ASX ANNOUNCEMENT
Heavy Rare Earths Limited (ASX: HRE)
12 April 2023

OUTSTANDING HIGH-GRADE RARE EARTH INTERSECTIONS CONTINUE AT COWALINYA

Highlights:

- Drilling in the newly discovered Western Zone at Cowalinya includes **high grade intercepts of up to 4839 ppm TREO**
- **159 mineralised intercepts** have been drilled in the Western Zone, **covering approximately 13km^2** and confirming the potential **to host a material increase in rare earths resources**
- These results add to previously announced thick, high-grade results – **42 metres @ 790 ppm TREO** in AC226 and **19 metres @ 3190 ppm TREO** in AC225
- Process to **upgrade current Inferred Resource of 28 Mt @ 625 ppm TREO** to commence on receipt of assays from another 36 holes

Significant new drill intersections include:

- **26 metres @ 1201 ppm TREO (22.5% magnet REOs) from 19 metres (AC360)**
  - **including 8 metres @ 3057 ppm TREO from 27 metres**
- **14 metres @ 1164 ppm TREO (31.6% magnet REOs) from 16 metres (AC359)**
  - **including 2 metres @ 4839 ppm TREO from 16 metres**
- **14 metres @ 1060 ppm TREO (24.2% magnet REOs) from 28 metres (AC356)**
  - **including 4 metres @ 2360 ppm TREO from 30 metres**
- **7 metres @ 1173 ppm TREO (22.0% magnet REOs) from 20 metres (AC511)**
- **10 metres @ 1169 ppm TREO (26.6% magnet REOs) from 19 metres (AC354)**
- **11 metres @ 948 ppm TREO (22.9% magnet REOs) from 19 metres (AC540)**

Heavy Rare Earths Limited (**"HRE"** or **"the Company"**) is pleased to report assays from another 57 air core holes from its recently completed 441-hole rare earth exploration and resource expansion drilling program at its 100 per cent-owned Cowalinya project in the Norseman-Esperance region of Western Australia.

These assays include a number of high grade and/or thick rare earth intercepts in the project's newly-discovered Western Zone (Figures 1 and 2). The drilled extent of this sizeable zone measures approximately 5 x 3 kilometres with mineralisation remaining open to the north and northwest. Assays from only one hole (AC227) in the Western Zone remain to be reported. AC227 lies alongside holes AC226 and AC225 where the project's thickest

(**42 metres** @ **790 ppm TREO** in AC226) and amongst its highest-grade (**19 metres** @ **3190 ppm TREO** in AC225) intercepts have previously been reported *(refer to ASX announcement 1 March 2023)*.

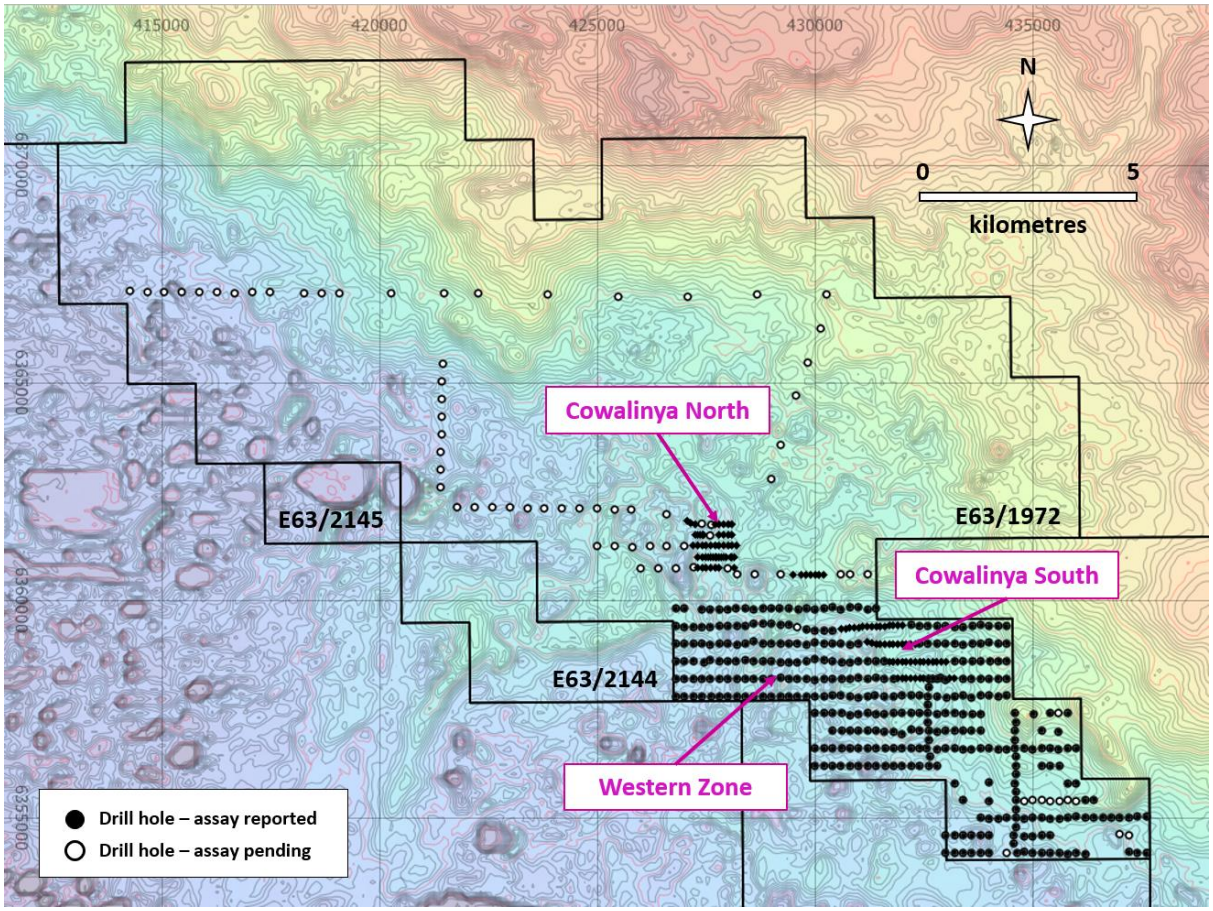

Figure 1: HRE's Cowalinya project tenements showing assay reporting status and the locations of the Cowalinya North and South deposits, and the new Western Zone.
Background image: Landgate digital elevation model.

