

## Vital drilling at Tardiff returns up to 5.4% TREO, amplifying world-class high-grade potential and scale

### Highlights

- Tardiff drilling returns shallow high grades that remain open to the west, northwest and on the southern margins from 23 drill hole results completed in a 2023 resource definition drilling program (74 holes totaling 6,664 m)
- Results from resource conversion program at Tardiff; best results include:
  - 56.0m at 1.2% TREO from 34.00m incl. 1.05m at 5.4% TREO within 2.16m at 4.8% TREO
  - 79.7m at 1.5% TREO incl. 1.5m at 4.3% TREO within 3.0m at 3.3% TREO and 4.15m at 3.0% TREO
  - 33.45m at 2.2% TREO from 47.00m incl. 3.85m at 3.3% TREO within 8.95m at 2.8% TREO;
  - 31.76m at 2.1% TREO from 34.24m and 1.92m at 4.0% TREO from 88.76m;
  - 23.85 m at 2.0% TREO from 9.15m; and
  - 15.50 m at 2.7% TREO from 30.50m
- Latest results confirm Vital's contention for shallow higher-grade expansion potential, with future drilling focus to augment and de-risk the mineral resource
- 2023 drilling focused on increasing confidence of the Tardiff Zones 1 and 3 resource definition and grade, by narrowing drilling spacing for resource conversion
- Assay results from the remaining 34 holes are expected within 3 to 4 months; Mineral Resource Estimate update due Q1 CY24
- Vital is focused on developing the large-scale Tardiff deposit, one of the largest single rare earths deposits in the western World, estimated to contain 416,000 tonnes of neodymium and praseodymium (NdPr)<sup>1</sup>
- NdPr offers the largest value market within the lanthanide series of rare earths and provide essential components in the production of high strength rare earth magnets
- Vital anticipates closing the recently announced financing and resuming trading on ASX shortly.

Vital Metals Limited (ASX: VML | OTCQB: VTMXF) ("Vital", "Vital Metals" or "the Company") is pleased to announce high-grade results from 23 drill holes from its 2023 resource definition drilling program on the Tardiff deposit at its Nechalacho Rare Earth Project in NWT, Canada.

---

<sup>1</sup> VML ASX Announcement 14/02/2023 – Vital Achieves 26% Increase in Tardiff Mineral Resource

