Metallurgical Testwork Confirms Outstanding Ionic Clay Recoveries for Caldeira REE Project

Highest globally reported Ionic Adsorption Clay recoveries using a standard AMSUL wash.

Highlights

- Metallurgical testwork results continue to show excellent leach extractions for Ionic Clays[1] at the Caldeira Project.
- Rare Earth Element recoveries across all six deposits tested display consistent strong ionic behaviour over thick intervals using a standard AMSUL wash test (unoptimised).
- Exceptional Magnet Rare Earth Element[2] (MREE) leach extractions, include;
    - 48 different metallurgical composites across ALL deposits had a TREO head grade of >4,000ppm and achieved average Magnetic REE leach extractions of 73% with 74% Nd, 71% Pr, 57% Tb and 56% Dy with a standard AMSUL wash (unoptimised) at pH4.
    - 81% magnet metal extractions over 10.4m from CVNDD001 with a high of 88% including 90% for Nd, 86% for Pr, 79% for Tb and 84% for Dy.
    - 73% magnet metal extractions over 8.4m from SBDD009 with a high of 75% including 76% for Nd, 73% for Pr, and 63% for Tb & Dy respectively.
    - 80% magnet metal extractions over 5.6m from DM2DD001 with a high of 85% including 87% for Nd, 81% for Pr, 73% for Tb and 77% for Dy.
    - 73% magnet metal extractions over 8.7m from CDMDD009 with a high of 75% including 77% for Nd, 74% for Pr, 55% Tb and 55% for Dy.

Meteoric Resources NL (**ASX: MEI**) (**Meteoric** or the **Company**) is pleased to report additional results of the metallurgical test work being undertaken on its 100%-owned Caldeira Rare Earth Ionic Clay Project, in the state of Minas Gerais, Brazil.

Meteoric has engaged Australia's leading laboratory in ionic clay leaching – Australian Nuclear Science and Technology Organisation (**ANSTO**) to assist with process flowsheet development. The testwork reported is from diamond drill cores collected during a metallurgical sampling program completed by Meteoric across the six deposits with defined Inferred Resources. These results build on historical testwork from a single composite sample at the Capo do Mel deposit which produced outstanding results including leachability averaging 70%.

[1] ASX:MEI 20/12/2023 Caldeira Confirmed as Ionic Adsorption Clay REE Project
[2] Magnetic Rare Earth Elements (MREE) = Pr, Nd, Tb, Dy

Chief Executive Officer, Nick Holthouse said,

"We are delighted by more great results from the metallurgical testwork program which continues to build on the exceptional Recovery to Leach results announced earlier this year.

The recoveries not only confirm that the vast majority of samples tested are truly ionic and amenable to low Capex, low Opex AMSUL leaching at pH 4.0 but also that the ionic clays extend significantly below the existing resource profile. All of the results add value to the schedule through increased scale and scheduling flexibility.

Importantly, the latest results focus on de-risking process recoveries for the Southern Licenses of Capão do Mel and Soberbo, both integral as near-term sources of ore feed for Meteoric's proposed Southern license processing plant location and the ongoing focus for resource infill drilling, engineering and permitting packages."

New ANSTO Metallurgical Leach Results

Metallurgical testwork commenced at ANSTO in July 2023 on 3m composite samples from forty-one (41) diamond drill cores completed as part of the Company's metallurgical sampling program in March-July 2023. The program targeted the six deposits which currently define the Company's stated Inferred Resource Estimates: Capão Do Mel, Soberbo, Figueira, Cupim Vermelho Norte, Donna Maria 1, and Donna Maria 2 (Figure 1 & Appendix 1). Standard AMSUL washes have been completed for 33 diamond drill holes to date for a total of 190 composite diagnostic leaches. The remaining results are pending and are expected in December 2023-January 2024.

The metallurgical testwork program was designed to:

- Validate the results of previous testwork undertaken by JOGMEC in 2019 and reported to the ASX by MEI in December 2022; and
- Assess the metallurgical variability both laterally and at depth across each of the deposits, paying particular attention to the clay zone below known JOGMEC drilling, the current resource estimation boundary, and the previous SGS testwork.

Composite samples (3m) were collected from beneath the soil horizon (2m depth), starting in the clay zone and progressing down the hole until the intrusive basement was reached. Whilst the soil from the deposit does contain strongly elevated REE, it was not included in the testwork as it is planned for stockpiling and subsequent replacement and revegetation after mining.

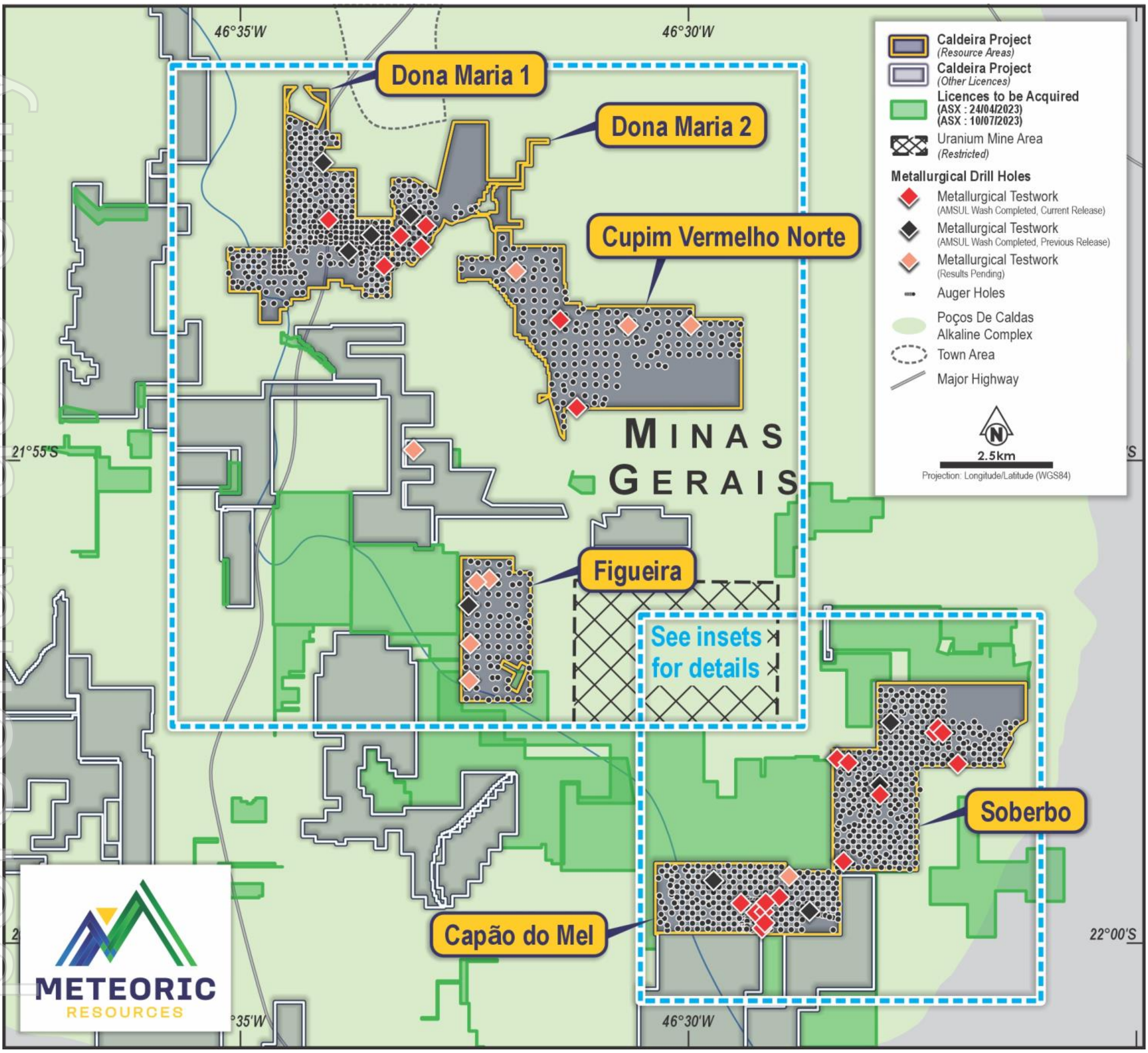

Figure 1: *Metallurgical Drill Hole Location Plan, Caldeira Project.*

Results

Mineralisation across all deposits tested so far displays strong ionic behaviour over thick intervals using a standard AMSUL wash test. The best results from each of the tenements include:

- 81% magnet metal extractions over 10.4m from CVNDD001 with a high of 88% including 90% for Nd, 86% for Pr, 79% for Tb and 84% for Dy.
- 73% magnet metal extractions over 8.4m from SBDD009 with a high of 75% including 76% for Nd, 73% for Pr, and 63% for Tb & Dy respectively.
- 80% magnet metal extractions over 5.6m from DM2DD001 with a high of 85% including 87% for Nd, 81% for Pr, 73% for Tb and 77% for Dy.
- 73% magnet metal extractions over 8.7m from CDMDD009 with a high of 75% including 77% for Nd, 74% for Pr, 55% Tb and 55% for Dy.
- 72% magnet metal extractions over 6.6m from CDMDD010 with a high of 78% including 80% for Nd, 77% for Pr, 47% Tb and 43% for Dy.

