

ASX / Media Announcement 22 July 2022

# Vital intersects further broad zones of REO in near surface drilling at Tardiff Zone 1

## Highlights

- Large intersections of total rare earth oxides (TREO) grades above 1.5% TREO intersected at Tardiff Zone 1 with all holes hitting mineralisation
- Many intercepts of REO mineralisation in excess of 30 metres true thickness
- Best results from Tardiff Zone 1 include:
  - 13.7m at 3.91% TREO from 10.3m
  - 22.95m at 2.21% TREO from 28.45m
  - 32m at 2.11% TREO from 60m
  - 48.1m at 2.03% TREO from 13m
- High value Nd<sub>2</sub>O<sub>3</sub> and Pr<sub>6</sub>O<sub>11</sub> content of rare earths estimated at an impressive level of 24.5% TREO
- Tardiff Zone 1 remains open in all directions with a higher grade zone on the north east edge of the latest drilling
- All intersections under shallow cover (10m) and contained within 92m of surface
- Mineralisation appears to be associated with bastnasite with metallurgical test work ongoing
- Results will form part of new resource upgrade to be part of Stage 2 Expansion Plans at Nechalacho

**Vital Metals Ltd (ASX:VML)** is pleased to announce it has received outstanding results for in-fill resource definition drilling at Tardiff Zone 1 within the Upper Zone of its 100%-owned Nechalacho Rare Earth Project, Northwest Territories, Canada from 37 holes drilled totaling 2,771 meters.

The Nechalacho rare earth project consists of two distinct deposits which will be developed over two stages. The North T deposit hosts a high grade resource of **101,000 tonnes at 9.01% LREO**<sup>1</sup> in the measured and indicated JORC 2012 categories, making it one of the highest grade rare earth deposits in the world. Development of this deposit in currently underway under Stage 1. The second deposit, the Upper Zone, boasts an impressive light rare earth oxides (LREO) resource of **94.7 million tonnes** 

<sup>&</sup>lt;sup>1</sup> ASX Announcement 15 April 2020: Substantial Increase in Resource Size and Grade at North-T Zone Nechalacho



**at 1.46% TREO**<sup>2</sup> in the measured, indicated and inferred JORC 2012 categories and will be the focus expanded operations. The Tardiff Zone 1, with a resource area of 4.0mt @ 1.95 TREO% or 79,000kt contained TREO, is a higher-grade bastnasite rich area within this resource targeted by the 2021 and 2022 drilling programs to upgrade the resource so that mining and processing studies can be carried out for a starter open pit in the Upper Zone.



Figure 1 – Nechalcacho Upper Zone

Vital Metal's 2022 drilling program was developed to extend the close spaced drilling (25m by 25m) at the Tardiff Zone 1 area to up-grade resources from inferred to measured and indicated so mining studies can be carried out. The close spaced drilling at Tardiff Zone 1 has defined a strong zone of higher grade REO mineralisation with wide intersections greater than 1.5% TREO. The higher grade mineralisation in Tardiff Zone 1 has been drilled on a 25m grid over a distance of 250m x 250m with material above 1.5% TREO open in most directions.

Metallurgical testwork completed on mineralisation from Tardiff Zone 1 returned grades of up to 39.9% TREO after three beneficiation stages with a low mass pull to the final concentrate of 3.3% and

<sup>&</sup>lt;sup>2</sup> ASX Announcement 13 December 2019: Vital Announces JORC 2012 Compliant Resources for the Nechalacho Rare Earth Deposit



from an original feed grade of 2.4% TREO.<sup>3</sup> The testwork demonstrated the ability to produce a high grade concentrate from Tardiff material which is critical for cost effective rare earth production.



 $Figure \ 2-Close \ spaced \ drilling \ program \ targeting \ Tardiff \ Zones \ 1$ 

<sup>&</sup>lt;sup>3</sup> ASX Announcement 9 June 2022: Vital's North Tardiff Testwork Results Exceed Expectations for Stage 2 REO Operations





Figure 3 – Tardiff Zone 1 Drill Plan



Figure 4 – East-west Section typical of the Tardiff Zone 1





Figure 5 – Long-section through Tardiff Zone 1

Historical drill holes from drilling programs carried out by Avalon Materials Inc between 2007 and 2013 targetted the heavy rare earth rich Basal Zone (below the Vital Metals owned Upper Zone). The targeting of the Basal Zone resulted in very poor definition of the Upper Zone as many of the holes were drilled as fans from a single drill pad. The aim of the 2021 and 2022 drilling programs is to outline the higher grade REO mineralisation where it can be categorised into Measured and Indicated categories. This will allow mining studies to be carried out on this higher-grade zone of REO mineralisation.

