

**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<sup>2</sup>** 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

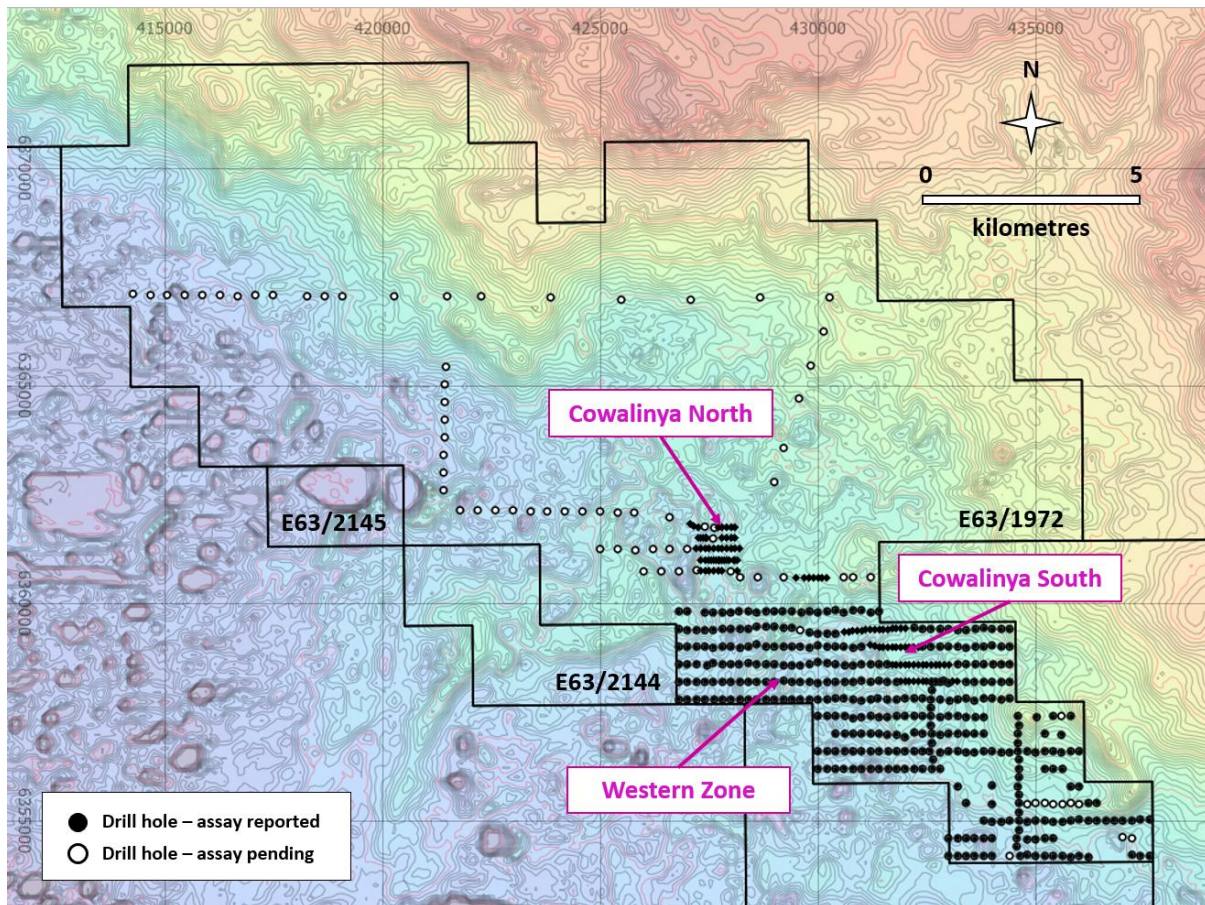
**Heavy Rare Earths Limited (ASX:HRE)**

ACN 648 991 039

Level 21, 459 Collins Street, Melbourne, VIC 3000

[www.hreltd.com.au](http://www.hreltd.com.au)

(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)<sup>1</sup> is shown in the table below:

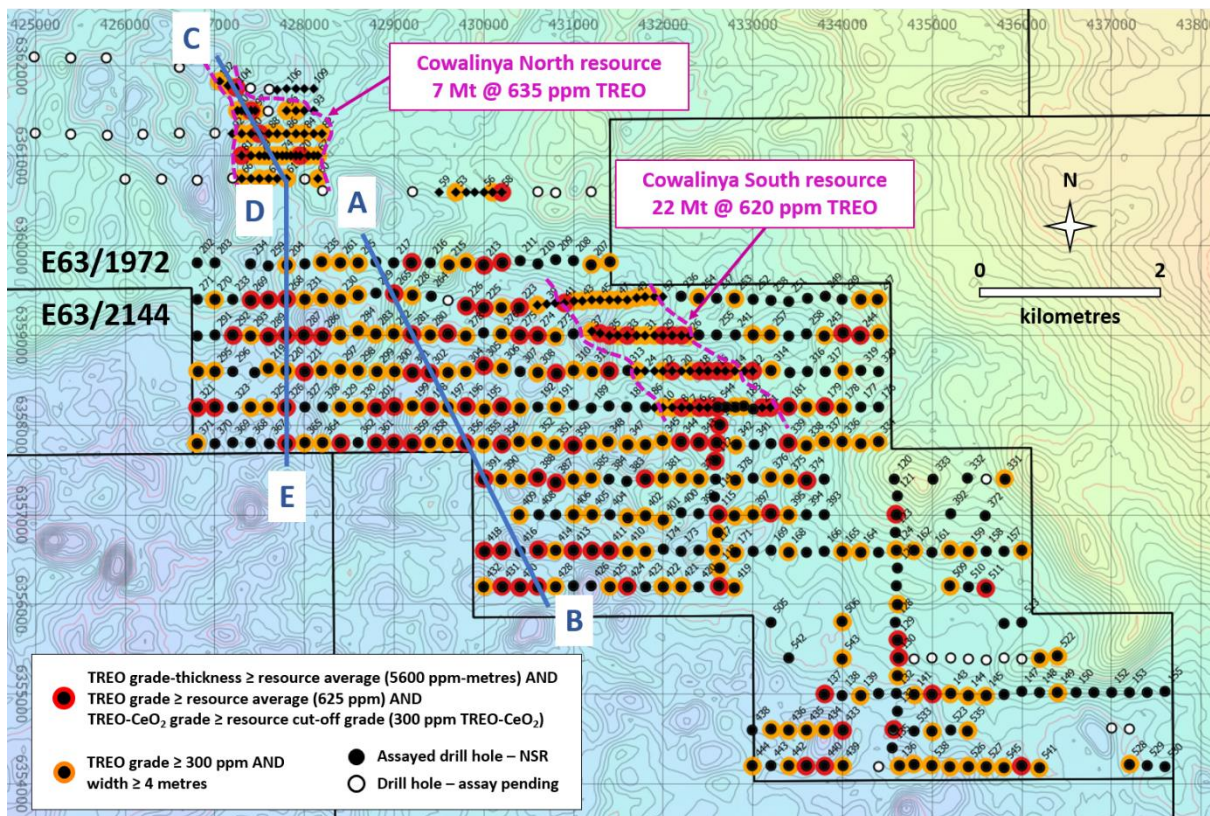
<sup>1</sup> Table 5.1 of Appendix 7 (Cowalinya Resource Report) of the Independent Geologist's Report contained in HRE's IPO Prospectus.



|                                               | COWALINYA                                                                    | WESTERN ZONE                      |
|-----------------------------------------------|------------------------------------------------------------------------------|-----------------------------------|
| Area drilled                                  | 2.0 km <sup>2</sup>                                                          | 13.0 km <sup>2</sup>              |
| Drill spacing                                 | 50 metres x 150 metres<br>100 metres x 150 metres<br>100 metres x 400 metres | 200 metres x 400 metres           |
| Number of mineralised intercepts <sup>1</sup> | 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 <sup>2</sup> mineralised intercept       | 19 metres @ 1659 ppm TREO (AC29)                                             | 19 metres @ 3190 ppm TREO (AC225) |

<sup>1</sup> ≥ 4 metres @ ≥ 300 ppm TREO

<sup>2</sup> 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.

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

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 =  $Pr_6O_{11} + Nd_2O_3 + Tb_4O_7 + Dy_2O_3$

-- Ends --

This announcement has been approved by the Board of HRE.

