TECHNOLOGY
METALS AUSTRALIA LIMITED

**ASX Announcement**

**3 December 2020**

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**Directors**

Michael Fry:
**Chairman**

Ian Prentice:
**Managing Director**

Sonu Cheema:
**Director and Company Secretary**

**Issued Capital**

147,271,427 ("TMT") Fully Paid Ordinary Shares

8,250,000 – Unquoted Director and Employee Options exercisable at $0.20 on or before 10 May 2023

9,399,834 – Unquoted Options – various exercise prices and dates

1,800,000 – Performance Rights

**ASX Code: TMT**

**FRA Code: TN6**

# TESTWORK CONFIRMS RECOVERY OF YARRABUBBA TITANIUM PRODUCT

## HIGHLIGHTS

- Diagnostic testwork demonstrates scope to produce **high grade titanium bearing concentrates** at Yarrabubba.
- Concentrates containing up to 48.5%[1] $TiO_2$ produced from **non-magnetic tails streams** generated from recent LIMS testwork.
- $TiO_2$ head grade in the non-magnetic tails ranges from 20% to 25% across a range of grind sizes, with typically 60% to 80% of the titanium reporting to the +45micron fractions.
- Testwork confirms **high titanium recoveries** (typically greater than 90% of +45micron fractions) using standard gravity separation.
- Further work is underway to investigate and optimise the titanium product generated from the anticipated Yarrabubba flowsheet.

Technology Metals Australia Limited (ASX: **TMT**) ("**Technology Metals**" or the "**Company**") is pleased to announce results from diagnostic testwork completed on the non-magnetic tails streams from the MASFR1 and MASFR2 composites from the Yarrabubba Iron-Vanadium Project ("**Yarrabubba Project**").

This testwork has demonstrated the viability of producing a titanium product ***from the tails stream*** from magnetic concentration of ore from the Yarrabubba Project, with concentrates generated from the +45micron size fractions containing up to 48.5% $TiO_2$ for MASFR1 and 48.4% $TiO_2$ for MASFR2[1]. Importantly the work demonstrates that high titanium recovery is possible using standard gravity separation, with dense fractions **typically recovering in excess of 90%[2]** of the +45micron $TiO_2$ for a total $TiO_2$ recovery between 54% and 72% from the non-magnetic tails.

The testwork is preliminary and unoptimised, with further work underway to replicate the anticipated Yarrabubba flowsheet, with the expectation that this optimised testwork will further enhance the titanium product.

**Managing Director Ian Prentice commented:** "This early testwork has confirmed the potential to produce a high grade titanium product from the tails at Yarrabubba, providing scope to generate an additional significant revenue stream and maximise the economic benefit of every ore tonne mined at Yarrabubba. The separation of the majority of the titanium from the iron – vanadium product is a key differentiator of the Yarrabubba orebody and is a significant contributing factor to the ability to generate the premium Yarrabubba High Grade Iron – Vanadium Product."

1 – See Appendix 2 for assay results at a range of size fractions

2 - See Appendix 1 for assay results at a range of densities.

VANITEC
TRANSFORMING POSSIBILITIES

AMEC

The Yarrabubba Iron-Vanadium Project, a satellite project to the globally significant Gabanintha Vanadium Project ("**GVP**"), is located on granted Mining Lease M51/884 and hosts an Indicated and Inferred mineral resource estimate ("**MRE**") of 27.7Mt at 38.7% Fe, 0.9% $V_2O_5$, and 9.9% $TiO_2$. The high grade massive magnetite unit contained within the MRE consists of 14.4Mt at 48.1% Fe, 1.1% $V_2O_5$ and 12.4% $TiO_2$ (see ASX announcement dated 1 July 2020 and Table 1).

Table 1: Yarrabubba MRE with classification by mineralisation type and category

| Classification | Material | Mt | $V_2O_5$% | Fe% | $Al_2O_3$% | $SiO_2$% | $TiO_2$% | LOI% | P% | S% |
|---|---|---|---|---|---|---|---|---|---|---|
| Indicated | Massive | 7.3 | 1.1 | 49.2 | 5.1 | 5.8 | 12.6 | -0.6 | 0.004 | 0.3 |
| Indicated | Disseminated | 2.3 | 0.7 | 33.1 | 9.5 | 20.6 | 8.5 | 2.3 | 0.014 | 0.3 |
| **Indicated** | **Massive plus Disseminated** | **9.6** | **1.0** | **45.3** | **6.1** | **9.3** | **11.7** | **0.1** | **0.007** | **0.3** |
| Inferred | Massive | 7.1 | 1.1 | 46.9 | 5.6 | 7.4 | 12.1 | 0.5 | 0.005 | 0.3 |
| Inferred | Disseminated | 11.0 | 0.6 | 27.7 | 13.0 | 25.9 | 7.0 | 2.7 | 0.015 | 0.3 |
| **Inferred** | **Massive plus Disseminated** | **18.1** | **0.8** | **35.3** | **10.1** | **18.6** | **9.0** | **1.8** | **0.011** | **0.3** |
| **Indicated plus Inferred** | **Massive plus Disseminated** | **27.7** | **0.9** | **38.7** | **8.7** | **15.4** | **9.9** | **1.2** | **0.009** | **0.3** |

*Note: The Mineral Resources were estimated within constraining wireframe solids using a nominal 0.9% $V_2O_5$% lower cut-off grade for the massive magnetite zones and using a nominal 0.4% $V_2O_5$% lower cut-off grade for the banded and disseminated mineralisation zones. The Mineral Resources are quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% $V_2O_5$%. Differences may occur due to rounding.

A program of Low Intensity Magnetic Separation ("**LIMS**") testwork completed on seven (7) composite samples from PQ diamond drill holes confirmed the opportunity to produce a high grade, high purity iron-vanadium concentrate across all of the mineralised units at Yarrabubba, with a weighted average grade of **64.3% Fe, 1.71% $V_2O_5$, 6.34% $TiO_2$, 0.42% $SiO_2$ and 0.67% $Al_2O_3$** and an overall mass recovery of 47.6% at a 32 micron grind size (see ASX announcement dated 11 November 2020). The representative composite samples tested were:

- MASFR1 – Massive, Fresh, Composite 1
- MASFR2 – Massive, Fresh, Composite 2
- HW1FR – Hangingwall Unit 1, Fresh
- HW2FR – Hangingwall Unit 2, Fresh
- HW3FR – Hangingwall Unit 3, Fresh
- FWFR – Footwall Unit, Fresh
- TRANS – Massive Transitional Composite

The LIMS testing across the seven (7) composites showed clear potential to discriminate between vanadiferous iron (V+Fe) phases and titanium ($TiO_2$) containing phases across the range of grind sizes, indicating potential for a titanium product to be generated from the non-magnetic tails stream.

Diagnostic testwork has now been completed on non-magnetic tails streams generated from the MASFR1 and MASFR2 composites at selected grind sizes of $P_{80}$ 710 µm, $P_{80}$ 500 µm, $P_{80}$ 250 µm and $P_{80}$ 125 µm. This work has demonstrated the viability of producing a titanium product from the ore at Yarrabubba. Products were generated with **grades up to 48.5% $TiO_2$ for MASFR1 and 48.4% $TiO_2$ for MASFR2**, with an average of 45.9% $TiO_2$.

The non-magnetic tails streams, which based on the LIMS testwork represent about 50% of the overall process plant feed, contained $TiO_2$ head grades ranging from ~20% to 25% (see Tables 2 and 3).

Table 2: MASFR1 Non-Magnetic Head Grade

| Nominal Grind Size ($P_{80}$) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 710 µm | 24.3 | 100 | 20.0 | 100 | 1.06 | 100 | 16.95 | 100 | 11.95 | 100 |
| 500 µm | 24.1 | 100 | 20.2 | 100 | 0.97 | 100 | 16.65 | 100 | 12.20 | 100 |
| 250 µm | 24.8 | 100 | 22.5 | 100 | 0.95 | 100 | 15.35 | 100 | 11.75 | 100 |
| 125 µm | 25.6 | 100 | 25.0 | 100 | 0.90 | 100 | 13.20 | 100 | 10.65 | 100 |

Table 3: MASFR2 Non-Magnetic Head Grade

| Nominal Grind Size ($P_{80}$) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 710 µm | 20.5 | 100 | 19.7 | 100 | 0.53 | 100 | 12.80 | 100 | 14.20 | 100 |
| 500 µm | 23.8 | 100 | 20.6 | 100 | 0.52 | 100 | 11.15 | 100 | 12.65 | 100 |
| 250 µm | 23.0 | 100 | 23.0 | 100 | 0.53 | 100 | 10.75 | 100 | 12.75 | 100 |
| 125 µm | 22.9 | 100 | 25.4 | 100 | 0.51 | 100 | 10.00 | 100 | 12.50 | 100 |

The tails streams were screened at 45 µm, with the +45 µm fraction subjected to sequential Heavy Liquid Separation ("**HLS**") to separate the denser $TiO_2$ bearing phases from the lighter gangue material. The HLS involved the material being separated by placing into a heavy liquid at a SG of 2.8, with floats being recovered and the sinks fraction stirred to ensure release of entrapped floats. The sinks were then recovered and placed into liquid of the next SG point. This was repeated at SG points of 3.1, 3.4, 3.6 (and 4.05 for $P_{80}$ 710 µm only) to obtain HLS float products until the final SG point, in which the sinks and the floats were both recovered for assay. All HLS products were washed thoroughly with acetone and dried prior to assay.

This testwork identified that high recovery of titanium is possible using standard gravity separation, with the +3.6/+4.05 fractions containing significantly elevated $TiO_2$ content, recovering +90% of the +45 µm $TiO_2$ for all fractions aside from MASFR2 $P_{80}$ 710 µm (87.9%). See Appendix 1 for assay results for each composite at the range of tested densities.

The +3.6 / +4.05 sink fractions from the HLS were screened to determine particle sizing, with selected fractions recombined for assay. This work demonstrated significantly elevated $TiO_2$ in the -106 µm fraction, with up to 48.5% $TiO_2$ from the MASFR1 $P_{80}$ 710 µm +4.05 sink fraction, 47.9% $TiO_2$ from the MASFR1 $P_{80}$ 500 µm +3.6 sink fraction and 48.4% $TiO_2$ from the MASFR2 $P_{80}$ 710 µm +4.05 sink fraction. Titanium recoveries in to the -106 µm fraction ranged from 54.7% to 76.7%. See Appendix 2 for assay results for each composite at a range of size fractions.

The work completed is preliminary and unoptimised, with work ongoing to further investigate the $TiO_2$ product from samples generated by a testwork process that has been designed to replicate the anticipated processing flowsheet for the Yarrabubba deposit. This further testwork is concentrated on the two massive fresh composites, MASFR1 and MASFR2 with 300 kg and 90 kg of each being utilised. Additional work is underway to investigate suitable methods of $TiO_2$ recovery from the -45 µm fraction.