Figures 3 and 4 show northwest-southeast and north-south oriented cross sections through the Western Zone and Cowalinya North deposit. The locations of these cross sections are shown in Figure 2. For completeness, east-west cross sections through the Western Zone and Cowalinya South deposits were presented in previous announcements *(refer to Figures 2 and 3 in ASX announcement 1 March 2023; Figure 2 in ASX announcement 29 March 2023)*.

A high-level comparison of the Western Zone with the more densely drilled Cowalinya resource (comprising the Cowalinya North and South deposits)[1] is shown in the table below:

[1] Table 5.1 of Appendix 7 (Cowalinya Resource Report) of the Independent Geologist's Report contained in HRE's IPO Prospectus.

	COWALINYA	WESTERN ZONE
Area drilled	2.0 km^2	13.0 km^2
Drill spacing	50 metres x 150 metres 100 metres x 150 metres 100 metres x 400 metres	200 metres x 400 metres
Number of mineralised intercepts[1]	78	159
Average mineralised width	10 metres	11 metres
Average depth to mineralisation	19 metres	19 metres
Length-weighted average grade	697 ppm TREO	720 ppm TREO
Best[2] mineralised intercept	19 metres @ 1659 ppm TREO (AC29)	19 metres @ 3190 ppm TREO (AC225)

[1] ≥ 4 metres @ ≥ 300 ppm TREO

[2] Based on grade-thickness

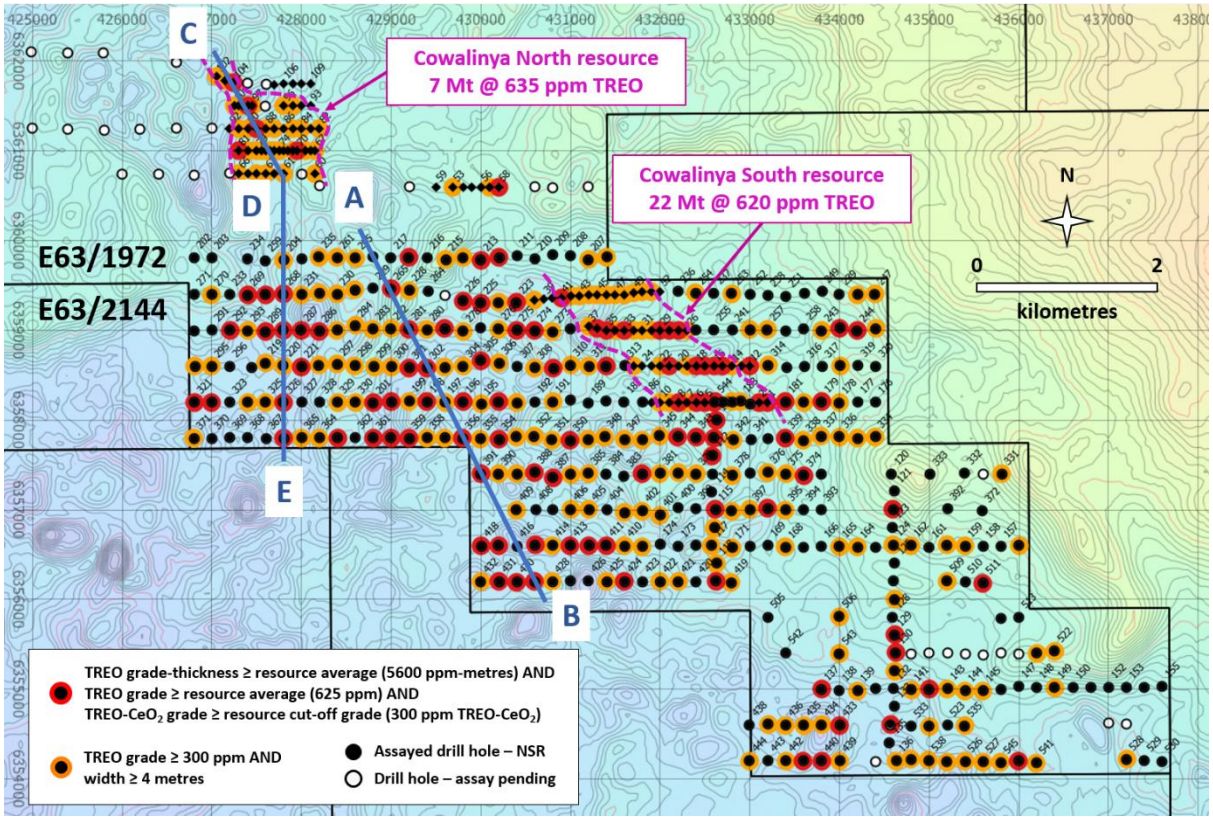

Figure 2: Plan view of Cowalinya air core drilling on E63/1972 showing holes with significant intervals of REE mineralisation and locations of cross-sections A-B and C-D-E.

Background image: Landgate digital elevation model.

Assays are pending from 36 holes which will complete assay coverage of the south-eastern part of HRE's E63/1972 tenement (Figure 2). This includes 14 holes immediately west of the Cowalinya North deposit.

When all assays have been received, the process to update the project's resource inventory will commence.

In addition, there are 41 holes drilled nominally on 400-1600 metre centres along existing access tracks to the north and west of Cowalinya North for which assays are also pending (Figure 1). These holes, located up to 15 kilometres from the Western Zone, will be excluded from the updated resource estimate, but may present new rare earth target areas for subsequent definition drilling.

All remaining assays for the program are expected to be reported by LabWest Minerals Analysis by the end of April.

Table 1: Mineralised saprolite intervals from all 2022 drilling that exceed the average grade-thickness of the mineralised horizon in the Cowalinya deposit.
Newly reported holes are highlighted at the top.