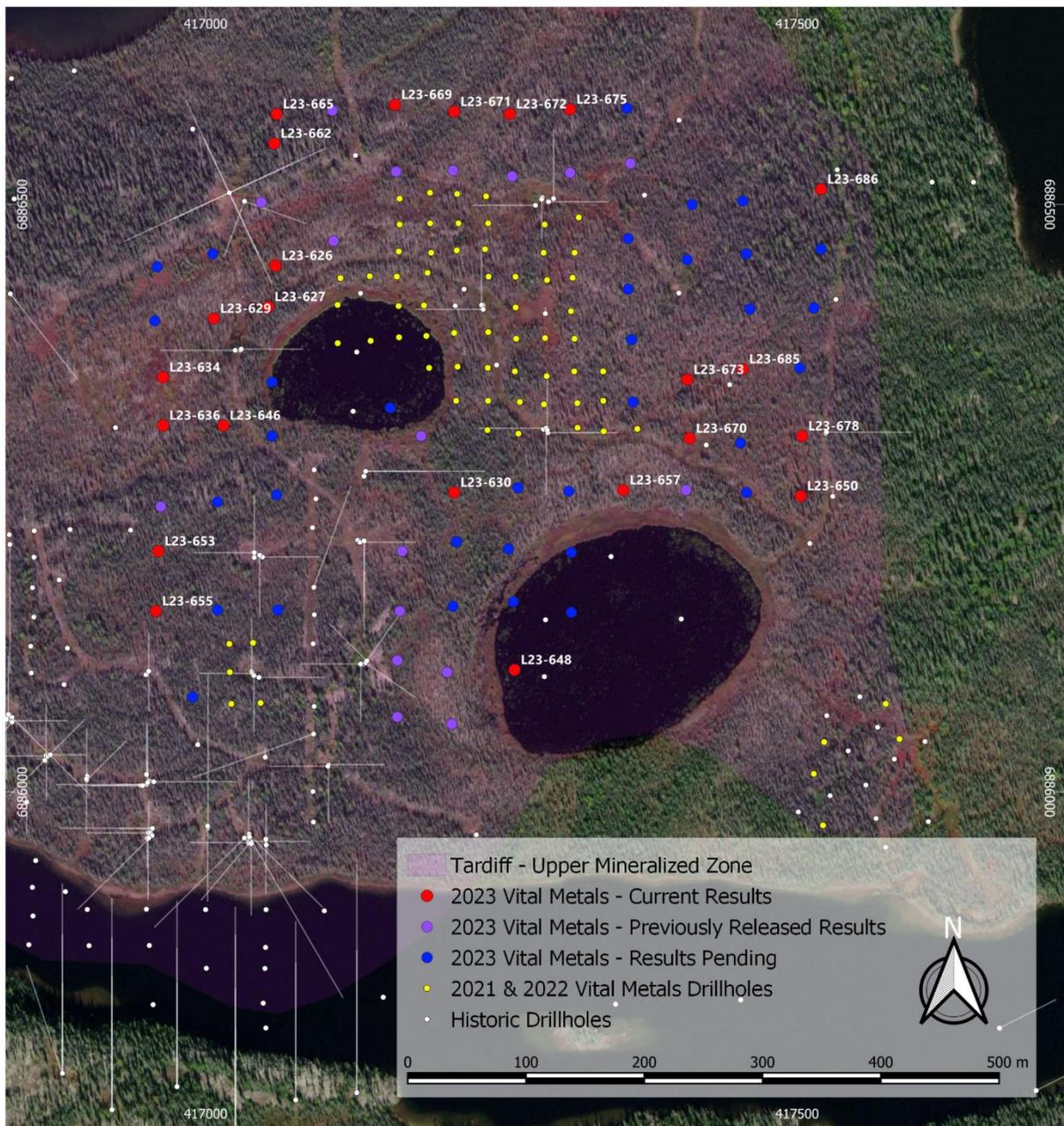
**Vital Managing Director Geordie Mark said:** *“The unearthing of more shallow higher grade mineralization on Tardiff reinforces our focus of marrying value, with project de-risking as we look to expand areas of higher grade while aiming to convert to higher confidence resource categories. Further drilling is warranted to expand high-grade areas in several directions, which with 2023 drilling, could be folded into a resource update to inform mine plan design in our ongoing scoping study.”*

*“These drill results continue to instill our high confidence in Tardiff and this work serves as a reminder of our primary focus for the development of the deposit. We are set to determine an optimum pathway to production for Tardiff via a rigorous scoping study and we are most fortunate to couple the maturation of our augmented scoping study with anticipated product and market insights from the world-leading diversified rare earth producer - Shenghe Resources, our recently announced new cornerstone investor. Vital has exciting potential, with the Tardiff deposit already positioned to enable the growth of a North American rare earth supply chain.”*