**ABOUT VANADIUM**

Vanadium is a hard, silvery grey, ductile and malleable speciality metal with a resistance to corrosion, good structural strength and stability against alkalis, acids and salt water. The elemental metal is rarely found in nature. The main use of vanadium is in the steel industry where it is primarily used in metal alloys such as rebar and structural steel, high-speed tools, titanium alloys and aircraft. The addition of a small amount of vanadium can increase steel strength by up to 100% and reduces weight by up to 30%. Vanadium high-carbon steel alloys contain in the order of 0.15 to 0.25% vanadium while high-speed tool steels, used in surgical instruments and speciality tools, contain in the range of 1 to 5% vanadium content. Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

An emerging and likely very significant use for vanadium is the rapidly developing energy storage (battery) sector with the expanding use and increasing penetration of the vanadium redox flow batteries (“**VRFB’s”**). VRFB’s are a rechargeable flow battery that uses vanadium in different oxidation states to store energy, using the unique ability of vanadium to exist in solution in four different oxidation states. VRB’s provide an efficient storage and re-supply solution for renewable energy – being able to time-shift large amounts of previously generated energy for later use – ideally suited to micro-grid to large scale energy storage solutions (grid stabilisation). Some of the unique advantages of VRB’s are:

- a lifespan of 20 years with very high cycle life (up to 20,000 cycles) and no capacity loss,
- rapid recharge and discharge,
- easily scalable into large MW applications,
- excellent long-term charge retention,
- improved safety (non-flammable) compared to Li-ion batteries, and
- can discharge to 100% with no damage.

Global economic growth and increased intensity of use of vanadium in steel in developing countries will drive near term growth in vanadium demand.

This announcement has been authorised by the Board of Technology Metals Australia Limited.

*For, and on behalf of, the Board of the Company,*

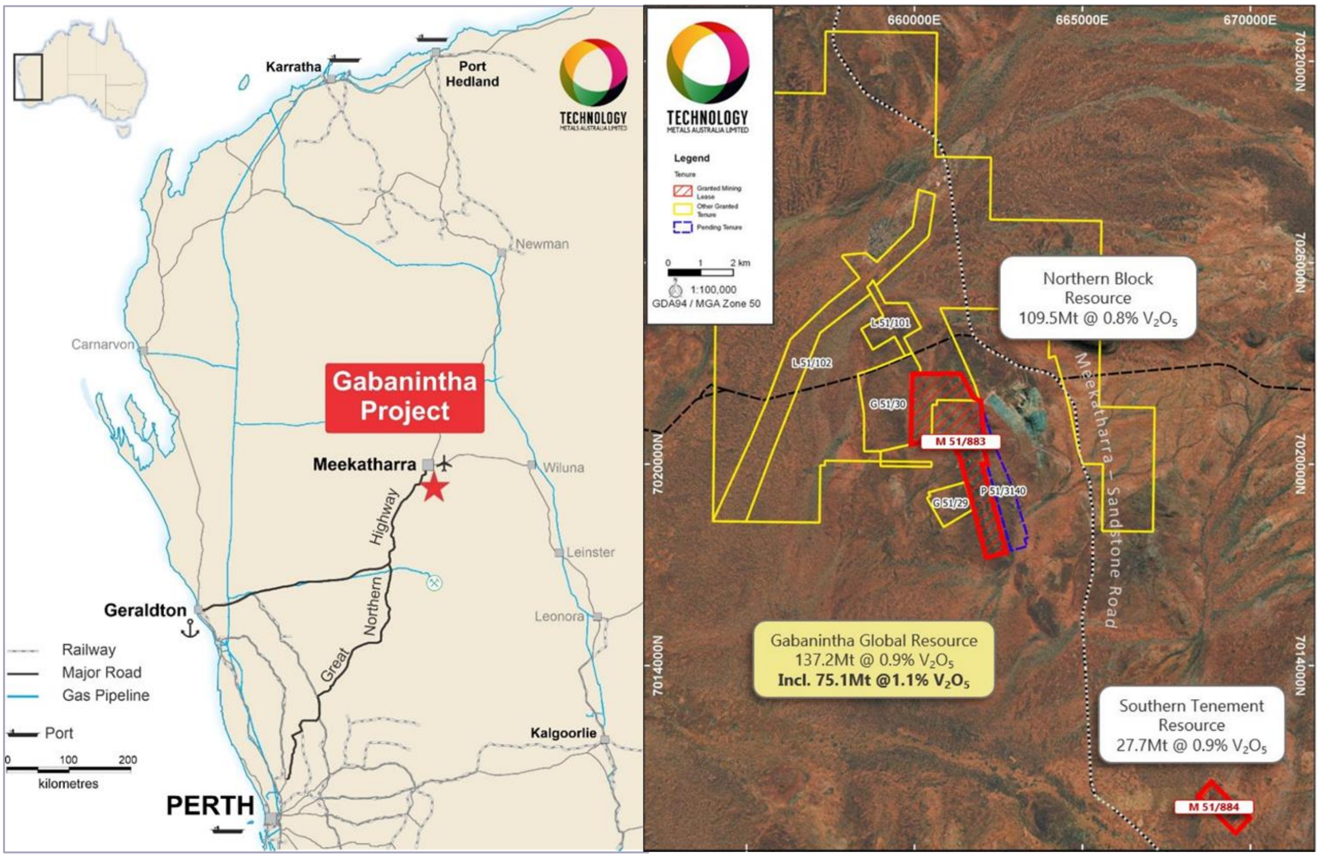
Ian Prentice
**Managing Director**
**Technology Metals Australia Limited**

**- ENDS -**

## About Technology Metals Australia Limited

**Technology Metals Australia Limited (ASX: TMT)** was incorporated on 20 May 2016 for the primary purpose of identifying exploration projects in Australia and overseas with the aim of discovering commercially significant mineral deposits. The Company's primary exploration focus has been on the Gabanintha Vanadium Project located 40 km south east of Meekatharra in the mid-west region of Western Australia with the aim to develop this project to potentially supply high-quality $V_2O_5$ flake product to both the steel market and the emerging vanadium redox battery (VRB) market.

The Project consists of eleven granted tenements and three applications (including two Mining Leases) divided between the Northern Block of Tenements (12 tenements) and the Southern Tenement (2 tenements). Vanadium mineralisation is hosted by a north west – south east trending layered mafic igneous unit with a distinct magnetic signature. Mineralisation at Gabanintha is similar to the Windimurra Vanadium Deposit, located 270km to the south, and the Barrambie Vanadium-Titanium Deposit, located 155km to the south east. The key difference between Gabanintha and these deposits is the consistent presence of the high-grade massive vanadium – titanium – magnetite basal unit, which results in an overall higher grade for the Gabanintha Vanadium Project.




GVP Location and Tenure

Data from the Company's 2017 and 2018 drilling programs, including 111 RC holes and 53 HQ and PQ diamond holes at the Northern Block and 31 RC holes and 4 PQ sized diamond holes completed in late 2018 at the Southern Tenement, has been used by independent geological consultants CSA Global to generate a global Inferred and Indicated Mineral Resource estimate, reported in accordance with the JORC Code 2012 edition, for the Project. The Resource estimate confirms the position of the Gabanintha Vanadium Project as one of the highest grade vanadium projects in the world.

Global Mineral Resource estimate for the Gabanintha Vanadium Project as at 29 June 2020.

| Material Type | Classification | Mt | $V_2O_5$% | Fe% | $Al_2O_3$% | $SiO_2$% | $TiO_2$% | LOI% | P% | S% |
|---|---|---|---|---|---|---|---|---|---|---|
| **Massive Magnetite** | **Measured (North)** | **1.2** | **1** | **44.7** | **6.2** | **10.4** | **11.4** | **0** | **0.009** | **0.2** |
| | Indicated (North) | 18.5 | 1.1 | 49.1 | 5.2 | 5.8 | 12.9 | -0.1 | 0.007 | 0.2 |
| | Indicated (South) | 7.3 | 1.1 | 49.2 | 5.1 | 5.8 | 12.6 | -0.6 | 0.004 | 0.3 |
| | **Total Indicated** | **25.8** | **1.1** | **49.1** | **5.1** | **5.8** | **12.8** | **-0.3** | **0.007** | **0.2** |
| | Inferred (North) | 41 | 1.1 | 47.7 | 5.6 | 7.1 | 12.6 | 0.3 | 0.008 | 0.2 |
| | Inferred (South) | 7.1 | 1.1 | 46.9 | 5.6 | 7.4 | 12.1 | 0.5 | 0.005 | 0.3 |
| | **Total Inferred** | **48.1** | **1.1** | **47.6** | **5.6** | **7.2** | **12.5** | **0.3** | **0.008** | **0.2** |
| | **Massive Global** | **75.1** | **1.1** | **48.1** | **5.5** | **6.8** | **12.6** | **0.1** | **0.007** | **0.2** |
| **Disseminated / Banded Magnetite** | Indicated (North) | 10.3 | 0.6 | 28.6 | 13.1 | 25.5 | 7.5 | 3 | 0.03 | 0.2 |
| | Indicated (South) | 2.3 | 0.7 | 33.1 | 9.5 | 20.6 | 8.5 | 2.3 | 0.014 | 0.3 |
| | **Total Indicated** | **12.6** | **0.6** | **29.5** | **12.5** | **24.6** | **7.7** | **2.8** | **0.027** | **0.2** |
| | Inferred (North) | 38.5 | 0.5 | 27.1 | 12.7 | 27.4 | 6.9 | 3.3 | 0.027 | 0.2 |
| | Inferred (South) | 11 | 0.6 | 27.7 | 13 | 25.9 | 7 | 2.7 | 0.015 | 0.3 |
| | **Total Inferred** | **49.5** | **0.5** | **27.2** | **12.8** | **27.1** | **6.9** | **3.2** | **0.024** | **0.2** |
| | **Diss / Band Global** | **62.1** | **0.6** | **27.7** | **12.7** | **26.6** | **7.1** | **3.1** | **0.025** | **0.2** |
| **Combined** | **Global Combined** | **137.2** | **0.9** | **38.9** | **8.7** | **15.7** | **10.1** | **1.5** | **0.015** | **0.2** |

*Note: The Mineral Resources were estimated within constraining wireframe solids using a nominal 0.9% $V_2O_5$% lower cut-off grade for the massive magnetite zones and using a nominal 0.4% $V_2O_5$% lower cut-off grade for the banded and disseminated mineralisation zones. The Mineral Resources are quoted from all classified blocks within these wireframe solids above a lower cut-off grade of 0.4% $V_2O_5$%. Differences may occur due to rounding.

Data from the global Mineral Resource estimate and the 2019 DFS on the GVP were used by independent consultants CSA Global to generate a Proven and Probable Ore Reserve estimate based on the Measured and Indicated Mineral Resource of 39.6 Mt at 0.9% $V_2O_5$ located within the Northern Block of tenements and the Southern Tenement at Gabanintha.