HOLE NO.	FROM (m)	TO (m)	INTERVAL (m)	TREO (ppm)	MAGNET REOs/TREO
AC292	21	39	18	668	23.2%
AC293	21	38	17	492	18.2%
AC321	38	41	3	2246	23.7%
AC322	25	33	8	838	28.1%
AC326	32	36	4	1783	28.4%
AC329	20	36	16	393	27.7%
AC343	20	32	12	928	28.6%
AC354	19	29	10	1169	26.6%
AC356	28	42	14	1060	24.2%
AC358	26	40	14	458	26.3%
AC359	16	30	14	1164	31.6%
AC360	19	45	26	1201	22.5%
AC506	18	32	14	616	19.8%
AC511	20	27	7	1173	22.0%
AC526	16	30	14	506	25.7%
AC538	18	28	10	621	24.9%
AC539	18	34	16	429	23.5%
AC540	19	30	11	948	22.9%
AC543	20	31	11	613	24.7%
AC544	17	39	22	868	21.3%
AC110	18	29	11	826	26.2%
AC111	16	30	14	712	27.9%
AC112	19	29	10	663	29.2%
AC115	22	29	7	1042	27.1%
AC118	19	35	16	396	22.0%
AC119	16	25	9	673	22.9%
AC122	16	21	5	1258	27.6%
AC124	14	30	16	539	22.5%
AC129	15	25	10	740	22.5%

AC130	18	38	20	726	22.4%
AC134	6	18	12	632	19.4%
AC137	15	29	14	758	26.3%
AC142	14	25	11	768	25.9%
AC165	23	35	12	500	23.5%
AC175	22	44	22	576	21.8%
AC178	28	40	12	563	26.0%
AC179	14	36	22	665	24.8%
AC181	15	26	11	745	27.3%
AC193	20	40	20	448	24.3%
AC194	20	28	8	727	24.1%
AC195	15	30	15	541	21.3%
AC196	19	37	18	631	23.2%
AC198	35	45	10	640	19.8%
AC199	21	35	14	412	25.4%
AC200	20	26	6	1862	25.8%
AC201	22	40	18	710	22.2%
AC204	15	33	18	473	25.7%
AC206	22	34	12	568	23.6%
AC211	20	37	17	402	26.5%
AC212	22	36	14	1033	29.0%
AC213	17	29	12	748	27.4%
AC221	17	27	10	2087	25.1%
AC222	15	35	20	407	22.0%
AC223	11	28	17	1069	26.3%
AC224	9	21	12	509	22.1%
AC225	16	35	19	3190	32.5%
AC226	12	54	42	790	25.4%
AC232	18	25	7	1047	33.8%
AC244	20	27	7	895	30.9%
AC245	14	27	13	500	22.1%
AC246	18	25	7	824	23.7%
AC263	18	28	10	1026	28.0%
AC265	26	40	14	796	20.1%
AC268	24	34	10	888	25.5%
AC269	10	24	14	1135	25.3%
AC274	14	40	26	1133	25.7%
AC275	19	37	18	1344	22.2%
AC278	24	49	25	449	23.6%
AC279	29	39	10	1580	27.4%
AC281	20	33	13	740	26.9%
AC283	19	31	12	531	25.0%

AC285	21	37	16	489	26.9%
AC286	9	21	12	718	24.3%
AC287	14	43	29	701	25.3%
AC288	20	32	12	816	27.2%
AC289	11	35	24	747	28.0%
AC297	17	31	14	464	22.2%
AC301	18	32	14	689	26.2%
AC302	18	30	12	1207	23.8%
AC305	17	33	16	629	20.2%
AC306	15	29	14	559	25.0%
AC309	25	41	16	814	21.8%
AC312	18	54	36	656	23.3%
AC339	28	44	16	688	23.9%
AC344	22	34	12	1212	18.5%
AC349	16	28	12	567	24.9%
AC350	19	27	8	843	26.8%
AC361	20	26	6	1771	23.9%
AC363	30	40	10	1200	19.9%
AC366	21	33	12	725	22.5%
AC374	30	41	11	744	22.2%
AC379	20	32	12	621	23.2%
AC381	24	46	22	522	22.3%
AC382	15	29	14	799	30.3%
AC385	9	25	16	483	25.1%
AC386	20	38	18	463	23.1%
AC387	24	45	21	867	25.1%
AC388	15	29	14	670	23.8%
AC391	22	32	10	858	19.3%
AC395	20	32	12	515	25.0%
AC396	10	24	14	825	19.7%
AC397	18	40	22	391	23.3%
AC398	16	28	12	572	21.6%
AC401	10	32	22	548	26.6%
AC405	8	24	16	525	25.2%
AC406	6	20	14	498	23.6%
AC409	11	25	14	588	25.3%
AC411	15	35	20	755	27.7%
AC412	16	38	22	1018	24.7%
AC413	17	27	10	747	25.6%
AC415	11	27	16	929	27.3%
AC417	23	29	6	1010	28.8%
AC418	21	26	5	1784	24.2%

AC419	26	37	11	612	23.7%
AC424	9	15	6	2597	54.8%
AC424	21	25	4	1976	31.8%
AC429	23	31	8	847	23.9%
AC430	19	29	10	813	27.2%
AC431	22	36	14	755	17.9%
AC432	17	29	12	578	25.3%
AC433	6	32	26	702	24.9%
AC434	12	30	18	531	23.8%
AC440	14	28	14	1278	24.8%
AC441	8	22	14	630	21.2%

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
Magnet REOs = Pr_6O_{11}+Nd_2O_3+Tb_4O_7+Dy_2O_3

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This announcement has been approved by the Board of HRE.

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About Heavy Rare Earths Limited
Heavy Rare Earths Limited (ASX:HRE) is an Australian rare earth exploration and development company. HRE's key exploration project is Cowalinya, near Norseman in Western Australia. This is a clay-hosted rare earth project with a JORC Inferred Resource of 28 Mt @ 625 ppm TREO and a desirable rare earth composition where 25% are the valuable magnet rare earths and 23% the strategic heavy rare earths.

Competent Persons Statement
The Exploration Results contained in this announcement were compiled by Mr. Richard Brescianini. Mr. Brescianini is a member of the Australian Institute of Geoscientists (AIG). He is a director and full-time employee of Heavy Rare Earths Limited. Mr. Brescianini has more than 35 years' experience in mineral exploration and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 JORC Code.

The Mineral Resources contained in this announcement have been extracted from the Independent Geologist's Report included in the Company's Initial Public Offering (IPO) Prospectus, a copy of which was lodged with the Australian Securities and Investments Commission (ASIC) on 5 July 2022. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resources as contained in the Company's IPO Prospectus. All material assumptions and technical parameters underpinning the Mineral Resources in the Company's IPO Prospectus continue to apply and have not materially changed.