The 2022 drilling program has provided a better understanding of the mineralisation in the Tardiff Zone 1 area with higher grade TREO continuing to the southeast with wide intercepts above 1.5% in the southern portion of the close spaced drilling pattern. To the Northwest of the drilling pattern the high grade zone appears to be closed off with typical Upper Zone grades around 1.5% TREO in the intercepts in this area. A deeper zone of higher grade TREO identified in historic Avalon drill-holes in the northeast of the drilling pattern has been confirmed in the 2022 drilling and warrants follow-up drilling to outline this higher grade TREO zone. Currently this deeper higher grade zone is on the northeast edge of the close spaced drilling pattern.

Appendix 2 has a list of the 2022 drill holes and all the significant intercepts above 1% TREO are listed below.

Hole ID	From	То	Length	TREO%	
L22-577	8.6	18	9.4	1.61	
L22-577	28	70	42	1.55	
L22-578	19	25	6	1.25	
L22-578	31	51.8	20.8	1.95	



Hole ID	From	То	Length	TREO%
L22-578	66	70	4	2.26
L22-579	15	51	36	1.62
L22-579	68.3	75	6.7	1.95
L22-580	18	50	32	1.76
L22-581	20	34	14	1.42
L22-581	46.45	54.2	7.75	2.22
L22-582	17	26	9	1.46
L22-582	34	43	9	1.97
L22-582	48.5	80	31.5	1.41
L22-583	9.15	13	3.85	1.15
L22-583	17	47.9	30.9	1.71
L22-583	73	77	4	2.30
L22-584	7.55	26	18.45	1.54
L22-584	28.45	51.4	22.95	2.21
L22-585	52	80	28	1.47
L22-586	11	15	4	1.49
L22-586	37	64	27	1.83
L22-587	13.65	19	5.35	1.42
L22-587	27.7	38	10.3	1.53
L22-587	44	80	36	1.40
L22-588	8.3	14	5.7	1.30
L22-588	32	42	10	1.31
L22-588	52	55.5	3.5	1.90
L22-588	75.35	80	4.65	3.14
L22-589	10.3	25	14.7	2.09
L22-589	33.3	43	9.7	1.57
L22-589	68	80	12	1.98
L22-590	34	62.4	28.4	1.47
L22-591	12.16	18	5.84	1.81
L22-591	45	54.3	9.3	1.29
L22-592	14.8	21	6.2	2.11
L22-592	27	32.7	5.7	1.75
L22-593	15	20.6	5.6	1.45
L22-593	23	27	4	1.45
L22-593	31	46.3	15.3	1.69
L22-593	71	84.3	13.3	1.88
L22-594	17	28	11	1.18
L22-594	43	51	8	1.32
L22-594	65	68.5	3.5	1.82
L22-595	13	61.1	48.1	2.03
L22-595	73	80	7	1.79
L22-596	11.6	29	17.4	1.33



Hole ID	From	То	Length	TREO%
L22-596	42.8	58	15.2	2.14
L22-597	14.25	38	23.75	1.44
L22-597	74	87.5	13.5	2.41
L22-598	14.7	25	10.3	1.65
L22-598	43.8	49	5.2	1.84
L22-599	19	28	9	1.61
L22-599	33	37	4	1.25
L22-599	41	54.6	13.6	2.12
L22-599	57	68.25	11.25	2.13
L22-599	72	90	18	1.95
L22-600	36	40	4	1.27
L22-600	55	63	8	1.46
L22-601	10.2	14	3.8	1.82
L22-601	52	55.4	3.4	1.24
L22-601	63.1	71	7.9	1.58
L22-601	75	78.7	3.7	2.12
L22-602	12	24	12	1.50
L22-602	28	32	4	1.49
L22-602	48.3	59.6	11.3	1.51
L22-603	13	19	6	1.12
L22-603	25	45.75	20.75	1.50
L22-604	18	30	12	1.52
L22-604	33	55	22	2.20
L22-605	9.2	21	11.8	1.76
L22-605	41.1	49	7.9	1.70
L22-606	14.25	55	40.75	1.63
L22-607	23.35	28.65	5.3	1.93
L22-607	43	55.1	12.1	1.29
L22-608	9.95	23.15	13.2	1.74
L22-608	33	37	4	1.29
L22-608	43.75	51	7.25	1.60
L22-609	10.3	24	13.7	3.91
L22-609	31.45	41.95	10.5	1.71
L22-610	15.9	33.3	17.4	1.92
L22-610	38.25	47.3	9.05	2.25
L22-611	12	24	12	1.28
L22-611	32	46.8	14.8	2.24
L22-612	11	57.4	46.4	1.44
L22-612	74.65	91	16.35	2.44
L22-613	8.6	52	43.4	1.42
L22-613	60	92	32	2.11