Typically, the holes that displayed the highest metallurgical recoveries are in the strongly weathered clay zone above the transition zone and the basement. Samples in the top part of the hole (from 2-4m) show a cerium enrichment zone, where cerium has been oxidised from Ce+3 to Ce+4, which has resulted in significant precipitation of Cerianite (CeO_2) whilst the remaining liberated rare earth elements travel down the profile until they physically adsorb onto the kaolinite clay surface. The zone of enrichment of rare earth elements is observed to be 5-30m thick and shows exceptional recoveries under standard ammonium sulphate leaching conditions.

The results clearly show the rare earth extractions achieved from the six deposits evaluated under standard ammonium sulphate wash conditions (currently still unoptimised) respond extremely favourably, and unequivocally validate the historical recoveries that this is a true rare earth ionic clay deposit.

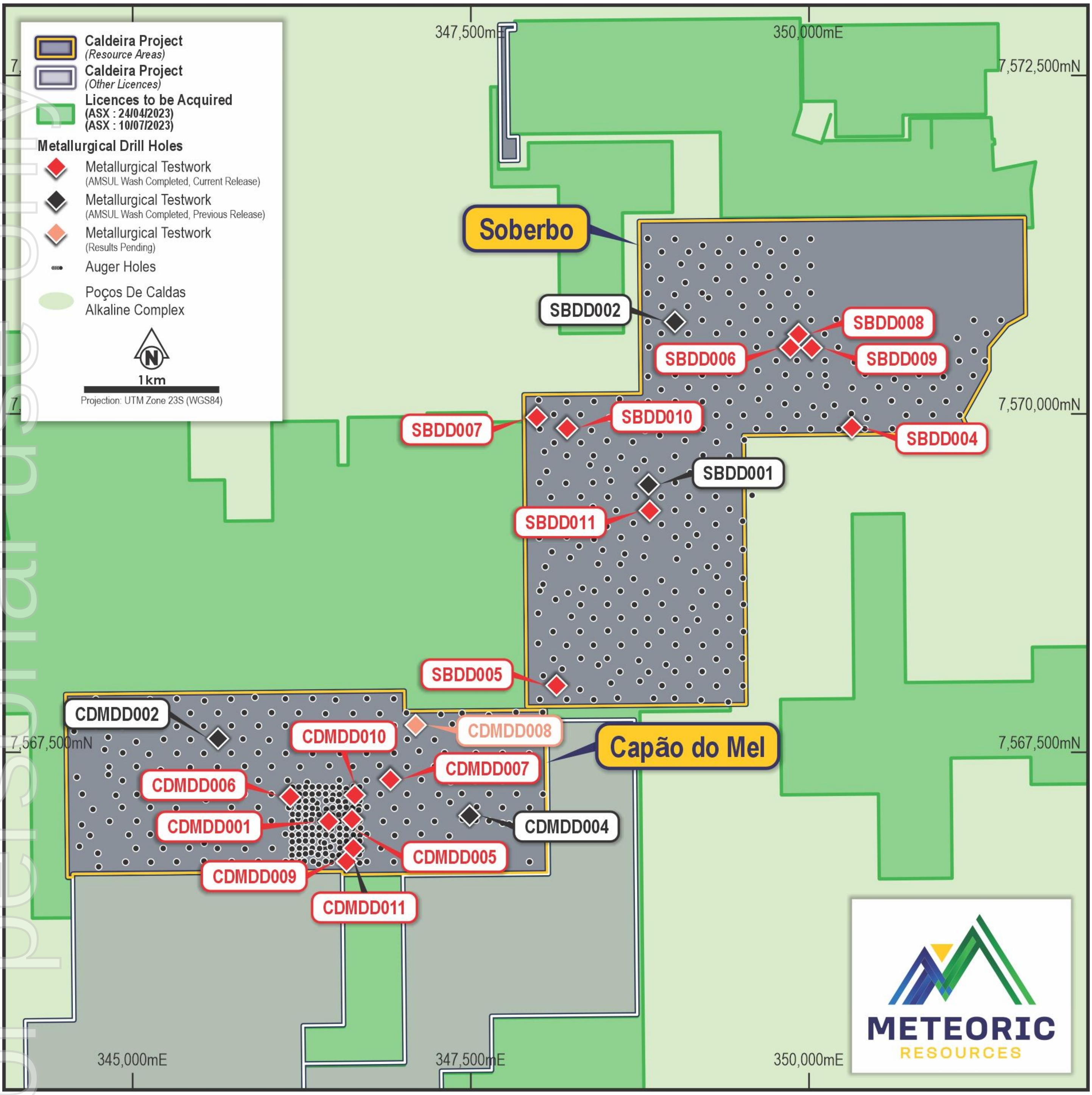

Figure 2: *Metallurgical Drill Hole Location Plan, Capao do Mel and Soberbo tenements*

***Table 1: Capão Do Mel** Metallurgical Drill Holes – REE recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
CDMDD001	**2.2**	**5.5**	**3.3**	**Clay**	**7,418**	**4,999**	**1,631**	**67**	**69**	**44**	**36**	**67**	**65**
	5.5	**8.5**	**3.0**	**Clay**	**5,021**	**3,276**	**1,063**	**49**	**52**	**30**	**28**	**50**	**51**
	8.5	**11.3**	**2.8**	**Clay**	**6,378**	**4,793**	**1,380**	**64**	**66**	**51**	**47**	**65**	**67**
	11.3	**14.0**	**2.7**	**Clay**	**6,272**	**4,898**	**1,329**	**60**	**62**	**45**	**44**	**61**	**61**
	14.0	**17.5**	**3.5**	**Clay**	**5,549**	**4,148**	**1,106**	**67**	**70**	**56**	**54**	**69**	**67**
	17.5	21.0	3.5	Fresh Rock	3,392	**2,307**	**745**	8	9	6	8	8	9
	21.0	24.0	3.0	Fresh Rock	1,774	**845**	**263**	17	19	10	13	18	19
	24.0	26.5	2.5	Fresh Rock	1,098	**418**	**137**	10	12		9	12	11
CDMDD002	2.0	5.0	3.0	Clay	2,639	**991**	**344**	43	44	24	24	43	42
	5.0	8.0	3.0	Clay	2,940	**2,057**	**673**	44	45	19	14	43	36
	8.0	**11.0**	**3.0**	**Clay**	**5,596**	**3,787**	**1,415**	**70**	**77**	**49**	**48**	**74**	**68**
	11.0	**15.2**	**4.2**	**Clay**	**5,908**	**4,550**	**1,711**	**77**	**84**	**62**	**58**	**81**	**79**
	15.2	18.5	3.3	Transition2	3,076	**2,144**	**740**	43	45	30	31	44	43
CDMDD004	**2.6**	**6.0**	**3.4**	**Clay**	**7,296**	**2,235**	**5,786**	**83**	**89**	**66**	**61**	**87**	**84**
	6.0	**9.0**	**3.0**	**Clay**	**10,468**	**2,930**	**7,991**	**86**	**92**	**72**	**71**	**90**	**90**
	9.0	**12.0**	**3.0**	**Transition 1**	**7,649**	**2,220**	**6,254**	**83**	**90**	**69**	**68**	**87**	**86**
	12.0	16.4	4.4	Transition 1	3,587	795	2,345	29	31	28	26	30	32
CDMDD005	**2.0**	**5.4**	**3.4**	**Clay**	**9,621**	**7211**	**2,316**	**49**	**53**	**41**	**40**	**52**	**54**
CDMDD006	3.0	6.0	3.0	Clay	2,545	916	295	37	38	13	10	36	36
	6.0	7.9	1.9	Clay	2,920	1,020	332	47	46	10	10	42	44
	7.9	**10.8**	**2.8**	**Clay**	**2,947**	**1,226**	**381**	**82**	**79**	**27**	**23**	**76**	**73**
	10.8	**13.0**	**2.3**	**Clay**	**1,880**	**1,034**	**313**	**65**	**64**	**23**	**19**	**62**	**65**
	13.0	**15.0**	**2.0**	**Clay**	**1,905**	**1,434**	**397**	**76**	**74**	**39**	**35**	**73**	**73**
	15.0	**19.0**	**4.0**	**Transition 1**	**2,956**	**1,579**	**454**	**51**	**50**	**14**	**11**	**48**	**51**
	19.0	23.0	4.0	Transition 1	2,927	1,623	477	44	43	15	10	41	**47**
	23.0	27.0	4.0	Transition 1	3,317	2,463	708	44	43	34	27	43	**46**
	27.0	30.0	3.0	Transition 1	2,330	1,670	502	36	36	18	19	35	43
	30.0	33.0	3.0	Transition 2	2,191	1,102	315	25	25	13	13	25	30
	33.0	36.0	3.0	Transition 2	1,870	1,181	356	**10**	10	12	7	10	14
CDMDD007	**3.0**	**5.8**	**2.8**	**Clay**	**3,615**	**2,156**	**680**	**67**	**67**	**49**	**44**	**66**	**66**
	5.8	**8.0**	**2.2**	**Clay**	**3,200**	**1,491**	**492**	**65**	**65**	**50**	**45**	**64**	**62**
	8.0	**11.0**	**3.0**	**Clay**	**1,865**	**698**	**237**	**52**	**53**	**34**	**26**	**52**	**53**
	11.0	**14.0**	**3.0**	**Clay**	**1,825**	**703**	**239**	**57**	**61**	**32**	**30**	**59**	**60**
	14.0	**17.0**	**3.0**	**Clay**	**2,526**	**1,058**	**349**	**54**	**57**	**32**	**30**	**55**	**53**
	17.0	**20.0**	**3.0**	**Clay**	**2,482**	**1,058**	**356**	**48**	**49**	**28**	**26**	**47**	**47**
	20.0	**23.0**	**3.0**	**Clay**	**2,158**	**706**	**242**	**52**	**54**	**28**	**22**	**51**	**52**
	23.0	**26.0**	**3.0**	**Clay**	**714**	**382**	**123**	**49**	**52**	**19**	**20**	**49**	**48**
	26.0	29.0	3.0	Transition 1	584	305	84	38	41	22	13	38	34
	29.0	31.6	2.6	Transition 2	876	540	143	22	22	11	7	21	19
	31.6	33.3	1.7	Transition 2	1,176	605	175	9	9		5	9	10
CDMDD008	**1.7**	**4.0**	**2.4**	**Clay**	**4,778**	**2,160**	**741**	**63**	**63**	**39**	**39**	**62**	**60**
	4.0	**7.0**	**3.0**	**Clay**	**5,460**	**4,137**	**1,333**	**70**	**76**	**63**	**64**	**74**	**70**
	7.0	**10.0**	**3.0**	**Clay**	**2,214**	**1,459**	**414**	**63**	**67**	**62**	**65**	**65**	**61**
	10.0	13.0	3.0	Clay	913	404	102	-	-	-	-	-	-
	13.0	16.0	3.0	Clay	822	397	94	-	-	-	-	-	-
	16.0	19.0	3.0	Clay	894	423	110	-	-	-	-	-	-
	19.0	22.1	3.1	Clay	1,019	485	135	-	-	-	-	-	-
	22.1	25.0	2.9	Transition 2	764	353	108	-	-	-	-	-	-
	25.0	28.0	3.0	Transition 2	787	391	116	-	-	-	-	-	-
	28.0	29.7	1.7	Transition 3	1,045	486	135	-	-	-	-	-	-
	29.7	33.0	3.3	Transition 3	828	396	93	-	-	-	-	-	-
	33.0	36.8	3.8	Transition 3	970	447	112	-	-	-	-	-	-

