ASX / Media Announcement
4 April 2024

Vital increases Tardiff Mineral Resource Estimate tonnage by 79% and contained NdPr by 49%

Highlights

- **Updated Mineral Resource Estimate ("MRE") for the Tardiff Upper Zone ("Tardiff") at Nechalacho yields:**
  - **79% increase in Mineral Resource tonnes to 213 Mt at 1.17% TREO; and**
  - **49% increase in total contained rare earth oxides ("TREO") tonnage to 2.48 Mt over the 14 February 2023 MRE.**
- **Tardiff is estimated to include more than 623,000 tonnes of neodymium oxide + praseodymium oxide (NdPr), a ~49% increase on the previous MRE.**
- **High-grade mineralization at Tardiff remains open in multiple directions for future testing and potential resource growth.**
- **Vital expects to deliver more 2023 drill results from Tardiff in the June quarter.**
- **Vital plans an additional MRE update later in 2024, which will include post-2022 drill results.**
- **Tardiff scoping study on track for late 2024, which aims to examine the size and scalability of future production scenarios.**

Vital Metals' Managing Director and CEO Geordie Mark said: *"Deposit size and grade matters and Nechalacho's world-class character is reinforced with our latest MRE for the Tardiff Deposit, which shows its sector impact potential, particularly within a North American perspective, and is highlighted by the substantial increase in contained neodymium-praseodymium oxide, or NdPr, to more than 623,000 tonnes.*

We believe that Tardiff is an outstanding asset, given that it represents a shallow deposit hosted within a single pit-constrained resource with a high NdPr:TREO ratio (~25%), and a size that affords potential for project size and scalability of production over a protracted period.

We will continue to deliver a range of catalysts over the course of the year, with more Tardiff drill results expected over the next few months, where high-grade mineralization remains open in several directions out from the 2023 drill grid perimeter. These data and updated geological interpretations will form the basis of targeted metallurgical work to inform a Scoping Study to be completed in late 2024."

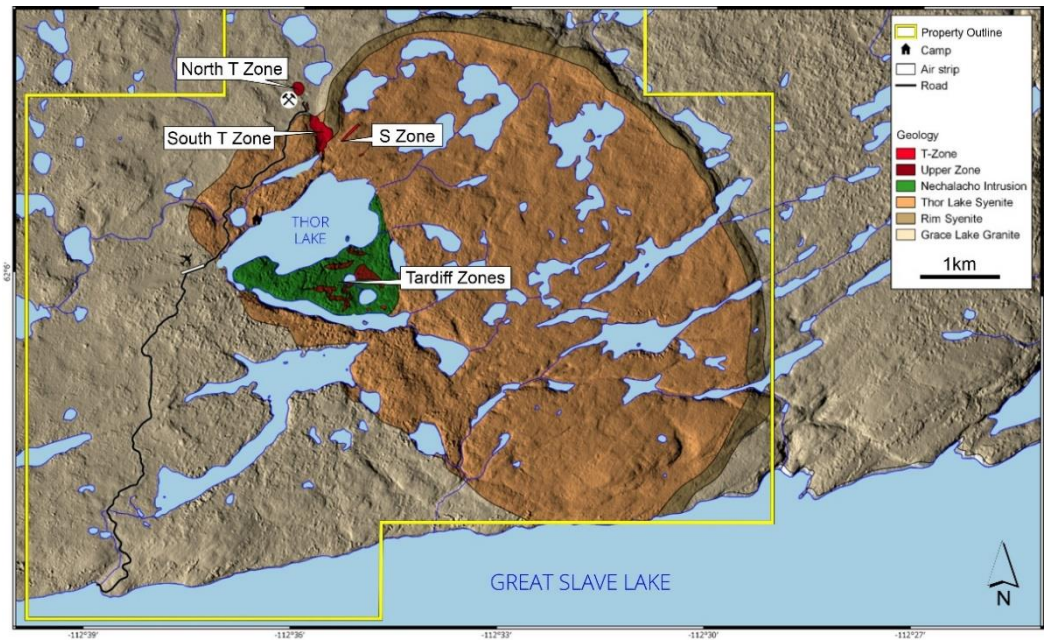

Figure 1: Location of the Tardiff deposit at Vital's Nechalacho Rare Earths Project, Canada

Vital Metals Ltd (ASX: **VML**) ("**Vital**", "**Vital Metals**" or "the **Company**"), an advanced exploration/development stage rare earths company, is pleased to announce an updated Mineral Resource Estimate for its Tardiff Upper Zone Deposit ("**Tardiff**"), which forms part of the Nechalacho Rare Earths Project ("**Nechalacho**" or the "**Project**"), 100km south-east of Yellowknife in Canada's Northwest Territories.

Tardiff's updated estimate was prepared by SLR Consulting (Canada) Ltd. and shows a significant lift in the contained NdPr in the total resource in comparison to the earlier published resource estimate in February 2023[1] (see Table 3). This new resource estimate is informed by an integrated cost and recovery approach which employs a net metal revenue (NMR) cut-off based on projected cost and recovery factors (see Table 2). In comparison, the former estimate employed more simplified TREO cut-off criteria. The new base resource estimate was constructed using first principles cost and metal recovery factors, and payability assumptions utilizing peer and operational data to generate an NMR of C$115 per tonne and is reported within an optimized pit shell. The estimate features a total resource tonnage (across all categories) of 212.7 Mt grading 1.17% TREO containing 2.48 Mt TREO including more than 623,000 tonnes of NdPr. This new method in resource estimation approach aligns more closely with potential project costs, cost structures, and recovery factors to be considered within the auspices of the ongoing scoping study to be carried out within the same consulting group with protracted experience in rare earth systems analysis.

This MRE update includes all drilling data to the end of the 2022 drilling season. Vital expects to announce a further MRE update later in 2024 that will incorporate all drilling data completed post 2022.

[1] See VML ASX Announcement dated 14 February 2023

The Company holds a 100% interest in the Nechalacho project, covering more than 5000 hectares, and extending to a depth down to 150 metres above sea level.

Table 1: Summary of the Mineral Resource Estimate for the Tardiff Upper Zone – Effective January 30, 2024

Classification	Tonnage	NMR	Average grade			Contained oxide	
			TREO	Nd_2O_3	Pr_6O_{11}	TREO	NdPr
	(Mt)	($/t)	(%)	(%)	(%)	Kt	Kt
Measured	7.0	457	1.392	0.267	0.074	97.3	23.8
Indicated	24.1	362	1.082	0.213	0.057	260	65.0
Measured + Indicated	**31.1**	**383**	**1.152**	**0.225**	**0.061**	**358**	**88.8**
Inferred	181.6	395	1.170	0.232	0.062	2,125	534
Total	212.7	393	1.167	0.231	0.062	2,482	623

Notes:

1. JORC (2012) definitions were followed for Mineral Resources.
2. Open pit Mineral Resources are reported within an optimized pit shell above a net metal revenue (NMR) value of C$115/t.
3. Mineral Resources are estimated using average long term metal prices and metallurgical recoveries as outlined in Section 3 of JORC Table 1, a mining cost of C$4.50/t moved, a processing cost of C$92/t milled, G&A costs of C$15/t milled, and transportation costs of C$70/t concentrate moved and C$115/t final product TREO moved.
4. Revenue is attributable to Nd_2O_3 and Pr_6O_{11}. The NMR value for each block was calculated using the following NMR factors: C$133.92 per kg Nd_2O_3, and C$133.92 per kg Pr_6O_{11}.
5. Average bulk density is 2.80 t/m^3.
6. NdPr refers to the sum of neodymium and praseodymium oxide, $Nd_2O_3 + Pr_6O_{11}$.
7. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
8. Totals may not add or multiply accurately due to rounding.

Tardiff Mineral Resource Estimate

The Mineral Resource estimate for the Tardiff Upper Zone Deposit was created using drilling and assay results available as of 30 January 2024, unchanged from the previous MRE (31 December, 2022; Vital Metals, 2023a). Table 2 provides the full list of estimated rare earth elements. Five resource domain wireframes were modelled representing sub-horizonal layers and bounded considering geology and a nominal cut-off value of 0.7% TREO in Leapfrog Geo software (see Figure 2).

Table 2: Mineral Resources at the Tardiff Upper Zone – Effective Date January 30, 2024

Variable	Unit	Classification				
		Measured	Indicated	Measured + Indicated	Inferred	Total
Tonnage	Mt	7.0	24.1	31.0	181.6	212.7
Oxide						
TREO	%	1.392	1.082	1.152	1.170	1.167
La_2O_3	%	0.277	0.199	0.216	0.214	0.215
CeO_2	%	0.632	0.468	0.505	0.512	0.511
Pr_6O_{11}	%	0.074	0.057	0.061	0.062	0.062
Nd_2O_3	%	0.267	0.213	0.225	0.232	0.231
Sm_2O_3	%	0.045	0.041	0.042	0.041	0.041
Eu_2O_3	%	0.005	0.004	0.004	0.004	0.004
Gd_2O_3	%	0.029	0.029	0.029	0.029	0.029
Tb_4O_7	%	0.003	0.003	0.003	0.003	0.003
Dy_2O_3	%	0.010	0.012	0.011	0.012	0.012
Ho_2O_3	%	0.001	0.002	0.002	0.002	0.002
Er_2O_3	%	0.003	0.004	0.004	0.004	0.004
Tm_2O_3	%	0.000	0.000	0.000	0.001	0.000
Yb_2O_3	%	0.002	0.003	0.003	0.003	0.003
Lu_2O_3	%	0.000	0.000	0.000	0.000	0.000
Y_2O_3	%	0.043	0.048	0.047	0.049	0.049

Notes:

1. JORC (2012) definitions were followed for Mineral Resources.
2. Open pit Mineral Resources are reported within an optimized pit shell above a net metal revenue (NMR) value of C$115/t.
3. Mineral Resources are estimated using average long term metal prices and metallurgical recoveries as outlined in Section 3 of JORC Table 1, a mining cost of C$4.50/t moved, a processing cost of C$92/t milled, G&A costs of C$15/t milled, and transportation costs of C$70/t concentrate moved and C$115/t final product TREO moved.
4. Average bulk density is 2.80 t/m^3.
5. Revenue is attributable to Nd_2O_3 and Pr_6O_{11}.
6. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
7. Totals may not add or multiply accurately due to rounding.