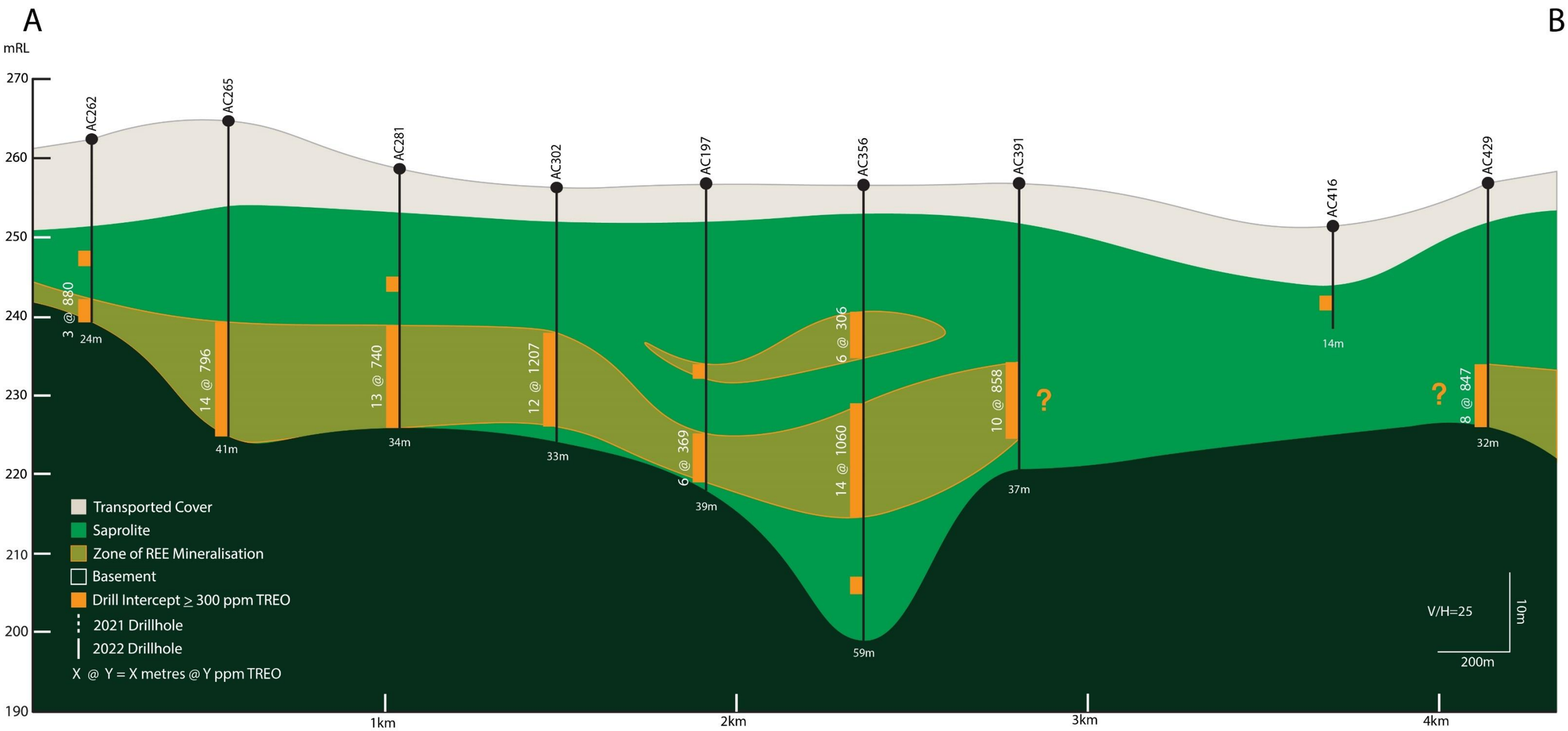

Figure 3: Western Zone cross section along line A-B.
Location of A-B shown on Figure 2.

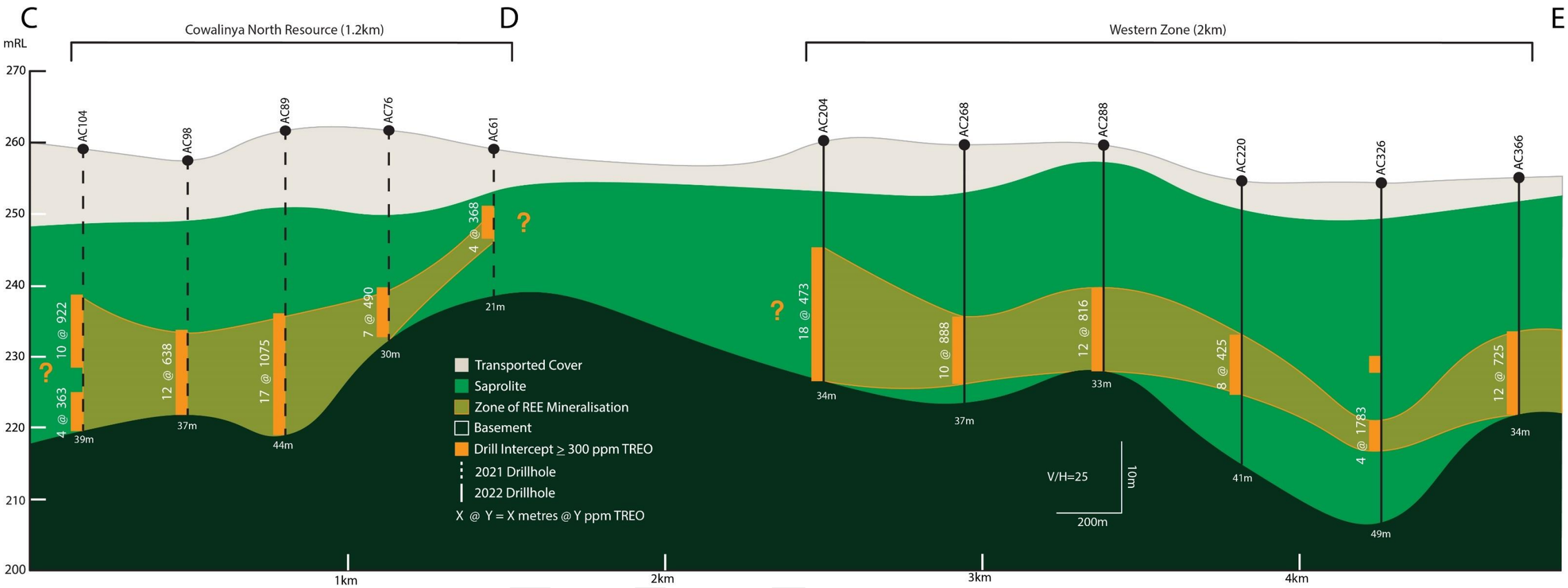

Figure 4: Cowalinya North and Western Zone cross section along C-D-E.
Location of C-D-E shown on Figure 2.

