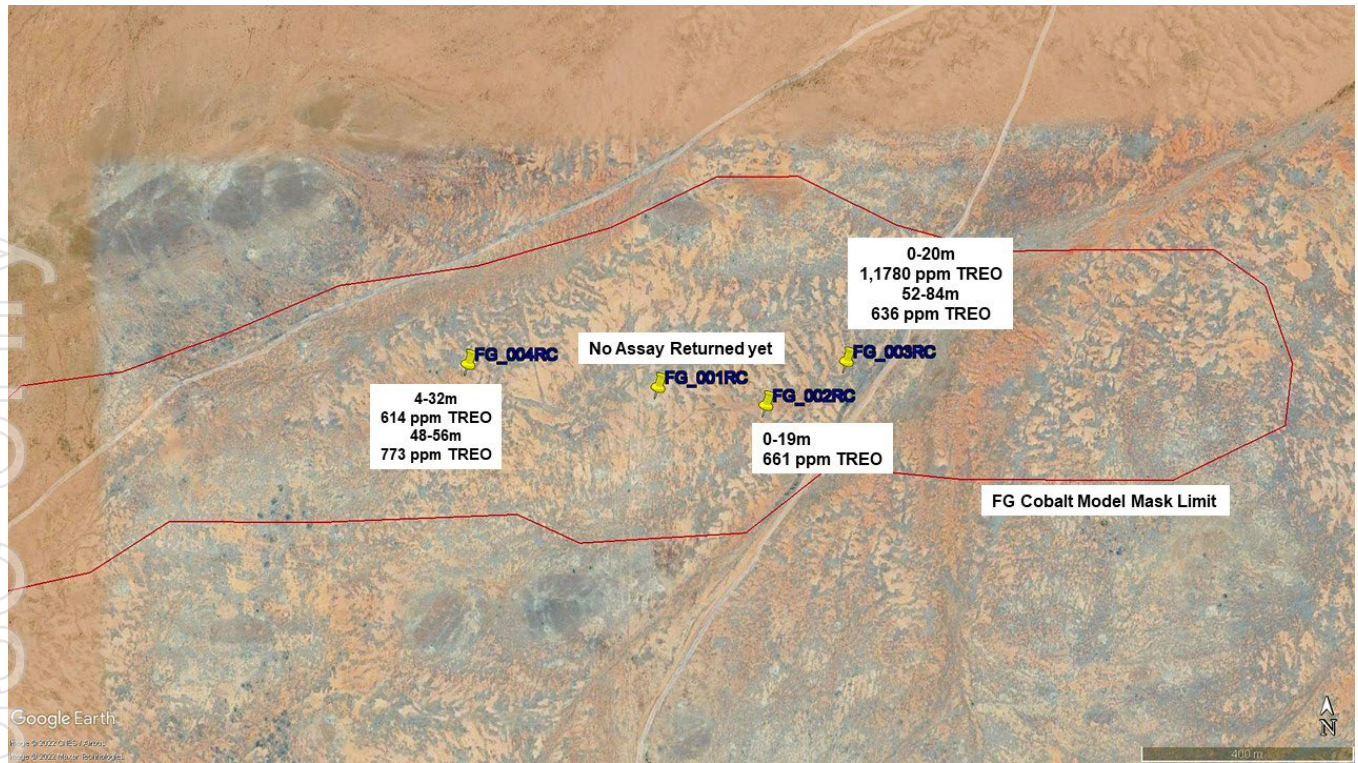
FIGURE B2: TORS TANK – TREO RESULTS PLAN



Source: CCZ geology team



**FIGURE B3: FENCE GOSSAN – TREO RESULTS PLAN**



Source: CCZ geology team

**FIGURE B4: FENCE GOSAN DRILL COLLARS**

Site ID	HoleID	Easting (GDA94)	Northing (GDA94)	Tdepth (m)	Grid Azimuth	Dip Horizontal	Hole Type	AHD	Start	End
2022_FG_03	FG_002RC	576550	6453755	110	180	-60	RC	169.6	7-Oct-22	8-Oct-22
2022_FG_04	FG_001RC	576350	6453790	120	180	-60	RC	172.7	4-Oct-22	7-Oct-22
2022_FG_06	FG_004RC	576000	6453835	120	170	-60	RC	176.8	9-Oct-22	10-Oct-22
2022_FG_07	FG_003RC	576700	6453835	160	180	-60	RC	170.1	8-Oct-22	9-Oct-22

Source: CCZ geology team

**FIGURE B5: TORS TANK DRILL COLLARS**

SiteID	HoleID	Easting (GDA94)	Northing (GDA94)	TDepth (m)	Grid Azimuth	Dip Horizontal	Hole Type	AHD	Start	End
2022_TT_01	TT_004RC	571250	6451480	120	180	-60	RC	189.2	3-Oct-22	4-Oct-22
2022_TT_02	TT_001RC	571370	6451395	120	180	-60	RC	191.8	30-Sep-22	1-Oct-22
2022_TT_03	TT_003RC	571425	6451280	140	180	-60	RC	189.1	2-Oct-22	3-Oct-22
2022_TT_04	TT_002RC	571475	6451250	108	180	-60	RC	187.2	1-Oct-22	2-Oct-22

Source: CCZ geology team

## TREO conversion factor

Conversion of elemental analysis (REE parts per million) to stoichiometric oxide (REO parts per million) was undertaken by ROM geological staff using the below (Figure B6) element to stoichiometric oxide conversion factors.

**FIGURE B6: ELEMENT – CONVERSION FACTOR – OXIDE FORM**

Rare Earth Element	Factor for Conversion	Rare Earth Oxide Common Form
Ce	1.2284	CeO <sub>2</sub>
Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>
Er	1.1435	Er <sub>2</sub> O <sub>3</sub>
Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>
Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>
Ho	1.1455	Ho <sub>2</sub> O <sub>3</sub>
La	1.1728	La <sub>2</sub> O <sub>3</sub>
Lu	1.1371	Lu <sub>2</sub> O <sub>3</sub>
Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>
Pr	1.2083	Pr <sub>6</sub> O <sub>11</sub>
Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>
Tb	1.1762	Tb <sub>4</sub> O <sub>7</sub>
Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>
Y	1.2699	Y <sub>2</sub> O <sub>3</sub>
Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>

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) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub>.
- ❖ TREO-Ce = TREO – CeO<sub>2</sub>
- ❖ LREO (Light Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub>
- ❖ HREO (Heavy Rare Earth Oxide) = Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub>
- ❖ CREO (Critical Rare Earth Oxide) = Nd<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub>
- ❖ MREO (Magnetic Rare Earth Oxide) = Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub>.

### Total Rare Earth Oxides (TREO):

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).

Relative Atomic Mass (La) = 138.9055

Relative Atomic Mass (O) = 15.9994

Oxide Formula = La<sub>2</sub>O<sub>3</sub>

Oxide Conversion Factor =  $1 / ((2 \times 138.9055) / (2 \times 138.9055 + 3 \times 15.9994))$  Oxide Conversion Factor = 1.173 (3 decimal places)



## APPENDIX C: QUALITATIVE DRILL LOGS

**FIGURE 2: TORS TANK/ FENCE GOSSAN - QUALITATIVE MINERALS LOG AT DRILL-HOLES**

Borehole	From (m)	To (m)	Apparent Thick. (m)	Magnetite (%)	Epidote (%)	Chlorite (%)	Sulphides (%)	Comments
TT_001RC	1	21	20	1-5	0	1-3	1-3	Amphibolite, sulphides (mostly pyrite) & trace chalcopyrite
TT_001RC	25	38	13	1-12	0	0	0	Pegmatite & clay
TT_001RC	66	75	9	0	0-2	1-3	1-3	Schist & sulphides (pyrite)
TT_001RC	110	118	8	1-3	0	1-3	0-1	Schist, Iron oxide & haematite (1-3%)
TT_002RC	4	13	9	2-40	0	0	0-2	Clayey amphibolite & haematite (2-15%)
TT_002RC	26	30	4	1-5	0	0	0	Clay & schist
TT_002RC	44	47	3	1-5	0	0-1	0-1	Pegmatite
TT_002RC	79	80	1	0	0	1-2	1-3	Pyrite band
TT_003RC	8	30	22	3-40	1-2	1-3	1-4	Clay & amphibolite
TT_003RC	72	79	7	1-10	0	1-2	0-1	In schist
TT_003RC	106	132	26	0	1-3	1-3	1-5	Mostly schist & gneiss
TT_004RC	1	6	5	1-5	0	0	0	Amphibolite
TT_004RC	21	44	23	1-30	0	0	0	Amphibolite & schist
TT_004RC	97	104	7	1-5	0	0	0	Schist
TT_004RC	108	114	6	0	1-3	0-1	1-4	Schist & sulphides (mostly pyrite)
FG_001RC			0					No amphibolite logged
FG_002RC	88	94	6	0	1-5	0-3	1-6	In schist, no amphibolite logged in hole
FG_003RC	102	111	9	1-10	0	1-3	1-3	Amphibolite and gneiss
FG_003RC	120	124	4	0	1-10	0-3	0	In schist
FG_004RC	34	48	14	1-15	0-1	2-5	2-5	Amphibolite
FG_004RC	65	82	17	1-10	0	0-5	1-3	Amphibolite

Note: Ranges of minerals represent qualitative estimation during geological modelling.