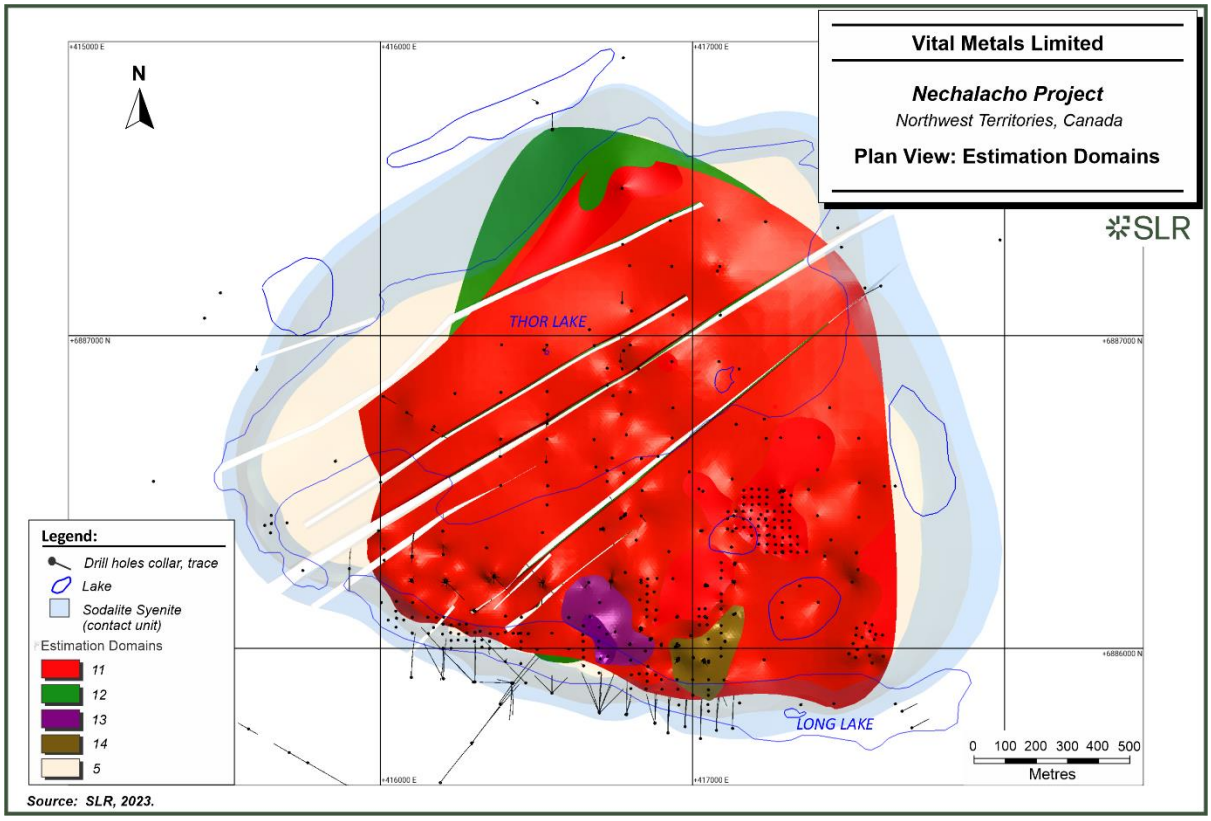

Figure 2: Plan view showing the estimation domains

Analytical results for the 2023 infill drilling program at the Tardiff Upper Zone (Vital Metals, 2023b, 2023c, 2024) have been received; however, collar surveys remain outstanding and, as such, these holes have not been incorporated into this update. These results will be included in a future MRE to be performed upon completion of the assaying and receipt of all outstanding collar location surveys. The Competent Persons (CPs) have reviewed available analytical and geological results and confirm that, while local variations do occur, the global grade and tonnage estimates are unlikely to be materially affected by these results, and that they are, in general, confirmatory of the geology and mineralization.

The MRE has been classified in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). The Tardiff Mineral Resource was classified as Measured, Indicated, and Inferred based on drill hole spacing, the reliability of data, geological confidence, and with consideration to the continuity of grade (Figure 3). Measured Mineral Resources were guided by a nominal drill hole spacing of approximately 25 m, Indicated Mineral Resource by a nominal drill hole spacing of approximately 50 m, and Inferred Mineral Resources by a nominal drill hole spacing of less than approximately 200 m. Small volumes with locally wider drill hole spacing were included in the Measured and Indicated volumes to maintain continuity of classification shapes.

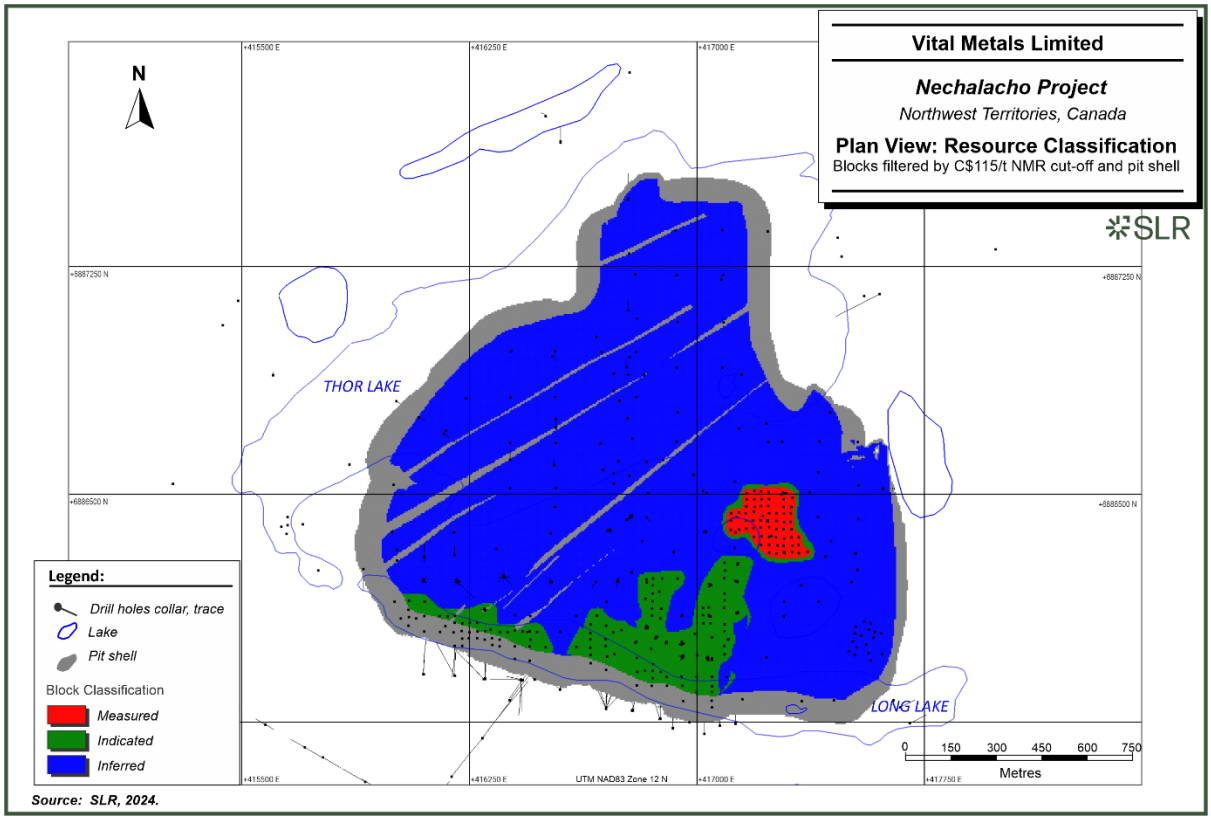

Figure 3: Plan view showing the resource blocks at a C$115/t NMR cut-off within the pit shell, colour-coded by resource classification

Open Pit Mineral Resources have been reported from a block model re-blocked to parent blocks with 5 m x 5 m x 3 m in the X, Y, and Z dimensions within an optimized pit shell generated using Whittle software and a slope angle of 45°and a pit discard Net Value cut-off of C$115/t (see Figures 3 - 6). Net Value factors were developed for the purposes of resource reporting and key assumptions behind these factors are presented in Table 2.