**For more information, please contact:**

**Executive Director**

Richard Brescianini  
[info@hreltd.com.au](mailto:info@hreltd.com.au)

**Media Enquiries**

Ryan Batros  
[info@brcapital.com.au](mailto:info@brcapital.com.au)

**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.

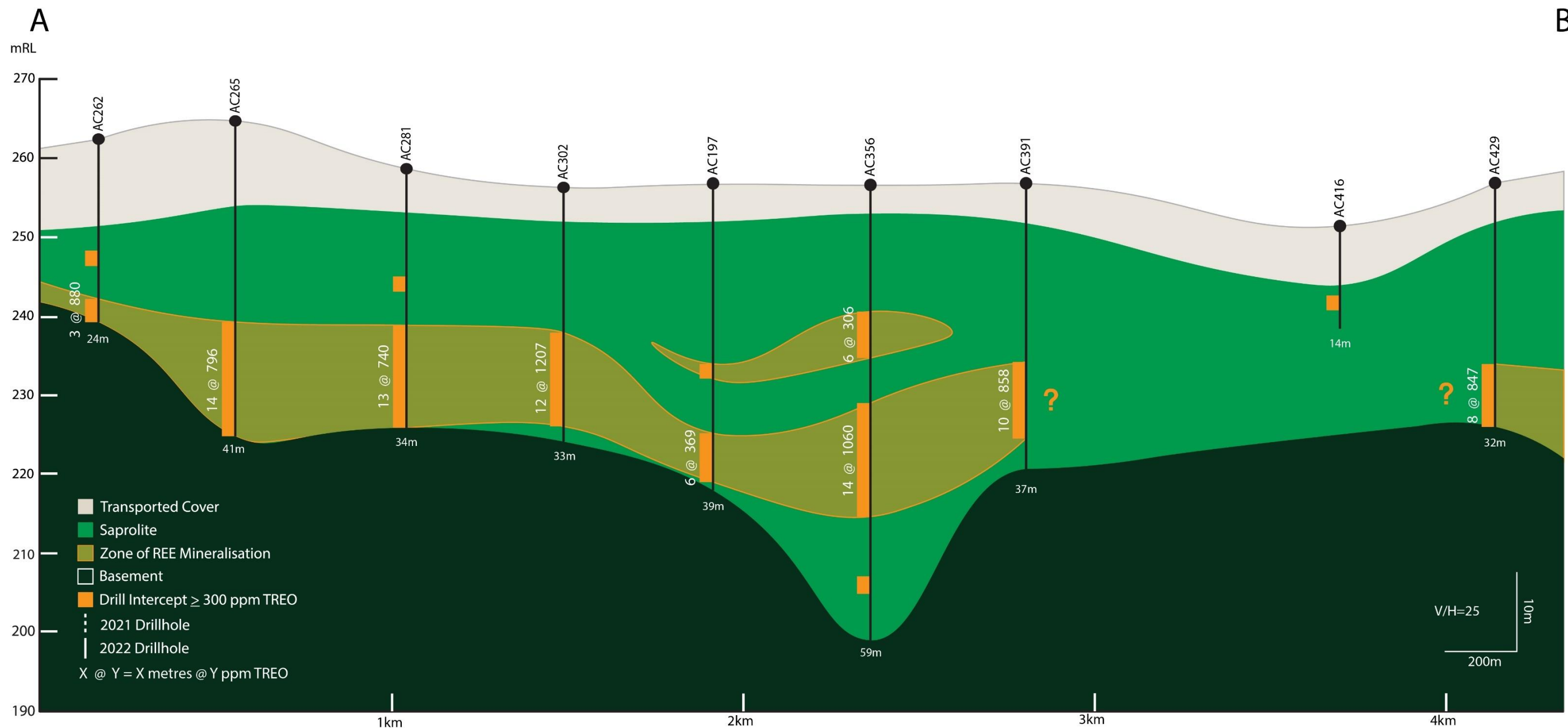
**Competent Persons Statement**

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.