CDMDD009	2.3	4.8	2.5	Clay	7,431	5,067	1,542	72	75	59	57	73	71
	4.8	8.0	3.2	Clay	3,519	2,403	705	74	77	55	55	75	73
	8.0	11.0	3.0	Clay	1,875	1,299	374	68	77	38	36	71	68
	11.0	14.0	3.0	Transition 3	1,730	810	256	31	34	18	10	32	33
	14.0	16.9	2.9	Transition 3	2,388	967	303	20	23	8	9	21	21
CDMDD010	2.4	6.0	3.6	Clay	4,202	2,989	848	77	80	47	43	78	78
	6.0	9.0	3.0	Clay	5,180	1,880	545	62	69	42	40	66	71
	9.0	11.8	2.8	Clay	2,728	1,247	349	57	65	28	20	59	62
	11.8	15.0	3.3	Clay	3,371	945	262	55	57	10	6	50	47
	15.0	19.3	4.3	Clay	3,516	1,248	383	51	53	18	12	50	54
	19.3	22.8	3.6	Transition 3	2,796	1,547	475	38	41	15	12	39	44
	22.8	27.0	4.2	Transition 3	2,336	1,184	385	21	24	8	7	22	25
	27.0	31.0	4.0	Fresh Rock	2,036	743	248	7	8	-	2	7	8
	31.0	34.7	3.7	Fresh Rock	2,067	754	248	6	7	-	2	6	6
	34.7	39.0	4.3	Fresh Rock	2,770	1,199	377	5	5	-	3	5	5
	39.0	43.0	4.0	Fresh Rock	1,060	516	162	4	4	-	2	4	3
	43.0	47.9	4.9	Fresh Rock	2,361	1,043	347	8	9	9	7	9	8
CDMDD011	2.0	5.0	3.0	Clay	13,351	11,583	3,888	95	104	88	92	101	100
	5.0	8.5	3.5	Clay	13,202	11,025	3,566	88	104	84	89	99	94
	8.5	11.0	2.5	Clay	5,519	4,653	1,484	92	105	84	87	101	96
	11.0	13.7	2.7	Clay	4,752	3,774	1,192	84	90	74	79	88	85
	13.7	18.0	4.4	Transition 3	4,486	2,846	919	51	57	50	48	55	57
	18.0	21.5	3.5	Transition 3	2,017	1,096	349	24	28	24	21	27	29
	21.5	25.0	3.4	Fresh Rock	2,042	930	287	13	16	9	10	15	12

TREO = La_2O_3 + CeO_2 +Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3
TREE-Ce = La + Pr + Nd + Sm + Eu + Gd + Tb + Dy + Ho + Er+ Tm + Yb + Lu + Y
Note: "-"denotes assays pending

***Table 2: Capão Do Mel** Metallurgical Drill Holes –AVERAGE leach extractions by lithology classification, recovery and Head grade*

Criteria	#of samples	Average Head (ppm)			% Extractions						
		TREO	MREE	TREE-Ce	Pr	Nd	Tb	Dy	Magnets	TREE	TREE-Ce
Avg ALL CLAY & Transition	64	3,298	655	2,263	53	56	35	31	54	38	54
Avg >45% MREE Recovery	36	4,410	922	3,075	64	68	43	40	65	46	65
Avg ALL Clay	37	4,181	845	2,886	62	65	40	37	63	43	62
Avg ALL Transition	18	2,683	537	1,904	34	36	23	19	35	27	37
Avg Transition 1	7	3,336	749	2,720	46	48	29	25	46	38	49
Avg Transition 2	4	2,003	388	1,545	25	26	17	15	25	20	27
Avg Transition 3	6	2,626	448	1,408	31	35	21	18	33	22	35
Avg Fresh Rock	0	2,067	313	1,182	9	10	8	6	9	7	9
Avg Head >4000ppm TREO	17	6,108	1,420	4,597	70	74	54	52	72	57	71
Avg Head > 5000 ppm TREO	13	6,587	1,572	5,106	70	75	54	52	73	59	72
ANSTO MAX	-	10,468	2,930	7,991	86	92	72	71	90	78	90
JOGMEC CDM	-	5,000	-	-	75	78	66	64	-	68	-