Source: CCZ geology team

## APPENDIX D: JORC CODE, 2012 EDITION – TABLE

### Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<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><b>Diamond Drilling (DDH)</b></p> <p>Diamond drilling of HQ diameter (TT_005DD) was completed to 137m recently in the current program and was located 5m away from a RC hole already drilled (TT_003RC).</p> <p><b>Reverse Circulation (‘RC’) Drilling</b></p> <p>RC drilling at Fence Gossan was used to obtain a representative sample by means of riffle splitting with samples submitted for analysis using the above-mentioned methodologies.</p> <p>Four (4) holes for a total of 516m have been completed to the 10<sup>th</sup> October 2022, all at the Fence Gossan Prospect.</p> <p>One (1) hole to 120m has been completed at Reefs Tank and the others are in progress.</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 &gt;10% by LECO).</p>
<b>Drilling techniques</b>	<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>Historical drilling consists of auger, rotary air blast, reverse circulation, and NQ, BQ, and HQ diamond coring. One cored hole of NQ or BQ diameter will be completed after all the RC holes have 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>

<b>Drill sample recovery</b>	<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 were well documented and generally have &gt;90% core recovery.</p> <p>No relationship between sample recovery and grade has been observed.</p>
<b>Logging</b>	<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. The preferred exploration strategy in the eighties and early nineties was to drill shallow auger holes to negate the influence of any Quaternary and Tertiary sedimentary cover, and then return to sites where anomalous Cu or Zn were assayed. In this program at all three areas holes were completed to varying depths ranging from 100-160m.</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>
<b>Sub-sampling techniques and sample preparation</b>	<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>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 will be 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>

*Whether sample sizes are appropriate to the grain size of the material being sampled.*

Quarter core will be submitted to ALS for chemical analysis using industry standard sample preparation and analytical techniques.

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, d, e, f).

**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 (i.e. lack of bias) and precision have been established.*

The following rare earth elements were analysed using ME-MS61R Sample Decomposition is by HF-HNO<sub>3</sub>-HClO<sub>4</sub> acid digestion, HCl leach (GEO-4A01). The Analytical Method for Silver is shown below:

Element	Symbol	Units	Lower Limit	Upper Limit
Silver	Ag	ppm	0.01	100

**Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES) Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)**

A prepared sample (0.25 g) is digested with perchloric, nitric, hydrofluoric, and hydrochloric acids, topped up with dilute hydrochloric acid and analyzed by inductively coupled plasma atomic emission spectroscopy. Following this analysis, the results are reviewed for high concentrations of molybdenum, silver, and tungsten and diluted accordingly.

Samples meeting this criterion are then analyzed by inductively coupled plasma-mass spectrometry, 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 quantified.

Results for the additional rare earth elements will represent the acid leachable portion of the sample 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	Symbol	Units	Lower Limit	Upper Limit
<b>Molybdenum</b>	Mo	ppm	0.05	10 000
<b>Sodium</b>	Na	%	0.01	10
<b>Niobium</b>	Nb	ppm	0.1	500
<b>Nickel</b>	Ni	ppm	0.2	10 000
<b>Phosphorous</b>	P	ppm	10	10 000
<b>Lead</b>	Pb	ppm	0.5	10 000
<b>Rubidium</b>	Rb	ppm	0.1	10 000
<b>Rhenium</b>	Re	ppm	0.002	50
<b>Sulphur</b>	S	%	0.01	10
<b>Antimony</b>	Sb	ppm	0.05	10 000
<b>Scandium</b>	Sc	ppm	0.1	10 000
<b>Selenium</b>	Se	ppm	1	1 000
<b>Tin</b>	Sn	ppm	0.2	500
<b>Strontium</b>	Sr	ppm	0.2	10 000
<b>Tantalum</b>	Ta	ppm	0.05	100
<b>Tellurium</b>	Te	ppm	0.05	500
<b>Thorium</b>	Th	ppm	0.2	10 000
<b>Titanium</b>	Ti	%	0.005	10
<b>Thallium</b>	Tl	ppm	0.02	10 000
<b>Uranium</b>	U	ppm	0.1	10 000
<b>Vanadium</b>	V	ppm	1	10 000
<b>Tungsten</b>	W	ppm	0.1	10 000