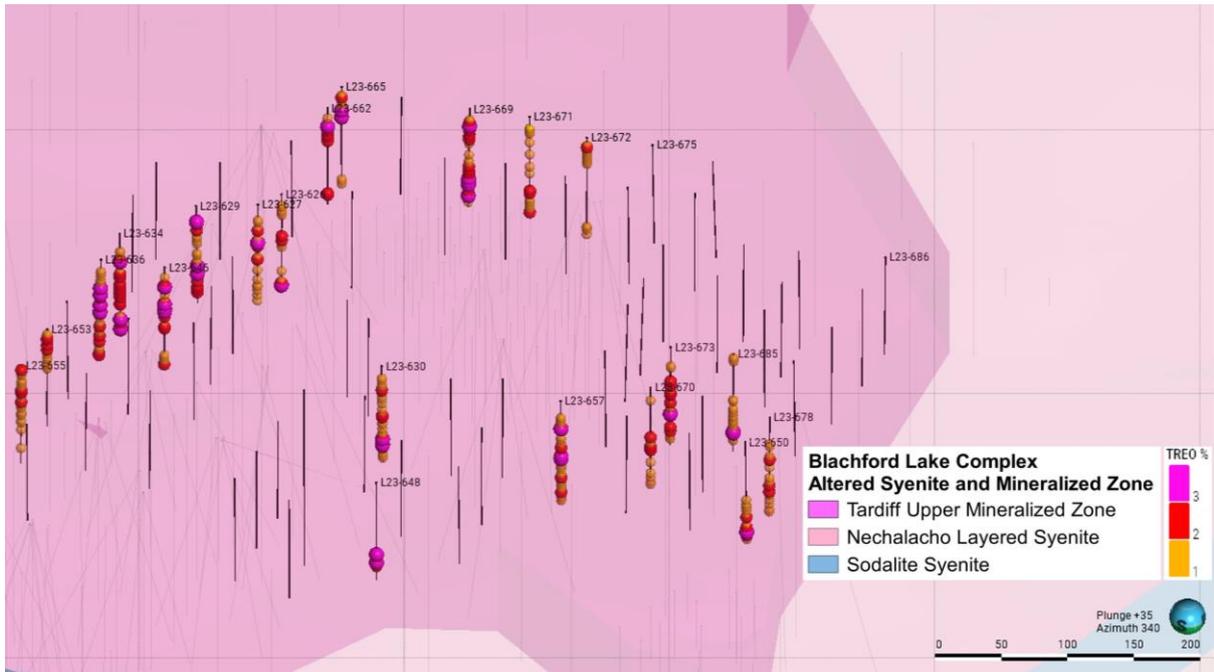
The primary outcomes from this parcel of results for 23 drillholes (Figure 2) highlight the potential expansion of shallow higher-grade mineralization beyond the scope of the 2023 program footprint, and consolidates Vital’s geological interpretations and modelling of the internal distribution of rare earth mineralization. These outcomes will aid in further conversion and refining of inferred resources in subsequent resource estimate updates on the Tardiff deposit.

The Tardiff deposit has an existing resource estimate of 119 million tonnes at 1.4% TREO in the Measured, Indicated and Inferred JORC 2012 categories completed to 31 December 2022. Vital aims to deliver a resource estimate update on the Tardiff deposit in the coming months. A further update on the Tardiff resource is planned to incorporate results from the 2023 drilling program and potentially other follow-up drilling that tests expansion potential of shallow high grades.

The 2023 program aimed to improve the definition and increase the Measured and Indicated components of the 2023 Mineral Resource Estimate, focusing on the Tardiff Upper Mineralised Zone above the 150 RL. Vital’s 2023 resource definition drilling program was drilled on a nominal 50 m by 50 m grid to infill areas previously drilled on nominal 100 m to 200 m drill spacing.



**Figure 1:** Plan view of the 2023 Tardiff drill program, showing locations of 2021- 2022 drilling and historical drillholes.



**Figure 2:** Projected drill strings highlighting (in colour) down-hole assays of the 23 drillholes released in this parcel of results from the 2023 drill program with a simplified geological underlay of the Blachford Lake Complex. Assay results: Yellow 1-2% TREO, Red 2-3% TREO and Fuchsia >3% TREO.

Results from these new data highlight shallow higher grades on the western margin of Tardiff (hosting most of the discrete assays above 4% TREO in this parcel of data), which remains open for subsequent expansion. Shallow higher grade mineralization (mainly <40 metres depth) is hosted within biotite altered syenite and as well as altered aegirine, K-feldspar syenite, show broad lateral continuity extending to the west: holes to the immediate northeast have been completed with results pending. Results include:

- L23-634: 73.18m at 1.7% TREO from 15.58m,**  
Incl. 31.76m at 2.1% TREO from 34.24m;
- L23-636: 81.85m at 1.6% TREO from 8.15m,**  
Incl. 10.45m at 2.3% TREO from 26.00m  
and incl. 4.45m at 2.9% TREO from 32.00m
- L23-646: 37.55m at 1.8% TREO from 8.45m,**  
Incl. 15.50m at 2.7% TREO from 30.50m.