Note: "-" denotes no data

Table 3: **SOBERBO** *Metallurgical Drill Holes – REE recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
SBDD001	2	5	3	Clay	2,777	1,709	640	36	40	21	20	38	35
	5	**9**	**4**	**Clay**	**3,286**	**2,119**	**827**	**49**	**50**	**31**	**28**	**49**	**46**
	9	**13**	**4**	**Clay**	**5,768**	**4,469**	**1,707**	**47**	**51**	**35**	**34**	**50**	**48**
SBDD002	2	5	3	Clay	2,690	845	313	46	49	21	17	47	42
	5	8	3	Clay	2,550	1,106	397	34	38	22	21	36	31
	8	11	3	Clay	2,054	1,077	394	46	51	32	23	49	42
	11	**14**	**3**	**Clay**	**4,502**	**2,013**	**809**	**77**	**83**	**41**	**32**	**80**	**74**
	14	**17**	**3**	**Clay**	**4,238**	**3,344**	**1,337**	**85**	**91**	**60**	**57**	**89**	**85**
	17	**20**	**3**	**Clay**	**4,008**	**2,966**	**1,086**	**80**	**86**	**63**	**59**	**84**	**81**
	20	**23.7**	**3.7**	**Transition 1**	**4,538**	**3,534**	**1,295**	**83**	**89**	**73**	**67**	**87**	**83**
	23.7	**26.1**	**2.5**	**Transition 1**	**5,383**	**4,130**	**1,604**	**52**	**55**	**70**	**68**	**55**	**57**
SBDD004	**3**	**6**	**3**	**Clay**	**4,394**	**3,329**	**1,236**	**74**	**74**	**58**	**60**	**74**	**71**
	6	**9**	**3**	**Clay**	**4,100**	**3,024**	**1,053**	**68**	**66**	**61**	**61**	**67**	**65**
	9	**14**	**5**	**Clay**	**1,289**	**674**	**238**	**47**	**49**	**39**	**42**	**48**	**47**
	14	19	5	Transition 1	1,227	624	215	30	32	26	18	30	30
	19	23	4	Transition 2	1,349	682	247	21	23	13	14	22	23
SBDD005	2.0	5.0	3.0	Clay	1,271	591	181	9	10	-	2	9	7
	5.0	8.3	3.3	Clay	1,507	617	194	12	14	-	4	13	10
	8.3	13.0	4.7	Clay	1,606	717	229	11	13	-	4	12	10
	13.0	17.0	13.0	Clay	1,780	898	307	40	45	15	14	42	34
SBDD006	2.5	5.3	2.8	Clay	1,355	175	50	23	27		4	23	16
	5.3	7.5	2.3	Transition 1	1,634	651	249	42	45	24	25	43	36
SBDD007	**2.0**	**4.8**	**2.8**	**Clay**	**3,711**	**2,680**	**952**	**56**	**59**	**49**	**49**	**58**	**61**
	4.8	**6.5**	**1.7**	**Clay**	**4,775**	**3,865**	**1,359**	**64**	**65**	**51**	**52**	**64**	**67**
	6.5	**8.8**	**2.3**	**Transition 1**	**6,694**	**5,230**	**1,855**	**51**	**52**	**45**	**46**	**52**	**54**
SBDD008	3.0	7.0	4.0	Clay	1,286	657	234	34	35	11	8	33	28
	7.0	11.0	4.0	Clay	2,148	1,278	513	33	36	16	14	34	33
	11.0	15.0	4.0	Clay	2,567	1,505	567	46	47	27	21	46	44
	15.0	**19.0**	**4.0**	**Clay**	**5,347**	**4,069**	**1,469**	**60**	**58**	**42**	**43**	**58**	**56**
	19.0	**21.7**	**2.7**	**Clay**	**5,255**	**4,216**	**1,539**	**72**	**71**	**64**	**64**	**71**	**70**
	21.7	**26.2**	**4.5**	**Transition 2**	**4,227**	**3,354**	**1,201**	**64**	**65**	**58**	**58**	**65**	**65**
SBDD009	2.8	7.0	4.2	Clay	1,858	868	313	28	29	8	9	27	24
	7.0	9.7	2.7	Clay	2,208	1,393	523	40	42	21	18	40	38
	9.7	**14.0**	**4.3**	**Clay**	**4,008**	**2,948**	**1,101**	**62**	**62**	**50**	**46**	**61**	**59**
	14.0	**18.5**	**4.5**	**Clay**	**6,012**	**4,942**	**1,770**	**73**	**76**	**63**	**63**	**75**	**72**
	18.5	**22.4**	**3.9**	**Transition 1**	**5,833**	**4,634**	**1,619**	**70**	**72**	**62**	**63**	**71**	**70**
	22.4	**26.2**	**3.8**	**Transition 2**	**3,495**	**2,597**	**894**	**57**	**54**	**43**	**45**	**54**	**56**
SBDD010	2.0	6.5	4.5	Clay	1,424	568	174	36	37	13	9	34	28
	6.5	**11.0**	**4.5**	**Clay**	**2,717**	**1,539**	**530**	**58**	**60**	**34**	**29**	**59**	**54**
	11.0	**15.7**	**4.7**	**Clay**	**6,172**	**4,516**	**1,433**	**70**	**77**	**59**	**57**	**74**	**68**
	15.7	**21.0**	**5.3**	**Clay**	**3,834**	**2,786**	**825**	**65**	**65**	**52**	**53**	**65**	**61**
	21.0	24.3	3.3	Clay	1,342	798	254	45	44	32	27	43	44
	24.3	38.7	14.4	Fresh Rock	1,030	337	108	4	5	-	-	4	4
SBD011	2.6	6.0	3.4	Clay	1,056	178	48	28	29	-	3	25	17
	6.0	10.0	4.0	Clay	1,195	226	57	23	25	-	5	21	15
	10.0	14.5	4.5	Clay	1,749	931	312	17	18	8	9	17	13
	14.5	18.4	3.9	Clay	4,399	3,253	1,143	47	50	34	36	48	43
	18.4	**22.0**	**3.6**	**Transition 1**	**3,844**	**2,868**	**1,043**	**55**	**58**	**39**	**39**	**56**	**54**
	22.0	24.5	2.5	Transition 2	1,472	887	292	44	45	29	27	44	44

*Table 4: **Soberbo** Metallurgical Drill Holes – AVERAGE leach extractions by lithology classification, recovery and Head grade*

Criteria	#of samples	Average Head (ppm)			% Extractions						
		TREO	MREE	TREE-Ce	Pr	Nd	Tb	Dy	Magnets	TREE	TREE-Ce
Avg ALL CLAY and ALL Transition	44	3,313	812	2,256	51	54	39	35	52	38	49
Avg >45% MREE Recovery	28	4,255	1,114	3,090	62	65	48	47	64	51	61
Avg ALL Clay	33	3,214	764	2,123	51	53	37	33	51	36	48
Avg ALL Transition	11	3,609	956	2,654	54	56	44	43	55	44	54
Avg Transition 1	7	4,165	1,126	3,096	58	62	49	47	60	47	58
Avg Transition 2	4	2,636	659	1,880	47	47	36	36	46	38	47
Avg Transition 3	0	-	-	-	-	-	-	-	-	-	-
Avg Fresh Rock	1	1,030	108	337	4	5	0	0	4	2	4
Avg Head >4000ppm TREO	18	4,981	1,368	3,769	68	71	55	54	69	58	67
Avg Head > 5000 ppm TREO	8	5,808	1,625	4,526	65	68	55	55	66	57	65
ANSTO MAX	-	5,201	0	0	85	91	60	57	89	78	85
JOGMEC CDM	-	5,000	-	-	75	78	66	64	-	68	-

*Note SBDD005 has been omitted from the statistical analysis as it is being re-assayed.
Note: "-"denotes no data