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

Element	Symb	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

		<div></div> <div></div> <div></div> <div></div> <div></div> <p>Laboratory inserted standards, blanks and duplicates were analysed per industry standard practice. There was no evidence of bias from these results.</p>																																													
<p><b>Verification of sampling and assaying</b></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> <p><i>Discuss any adjustment to assay data.</i></p>	<p>None of the drillholes have been twinned, as they are historical holes.</p> <p>Conversion of elemental analysis (REE parts per million) to stoichiometric oxide (REO parts per million) was undertaken by ROM geological staff using the below (Table D1-1) element to stoichiometric oxide conversion factors</p> <p>(<a href="https://www.jcu.edu.au/news/releases/2020/march/rare-earth-metals-an-untapped-resource">https://www.jcu.edu.au/news/releases/2020/march/rare-earth-metals-an-untapped-resource</a>)</p> <p><b>Table D1-1: Element -Conversion Factor -Oxide Form</b></p> <table> <tr> <th>Ce</th><th>1.2284</th><th>CeO2</th></tr> <tr> <td>Dy</td><td>1.1477</td><td>Dy2O3</td></tr> <tr> <td>Er</td><td>1.1435</td><td>Er2O3</td></tr> <tr> <td>Eu</td><td>1.1579</td><td>Eu2O3</td></tr> <tr> <td>Gd</td><td>1.1526</td><td>Gd2O3</td></tr> <tr> <td>Ho</td><td>1.1455</td><td>Ho2O3</td></tr> <tr> <td>La</td><td>1.1728</td><td>La2O3</td></tr> <tr> <td>Lu</td><td>1.1371</td><td>Lu2O3</td></tr> <tr> <td>Nd</td><td>1.1664</td><td>Nd2O3</td></tr> <tr> <td>Pr</td><td>1.2083</td><td>Pr6O11</td></tr> <tr> <td>Sm</td><td>1.1596</td><td>Sm2O3</td></tr> <tr> <td>Tb</td><td>1.1762</td><td>Tb4O7</td></tr> <tr> <td>Tm</td><td>1.1421</td><td>Tm2O3</td></tr> <tr> <td>Y</td><td>1.2699</td><td>Y2O3</td></tr> <tr> <td>Yb</td><td>1.1387</td><td>Yb2O3</td></tr> </table>	Ce	1.2284	CeO2	Dy	1.1477	Dy2O3	Er	1.1435	Er2O3	Eu	1.1579	Eu2O3	Gd	1.1526	Gd2O3	Ho	1.1455	Ho2O3	La	1.1728	La2O3	Lu	1.1371	Lu2O3	Nd	1.1664	Nd2O3	Pr	1.2083	Pr6O11	Sm	1.1596	Sm2O3	Tb	1.1762	Tb4O7	Tm	1.1421	Tm2O3	Y	1.2699	Y2O3	Yb	1.1387	Yb2O3
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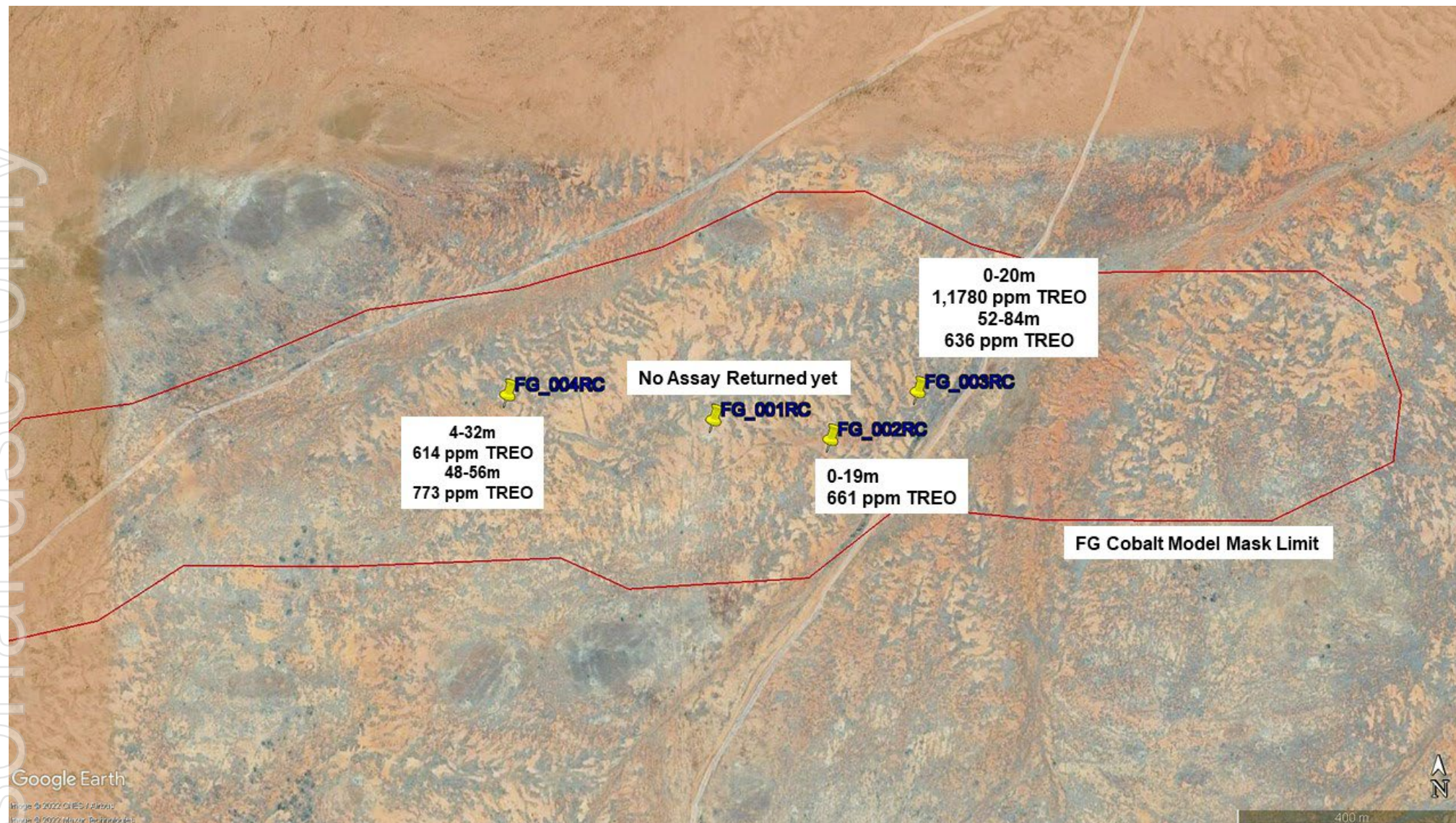
		<p>Rare earth oxide is the industry accepted form for reporting rare earths. The following calculations are used for compiling REO into their reporting and evaluation groups:</p> <p>TREO (Total Rare Earth Oxide) = <math>\text{La}_2\text{O}_3 + \text{CeO}_2 + \text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Sm}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Ho}_2\text{O}_3 + \text{Er}_2\text{O}_3 + \text{Tm}_2\text{O}_3 + \text{Yb}_2\text{O}_3 + \text{Y}_2\text{O}_3 + \text{Lu}_2\text{O}_3</math>.</p> <p>TREO-Ce = TREO – CeO<sub>2</sub></p> <p>LREO (Light Rare Earth Oxide) = <math>\text{La}_2\text{O}_3 + \text{CeO}_2 + \text{Pr}_6\text{O}_{11} + \text{Nd}_2\text{O}_3 + \text{Sm}_2\text{O}_3</math></p> <p>HREO (Heavy Rare Earth Oxide) = <math>\text{Eu}_2\text{O}_3 + \text{Gd}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Ho}_2\text{O}_3 + \text{Er}_2\text{O}_3 + \text{Tm}_2\text{O}_3 + \text{Yb}_2\text{O}_3 + \text{Y}_2\text{O}_3 + \text{Lu}_2\text{O}_3</math></p> <p>CREO (Critical Rare Earth Oxide) = <math>\text{Nd}_2\text{O}_3 + \text{Eu}_2\text{O}_3 + \text{Tb}_4\text{O}_7 + \text{Dy}_2\text{O}_3 + \text{Y}_2\text{O}_3</math></p> <p>MREO (Magnetic Rare Earth Oxide) = <math>\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</math>.</p> <p><b>Total Rare Earth Oxides (TREO):</b></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"> <li>○ Relative Atomic Mass (La) = 138.9055</li> <li>○ Relative Atomic Mass (O) = 15.9994</li> <li>○ Oxide Formula = <math>\text{La}_2\text{O}_3</math></li> <li>○ Oxide Conversion Factor = <math>1 / ((2 \times 138.9055) / (2 \times 138.9055 + 3 \times 15.9994))</math> Oxide Conversion Factor = 1.173 (3dp)</li> </ul> <p>None of the historical data has been adjusted.</p>
<p><b>Location of data points</b></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>In general, locational accuracy does vary, depending upon whether the historical surface and drillhole samples were digitised off plans or had their coordinated tabulated. Many samples were originally reported to AGD66 or AMG84 and have been converted to MGA94 (Zone 54)</p>

	<p><i>Quality and adequacy of topographic control.</i></p>	<p>The holes are currently surveyed with handheld GPS, awaiting more accurate DGPS survey. It is thus estimated that locational accuracy therefore varies between 2-4m until the more accurate surveying is completed.</p> <p>The quality of topographic control (GSNSW 1 sec DEM) is deemed adequate for the purposes of the exploration drilling program.</p>																					
<p><b>Data spacing and distribution</b></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 D1-2, below:</p> <p><b>Table D1-2: EL 8434 Drillhole Spacing</b></p> <table> <tr> <th>Prospect</th><th>Drillholes Completed</th><th>RMS Drillhole Spacing (m)</th></tr> <tr> <td>The Sisters</td><td>Not yet</td><td></td></tr> <tr> <td>Iron Blow</td><td>Not Yet</td><td></td></tr> <tr> <td>Tors Tank</td><td>4</td><td>127</td></tr> <tr> <td>Fence Gossan</td><td>4</td><td>208</td></tr> <tr> <td>Ziggy's Hill</td><td>n/a</td><td>n/a</td></tr> <tr> <td>Reefs Tank</td><td>1</td><td></td></tr> </table> <p>The Datamine software allows creation of fixed length samples from the original database given a set of stringent rules.</p>	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	
Prospect	Drillholes Completed	RMS Drillhole Spacing (m)																					
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Fence Gossan	4	208																					
Ziggy's Hill	n/a	n/a																					
Reefs Tank	1																						
<p><b>Orientation of data in relation to geological structure</b></p>	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>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.</i></p>	<p>Historical drill holes at the BHA E 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 (Figure D1-3 and D1-4).</p> <p>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.</p> <p>The drilling orientation is not considered to have introduced a sampling bias on assessment of the current geological interpretation.</p> <p>Geological mapping by various companies has reinforced that the strata dips variously between 5 and 65 degrees.</p>																					

<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	<p>Sample security procedures are considered 'industry standard' for the current period.</p> <p>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, Adelaide.</p> <p>The Company considers that risks associated with sample security are limited given the nature of the targeted mineralisation.</p>
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No external audits or reviews have yet been undertaken.