Ore Reserve Estimate as at 15 September 2020

| Reserve Category | Tonnes (Mt) | Grade $V_2O_5$% | Contained $V_2O_5$ Tonnes (Mt) |
|---|---|---|---|
| Proven | 1.1 | 0.96 | 0.01 |
| Probable | 37.9 | 0.90 | 0.34 |
| **Total** | 39.0 | **0.90** | **0.26** |

- *Note: Includes allowance for mining recovery (98% for massive magnetite ore and 95% for banded and disseminated ore) and mining dilution applied as a 1 metre dilution skin; resulting in a North Pit dilution for massive magnetite ore of 13% at 0.45% $V_2O_5$, and North Pit dilution for banded and disseminated ore of 29% at 0.0% $V_2O_5$; a Central Pit dilution for massive magnetite ore of 10% at 0.46% $V_2O_5$, and Central Pit dilution for banded and disseminated ore of 20% at 0.0% $V_2O_5$.; a Southern Pit dilution for massive magnetite ore of 12% at 0.49% $V_2O_5$, and Southern Pit dilution for banded and disseminated ore of 15% at 0.21% $V_2O_5$)*
- *Rounding errors may occur*

| ***Capital Structure*** | |
|---|---|
| *Fully Paid Ordinary Shares on Issue* | *147.3m* |
| *Unquoted Options ($0.20 – 10/05/23 expiry)[1]* | *8.25m* |
| *Unquoted Options ($0.35 – 12/01/21 expiry)* | *2.55m* |
| *Unquoted Options ($0.25 – 15/06/22 expiry)* | *6.850m* |
| *Unquoted Performance Rights[2]* | *1.8m* |

*1 - Director and employee options – 50% vested on grant of mining licence, 50% vest on Gabanintha FID*

*2 – Performance rights issued to technical, metallurgical and processing consultants – two tranches; FID on Yarrabubba and first commercial production from Yarrabubba*

***Forward-Looking Statements***
*This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Technology Metal Australia Limited's planned exploration programs, corporate activities and any, and all, statements that are not historical facts. When used in this document, words such as "could," "plan," "estimate," "expect," "intend," "may", "potential," "should" and similar expressions are forward-looking statements. Technology Metal Australia Limited believes that it has a reasonable basis for its forward-looking statements; however, forward-looking statements involve risks and uncertainties and no assurance can be given that actual future results will be consistent with these forward-looking statements. All figures presented in this document are unaudited and this document does not contain any forecasts of profitability or loss.*

## *Competent Persons Statement*

*The information in this report that relates to Exploration Results are based on information compiled by Mr John McDougall. Mr McDougall is the Company's Exploration Manager and a member of the Australian Institute of Geoscientists. Mr McDougall has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this report and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("**JORC Code**"). Mr McDougall consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

*The information in this report that relates to Mineral Resources is based on information compiled by Mr Aaron Meakin. Mr Aaron Meakin is a Principal Consultant of CSA Global Pty Ltd and is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr Aaron Meakin has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves ("**JORC Code**"). Mr Aaron Meakin consent to the disclosure of the information in this announcement in the form and context in which it appears.*

*The information that relates to Ore Reserves is based on information compiled by Mr Daniel Grosso an employee of CSA Global Pty Ltd. Mr Grosso takes overall responsibility for the Report as Competent Person. Mr Grosso is a Member of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Person in terms of the JORC (2012 Edition). The Competent Person, Daniel Grosso has reviewed the Ore Reserve statement and given permission for the publication of this information in the form and context within which it appears.*

*The information in this report that relates to the Processing and Metallurgy for the Gabanintha project is based on and fairly represents, information and supporting documentation compiled by Mr Brett Morgan and reviewed by Mr Damian Connelly, both employees of METS Engineering Group Pty Ltd. Mr Connelly takes overall responsibility for the Report as Competent Person. Mr Connelly is a Fellow of The Australasian Institute of Mining and Metallurgy and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. The Competent Person, Damian Connelly consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

**Appendix 1: - HLS Products – Assay Results at Range of Densities Tested.**

*Note: Results indicated by red italics are indicative as these samples were over the limit of detection.*

Table 4: HLS on MASFR1 P80 710 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 16.2 | 9.3 | 6.0 | 0.30 | 0.2 | 0.008 | 0.1 | 37.20 | 36.8 | 18.85 | 28.9 |
| 2.8 | 31.5 | 17.2 | 21.5 | 1.17 | 1.8 | 0.043 | 1.1 | 27.30 | 52.7 | 18.55 | 55.4 |
| 3.1 | 4.3 | 22.3 | 3.8 | 6.31 | 1.3 | 0.285 | 1.0 | 21.60 | 5.7 | 15.85 | 6.5 |
| 3.4 | 1.9 | 27.7 | 2.1 | 11.30 | 1.0 | 0.707 | 1.1 | 14.70 | 1.7 | 13.20 | 2.3 |
| 3.6 | 2.8 | 32.6 | 3.6 | 20.50 | 2.8 | 1.335 | 3.1 | 8.06 | 1.4 | 10.05 | 2.7 |
| 4.05 | 43.4 | 36.5 | 63.0 | *44.52* | 92.9 | *2.646* | 93.7 | 0.66 | 1.8 | 1.01 | 4.2 |

Table 5: HLS on MASFR1 P80 500 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 22.7 | 13.8 | 12.2 | 2.44 | 2.4 | 0.073 | 1.3 | 31.30 | 47.3 | 18.20 | 41.1 |
| 2.8 | 22.3 | 16.9 | 14.7 | 1.40 | 1.3 | 0.056 | 1.0 | 28.00 | 41.6 | 19.00 | 42.1 |
| 3.1 | 3.5 | 20.9 | 2.9 | 5.76 | 0.9 | 0.260 | 0.7 | 23.00 | 5.4 | 16.85 | 5.9 |
| 3.4 | 2.3 | 25.3 | 2.2 | 9.63 | 0.9 | 0.580 | 1.0 | 16.90 | 2.6 | 14.70 | 3.3 |
| 3.6 | 49.2 | 35.3 | 67.9 | *45.19* | 94.5 | *2.505* | 96.0 | 0.94 | 3.1 | 1.54 | 7.6 |

Table 6: HLS on MASFR1 P80 250 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 21.4 | 13.4 | 11.3 | 2.38 | 2.3 | 0.068 | 1.1 | 31.00 | 44.6 | 18.25 | 38.4 |
| 2.8 | 23.5 | 16.4 | 15.1 | 1.16 | 1.2 | 0.040 | 0.7 | 27.80 | 44.0 | 19.30 | 44.6 |
| 3.1 | 4.7 | 21.1 | 3.9 | 6.99 | 1.4 | 0.269 | 1.0 | 22.20 | 7.0 | 16.50 | 7.6 |
| 3.4 | 1.9 | 25.3 | 1.9 | 10.90 | 0.9 | 0.539 | 0.8 | 15.50 | 2.0 | 13.95 | 2.7 |
| 3.6 | 48.5 | 35.5 | 67.8 | *43.83* | 94.2 | *2.555* | 96.3 | 0.75 | 2.5 | 1.43 | 6.8 |

Table 7: HLS on MASFR1 P80 125 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 20.7 | 12.3 | 9.7 | 1.32 | 1.1 | 0.042 | 0.9 | 30.10 | 49.5 | 19.70 | 43.2 |
| 2.8 | 17.7 | 16.6 | 11.2 | 1.32 | 0.9 | 0.047 | 0.9 | 26.90 | 37.8 | 19.60 | 36.7 |
| 3.1 | 4.2 | 20.8 | 3.3 | 9.69 | 1.6 | 0.387 | 1.7 | 20.60 | 6.8 | 16.35 | 7.2 |
| 3.4 | 2.6 | 24.6 | 2.4 | 12.50 | 1.2 | 0.424 | 1.1 | 15.20 | 3.1 | 16.95 | 4.6 |
| 3.6 | 54.8 | 35.1 | 73.3 | *44.47* | 95.2 | 1.700 | 95.5 | 0.64 | 2.8 | 1.45 | 8.4 |

Table 8: HLS on MASFR2 P80 710 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 24.2 | 8.5 | 14.1 | 0.25 | 0.5 | 0.004 | 0.3 | 23.70 | 44.3 | 25.20 | 46.2 |
| 2.8 | 30.4 | 11.1 | 23.3 | 0.85 | 2.3 | 0.025 | 2.1 | 21.10 | 49.5 | 19.40 | 44.5 |
| 3.1 | 1.9 | 15.9 | 2.1 | 5.58 | 1.0 | 0.212 | 1.1 | 16.10 | 2.4 | 16.80 | 2.5 |
| 3.4 | 1.4 | 24.6 | 2.4 | 16.80 | 2.1 | 0.521 | 2.0 | 8.47 | 0.9 | 13.75 | 1.5 |
| 3.6 | 3.2 | 24.7 | 5.5 | 21.30 | 6.1 | 0.531 | 4.7 | 7.95 | 2.0 | 14.35 | 3.5 |
| 4.05 | 38.8 | 19.7 | 52.6 | 25.42 | 87.9 | 0.843 | 89.8 | 0.31 | 0.9 | 0.63 | 1.9 |

Table 9: HLS on MASFR2 P80 500 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 27.4 | 10.3 | 12.1 | 1.56 | 1.8 | 0.033 | 0.7 | 22.70 | 54.1 | 22.90 | 53.8 |
| 2.8 | 20.3 | 11.5 | 10.1 | 1.24 | 1.1 | 0.040 | 0.6 | 21.50 | 38.1 | 20.20 | 35.2 |
| 3.1 | 2.1 | 20.0 | 1.9 | 8.85 | 0.8 | 0.341 | 0.6 | 15.10 | 2.8 | 16.20 | 3.0 |
| 3.4 | 1.1 | 24.9 | 1.1 | 13.40 | 0.6 | 0.491 | 0.4 | 10.55 | 1.0 | 15.90 | 1.5 |
| 3.6 | 49.1 | 35.3 | 74.8 | *45.19* | 95.6 | *2.505* | 97.6 | 0.94 | 4.0 | 1.54 | 6.5 |

Table 10: HLS on MASFR2 P80 250 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 30.4 | 11.6 | 15.2 | 3.98 | 5.5 | 0.067 | 3.3 | 20.90 | 57.3 | 21.40 | 54.1 |
| 2.8 | 18.0 | 10.7 | 8.2 | 1.28 | 1.0 | 0.031 | 0.9 | 21.70 | 35.1 | 21.40 | 31.9 |
| 3.1 | 2.4 | 15.9 | 1.6 | 6.53 | 0.7 | 0.184 | 0.7 | 16.85 | 3.7 | 18.95 | 3.8 |
| 3.4 | 1.4 | 22.1 | 1.3 | 12.20 | 0.8 | 0.339 | 0.8 | 11.55 | 1.5 | 17.85 | 2.1 |
| 3.6 | 47.8 | 36.0 | 73.7 | 42.38 | 92.0 | 1.220 | 94.3 | 0.57 | 2.4 | 2.03 | 8.1 |

Table 11: HLS on MASFR2 P80 125 LIMS Non-Mags

| Density | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| -2.8 | 27.4 | 10.2 | 12.0 | 1.70 | 1.9 | 0.032 | 1.4 | 22.30 | 56.9 | 23.20 | 52.5 |
| 2.8 | 17.8 | 11.3 | 8.6 | 1.58 | 1.1 | 0.034 | 1.0 | 21.60 | 35.9 | 21.40 | 31.5 |
| 3.1 | 2.6 | 14.5 | 1.6 | 6.35 | 0.7 | 0.158 | 0.7 | 17.35 | 4.2 | 20.00 | 4.3 |
| 3.4 | 1.0 | 22.2 | 1.0 | 13.75 | 0.6 | 0.295 | 0.5 | 9.06 | 0.9 | 23.10 | 2.0 |
| 3.6 | 51.1 | 35.0 | 76.8 | *46.22* | 95.7 | 1.174 | 96.5 | 0.44 | 2.1 | 2.31 | 9.7 |

**Appendix 2: - HLS Sink Products – Assay Results by Size Fraction**

*Note: Results indicated by red italics are indicative as these samples were over the limit of detection. Selected samples were re-assayed to confirm titanium content – results highlighted in bold.*

Table 12: Assay by Size on +4.05 MASFR1 P80 710 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 12.8 | 41.3 | 14.5 | 24.30 | 7.0 | *11.75* | 57.0 | 2.20 | 42.8 | 1.36 | 17.3 |
| 150 | 9.9 | 37.0 | 10.0 | *41.50* | 9.2 | *4.240* | 15.8 | 0.93 | 13.9 | 1.21 | 11.8 |
| 106 | 18.9 | 35.5 | 18.4 | *46.90* | 19.9 | 1.320 | 9.4 | 0.52 | 14.9 | 1.14 | 21.3 |
| -106 | 58.4 | 35.6 | 57.0 | *48.70*<br>**48.50** | 63.9 | 0.805 | 17.8 | 0.32 | 28.3 | 0.86 | 49.6 |