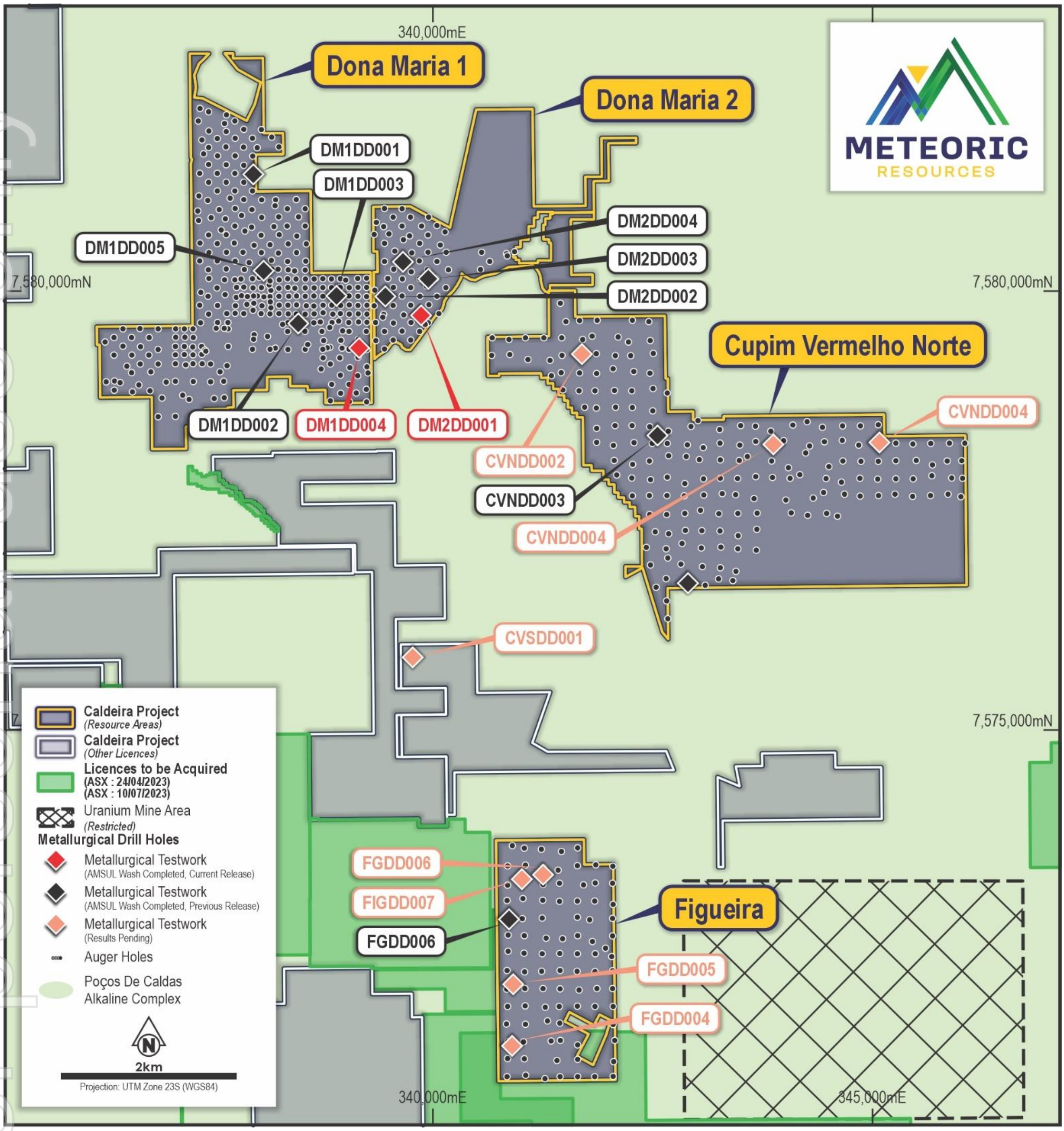

***Figure 3:** Metallurgical Drill Hole Location Plan, Dona Maria 1 & 2, Cupim Vermelho Norte and Figueira tenements*

***Table 5: DONA MARIA 1** Metallurgical Drill Holes – REE recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
DM1DD001	**2.8**	**6.0**	**3.2**	**Clay**	**2,616**	**1,675**	**729**	**58**	**64**	**45**	**37**	**61**	**56**
	6.0	**8.7**	**2.7**	**Clay**	**3,697**	**2,812**	**1,195**	**68**	**73**	**66**	**67**	**71**	**70**
	8.7	**12.0**	**3.3**	**Transition 2**	**4,303**	**3,533**	**1,401**	**69**	**75**	**73**	**75**	**73**	**74**
	12.0	**15.0**	**3.0**	**Transition 2**	**2,575**	**1,936**	**755**	**67**	**71**	**72**	**73**	**71**	**71**
	15.0	18.0	3.0	Transition 3	1,518	899	338	28	32	37	35	31	29
	18.0	20.4	2.4	Transition 3	845	419	151	16	18	17	37	18	15
DM1DD002	**2.2**	**5.0**	**2.8**	**Clay**	**2,503**	**1,436**	**549**	**87**	**90**	**51**	**42**	**88**	**87**
	5.0	**8.0**	**3.0**	**Clay**	**5,567**	**4,004**	**1,531**	**93**	**92**	**77**	**76**	**91**	**93**
	8.0	**11.0**	**3.0**	**Clay**	**5,201**	**3,951**	**1,459**	**95**	**94**	**81**	**75**	**94**	**96**
	11.0	**14.0**	**3.0**	**Clay**	**4,155**	**3,142**	**1,119**	**89**	**89**	**76**	**71**	**88**	**90**
	14.0	**17.0**	**3.0**	**Clay**	**3,046**	**2,152**	**760**	**86**	**89**	**70**	**70**	**88**	**90**
	17.0	**20.9**	**3.9**	**Clay**	**1,469**	**727**	**219**	**64**	**69**	**41**	**29**	**66**	**60**
	20.9	**24.0**	**3.1**	**Transition 2**	**3,056**	**873**	**249**	**74**	**77**	**31**	**30**	**73**	**75**
	24.0	**27.0**	**3.0**	**Transition 2**	**1,847**	**997**	**278**	**86**	**87**	**72**	**49**	**85**	**88**
	27.0	**31.0**	**4.0**	**Transition 3**	**943**	**487**	**122**	**69**	**73**	**41**	**26**	**68**	**64**
	31.0	34.6	3.6	Transition 3	1,095	449	549	42	45	20	16	42	42
DM1DD003	**2.0**	**5.0**	**3.0**	**Clay**	**5,616**	**3,778**	**1,457**	**85**	**83**	**51**	**48**	**83**	**84**
	5.0	**7.0**	**2.0**	**Clay**	**8,195**	**6,520**	**2,428**	**87**	**91**	**71**	**73**	**89**	**90**
	7.0	**9.9**	**2.9**	**Transition 1**	**3,928**	**2,901**	**1,017**	**85**	**88**	**75**	**72**	**87**	**90**
DM1DD004	**4.0**	**7.0**	**3.0**	**Clay**	**1,781**	**1,389**	**350**	**78**	**81**	**58**	**57**	**78**	**78**
	7.0	**9.5**	**2.5**	**Clay**	**1,445**	**1,157**	**293**	**75**	**78**	**54**	**53**	**75**	**74**
	9.5	**14.46**	**5.0**	**Clay**	**1,829**	**1,446**	**370**	**81**	**84**	**70**	**68**	**82**	**83**
	14.46	**17.5**	**3.0**	**Transition 2**	**1,781**	**1,389**	**350**	**78**	**81**	**58**	**57**	**78**	**78**

***Table 6: DONA MARIA 2** Metallurgical Drill Holes – REE & REO recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interva l			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
DM2DD001	**2.0**	**5.0**	**3.0**	**Clay**	**3,138**	**2,392**	**791**	**81**	**87**	**73**	**77**	**85**	**82**
	5.0	**7.58**	**2.6**	**Clay**	**2,764**	**1,846**	**610**	**75**	**76**	**67**	**69**	**75**	**73**
	7.6	**10.0**	**2.4**	**Clay**	**2,016**	**1,276**	**431**	**59**	**60**	**50**	**49**	**59**	**58**
	10.0	14.0	4.0	Clay	1,277	684	238	28	29	22	15	28	27
	14.0	15.6	1.6	Transition 3	1,060	604	217	21	23	12	8	22	23
DM2DD002	**2.0**	**5.0**	**3.0**	**Clay**	**2,245**	**1,751**	**460**	**88**	**87**	**64**	**61**	**86**	**80**
	5.0	8.0	3.0	Transition 3	866	435	97	39	41	-	8	38	30
	8.0	11.0	3.0	Transition 3	809	404	90	22	22	-	4	20	16
	11.0	13.6	2.6	Transition 3	896	436	111	37	40	27	12	38	34
DM2DD003	**2.0**	**5.3**	**3.3**	**Clay**	**2,783**	**2,007**	**706**	**74**	**74**	**54**	**58**	**73**	**71**
	5.3	**8.5**	**3.3**	**Clay**	**1,794**	**1,167**	**429**	**56**	**57**	**35**	**38**	**56**	**57**
	8.5	**12.2**	**3.6**	**Clay**	**1,617**	**1,067**	**375**	**63**	**64**	**41**	**45**	**63**	**62**
	12.2	15.3	3.1	Transition 3	1,820	1,114	405	37	38	25	24	37	39
DM2DD004	**2.0**	**5.0**	**3.0**	**Clay**	**1,113**	**556**	**228**	**53**	**55**	**18**	**20**	**53**	**49**
	5.0	**8.0**	**3.0**	**Clay**	**3,987**	**2,875**	**1,168**	**88**	**93**	**63**	**67**	**91**	**87**
	11.0	15.6	4.6	Transition	4,497	3,503	1,195	8	8	5	8	8	9

Note: "-"denotes assays pending

***Table 7: Dona Maria 1 & 2** Metallurgical Drill Holes – AVERAGE leach extractions by lithology classification, recovery and Head grade*

Criteria	#of samples	Average Head (ppm)			% Extractions						
		TREO	MREE	TREE-Ce	Pr	Nd	Tb	Dy	Magnets	TREE	TREE-Ce
Avg ALL CLAY and ALL Transition	38	2,510	602	1,733	66	68	53	47	66	52	65
Avg >45% MREE Recovery	29	2,937	727	2,083	77	79	60	57	77	62	77
Avg ALL Clay	22	3,007	762	2,158	75	77	57	55	75	61	74
Avg ALL Transition	16	1,826	381	1,149	53	56	46	36	54	41	53
Avg Transition 1	2	2,878	694	2,173	83	86	72	70	85	75	86
Avg Transition 2	5	2,722	611	1,757	75	79	64	59	77	56	78
Avg Transition 3	9	1,095	184	583	35	37	26	16	35	25	32
Avg Fresh Rock	0	-	-	-	-	-	-	-	-	-	-
Avg Head >4000ppm TREO	6	5,506	1,566	4,155	86	87	72	70	87	74	88
Avg Head > 5000 ppm TREO	4	6,145	1,719	4,563	90	90	70	68	89	76	91
ANSTO MAX	-	5,201	-	-	95	94	81	75	94	82	96
JOGMEC CDM	-	5,000	-	-	75	78	66	64	-	68	-

Note: "-" denotes no data

***Table 8: FIGUEIRA** Metallurgical Drill Holes – REE recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
FIGDD003	**2.3**	**6.0**	**3.7**	**Clay**	**4,819**	**2,688**	**883**	**50**	**49**	**35**	**27**	**48**	**47**
	6.0	**9.0**	**3.0**	**Clay**	**5,310**	**3,529**	**1,153**	**64**	**69**	**47**	**42**	**67**	**65**
	9.0	**12.0**	**3.0**	**Clay**	**7,370**	**5,957**	**1,843**	**81**	**88**	**65**	**66**	**86**	**84**
	12.0	**15.0**	**3.0**	**Clay**	**4,458**	**3,510**	**1,067**	**77**	**82**	**63**	**63**	**80**	**80**
	15.0	**19.0**	**4.0**	**Clay**	**2,244**	**1,437**	**436**	**48**	**52**	**44**	**40**	**50**	**55**
	19.0	22.6	3.6	Transition 3	2,848	1,606	460	8	10	18	18	10	11
	22.6	26.0	3.4	Fresh Rock	1,877	886	263	11	12	11	10	12	12
	26.0	29.0	3.0	Fresh Rock	3,487	1,573	485	3	4	7	4	4	4

***Table 9: CUPIM VERMELHO NORTE** Metallurgical Drill Holes – REE & REO recoveries by depth (leach extractions above 45% are highlighted in bold type)*

Drill Hole	Interval			Lithology	Assayed Head (ppm)			Pr	Nd	Tb	Dy	MREE Recovery	TREE-Ce Recovery
	From	To	m		TREO	TREE-Ce	MREE	%	%	%	%	%	%
CVNDD001	**3.7**	**6.0**	**2.3**	**Clay**	**2,461**	**1,780**	**641**	**71**	**72**	**49**	**47**	**71**	**65**
	6.0	**8.5**	**2.5**	**Clay**	**3,700**	**2,957**	**1,067**	**81**	**83**	**64**	**70**	**82**	**78**
	8.5	**11.0**	**2.5**	**Clay**	**4,664**	**3,779**	**1,415**	**78**	**83**	**72**	**78**	**82**	**78**
	11.0	**14.1**	**3.1**	**Clay**	**5,874**	**4,851**	**1,776**	**86**	**90**	**79**	**84**	**88**	**85**
	14.1	**19.5**	**5.4**	**Transition 1**	**2,689**	**1,880**	**712**	**51**	**52**	**41**	**43**	**52**	**53**
CVNDD003	1.7	6.1	4.4	Clay	1,055	233	53	21	21	-	2	17	10
	6.1	9.0	2.9	Clay	1,253	758	234	17	17	7	4	16	13
	9.0	12.0	3.0	Clay	1,191	781	276	31	31	9	10	29	27
	12.0	**15.0**	**3.0**	**Clay**	**554**	**437**	**171**	**91**	**96**	**59**	**60**	**94**	**90**
	15.0	**17.8**	**2.8**	**Clay**	**1,783**	**1,278**	**495**	**43**	**46**	**24**	**27**	**45**	**43**
	17.8	20.7	2.8	Clay	1,085	628	255	36	38	23	22	37	37
	20.7	24.1	3.5	Transition 1	2,834	2,239	758	14	15	9	11	14	13
	24.1	28.0	3.9	Transition 2	12,731	11,270	3,983	1	1	1	1	1	1
	28.0	32.4	4.4	Transition 3	1,329	716	248	0.4	1	-	-	0.5	0.4