FIGURE D1-3: FENCE GOSSAN DRILLHOLE LOCATION AND TREO RESULTS NOVEMBER 2022



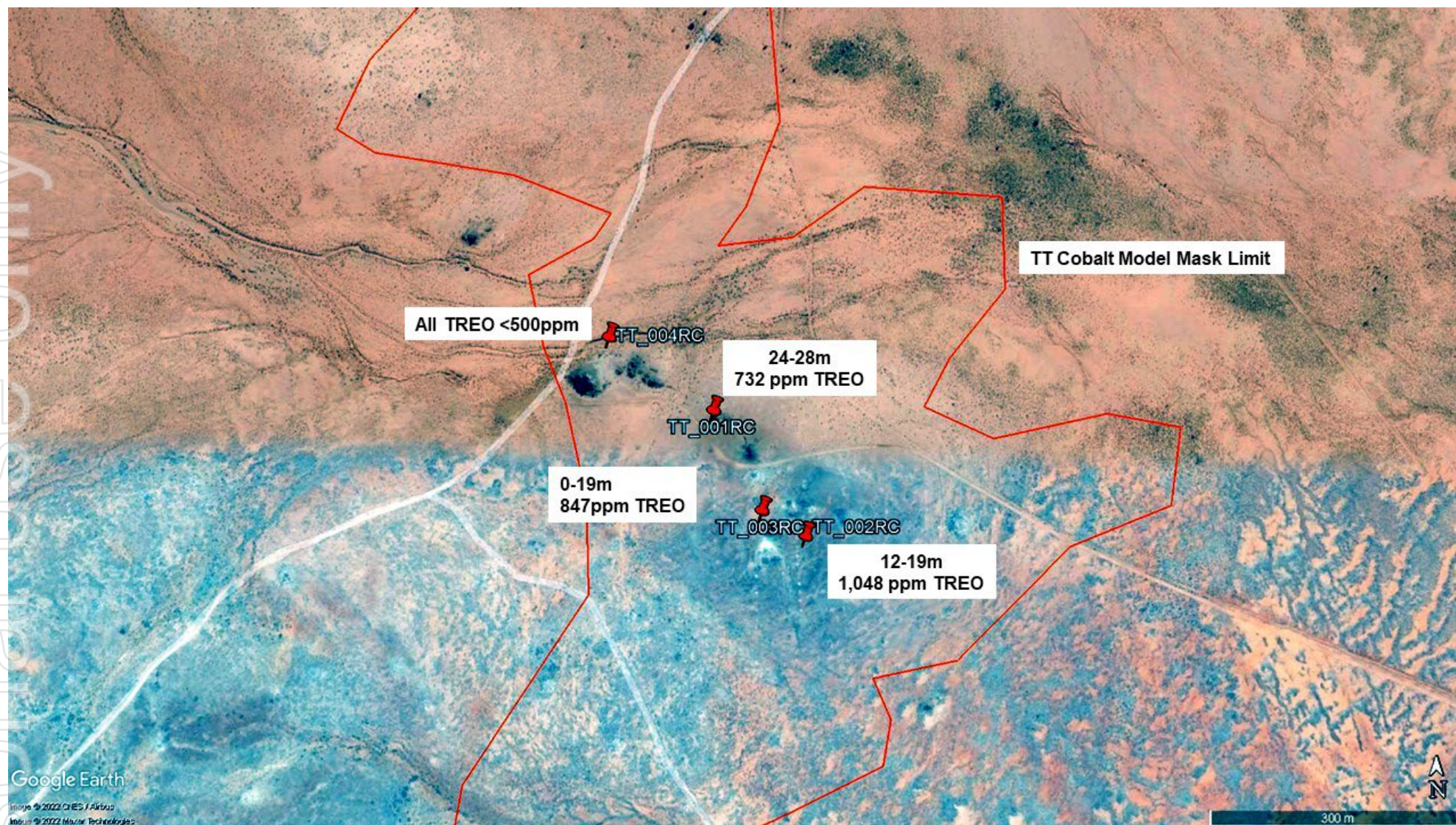
Google Earth

Images © 2022 Google / Earth  
Images © 2022 Maxar Technologies

Source: CCZ geology team



FIGURE D1-4: TORS TANK DRILLHOLE LOCATION AND TREO RESULTS NOVEMBER 2022



Notes:

1. Current 2022 drillholes shown and deposit block model mask, All holes orientated south at -60 degrees from horizontal.

Source: CCZ geology team



TABLE D1-5: RARE EARTH ELEMENT RETURNED ASSAY (ME-MS61R)

HOLEID	XRF_SAMPLE / SAMPID	FROM	TO		Ag (ppm)	Th (ppm)	U (ppm)	Ce (ppm)	La (ppm)	Y (ppm)	Dy (ppm)	Er (ppm)	Eu (ppm)	Gd (ppm)	Ho (ppm)	Lu (ppm)	Nd (ppm)	Pr (ppm)	Sm (ppm)	Tb (ppm)	Tm (ppm)	Yb (ppm)	TREO (ppm)	TREO-Ce (ppm)	LREO (ppm)	HREO (ppm)	CREO %	MREO %
TT_001RC	CCZ03772 - CCZ03775	24.00	28.00		0.14	7.2	10.2	166.50	105.00	132.00	19.00	11.40	3.89	17.50	4.01	1.50	87.00	21.60	15.70	2.95	1.55	9.54						
TT_001RC				Avge. Element	0.14	7.2	10.2	166.50	105.00	132.00	19.00	11.40	3.89	17.50	4.01	1.50	87.00	21.60	15.70	2.95	1.55	9.54						
TT_001RC				Avge.Oxide			204.53	123.14	167.63	21.81	13.04	4.50	20.17	4.59	1.71	101.48	26.10	25.06	3.47	1.77	10.86		729.85	525.32	480.31	249.55	41.0%	27.1%
TT_001RC	CCZ03787	39.00	40.00		0.05	19.2	1.7	271.00	132.50	13.70	3.13	1.22	1.79	6.17	0.51	0.20	102.50	28.30	11.95	0.66	0.16	1.06						
TT_001RC	CCZ03788 - CCZ03791	40.00	44.00		0.04	14.0	2.3	188.00	101.50	16.00	3.54	1.61	1.90	6.33	0.60	0.27	78.80	21.50	10.20	0.73	0.23	1.51						
TT_001RC	CCZ03792 - CCZ03795	44.00	48.00		0.07	9.3	3.1	150.00	97.20	17.80	3.44	1.56	1.14	4.94	0.59	0.23	49.80	16.15	6.88	0.64	0.22	1.38						
TT_001RC	CCZ03796 - CCZ03799	48.00	52.00		0.07	26.7	3.0	182.00	95.50	25.80	5.11	2.33	1.40	6.12	0.95	0.29	60.80	18.85	8.83	0.90	0.34	2.03						
TT_001RC				Avge. Element	0.06	17.3	2.5	197.75	106.68	18.33	3.81	1.68	1.56	5.89	0.66	0.25	72.98	21.20	9.47	0.73	0.24	1.50						
TT_001RC				Avge.Oxide			242.92	125.11	23.27	4.37	1.92	1.80	6.79	0.76	0.28	85.12	25.62	10.98	0.86	0.27	1.70		531.76	288.84	489.73	42.03	21.7%	25.1%
TT_002RC	CCZ03886 - CCZ03889	12.00	16.00		0.32	1.0	7.0	426.00	128.00	94.20	20.80	9.41	6.27	23.50	3.78	1.09	133.50	32.10	26.70	3.67	1.29	7.78						
TT_002RC	CCZ03890 - CCZ03892	16.00	19.00		0.69	1.0	6.8	234.00	105.50	137.50	30.10	14.55	7.67	33.80	5.53	1.65	145.00	31.20	30.50	5.14	1.96	12.20						
TT_002RC																												
TT_002RC				Avge. Element	0.51	1.0	6.9	330.00	116.75	115.85	25.45	11.98	6.97	28.65	4.66	1.37	139.25	31.65	28.60	4.41	1.63	9.99						
TT_002RC				Avge.Oxide			405.37	136.92	147.12	29.21	13.70	8.07	33.02	5.33	1.56	162.42	38.24	45.65	5.18	1.86	11.38		1045.03	639.66	788.61	256.42	33.7%	30.0%
TT_003RC	CCZ04252 - CCZ04255	0	4		0.04	6.1	7.3	150.50	52.80	34.00	7.53	3.62	2.54	9.58	1.37	0.49	57.60	14.95	10.25	1.38	0.55	3.47						
TT_003RC	CCZ04256 - CCZ04259	4.00	8.00		0.21	1.6	6.5	212.00	82.50	62.90	16.60	6.11	6.71	27.60	2.63	0.66	157.00	40.70	28.30	3.33	0.83	4.94						
TT_003RC	CCZ04260 - CCZ04263	8.00	12.00		0.19	0.8	14.2	236.00	98.70	90.40	16.95	8.21	5.59	22.90	3.18	1.09	110.00	27.00	22.00	3.04	1.19	7.36						
TT_003RC	CCZ04264 - CCZ04267	12.00	16.00		0.07	1.4	12.2	242.00	132.00	290.00	51.40	30.50	9.28	50.90	11.30	3.81	148.00	33.80	32.20	8.12	4.06	24.90						
TT_003RC	CCZ04268 - CCZ04270	16.00	19.00		0.09	0.6	12.5	66.70	76.70	366.00	45.40	32.90	5.02	35.50	11.05	4.18	59.40	12.05	13.80	6.07	4.32	26.90						
TT_003RC																												
TT_003RC				Avge. Element	0.12	2.09	10.54	181.44	88.54	168.66	27.58	16.27	5.83	29.30	5.91	2.05	106.40	25.70	21.31	4.39	2.19	13.51						
TT_003RC				Avge.Oxide			222.88	103.84	214.18	31.65	18.60	6.75	33.77	6.77	2.33	124.10	31.05	24.71	5.16	2.50	15.39		843.68	620.80	506.59	337.09	45.3%	29.7%
TT_003RC	CCZ04351	99.00	100.00		0.01	26.9	1.8	137.50	70.20	14.50	3.58	1.26	1.53	6.15	0.57	0.15	58.50	16.40	8.80	0.78	0.17	0.96						
TT_003RC	CCZ04352 - CCZ04355	100.00	104.00		0.01	27.4	2.7	158.50	85.00	16.00	3.73	1.30	1.73	6.69	0.59	0.14	66.10	18.75	9.89	0.83	0.16	0.93						
TT_003RC																												
TT_003RC				Avge. Element	0.01	27.2	2.3	148.00	77.60	15.25	3.66	1.28	1.63	6.42	0.58	0.15	62.30	17.58	9.35	0.81	0.17	0.95						
TT_003RC				Avge.Oxide			181.80	91.01	19.37	4.19	1.46	1.89	7.40	0.66	0.16	72.67	21.24	10.84	0.95	0.19	1.08		414.90	233.10	377.55	37.35	23.9%	28.3%
TT_004RC	CCZ04019	19.00	20.00		0.02	23.6	0.7	127.50	49.80	25.80	4.59	2.24	1.14	5.44	0.88	0.25	35.00	10.50	6.48	0.84	0.32	1.72						
TT_004RC	CCZ04020 - CCZ04023	20.00	24.00		0.04	15.6	1.6	107.00	50.40	29.70	5.83	3.07	1.66	6.79	1.12	0.37	39.30	11.30	7.57	1.07	0.43	2.65						
TT_004RC																												
TT_004RC				Avge. Element	0.03	19.6	1.2	117.25	50.10	27.75	5.21	2.66	1.40	6.12	1.00	0.31	37.15	10.90	7.03	0.96	0.38	2.19						
TT_004RC				Avge.Oxide			144.03	58.76	35.24	5.98	3.04	1.62	7.05	1.15	0.35	43.33	13.17	11.21	1.12	0.43	2.49		328.96	184.93	270.50	58.46	26.5%	24.9%
TT_004RC	CCZ04056 - CCZ04058	56.00	59.00		0.70	21.2	1.6	126.00	63.40	22.40	4.43	1.93	1.68	6.61	0.77	0.25	48.10	14.05	8.27	0.90	0.26	1.68						
TT_004RC																												
TT_004RC				Avge. Element	0.70	21.2	1.6	126.00	63.40	22.40	4.43	1.93	1.68	6.61	0.77	0.25	48.10	14.05	8.27	0.90	0.26	1.68						
TT_004RC				Avge.Oxide			154.78	74.36	28.45	5.08	2.21	1.95	7.62	0.88	0.28	56.10	16.98	9.59	1.06	0.30	1.91		361.54	206.76	311.80	49.74	25.6%	26.7%