Table 2: Mineralised saprolite intervals that assay ≥300 ppm TREO.

HOLE NO.	FROM (m)	TO (m)	INTERVAL (m)	TREO (ppm)	TREO-CeO_2 (ppm)	MAGNET REOs/TREO
AC270	25	27	2	311	182	22.0%
AC270	27	29	2	311	176	22.6%
AC292	21	23	2	1146	555	23.2%
AC292	23	25	2	325	173	22.8%
AC292	25	27	2	625	310	21.8%
AC292	27	29	2	1494	1030	31.8%
AC292	29	31	2	510	261	22.2%
AC292	31	33	2	404	154	18.1%
AC292	33	35	2	336	169	20.4%
AC292	35	37	2	384	235	23.6%
AC292	37	39	2	786	577	25.1%
AC293	21	23	2	427	125	10.3%
AC293	23	25	2	397	197	16.0%
AC293	25	27	2	594	208	15.2%
AC293	27	29	2	230	107	14.9%
AC293	29	31	2	441	221	17.7%
AC293	31	33	2	406	161	18.3%
AC293	33	35	2	621	478	26.9%
AC293	35	37	2	909	699	24.7%
AC293	37	38	1	309	201	21.2%
AC294	16	18	2	371	192	17.2%
AC294	18	20	2	311	165	22.5%
AC294	20	22	2	244	159	27.8%
AC294	22	24	2	415	337	24.0%
AC295	19	21	2	1421	1044	32.2%

AC295	21	23	2	408	313	29.1%
AC295	27	29	2	312	212	28.3%
AC321	30	32	2	508	363	27.9%
AC321	38	40	2	2200	2152	23.2%
AC321	40	41	1	2337	2274	24.6%
AC322	25	27	2	1339	997	31.4%
AC322	27	29	2	1048	930	31.4%
AC322	29	31	2	464	310	25.0%
AC322	31	33	2	501	322	24.8%
AC324	22	24	2	550	194	14.6%
AC324	24	25	1	3046	2860	38.3%
AC325	21	23	2	393	283	35.1%
AC325	23	25	2	602	503	35.0%
AC325	35	37	2	315	245	22.8%
AC326	22	24	2	460	341	25.9%
AC326	32	34	2	371	245	24.8%
AC326	34	36	2	3196	2753	32.1%
AC327	19	21	2	319	286	35.0%
AC328	30	32	2	1534	1378	31.3%
AC329	20	22	2	324	277	30.4%
AC329	22	24	2	176	140	31.0%
AC329	24	26	2	384	318	31.5%
AC329	26	28	2	428	348	30.1%
AC329	28	30	2	359	247	27.9%
AC329	30	32	2	699	488	23.4%
AC329	32	34	2	390	280	22.7%
AC329	34	36	2	386	261	24.6%
AC330	15	17	2	408	233	24.5%

AC330	17	19	2	480	246	22.5%
AC330	19	21	2	645	338	27.8%
AC330	21	23	2	506	283	28.6%
AC343	20	22	2	404	310	33.0%
AC343	22	24	2	522	328	25.6%
AC343	24	26	2	1155	804	32.7%
AC343	26	28	2	2753	2583	34.4%
AC343	28	30	2	417	300	23.5%
AC343	30	32	2	318	224	22.7%
AC347	20	22	2	356	231	23.4%
AC347	22	24	2	341	235	24.7%
AC347	24	26	2	575	361	24.2%
AC352	22	24	2	378	209	24.1%
AC352	24	26	2	840	508	30.2%
AC352	26	28	2	990	635	32.4%
AC353	15	17	2	344	167	17.7%
AC353	17	19	2	299	166	19.3%
AC353	19	21	2	344	237	26.3%
AC354	19	21	2	1914	1316	28.5%
AC354	21	23	2	955	600	23.8%
AC354	23	25	2	665	428	25.7%
AC354	25	27	2	701	384	25.3%
AC354	27	29	2	1611	1294	29.8%
AC355	27	29	2	394	223	25.8%
AC355	29	31	2	788	505	22.5%
AC355	31	33	2	368	273	19.1%
AC356	16	18	2	313	130	16.4%
AC356	18	20	2	305	97	14.1%

AC356	20	22	2	301	152	21.5%
AC356	28	30	2	822	508	24.1%
AC356	30	32	2	1589	1486	29.5%
AC356	32	34	2	3131	2962	29.6%
AC356	34	36	2	631	382	23.1%
AC356	36	38	2	224	59	7.1%
AC356	38	40	2	575	375	26.8%
AC356	40	42	2	450	384	29.4%
AC356	50	52	2	357	230	24.0%
AC357	20	22	2	494	314	24.0%
AC357	22	24	2	646	391	23.7%
AC357	24	26	2	636	393	18.9%
AC358	26	28	2	508	303	26.3%
AC358	28	30	2	476	376	33.8%
AC358	30	32	2	451	345	29.0%
AC358	32	34	2	554	365	25.0%
AC358	34	36	2	408	249	23.6%
AC358	36	38	2	326	199	23.6%
AC358	38	40	2	482	271	22.8%
AC359	16	18	2	4839	3937	47.5%
AC359	18	20	2	154	110	34.4%
AC359	20	22	2	558	316	29.5%
AC359	22	24	2	1569	1007	36.7%
AC359	24	26	2	350	225	26.7%
AC359	26	28	2	207	119	18.9%
AC359	28	30	2	471	324	27.4%
AC359	36	38	2	470	346	20.3%
AC359	38	40	2	356	229	24.6%