Furthermore, drillholes testing the northern margin of the deposit have yielded shallow mineralization higher than the resource average, warranting follow-up for testing for northern extension. These holes include:

- L23-665: 23.05m at 1.8% TREO from 7.20m;**
- L23-669: 85.40m at 1.6% TREO from 4.60m**  
Incl. 23.85m at 2.0% TREO from 9.15m.

Adding to the program, new data from drilling on the southern margin (L23-657) shows localized expansion potential of mafic altered syenite to south:

- L23-657: 79.70m at 1.5% TREO from 13.30m;**  
Incl. 9.00m at 2.2% TREO from 17.50m.

Summary Intersections from the 23 drill holes are listed in **Table 1**.

Hole ID		From (m)	To (m)	Length (m)	TREO %
L23-626		9.70	19.80	10.10	1.2
L23-626		37.85	49.20	11.35	1.4
L23-626		79.20	90.00	10.80	1.7
L23-627		14.39	55.00	40.61	1.0
L23-627	including	31.41	41.19	9.78	1.8
L23-627	and including	35.35	39.45	4.10	2.4
L23-627		74.98	83.00	8.02	1.0
L23-629		14.00	90.00	76.00	1.3
L23-629	including	60.80	81.20	20.40	1.9
L23-629	and including	69.15	81.20	12.05	2.3
L23-630		10.38	90.00	79.62	1.4
L23-630	including	44.00	77.33	33.33	1.8
L23-630	and	65.85	76.55	10.70	2.8
L23-630	and	<b>67.62</b>	<b>69.50</b>	<b>1.88</b>	<b>3.8</b>
L23-634		15.58	66.00	50.42	1.8
L23-634	including	<b>22.62</b>	<b>26.67</b>	<b>4.05</b>	<b>3.2</b>
L23-634	and	34.24	66.00	31.76	2.1
L23-634	including	75.30	88.76	13.46	2.4
L23-634	and	<b>86.84</b>	<b>88.76</b>	<b>1.92</b>	<b>4.0</b>
L23-636		8.15	90.00	81.85	1.6
L23-636	including	26.00	36.45	10.45	2.3
L23-636	and including	32.00	36.45	4.45	2.9
L23-636	including	41.80	50.00	8.20	2.3
L23-636	including	61.00	71.60	10.60	1.7
L23-636	including	80.95	89.30	8.35	2.0
L23-646		8.45	46.00	37.55	1.8
L23-646	including	<b>17.15</b>	<b>19.00</b>	<b>1.85</b>	<b>4.1</b>
L23-646	including	30.50	46.00	15.50	2.7
L23-646		79.85	90.00	10.15	1.7
L23-646	including	88.60	90.00	1.40	2.9
L23-648		53.00	90.00	37.00	1.3
L23-648	including	64.50	80.00	15.50	2.2
L23-648	and including	72.00	77.90	5.90	2.6
L23-650		52.00	90.00	38.00	1.4
L23-650	including	77.55	86.45	8.90	2.3
L23-650	and including	82.10	83.50	1.40	3.5
L23-653		4.05	37.50	33.45	1.4
L23-653	including	7.50	10.25	2.75	2.2
L23-655		3.40	60.00	56.60	1.3