Source: CCZ geology team



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HOLEID	XRF_SAMPLE / SAMPID	FROM	TO		Ag (ppm)	Th (ppm)	U (ppm)	Ce (ppm)	La (ppm)	Y (ppm)	Dy (ppm)	Er (ppm)	Eu (ppm)	Gd (ppm)	Ho (ppm)	Lu (ppm)	Nd (ppm)	Pr (ppm)	Sm (ppm)	Tb (ppm)	Tm (ppm)	Yb (ppm)	TREO (ppm)	TREO- Ce (ppm)	LREO (ppm)	HREO (ppm)	CREO %	MREO %
FG_002RC	CCZ03982 - CCZ03985	0.00	4.00		0.02	10.15	9.9	156.50	83.80	18.70	4.11	1.81	1.53	5.99	0.70	0.21	62.00	18.25	9.36	0.81	0.25	1.55						
FG_002RC	CCZ03986 - CCZ03989	4.00	8.00		0.01	17.35	6.8	234.00	121.50	28.10	6.12	2.93	1.93	8.67	1.13	0.36	88.50	26.20	12.45	1.27	0.40	2.58						
FG_002RC	CCZ04404 - CCZ04407	8.00	12.00		0.02	16.45	8.5	221.00	114.50	28.70	6.55	3.16	2.12	9.75	1.18	0.38	91.70	25.80	13.20	1.35	0.44	2.86						
FG_002RC	CCZ04408 - CCZ04411	12.00	16.00		0.01	10.45	17.6	347.00	198.00	58.30	12.65	5.47	4.22	18.65	2.12	0.58	150.00	41.00	23.80	2.47	0.69	4.08						
FG_002RC	CCZ04412 - CCZ04414	16.00	19.00		0.03	19	5.4	155.50	92.20	46.30	8.01	4.07	1.94	10.75	1.57	0.45	71.50	18.95	12.20	1.52	0.53	3.24						
FG_002RC				Avge. Element	0.02	14.7	9.6	222.80	122.00	36.02	7.49	3.49	2.35	10.76	1.34	0.40	92.74	26.04	14.20	1.48	0.46	2.86						
FG_002RC				Avge.Oxide			273.69	143.08	45.74	8.59	3.99	2.72	12.40	1.53	0.45	108.17	31.46	22.67	1.75	0.53	3.26		660.04	386.35	579.07	80.96		
FG_003RC	CCZ04511 - CCZ04514	0.00	4.00		0.02	16.5	11.1	550.00	297.00	44.70	13.55	4.49	6.67	23.70	2.06	0.47	263.00	72.60	40.40	2.90	0.62	3.54						
FG_003RC	CCZ04515 - CCZ04518	4.00	8.00		0.02	19.3	9.1	452.00	268.00	34.70	12.00	3.76	5.50	21.50	1.80	0.39	209.00	57.70	32.30	2.55	0.52	3.03						
FG_003RC	CCZ04519 - CCZ04522	8.00	12.00		0.02	18.8	9.9	355.00	214.00	31.40	8.84	3.50	3.65	13.85	1.44	0.48	153.50	42.10	22.20	1.77	0.52	3.46						
FG_003RC	CCZ04523 - CCZ04526	12.00	16.00		0.02	21.4	15.3	465.00	298.00	59.90	15.75	6.59	5.80	24.80	2.78	0.79	212.00	56.10	33.70	3.23	0.93	5.72						
FG_003RC	CCZ04527 - CCZ04529	16.00	19.00		0.04	9.5	42.8	690.00	448.00	109.50	29.70	11.55	9.76	43.80	4.91	1.32	306.00	83.20	49.00	5.93	1.68	9.70						
FG_003RC	CCZ04530	19.00	20.00		0.11	1.9	47.6	647.00	510.00	510.00	99.90	65.40	17.10	101.00	22.90	9.02	388.00	95.20	74.30	15.65	9.77	58.70						
FG_003RC				Avge. Element	0.04	14.5	22.6	526.50	339.17	131.70	29.96	15.88	8.08	38.11	5.98	2.08	255.25	67.82	41.98	5.34	2.34	14.03						
FG_003RC				Avge.Oxide				646.75	397.77	167.25	34.38	18.16	9.36	43.92	6.85	2.36	297.72	81.94	48.53	6.28	2.67	15.97	1779.93	1133.18	1472.73	307.20		28.9%
FG_003RC	CCZ04563 - CCZ04566	52.00	56.00		0.17	2.1	40.6	168.00	91.50	63.10	10.05	5.95	2.68	11.90	2.06	0.88	76.70	21.20	12.40	1.72	0.92	5.75						
FG_003RC	CCZ04567 - CCZ04569	56.00	59.00		0.05	4.0	35.3	271.00	171.00	68.20	12.05	5.68	3.27	15.40	2.22	0.74	114.50	32.60	18.20	2.05	0.81	4.81						
FG_003RC	CCZ04570	59.00	60.00		0.04	8.7	25.1	213.00	165.50	90.60	13.05	7.99	2.82	13.95	2.77	1.17	100.50	29.30	15.25	2.11	1.21	7.48						
FG_003RC	CCZ04571 - CCZ04574	60.00	64.00		0.06	9.2	18.7	236.00	165.00	62.60	10.75	5.44	3.11	14.30	2.13	0.70	105.00	30.30	16.25	2.03	0.78	4.71						
FG_003RC	CCZ04575 - CCZ04578	64.00	68.00		0.07	12.7	12.8	218.00	102.50	38.80	6.56	3.49	1.79	8.18	1.30	0.47	68.60	20.50	11.00	1.19	0.53	3.20						
FG_003RC	CCZ04579 - CCZ04582	68.00	72.00		0.03	7.1	10.0	385.00	169.50	42.80	9.65	4.18	3.47	13.30	1.65	0.50	120.00	33.80	19.15	1.82	0.61	3.68						
FG_003RC	CCZ04583 - CCZ04586	72.00	76.00		0.01	15.1	4.3	115.00	60.20	27.20	4.64	2.58	1.49	5.80	0.90	0.36	46.90	13.60	7.88	0.82	0.40	2.52						
FG_003RC	CCZ04587 - CCZ04589	76.00	79.00		0.01	22.1	3.1	152.50	73.50	16.20	3.13	1.38	1.27	5.64	0.54	0.18	55.90	16.25	8.72	0.67	0.20	1.23						
FG_003RC	CCZ04590	79.00	80.00		0.01	23.9	1.8	134.50	68.40	13.90	3.21	1.10	1.69	5.87	0.49	0.13	55.90	15.35	9.03	0.68	0.15	0.85						
FG_003RC	CCZ04591 - CCZ04594	80.00	84.00		0.01	20.3	2.0	122.00	61.00	15.60	3.54	1.30	1.72	6.30	0.57	0.16	54.10	15.10	8.87	0.73	0.17	1.02						
FG_003RC				Avge. Element	0.05	12.5	15.4	210.33	118.57	47.04	8.12	4.20	2.40	10.48	1.56	0.57	82.67	23.66	13.10	1.45	0.62	3.80						
FG_003RC				Avge.Oxide				258.37	139.05	59.74	9.32	4.80	2.78	12.08	1.79	0.65	96.42	28.58	15.14	1.71	0.71	4.33	635.49	377.12	537.57	97.91		26.7%
FG_004RC	CCZ04683 - CCZ04686	4.00	8.00		0.01	20.8	3.9	164.00	81.20	11.80	3.23	1.18	1.57	6.17	0.50	0.13	62.20	19.10	9.60	0.74	0.15	0.89						
FG_004RC	CCZ04687 - CCZ04690	8.00	12.00		0.01	17.1	7.2	407.00	181.50	24.70	9.13	2.92	4.50	16.80	1.32	0.30	183.50	49.90	29.20	2.12	0.36	2.18						
FG_004RC	CCZ04691 - CCZ04694	12.00	16.00		0.01	17.9	7.0	149.00	74.40	32.60	6.98	3.24	2.33	9.90	1.25	0.42	71.70	19.25	12.45	1.36	0.44	2.84						
FG_004RC	CCZ04695 - CCZ04697	16.00	19.00		0.01	20.5	5.5	152.00	78.30	21.30	5.01	1.94	1.87	8.29	0.83	0.24	63.00	17.80	10.20	1.08	0.26	1.61						
FG_004RC	CCZ04698	19.00	20.00		0.01	17.2	6.3	137.00	70.40	27.50	5.67	2.57	1.82	8.15	1.03	0.32	58.70	17.10	9.62	1.10	0.36	2.18						
FG_004RC	CCZ04699 - CCZ04702	20.00	24.00		0.01	16.7	6.9	160.50	80.70	43.70	7.85	4.13	2.08	10.15	1.52	0.45	71.00	19.70	12.05	1.43	0.53	3.19						