Table 13: Assay by Size on +3.6 MASFR1 P80 500 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 13.7 | 39.8 | 15.5 | 25.70 | 7.8 | *9.830* | 53.8 | 39.8 | 15.5 | 2.77 | 40.3 |
| 150 | 11.4 | 36.2 | 11.7 | *42.30* | 10.6 | *3.760* | 17.1 | 36.2 | 11.7 | 1.44 | 17.4 |
| 106 | 18.1 | 35.3 | 18.1 | *48.01*<br>**45.70** | 19.2 | 1.375 | 9.9 | 35.3 | 18.1 | 0.73 | 14.0 |
| -106 | 56.8 | 34.0 | 54.8 | *49.57*<br>**47.90** | 62.3 | 0.846 | 19.2 | 34.0 | 54.8 | 0.47 | 28.3 |

Table 14: Assay by Size on +3.6 MASFR1 P80 250 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 7.2 | 38.2 | 7.8 | *30.30* | 5.0 | *8.680* | 24.5 | 1.94 | 18.6 | 1.48 | 7.5 |
| 150 | 18.1 | 36.6 | 18.7 | *38.10* | 15.8 | *5.430* | 38.5 | 1.29 | 31.1 | 1.46 | 18.5 |
| 106 | 24.0 | 35.1 | 23.6 | *44.90* | 24.5 | **1.815** | 17.0 | 0.71 | 22.6 | 1.44 | 24.1 |
| -106 | 50.7 | 35.0 | 49.9 | *47.30* | 54.7 | **1.005** | 19.9 | 0.41 | 27.6 | 1.41 | 49.9 |

Table 15: Assay by Size on +3.6 MASFR1 P80 125 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 150 | 6.3 | 36.2 | 6.5 | *37.90* | 5.4 | 3.740 | 13.8 | 1.32 | 12.9 | 1.43 | 6.2 |
| 106 | 21.0 | 36.0 | 21.5 | *42.50* | 20.1 | 2.510 | 31.0 | 0.90 | 29.4 | 1.38 | 20.0 |
| -106 | 72.7 | 34.8 | 72.0 | *45.60* | 74.6 | 1.290 | 55.2 | 0.51 | 57.7 | 1.47 | 73.8 |

Table 16: Assay by Size on +4.05 MASFR2 P80 710 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 11.6 | 36.8 | 21.7 | *39.60* | 18.1 | 2.870 | 39.5 | 1.08 | 41.1 | 1.41 | 25.9 |
| 150 | 6.5 | 35.8 | 11.9 | *43.60* | 11.2 | 2.610 | 20.2 | 0.74 | 15.8 | 1.18 | 12.2 |
| 106 | 7.3 | 35.5 | 13.2 | *46.10* | 13.3 | 1.525 | 13.3 | 0.59 | 14.2 | 1.32 | 15.3 |
| -106 | 30.4 | 34.5 | 53.2 | *48.00*<br>**48.40** | 57.4 | 0.747 | 26.9 | 0.29 | 28.9 | 0.97 | 46.6 |

Table 17: Assay by Size on +3.6 MASFR2 P80 500 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 24.9 | 44.6 | 28.6 | 28.50 | 18.1 | 1.585 | 32.9 | 1.20 | 41.9 | 2.17 | 24.7 |
| 150 | 14.4 | 40.7 | 15.1 | *35.20* | 13.0 | 1.965 | 23.7 | 0.89 | 18.0 | 1.86 | 12.3 |
| 106 | 13.2 | 37.7 | 12.8 | *39.90* | 13.5 | 1.380 | 15.2 | 0.76 | 14.1 | 2.17 | 13.1 |
| -106 | 47.4 | 35.7 | 43.5 | *45.80* | 55.4 | 0.713 | 28.2 | 0.39 | 25.9 | 2.31 | 50.0 |

Table 18: Assay by Size on +3.6 MASFR2 P80 250 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 250 | 11.7 | 40.5 | 13.2 | *35.30* | 9.8 | 1.750 | 16.8 | 0.81 | 16.7 | 1.50 | 8.6 |
| 150 | 16.6 | 37.9 | 17.5 | *37.70*<br>**38.40** | 14.8 | 2.190 | 29.9 | 0.79 | 23.1 | 1.63 | 13.4 |
| 106 | 15.6 | 36.7 | 15.9 | *41.80* | 15.3 | 1.500 | 19.1 | 0.72 | 19.7 | 2.14 | 16.4 |
| -106 | 56.1 | 34.3 | 53.5 | *45.40* | 60.1 | 0.744 | 34.2 | 0.41 | 40.5 | 2.23 | 61.6 |

Table 19: Assay by Size on +3.6 MASFR2 P80 125 LIMS Non-Mags

| Size Fraction | Mass Rec (%) | Fe | | $TiO_2$ | | S | | $SiO_2$ | | $Al_2O_3$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) | Grade (%) | Dist'n (%) |
| 150 | 6.8 | 36.6 | 7.1 | *42.30* | 6.2 | 1.605 | 9.3 | 0.80 | 12.2 | 1.60 | 4.7 |
| 106 | 17.8 | 35.5 | 18.1 | *44.40* | 17.1 | 1.750 | 26.5 | 0.62 | 24.9 | 2.01 | 15.5 |
| -106 | 75.4 | 34.7 | 74.8 | *47.00*<br>**46.70** | 76.7 | 0.999 | 64.2 | 0.37 | 62.9 | 2.44 | 79.8 |

**Appendix 3: - JORC (2012) Table 1.**

**Section 1: Sampling Techniques and Data**

| Criteria | Commentary |
|---|---|
| **Sampling techniques** | • Diamond drilling was undertaken on PQ size using triple tube drilling in the oxidised rock and conventional double tube in fresh rock to ensure maximum recovery and representivity.<br>• Core loss was typically <0.2 m in completely oxidised samples runs of 1.5 m and >98% core recovery was achieved in fresh rock.<br>• Sampling was completed using a diamond saw with half core being sampled to the base of partial oxidation (maximum 18 m) and quarter core being the primary sample for fresh rock.<br>• One primary sample was selected for assay from each metre, with every 20th sample having a duplicate quarter core.<br>• Except where geotechnical samples were taken, core was sampled on a 1 m or 0.5 m basis. Geotechnical samples were re-inserted into the assay stream as whole crushed core.<br>• Core was cut using a diamond blade core saw into quarter using a bottoming cut left of the orientation line.<br>• Samples were taken from the same side of the orientation line throughout each hole. For un-oriented core, samples were selected from a consistent side of the core.<br>• Core was measured on a 20 cm basis by a KT-10 Plus magnetic susceptibility meter.<br>• Reverse circulation (RC) drilling was sampled on a 1 m basis. Each metre drilled was cone split off the rig cyclone, with two 2–3 kg subsamples collected for each metre.<br>• One primary subsample was selected for assay from each metre.<br>• Secondary subsamples were submitted for analysis for every 20th sample, thereby duplicating the primary subsample.<br>• RC drillholes were analysed for magnetic susceptibility by either a KT-9 or KT-10 magnetic susceptibility meter on a 1 m basis.<br>• All Samples are analysed by x-ray fluorescence (XRF) spectrometry following digestion and Fused Disk preparation.<br>• Blanks and certified reference materials (CRMs) were inserted at a rate of 1:50 and 1:20 samples, respectively. CRMs were produced from mineralised material sourced from the Technology Metals Australia Limited (Technology Metals) Gabanintha deposit and certified by a commercial CRM vendor.<br>• Diamond drilling occurred in September 2017 and September 2018, sampling was undertaken by diamond saw late in 2019 and assay was conducted on delivered core sample in early 2020.<br>• RC drilling was complete during three different programs (March 2017, July 2017 and September 2018) with sampling and assay occurring as soon as practical thereafter.<br>• Where possible, diamond drillholes were probed via downhole Televiewer probe and selected drillholes probed with downhole magnetic susceptibility sonde.<br>• QEMSCAN was used to confirm that vanadium is hosted within titanomagnetite minerals within the host gabbro. |
| **Drilling techniques** | • PQ2/3 sized drill core was selected for future metallurgical reasons.<br>• RC drilling completed with 143 mm face-sampling hammer.<br>• Diamond holes were surveyed by Axis system north-seeking gyro and core was oriented by Reflex ACT 111 tool. |
| **Drill sample recovery** | • Sample recovery was assessed based on the estimated bulk sample collected for each metre. Each bag was not weighed. For one in three holes, a spring gauge was used to ensure the cone split remained within the 2–3 kg range. |

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| | • Poor sample recovery or quality (wet, etc) was recorded in logging sheets; however, significant wet sample was limited to one RC hole.<br>• Weights of primary and secondary subsamples were compared to check variability.<br>• There does not appear to be any relationship between recovery and grade in the "massive" mineralisation.<br>• Recovery was maximised in diamond drilling by using triple tube in weathered rock. Core recovery was assessed by measuring expected and recovered core and losses were logged where noted. Core recovery exceeded 98%. |
| **Logging** | • All chips and core have been qualitatively geologically logged to a minimum interval length and precision sufficient for calculation of a mineral resource.<br>• All core holes have been logged by an independent geotechnical consultant.<br>• All diamond core and chip trays have been photographed to a high resolution for electronic storage, for diamond holes this occurred prior to sampling.<br>• Where possible, diamond drillholes and selected RC drillholes were probed via downhole Televiewer probe and selected drillholes probed with downhole magnetic susceptibility sonde.<br>• Geotechnical logging was undertaken on all diamond holes. Geotechnical studies are underway to optimise wall angles on proposed pits. |
| **Subsampling techniques and sample preparation** | • Core was sampled on a quarter basis by diamond saw. Some sections of whole core were selected for geotechnical or metallurgical sampling and are noted as such in the database.<br>• All chips and core have been qualitatively geologically logged to a minimum interval length and precision sufficient for calculation of a mineral resource, for RC chips this is at a consistent 1 m interval with representative chips collected in sample trays and photographed.<br>• All core holes have been logged by an independent geotechnical consultant.<br>• Remaining drill core is stored on site and at the commercial laboratory with intervals and hole identifiers.<br>• Duplicate sampling was undertaken at a rate of 1:20 samples to monitor repeatability of all sampling.<br>• Core was duplicate sampled by assaying a second quarter in the fresh zone or a half core leaving no sample in the oxide zone<br>• Samples presented to the laboratory were split to <2 kg and pulverised to 95% passing 75 microns. 30 g of pulverised material was split and presented for assay.<br>• Davis Tube Recovery (DTR) tests were completed on selected 2 to 4m composites of mineralised intervals defined by assay data and coded to geological unit and weathering code.<br>• Metallurgical ¾ cut PQ diamond drill core samples have been selected to from composites of 50-450kg samples for representative stratigraphic and oxidation specific ore units.<br>• The composites were crushed down to -6.3 mm and split prior to a sub-sample being crushed further to -3.35 mm and used for grind establishment work, which determined the required milling time in order to reach the product P80 for the range of grind sizes being assessed for each composite type. Following the grind establishment each composite was milled down to eight (8) different grind sizes, ranging from 1,000 micron down to 32 micron. Two (2) to five (5) kilograms of each composite at each grind size was then subject to standard triple pass LIMS at 1200 Gauss to yield the final magnetic concentrate.<br>• The results of the 32 micron grind were comparable to previous 32 micron DTR data. |
| **Quality of assay data and laboratory tests** | • Pulverised samples from every metre were fused with a lithium borate flux and cast into disks and analysed by XRF spectrometry – method FB1/XRF77. In addition, loss on ignition (LOI) was completed by gravimetric analysis.<br>• This is considered to approximate a total analysis method. |