Table 1 - List of drill hole intercepts in Tardiff Zone 1 > 1% TREO



## **Ongoing Programs**

The 2022 drilling program has given Vital enough close spaced drilling data to create a resource model for the Tardiff Zone 1 to allow follow up mining and metallurgical studies to assess the viability to mining and processing the Tardiff Zone 1 area. It is expected further drilling will be carried out in the Tardiff Zone 1 area to expand the measured and indicated resources.



Figure 6 - Drill rig on Tardiff 1 target at Nechalacho

## ENDS

This announcement has been approved by the Board of Vital Metals.

## Contact:

Mr Geoff Atkins Managing Director Vital Metals Ltd Phone: +61 2 8823 3100 Email: vital@vitalmetals.com.au Nathan Ryan Investor/Media Relations NWR Communications +61 420 582 887 nathan.ryan@nwrcommunications.com.au

### ABOUT VITAL METALS

Vital Metals Limited (ASX:VML) is an explorer and developer focussing on rare earths, technology metals and gold projects. Our projects are located across a range of jurisdictions in Canada, Africa and Germany.



#### **Qualified/Competent Persons Statement**

#### Nechalacho Rare Earth Project

The information in this report relating to Exploration Results at the Nechalacho Rare Earths Project is based on, and fairly represents, information and supporting documentation prepared for Vital Metals Limited by Mr Brendan Shand. Mr Shand is a Competent Person and a member of the Australasian Institute of Mining and Metallurgy and an employee of the Company. Mr Shand has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Shand consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **ASX Listing Rule Information**

This announcement contains information relating to Mineral Resource Estimates in respect of the Nechalacho Project extracted from ASX market announcements reported previously and published on the ASX platform on 13 December 2019 and 15 April 2020. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original market announcements continue to apply and have not materially changed.

This announcement contains information relating to Exploration Results extracted from ASX market announcements reported previously in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("2012 JORC Code") and published on the ASX platform on 26 May 2021, 9 March 2022 and 9 June 2022. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements.

## Appendix 1 - JORC Code, 2012 Edition – Table 1 report – Nechalacho Upper Zone

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Sampling of 2022 diamond drill core are half splits of drill core using a core splitter.</li> <li>Samples were collected from the bastnaesite mineralisation with lengths ranging 0.7 to 2.5 metres. The typical sample length was between 1.0 and 2.0 metres. The sampling lengths were dictated by the lithology of the core.</li> <li>All drill core samples were crushed to 90% &lt;2 mm, then 1 kg was riffle split. The 1 kg splits from the samples were then pulverized to 85% &lt;75 µm.</li> <li>The samples were assayed using ICP-MS for the REE.</li> <li>The accuracy of the assaying has been validated through a combination of using standards with a known grade and inserting field blanks.</li> </ul>
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).	• HQ diameter core using standard tube was used for the 2022 drill program. As the holes were short and vertical no orientation was carried out on the core.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Good core recovery was observed for the 2022 drill program.</li> <li>The geological nature of the mineralization in the Upper Zone (coarse bastnaesite), in many cases, is such that the risk of biased sampling is somewhat reduced.</li> <li>No relationship has been identified between sample recovery and grade.</li> </ul>
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource	<ul> <li>Geological drill logs completed by an experienced professional geoscientist were produced to a standard to support a mineral resource estimation.</li> </ul>