Source: CCZ geology team

## SECTION 2: REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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 D2-1 and D2-2 in Appendix A &amp;B, above).</p> <p>EL 8434 and EL 8435 were both granted on the 2<sup>nd</sup> of June 2016 to Squadron Resources for a term of five (5) years for Group One Minerals. On the 25<sup>th</sup> 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 12<sup>th</sup> of August 2021 for a further six (6) years and are due to expire on the 2<sup>nd</sup> 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 580km<sup>2</sup>.</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 68km<sup>2</sup>.</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 the 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 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 D2-1).</p>



**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. Depth of 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 subcrops 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 dominantly 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 data base. 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 strong IP effects observed in the data. Geotech Airborne have provided an IP corrected data and interpretation of the data has since been undertaken.

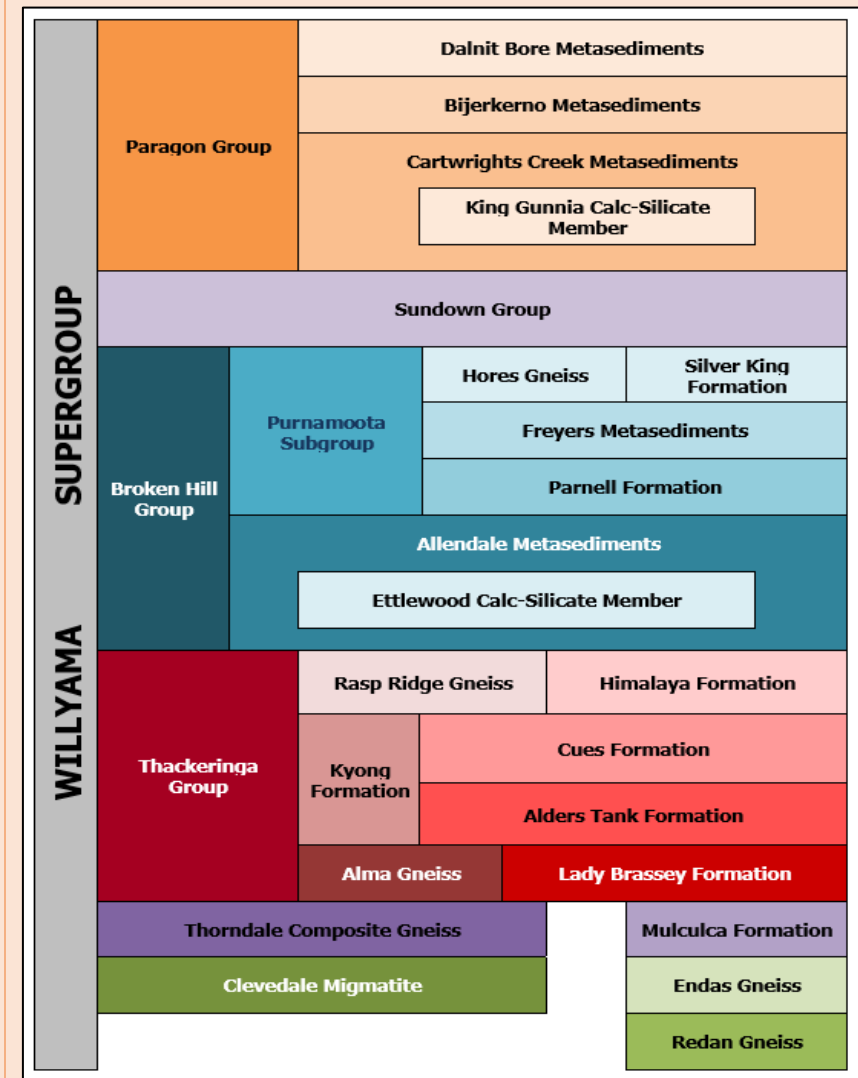
#### **Soil and Chip sampling**

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.

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>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>
<b>Geology</b>	<i>Deposit type, geological setting, and style of mineralisation.</i>	<p><b>Regional Geology</b></p> <p>The Broken Hill polymetallic deposits are located within Curnamona Province (Willyama Super group) (Figure D2-2) that hosts several world-class deposits of lead, zinc, silver, and copper. The Willyama Supergroup consists of highly deformed metasedimentary schists and gneisses with abundant quartz-feldspathic gneisses, lesser basic gneisses, and minor 'lode' rocks which are quartz-albite and calc-silicate rocks (Geoscience Australia, 2019). Prograde metamorphism ranges from andalusite through sillimanite to granulite grade (Stevens, Barnes, Brown, Stroud, &amp; Willis, 1988).</p> <p>Regionally, the tenures are situated in Broken Hill spatial domain which extends from far western New South Wales into eastern South Australia. The Broken Hill Domain hosts several major fault systems and shear zones, which were formed by various deformation events and widespread metamorphism which has affected the Willyama Supergroup (Figure D2-3).</p> <p>Major faults in the region include the Mundi Mundi Fault to the west of Broken Hill, the Mulculca Fault to the east, and the Redan Fault to the south. Broken Hill is also surrounded by extensive shear zones including the Stephens Creek, Globe-Vauxhall, Rupee, Pine Creek, Albert, and Thackaringa-Pinnacles Shear Zones.</p>

Figure D2-2: Regional Stratigraphy



Modified after: (Stevens, Barnes, Brown, Stroud, & Willis, 1988)



Modified after (Peljo, 2003)

**Local Geology**

There are over twenty (20) rock formations mapped within the project area. Parts of the project area are covered by Quaternary alluvium, sands, and by Tertiary laterite obscuring the basement geology. Within the Lower to Middle Proterozoic Willyama Supergroup (previously Complex) there are two (2) groups, the Thackaringa Group, and the younger Broken Hill Group (Colquhoun, et al., 2019). A summary of the units that host or appear to host the various mineralisation styles within EL 8434 and EL 8435 is given below.

