ASX / Media Announcement
9 June 2022

VITAL'S NORTH TARDIFF TESTWORK RESULTS EXCEED EXPECTATIONS FOR STAGE 2 REO OPERATIONS

HIGHLIGHTS

- **Metallurgical testwork completed on mineralisation from Tardiff Zone 1 returns grades of up to 39.9% total rare earth oxides (TREO) after three beneficiation stages with an exceptionally low mass pull to the final concentrate of 3.3%.**
- **Flotation concentrate grades as high as 42.9% TREO were achieved.**
- **The TREO recovery after each of the beneficiation steps (sorting, gravity and flotation concentration) were 91.7%, 81.4% and 66% TREO respectively for an overall recovery of 53.7% TREO, 51.4% Nd_2O_3.**
- **A range of grade recovery curves were achieved with a high grade 39.9% TREO @ 66% recovery concentrate (predominantly light rare earth bastnaesite) to undergo hydrometallurgical testwork together with a lower grade 20% TREO concentrate at ~ 76% recovery (light + heavy rare earth mineralisation)**
- **Results highlight Vital's ability to process Tardiff mineralisation through a similar process flowsheet as Vital is using for the North T deposit at Nechalacho.**
- **Vital aims to develop the larger Tardiff deposit as part of Stage 2 operations at Nechalacho.**
- **A three-stage strategy aims to transform Vital into the world's first rare earths producer capable of producing commercial quantities of both heavy and light rare earths**
- **Further testwork is underway to determine if separate light and heavy rare earth concentrates can be generated from Tardiff Zone 1.**

Canada's first rare earths producer **Vital Metals Limited** (ASX: **VML** | OTCQB: **VTMXF**) ("**Vital**", "**Vital Metals**" or "the **Company**") is pleased to announce results from metallurgical testwork completed on samples from the Tardiff Zone 1 deposit, part of its Nechalacho rare earths project in Northwest Territories, Canada have exceeded the Company's expectations.

A 550kg sample from Tardiff Zone 1 underwent testwork to a scoping study level using a similar flowsheet to that which Vital is using to produce a rare earth concentrate from the North T deposit at Nechalacho –sorting and gravity separation with the addition of a flotation stage.

This three-stage process produced a final concentrate with a total rare earth oxide (TREO) of 39.9% at a recovery rate of 53.7%. Final concentrate grades of 39.9% and exceptionally low mass pull of 3.3% will allow Vital to capitalise on a smaller, lower CAPEX hydrometallurgical plant. Final concentrate grade for neodymium oxide (Nd_2O_3) was 7.07% at an overall recovery of 51.4% (see Table 1).

Vital Metals Managing Director Geoff Atkins said: *"This testwork demonstrates that we can produce a high concentrate grade from Tardiff which is so critical for cost effective rare earth production. In addition, by demonstrating the ability to utilise the existing North T process flow sheet, this will also ensure that Tardiff development costs will be minimised.*

"This testwork demonstrates the enormous potential of Tardiff. Demonstrating the ability to produce a high grade concentrate from a deposit that has a contained REO resource of more than 1 million contained tonnes of rare earth reinforces our three-stage development strategy. These results highlight the potential for Nechalacho to become a large-scale, long-life rare earths operation."

Table 1: North Tardiff Testwork Summary (39.9% TREO Final Concentrate Grade)

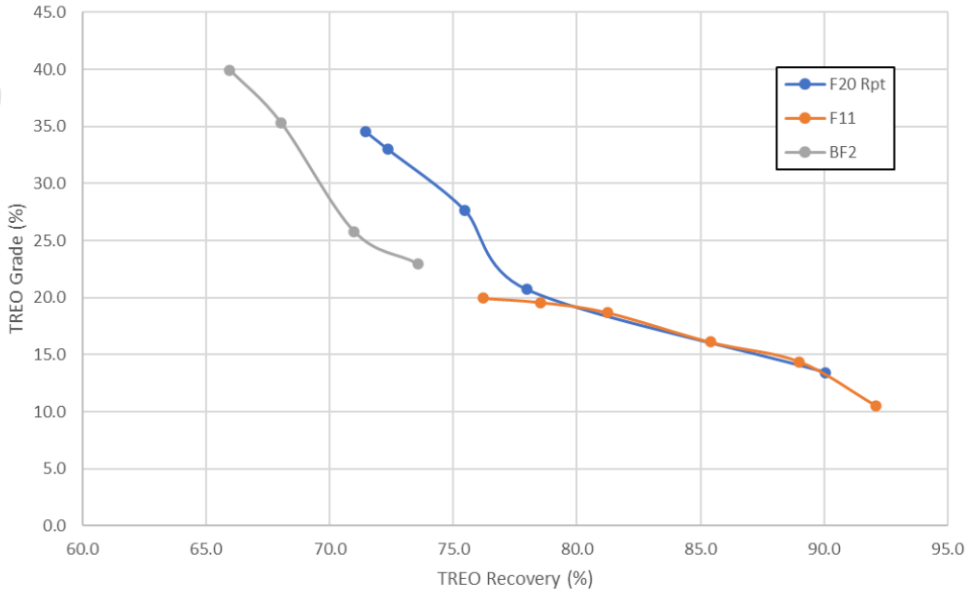
Concentrate stream	Assays (%)			Recovery (%)			Overall recovery (%)		
	TREO	Y_2O_3	Nd_2O_3	TREO	Y_2O_3	Nd_2O_3	TREO	Y_2O_3	Nd_2O_3
Stage 1 Sorting	3.14	0.08	0.57	91.7	90.8	91.4	91.7	90.8	91.4
Stage 2 Gravity	4.57	0.08	0.79	88.8	79.0	88.9	81.4	71.7	81.2
Stage 3 Flotation	39.9	0.27	7.07	66.0	19.0	63.3	53.7	13.6	51.4