	JORC Code explanation	Commentary
	<ul> <li>estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>For the 2022 drill program, core photographs are available.</li> <li>All the half splits from the 2021 drilling program were retained with the drill core stored on site, as half core, and can be viewed.</li> <li>Total length of the logged core for the 2022 program is 2771 m and the core are 100% logged.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>Half core splits were sampled for the 2022 drill program.</li> <li>For each sampled interval the entire interval was half split to ensure a representative sample of the interval. The sampled core was crushed before assaying to ensure the material from the entire interval was analysed during the assaying process.</li> <li>Duplicates of both the coarse-crushed (&lt;2 mm) rejects and of the assay pulps were analysed and showed good reproducibility of the REE assays, indicating that both materials are sufficiently homogeneous.</li> <li>The core sample intervals honour the contacts of the mineralization zones, thus providing adequate sample coverage.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>The assay methods for the REE include lithium borate fusion followed by ICP-MS and are thus considered total.</li> <li>External REE standards supplied by Avalon Advanced Materials Inc. and inserted in the field, and external REE standards inserted by the laboratory (ALS) were analysed with each batch of assays to ensure the assaying procedures gave accurate results.</li> <li>Field blanks were inserted to monitor contamination; results were acceptable.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>The assay data was collated by Brendan Shand of Cheetah Resources.</li> <li>The entire data set was received by email from ALS and converted to oxides. No assay data was manually inserted reducing the likelihood of human data entry errors. Assay data for rare earth elements was converted to rare earth oxides.</li> <li>Geology tables distinguishing host rock syenite were created from the original drill logs.</li> </ul>

	JORC Code explanation	Commentary
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All 2022 drill holes were surveyed at the time by a professional surveyor – Sub-Arctic Geometrics Ltd of Yellowknife who used local survey reference points to ensure accuracy.</li> <li>The grid system used is UTM NAD83 Zone 12 N, currently the standard system used in the area.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The drill hole spacing is approximately 25 by 25 m.</li> <li>The drill hole spacing is considered to be adequate for the measured resource confidence category.</li> <li>Sample compositing will be applied when using the data for resource estimation.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>All 2022 drill-holes were drilled at -90 to intersect the horizontally layered REO mineralisation at 90 degrees to achieve unbiassed sampling.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>All assay samples were sealed using zip locks, and multiple samples were placed in rice bags sealed with zip locks. Independent lab verified sealed sample integrity upon receipt.</li> <li>Analyses for elements such as rare earths, niobium and zircon are unlikely to be altered as a result of insecurity of samples such as contamination.</li> </ul>
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• As the drilling is only recent no audits have been carried out on the sampling techniques and data.

# Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The Upper Zone is located on Mining Lease NT-3178 registered to Avalon Advanced Materials Inc. and expires 21 May 2027. On June 24, 2019, Avalon Advanced Materials Inc. announced that it has entered into a definitive agreement with Cheetah Resources Pty Ltd. to transfer ownership of the near-surface mineral resources on the Property, which includes the Upper Zone (see Avalon News Release NR 19-04). On October 30, 2019, it was announced that Avalon received the full payment from Cheetah Resources Pty Ltd. for the near-surface resources on the Nechalacho rare earth elements property at Thor Lake (see Avalon News Release NR 19-04). On February 6, 2020, the completion of a co-ownership agreement was announced, under which Cheetah Resources Pty Ltd. acquired ownership of the near-surface resources on the property, including the Upper Zone, and a jointly-owned special purpose vehicle to hold and manage the permits and authorizations to operate at the site was created (see Avalon News Release NR 20-01).</li> <li>Operating licenses in the Northwest Territories are subject to the approvals by provincial and environmental regulators and require consultation with local communities.</li> </ul>
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The historic resource development drilling was carried out by Avalon Materials Inc with the bulk of this drilling carried out between 2007 and 2013.</li> <li>The geologist who supervised the historic work, J.C. Pedersen, P. Geo, is an experienced geologist in the rare earths field and is well known as a reliable geoscientist to the present parties. He also supervised the 2021 and 2022 drilling programs.</li> </ul>
Geology	• Deposit type, geological setting and style of mineralisation.	<ul> <li>The Upper Zone is a polymetallic (REE, Nb, Zr) deposit hosted by the Thor Lake Syenite. It is a large layered magmatic deposit.</li> <li>REO mineralization in the Lake Zone is layered in separate zones of light rare</li> </ul>