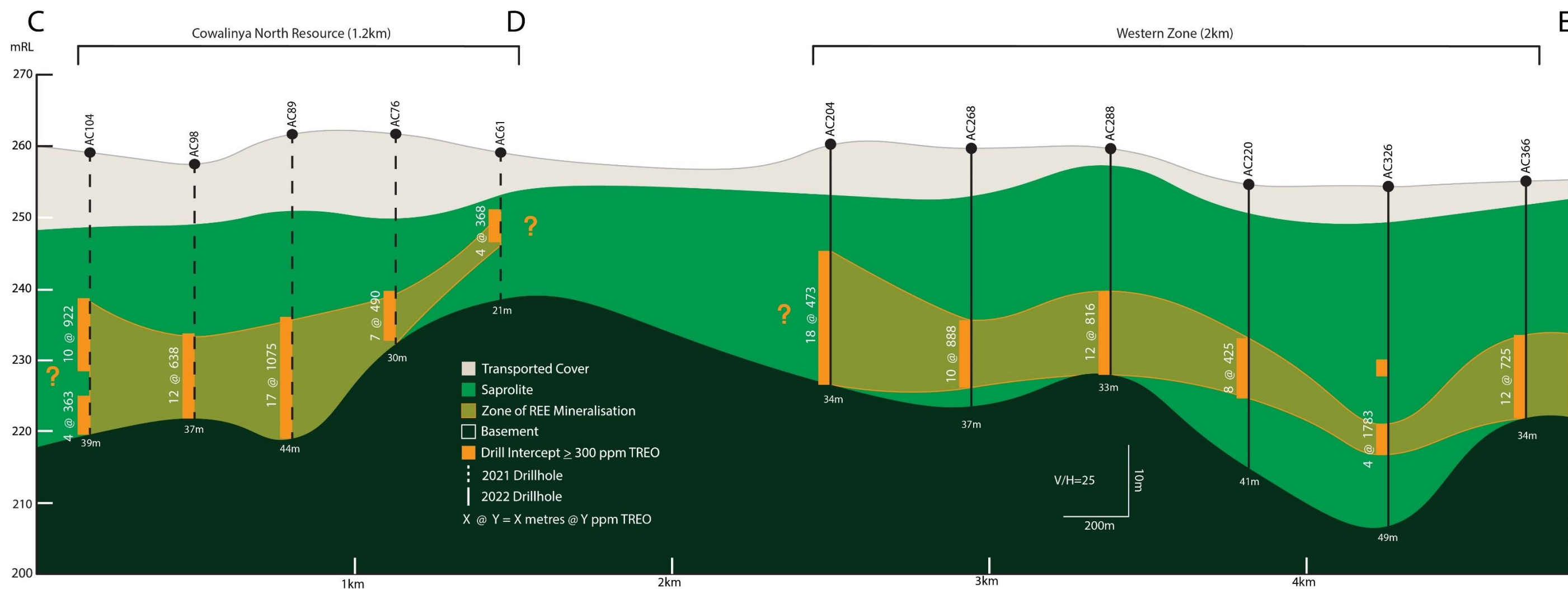
**Heavy Rare Earths Limited (ASX:HRE)**

ACN 648 991 039  
Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)



**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  $\geq 300$  ppm TREO.**

| HOLE NO. | FROM (m) | TO (m) | INTERVAL (m) | TREO (ppm) | TREO-CeO <sub>2</sub> (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%            |

Heavy Rare Earths Limited (ASX:HRE)  
ACN 648 991 039  
Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)



|       |    |    |   |      |      |       |
|-------|----|----|---|------|------|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

|       |    |    |   |      |      |       |
|-------|----|----|---|------|------|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

|       |    |    |   |      |      |       |
|-------|----|----|---|------|------|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)



|       |    |    |   |      |      |       |
|-------|----|----|---|------|------|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

|       |    |    |   |      |     |       |
|-------|----|----|---|------|-----|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

|       |    |    |   |     |     |       |
|-------|----|----|---|-----|-----|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)



|       |    |    |   |      |      |       |
|-------|----|----|---|------|------|-------|
| 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% |

**Heavy Rare Earths Limited (ASX:HRE)**  
 ACN 648 991 039  
 Level 21, 459 Collins Street, Melbourne, VIC 3000  
[www.hreltd.com.au](http://www.hreltd.com.au)

|       |    |    |   |      |     |       |
|-------|----|----|---|------|-----|-------|
| 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 |

## 2012 JORC Code – Table 1

### Section 1: Sampling Techniques and Data

|                              |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Sampling techniques</b>   | 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. | <p>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).</p> <p>One-metre samples are collected from a cyclone into plastic bags.</p> <p>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.</p> |
|                              | 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.                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Drilling techniques</b>   | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Drill sample recovery</b> | 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.                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Logging</b>                                        | 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.                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Sub-sampling techniques and sample preparation</b> | 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 20 <sup>th</sup> 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 20 <sup>th</sup> 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.                                                                                                                                                                                                                                                                                                                                      |



