ASX / Media Announcement
8 July 2022

VITAL PRODUCES HIGH GRADE CONCENTRATE IN FIRST RUN AT SASKATOON RARE EARTH EXTRACTION PLANT

HIGHLIGHTS

- **Vital achieves a high-grade concentrate of 43.7% TREO and 75.2% TREO recovery (single pass) from the first commissioning trial of the dense media separation (DMS) unit at its Saskatoon rare earth extraction plant**
- **The TREO concentrate grade (the Sinks) achieved from the DMS plant's initial run was comparable to the laboratory metallurgical testwork grade performed by SGS, 43.7% TREO vs 44.6% TREO**
- **Vital will use results from the DMS to further finetune the plant**
- **Vital is working towards producing a 2.5t rare earth carbonate qualification sample for offtake partner REEtec Ag**
- **Carbonate production ramp-up will follow, once qualification is complete**

Canada's first rare earths producer **Vital Metals Limited** (ASX: **VML** | OTCQB: **VTMXF**) ("**Vital**", "**Vital Metals**" or "the **Company**") is pleased to report that results from the first feed of the dense media separation (DMS) unit at its Saskatoon rare earths extraction facility in Saskatchewan, Canada, is comparable to the TREO grade achieved from laboratory metallurgical testwork in its first run.

Results show the DMS plant Sinks achieved comparable grades to those seen in testwork, with 43.7% total rare earth oxide (TREO) achieved from the DMS Cyclone at Saskatoon, compared to 44.6% TREO achieved in laboratory conditions at SGS.

The DMS unit also achieved 75.2% recovery in its first run for a single pass, processing ~2,300kg of concentrate mined at Vital's Nechalacho rare earth project (North T zone), sorted onsite and then crushed at the Saskatchewan Research Council (SRC) facility adjacent to Vital's Saskatoon plant.

With the concentrate grade reaching the target, the plant will now undergo some adjustments and ultimately further trials will be conducted that involve taking the tails (floats) from the 1st pass and subjecting it to a second scavenging step to try and increase the recovery further, whilst maintaining the combined sinks concentrate grade >40% TREO.

Vital Metals Managing Director Geoff Atkins said: *"Our team has achieved outstanding results from the DMS unit during initial commissioning at Saskatoon and the fact that on the first run we hit the laboratory test grades for total rare earths with 75% recovery with low grade feed material is above expectations. There will be work to do with optimising our process over the coming months but these initial results demonstrate incredible potential. It gives us a great level of confidence for future commissioning activities through the remaining process.*

"I acknowledge the hard work of our team onsite at Saskatoon, led by our General Manager Commissioning Ray Anguelov, for their efforts in helping Vital achieve these results during plant commissioning, and I thank them for their efforts.

"We look forward to continuing our commissioning process with the production of our 2.5T qualification sample followed by production ramp-up."

Table 1: Results from commissioning Vital's DMS plant at Saskatoon

Products	**Assays, % TREO**		**% Distribution**	
	SGS	VITAL	SGS	VITAL
S.G.	2.86	2.70		
DMS Feed	27.8	26.13	100.0	100.0
DMS Con (SINKS)	**44.6**	**43.7**	**90.4**	**75.2**
DMS Tails (FLOATS)	6.16	11.8	9.6	24.8

The % TREO recovery using the 2 product formula C(F-T)/F*(C-T)*100 = 75.2% for a single pass.*

Vital's sample processed was crushed to -2mm, with material -2mm and greater than 0.5mm being fed to the DMS cyclone at SG of 2.7, which was slightly lower than the target SG of 2.85, providing opportunities for further optimisation. The -0.5mm material will be processed through shaking tables as part of the overall commissioning process.

Vital will use results from the DMS unit's first run to finetune its Saskatoon operations.

Vital will incrementally commission the remaining circuits of the process flow sheet over the coming months, with plans to produce a 2.5-tonne rare earth carbonate sample for offtake partner REEtec Ag as the next step of product qualification.

This approach will focus on producing product at specification, minimising off-spec production and waste, prior to the commencement of production ramp-up.