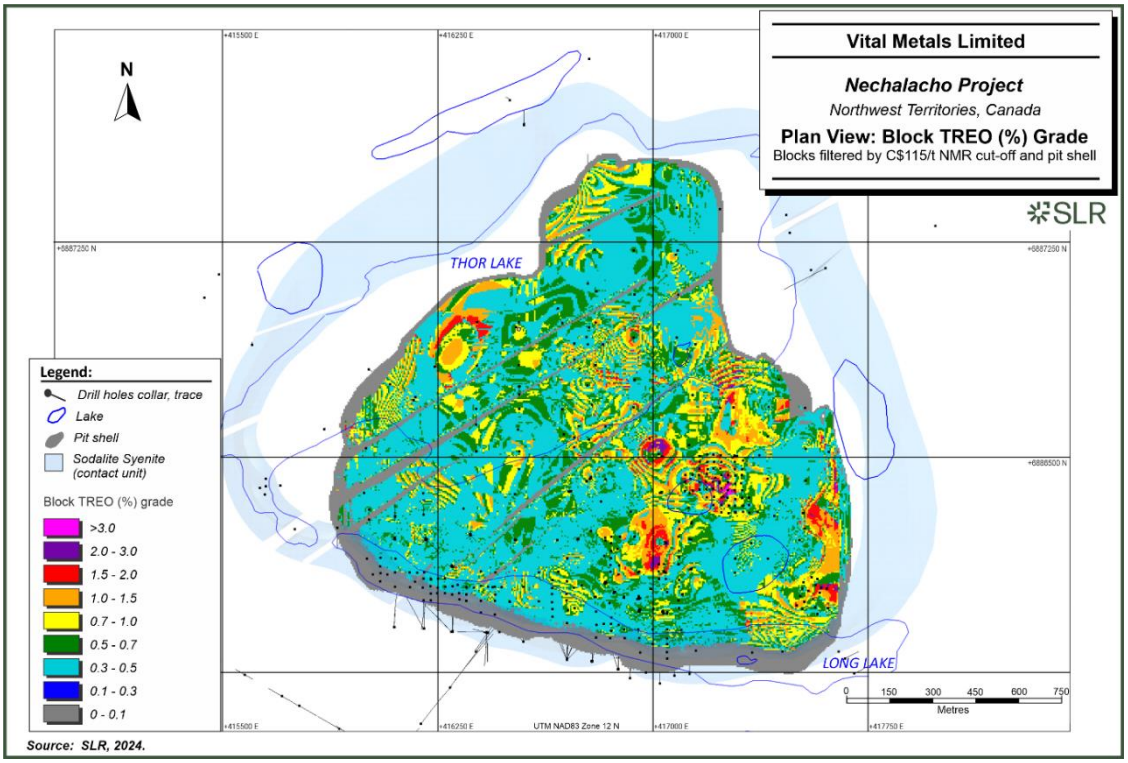

Figure 4: Plan view showing the resource blocks at a C$115/t NMR cut-off within the pit shell, colour-coded by TREO grade

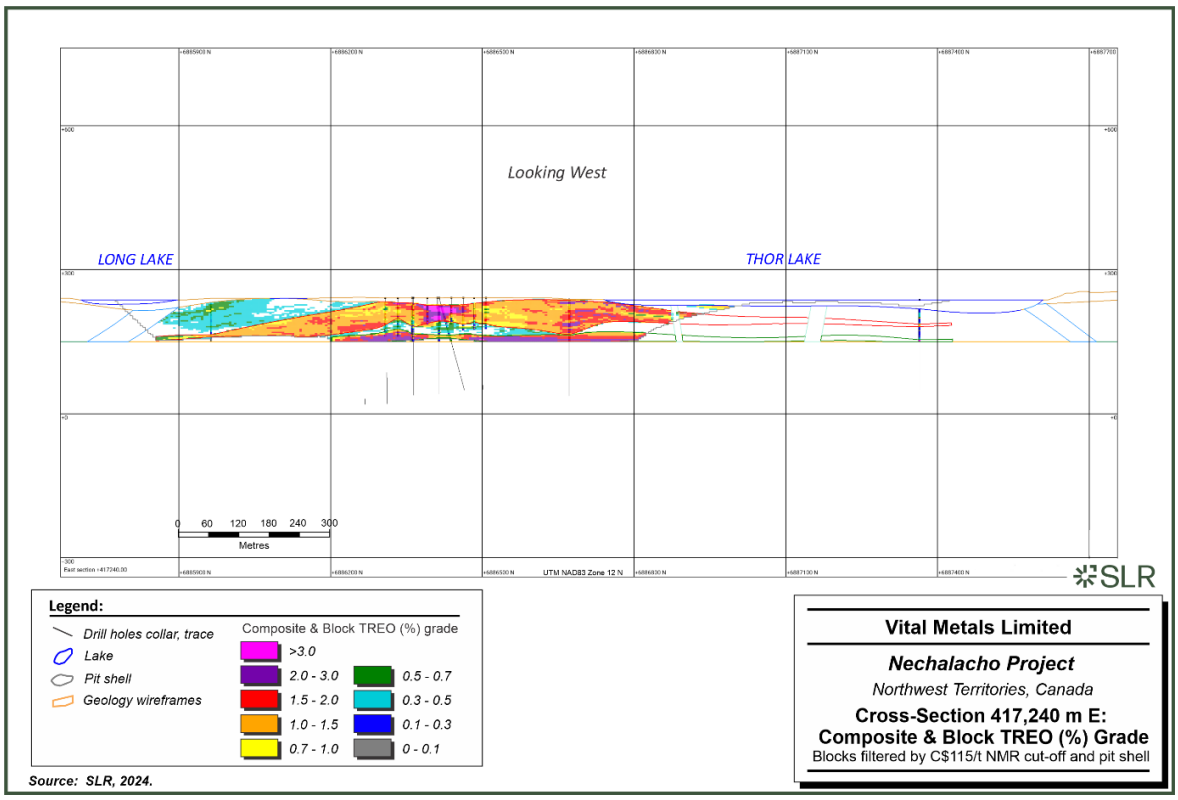

Figure 5: North-South cross-section (20 m thick) showing the resource blocks at a C$115/t NMR cut-off within the pit shell and the drill hole composites, colour-coded by TREO grade

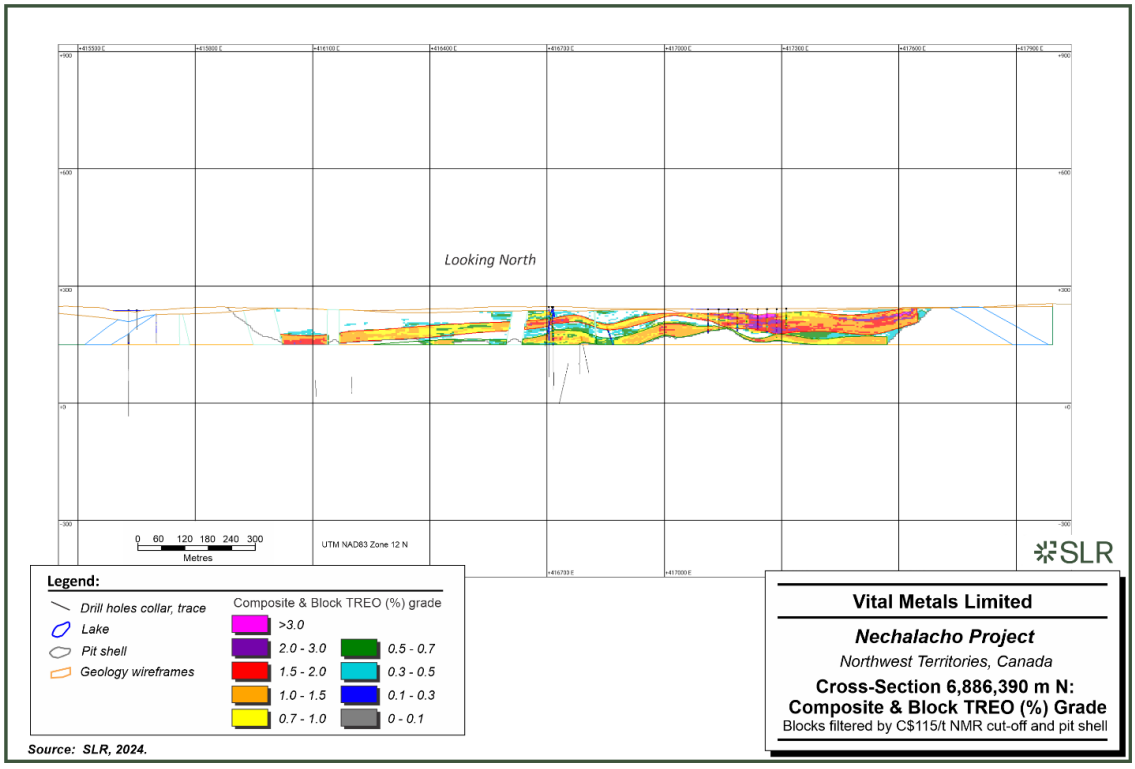

Figure 6: East-West cross-section (20m thick) showing the resource blocks at C$115/t NMR cut-off within the pit shell and the drill hole composites, colour-coded by TREO grade

Table 2: Operating Cost Assumptions for Tardiff Upper Zone

Parameter	Unit	Measure
Mining	C$/tonne	4.5
Processing	C$/tonne	92
G&A	C$/tonne	15
Transport to Hydrometallurgical Processing Plant	C$/tonne	70
Transport of Final Product	C$/tonne	115

Notes:

1. Open pit mining is reported at pit discard cut-off, which excludes mining costs of C$4.50/t.

Comparison of Mineral Resource Estimate with Previous Estimate

Although no additional drilling has been included in the resource database since the previous (December 31, 2022; published February 14, 2023) Mineral Resource estimate, the current Mineral Resource estimates 20.1 Mt more combined Measured and Indicated tonnes, and 73.5 Mt more Inferred tonnes, for an overall increase in estimated tonnage of 93.7 Mt (Table 3).