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| | • DTR was performed via compositing coarse and selected pulverised sample rejects, by a commercial laboratory.<br>• All comparisons of DTR are done on P80 250 micron target sizing and laser sizing was done as a check.<br>• Field duplicates (at least 1 duplicate sample for every 20 samples analysed), laboratory check samples, blanks (1:50) and commercial reference materials (1:20) are considered to be suitable quality control procedures.<br>• Quality control procedures demonstrate acceptable levels of accuracy and precision have been achieved. CRMs inserted to the sample stream at the laboratory have performed acceptably, and field duplicate samples have performed well. Batches of samples are periodically sent for check assay by an umpire laboratory. |
| **Verification of sampling and assaying** | • Logging was completed onto paper and transcribed or digitally captured in the field.<br>• All logging and sampling information has been captured into a commercially supplied database.<br>• Assay data was supplied in electronic format.<br>• Data has been subjected to quality assurance/quality control (QAQC) cross-checks and verification by company personnel prior to acceptance into the database.<br>• Significant intersections were correlated with mineralised zones as defined from geological logging.<br>• All significant intersections were verified by an independent geologist as well as the Competent Person for Reporting of Exploration Results.<br>• The estimation of significant intersections has been verified by alternate company personnel.<br>• There were no adjustments to assay data.<br>• Four RC holes have been twinned by diamond holes. |
| **Location of data points** | • The grid system used for collar positions is MGA94 – Zone 50.<br>• A 2017 50 cm resolution digital elevation model and high-resolution aerial photogrammetric survey was used for topographic survey control.<br>• Planned hole collar positions were located in the field using handheld global positioning system (GPS).<br>• Final hole collar positions were surveyed using differential RTK GPS with an accuracy of ±5 cm horizontally and ±10 cm vertically.<br>• Downhole deflections were measured using an Axis CHAMP north-seeking gyroscope every 30 m downhole and near the collar.<br>• Downhole magnetic susceptibility and Televiewer data was captured on a <1 cm accuracy downhole. |
| **Data spacing and distribution** | • The drill data is on nominal 100 m line spacing with holes located approximately every 50 m along the drill lines.<br>• Detailed airborne magnetic modelling supports strike and down dip continuity assumptions of the massive magnetite zone which is known to host high-grade mineralisation.<br>• This continuity has been additionally supported by drilling data and structural interpretation where offset is noted in surface mapping.<br>• Data is considered appropriate for use in estimating a Mineral Resource.<br>• No sample compositing is used in primary assay except for DTR testing. |
| **Orientation of data in relation to geological structure** | • The drilling has been completed at an orientation that would have been unlikely to have introduced a sampling bias. The drillholes are drilled orthogonal to the measured strike ±10°, the apparent thickness is estimated 0.85 X the true thickness, drill deviations were not noticeably higher through the mineralised zone. |
| **Sample security** | • RC samples were collected in poly-weave bags, sealed securely and transported by Technology Metals personnel until handover to a commercial transport company, which delivered the samples by road transport to the laboratory. |

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| | • Drill core samples for geotechnical rock property testing were transported to the commercial laboratory as whole core by registered consignment and sequential sample numbers were assigned and sample bags presented to the geotechnical lab for submission as discrete crushed samples to the commercial assay laboratory. All remaining core from the current program was labelled with non-degrading metal tags.<br>• For RC holes transport was completed within one week and sample reconciliation and crushing at the lab occurred within 14 days of receipt. The diamond drilling commercial transport was tracked and after a holding period at the laboratory the samples were reconciled against the sample list on the submissions provided after the 2019 sampling program. |
| **Audits or reviews** | • A representative from the independent geological consultants, CSA Global Pty Ltd (CSA Global), visited the site during the infill and extensional drilling program and reported drilling and sampling procedures and practices to be acceptable.<br>• Apart from umpire assay and use of experienced field geologists (all >20 years' experience) to supervise sampling, no written audits have been completed to date. Data validation is done by a supervising geologist, database geologist and a Resource consultant all independent and contracted to Technology Metals. |

**Section 2: Reporting of Exploration Results**

| Criteria | Commentary |
|---|---|
| **Mineral tenement and land tenure status** | • The areas drilled are located on current Mining Leases M51/883 and M51/884.<br>• The tenements for the global Mineral Resource estimate are granted and held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited. |
| **Exploration done by other parties** | • RC drilling was completed in 1998 by Intermin Resources NL under an option agreement on tenements held by Oakland Nominees Pty Ltd – consisting of GRC9801 to GRC9805 (on Prospecting Licence 51/2164) and GRC9815 to GRC9817 (on Prospecting Licence 51/2183).<br>• The areas drilled are located on current Prospecting Licences 51/2943 (GRC9801, GRC9802), 51/2944 (GRC9803, GRC9804, GRC9805) and 51/2942 (GRC9815 to GRC9817) held by The KOP Ventures Pty Ltd, a wholly owned subsidiary of Technology Metals Australia Limited.<br>• Exploration prior to this drilling included geological mapping and limited rock chip sampling completed across a zone of outcropping vanadiferous titanomagnetite layered mafic igneous unit by various parties. |
| **Geology** | • The Gabanintha vanadium deposit is of a layered igneous intrusive type, hosted within a gabbro intrusion assigned to the Archaean Meeline Suite.<br>• Mineralisation is in the form of vanadiferous magnetite in massive and disseminated bands |
| **Drillhole information** | • See attached Appendix A and B. |
| **Data aggregation methods** | • Significant intervals (as shown in Appendix B) have been defined nominally using a 0.4% $V_2O_5$ lower cut-off grade, length weighted average grades and no more than 2 m of consecutive lower grade mineralisation.<br>• High-grade intervals (as shown in Appendix B) have been defined nominally using a 0.8% $V_2O_5$ lower cut-off grade, length weighted average grades and nominally no more than 1 m of consecutive lower/medium-grade mineralisation.<br>• Where intervals were taken for specific geotechnical tests (six samples of generally <5 cm), the grade is calculated as zero for the contribution to the composite intervals. Longer geotechnical core samples were assayed in a separate batch after geotechnical testing. Assay was done on crushed whole core included using appropriate QAQC and reconciliation with the correct downhole interval. No weighting was given to the whole core v PQ quarter core in composites. |

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| **Relationship between mineralisation widths and intercept lengths** | • Downhole lengths of mineralisation are reported.<br>• True width is estimated at approximately 0.85 x downhole widths except where mineralisation steepens against major faults; however, true widths are not expected to be less than 70% in these cases.<br>• See the cross section shown in Figure 3 in the ASX announcement by Technology Metals on 1 July 2020 for an approximation of true width. |
| **Diagrams** | • The below diagrams were included in the ASX announcement by Technology Metals on 1 July 2020:<br>o A map showing tenement and drillhole locations has been included<br>o Cross sections showing the relationship between mineralisation and geology has been included<br>o A table of all intersections for the reported drilling has been included. |
| **Balanced reporting** | • Results for all mineralised intervals have been included, including both low and high grades. |
| **Other substantive exploration data** | • Geophysical data in the form of aeromagnetic data assists the geological interpretation of the main high magnetite unit and highlights offsets due to faults and or dykes. Historical drilling data is not used due to uncertainty in location and orientation.<br>• Oxidation state has been modelled based on geological logging and geometallurgical characterisation.<br>• Bulk density measurements using a mixture of calliper and immersion methods have been completed on diamond core samples of fresh, transitional and oxidised material from the Southern Tenement. These have been supplemented by, and compared to, measurements taken from the Northern Tenement core. A reasonable number of samples have been measured by both methods to ensure there is no significant bias when using data obtained by either of the two methods to estimate the various material type densities.<br>• Metallurgical testwork and bulk sampling results indicate amenability of magnetite concentrates to conventional roast leach processing (see ASX release dated 12 December 2018 – Outstanding Gabanintha Metallurgical Results), and DTR has been found to be a suitable proxy for low-intensity magnetic separation (LIMS).<br>• Low values of deleterious elements (arsenic, molybdenum, chromium) are associated with mineralisation.<br>• The Yarrabubba Iron-Vanadium product has been proven recoverable on the basis of <250 micron grinding and magnetic recovery, with low values of deleterious elements (Aluminium, Sulfur, Silica, Phosphorus) considered in iron products for steel production. |
| **Further work** | • Studies on the alternative development of Yarrabubba resource have been initiated with work on non-magnetic product recovery, dense media separation, mineralogy and flowsheet definition.<br>• Further assessment of the Yarrabubba Iron-Vanadium recovery and variability from drilling, pilot scale testwork and geotechnical assessment will inform a new reserve assessment in due course with concurrent activity evaluating logistics options, haulage routes and advancing required approvals and proposals.<br>• The strike length of the outcropping mineralisation has been drill tested with outcrop receding under cover in adjacent tenements to the northwest and southeast. More high yielding fresh vanadiferous titaniferous magnetite may be present down dip in the structurally deformed and thickened apparent footwall in the vicinity of GBDD034.<br>• Processing water is being sourced from a paleochannel to the northwest of M51/883 where four (4) successful production bores have been pump tested for assessment of groundwater impacts.<br>• Environmental studies for EPA approvals and for the processing site are expected to be finalised in Q1 2021. |

**Section 3: Estimation and Reporting of Mineral Resources**

| Criteria | Commentary |
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| **Database integrity** | • Drilling data is stored in a DataShed database system which is an industry best practice relational geological database. Data that has been entered to this database is cross checked by independent geological contracting staff to |

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| | ensure accuracy. CSA Global has been provided with a number of PDF format assay certificates from the laboratory and completed its own checks, finding that all checked assay data was correctly captured in the relevant database table.<br>• Data used in the Mineral Resource estimate is sourced from a database export. Relevant tables from the database are exported to Microsoft Excel format and converted to comma-separated values (CSV) format for import into Datamine Studio RM software.<br>• Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars. |
| **Site visits** | • A two-day site visit was completed by a CSA Global staff member in August 2017 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling and logging practice being observed. Drill collar locations have been captured by handheld GPS confirming their stated survey locations. Mineralisation outcrop extents were followed, with measurements taken confirming the interpreted strike and dip.<br>• A two-day site visit was completed by a CSA Global staff member in October 2018 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling, density measurement and logging practice being observed. Drill collar locations have been captured by handheld GPS confirming their stated survey locations. |
| **Geological interpretation** | • Based on surface geological and structural mapping, drillhole logging and sample analysis data and geophysical total magnetic intensity (TMI) data, the geology and mineral distribution of the massive V-Ti-magnetite zone appears to be relatively consistent through the interpreted strike length of the deposit. Crosscutting faults, interpreted from the drillhole and magnetic data and surface mapping, have been modelled. These features displace the mineralisation as shown in the diagrams in the body of this report. In the hangingwall and footwall of the massive magnetite zone, the mineralised units are defined at a nominal 0.4% $V_2O_5$ lower cut-off grade and a nominal minimum 3 m downhole continuity. The geological and grade continuity of some of these zones is not as well understood as the massive magnetite unit. Drill sample logging and analysis demonstrates consistent zones of more disseminated magnetite mineralisation, containing centimetre to decimetre scale magnetite bands, existing in the hangingwall and footwall of the massive unit along strike and on section. Weathering surfaces for the base of complete oxidation and top of fresh rock have been generated based on a combination of drillhole logging, magnetic susceptibility readings and sample analysis results. A partially mineralised cover sequence is interpreted as depleting the top few metres of the model interpreted based on lithological logging of the drilling.<br>• Surface mapping, drillhole intercept logging, sample analysis results and TMI data have formed the basis of the geological and mineralisation interpretations. Assumptions have been made on the depth and strike extent of the mineralisation based on the drilling and geophysical data, as documented further on in this table. Based on the currently available information contained in the drilling data, surface mapping and the geophysical data, the assumption has been made that the hangingwall and footwall disseminated mineralisation lenses that are in the same stratigraphic position relative to the massive magnetite are related and are grouped together as the same zones for estimation purposes.<br>• The extents of the modelled mineralisation zones are constrained by the available drill and geophysical data, with strike extent limited by tenement boundaries. Alternative interpretations are not expected to have a significant influence on the global Mineral Resource estimate.<br>• The continuity of the geology and mineralisation can be identified and traced between drillholes by visual, geophysical and geochemical characteristics. In parts of the modelled area, additional data is required to more accurately model the effect of any potential structural or other influences on the modelled mineralised units. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification. |