L23-655	including	13.20	25.75	12.55	1.8
L23-655	including	32.60	34.20	1.60	2.3
L23-657		13.30	93.00	79.70	1.5
L23-657	including	17.50	26.50	9.00	2.2
L23-657	<b>and including</b>	<b>23.50</b>	<b>26.50</b>	<b>3.00</b>	<b>3.3</b>
L23-657	<b>and</b>	<b>25.00</b>	<b>26.50</b>	<b>1.50</b>	<b>4.3</b>
L23-657	<b>and</b>	<b>49.85</b>	<b>54.00</b>	<b>4.15</b>	<b>3.0</b>
L23-662		8.40	32.00	23.60	1.7
L23-662	including	16.00	27.30	11.30	2.3
L23-662		78.70	88.80	10.10	1.1
L23-665		7.20	30.25	23.05	1.8
L23-665	including	21.00	29.00	8.00	2.4
L23-665		84.00	90.00	6.00	1.3
L23-669		4.60	90.00	85.40	1.6
L23-669	including	9.15	33.00	23.85	2.0
L23-669	including	47.00	80.45	33.45	2.2
L23-669	and including	62.00	70.95	8.95	2.8
L23-669	and including	67.10	70.95	3.85	3.3
L23-670		44.95	60.00	15.05	1.8
L23-670		53.70	58.40	4.70	2.5
L23-670		78.20	84.00	5.80	1.3
L23-671		10.20	29.00	18.80	1.1
L23-671	including	10.20	16.25	6.05	1.6
L23-671		66.00	90.00	24.00	1.6
L23-671	including	68.00	72.00	4.00	2.6
L23-672		6.35	24.75	18.40	1.4
L23-672	including	6.35	9.50	3.15	2.0
L23-672		80.00	90.00	10.00	1.2
L23-673		16.95	85.15	68.20	1.3
L23-673	including	30.60	44.70	14.10	1.8
L23-673	including	59.15	63.80	4.65	2.5
L23-675	<i>No significant results</i>				
L23-678		20.00	90.00	70.00	1.1
L23-678	including	55.00	71.00	16.00	1.7
L23-678	<i>and including</i>	62.00	64.00	2.00	2.3
L23-685		34.00	90.00	56.00	1.2
L23-685	including	49.84	81.00	31.16	1.6
L23-685	<b>including</b>	<b>71.51</b>	<b>73.67</b>	<b>2.16</b>	<b>4.8</b>
L23-685	<b>including</b>	<b>72.62</b>	<b>73.67</b>	<b>1.05</b>	<b>5.4</b>
L23-686	<i>No significant results</i>				

**Table 1:** Summary intersections for the latest parcel of 23 drill-holes of the 2023 resource definition drilling.



Assay results for the remaining 34 drillholes in Vital's 2023 resource definition drilling are expected in the next 3 to 4 months.

**ENDS**

**Contact**

Mr Richard Crookes  
Chairman  
Vital Metals Limited  
Phone: +61 2 8823 3100  
Email: vital@vitalmetals.com

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

**About Vital Metals**

Vital Metals Limited (ASX: VML) is developing the large Nechalacho Rare Earth Project in Canada's Northwest Territories. Nechalacho has the potential to underpin a significant rare earths supply chain for North America and Europe with responsibly sourced critical minerals for the green economy transformation.

**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 Dr. Natalie Pietrzak-Renaud. Dr. Pietrzak-Renaud is a Competent Person and a member of the Association of Professional Geoscientists of Ontario, Canada and a contract consultant for the Company. Dr. Pietrzak-Renaud 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'. Dr. Natalie Pietrzak-Renaud 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 14 February 2023. 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. The Mineral Resource estimate of 119.0Mt @ 1.4% TREO comprises 108.1Mt @ 1.39% TREO Inferred, 6.3Mt @ 1.45% TREO Indicated and 4.6Mt @ 1.59% TREO Measured.