The difference reflects changes in both the domaining and interpolation approach, as well as the application of technical and economic factors for the purposes of demonstrating Reasonable Prospects for Eventual Economic Extraction (RPEEE). In order of significance, the changes in the Mineral Resource estimate are attributed to:

An economic cut-off was calculated using an NMR value that considers commodity prices, metallurgical recoveries, and payable functions for the two metals considered for extraction. The Net Value cut-off applied to the 2024 estimate is a lower effective cut-off value when compared to the 1.0% TREO cut-off grade applied to the 2022 estimate, resulting in a significant increase in tonnage above cut-off and a decrease in the average resource grade.

The new approach improved the local grade representation of the estimate by defining wireframes for the sub-horizontal layers, modelled using a guiding threshold of 0.7% TREO and lithological logging information within a low-grade envelope in comparison to the previous estimate that used only a broad envelope.

To ensure blocks classified as Measured and Indicated were continuous and cohesive in shape class-defining polygons were constructed, which ultimately led to an increase in Measured and Indicated tonnes.

Mineral Resources were constrained within an optimized pit shell; however, the effect of applying the pit shell is small.

Table 3: Comparison of the current with the Previous Mineral Resource Estimate (dated December 31, 2022, published 14 February 2023) for the Tardiff Deposit

Effective Date	December 31, 2022			January 30, 2024			Change		
Class	Tonnage (Mt)	Nd_2O_3 (%)	Pr_6O_{11} (%)	Tonnage (Mt)	Nd_2O_3 (%)	Pr_6O_{11} (%)	Tonnage (Mt)	Nd_2O_3 (%)	Pr_6O_{11} (%)
Measured	4.6	0.307	0.083	7.0	0.267	0.074	+2.4	-0.040	-0.009
Indicated	6.3	0.283	0.076	24.1	0.213	0.057	+17.7	-0.070	-0.019
Measured + Indicated	**10.9**	**0.293**	**0.079**	**31.1**	**0.225**	**0.061**	**+20.1**	**-0.068**	**-0.018**
Inferred	108.1	0.275	0.073	181.6	0.232	0.062	+73.5	-0.043	-0.011
Total	**119.0**	**0.277**	**0.074**	**212.7**	**0.231**	**0.062**	**+93.7**	**-0.046**	**-0.012**

Notes:

1. Totals may not add or multiply accurately due to rounding.

Mineral Resource Sensitivity

Mineral Resource Net Value sensitivity is presented in Table 4 and illustrates that the estimate is relatively insensitive to cut-off value.

Table 4: Mineral Resource Sensitivity to Cut-off Value[1]

Revenue Factor	NMR Cut-off Value ($/t)	NdPr cutoff (%)	Tonnage (Mt)	NMR ($/t)	TREO (%)	NdPr (%)
0.5	230	0.172	177.3	435	1.292	0.325
0.6	192	0.143	189.6	422	1.251	0.315
0.7	164	0.122	198.0	412	1.222	0.307
0.8	144	0.108	204.2	404	1.199	0.302
0.9	125	0.093	209.6	397	1.179	0.296
1.0	115	0.086	212.7	393	1.167	0.294
1.1	105	0.078	215.5	389	1.157	0.291
1.2	96	0.072	218.1	386	1.147	0.288
1.3	88	0.066	220.1	383	1.139	0.286
1.4	82	0.061	221.5	381	1.133	0.285
1.5	77	0.057	222.8	380	1.128	0.284

1. Tonnes and grades are expressed within a series of nested pit shells generated at a range of revenue factors (RF). RF = 1.0 is the base case Mineral Resource using an NMR value of C$115 per tonne.
2. NdPr refers to the sum of neodymium and praseodymium oxide, $Nd_2O_3 + Pr_6O_{11}$

- ENDS -

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This announcement has been authorized for release by the Board of Vital Metals.

ABOUT VITAL METALS

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 significant rare earths supply chain for North America and Europe with responsibly sourced critical minerals for the green economy transformation.

Qualified/Competent Persons Statement

The Tardiff Upper Zone Mineral Resource estimate has been updated effective January 30, 2024. The CPs confirm that they are not aware of any other information or data that materially affects the information included in this memorandum.

The information contained in this announcement relates to a Mineral Resource estimate report for the Tardiff Upper Zone Deposit prepared by Ms. Katharine Masun, MSc, MSA, P.Geo., Principal Resource Geologist at SLR, and Dr. Volker Moeller, PhD, P.Geo., Senior Resource Geologist at SLR. Ms. Masun is registered as a Professional Geologist in the Northwest Territories and Nunavut, the provinces of Ontario, Newfoundland and Labrador, and Saskatchewan, Canada and is a member of the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists. Dr. Moeller is registered as a Professional Geologist in the province of Ontario and a member of the Association of Professional Geoscientists Ontario. Ms. Masun and Dr. Moeller have sufficient experience relevant to the style of mineralization and type of deposit under consideration, and to the activity being undertaken, to qualify as Competent Persons as defined in the December 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Ms. Masun and Dr. Moeller have reviewed and approved the information in this announcement. Although a site visit by the CPs has not been undertaken due the current inoperative state of the exploration camp, a site visit will be performed as soon as the conditions allow. Ms. Masun and Dr. Moeller confirm that the information in this announcement that relates to Mineral Resources is based on and fairly and accurately reflects in the form and context in which it appears, the information and supporting documentation prepared by them.

Compliance Statements

This announcement contains information relating to exploration results in respect of the Nechalacho Project extracted from ASX market announcements dated 26 May 2021 "Vital Intersects Broad High Grade REO at Tardiff Zone ", 3 August 2021 "Vital Intersects High-Grade REO in Tardiff Zones 2 & 3", 22 July 2022 "Vital Intersects Further Broad Zones of REO at Tardiff ", 14 February 2023 "Vital Achieves 26% Increase in Tardiff Mineral Resource" and 21 November 2023 "Vital Drilling at Tardiff returns up to 5.4% TREO" reported in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" ("2012 JORC Code"). VML confirms that it is not aware of any new information or data that materially affects the information included in the abovementioned ASX market announcements.

Information provided pursuant to ASX Listing Rule 5.8.1

Definitions

TREO includes the rare earth element oxides, La_2O_3, CeO_2, Nd_2O_3, Pr_6O_{11}, 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 and Y_2O_3.

NdPr includes the sum of Nd_2O_3 and Pr_6O_{11}.

LREO includes the light rare earth element oxides, La_2O_3, CeO_2, Nd_2O_3 and Pr_6O_{11}.

HREO includes the heavy rare earth element oxides, Sm2O3, 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 and Y_2O_3.

Kt and Mt means thousands and millions of metric tonnes, respectively.

REO means rare earth oxides

Geology and Geological Interpretation

The Tardiff deposit is hosted near the top of a layered nepheline syenite intrusion, the Nechalacho Layered Suite, which is the final phase of an anorogenic alkaline intrusive complex, the Paleoproterozoic Blatchford Lake Igneous Complex. The REE mineralization is hosted in hydrothermally altered eudialyte syenite collectively referred to as the Upper and Basal Zones of the Nechalacho Deposit and the REE are mainly contained in the minerals bastnäsite-(Ce), synchysite-(Ce), parasite-(Ce), fergusonite-(Y), samarskite-(Y), allanite-(Ce), and monazite-(Ce). The term 'Tardiff deposit' refers to the Upper Zone of the Nechalacho Deposit, which outcrops in the area of the North and South Tardiff Lakes.

The Nechalacho Layered Suite consists of a layered nepheline syenite series. It is virtually undeformed, and the rock units and mineralization are generally sub-horizontal and can be traced for hundreds of metres. The rare earth mineralization is hosted in mafic, hydrothermally altered eudialyte-aegirine-nepheline syenite. The Nechalacho deposit alteration overprint (biotite-magnetite-chlorite-quartz-zircon) varies between 80 m (L08-65) and 190 m (L08-127) in vertical thickness, with the alteration typically starting at the surface. The alteration zone coincides with REE, Zr, Nb, and Ta mineralization, with average values over the whole mineralized package of approximately 0.75% to 1.0% TREO. There are some trends in chemical and mineralogical characteristics in the Nechalacho deposit that have both geological and metallurgical significance. These trends are most apparent in vertical zoning of the deposit with respect to the proportion of heavy rare earth elements (HREE) and light rare earth elements (LREE). In general, the HREE relative to the LREE show a distinct vertical zonation with increasing HREE to depth. This is not always consistent in individual drill holes.