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| **Dimensions** | • The modelled mineralisation on M51/883 strikes approximately 125° to 305°, dipping on average about 55° towards 215°, with a modelled strike extent of approximately 1.6 km. The modelled mineralisation on M51/884 strikes approximately 160° to 340°, dipping on average about 60° towards 250°, with a modelled strike extent of approximately 4.6km.<br>• The stratiform massive magnetite unit has a true thickness varying between 5 m and 25 m. The interpreted disseminated mineralisation lenses appear to be better developed in the centre and northern half of the modelled area on M51/884 and within M51/883, with cumulative true thickness of the order of 25 m from up to four lenses, reducing to roughly 7 m from two lenses south of the southern deposit. The massive magnetite outcrops and has been mapped along the strike extent and has been extended to a maximum of approximately 200 m below topographic surface or nominally 70 m down dip of the deepest drillhole intersections in M51/884 and 50m in M51/883. The strike extent is extended to the intersections with the tenement boundaries based on the surface mapping and geophysical data extents. In the north of M51/884 this is roughly 30 m along strike and in the south of M51/884 roughly 125 m along strike from the relevant drilling sections. The southern-most lens of the modelled massive magnetite mineralisation has been limited to roughly 160 m below topographic surface, due to increased geological uncertainty. The immediate hangingwall disseminated mineralisation zone above the massive magnetite is modelled to a nominal maximum of 175 m below topographic surface. The remaining hangingwall lenses are successively modelled to nominal maximums below topographic surface of 165 m and 155 m respectively, and the footwall lens to 165 m. Given the continuity defined over the drilled extents (fence line spacings of mostly 100 m) and being additionally informed by the magnetics (TMI), these extrapolation extents are considered reasonable. Within M51/883 the strike extent is extended a nominal 200m, or half the nominal drill section spacing, past the last drilling section in the south to the intersection with the tenement boundary based on the surface mapping and geophysical data extents. In the north the mineralisation is terminated nominally 50m past drilling based on the surface mapping extents of the outcropping mineralisation. The northern most lens of the modelled massive magnetite mineralisation has the down dip extent limited to a nominal 40m down dip of drill section data, or 150m below topographic surface, due to the greater geological uncertainty. The immediate hanging wall disseminated mineralisation zone above the massive magnetite is considered to be the most consistent of the disseminated magnetite zones and is modelled nominally 80 m down dip of the deepest drill intersections or nominally 260 m below topographic surface. The lenses further up in the hanging wall are not as clearly constrained and understood, mostly due to lower drill coverage at depth, and therefore the down dip extent is successively reduced upwards in the sequence. Given the continuity defined over the drilled extents on M51/883 (fenceline spacings of mostly 100m) and being additionally informed by the magnetics (TMI), these extrapolation extents are considered reasonable. |
| **Estimation and modelling techniques** | • The Mineral Resource estimates were completed in Datamine Studio RM software using the ordinary kriging estimation method, with an inverse distance weighting to the power of two (IDW) estimation method also completed for validation purposes. Estimations were completed for $V_2O_5$, iron and contaminant elements, $TiO_2$, $Al_2O_3$, $SiO_2$, phosphorous and sulphur, and LOI at 1,000°C.<br>• Due to the mineralised zones being cut by and/or offset by faults in ML51/884, the mineralisation interpretation consists of 11 massive magnetite and 28 disseminated/banded magnetite mineralisation lenses. These are grouped together using a numeric zone code as the massive magnetite lenses, or for the disseminated mineralisation lenses they grouped together based on stratigraphic position in the hangingwall or footwall relative to the massive magnetite. These lens groupings are then further split based on the weathering surface interpretations into oxide, transition and fresh materials.<br>• Due to the mineralised zones being cut by and / or offset by faults and dykes the mineralisation interpretation in ML51/883 consists of 12 massive magnetite and 36 disseminated magnetite mineralisation lenses. These are grouped together using a numeric zone code as the massive magnetite lenses, or for the disseminated mineralisation lenses they |

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| | | grouped together based on stratigraphic position in the hanging wall or foot wall relative to the massive magnetite. These lens groupings are then further split based on the weathering surface interpretations into oxide, transition and fresh materials.<br>• The preliminary statistical analysis completed on ML51/884 on the massive magnetite and stratigraphically relative grouped disseminated magnetite domains showed that for the some of the combined mineralisation / weathering state domain groupings there were not sufficient samples to complete a robust grade estimation. As a result, due to insufficient data points for the oxide massive magnetite, the oxide material was combined with transitional to form one estimation domain. Similarly, in the foot wall disseminated magnetite domains, the oxide and transition zones are grouped together. All data in the upper most hanging wall disseminated unit is combined into a single domain. This has resulted in 17 separate estimation domains being defined with hard boundaries being used between the defined combined weathering and mineralisation estimation domains.<br>• The preliminary statistical analysis for ML51/884 completed on the massive magnetite and stratigraphically relative grouped disseminated magnetite domains showed that for the combined mineralisation/weathering state domain groupings there were not sufficient samples to complete a robust grade estimation. These weathering state domains were combined to provide sufficient data to inform a robust estimate. The oxide and transitional zones of the massive magnetite and hangingwall disseminated magnetite mineralisation zones were combined and, in the footwall disseminated magnetite domain, all weathering state zones are grouped together. This has resulted in nine separate estimation domains being defined, with hard boundaries being used between the defined combined weathering and mineralisation estimation domains.<br>• A detailed statistical analysis was completed for each of the defined mineralisation/weathering state estimation domains. This analysis showed that for some grade variables occasional outlier grades existed and, in the Competent Person's opinion, these required balancing cuts to prevent estimation bias associated with outlier values.<br>• On M51/884 for the massive magnetite, top cuts were applied to $SiO_2$ in the combined weathered domain, and for $SiO_2$, LOI, phosphorous and sulphur in the fresh domain. For the disseminated magnetite domains, phosphorous and sulphur required top cutting in various domains.<br>• On M51/8843 for the massive magnetite top cuts were applied to $Al_2O_3$, P, S and $SiO_2$ in the combined weathered domain, and for $Al_2O_3$, Co, Cu, Ni, P and $SiO_2$ in the fresh domain as listed in the relevant table in the body of the report. For the disseminated magnetite domains, various elements required top cutting as listed in the relevant table in the body of this report.<br>• Drill spacing on ML51/884 is nominally 40 m to 50 m on sections spaced 100 m or 200 m apart. Maximum extrapolation away from data points is up to 170 m downdip on two drill sections with two drill holes and between roughly 65 m and 120 m on remaining sections.<br>• Drill spacing is nominally 40m to 50m on ML51/883 with sections spaced 100m or 200m apart. Maximum extrapolation away from data points is to 200m in the south and up to 120m down dip.<br>• Kriging neighbourhood analysis was used in conjunction with the modelled variogram ranges on ML51/884 and consideration of the drill coverage to inform the search parameters. Search ellipse extents are set to 250 m along strike, 125 m down dip and 15 m across dip, ensuring the majority of the block estimates find sufficient data to be completed in the first search volume. The search volume was doubled for the second search pass and increased 20-fold for the third search pass to ensure all block were estimated. A maximum of six samples per hole, with a minimum of 15 and a maximum of 30 samples are allowed for a block estimate in the first search pass, reducing to a minimum of 12 samples and a maximum 24 samples for the second pass, and reducing to a minimum of eight samples and a maximum 15 samples for the final pass. |

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| | • Kriging neighbourhood analysis (KNA) was used in conjunction with the modelled variogram ranges on ML51/883 and consideration of the drill coverage to inform the search parameters. Search ellipse extents are set to 275m along strike, 230m down dip and 20m across dip, ensuring that the majority of the block estimates find sufficient data to be completed in the first search volume. The search volume was doubled for the second search pass and increased 20-fold for the third search pass to ensure all block were estimated. A maximum of 8 samples per hole, with a minimum of 15 and a maximum of 36 samples are allowed for a block estimate in the first search pass, reducing to a minimum of 12 samples and a maximum 30 samples for the second pass, and the maximum was then further reduced to maximum 24 samples for the final pass.<br>• The IDW check estimate results produced comparable results with a less than 1% difference in global $V_2O_5$ grade.<br>• By-product recovery of the base metals Co, Cu and Ni is considered to be a possible option on M51/883. Metallurgical testing has demonstrated that a base metal concentrate with up to 10% to 15% can be produced by flotation methods from the non-magnetic tailing stream produced during beneficiation of the primary commodity – vanadium bearing magnetite. These base metals have therefore been estimated into the block model using the same search and variogram parameters as used for the other estimated elements.<br>• By-product recovery has not been considered for M51/884 in this deposit estimate.<br>• Potentially deleterious phosphorous and sulphur have been estimated.<br>• A volume block model for M51/883 with parent block sizes of 40 m(N) x 40 m(E) x 5 m(RL) was constructed using Datamine Studio software. Minimum sub cells down to 2.5 m(N) x 2.5 m(E) x 2.5 m(RL) were allowed for domain volume resolution. Drill spacing is nominally 40–50 m across strike on southwest to northeast orientated sections spaced either 100 m or 200 m apart along strike.<br>• A volume block model for M51/884 with parent block sizes of 50 m (N) by 10 m (E) by 5 m (RL) was constructed using Datamine Studio Software. Minimum sub cells down to 2.5 m (N) by 2.5 m (E) by 2.5 m (RL) were allowed for domain volume resolution. Drill spacing is nominally 40m to 50m across strike on west to east sections spaced either 100m or 200m apart north to south.<br>• No assumptions have been made regarding selective mining units at this stage.<br>• A strong positive correlation on ML51/883 exists between iron and $V_2O_5$ and $TiO_2$ and a strong negative correlation between those three grade variables and $Al_2O_3$, and $SiO_2$.<br>• A strong positive correlation on ML51/884 exists between Fe and $V_2O_5$ and $TiO_2$ and a strong negative correlation between Fe and $Al_2O_3$, $SiO_2$ and LOI.<br>• The separate interpreted mineralisation zones domained based on the geological, geochemical and geophysical data, and further domained by weathering state have been separately estimated using hard boundaries between domains. The model is depleted by fault zones, and surficial colluvium zones that have been interpreted based on the geological, geochemical and geophysical data.<br>• Block model validation has been completed by statistical comparison of drill sample grades with the ordinary kriging and IDW check estimate results for each estimation zone. Visual validation of grade trends along the drill sections was completed and trend plots comparing drill sample grades and model grades for northings, eastings and elevation were completed. These checks show reasonable comparison between estimated block grades and drill sample grades, with differences in block model grade compared to the drill sample data for $V_2O_5$ primarily attributable to volume variance and estimation smoothing effects.<br>• With no mining having taken place, there is no reconciliation data available to test the model against. |
| **Moisture** | • Tonnages have been estimated on a dry, in situ, basis. |