Testwork was undertaken by Lakefield SGS in Canada and managed by Independent Metallurgy Operations (IMO) in Perth WA in consultation with Vital Metals' COO Tony Hadley, analysing the overall circuit performance of the:

- Stage 1: Sorting
- Stage 2: Gravity Separation by Dense Media Separation on coarse material and Shaking Table on finer material
- Stage 3: Flotation using a multistage rougher, cleaner flotation circuit to generate a final concentrate suitable to be fed into a downstream hydrometallurgical circuit.

A range of grade recovery curves were achieved as indicated in Figure 1 below and the high grade 39.9% TREO @ 66% recovery concentrate (predominantly light rare earth bastnaesite) will undergo hydrometallurgical test-work together with a lower grade 20% TREO concentrate at ~ 76% recovery (light + heavy rare earth mineralisation). Results highlight Vital's ability to process Tardiff mineralisation through a similar process flowsheet as Vital is using for the North T deposit at Nechalacho.

Figure 2: Flotation Grade Recovery Curves



IMO is now evaluating sequential flotation testwork to determine if separate high-grade light and heavy rare earth concentrates can be generated from Tardiff mineralisation, to create the potential for separate processing and revenue pathways for light and heavy rare earths.

Vital commenced rare earth production in June 2021 at the North T deposit at Nechalacho. It is on track to produce first rare earth carbonate at its Saskatoon extraction facility in Saskatchewan, Canada, from June 2022 as part of its Stage 1 operations.

Stage 2 will focus on growth via the Tardiff deposit at Nechalacho as well as development of the Wigu Hill rare earths project in Tanzania, where Vital is continuing discussions for a Mining Licence.

During 2022, Vital will focus on plans to add heavy rare earths to its production capabilities as it looks to develop a xenotime subzone at North T. It is also progressing plans to acquire two heavy rare earths project, Kipawa and Zeus in Quebec, Canada.