	JORC Code explanation	Commentary
		earths at the top of the deposit (Upper Zone) and a mixture of light and heavy REO mineralisation in the lower part of the deposit (Basal Zone).
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul> <li>The historic data set for the Lake Zone includes 582 diamond drill holes with many of them in fans from the surface utilising a small number of drill pads to target the basal zone which begins approximately 80 metres below the surface. The historic drill hole data gave poor representation of the Upper Zone as the fans resulted in many holes close together in clusters and wide spaces between the clusters.</li> <li>The historic drill holes ranged from 1.5 to 1070 m in length with the bulk of the drill holes between 150 and 300 m long for a total length of 120,062 m.</li> <li>See the attached appendices for the details of each of the holes and the assay intervals in the 2022 drilling program.</li> </ul>
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Where there was more than 1 assay for an interval a weighted average was used for the grade of the interval. The weighted average was calculated by using the following formula. Interval grade= (Sum of (Assay length X assay grade) )/(total interval length)</li> <li>No capping was applied as no outliers were observed.</li> <li>Nd2O3 and Pr2O3 has been reported as 24.5% of the total REO. This was calculated by summing the Nd2O3 and PR6O11 assay grades and dividing by the sum of the Total REO grades.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>For the 2022 drilling the intervals reported closely approximate the true width of the mineralisation as most holes intersect at right angles to the dip of the mineralisation.</li> <li>The sample intervals are suitable for the mineralisation.</li> <li>The drill holes intersect the deposit at approximately right angles to the orientation of the orebody which is the ideal orientation.</li> <li>The orientation of the holes to the mineralization is well established.</li> </ul>
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should	• See figures in this ASX release for maps and section.

	JORC Code explanation	Commentary
	include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>All intervals greater 2 metres in length and 1% TREO are reported Appendix</li> <li>3.</li> </ul>
Other substantive exploration data	<ul> <li>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.</li> </ul>	<ul> <li>Not applicable as no other exploration data is available.</li> <li>Deleterious and contaminating materials are not present except for some thorium as is commonly present in rare earth deposits and well established with respect to levels.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	• The 2022 drilling program should outline enough resources in the Measured and Indicated categories to allow mining and processing studies to be carried for a starter open pit. If the mining and processing studies successfully show the starter pit is economically viable then further close space drilling will be carried out to further expand the Measured and Indicated resources in the Tardiff Zone 1 area where there are currently Inferred resources.



				Length		
Hole_ID	Northing	Easting	Elevation	(m)	Azimuth	Dip
L22-577	6886309	417364.8	241.047	80	0	-90
L22-578	6886358	417335.9	241.744	80	0	-90
L22-579	6886333	417336	241.305	80	0	-90
L22-580	6886307	417336.4	240.794	80	0	-90
L22-581	6886358	417311.5	241.302	80	0	-90
L22-582	6886331	417314.1	241.15	80	0	-90
L22-583	6886310	417314.3	240.627	80	0	-90
L22-584	6886354	417288.2	241.643	80	0	-90
L22-585	6886330	417285.9	241.108	80	0	-90
L22-586	6886305	417264.3	240.75	80	0	-90
L22-587	6886332	417265.5	240.955	80	0	-90
L22-588	6886308	417238.1	241.098	80	0	-90
L22-589	6886333	417238.7	241.086	80	0	-90
L22-590	6886505	417163.9	241.044	80	0	-90
L22-591	6886483	417163.9	241.023	71	0	-90
L22-592	6886460	417163.2	241.686	71	0	-90
L22-593	6886333	417211.7	240.678	92	0	-90
L22-594	6886510	417189.6	241.422	71	0	-90
L22-595	6886358	417261.3	241.226	80	0	-90
L22-596	6886484	417189.7	241.107	71	0	-90
L22-597	6886361	417238.4	241.264	92	0	-90
L22-598	6886459	417190.6	241.452	65	0	-90
L22-599	6886459	417311.8	241.523	107	0	-90
L22-600	6886509	417212.5	241.48	69	0	-90

# Appendix 2: List of Drill Holes for the 2022 Upper Zone Drill Program

	Northing	Facting	Elevation	Length	Azimuth	Din
Hole_ID	Northing	Easting	Elevation	(m)	Azimutn	Dip
L22-601	6886459	417285.6	241.431	80	0	-90
L22-602	6886484	417213.6	240.943	70	0	-90
L22-603	6886484	417238.7	240.882	66	0	-90
L22-604	6886461	417212.2	241.29	68	0	-90
L22-605	6886507	417237	241.411	65	0	-90
L22-606	6886462	417236.1	241.306	68	0	-90
L22-607	6886382	417111.6	240.302	60	0	-90
L22-608	6886384	417139.4	240.35	51	0	-90
L22-609	6886387	417163.4	240.344	50	0	-90
L22-610	6886362	417212.9	240.488	50	0	-90
L22-611	6886361	417188.8	240.358	51	0	-90
L22-612	6886489	417315.3	241.647	91	0	-90
L22-613	6886483	417286.5	241.452	92	0	-90