**Broken Hill Group**

The Hores Gneiss is mostly comprised of quartz-feldspar-biotite-garnet gneiss, interpreted as metadacite with some minor metasediments noted. An age range from Zircon dating has been reported as 1682-1695Ma (Geoscience Australia, 2019). The Allendale Metasediments unit contains mostly metasedimentary rocks, dominated by albitic, pelitic to psammitic composite gneiss, including garnet-bearing feldspathic composite gneiss, sporadic basic gneiss, and quartz-gahnite rock. Calc-silicate bodies can be found at the base of the unit and the formation's average age is 1691 Ma (Geoscience Australia, 2019).

**Thackaringa Group**

The **Thorndale Composite Gneiss** is distinguished by mostly gneiss, but also migmatite, amphibolite, and minor magnetite. The age of this unit is >1700Ma (Geoscience Australia, 2019) and is one of the oldest formations in the Group. The **Cues Formation** is interpreted as a deformed sill-like granite, including Potosi-type gneiss. Other rock-types include pelitic paragneiss, containing cordierite. The average age: ca 1700-1730 Ma. (Stevens, Barnes, Brown, Stroud, & Willis, 1988). Other rock types include mainly psammo-pelitic to psammitic composite gneisses or metasedimentary rocks, and intercalated bodies of basic gneiss. This unit is characterised by stratiform horizons of granular garnet-quartz +/-magnetite rocks, quartz-iron oxide/sulphide rocks and quartz-magnetite rocks (Geoscience Australia, 2019). This is a significant formation as it hosts the Pinnacles Ag-Pb-Zn massive sulphide deposit along with widespread Fe-rich stratiform horizons.



The protolith was probably sandy marine shelf sedimentary rocks. An intrusion under shallow cover was syn-depositional. The contained leuco-gneisses and Potosi-type gneisses are believed to represent a felsic volcanic or volcanoclastic protolith. Basic gneisses occur in a substantial continuous interval in the middle sections of the Formation, underlain by thinner, less continuous bodies. They are moderately Fe-rich (abundant orthopyroxene or garnet) and finely layered, in places with pale feldspar-rich layers, and are associated with medium-grained quartz-feldspar-biotite-garnet gneiss or rock which occurs in thin bodies or pods ('Potosi-type' gneiss).

A distinctive leucocratic quartz-microcline-albite(-garnet) gneiss (interpreted as meta-rhyolite) occurs as thin, continuous, and extensive horizons, in several areas. The sulphide-bearing rocks may be lateral equivalents of, or associates of Broken Hill type stratiform mineralisation. Minor layered garnet-epidote-quartz calc-silicate rocks occur locally within the middle to basal section. The unit is overlain by the **Himalaya Formation**.

The **Cues Formation** is intruded by Alma Granite (Geoscience Australia, 2019). The **Himalaya Formation** (Figure D2-4) consists of medium-grained saccharoidal leucocratic psammitic and albitic meta-sedimentary rocks (average age 1700Ma). The unit comprises variably interbedded albite-quartz rich rocks, composite gneiss, basic gneiss, horizons of thinly bedded quartz-magnetite rock.

Pyrite-rich rocks occur at the base of the formation (Geoscience Australia, 2019). It is overlain by the **Allendale Metasediments** (Broken Hill Group). The Himalaya Formation hosts cobalt-rich pyritic horizons at Pyrite Hill and Big Hill. The protolith is probably sandy marine shelf sedimentary rocks with variable evaporitic or hypersaline component. Plagioclase-quartz rocks are well-bedded (beds 20 - 30mm thick), with rare scour-and-fill and cross-bedded structures.

Thin to thick (0.5 - 10m) horizons of thinly bedded quartz-magnetite rock also occur with the plagioclase-quartz rocks. In some areas the formation consists of thin interbeds of plagioclase-quartz rocks within meta-sedimentary rocks or metasedimentary composite gneiss (Geoscience Australia, 2019). Lady Brassey Formation which is well-to-poorly-bedded leucocratic sodic plagioclase-quartz rock, as massive units or as thick to thin interbeds within psammitic to pelitic metasedimentary composite gneisses. A substantial conformable basic gneiss. It overlies both Mulculca Formation and Thorndale Composite Gneiss. Part of the formation was formerly referred to as Farmcote Gneiss in the Redan geophysical zone of Broken Hill Domain - a zone in which the stratigraphy has been revised to create the new Rantya Group (Redan and Ednas Gneisses, Mulculca Formation, and the now formalised Farmcote Gneiss).

**Lady Louise Suite**

This unit is approximately 1.69Ma in age comprising amphibolite, quartz-bearing, locally differentiated to hornblende granite, intrusive sills, and dykes, metamorphosed, and deformed; metabasalt with pillows (Geoscience Australia, 2019). Annadale Metadolerite is basic gneisses, which includes intervening metasedimentary rocks possibly dolerite (Geoscience Australia, 2021).

**Rantya Group**

Farmcote Gneiss contains metasedimentary rocks and gneiss and is a new unit at the top of Rantya Group. It is overlain by the Cues Formation and Thackaringa Group, and it overlies the Mulculca Formation. The age of the unit is between 1602 to 1710Ma. Mulculca Formation is abundant metasedimentary composite gneiss, variable sodic plagioclase-quartz-magnetite rock, quartz-albite-magnetite gneiss, minor quartz-magnetite rock common, minor basic gneiss, albite-hornblende-quartz rock (Geoscience Australia, 2019). Ednas Gneiss contains quartz-albite-magnetite gneiss, sodic plagioclase-quartz-magnetite rock, minor albite-hornblende-quartz rock, minor quartzo-feldspathic composite gneiss. It is overlain by Mulculca Formation.

**Silver City Suite**

Formerly mapped in the Thackaringa Group this new grouping accommodates the metamorphosed and deformed granites. A metagranite containing quartz-feldspar-biotite gneiss with variable garnet, sillimanite, and muscovite, even-grained to megacrystic, elongate parallel to enclosing stratigraphy. It occurs as sills and intrudes both the Thackeringa Group and the Broken Hill Group. This unit is aged between 1680 to 1707Ma.

**Torrowangee Group**

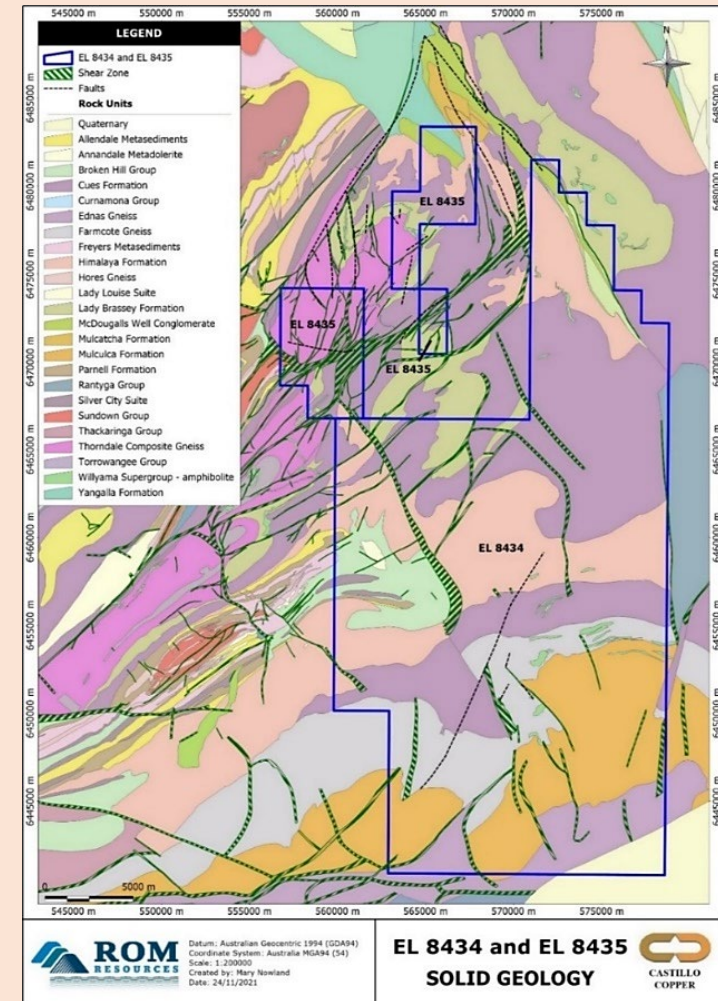
Mulcatcha Formation comprises flaggy, quartzose sandstone with lenticular boulder and arkosic sandstone beds. Yangalla Formation contains boulder beds, lenticular interbedded siltstone, and sandstone. It overlies the Mulcatcha Formation (Geoscience Australia, 2020).