__Table 10:__ ALL Metallurgical Drill Holes across ALL tenements – AVERAGE leach extractions by lithology classification, recovery and Head grade (refer ASX announcement 27 September 2023 for further information)

Criteria	#of samples	Average Head (ppm)			% Extractions						
		TREO	MREE	TREE-Ce	Pr	Nd	Tb	Dy	Magnets	TREE	TREE-Ce
Avg ALL CLAY and ALL Transition	157	3,176	713	2,160	57	59	42	38	57	43	56
Avg >45% MREE Recovery	103	3,948	937	2,769	68	71	51	48	69	53	68
Avg ALL Clay	101	3,642	827	2,475	62	64	45	41	63	46	61
Avg ALL Transition	47	2,612	584	1,816	45	48	36	31	46	36	46
Avg Transition 1	17	3,585	895	2,761	56	58	43	40	57	46	57
Avg Transition 2	14	2,382	530	1,649	48	50	41	36	48	37	50
Avg Transition 3	16	1,778	300	956	32	34	23	17	33	23	32
Avg Fresh Rock	17	2,113	307	992	6	7	8	5	7	5	7
Avg Head >4000ppm TREO	48	5,597	1,429	4,117	71	74	57	56	73	60	72
Avg Head > 5000 ppm TREO	29	6,374	1,634	4,744	71	75	57	56	73	61	72
ANSTO MAX	-	5,201	1,459	3,951	95	94	81	75	94	82	96
JOGMEC CDM	-	3,948	-	-	75	78	66	64	-	68	-

Note SBDD005 & CVNDD003 have been omitted from the statistical analysis as they are being re-assayed.
Note: "-"denotes no data

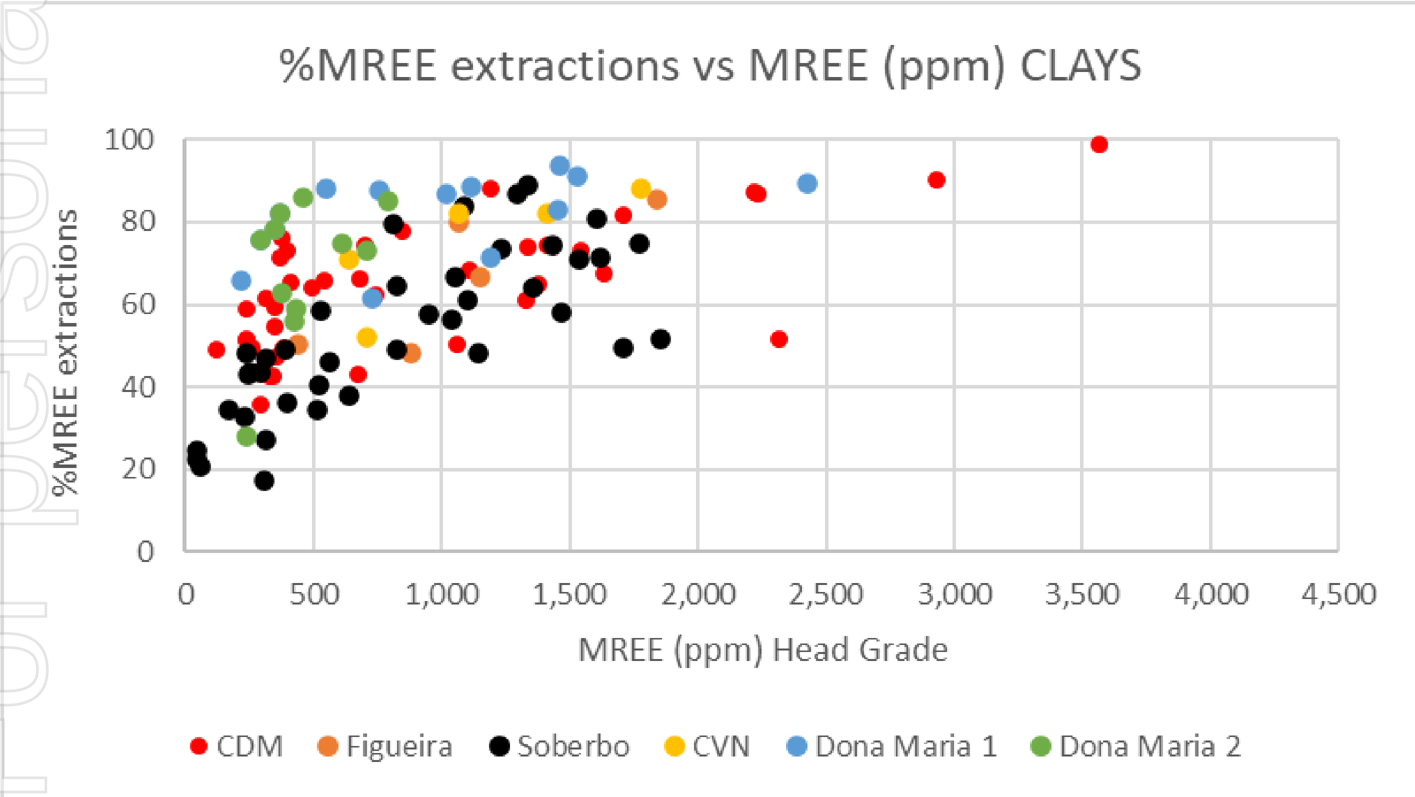

__Figure 4:__ Graph of MREE grades vs desorption extractions in ALL CLAYS across ALL Tenements with standard pH4 AMSUL wash

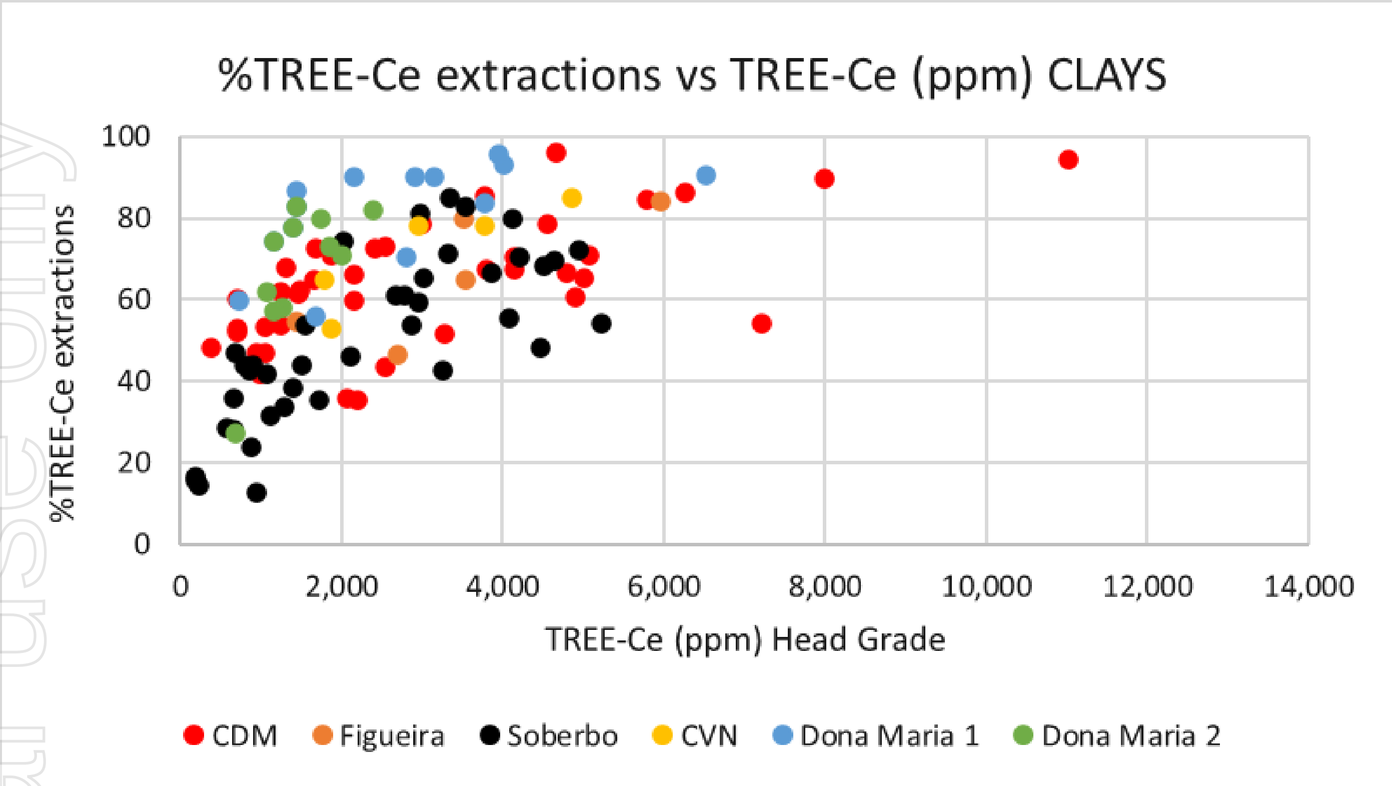

Figure 5: *Graph of TREE-Ce grades vs desorption extractions in ALL CLAYS across ALL Tenements with standard pH4 AMSUL wash*

Figures 4 & 5 above show high MREE and TREE-Ce extractions across all six deposit areas.