AC359	40	42	2	297	188	24.8%
AC359	42	44	2	327	209	25.1%
AC359	44	46	2	311	195	24.4%
AC359	46	48	2	389	247	25.2%
AC359	48	50	2	309	195	25.3%
AC360	19	21	2	790	98	4.7%
AC360	21	23	2	314	82	6.2%
AC360	23	25	2	311	212	21.0%
AC360	25	27	2	386	160	14.1%
AC360	27	29	2	2756	2257	35.0%
AC360	29	31	2	3608	3340	37.3%
AC360	31	33	2	4042	3798	23.8%
AC360	33	35	2	1820	1653	33.0%
AC360	35	37	2	337	229	24.1%
AC360	37	39	2	385	238	22.6%
AC360	39	41	2	346	218	24.2%
AC360	41	43	2	214	146	22.8%
AC360	43	45	2	309	211	23.6%
AC505	19	21	2	403	219	23.6%
AC506	18	20	2	340	192	19.1%
AC506	20	22	2	506	309	21.5%
AC506	22	24	2	644	390	17.5%
AC506	24	26	2	706	426	19.7%
AC506	26	28	2	593	312	18.4%
AC506	28	30	2	773	423	20.2%
AC506	30	32	2	754	407	21.9%
AC509	26	28	2	1200	905	33.0%
AC509	28	30	2	240	173	26.2%

AC509	30	32	2	466	392	28.9%
AC511	20	22	2	1695	884	20.8%
AC511	22	24	2	1298	920	24.0%
AC511	24	26	2	924	763	20.1%
AC511	26	27	1	374	254	24.2%
AC513	18	20	2	435	219	20.0%
AC521	20	22	2	475	288	24.6%
AC521	22	24	2	492	313	24.3%
AC521	24	26	2	645	421	26.2%
AC522	16	18	2	503	276	21.8%
AC522	18	20	2	485	259	21.8%
AC522	20	22	2	571	293	21.0%
AC522	22	24	2	618	336	27.2%
AC522	24	25	1	420	278	29.5%
AC523	10	12	2	842	404	15.6%
AC526	16	18	2	608	377	30.8%
AC526	18	20	2	352	220	25.0%
AC526	20	22	2	298	215	23.5%
AC526	22	24	2	507	350	31.9%
AC526	24	26	2	498	373	26.1%
AC526	26	28	2	638	514	25.1%
AC526	28	30	2	641	560	17.8%
AC527	19	21	2	542	322	22.9%
AC527	21	23	2	712	460	29.0%
AC527	23	25	2	375	250	27.2%
AC527	25	27	2	463	322	32.6%
AC528	18	20	2	372	260	19.1%
AC528	20	22	2	360	238	23.2%

AC528	22	24	2	505	385	29.6%
AC528	24	26	2	592	445	29.6%
AC528	26	28	2	309	220	25.0%
AC528	28	30	2	400	280	29.0%
AC533	11	13	2	349	175	21.5%
AC534	15	17	2	329	184	27.3%
AC534	17	19	2	344	224	26.1%
AC534	19	20	1	530	323	27.0%
AC535	15	17	2	372	180	18.8%
AC535	17	19	2	298	140	16.8%
AC535	19	21	2	725	390	23.9%
AC535	21	23	2	911	640	24.6%
AC537	11	13	2	722	486	25.4%
AC537	13	15	2	916	865	39.8%
AC537	15	17	2	396	292	11.6%
AC538	18	20	2	317	191	31.1%
AC538	20	22	2	407	299	25.3%
AC538	22	24	2	689	489	30.0%
AC538	24	26	2	931	820	20.7%
AC538	26	28	2	761	666	17.6%
AC539	18	20	2	342	218	19.6%
AC539	20	22	2	498	300	27.3%
AC539	22	24	2	182	121	21.5%
AC539	24	26	2	359	230	23.6%
AC539	26	28	2	467	309	31.6%
AC539	28	30	2	398	305	22.6%
AC539	30	32	2	600	487	22.5%
AC539	32	34	2	585	474	19.6%

AC540	19	21	2	418	239	18.2%
AC540	21	23	2	181	109	15.9%
AC540	23	25	2	874	580	21.8%
AC540	25	27	2	2071	1454	27.6%
AC540	27	29	2	1358	868	26.7%
AC540	29	30	1	620	478	31.6%
AC541	10	12	2	307	160	14.5%
AC541	12	14	2	370	184	17.8%
AC541	14	16	2	328	179	21.0%
AC541	16	18	2	178	98	16.4%
AC541	18	20	2	327	173	24.7%
AC541	20	22	2	246	157	25.4%
AC541	22	24	2	472	360	22.5%
AC542	7	9	2	363	190	24.9%
AC542	17	19	2	501	252	22.8%
AC543	20	22	2	867	548	26.7%
AC543	22	24	2	755	506	26.8%
AC543	24	26	2	617	398	24.5%
AC543	26	28	2	323	213	23.4%
AC543	28	30	2	401	257	23.5%
AC543	30	31	1	824	451	21.5%
AC544	17	19	2	477	211	14.8%
AC544	19	21	2	499	183	12.4%
AC544	21	23	2	625	202	11.2%
AC544	23	25	2	772	445	22.5%
AC544	25	27	2	993	740	29.8%
AC544	27	29	2	782	527	23.7%
AC544	29	31	2	591	377	23.7%

AC544	31	33	2	1351	786	22.5%
AC544	33	35	2	1454	834	22.5%
AC544	35	37	2	1031	656	27.1%
AC544	37	39	2	977	782	23.8%
AC545	12	14	2	615	336	28.4%
AC545	14	16	2	417	236	28.7%
AC545	16	18	2	137	74	18.1%
AC545	18	20	2	367	209	27.8%

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.
Magnet REOs = Pr_6O_{11}+Nd_2O_3+Tb_4O_7+Dy_2O_3.

Table 3: Cowalinya air core holes for which rare earth assays are reported in Table 2.