Geological and mineralization continuity are supported by close-spaced drilling and variography. The layered mineralization is reasonably predictable and observable in the drill holes. The nepheline syenite intrusion contacts are sharp and provide an outer limit to the mineralization. The continuity of the mineralization is largely controlled by the deposition of eudialyte crystals in magmatic cumulate layers and by the interstitial crystallization of eudialyte in distinct horizons. The mineralized magmatic layers typically display sharp lower undulating boundaries and more gradual upper boundaries. Localized hydrothermal REE-mobilization and redeposition in small, locally semi-massive bastnäsite

veins and pervasive disseminated zones is less predictable. Constraining the latter zones within wireframes is not possible at the current drill spacing.

Sampling and sub-sampling techniques

The geological database used for the Lake Zone Resource estimate includes a total of 7,498 samples over a combined length of 14,290.75 metres from 415 diamond drill holes, with 2 metres as the most common sample length. Owing to the large spatial extent of the Tardiff deposit, the drill hole spacing is highly variable, with the closest drill spacing at approximately 25 metres. The diamond drill core was sawn or split mechanically. Samples from Tardiff were riffle split following crushing, before being pulverized.

Drilling Techniques

Drilling was diamond core drilling, mainly with NQ (4.76 cm), HQ (6.35 cm) or PQ (8.50 cm) drilling with the majority of the holes being HQ diameter for Tardiff.

Classification Criteria

The Mineral Resource estimate has been classified in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).

The Tardiff resource is classified as Measured, Indicated, and Inferred based on drill hole spacing, the reliability of data (including the availability of full set of assay data), and geological confidence in the continuity of grade. Variography was used to assist drill hole spacing guidelines for classification.

The following nominal drill hole spacing guidelines were used for classification: Measured: approximately 25 m spacing; Indicated: approximately 50 m spacing; and, Inferred: approximately 200 m spacing.

Outlines of drill hole spacing classification bins were digitized and a three-metre buffer into unclassified blocks was added to facilitate correct classification during re-blocking for pit optimization.

Block model validation indicates that the final block estimate is a reasonable representation of the input drill hole data and the geological features at the Project.

Sample Analysis Method

For the Upper Zone, routine assaying of 14 lanthanides as well as Y, Th, U, Al, Si, P, Mg, Fe, Ca, Ga, Hf, Nb, S, Sc, Ta, Ti and Zr have been performed usually by ALS Global Laboratories in North Vancouver, BC using ICP-MS techniques. Other independent laboratories including Acme, Actlabs and SGS were used for check analyses of one in 10 to 25 of drill core samples at particular periods. For the drill program of 2007 all core samples were analysed in two independent laboratories. Custom certified standards were prepared from typical project mineralization with similar overall chemistry and utilized in all analyses post 2007. Details of QAQC procedures are publicly available in Canadian NI 43-101 reports.

Estimation Methodology

A nominal 0.7% TREO value combined with lithological logging information was used for developing wireframes in Leapfrog Geo software (wireframes 1, 2, 3, 4). The mineralized domains (or resource domains) were modelled as sub-horizontal magmatic layers, and the footwall surface of the

mineralized domains is controlled by collapsed fragments of the contact unit in several locations. Five mineralized domains were modelled for the deposit: The Nechalacho Layered Suite, undifferentiated and exclusive of the Roof Sodalite Syenite, as a low-grade volume surrounding the mineralized domains, and four separate mineralized domains within the Nechalacho Layered Suite (Upper Zone 1, 2, 3, and 4). Unmineralized country rock lithology, as well as overburden, diabase, and unmineralized syenite were constrained by wireframes. The block model was constructed in Micromine Origin software as a sub blocked model without rotation. All steps for populating the block model attributes were recorded as Script files and/or form sets. The block model uses a block size of 5 m x 5 m x 3 m with a minimum sub-block size of 1 m x 1 m x 1 m in the X, Y, and Z directions. The block model contained various types of information including: Mineralized domain identifier; Lithology; Estimated grades of REOs; Calculated TREO grade; Calculated Net Metal Revenue (NMR) values; Bulk density; Resource classification; and, Lithology and resource domain identifiers were coded to the block model and used as a sub-block trigger.

Bulk density was interpolated into blocks for each resource domain by inverse distance weighting (IDW) using the same search criteria as grade estimation. For unmineralized country rock domains, bulk density was interpolated into blocks using IDW^2, and where data was insufficient, the mean density was assigned to remaining blocks within the domain. No density samples were taken within the overburden and a default value was assigned. REO assays in each resource domain were investigated for outlier grade values. Extreme values were capped prior to compositing to limit their influence. The assays were composited into two metre intervals for the resource estimation. All drill holes were fully sampled over the mineralized interval, except for some historic drill holes that were mainly assayed for Nb and Ta. Missing assay values were ignored since historic drill holes were not consistently sampled or do not have complete suite of analytical results. Variograms were generated for each interpolated oxide using the composites for the largest resource domain (Upper Zone 1) in the horizontal plane and in the vertical direction. The ranges from the down hole variogram were used when the vertical direction did not yield a meaningful analysis. Ordinary kriging (OK) was used to interpolate grades using four passes and variable orientation (VO) based on hangingwall, footwall, and centre surfaces for each resource domain. Similar interpolation parameters and search neighbours were used for all REOs. Search ellipse dimensions were as follows: Pass 1: 30 m x 30 m x 5 m in the x, y, and z directions; Pass 2: 60 m x 60 m x 10 m in the x, y, and z directions; Pass 3: 150 m x 150 m x 25 m in the x, y, and z directions; and, Pass 4: 200 m x 200 m x 30 m in the x, y, and z directions.

The sample restrictions used for grade interpolation for each pass are as follows: Pass 1 and Pass 2: minimum 6 / max. 10; Pass 3: min. 4 / max. 12; Pass 4: min. 1 / max. 12; A maximum of two composites per drill hole was used to match the composite length (2.0 m), the block height (3.0 m), and the most common orientation of the drill holes (vertical); and, The interpolations were checked globally against the composites and nearest neighbour (NN) assignment by domain.

The mean values of the Nd2O3 and Pr6O11 grades interpolated using OK are within 3% of those of the composites and within 2% of those of the NN assignment for domains 1 and 2. The NN assignment was performed using three metre composites (corresponding to the block size). The interpolated grades were also checked in east-west and north-south oriented swath plots and good agreement was

found between the composites, NN assignment and the grades interpolated using OK, with moderate grade smearing observed in the Inferred category due to the wide search ellipse.

Cut off grades

The depth and geometry of the Tardiff deposit make it amenable to open pit methods. Net Value factors were developed by SLR for resource reporting. Net Value is the estimated value per tonne of mineralized material after allowance for metallurgical recovery and consideration of terms for separation and refining, including payability and charges. These assumptions are based on the current processing scenario and results from metallurgical test work.

Operating cost assumptions for Tardiff included: Mining: $4.50/tonne moved; Processing: $92/tonne milled; Processing Plant G&A: $15/tonne milled; Transport to Hydrometallurgical Processing Plant in Hay River: $70/tonne concentrate; and, Transport of Final Product: $115/tonne TREO.

The Net Value factors were used to calculate a Net Value ($ per tonne) for each block in the block model, which was compared directly to unit operating costs required to mine that block. All resource blocks classified as Measured, Indicated or Inferred and above the pit shell with Net Values greater than $115/t were included in the open pit resource estimate. For the purposes of demonstrating Reasonable Prospects of Eventual Economic Extraction (RPEEE) an optimized pit shell was generated using Whittle software and a slope angle of 45°.

Vital Metals anticipates purchasing the royalty rights for lump sum payments; royalties are thus not considered in the cut-off grade calculation. The net revenue of the two payable REOs was calculated and then divided by grade to generate a Net Value factor for resource reporting. These Net Value factors represent revenue per oxide grade unit (US$/kg Nd2O3, for example), and are independent of grade. Gross revenue is attributable to Nd2O3 (78.9%) and Pr6O11 (21.1%). Key cut-off value assumptions for these metals include: Oxide Price: Nd2O3 - US$200/kg, and P6O11 - US$200/kg. Overall recovery of 58.94%, which includes hydrometallurgical and oxide recovery factors. An exchange rate of C$1.30:US$1.00 was used to convert oxide prices Net Value Factor (C$/kg): Nd2O3 – 133.92, and P6O11 – 133.92. Using metal pricing and cost information available, a Net Value cut-off of $115/t was adopted for the open pit mining scenario. Open pit mining is reported at a pit discard cut-off, which excludes mining costs.

Mining and metallurgical considerations

No detailed metallurgical studies have been completed on the Tardiff Upper Zone Deposit. For the purposes of demonstrating RPEEE, metallurgical assumptions, in part drawn from studies completed on the Tardiff Basal Zone by Avalon Advanced Material Inc., the previous project owner, include: Gravity/Dense Media Separation (DMS) Recovery: 91.7%; Flotation Recovery: 76.5%; Hydrometallurgical Recovery: 82.3%; and, Oxide Separation: 97%. A scoping study is expected to be completed in the next year.

References

Möller, V., & Williams-Jones, A.E. (2016). Petrogenesis of the Nechalacho layered suite, Canada: Magmatic evolution of a REE-Nb-rich nepheline syenite intrusion. Journal of Petrology, 2016, Vol 57, 229-276

Vital Metals, 2023a. Vital achieves 26% increase in Tardiff Mineral Resource tonnes and 19% increase in contained NdPr. ASX / Media Announcement 14 February 2023.

Vital Metals, 2023b. Vital intersects up to 2.8% TREO in drilling at Tardiff. ASX / Media Announcement 30 May 2023.