The graphs also show high extractions across the full grade spectrum, but interestingly the extractions tend to increase with grade. One 3m interval in CDMDD006 with 1.05% TREO head grade, achieved an astonishing 90% magnet element extractions.

This initial testwork has contributed significantly to MEI's knowledge base on metallurgical performance laterally, at depth and across different lithologies. The new information will be built into a geometallurgical model for the Caldeira Project. Further leaching parameters will be investigated in Q4 2023 to further optimise recoveries.

Next Steps

Leaching Program

Diagnostic leach tests will continue throughout December and January on the remaining metallurgical holes that sit outside the 10-year mine plan. Importantly, the CDM and Soberbo deposits that underpin the starter pits in the scoping study have been completed. A master composite of the CDM deposit is currently being constructed from all of the metallurgical drill holes that return satisfactory metallurgical performance. The leaching program will aim to optimise the extractions by evaluating different lixiviants, lixiviant concentration, % solids and pH.

Impurity Removal

Following the leaching program, impurity removal optimisations will be performed to improve the rejection of deleterious elements such as aluminium, iron, silica, calcium, thorium and uranium, whilst maximising the recovery of the rare earths. The testwork will aim to evaluate impurity removal conditions including pH, alkali type, temperature, residence time, % solids and solid liquid separation performance.

Rare Earth Precipitation

Following the impurity removal program, rare earth precipitation tests will be performed to generate a saleable rare earth product. The testwork will evaluate the type of precipitation agent, pH, temperature, residence time, % solids and solid liquid separation performance.

Schedule

The metallurgical scope is comprehensive and will run until the end of April to enable adequate characterisation of each of the prospects. Some delays have been experienced with assay turnaround times which is currently a problem all over Australia. As milestone results come to hand, they will be reported to the market. The precipitation of MREC from the CDM master composite is targeted in late January – early February.

About ANSTO

ANSTO has extensive experience in rare earth process development with several rare earth experts in its team having a combined ~30 years' experience dating back to early work on the Mt Weld deposit (monazite mineralogy) in Western Australia in the early 1990s. Over the past 10-15 years, ANSTO has worked on numerous rare earth projects covering process development, piloting (Peak Resources, Arafura Rare Earths, ASM, Northern Minerals, Hastings Technology Metals, Mkango Resources, Iluka Resources) and providing expert advice.

Over the past five years, ANSTO's expertise has shifted to an increasing number of ionic adsorption and clay-hosted REE projects (>15 currently in progress), including the more advanced Aclara (Chile), Ionic Rare Earths (Uganda) and Australian Rare Earths (South Australia) projects. Work on these projects has included leaching/desorption, solid/liquid separation, impurity removal and rare earth precipitation, mineralogy, radionuclide deportment and removal, process modelling and mini-plant circuit operations.

Background Information on Ionic Clay REE Deposits

Geologically, the Caldeira REE Project is classified as an Ionic Adsorption Clay REE Deposit, which is characterised by the following key criteria:

- Formed in the saprolite (clay) zone of the weathering profile.
- The majority of the REE's are **adsorbed** onto clay minerals and accumulate in the clay zone of the regolith profile.
- Adsorbed REEs are ionically attached to the clay minerals and can be liberated by washing in a weak solution of ammonium sulphate (or other metal salt) at near neutral pH.
- Ionic Adsorption Clay REE deposits are typically found near surface, often at depths of less than 10m.
- The U and Th levels in Ionic Clay REE deposits are typically low, as these elements are less soluble in ground waters and are not preferentially adsorbed by clays during the weathering and leaching processes.

Mineral Resource Statement – Caldeira Project (ASX:MEI 1/5/2023)

Table 11: *Caldeira REE Project 2023 Mineral Resource Estimate– by licence at 1,000ppm TREO cut-off*

Licence	JORC Category	Tonnes Mt	TREO ppm	Pr_6O_{11} ppm	Nd_2O_3 ppm	Tb_4O_7 ppm	Dy_2O_3 ppm	MREO ppm	MREO/TREO %
Capão do Mel	Inferred	68	2,692	148	399	4	22	572	21.3%
Cupim Vermelho Notre	Inferred	104	2,485	152	472	5	26	655	26.4%
Dona Maria 1 & 2	Inferred	94	2,320	135	404	5	25	569	24.5%
Figueira	Inferred	50	2,811	135	377	5	26	542	19.3%
Soberbo	Inferred	92	2,948	190	537	6	27	759	25.8%
Total	**Inferred**	**409**	**2,626**	**154**	**447**	**5**	**25**	**631**	**24.0%**

TREO = La_2O_3 + CeO_2 +Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3
MREO = Pr_6O_{11} + Nd_2O_3+ Tb_4O_7 + Dy_2O_3

This release has been approved by the Board of Meteoric Resources NL.

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The information in this announcement that relates to exploration results is based on information reviewed, collated and fairly represented by Dr Carvalho a Competent Person and a Member of the Australasian Institute of Mining and Metallurgy and is a non executive director Meteoric Resources NL. Dr. Carvalho has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which has been 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, Mineral Resources and Ore Reserves. Dr. Carvalho consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this announcement that relates to the metallurgical results were compiled by Tony Hadley who is the Metallurgy Manager of Meteoric Resources and is a Member of the Australian Institute of Mining and Metallurgy (AusIMM). Mr. Hadley has sufficient experience that is relevant to the metallurgical testwork which was undertaken to qualify as a Competent Person as defined in the 2012 JORC Code. Mr. Hadley consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

The information in this release that relates to Mineral Resource Estimates was prepared by BNA Mining Solutions and released on the ASX platform on 1 May 2023. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resources in this publication. The Company confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. The Company confirms that the form and context in which the BNA Mining Solutions findings are presented have not been materially modified.

APPENDIX 1

Collar Table of holes reported in this release.

Target	Hole_ID	East	North	RL	Hole Depth
Capao do Mel	CDMDD001	346439	7566998	1342	50.00
Capao do Mel	CDMDD002	345621	7567611	1339	50.00
Capao do Mel	CDMDD004	347477	7567043	1326	50.00
Capao do Mel	CDMDD005	346611	7567015	1316	9.78
Capao do Mel	CDMDD006	346155	7567180	1250	46.35
Capao do Mel	CDMDD007	346893	7567307	1288	39.44
Capao do Mel	CDMDD008	347079	7567709	1272	40.58
Capao do Mel	CDMDD009	346570	7566704	1277	29.61
Capao do Mel	CDMDD010	346631	7567194	1308	57.75
Capao do Mel	CDMDD011	346621	7566802	1296	25.95
Cupim Vermelho Notre	CVNDD001	342883	7576678	1445	23.25
Cupim Vermelho Notre	CVNDD002	341677	7579289	1382	28.05
Cupim Vermelho Notre	CVNDD003	342535	7578361	1421	42.95
Cupim Vermelho Notre	CVNDD004	343854	7578258	1434	31.10
Cupim Vermelho Notre	CVNDD005	345060	7578282	1272	22.75
Cupim Vermelho Sul	CVSDD001	339750	7575833	1463	149.49
Dona Maria 1	DM1DD001	337939	7581336	1353	33.25
Dona Maria 1	DM1DD002	338450	7579638	1367	37.25
Dona Maria 1	DM1DD003	338886	7579953	1382	15.05
Dona Maria 1	DM1DD004	339141	7579358	1374	21.20
Dona Maria 2	DM2DD001	339847	7579729	1391	22.05
Dona Maria 2	DM2DD002	339441	7579946	1346	22.35
Dona Maria 2	DM2DD003	339930	7580144	1396	23.20
Dona Maria 2	DM2DD004	339639	7580340	1407	18.62
Figueira	FIGDD003	340847	7572850	1282	50.00
Figueira	FIGDD004	340882	7571408	1343	111.87
Figueira	FIGDD005	340893	7572111	1330	20.74
Figueira	FIGDD006	341233	7573358	1250	58.99
Figueira	FIGDD007	340994	7573308	1406	71.04
Soberbo	SBBDD001	348798	7569484	1307	50.00
Soberbo	SBBDD002	349087	7568044	1298	50.00
Soberbo	SBBDD004	350298	7569905	1218	31.10
Soberbo	SBBDD005	348119	7568003	1313	23.40
Soberbo	SBBDD006	349845	7570492	1296	10.25
Soberbo	SBBDD007	347973	7569979	1209	11.14
Soberbo	SBBDD008	349905	7570592	1283	29.25
Soberbo	SBBDD009	350003	7570490	1261	29.57
Soberbo	SBBDD010	348197	7569898	1238	38.69
Soberbo	SBBDD011	348806	7569291	1306	28.85