HOLE NO.	NORTHING (m)	EASTING (m)	EVEVATION (m)	DIP (°)	TOTAL DEPTH (m)
AC270	6359397	426999	262.6	-90	30
AC271	6359399	426800	262.5	-90	18
AC290	6358996	426798	258.9	-90	26
AC291	6359002	427000	259.6	-90	36
AC292	6359002	427204	255.8	-90	41
AC293	6358998	427403	255.0	-90	39
AC294	6358600	426811	255.7	-90	32
AC295	6358598	426999	255.8	-90	31
AC296	6358601	427202	255.7	-90	22
AC321	6358196	426808	255.2	-90	42
AC322	6358197	427000	254.6	-90	42
AC323	6358197	427201	255.6	-90	21
AC324	6358196	427402	255.4	-90	26
AC325	6358198	427601	255.7	-90	45
AC326	6358198	427799	254.4	-90	49
AC327	6358197	427999	254.2	-90	54
AC328	6358198	428201	258.4	-90	37
AC329	6358198	428402	258.1	-90	44
AC330	6358200	428602	258.3	-90	23
AC343	6357809	432402	264.4	-90	35
AC347	6357784	431600	259.9	-90	26
AC352	6357820	430594	260.1	-90	29
AC353	6357814	430396	257.0	-90	22
AC354	6357786	430201	258.7	-90	30
AC355	6357792	429995	257.6	-90	38
AC356	6357797	429798	256.4	-90	59
AC357	6357800	429595	256.8	-90	27
AC358	6357801	429400	256.5	-90	41
AC359	6357798	429199	255.7	-90	51
AC360	6357800	428997	253.7	-90	46
AC505	6355803	433200	260.2	-90	24
AC506	6355807	433999	260.5	-90	33

AC509	6356205	435200	266.1	-90	51
AC510	6356192	435399	266.7	-90	23
AC511	6356184	435601	266.4	-90	28
AC512	6355790	435800	265.4	-90	30
AC513	6355802	436000	266.0	-90	29
AC521	6355402	436200	268.5	-90	45
AC522	6355425	436400	269.0	-90	26
AC523	6354595	435201	260.4	-90	19
AC526	6354196	435400	255.2	-90	32
AC527	6354189	435600	258.9	-90	29
AC528	6354215	437200	259.1	-90	33
AC529	6354204	437398	259.8	-90	22
AC530	6354189	437599	260.5	-90	15
AC533	6354586	434800	258.1	-90	21
AC534	6354587	434998	258.1	-90	21
AC535	6354590	435394	260.3	-90	26
AC537	6354216	434794	256.5	-90	18
AC538	6354206	434996	256.7	-90	30
AC539	6354189	435197	254.4	-90	35
AC540	6354201	435998	258.8	-90	31
AC541	6354176	436195	260.3	-90	25
AC542	6355406	433400	260.1	-90	29
AC543	6355395	433999	259.8	-90	32
AC544	6358203	432610	261.2	-90	40
AC545	6354180	435800	258.9	-90	22

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Section 1: Sampling Techniques and Data

Sampling techniques	Nature and quality of sampling (e.g., cut channels, random chips, or specific specialized 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.	A total of 550 vertical aircore holes have been drilled by HRE on the Cowalinya project to date, 109 holes in 2021 and 441 holes in 2022. Maximum hole depth is 59 metres. All holes have been tested for supergene rare earth element (REE) mineralisation hosted by saprolitic clays. Drilling in 2021 overlapped extensively with areas previously aircore drilled by two companies exploring for gold (AngloGold Ashanti Ltd and Great Southern Gold Pty Ltd). One-metre samples are collected from a cyclone into plastic bags. All holes drilled in 2022 have been 2 metre composite sampled with 1 metre samples at end of hole. Overlying transported sediments are not routinely sampled as they do not contain anomalous amounts of REEs.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For aircore drilling, regular air and manual cleaning of cyclone is being undertaken. Certified standards and duplicate samples are submitted with drill samples.
	Aspects of the determination of mineralisation that are Material to the Public Report.	Aircore drilling is used to obtain 1m samples which are collected in plastic bags. Samples ranging from 1m to 2m composites are taken for analysis. Sample size is 2-3 kilograms in weight. At LabWest Minerals Analysis (LabWest) in Perth, Western Australia, samples are dried, crushed, split and pulverized with a 0.1-gram sub-sample set aside for assay.
Drilling techniques	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.).	The drill type is aircore, a form of reverse circulation (RC) drilling using slim rods and a 3.5-inch blade bit. The samples recovered are typically rock chips and powder, similar to RC drilling.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Aircore recovery is visually assessed by comparing drill chip volumes in sample bags for individual metres. Estimates of sample recovery are recorded on drill logs. Routine checks for correct sample depths are undertaken. Aircore sample recoveries are visually checked for recovery, moisture and contamination and are considered to be acceptable within industry standards. The cyclone is routinely cleaned ensuring no material build up.

	Measures taken to maximize sample recovery and ensure representative nature of the samples.	Due to the generally good drilling conditions through dry saprolite the site geologist believes the samples are reasonably representative. Poor sample recovery is regularly recorded in the first couple of metres of a hole and often when hard bedrock is intersected – usually less than a full metre is recovered. Wet samples with moderate recoveries are encountered most often in the transported sand/silcrete layer lying immediately above saprolite.
	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.	No sample bias has been identified to date. Future studies will be undertaken.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Chip/clay samples are geologically logged in enough detail to discern lithological units. Logging is appropriate for this style of drilling and current stage of the project.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is qualitative in nature.
	The total length and percentage of the relevant intersections logged.	All aircore holes are completely geologically logged.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Not applicable.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	One-metre samples are collected from a cyclone into plastic bags. Two-metre composites and single metre samples are collected by spearing each plastic bag with a scoop down the side of the bag and dragging it back up the side of the bag so as not to lose any sample – this achieves a representative sample from top to bottom through the entire bag. The vast majority of samples are dry sampled.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sampling technique is appropriate for the sample types and stage of the project.
	Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.	QAQC procedures involve the use of certified standards every 20th sample.
	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.	A field duplicate is taken every 20th sample.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size of 2-3 kilograms is considered appropriate to the grain size and style of mineralisation being investigated.