Vital's Saskatoon plant will have initial throughput capacity of 1,000 tonnes/year of rare earth oxide (REO) excluding cerium, which is equivalent to ~470t NdPr/year, increasing to 2,000 tonnes/year REO excluding cerium, equivalent to 940t NdPr/year, in Stage 2.

Figure 1: Vital Commissioning team led by Ray Anguelov (far right)

Figures 2 & 3: Concentrate (left) and tails (right) produced during initial DMS commissioning run

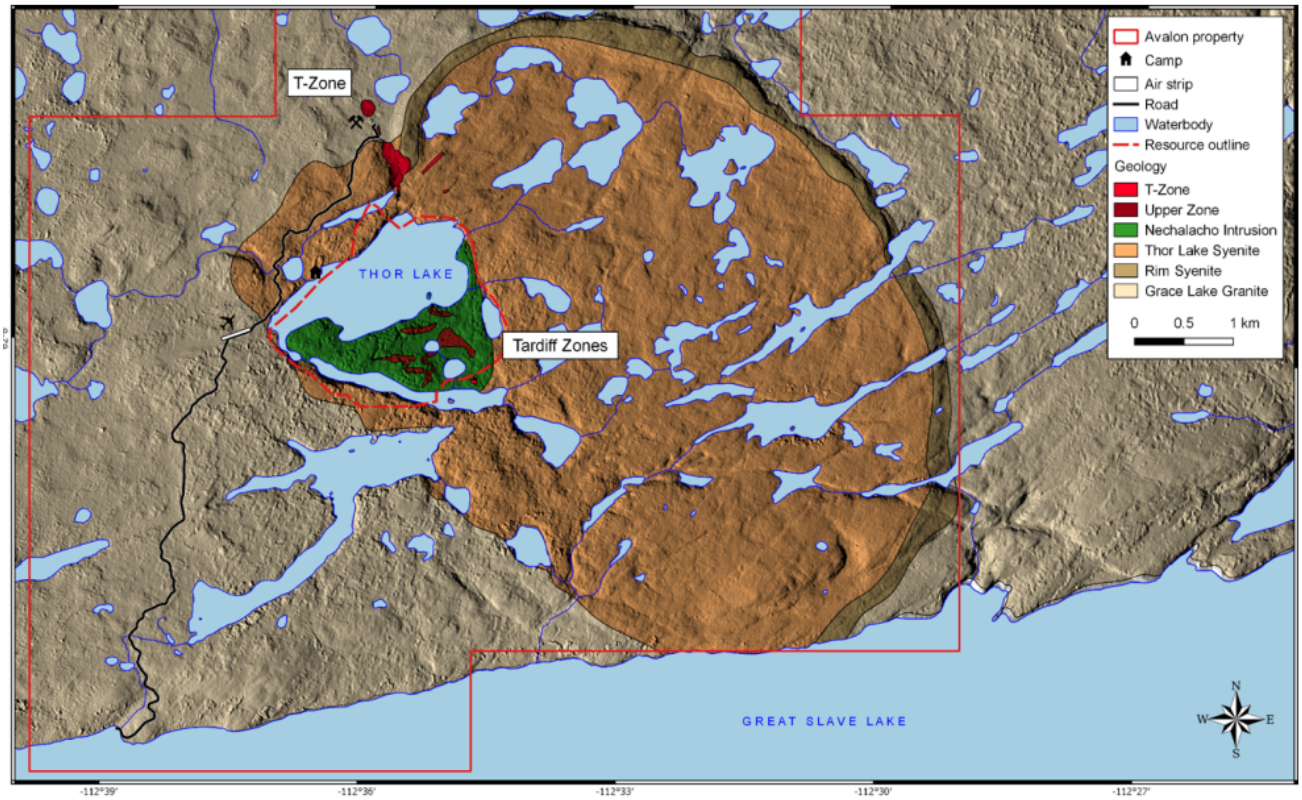

Figure 4 – Location of the North T open pit deposit

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.

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.

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 Process Plant Commissioning 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.