## 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
<p><i>Sampling techniques</i></p> <ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sampling of 2023 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 0.35 to 2.45 metres. The typical sample length was 1.0 to 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>
<p><i>Drilling techniques</i></p> <ul style="list-style-type: none"> <li>• <i>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).</i></li> </ul>	<ul style="list-style-type: none"> <li>• HQ diameter core using standard tube was used for the 2023 drill program. As the holes were short and vertical no orientation was carried out on the core.</li> </ul>
<p><i>Drill sample recovery</i></p> <ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Good core recovery was observed for the 2023 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>
<p><i>Logging</i></p> <ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource</i></li> </ul>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li><i>estimation, mining studies and metallurgical studies.</i></li> <li><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li><i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>For the 2023 drill program, core photographs are available.</li> <li>All the half splits from the 2021 and 2022 drilling programs were retained with the drill core stored on site, as half core, and can be viewed.</li> <li>Total length of the core for the first 17 holes of the 2023 program is 1431.4 m and the core was 100% logged.</li> </ul>
<p><i>Sub-sampling techniques and sample preparation</i></p> <ul style="list-style-type: none"> <li><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li><i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>Half core splits were sampled for the 2023 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>
<p><i>Quality of assay data and laboratory tests</i></p> <ul style="list-style-type: none"> <li><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <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>
<p><i>Verification of sampling and assaying</i></p> <ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>The assay data was collated by Mercedes Rich 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
<p><i>Location of data points</i></p> <ul style="list-style-type: none"> <li>• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• The 23 drill holes samples have been received for have been surveyed using a handheld GPS by the supervising geologist. It is expected all the 2023 drill holes will by professional surveyor using more accurate surveying methods before any resource modelling is carried out.</li> <li>• The grid system used is UTM NAD83 Zone 12 N, currently the standard system used in the area.</li> </ul>
<p><i>Data spacing and distribution</i></p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• The drill hole spacing is approximately 50 by 50 m.</li> <li>• The drill hole spacing is considered to be adequate for the indicated resource confidence category.</li> <li>• Sample compositing will be applied when using the data for resource estimation.</li> </ul>
<p><i>Orientation of data in relation to geological structure</i></p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• All 2023 drill-holes were drilled at -90 to intersect the horizontally layered REO mineralisation at 90 degrees to achieve unbiased sampling.</li> </ul>
<p><i>Sample security</i></p> <ul style="list-style-type: none"> <li>• The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <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>
<p><i>Audits or reviews</i></p> <ul style="list-style-type: none"> <li>• The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>• As the drilling is only recent no audits have been carried out on the sampling techniques and data.</li> </ul>

## Section 2 Reporting of Exploration Results

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

JORC Code explanation		Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li>• <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <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>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <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 and some of the 2023 drilling program.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <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
<p><i>Drill hole Information</i></p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <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>	<p>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).</p> <ul style="list-style-type: none"> <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 Appendix 2 and Table 1 for the details of each of the holes and the assay intervals in the 2023 drilling program.</li> </ul>
<p><i>Data aggregation methods</i></p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <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>
<p><i>Relationship between mineralisation widths and intercept lengths</i></p> <ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>• For the 2023 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>
<p><i>Diagrams</i></p> <ul style="list-style-type: none"> <li>• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should</li> </ul>	<ul style="list-style-type: none"> <li>• See figures in this ASX release for map of collars and a 3D sectional view.</li> </ul>

JORC Code explanation		Commentary
	<i>include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i>	
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All intervals greater than and equal to 4 metres in length and 1% TREO are reported in Table 1.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <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>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The 2023 drilling program should outline enough resources in the Measured and Indicated categories to allow mining and processing studies to be carried for a pre-feasibility study. If the mining and processing studies successfully show that mining is economically viable then further close space drilling will be carried out to further expand the Measured and Indicated resources in the Tardiff Zone where there are currently Inferred mineral resources and indicated mineral resources.</li> </ul>



**Appendix 2: List of the latest parcel of drill-holes for the 2023 resource definition drilling.  
Note all holes were drilled vertically.**

Hole	Northing	Easting	Elevation (m)	Length (m)
L23-626	6886460	417060	243	90
L23-627	6886410	417060	242	90
L23-629	6886410	417010	242	90
L23-630	6886260	417210	241	90
L23-634	6886360	416960	242	90
L23-636	6886310	416960	242	90
L23-646	6886310	417010	242	90
L23-648	6886110	417260	241	90
L23-650	6886260	417510	243	90
L23-653	6886210	416960	244	90
L23-655	6886160	416960	244	90
L23-657	6886260	417360	241	93
L23-662	6886560	417060	244	90
L23-665	6886585	417060	243	90
L23-669	6886585	417160	242	90
L23-670	6886310	417410	242	90
L23-671	6886585	417210	242	90
L23-672	6886585	417260	242	90
L23-673	6886360	417410	242	90
L23-675	6886585	417310	242	90
L23-678	6886310	417510	243	90
L23-685	6886360	417460	241	90
L23-686	6886510	417510	245	90