|                                                   |                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Quality of assay data and laboratory tests</b> | 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.<br><br>This technique is considered to be a 'total' digest.<br><br>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 20 <sup>th</sup> sample. Field duplicates are taken every 20 <sup>th</sup> sample.<br><br>LabWest uses OREAS standards, blanks and sample repeats. Acceptable levels of accuracy have been achieved.                                                                                                                                                                                                                                                                                                                                                        |
| <b>Verification of sampling and assaying</b>      | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Location of data points</b>                    | 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 $\pm 3$ 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).                            |
| <b>Data spacing and distribution</b>                           | 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.<br><br>A total of 923 samples (including standards, blanks and field duplicates) have been submitted for assay. |
| <b>Orientation of data in relation to geological structure</b> | 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.                                                                                                                                                                                                                                                                           |
| <b>Sample security</b>                                         | 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.                                                                                                                   |
| <b>Audits or reviews</b>                                       | 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

|                                                |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mineral tenement and land tenure status</b> | 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 <sup>2</sup> . It is situated on unallocated crown land. The registered holder of the tenement is Heavy Rare Earths Limited (HRE).<br><br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Exploration done by other parties</b>       | 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.<br><br>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. |
| <b>Geology</b>                                 | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Drillhole Information</b>    | <p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</p> <ul style="list-style-type: none"> <li>- easting and northing of the drillhole collar</li> <li>- elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar</li> <li>- dip and azimuth of the hole</li> <li>- down hole length and interception depth</li> <li>- hole length.</li> </ul> | All relevant data for the drilling is shown in Table 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Data aggregation methods</b> | <p>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.</p>                                                                                                                                                                                                                                                                                            | <p>All REE assays have been converted to oxide (REO) values using the following industry standard element-to-stoichiometric oxide conversion factors:</p> <p> <math>\text{La}_2\text{O}_3 = \text{La} \times 1.1728</math><br/> <math>\text{CeO}_2 = \text{Ce} \times 1.2284</math><br/> <math>\text{Pr}_6\text{O}_{11} = \text{Pr} \times 1.2082</math><br/> <math>\text{Nd}_2\text{O}_3 = \text{Nd} \times 1.1664</math><br/> <math>\text{Sm}_2\text{O}_3 = \text{Sm} \times 1.1596</math><br/> <math>\text{Eu}_2\text{O}_3 = \text{Eu} \times 1.1579</math><br/> <math>\text{Gd}_2\text{O}_3 = \text{Gd} \times 1.1526</math><br/> <math>\text{Tb}_4\text{O}_7 = \text{Tb} \times 1.1762</math><br/> <math>\text{Dy}_2\text{O}_3 = \text{Dy} \times 1.1477</math><br/> <math>\text{Ho}_2\text{O}_3 = \text{Ho} \times 1.1455</math><br/> <math>\text{Er}_2\text{O}_3 = \text{Er} \times 1.1435</math><br/> <math>\text{Tm}_2\text{O}_3 = \text{Tm} \times 1.1421</math><br/> <math>\text{Yb}_2\text{O}_3 = \text{Yb} \times 1.1387</math><br/> <math>\text{Lu}_2\text{O}_3 = \text{Lu} \times 1.1371</math><br/> <math>\text{Y}_2\text{O}_3 = \text{Y} \times 1.2699</math>. </p> <p>These oxide values are summed to produce a total rare earth oxide (TREO) grade for each assay sample.</p> <p>Minimum grade cut-off used is 300 ppm TREO.</p> <p>Maximum internal dilution is 2 metres @ &lt;300 ppm TREO.</p> <p>No high cut-off has been applied.</p> <p>Length weighted averages have been applied to intersections.</p> |



|                                                                         |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                         | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Relationship between mineralisation widths and intercept lengths</b> | If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.<br><br>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.<br><br>The down hole length of intercept is effectively a true thickness of mineralisation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Diagrams</b>                                                         | 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.<br><br>Refer to Figures 3 and 4 for drillhole sections A-B and C-D-E.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Balanced reporting</b>                                               | 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 $\geq 300$ ppm TREO are presented in Table 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Other substantive exploration data</b>                               | 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: <ul style="list-style-type: none"> <li>- 78.5% of REEs are confined to the -25 <math>\mu\text{m}</math> size fraction</li> <li>- the -25 <math>\mu\text{m}</math> fraction comprises 37.2% of the bulk saprolite feed mass</li> <li>- the REE grade of the -25 <math>\mu\text{m}</math> fraction is 116% higher than the bulk saprolite feed grade.</li> </ul> Preliminary leach testwork has shown up to 91% TREO recovery from Cowalinya South using 5% hydrochloric acid at 30°C.<br><br>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 $\text{U}_3\text{O}_8$ and 81 ppm $\text{ThO}_2$ . |
| <b>Further work</b>                                                     | 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. |