APPENDIX 2 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	• The drilling utilises a conventional wireline diamond drill rig (Mach 1200) with HQ diameter. • The core is collected in core trays with depth markers at the end of each drill run (blocks). • In the saprolite zone the core is halved with a metal spatula and bagged in plastic bags, the fresh rock was halved by a powered saw and bagged.
Drilling techniques	• The drilling uses a diamond drill rig (Mach 1200) with HQ diameter using the wireline technique. • Each drill site was cleaned and levelled with a backhoe loader. • All holes are drilled vertical. • Drilling is stopped once intersection with unweathered basement intrusives is confirmed = +5m of fresh rock.
Drill sample recovery	• Core recoveries were measured after each drill run, comparing length of core recovered vs. drill depth. Overall Core recoveries are 92.5%, achieving 95% in the saprolite target horizon, 89% in the transitional rock (fresh fragments in clay), and 92.5% in fresh rock.
Logging	• The geology was described in a core facility by geologist - logging focused on the soil (humic) horizon, saprolite and fresh rock boundaries. Depth of geological boundaries are honoured and described with downhole depth – not meter by meter. • Other important data parameters collected include: grainsize, texture and colour, which can help to identify the parent rock before weathering. • All drilled holes have a digital photographic record. The log is stored in Microsoft Excel template with inbuilt validation tables and pick list to avoid data entry errors. • All geological data are imported into a Microsoft Access database and validated.
Sub-sampling techniques and sample preparation	• Metallurgical samples consist of ¾ of the drill core, except for the CDMDD001 where the entire core was sampled due to the drill core being NQ. • The samples were generally composited into 3m composites, however on occasions the composites were reduced/extended based on geologic boundaries (clay zone v transition v fresh rock). Composites ranged from 2.0m – 4.6m. • The top 2m of material was excluded from shipments to avoid problems importing organic material within the soils into Australia. Fresh rock was also excluded from the testwork as it is clearly not related to ionic clay mineralisation. • The metallurgical samples were dried at 60 degrees Celsius and stage crushed to –1mm followed by pulverising in a ring mill. An 80 gram sub sample was used in each diagnostic leach at 4% solids, using 0.4M ammonium sulphate solution, ambient temperature and 30 minutes leaching time at pH 4.0. The % extractions are calculated using the head and the liqour assays.

Quality of assay data and laboratory tests	• All samples were assayed by three ALS methods:
	  ○ ME-MS81 – Lithium borate fusion prior acid dissolution and ICP-MS analysis for Ba, Ce, Cr, Cs, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Nb, Nd, Pr, Rb, Sc, Sm, Sn, Sr, Ta, Tb, Th, Ti, Tm, U, V, W, Y, Yb, Zr
	  ○ Me-4ACD81 - Lithium borate fusion prior acid dissolution and ICP-MS analysis for Ag, Au, Cd, Co, Cu, Li, Mo, Ni, Pb, Sc, Tl, Zn.
	  ○ ME-ICP06 – X-Ray Fluorescence (XRF) and acid ICP-AES analysis for Al_2O_3, BaO, CaO, Cr_2O_3, Fe_2O_3, K_2O, MgO, MnO, Na_2O, P_2O_5, SiO_2, SrO, TiO_2, LOI.
	• Laboratory inserted its own QA/QC controls, with standards, blanks and duplicates to assure the quality and standards of the lab.

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The QA/QC data includes a duplicate sample every 20 samples, and a blank and standard sample in each 30 samples.
Head, liqour and residue metallurgical samples were sent to ALS in Brisbane where the samples underwent a lithium borate fusion prior to acid dissolution and La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu , Y, Th & U were read by ICP-MS. ANSTO read all of the gangue elements using ICP-OES, namely Al, Fe, K, Mg, Mn, Ca, Si and Zn.

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<tr><td>Verification of sampling and assaying</td><td>

All data is in digital format and stored in a cloud server, also the company maintains a back up in a desktop computer to assure that the data could be restored if any problem occurs with the cloud or with the desktop server.
Raw assays are received as Elemental data (ppm) from ALS laboratories. The Elemental data is converted to Element Oxide data using the following conversion factors:

<table>
<tr><th>Element</th><th>Conversion Factor</th><th>Oxide</th></tr>
<tr><td>Ce</td><td>1.2284</td><td>CeO2</td></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>1.2082</td><td>Pr6O11</td></tr>
<tr><td>Sc</td><td>1.5338</td><td>Sc2O3</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>
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</td></tr>
<tr><td>Location of data points</td><td>

All collars were surveyed in SIRGAS 2000, 23S spindle UTM grid system. The SIRGAS 2000 is a South American Datum which is very similar with the WGS 84.
At present the survey of collars was made with a handheld GPS. Prior to inclusion in any resource estimation work the holes will be surveyed by a RTK GPS.
The Topographic data was made by by Nortear Topografia e Projectos Ltda., planialtimetric topographic surveyors. The GPS South Galaxy G1 RTK GNSS was used, capable of carrying out data surveys and kinematic locations in real time (RTK-Real Time Kinematic), consisting of two GNSS receivers, a BASE and a ROVER. The horizontal accuracy, in RTK, is 8mm + 1ppm, and vertical 15mm + 1ppm. The coordinates were provided in the following formats: Sirgas 2000 datum, and UTM WGS 84 datum - georeferenced to spindle 23S.
For the generation of planialtimetric maps (DEM), drones were used with control points in the field (mainly in a region with more dense vegetation), in addition to the auger drillholes.an employed company with drone imaging and RTK GPS on auger drill holes.

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<tr><td>Data spacing and distribution</td><td>

Collar plan displayed in the body of the release.
No new resources are reported.

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<tr><td>Orientation of data in relation to geological structure</td><td>

The mineralisation is flat lying and occurs within the saprolite/clay zone of a deeply developed regolith (reflecting topography and weathering). Vertical sampling from the diamond holes is appropriate.
Diamond drill core is acknowledged to deliver uncontaminated samples, as such no sampling bias is believed to be introduced.

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</table>

Sample security	• Samples are removed from the field and transported back to a Core shad to be logged and sampled as reported before. • Composited samples were given unique identifiers and placed in plastic bags, before being packed into plastic drums suitable for export via airfreight to ANSTO in Australia. • Export drums were shipped via FedEx Airfreight. Samples were collected from Meteoric core shed in Pocos de Caldas and tracked online to their destination in Sydney, Australia (ANSTO).
Audits or reviews	• MEI conducted a review of assay results as part of its Due Diligence prior to acquiring the project. Approximately 5% of all stored coarse rejects from auger drilling were resampled and submitted to two (2) labs: SGS Geosol and ALS Laboratories. Results verified the existing assay results, returning values +/-10% of the original grades, well within margins of error for the grade of mineralisation reported. (see ASX:MEI 13/03/23 for a more detailed discussion). • No independent audit of sampling techniques and data has been completed.

Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	• No change since previous report. • Given the rich history of mining and current mining activity in the Poços de Caldas there appears to be no impediments to obtaining a License to operate in the area.
Exploration done by other parties	• Licenses under the TOGNI Agreement: significant previous exploration exists in the form of surface geochem across 30 granted mining concessions, plus: geologic mapping, topographic surveys, and powered auger (1,396 holes for 12,963 samples). • MEI performed Due Diligence on historic exploration and are satisfied the data is accurate and correct (refer ASX Release 13 March 2023 for a discussion). • Licenses under VAGINHA and RAJ Agreements: no previous exploration exists for REEs.
Geology	• The Alkaline Complex of Poços de Caldas represents in Brazil one of the most important geological terrain which hosts deposits of ETR, bauxite, clay, uranium, zirconium, rare earths and leucite. The different types of mineralization are products of a history of post-magmatic alteration and weathering, in the last stages of its evolution (Schorscher & Shea, 1992; Ulbrich et al., 2005), The REE mineralisation discussed in this release is of the Ionic Clay type as evidenced by development within the saprolite/clay zone of the weathering profile of the Alkaline syenite basement as well as enriched HREE composition.
Drill hole Information	• Reported in body of report and Appendix 1.

Data aggregation methods	•	Mineralised Intercepts are reported with a minimum of 4m width, lower cut-off 1000ppm TREO, with a maximum of 2m internal dilution.
	•	High-Grade Intercepts reported as "including" are reported with a minimum of 2m width, lower cut-off 3000 ppm TREO, with a maximum of 1m internal dilution.
	•	Ultra High-Grade Intercepts reported as "with" are reported with a minimum of 2m width, lower cut-off 10,000 ppm TREO, with a maximum of 1m internal dilution.
Mineralisation widths and intercept lengths	•	All holes are vertical and mineralisation is developed in a flat lying clay and transition zone within the regolith. As such, reported widths are considered to equal true widths.
Diagrams	•	Reported in the body of the text.
Balanced reporting	•	All metallurgical recoveries for all samples are published in table 1 in body of report
	•	Highlights of the Mineralised Intercepts are reported in the body of the text with available results from every drill hole drilled in the period reported in the Mineralised Intercept table for balanced reporting.
Other substantive exploration data	•	A maiden Inferred resource was published to the ASX on May 1st 2023.
Further work	•	Proposed work is discussed in the body of the text.