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.	Analyses are done at LabWest using their AF-02S technique: lithium meta/tetraborate fusion with ICP-MS/OES finish. This technique is considered to be a 'total' digest. A suite of 15 REEs – lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y) – plus scandium (Sc), thorium (Th) and uranium (U), and oxides of aluminium (Al), calcium (Ca), iron (Fe), magnesium (Mg) and phosphorus (P), are measured.
	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.	Not applicable.
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.	OREAS standards and/or blanks are inserted every 20th sample. Field duplicates are taken every 20th sample. LabWest uses OREAS standards, blanks and sample repeats. Acceptable levels of accuracy have been achieved.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections have yet to be verified by an independent geological consultant. They have been verified by alternative company geological personnel.
	The use of twinned holes.	Two holes have been twinned at Cowalinya: AC4 (AC544) and AC222 (AC222A).
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data have been entered into Excel spreadsheets.
	Discuss any adjustment to assay data.	No data has been adjusted.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	Hole collars are surveyed using a hand-held Garmin Etrex 22x GPS with ±3 metre accuracy. Northings, eastings and elevations are recorded using the hand-held GPS.
	Specification of the grid system used.	GDA94 z51.

	Quality and adequacy of topographic control.	The Cowalinya project is located in relatively flat terrain. Topographic control is provided by Landgate's Digital Elevation Model over the region which has an expected horizontal accuracy of 10 metres and vertical accuracy of 2 metres (both 95% confidence interval).
Data spacing and distribution	Data spacing for reporting of Exploration Results.	Generally 400 metres x 200 metres.
	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.	Data spacing is considered sufficient for this style of mineralisation to establish Inferred Mineral Resources. The mineralisation occurs as extensive, generally flat lying supergene blankets hosted in saprolitic clays.
	Whether sample compositing has been applied.	All holes have been assayed by 2 metre composite samples, compiled from 1 metre drilled samples. Additionally, a 1 metre end-of-hole sample is submitted for a 63 multi-element assay. A total of 923 samples (including standards, blanks and field duplicates) have been submitted for assay.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Sampling is likely to be unbiased as vertical holes are intersecting flat lying mineralisation.
	If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	It is unlikely to be biased.
Sample security	The measures taken to ensure sample security.	Experienced field assistants have undertaken the sampling and delivery of samples to the freight company in Esperance, which provides a direct delivery service to LabWest in Perth.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been commissioned to date.

Section 2: Reporting of Exploration Results

Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	Exploration licence E63/1972 is located 55 kilometres east-north-east of Salmon Gums in Western Australia. It consists of 80 graticular blocks comprising an area of 224 km^2. It is situated on unallocated crown land. The registered holder of the tenement is Heavy Rare Earths Limited (HRE). Full native title rights have been granted over the tenement and surrounding lands to the Ngadju people, with whom cultural heritage surveys are undertaken in advance of substantial disturbance exploration works.
	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.	The tenement is in good standing. There are no impediments to operating on the tenement other than requirements of the DMIRS and the Heritage Protection Agreement, all of which are industry standard.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	AngloGold Ashanti and Great Southern Gold previously worked in the area of E63/1972 exploring for gold mineralisation. Surface geochemical sampling and aircore drilling was undertaken by both companies but no significant gold mineralisation was discovered. Both companies assayed bottom of hole samples for a suite of multi-elements including REEs. Anomalous bedrock REE values were recorded in numerous holes from their drilling. Great Southern Gold also assayed for La and Ce for the entire length of a number of holes. AngloGold Ashanti flew an airborne magnetic/radiometric survey to assist with mapping of buried bedrock lithologies. Buxton Resources and Toro Energy also previously worked in the area of E63/1972 exploring for gold and nickel mineralisation, and uranium mineralisation, respectively. Both companies flew time-domain electromagnetic surveys to aid in their exploration targeting. No significant mineralisation was discovered.
Geology	Deposit type, geological setting and style of mineralisation.	The deposit type being investigated is low grade saprolite clay-hosted supergene rare earth mineralisation. This style of supergene rare earth mineralisation is developed over bedrock granitic rock types (granites and granitic gneisses) which contain anomalous levels of REEs. Although low grade, low mining and processing costs can make this type of deposit profitable to exploit.

Drillhole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: - easting and northing of the drillhole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar - dip and azimuth of the hole - down hole length and interception depth - hole length.	All relevant data for the drilling is shown in Table 3.
Data aggregation methods	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.	All REE assays have been converted to oxide (REO) values using the following industry standard element-to-stoichiometric oxide conversion factors: La_2O_3 = La x 1.1728 CeO_2 = Ce x 1.2284 Pr_6O_{11} = Pr x 1.2082 Nd_2O_3 = Nd x 1.1664 Sm_2O_3 = Sm x 1.1596 Eu_2O_3 = Eu x 1.1579 Gd_2O_3 = Gd x 1.1526 Tb_4O_7 = Tb x 1.1762 Dy_2O_3 = Dy x 1.1477 Ho_2O_3 = Ho x 1.1455 Er_2O_3 = Er x 1.1435 Tm_2O_3 = Tm x 1.1421 Yb_2O_3 = Yb x 1.1387 Lu_2O_3 = Lu x 1.1371 Y_2O_3 = Y x 1.2699. These oxide values are summed to produce a total rare earth oxide (TREO) grade for each assay sample. Minimum grade cut-off used is 300 ppm TREO. Maximum internal dilution is 2 metres @ <300 ppm TREO. No high cut-off has been applied. Length weighted averages have been applied to intersections.

	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.	Intervals reporting >1000 ppm TREO are reported separately.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values have been used.
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., 'down hole length, true width not known').	To date the targeted mineralisation appears to occur in flat lying sheets and drill holes have all been drilled at 90° vertically. The down hole length of intercept is effectively a true thickness of mineralisation.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.	Refer to Figures 1 and 2 for plan views of drillhole collar locations. Refer to Figures 3 and 4 for drillhole sections A-B and C-D-E.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Summary assays for all mineralised intervals ≥300 ppm TREO are presented in Table 2.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Particle size analysis on mineralised saprolite shows that, on average: - 78.5% of REEs are confined to the -25 µm size fraction - the -25 µm fraction comprises 37.2% of the bulk saprolite feed mass - the REE grade of the -25 µm fraction is 116% higher than the bulk saprolite feed grade. Preliminary leach testwork has shown up to 91% TREO recovery from Cowalinya South using 5% hydrochloric acid at 30°C. U and Th values are reported as they are considered to be deleterious elements in rare earth processing. The highest values recorded for these elements on the project to date are 57 ppm U_3O_8 and 81 ppm ThO_2.
Further work	The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).	Comprehensive metallurgical testwork is in progress and petrological studies will be completed to identify REE-bearing mineral species.

	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Potential extensions to the Cowalinya South deposit are indicated in Figure 2.