Vital Metals, 2023c. Vital drilling at Tardiff returns up to 5.4% TREO, amplifying world-class high-grade potential and scale. ASX / Media Announcement 21 November 2023.

Vital Metals, 2024. Tardiff returns further high-grade results up to 7.9% TREO, underlining resource growth potential. ASX / Media Announcement 6 February 2024.

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*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.* *Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *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 (e.g. submarine nodules) may warrant disclosure of detailed information*	• All samples at the Tardiff Deposit Upper Zone (Tardiff or Tardiff deposit) are splits of diamond drill core over lengths of one metre (PQ [85 mm] diameter core) or two metres (NQ [47.6 mm] and HQ [63.5 mm] diameter). Of the NQ and HQ diameter core, a half or quarter mechanical split was sampled; the PQ diameter core was sampled entirely in the mineralized zones and a third of the core was sawn and sampled in unmineralized or weakly mineralized zones. The drill core was crushed and splits for geochemical analysis were prepared by independent laboratories. • Drill core is marked with a centre line for the sampler to ensure no sampling bias was introduced by choosing the location of the split and ensuring the samples are representative. • NQ and HQ drill core was crushed to 90% passing 10 mesh (2.0 mm). The PQ core was crushed to 6-mesh (approximately 3.3 mm) and approximately 2.0 kg was split off using a rotary splitter which was then crushed to 10-mesh. Splits of 250 g pulps were prepared from the 10-mesh crushed core. • For drill hole samples collected by previous owner Avalon Advanced Materials Inc. (Avalon), the rare earth element (REE) concentrations were determined using inductively coupled plasma mass spectrometry (ICP-MS) and X-ray fluorescence (XRF) for the highest concentrations by several different geochemical laboratories. The laboratory packages used were 4B2-STD and 4B2- RESEARCH (ACME Laboratories Ltd. [ACME]), 4B (Activation Laboratories Ltd. [Actlabs]), and ME-MS81d, ME-MS81h, and XRF10 (ALS Laboratories [ALS]). The majority of the samples were analyzed by ALS. • All 2021 and 2022 Vital Metals samples were submitted to ALS for assay by lithium borate fusion with ICP-MS analysis (ME-MS81h).
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).*	• Diamond core drilling of PQ, NQ, and HQ diameter core using wireline recovery was used for all the drilling at Tardiff. A limited number of oriented core holes were drilled by Avalon for geotechnical purposes.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	• Rock quality designation (RQD) logging was performed on all drill holes starting in 2009. • The weathering profile at Tardiff is limited and core recovery was generally excellent. RQD averaged 96.2% with a median of 98.7%.

Criteria	JORC Code Explanation	Commentary
	Measures taken to maximise sample recovery and ensure representative nature of the samples. *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.*	• The split lines were marked on the core to ensure systematic representative sampling. • There is no relationship between recovery and grade, and preferential loss or gain of material during sample capture is not expected or thought to bias sample results at the Project.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• Logging was completed by qualified personnel by Avalon (historically) and Vital Metals Limited (Vital Metals). Detailed lithology logs include a description of alteration, texture, mineralogy, and mineralization. • All core for the 2007 to 2014 drill holes was photographed digitally with Avalon maintaining a database for these holes. All drill core in the 2021 and 2022 drilling programs were photographed digitally and the database of these photos is maintained by Vital Metals. • Logging information from a total of 1,796 intersections from 537 drill holes within the resource estimation domains with a total length of 38,081 m were used for constructing the wireframes for the mineralized domains (high- and low-grade). Qualitative lithological logs for 100% of the intersections were available. • In the CPs' opinion the logging is adequate to support Mineral Resource estimation.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representativity of samples.* *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.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Of the NQ and HQ diameter core, a half or quarter mechanical split was sampled; the PQ diameter core was sampled entirely in the mineralized zones; and approximately 1/3 of the drill core was sawn and sampled in unmineralized or weakly mineralized zones. • Sampling procedures of mechanical or sawn splits of core follows industry standard practice and is considered by the CPs to be appropriate for hard rock deposits. • Drill core sample lengths ranged from 0.2 m to 5.9 m with 2 m as the most common sample length, and nearly 90% ranged from 1.0 m to 3.0 m. • The sample lengths are considered appropriate for the rock type and mineralization style by the CPs. • The core samples were bagged and sealed at the Project site; crushing and pulverization were performed by the primary laboratory, ALS Canada. • Duplicate analyses of the rejects and the pulps were routinely performed for the Avalon drilling. • Avalon performed 87 field duplicate analyses of drill core, which indicated acceptable reproducibility.

Criteria	JORC Code Explanation	Commentary
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.* *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.*	• The analyses of the REE are considered total analyses. The methods include lithium metaborate/tetraborate fusion (Actlabs), in some cases followed by dilute nitric digestion (ACME, ALS) of 0.1 g of pulp followed by multi-element ICP-MS analysis. Samples with high REE values were analyzed via XRF or further diluted using ICP-MS. These methods are considered appropriate for REE analysis. • Handheld XRF was only used as a guide for drill core logging. • For the Avalon drilling, the pulp of every 10th sample was analyzed by a secondary laboratory. Every 40th sample was a blank and one of several in-house standards was inserted as every 15th sample. Assay batches that did not meet the quality control (QC) criteria were re-assayed. For the 2021 and 2022 drilling by Vital Metals, blanks and in-house standards were inserted at the same ratio as the Avalon drilling programs. Results of the QA/QC program indicate acceptable levels of accuracy and precision of analytical results. • It is the opinion of CPs that sampling methods, sample preparation, security and analytical procedures implemented by Avalon and Vital Metals for the Tardiff Deposit meet industry standards.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data*	• During the April 2011 site visit, RPA (now SLR) personnel collected eight core samples from six diamond drill holes from the 2010 drill program. The presence of mineralization was confirmed, and the assay results were similar to the original samples. • No twinned holes were drilled. However, in multiple cases, zones of REE mineralization were intersected from different drill hole collar locations. • REO values were calculated from the ppm assay values for the REE. • Drill hole data were maintained in a Maxwell Datashed database by Avalon and in a Microsoft Access Database by Vital Metals. SLR recompiled the Vital Metals assay data from the original laboratory certificates prior to merging with the Avalon portion of the database. • It is the opinion of the CPs that industry standard procedures were followed for data entry, verification, and storage.
Location of data points	*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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	• All drill hole collar locations were determined by registered surveyors. • All collar location data are in the UTM NAD83 Zone 12N coordinate system. • Down hole deviation surveys were completed on all drill holes used for Mineral Resource estimation. • A 0.5 m resolution satellite digital elevation survey was obtained by Avalon in 2010, providing adequate topographic data.

Criteria	JORC Code Explanation	Commentary
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	• The drill hole collars are spaced 25 m, 50 m, or wider in the less explored areas. ○ In combination with geological and grade continuity in the deposit, in the CPs' opinion, these spacings are considered adequate to support the Mineral Resource classifications applied. • Grade estimation is based on drill hole assays composited to two metre intervals within the intercepts of the mineralized zones. Residuals were distributed equally through the intercept.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *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.*	• The zones of REE mineralization are sub-horizontal magmatic layers which have not been structurally modified. Drill hole dip ranges from -45° to -90°, averaging -76°. • The mineralization was intersected at appropriate angles for the deposit type. • The apparent mineralization intersections may be longer than true thicknesses in cases where the drill hole is not vertical.
Sample security	*The measures taken to ensure sample security.*	• Samples were double-sealed, and industry standard chain of custody procedures were applied.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• The sampling techniques and data for the Avalon drilling have been independently reviewed by RPA (now SLR) and Micon International Limited (Micon). ○ Vital Metals has followed the same sampling techniques previously used by Avalon.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *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 Nechalacho Project (the Project) is located in the Northwest Territories, Canada, approximately 100 km east-southeast of Yellowknife, centred on coordinates 416,400 m E / 6,887,000 m N or 112° 36' 6" W / 62° 6' 20" N. The Tardiff deposit is located on Mineral Lease NT-3178. This Mineral Lease, as well as adjoining leases NT-3179, NT-3265, NT-3266, NT-3267, NT-5534, NT-5535, and NT-5561 are described on the NWT's Mining Recorder's Office Mineral Tenure Web Map as being actively held by Avalon Advanced Materials Inc. (50%), and Cheetah Resources Corp (50%), a subsidiary of Vital Metals, with expiration dates ranging from May 21, 2027 and October 24, 2039. • The CPs confirmed the active status of the Project mining leases on the Mining Recorder's Office Mineral Tenure Web Map. • On June 24, 2019, Avalon announced that it had entered into a definitive agreement with Vital Metals to transfer ownership of the near-surface mineral resources on the Project (above 150 m RL), which includes the Tardiff deposit, and will retain a 3% net smelter royalty, which Avalon has agreed to waive for the first five years of commercial production or in perpetuity for a $2.0 M payment within eight years of the transaction (see Avalon's News Release NR 19-04 dated 24 June 2019). This agreement was later announced to be finalized (Avalon News Release dated 30 October 2019), and the information presented in this table is limited to above the 150 m elevation boundary. • A 2.5% Net Smelter Return (NSR) royalty to J. Daniel Murphy applies to the Thor Lake property which is capped at an escalating amount indexed to the rate of inflation. Cheetah Resources has been granted the option to purchase Avalon's option in this third party-owned royalty for a payment of $1.5 million provided that, upon exercising the option, Cheetah Resources extinguishes this royalty. SLR has reviewed the final Agreement of Sale between Vital Metals' subsidiary Cheetah Resources and Avalon to confirm Vital Metals' ownership of the mineral rights above 150 m elevation, including the Tardiff Upper Zone. • Although there are no known impediments, provincial and/or federal approvals and consultation with local communities are standard requirements for obtaining a licence to operate in the area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• Historic exploration drilling on the Project by Highwood Resources Ltd. was carried out in the 1980s.