**Sundown Group**

The Sundown Group contains Interbedded pelite, psammopelitic and psammitic metasedimentary rocks and it overlies the Broken Hill Group. The unit age is from 1665 to 1692Ma (Figure D2-4).

There is also an unnamed amphibolite in Willyama Supergroup, which present typically medium grained plagioclase and amphibole or pyroxene rich stratiform or discordant dykes.

**Figure D2-4: EL 8434 and EL 8435 Solid Geology**



<b>Drill hole Information</b>	<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"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> <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 completed at Tors Tank and Fence Gossan have been tabulated in previous ASX releases.</p>
<b>Data aggregation methods</b>	<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 2022f).</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>
<b>Relationship between mineralisation widths and intercept lengths</b>	<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>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 0-40m.</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>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.</p> <p>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.</p> <p>In general, most of the cobalt-rich layers have a north-northwest to north strike.</p>
<b>Diagrams</b>	<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>	Current surface anomalies are shown on maps released on the ASX (Castillo Copper 2022a and 2022b). All historical surface sampling has had their coordinates converted to MGA94, Zone 54.
<b>Balanced reporting</b>	<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>All recent laboratory analytical results have been recently reported (see Castillo Copper 2022a, b, c, d, e, and f) for assay results.</p> <p>Regarding the surface and sampling, no results other than duplicates, blanks or reference standard assays have been omitted.</p>
<b>Other substantive exploration data</b>	<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>	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 prospects.
<b>Further work</b>	<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><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<p>It is recommended that:</p> <ul style="list-style-type: none"> <li>• The remaining non-sampled zones within the Core Library drillholes, BH1, BH2, and DD90-IB3 in the north of the tenure group be relogged and sampled. DD90-IB3 is a good candidate for hyperspectral logging.</li> <li>• A program of field mapping and ground magnetic or EM surveys be planned and executed at Fence Gossan. Mapping of pegmatite outcrops is a high priority.</li> <li>• Complete the comprehensive drilling campaign that will comprise RC drilling and specifically target coring the known cobalt and REE</li> </ul>



		<p>mineralisation downdip to at least 100m depth at the Iron Blow prospects. The current drilling program is also designed to increase the resource confidence and has its ESF4 applications approved by the NSW Resource Regulator.</p>
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## References

- Biggs, M. S., 2021a, Broken Hill Alliance, NSW Tenure Package Background Geological Information, unpublished report to BH Alliance Pty Ltd, Sep 21, 30pp.
- Biggs, M. S., 2021b, EL 8434 and EL 8435, Brief Review of Surface Sample Anomalies Lithium, Rare Earth Elements and Cobalt, unpublished report to BH Alliance Pty Ltd, Nov 21, 18pp.
- Biggs, M.S., 2022a, BHA Cobalt Modelling and Mineral Resource Estimate Update, unpublished memo for Castillo Copper by ROM Resources.
- Biggs, M.S., 2022b, Broken Hill BHA Tenures Update, Castillo Copper, unpublished memo prepared by ROM Resources, Mar 22, 5pp
- Burkett R.D., 1975, Progress Report on Exploration Licenses 780, 781, 782 and 783, Broken Hill Area, NSW for the six months to 23<sup>rd</sup> November 1975, North Broken Hill Limited for the NSW Geological Survey, (GS1975-328)
- Castillo Copper Limited, 2022a, ASX Release Battery metal drill-hole assays unlock BHA East Zone potential / lithium update, 5<sup>th</sup> January 2022.
- Castillo Copper Limited, 2022b, ASX Release Strategic focus to develop significant cobalt mineralisation potential at BHA Project, 9<sup>th</sup> February 2022.
- Castillo Copper Limited, 2022c, ASX Release High grade platinum confirmed at BHA Project, 9<sup>th</sup> March 2022.
- Castillo Copper Limited, 2022d ASX Release Diamond core tests demonstrate high-grade cobalt-zinc potential at Broken Hill, 21 March 2022
- Castillo Copper Limited, 2022e ASX Release, Drilling hits targeted cobalt zones & wide pegmatite intercepts at Broken Hill 12 October 2022
- Castillo Copper Limited, 2022f ASX Release, Drilling hits more wide pegmatite intercepts at Broken Hill 24 October 2022
- Gilfillan J.F., 1971, Report on Exploration by Falconbridge (Australia) Pty Ltd on ATP 3091 Broken Hill Area NSW under option from Minerals Recovery (Australia) N.L., Falconbridge (Australia) Pty Limited, Jan 1971, 93pp
- Lees, T.C., 1978, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the six months to 23<sup>RD</sup> November 1978, North Broken Hill Limited for the NSW Geological Survey, (GS1978-043)
- Leyh, W.R., 1976, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29<sup>th</sup> June 1976, North Broken Hill Limited, Report GS1976-198, Jul 76, 88pp
- Leyh, W.R., 1977a, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29<sup>th</sup> December 1976, North Broken Hill Limited, Report GS1976-198, Feb 1977, 24pp
- Leyh W.R., 1977b, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 5<sup>th</sup> March 1977, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)
- Leyh W.R., 1977c, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 23<sup>rd</sup> May 1977, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)

Leyh W.R., 1978, Progress Report on Farmcote Exploration Licenses 780 and 782, Farmcote Area, Broken Hill, NSW for the three months to 27 October 1978, North Broken Hill Limited for the NSW Geological Survey, (GS1977-078)

Leyh W.R., 1978 Progress Report on Exploration Licenses 1099 and 1100 for the six months to 27 October 1978, North Broken Hill Limited for the NSW Geological Survey, (GS1978-407)

Leyh, W.R., 1990, Exploration Report for the Third Six Monthly Period ended 12th June 1990 for EL 3238 (K Tank), Broken Hill District, New South Wales for the six months period, Pasminco Limited, Report GS1989-226, Jun 90, 22pp

Leyh, W.R., and Lees T.C., 1977, Progress Report on Exploration Licence, No. 846 Iron Blow -Yellowstone Area, Broken Hill, New South Wales for the six months period ended 29<sup>th</sup> June 1977, North Broken Hill Limited, Report GS1976-198, Jul 77, 35pp

Leyh, W.R., and Larson P.D., 1981, Final Report for the Third Six Monthly Period ended 12th June 1990 for EL 3238 (K Tank), Broken Hill District, New South Wales for the six months period, Pasminco Limited, Report GS1989-226, Jun 90, 22pp

McConachy, G.W., 1997, EL 4792 Redan, Annual Report for the period ending 19/2/1997, Normandy Exploration Limited, unpublished report to the GSNSW, RIN 00002672

Main, J.V., and Tucker D.F., 1981, Exploration Report for Six Month Period 8<sup>th</sup> November 1980 to 7<sup>th</sup> May 1981, EL 1106 Rockwell, Broken Hill, NSW, CRA Exploration Pty Ltd, GS1980-080, Jul 1981, 40pp

Mohoney, M., 2018, BHA Broken Hill Project Position Paper, Squadron Resources Pty Ltd., Unpublished report, Mar2018, 8pp

Mortimer R., 2017, Re-interpretation of VTEM Profiles Broken Hill Area, unpublished report by Southern Geoscience Consultants for Squadron Resources Pty Ltd, Oct 17.

Squadron Resources Pty Ltd, 2018, Broken Hill Project Status, August 2018, unpublished confidential presentation by Squadron Resources,

Timms, P.D., and Groves A.J., 2003, Exploration Licence 4846, The Sisters, Annual Report to 29th May 2003, Endeavour Minerals Pty Ltd., RIN

Willis, I.L., Brown, R.E., Stroud, W.J., Stevens, B.P.J., 1983, The Early Proterozoic Willyama Supergroup: stratigraphic subdivision and interpretation of high to low-grade metamorphic rocks in the Broken Hill Block, New South Wales., Geological Society of Australia Journal, 30(2), p195-2