JORC Code, 2012 Edition – Table 1 report – Heavy Media Separation Plant Commisioning

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.*	• Material used for the Heavy Media Separation Plant commissioning was Run of Mine material (ROM) obtained from the 2021 maiden mining campaign from the North T open pit Deposit at the Nechalacho Project (refer to ASX announcements, 20/09/2021 & 28/01/2022) and concentrated on site by the Ore Sorting Plant. • For commissioning purposes, low grade material was strategically selected to minimise TREO losses. The sample was crushed, stockpiled, homogenised and blended prior to being processed through the ore sorter. The low grade material was classified and deemed representative by Chris Pedersen an experienced rare earth geologist with more than 30 years experience on this project. • Two random low grade bulker bags of ore sorter concentrate weighing ~ 2.3t were selected for DMS commissioning. The material was crushed to -2mm by the Saskatchewan Research Council (SRC) located next to Vitals Saskatoon facility. A DMS metallurgical survey was undertaken when the plant was stabilised and then representative samples of feed, concentrate (sinks) and tailings (floats) were collected in secure 20 litre buckets and sent to SRC for assay.
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 material was sourced from run of mine stockpiles from the 2021 maiden mining campaign, blended and concentrated through the ore sorter. No sampling from drilling was carried out during the mining campaign. (refer to ASX announcements, 20/09/2021 & 28/01/2022)
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 fine/coarse material.*	• Not applicable as no drilling was carried out during the mining campaign.

	JORC Code explanation	Commentary
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.*	• Not applicable as no drilling was carried out during the mining campaign. • Not applicable as no logging or drilling was carried out. • Not applicable as no drilling was carried out during the mining campaign.
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.*	• Approximately 2,300kg of low grade material was processed through the DMS plant. Representative samples of DMS feed, SINKS and FLOATS were collected in secure 20 litre buckets whilst taking sample cuts every 15 minutes during the duration of the survey. The samples were sent to the SRC laboratory adjacent to Vitals facility and were filtered, dried, pulverised and riffle split prior to submitting for assay. • The sampling techniques for the metallurgical testwork was in line with industry standards for compositing representative samples. • The sampling procedures were under the control of Ray Anguelov the Metallurgical Competent Person. • Sizes and representative nature of the samples is considered appropriate.
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. • SRC analytical & metallurgical laboratory is a very reputable government run laboratory in Canada with expertise in rare earth processing and analysis. • The SRC analytical laboratories are accredited by the Canadian Association for laboratory accreditation (CALA) and the standards council of Canada (SCC). • The SRC QAQC procedures adopted are considered acceptable by industry standards and they routinely participate in round robin checks with other labs. Similarly the level of precision and accuracy of their ICP-MS instruments for rare earth analysis is inline with 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,*	• The metallurgical test-work was reviewed by Ray Anguelov and Ray is of the view the test work was done to a very high standard. • Further test-work to be carried to enhance and verify the test work being reported on in this ASX release.

	JORC Code explanation	Commentary
	data storage (physical and electronic) protocols. • *Discuss any adjustment to assay data.*	
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 drill holes have 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 as this announcement is about plant commisioning
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.*	• Not applicable as this announcement is about plant commisioning
Sample security	• *The measures taken to ensure sample security.*	• The samples sent to SRC were securely packaged.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Mr. Ray Anguelov has reviewed the QAQC results and found these to be acceptable.

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 North T Zone is located on Mining Lease NT-3179 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 North T Zone is a polymetallic (REE, Nb, Zr) deposit hosted by a pegmatite dyke coming off the Thor Lake Syenite. • REO mineralization in the North T Zone is layered in separate zones of light

	JORC Code explanation	Commentary
		rare earths at the top of the deposit and a mixture of light and heavy REO mineralisation in the lower part of the deposit.

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.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should*	• See figure 4 for the location of the North T Mine.

	JORC Code explanation	Commentary
	include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	
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 commissioning results achieved 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 commissioning 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.*	• It is planned to commission each of the unit processes in the process flowsheet sequentially in the coming months and as results come to hand they will be announced to the market.