Criteria	JORC Code Explanation	Commentary
		• Avalon carried out extensive exploration work, including drill programs, on the Project from 2008 to 2019.
Geology	*Deposit type, geological setting and style of mineralisation.*	• The Tardiff deposit is hosted near the top of a layered nepheline syenite intrusion, which is part of an anorogenic alkaline intrusive complex, the Paleoproterozoic Blatchford Lake Igneous Complex. The REE mineralization is hosted in hydrothermally altered eudialyte syenite collectively referred to as the Upper and Basal Zones and the REE are mainly contained in the minerals bastnäsite-(Ce), synchysite-(Ce), parasite-(Ce), fergusonite-(Y), samarskite-(Y), allanite-(Ce), and monazite-(Ce).
Drill hole Information	*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:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* *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.*	• No new exploration results are included in this Press Release.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *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*	• This section is not relevant as this Press Release is not disclosing new exploration results.

Criteria	JORC Code Explanation	Commentary
	and some typical examples of such aggregations should be shown in detail. *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• All of the Vital Metals drill holes are vertical, and the interval lengths closely match the true width of mineralization. • Many Avalon drill holes are steeply angled, and the interval lengths are slightly longer than true width.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• A map and a cross section showing the drill hole collars and traces with the geological wireframe for the Tardiff deposit above the 150RL are included in this announcement.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• This section is not relevant as we are disclosing Mineral Resources.
Other substantive exploration data	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• An airborne magnetics survey has been performed in 2009 by Avalon. • A sample from drill core of the Tardiff Upper Zone has been extracted and ongoing metallurgical test work is being carried out to develop a flowsheet for extracting the REO. • The rocks do not contain significant amounts of sulphide and, with the exception of low thorium concentrations (112 ppm on average), there are no deleterious elements in the Tardiff deposit.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth*	• Ongoing resource development drilling will continue in the next several years to continue to grow a resource greater than 40 million tonnes in the Measured and

Criteria	JORC Code Explanation	Commentary
	extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Indicated categories. A Scoping Study on the existing resource is expected to be completed in the next year that considers several processing routes and concentration strategies for the project. With the intent of selecting one of those options to then complete a Feasibility study on.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	• The Nechalacho database maintained by Vital Metals consists of a historic portion, which was compiled by Avalon prior to 2019, and additional data acquired by Vital Metals during their 2021 and 2022 drill programs. • A data package was provided to SLR by Avalon including: o Assay certificates and CSV files o Drill logs o Down hole surveys o Satellite photographs o Topography survey • Vital Metals provided SLR with the following data for drilling from 2021 to 2022 representing all drill hole information available as of January 30, 2024: o Drill hole logs as a Microsoft (MS) Access database. o Assay certificates and CSV files o List of field QC samples (blanks, three different types of standards). o Drill hole collar location survey records. • In addition, Vital Metals provided quality assurance/quality control (QA/QC) samples analyzed by Avalon prior to 2019 in an MS Excel file. • RPA (now SLR) completed a detailed check on Avalon's database for a Feasibility Study and NI 43-101 Technical Report prepared by Micon in 2013. • For the current Mineral Resource update, SLR re-examined the portion of the database compiled by Avalon prior to 2019 and completed a detailed check of the data provided by Vital Metals for 2021 and 2022. • With respect to the Avalon dataset: o The CPs are of the opinion that the Avalon portion of the database is acceptable, and that Avalon followed industry standard best practices for data security, import/export procedures, and QA/QC protocols. o The database is complete, and no information has been lost or modified during the handover between Avalon and Vital Metals and subsequent compilation work. o Differences in conversion factors for Ce and Pr in a subset of the data were identified and aligned prior to Mineral Resource estimation.

Criteria	JORC Code Explanation	Commentary
		○ A subset of assay certificates was compared against REE values in the database and no structural issues, such as switched columns, were identified. • With respect to the Vital Metals dataset: ○ A subset of the economic REEs (Sm, Nd, Pr) was reviewed for the QC field standards collected from 2021 and 2022 drill holes, and the CPs found the results to be within acceptable ranges. ○ SLR has compared the dataset against the original ALS certificates, and reviewed it for oxide conversion errors and consistency, transcription errors, survey and location discrepancies, and for irregular and impossible values, intervals, and interval lengths. Any discrepancies identified were amended. • Overall, is the CPs are satisfied that the databases used for Mineral Resource estimation are sufficiently robust and are representative of the originally collected data.
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• The drill hole data informing the present Mineral Resource estimate are the same as that informing the previous (December 31, 2022) Mineral Resource estimate and the procedures and data were verified by CP Brendan Shand (see Vital Metals ASX news release dated 14 February 2023). • A current site visit by a CP has not been undertaken at this time because of Vital Metals does not currently operate an exploration camp at the site. Combined with current subarctic winter conditions in the Northwest Territories, a site visit is thus not feasible at present. • SLR CP Volker Moeller has been involved in the Project between 2010 and 2019 and has previously conducted site visits to the Tardiff deposit. In particular, he has reviewed the drilling, sampling, and analytical procedures during this time period, in which the majority of the holes that the current resource is based one were drilled. • SLR expects a CP to complete a site visit during the next phase of drilling at the Project to review the drilling, logging, sampling, and surveying procedures.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.*	• The Tardiff deposit is hosted by the Nechalacho Nepheline Syenite and consists of a layered series of rocks with increasing peralkaline characteristics at depth. It is virtually undeformed, and the rock units and mineralization are generally sub-horizontal and can be traced for hundreds of metres. ○ The rare earth mineralization is hosted in mafic, hydrothermally altered eudialyte-aegirine-nepheline syenite. The Nechalacho deposit alteration system (biotite-magnetite-chlorite-quartz-zircon) varies between 80 m (L08-65) and 190 m (L08-127) in vertical thickness, with the alteration typically starting at the surface. The alteration zone coincides with REE, Zr, Nb, and Ta mineralization, with average values over the whole mineralized package of approximately 0.75% to 1.0% TREO.

Criteria	JORC Code Explanation	Commentary
	The factors affecting continuity both of grade and geology	○ There are some trends in chemical and mineralogical characteristics in the Nechalacho deposit that have both geological and metallurgical significance. These trends are most apparent in vertical zoning of the deposit with respect to the proportion of heavy rare earth elements (HREE) and light rare earth elements (LREE). In general, the HREE relative to the LREE show a distinct vertical zonation with increasing HREE to depth. This is not always consistent in individual drill holes. • Geological continuity and mineralization are supported by close-spaced drilling and variography. The layered mineralization is reasonably predictable and observable in the drill holes. • The nepheline syenite intrusion contacts are sharp and provide an outer limit to the mineralization. • The continuity of the mineralization is largely controlled by the deposition of eudialyte crystals in magmatic cumulate layers and by the interstitial crystallization of eudialyte in distinct horizons. The mineralized magmatic layers typically display sharp lower undulating boundaries and more gradual upper boundaries. • Localized hydrothermal REE-mobilization and redeposition in small, locally semi-massive bastnäsite veins and pervasive disseminated zones is less predictable. Constraining these zones within wireframes is not possible at the current drill spacing.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• In plan, the Mineral Resource extends approximately 1,670 m in the north-south and east-west direction at its widest points. Vertically, the Mineral Resource lower limit is at the 150RL, below which Avalon has maintained ownership. The upper limit of the Mineral Resource is the contact between the Nechalacho Syenite and a layer of Glacial Till that may be up to 10 m in thickness.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.*	• A nominal 0.7% TREO value combined with lithological logging information was used for developing high-grade wireframes in Leapfrog Geo software (wireframes 1, 2, 3, 4). • The mineralized domains (or resource domains) were modelled as sub-horizontal magmatic layers, and the footwall surface of the mineralized domains is controlled by collapsed fragments of the contact unit in several locations. • Five mineralized domains were modelled for the deposit: ○ The Nechalacho Syenite, as a low-grade volume surrounding the high-grade domains. ○ Four separate mineralized domains within the Nechalacho Syenite (Upper Zone 1, 2, 3, and 4) • Unmineralized country rock lithology, as well as overburden, diabase, and unmineralized syenite were constrained by wireframes.