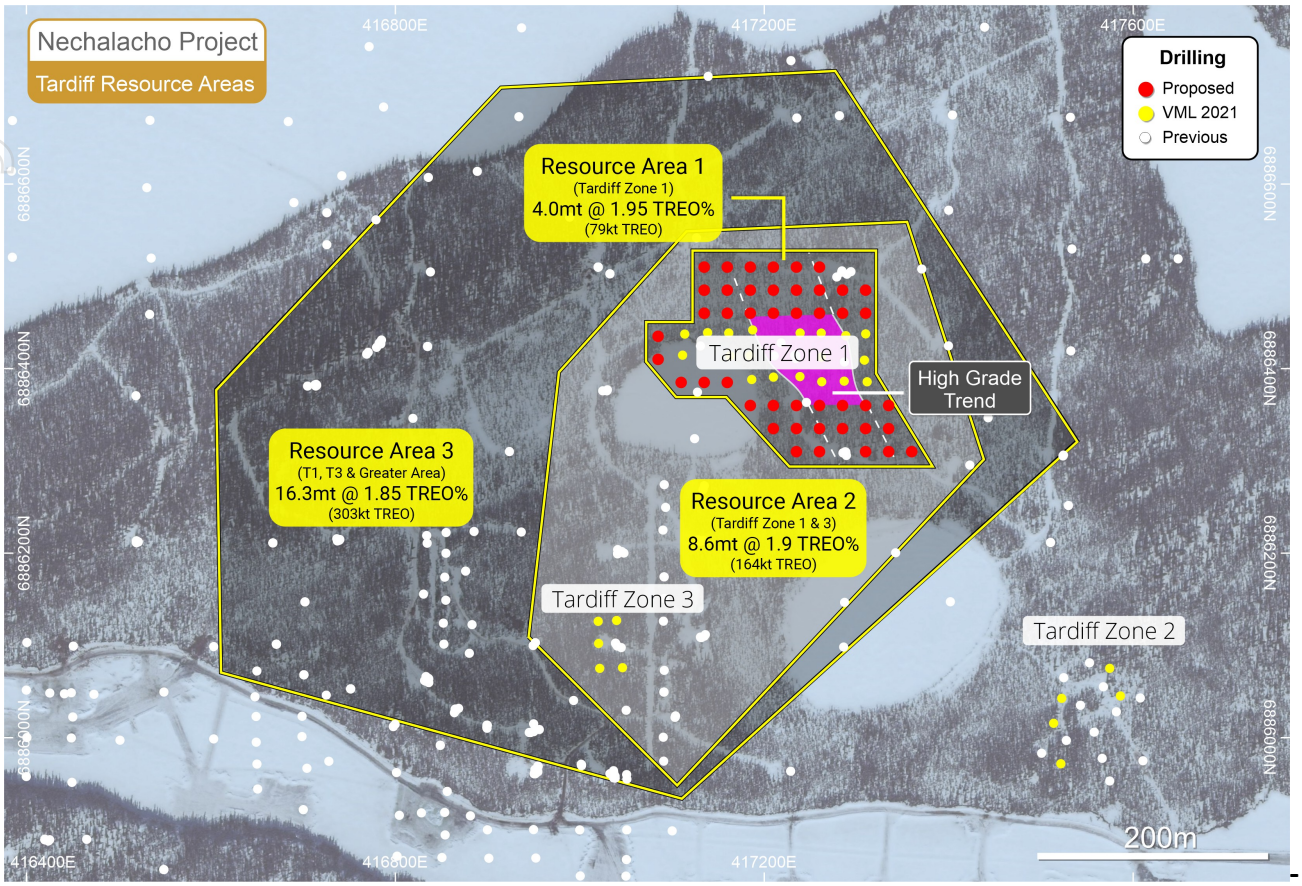


Figure 3: Tardiff Resource Area 1 which is the subject of initial process test-work

ENDS-

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

ABOUT VITAL

Vital Metals Limited (ASX: VML) is Canada's first rare earths producer following commencement of production at its Nechalacho rare earths project in Canada in June 2021. It holds a portfolio of rare earths, technology metals and gold projects located in Canada, Africa and Germany.

Nechalacho Rare Earth Project - Canada

The Nechalacho project is located at Nechalacho in the Northwest Territories of Canada and has potential for a start-up operation exploiting high-grade, easily accessible near surface mineralization before expanding into a large scale operation. The Nechalacho Rare Earth Project hosts within the Upper Zone, a JORC Resource of **94.7MT at 1.46% TREO** comprised of a Measured Resource of 2.9MT at 1.47% TREO, an Indicated Resource of 14.7MT at 1.5% TREO, and an Inferred Resource of 77.1MT at 1.46% TREO.

Qualified/Competent Persons Statement

Nechalacho Rare Earth Project

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

The information in this announcement that relates to Metallurgical Test Work Results is based on information reviewed by Mr Ray Anguelov (B.Sc in Mineral Science (Extractive Metallurgy), MAusIMM(CP)). Mr Anguelov is a Chemical engineer working for Cheetah Resources and has 25 years of relevant experience in this area of work. Mr Anguelov consents to the inclusion in this announcement of the matters based on information provided to him and in the form and context in which it appears.

ASX Listing Rule Information

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

Forward Looking Statements

This release includes forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production output.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the company's actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of resources or reserves, political and social risks, changes to the regulatory framework within which the company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the company's business and operations in the future. The company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the company or management or beyond the company's control.

Although the company attempts to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be anticipated, estimated or intended, and many events are beyond the reasonable control of the company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements.

Forward looking statements in this release are given as at the date of issue only. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

JORC Code, 2012 Edition – Table 1 report – Nechalacho Upper Zone Metallurgy Test Work