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| **Cut-off parameters** | • The adopted lower cut-off grade for reporting of 0.4% $V_2O_5$ is supported by the metallurgical results and conceptual pit optimisation study as being reasonable. |
| **Mining factors or assumptions** | • It has been assumed that these deposits are amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. No assumptions regarding minimum mining widths and dilution have been made. |
| **Metallurgical factors or assumptions** | <u>M51/883</u><br>• Metallurgical amenability has been assessed based on results from TMT's ongoing detailed metallurgical testwork program from its Northern Tenement Block.<br>• The work conducted since the previous Northern Block Mineral Resource estimate release (TMT: ASX announcement March 7th 2018) has consisted of:<br>• Comminution testwork on a number of sections of full core sampled from the August-November 2018 drilling program;<br>• DTR testwork on composites from 2017 drilling program samples;<br>• Magnetic beneficiation testwork, and<br>• Preparation of magnetic concentrate for kiln vendor testwork.<br>• The magnetic beneficiation testwork consisted of low intensity magnetic separation (LIMS) on the two composite samples (massive fresh and massive transitional (the significant ore types) at five nominal grind sizes of P80 passing 150, 250, 500, 750 and 1000 microns undertaken by a triple pass methodology at 1200 Gauss.<br>• The results for the fresh massive showed that grades of 1.25% to 1.34% $V_2O_5$ reported to a magnetic concentrate across the grind size range, with iron grades ranging between 55.3% and 58.1%. The massive fresh material showed a mass recovery ranging from 75.4% to 79.9% reporting to the magnetic concentrate, with a vanadium recoveries ranging from 95.3% to 96.2%.<br>• The results for the transition massive showed that grades of 1.27% to 1.32% $V_2O_5$ reported to a magnetic concentrate across the grind size range, with iron grades ranging between 54.5% and 56.2%. The massive transition material showed a mass recovery ranging from 58.1% to 66.2% reporting to the magnetic concentrate, with a vanadium recoveries ranging from 67.6% to 74.0%.<br>• There was a very high rejection of gangue minerals from both of the composites, with $SiO_2$ grades in the magnetic concentrates ranged from 0.8% to 2.9% in the massive fresh and 0.9% to 1.6% in the massive transitional, with $Al_2O_3$ ranging from 3.0% to 3.7% in the massive fresh and from 3.0% to 3.4% in the massive transitional.<br>• DTR testwork has given average head grades, concentrate grades, recoveries and mass yields across the Proposed North Pit and Central Pit as shown below<br>• Ore Type:MassiveDisseminated / Banded<br>• Oxidation typeOxideTransFreshOxideTransFresh<br>• Head grade $V_2O_5$%1.111.151.080.550.550.52<br>• DTR Magnetic Weight Recovery (Yield) %59.56178816.435.6<br>• DTR grade $V_2O_5$%1.341.351.321.281.281.14<br>• DTR $V_2O_5$ Recovery % (Magnetic con)72.973.295.137.753.476<br>• Selected samples from the bulk sample drilling conducted in October 2018 were sent down to Perth for generation of magnetic concentrate for preliminary kiln vendor testing. The samples were selected to be representative across the anticipated first 2 years of production with a head grade of approximately 1.01% $V_2O_5$. These samples were crushed, and milled to a P80 of 250 microns before being subject to triple pass LIMS. |

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| | • The results indicate that 95.3% of the vanadium was recovered into a concentrate with a grade of 1.34% $V_2O_5$ and a mass recovery of 72.0%. There was high gangue rejection with a $SiO_2$ grade of 1.56% and $Al_2O_3$ grade of 3.28%.<br>• This sample once roasted and leached under conditions representative of the process gave vanadium recoveries into the leach liquor of between 78.59% and 82.37%. The average recovery for these roast tests, plus assumed recoveries for desilication and associated required processes to obtain $V_2O_5$ gives a recovery of 78.33% from the magnetic concentrate.<br>• Based on the DTR results, kiln vendor roast work and leaching and assumed recoveries for downstream processes the following recovery factors have been estimated for each composite type:<br>•Massive fresh – 74.5%<br>•Massive transitional – 57.3%<br>•Massive oxide – 57.1%<br>•Disseminated/Banded fresh – 59.5%<br>•Disseminated/Banded transitional – 41.8%<br>•Disseminated/Banded oxide – 29.5%<br>•Further beneficiation work is underway on the remaining samples from the bulk drilling program to produce a bulk sample for additional kiln vendor testing.<br>•Base metal recovery testwork focused on the recovery of Co, Ni and Cu from the non-magnetic (tailings) fraction from the magnetic separation process and has been reported in an ASX announcement on 12 December 2018. Further work is underway to optimise the base metal recoveries.<br><br><u>ML51/884</u><br>• Metallurgical amenability has been assessed based on results from Technology Metals' ongoing metallurgical testwork program from DTR in the Southern Tenement and its kiln sample work for the Northern Tenements block.<br>• The work conducted since the previous Southern Tenement (Yarrabubba) Mineral Resource estimate release (TMT: ASX announcement, 17 December 2017) has consisted of:<br>o Comminution testwork on a number of sections of full core sampled from the August–November 2018 drilling NT program<br>o DTR testwork on composites from 2017–2018 drilling programs<br>o Magnetic beneficiation testwork on Northern Tenement ore<br>o Kiln vendor testwork and product generation.<br>• DTR was performed via compositing 18 coarse crushed and three pulverised sample rejects, by a commercial laboratory. All DTR tests were undertaken with a target P80 of 250 micron with screen sizing and laser sizing undertaken to verify.<br>• The DTR testing was completed on 21 composite samples prepared from stored coarse RC drill sample material from the RC drilling programs at the Southern Tenement, with a total of 50.5 kg of material tested. The testwork, completed at a commercial laboratory under the supervision of Technology Metals' metallurgical consultants METS Engineering Group Pty Ltd, was designed to assess magnetic yield and vanadium recovery to a magnetic concentrate.<br>• Key findings of the testwork were confirmation of high mass recovery for the massive magnetite zone, high vanadium recovery to the magnetic concentrate and higher vanadium grades in concentrate than recorded in the Northern Block material.<br>• The mass recovery to a magnetic concentrate for fresh massive magnetite samples is very high, averaging 72%, with excellent vanadium recovery to concentrate averaging 92%. The average vanadium in concentrate grades of 1.48% $V_2O_5$ for the fresh massive magnetite samples and 1.64% $V_2O_5$ for hangingwall magnetite exceeds the concentrate |

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| | grades recorded in the Northern Block whilst maintaining low levels of deleterious elements silica and aluminium (TMT: ASX announcement, 30 April 2020).<br>• These results are in line with the results from the Northern Block DTR testing undertaken previously and incorporated into the Definitive Feasibility Study (DFS). The Northern Block fresh massive magnetite samples averaged 78% mass recovery and 95% vanadium recovery into a concentrate averaging 1.32% $V_2O_5$. These Northern Block composites also averaged higher silica and alumina in the concentrate than the recently undertaken work.<br>• A notable difference from the Northern Block work is the deportment of titanium; Northern Block fresh material recovers on average 81% into a concentrate grading 12.86% $TiO_2$ whilst this work averaged 52% recovery into a concentrate that was 8.94% $TiO_2$.<br>• The remaining samples from the bulk sample drilling (Northern Block) conducted in October 2018 were sent to Perth for generation of bulk magnetic concentrate for kiln vendor testing. The samples were selected to be representative across the anticipated first two years of production. These samples were crushed and milled through a pilot plant to a P80 of 250 microns before being subject to triple pass LIMS at a pilot scale.<br>• The results indicate that 93.0% of the vanadium was recovered into a concentrate with a grade of 1.35% $V_2O_5$ and a mass recovery of 65.2%. There was high gangue rejection with a $SiO_2$ grade of 1.26% and $Al_2O_3$ grade of 3.16%.<br>• This sample was then utilised in pilot kiln testwork to achieve vanadium solubilities of 84.9–90.9% with an average of 88.6%. (TMT: ASX announcement, 19 June 2019).<br>• Previous testwork undertaken as part of the DFS has demonstrated the ability to leach the sighter calcine material and undertake the necessary downstream processes to produce a $V_2O_5$ product with a purity of 99.58% with a recovery of 96.5% from solution.<br>• The sample from the pilot kiln testwork is currently undergoing a bulk leach process in which the leach liquor generated will be used for optimisation of the downstream processes and generation of product samples. Previous work has shown the ability to undertake the necessary downstream process in order to produce $V_2O_5$ flake grading at +99.5% purity with a recovery of greater than 98% from solution (TMT: ASX announcement, 12 September 2018).<br>• Given the similarities in concentrate composition, with the exception of titanium, there is no evidence to suggest that the performance of this material will vary significantly through roasting and the associated downstream processes.<br><br>In addition to the DTR testwork variability Iron-Vanadium recovery studies are progressing with initial batches made for 7 representative mineralisation composites from the 4 PQ diamond drillholes in the Yarrabubba project, these were prepared for metallurgical work at a commercial laboratory. These have been tested for Heavy Liquid Separation characteristics and the first two Fresh Massive Magnetite composites have also been subjected to triple pass LIMS and assays of the concentrates have been returned from the Laboratory.<br><br>Key findings from the HLS (Heavy Liquid Separation) results are:<br><br>• HLS was extremely effective in removing mass with high recoveries of valuable constituents to the denser fractions, particularly for the Hangingwall units.<br>• High recoveries of Fe, V, TiO2 and S indicating potential to use DMS as an effective pre-concentration step for all material types.<br><br>Key findings in the LIMS (Low Intensity Magnetic Separation) work:<br>• The LIMS testing showed discrimination between Fe+V phases and TiO2 in the massive fresh material across the grind sizes assessed. |

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| | • This works confirms the high recoveries of iron and vanadium indicated previously by the DTR work with recoveries ranging from 80.6 – 93.7 % for iron and 90.0 – 96.6% for vanadium across the range of nominal grind sizes tested (P80 1000 µm to P80 32 µm – See results Table 1 and 2 in the announcement body text))<br>• Iron grades of 66.3% Fe are possible in magnetic concentrates with an average whole of resource grade of 64.3% Fe at a nominal P80 of 32 µm. The associated concentrate had an average V2O5 grade of 1.71%.<br>• There appears to be variability in terms of titanium rejection, which is being further assessed for 'non-magnetic' LIMS tails recoverable minerals.<br>• Low impurity concentrates were produced at P80 32 µm for all composites (see results in Appendix 1 and 2). |
| **Environmental factors or assumptions** | • Work was finalised by Technology Metals regarding waste disposal options for M51/883 in the Definitive Feasibility Study and a theoretical design for M51/884 is completed to PFS level. It is modelled for the purposes of the Mineral Resource estimates that disposal will not present a significant barrier to exploitation of the deposit, and that any disposal and potential environmental impacts will be correctly managed as required under the regulatory permitting conditions. |
| **Bulk density** | <u>M51/883</u><br>• Density measurements by caliper method have been completed for 177 samples, and by weight in air, weight in water method for 267 samples across a range of material types from the drill core in the Northern Tenement Block. A total of 92 samples have been measured using both methods and show a very good correlation between the two measurement methods with a mean density of 3.12 t/m³ for caliper method versus 3.15 t/m³ for the weight in air weight in water method.<br>• The density measurement result data has been separated by weathering state into oxide, transition and fresh, and further by mineralisation type into waste, disseminated mineralisation and massive mineralisation. The means of the measured densities from these various domains have been applied to the appropriate domains in the block model as follows:<br>• Massive magnetite mineralisation mean density in t/m³:<br>• Oxide: 3.83; Transition: 4.0; Fresh: 4.36<br>• Disseminated magnetite mineralisation mean density in t/m³:<br>• Hanging Wall Layer 1 - Oxide: 2.85; Transition: 3.1; Fresh: 3.99<br>• Hanging Wall Layers 2 to 5 Oxide: 2.15; Transition: 3.1; Fresh: 3.27<br>• Footwall Wall Layer 1 Oxide: 2.34; Transition: 3.1; Fresh: 4.14<br><br><u>M51/884</u><br>• The density measurements available for analysis included 25 samples by calliper method, and 63 samples by weight in air, weight in water method across a range of material types from the drill core. A total of 25 samples have been measured using both methods and show a very good correlation between the two measurement methods with a mean density of 3.22 t/m³ for calliper method vs 3.26 t/m³ for the weight in air weight in water method.<br>• The density measurement result data has been separated by weathering state into oxide, transition and fresh, and further by mineralisation type into waste, disseminated mineralisation and massive mineralisation. Some of the combined weathering/mineralisation type domains did not have sufficient data, so the domain results were compared with results from measurements from the North Tenements block measurements to determine suitability to use these data where insufficient data is available in the south. Fresh massive magnetite has a mean density of 4.35 t/m³ measured in the south compared to 4.36 t/m³ in the north, while fresh disseminated the same mean of 3.80 t/m³ in both areas. The mean density for the various mineralisation domains has been applied in the block model as follows:<br>o Massive magnetite mineralisation mean density in t/m³: Oxide 3.83; Transition 4.0; Fresh 4.35. |