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	Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
	Any assumptions behind modelling of selective mining units.
	Any assumptions about correlation between variables.
	Description of how the geological interpretation was used to control the resource estimates.
	Discussion of basis for using or not using grade cutting or capping.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.
		• The block model was constructed in Micromine Origin software as a sub blocked model without rotation.
		  ○ All steps for populating the block model attributes were recorded as Script files and/or form sets.
		• The block model uses a block size of 5 m x 5 m x 3 m with a minimum sub-block size of 1 m x 1 m x 1 m in the X, Y, and Z directions.
		• The block model contained various types of information including:
		  ○ Mineralized domain identifier
		  ○ Lithology
		  ○ Estimated grades of REOs
		  ○ Calculated TREO grade
		  ○ Calculated Net Metal Revenue (NMR) values
		  ○ Bulk density
		  ○ Resource classification
		• Lithology and resource domain identifiers were coded to the block model and used as a sub-block trigger.
		• Bulk density was interpolated into blocks for each resource domain by inverse distance weighting (IDW) using the same search criteria as grade estimation. For unmineralized country rock domains, bulk density was interpolated into blocks using IDW^2, and where data was insufficient, the mean sample grade was assigned to all blocks within the domain. No density samples were taken within the overburden and a default value was assigned.
		• REO assays in each resource domain was investigated for outlier grade values. Extreme values were capped to limit their influence.
		• The assays were composited into two metre intervals for the resource estimation. All drill holes were fully sampled over the mineralized interval, except for some historic drill holes that were mainly assayed for Nb and Ta. Missing assays were ignored since historic drill holes were not consistently sampled or do not have complete suite of analytical results.
		• Variograms were generated for each interpolated oxide using the composites for the largest resource domain (Upper Zone 1) in the horizontal plane and in the vertical direction. The ranges from the down hole variogram were used when the vertical direction did not yield a meaningful analysis.
		• Ordinary kriging (OK) was used to interpolate grades using four passes and variable orientation (VO) based on hangingwall, footwall, and centre surfaces for each resource domain.

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		• Identical interpolation parameters and search neighbours were used for all REOs.
		• The search ellipse dimensions for each pass were consistent with previous studies.
		• Search ellipse dimensions were as follows:
		  ○ Pass 1: 30 m x 30 m x 5 m in the x, y, and z directions.
		  ○ Pass 2: 60 m x 60 m x 10 m in the x, y, and z directions.
		  ○ Pass 3: 150 m x 150 m x 25 m in the x, y, and z directions.
		  ○ Pass 4: 200 m x 200 m x 30 m in the x, y, and z directions.
		• The sample restrictions used for grade interpolation for each pass are as follows:
		  ○ Pass 1 and Pass 2: minimum 6 / max. 10
		  ○ Pass 3: min. 4 / max. 12
		  ○ Pass 4: min. 1 / max. 12
		• A maximum of two composites per drill hole was used to match the composite length (2.0 m), the block height (3.0 m), and the most common orientation of the drill holes (vertical).
		• The interpolations were checked globally against the composites and nearest neighbour (NN) assignment by domain. The mean values of the Nd_2O_3 and Pr_6O_{11} grades interpolated using OK are within 3% of those of the composites and within 2% of those of the NN assignment for domains 1 and 2. The NN assignment was performed using three metre composites (corresponding to the block size). The interpolated grades were also checked in east-west and north-south oriented swath plots and good agreement was found between the composites, NN assignment and the grades interpolated using OK, with moderate grade smearing observed in the Inferred category due to the wide search ellipse.

Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnage was estimated on a dry basis. • The moisture content was not measured but is expected to be insignificant. The rock is competent with little porosity.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The depth and geometry of the Tardiff deposit make it amenable to open pit methods. Net Value factors were developed by SLR for resource reporting. Net Value is the estimated value per tonne of mineralized material after allowance for metallurgical recovery and consideration of terms for separation and refining, including payability and charges. These assumptions are based on the current processing scenario and results from metallurgical test work. • Operating cost assumptions for Tardiff included:

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		○ Mining: $4.50/tonne moved. ○ Processing: $92/tonne milled. ○ Processing Plant G&A: $15/tonne milled. ○ Transport to Hydrometallurgical Processing Plant in Hay River: $70/tonne concentrate. ○ Transport of Final Product: $115/tonne TREO. • The Net Value factors were used to calculate a Net Value ($ per tonne) for each block in the block model, which was compared directly to unit operating costs required to mine that block. All classified resource blocks located within the mineralized wireframe domains and above the pit shell with Net Values greater than $115/t were included in the open pit resource estimate. • For the purposes of demonstrating Reasonable Prospects of Eventual Economic Extraction (RPEEE) an optimized pit shell was generated using Whittle software and a slope angle of 45°. • Vital Metals anticipates purchasing the royalty rights for lump sum payments; royalties are thus not considered in the cut-off grade calculation. • The net revenue of the two payable REOs was calculated and then divided by grade to generate a Net Value factor for resource reporting. These Net Value factors represent revenue per oxide grade unit (US$/kg Nd_2O_3, for example), and are independent of grade. ○ Gross revenue is attributable to Nd_2O_3 (78.9%) and Pr_6O_{11} (21.1%). Key cut-off value assumptions for these metals include: • Oxide Price: • Nd_2O_3 - US$200/kg • P_6O_{11} - US$200/kg • Overall recovery of 58.94%, which includes hydrometallurgical and oxide recovery factors. ○ An exchange rate of C$1.30:US$1.00 was used to convert oxide prices ○ Net Value Factor (C$/kg): • Nd_2O_3 – 133.92 • P_6O_{11} – 133.92

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		Using metal pricing and cost information available, a Net Value cut-off of $115/t was adopted for the open pit mining scenario. Open pit mining is reported at a pit discard cut-off, which excludes mining costs.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• SLR has assumed that Tardiff will be amenable to open pit mining methods. • For determining RPEEE, SLR conducted preliminary pit optimization on the deposit using the key assumptions outlined in calculating the Net Value factors and Net Value cut-off. • The lower limit of the pit shell is 150 RL, above which Vital Metals has ownership. • The area of the Mineral Resource reporting pit shell includes several shallow lakes, including Thor Lake and Long Lake.

Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• No detailed metallurgical studies have been completed on the Tardiff Upper Zone Deposit.
		• For the purposes of demonstrating RPEEE, metallurgical assumptions, in part drawn from studies completed on the Tardiff Basal Zone by Avalon, include:
		  ○ Gravity/Dense Media Separation (DMS) Recovery: 91.7%
		  ○ Flotation Recovery: 76.5%
		  ○ Hydrometallurgical Recovery: 82.3%
		  ○ Oxide Separation: 97%

Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• Conventional waste dumps would be designed as part of the future mine design but would require permitting. The waste material is low in sulphides and other environmentally hazardous material and is likely to have low hazardous potential. • Part of the Mineral Resource is under small shallow lakes. The lakes are considered to be small enough to dewater. Environmental approvals would be required to dewater these lakes prior to mining commencing mining activities in the areas under these lakes. • Additional work in the form of detailed bathymetry measurements and environmental base line studies are warranted and will help clarify the required exclusion areas at the Project.

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Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.
		• Density was measured every five metres on a 10 cm size core segment using the Archimedes method (water displacement).
		  ○ Given the low porosity of the mineralized host rock and barren country rock, the CPs consider this method adequate to support Mineral Resource estimation.
		• Density values have been estimated into the block model using IDW using a single pass. Blocks not estimated were assigned the domain mean density value. Average block density values for interpolated domains are as follows:
		  ○ Thor Lake Syenite: 2.70 t/m^3
		  ○ Nechalacho Layer Syenite Undifferentiated: 2.71 t/m^3
		  ○ Upper Zone 1: 2.80 t/m^3
		  ○ Upper Zone 2: 2.85 t/m^3
		  ○ Upper Zone 3: 2.72 t/m^3
		  ○ Upper Zone 4: 2.68 t/m^3
		• For country rock lithologies Diabase and Sodalite Syenite, data was insufficient for IDW estimation, and the mean density value was assigned to all blocks within the domains, i.e., 2.73 t/m^3 for Diabase and 2.71 t/m^3 for Sodalite Syenite.
		• Overburden has been assigned a default value of 1.8 t/m^3.

Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).
	Whether the result appropriately reflects the Competent Person's view of the deposit.
		• The Mineral Resource estimate has been classified in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
		• SLR classified the Tardiff resource as Measured, Indicated, and Inferred based on drill hole spacing, the reliability of data (including the availability of full set of assay data), and geological confidence in the continuity of grade. Variography was used to assist drill hole spacing guidelines for classification.
		• The following nominal drill hole spacing guidelines were used for classification:
		  ○ Measured: approximately 25 m spacing.
		  ○ Indicated: approximately 50 m spacing.
		  ○ Inferred: approximately 200 m spacing.
		• Outlines of drill hole spacing classification bins were digitized and a three-metre buffer into unclassified blocks was added to facilitate correct classification during re-blocking for pit optimization.
		• Block model validation indicates that the final block estimate is a reasonable representation of the input drill hole data and the geological features at the Project.

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Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• In addition to the data validation undertaken by SLR throughout the geological modelling process, the final Mineral Resource estimate and block model has been subject to an internal Peer and Senior Review process adopted by SLR to ensure a robust estimate. The model has also been reviewed by Vital Metals.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Mineral Resource estimate has followed industry standard practices for collecting, validating, and estimating data. • The accuracy and precision of the assay results used in the Mineral Resource have been evaluated through the implementation of QA/QC programs, and it can be concluded that the overall accuracy and reliability of the data are suitable for Mineral Resource estimation. • The application of thorough exploratory data analysis (EDA), variography, and robust block model validation gives a high confidence in the Measured and Indicated material in the model. The Measured and Indicated Resources may be used for future technical and economic evaluation, for example, for the estimation of Ore Reserves. • The Inferred material by nature has a relatively low level of accuracy, but a high level of geological confidence to exist. • No production data exists for the deposit.