Section 1 Sampling Techniques and Data

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

	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 representivity 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 (eg submarine nodules) may warrant disclosure of detailed information.*	• Samples used for the scoping level metallurgy test work were half and quater core splits of typical rare earth oxide mineralisation from the Tardiff Zone 1. • Samples were taken from core available from holes drilled by Avalon Materials Incorporated in the Tardiff Zone 1 area. The core used was mineralogically typical of the rare earth mineralisation in the Tardiff Zone 1 area. • A total of 772 kg of core with typical rare earth minerlisation was collected and sent to SGS to create a master composite bulk sample. A small subset sample was sent to SRC to evaluate the ameniability of ore sorting. Another small subset was sent to SGS Garsen for Minalyser core scan analysis. The remaining sample was stage crushed to a nominal 19mm. Approximately 200 kg was then split and used for the initial beneficiation sighter testwork program conducted at SGS (SGS Job Number 17385-03). The remaining material (~ 550 kg) was utilised in the currently reported SGS testwork program (SGS Job Number 17385-06) to further evaluate the materials ameniability to ore sorting, DMS, gravity and flotation separation technologies.
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).*	• All core used in the metallurgical test work was NQ half and quarter core.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *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*	• Avalon noted good core recovery in the 6 historic holes in the Tardiff Zone 1 area. This was verified by Vital Metals on inspection of the core.

	JORC Code explanation	Commentary
	fine/coarse material.	
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.*	• Geological drill logs completed by an experienced professional geoscientist were produced to a standard to support a mineral resource estimation. • All the core used in the metallurgical test work was logged but no photographs were taken.
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 representivity 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.*	• A total of 772 kg of core with typical rare earth minerlisation was collected and sent to SGS. A 14kg subset of sample was sent to SRC for ameniability of ore sorting test work. Another small subset was sent to SGS Garsen for Minalyser core scan analysis. The remaining sample was stage crushed to a nominal 19mm. A 200kg subsample was taken for a scoping level metallurgical test-work program. The crushing to 19mm gave a blending of the sample that was representative when a 200kg subset was taken (SGS Job Number 17385-03). The remaining material (~ 550 kg) was utilised in the currently reported SGS testwork program (SGS Job Number 17385-06) to further evaluate the materials ameniability to ore sorting, DMS, gravity and flotation separation technologies. • The half and quarter core was of sufficient size to enable the various test-work programs to be carried out.
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 assay methods for the REE include lithium borate fusion followed by ICP-MS and are thus considered total.
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,*	• The metallurgical test-work was reviewed by Ray Anguelov and Mr Anguelov is of the view the test work was done to a very high standard. • Further test-work to be carried out to enhance and verify the test work

	JORC Code explanation	Commentary
	data storage (physical and electronic) protocols. • *Discuss any adjustment to assay data.*	being reported on in this ASX release.
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.*	• The grid system used is UTM NAD83 Zone 12 N, currently the standard system used in the area. • All historic Avalon drill holes havre been surveyed by professional surveyors.
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.*	• Not applicable
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.*	• Work undertaken is of an initial scoping nature and further work is required and planned to provide further representative metallurgical characteristics.
Sample security	• *The measures taken to ensure sample security.*	• The 772kg sample sent SGS was securely packaged.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• As the metallurgical test-work is only recent no audits have been carried out.

Section 2 Reporting of Exploration Results

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

	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *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 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). • Operating licenses in the Northwest Territories are subject to the approvals by provincial and environmental regulators and require consultation with local communities.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The historic resource development drilling was carried out by Avalon Materials Inc with the bulk of this drilling carried out between 2007 and 2013. • 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 drilling program.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Upper Zone is a polymetallic (REE, Nb, Zr) deposit hosted by the Thor Lake Syenite. It is a large layered magmatic deposit.

	JORC Code explanation	Commentary
		• REO mineralization in the Lake Zone is layered in separate zones of light rare earths at the top of the deposit (Upper Zone) and a mixture of light and heavy REO mineralisation in the lower part of the deposit (Basal Zone).

Drill hole Information	• *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.*
		• Not applicable as exploration results are not reported.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not applicable as exploration results are not reported.
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').*	• Not applicable as exploration results are not reported.

	JORC Code explanation	Commentary
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.*	• See figures in ASX release on June 23 2021 titled "Vital's Metallurgical Testwork Returns Positive results for plan of drill hole cores used in the test work in this report..
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.*	• The results of all metallurgical tests performed have been reported on. No results have been excluded.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All metallurgical test work results are outlined in the text of this report.
Further work	• *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.*	• A larger more representative sample from the 2021 amd 2022 drilling campaigns will go through a more detailed metallurgical program.

Appendix 4: List of historic Avalon Drill Holes used in the metallurgical test-work

Hole_ID	Northing	Easting	Elevation	Length (m)	Azimuth	Dip
L07-055	6886414.46	417234.35	241.75	200.4	0	-90
L09-144	6886424.49	417130.92	240.59	200.25	0	-90
L10-212	6886410.8	417234.51	241.56	221	270	-75.2
L10-213	6886407.17	417287.04	241.12	227.4	0	-88.75
L13-520	6886413.81	417210.87	241.5	52.3	0	-89.48
L13-521	6886427.87	417218.35	241.46	50	315	-72