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| | o Disseminated magnetite mineralisation mean density in t/m³: Oxide 2.79; Transition 3.43; Fresh 3.80. |
| **Classification** | • Classification of the Mineral Resource was carried out taking into account the level of geological understanding of the deposit, quantity, quality and reliability of sampling data, assumptions of continuity and drillhole spacing.<br>• The Mineral Resource estimate has been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1, Section 2 and Section 3 of this table.<br><u>M51/883</u><br>• The Mineral Resource is classified as a Measured Mineral Resource for those volumes where in the Competent Person's opinion there is detailed and reliable, geological and sampling evidence, which are sufficient to confirm geological and mineralisation continuity.<br>• Measured Mineral Resources are reported for portions of the transitional and fresh materials in the massive magnetite unit where in addition to surface mapping, and geophysical TMI modelling, the resource definition drill data results from diamond drill core (HQ) and reverse circulation drilling are supplemented by the geological logging and chemical analysis results (using 1 m sample intervals) obtained from close spaced large diameter diamond drill core (PQ) that was drilled primarily for bulk sample collection purposes. The confidence in grade and geological continuity is highest in these zones and variation from the interpreted geological and the estimated grade continuity is expected to be minimal.<br>• The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, which are sufficient to assume geological and mineralisation continuity.<br>• Indicated Mineral Resources are reported for portions of the transitional and fresh materials in the massive magnetite and the immediate hanging wall disseminated magnetite unit. The confidence in grade and geological continuity is considered to be good for these zones, based on the kriging slope of regression results, the nominal drill section spacing of 100 m spacing, geophysical (TMI) modelling continuity and surface mapping.<br>• The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, which are sufficient to imply but not verify geological and mineralisation continuity.<br>• Inferred Mineral Resources are reported for all massive magnetite oxide material, the volumes of the massive magnetite and it's immediate hanging wall disseminated unit not classified as Indicated. This is generally for the extrapolated zones of these units down dip and along strike, or in the central area drilled on 200 m fenceline spacing, where there appears to be greater structural complexity, and in the extreme north where possible structural influences on the geological and grade continuity are not well understood at this stage. For all remaining hanging wall disseminated mineralisation lenses and the foot wall unit there is a generally lower confidence in the geological and grade continuity due to along strike and down dip variability seen from the drill analysis result data and hence these zones are also classified as Inferred pending further information being collected.<br>• Inferred Mineral Resources are reported for base metals only from within the higher confidence Measured and Indicated portion of the unweathered massive magnetite material. It was assumed that this material is most likely to produce a relatively "clean" tailings stream that is likely to be more amenable to beneficiation of these metals. The classification of the base metals Mineral Resources as Inferred primarily reflects a lower confidence due to the relatively early stage of metallurgical testing for potential beneficiation of these metals into a by-product revenue stream.<br><br><u>M51/884</u> |

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| | • The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, which are sufficient to assume geological and mineralisation continuity.<br>• Indicated Mineral Resources are reported for portions of the fresh materials in the massive magnetite and the immediate hangingwall disseminated magnetite unit. The confidence in grade and geological continuity is considered to be good for these zones, based on the along strike and sectional continuity observed in the chemical analysis and drillhole logging data, from the nominal drill section spacing of 100 m, with nominal 50 m on section hole spacing, the geophysical (TMI) modelling continuity and correlation with drill data and the surface mapping.<br>• The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, which are sufficient to imply but not verify geological and mineralisation continuity.<br>• Inferred Mineral Resources are reported for all massive and transitional magnetite oxide material, the volumes of the massive magnetite and the immediate hangingwall disseminated unit not classified as Indicated. This is generally for the extrapolated zones of these units down dip and along strike, or where there appears to be greater structural complexity, and in the areas where possible structural influences on the geological and grade continuity are not well understood at this stage. For all remaining hangingwall disseminated mineralisation lenses and the footwall unit, there is a generally lower confidence in the geological and grade continuity due to along strike and down dip variability seen from the drill analysis result data and hence these zones are also classified as Inferred pending further information being collected.<br>• Both the Mineral Resources estimates appropriately reflect the view of the Competent Person. |
| **Audits or reviews** | • Internal audits and peer review were completed by CSA Global which verified and considered the technical inputs, methodology, parameters and results of the estimate. No external audits have been undertaken. |
| **Discussion of relative accuracy/ confidence** | • The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012).<br>• The Mineral Resource statement relates to global estimates of in situ tonnes and grade.<br>• No mining has taken place at this deposit to allow reconciliation with production data. |

## Section 4: Estimation and Reporting of Ore Reserves

| Criteria | JORC Code explanation | Commentary |
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| **Mineral Resource estimate for conversion to Ore Reserves** | • *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.*<br>• *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.* | The Mineral Resource estimate was completed by Grant Louw. The Mineral Resources for M51/883 and M51/884 were announced by Technology Metals on 21 March 2019 and 1 July 2020 respectively. The Mineral Resource estimate is reported inclusive of the Ore Reserve estimate. |
| **Site visits** | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*<br>• *If no site visits have been undertaken indicate why this is the case.* | A two-day site visit has been completed by a CSA Global staff member in August 2017 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling and logging practice being observed. Drill collar locations have been captured by handheld global positioning system (GPS) confirming their stated |

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| | | survey locations. Mineralisation outcrop extents were followed, with measurements taken confirming the interpreted strike and dip.<br>A two-day site visit was completed by a CSA Global staff member in October 2018 while drilling was in progress. The site visit confirmed that industry best practice procedures are in place and being followed, with drilling, sampling, density measurement and logging practice being observed. Drill collar locations have been captured by handheld GPS confirming their stated survey locations. The site visit included inspection of the proposed pit areas, waste rock dumps, processing, and non-processing infrastructure.<br>Based on these site visits, a further site visit to the, as-yet undeveloped site was considered unnecessary for the purposes of the Ore Reserve estimate. |
| **Study status** | • *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*<br>• *The Code requires that a study to at least PFS level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.* | The Northern Block of tenements had a FS released by Technology Metals in August 2019. The FS was completed in August 2019 under the direction of Technology Metals. Wave International was appointed by Technology Metals to prepare a FS for the Northern Block of tenements of the 100% owned Gabanintha Vanadium Project. The FS targets a production rate of 13 ktpa of $V_2O_5$ product over a 16-year LOM. The FS has been developed to a confidence level of -10% to +15%. This FS forms the basis for this Ore Reserve estimate.<br>CSA Global completed a mining study, LOM schedule, cost estimate, and economic assessment of the Southern Tenement to a PFS level of confidence and forms the basis for the Southern Tenement Ore Reserve estimate.<br>The work undertaken to date has addressed all material Modifying Factors required for the conversion of a Mineral Resource estimate into an Ore Reserve estimate and has shown that the mine plan is technically feasible and economically viable. |
| **Cut-off parameters** | • *The basis of the cut-off grade(s) or quality parameters applied.* | The cut-off between ore and waste has been determined by net value per block. A total block revenue is estimated for each block within the block model, accounting for total vanadium recovered to a payable product as well as the vanadium product price. Total block costs are estimated for all operating costs to the point of sale included processing, product haulage, crusher feed, general and administration, ore differential, sustaining capital, selling costs, and grade control costs. The total block revenue minus the total block costs estimate the net value per block. Any block returning a positive net value has been defined as "ore" for the purposes of pit design and production scheduling. |
| **Mining factors or assumptions** | • *The method and assumptions used as reported in the PFS or FS to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*<br>• *The choice, nature and appropriateness of the selected mining* | Input parameters for pit optimisations and subsequent financial modelling were: mining costs based on mining contract rates; mineral processing costs and recoveries both from the FS.<br>All other project modifying factors and costs are described in the FS.<br>The revenue assumptions are based on forward-looking $V_2O_5$ prices from Roskill Consulting Group Pty Ltd.<br>The long-term price of $V_2O_5$ used for modelling is US$10.0/lb.<br>The exchange rate has been modelled at a flat rate of A$1.00 = US$0.70. |

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| | *method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.*<br>• *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*<br>• *The mining dilution factors used.*<br>• *The mining recovery factors used.*<br>• *Any minimum mining widths used.*<br>• *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.*<br>• *The infrastructure requirements of the selected mining methods.* | Geotechnical analysis has been undertaken by MineGeotech. The mine designs have been based on the advice from the geotechnical analysis.<br>The proposed pit slopes are considered likely to be stable for the current pit designs over the mine life.<br>The Mineral Resource model was estimated by Grant Louw. The resource block model was used for optimisation and mine planning after inclusion of additional attributes.<br>Mining dilution has been applied using the skins methodology. A dilution skin of 1 m was applied to the Mineral Resource wireframes. The resulting North Pit dilution for massive magnetite ore is 13% at 0.45% $V_2O_5$, and North Pit dilution for banded and disseminated ore is 29% at 0.0% $V_2O_5$. The resulting Central Pit dilution for massive magnetite ore is 10% at 0.46% $V_2O_5$, and Central Pit dilution for banded and disseminated ore is 20% at 0.0% $V_2O_5$. The resulting Southern Pit dilution for massive magnetite ore is 12% at 0.49% $V_2O_5$, and Southern Pit dilution for banded and disseminated ore is 15% at 0.21% $V_2O_5$. A 98% mining recovery has been applied to all massive magnetite ore and a 95% mining recovery was applied to all banded and disseminated ore.<br>A minimum mining width of 25 m has been adopted for the mine design.<br>All pit optimisations have been conducted on Measured and Indicated Mineral Resources only. Inferred Mineral Resources have been included in the mine designs for the FS. The total LOM content of Inferred Mineral Resources in the mining plan is 47%. This material occurs throughout the life of the operation due to the geometry of the deposit, the Resource classification criteria and the mining schedule. The first 11.9 years of the LOM includes 2% Inferred Mineral Resources as ROM processing feed. The majority of the Inferred Mineral Resource included in the ROM feed over the LOM is within the banded and disseminated material which is processed in the final years of the mine life.<br>LOM scenarios have been completed without value from the Inferred portion and the Project remains economically viable. The economic assessment of the Southern Pit was completed without value from the Inferred portion of the LOM plan.<br>The Ore Reserves in this statement have been reported exclusive of the Inferred component of the LOM plan. This component is considered immaterial to the economic viability of the Project. |
| **Metallurgical factors or assumptions** | • *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*<br>• *Whether the metallurgical process is well-tested technology or novel in nature.*<br>• *The nature, amount and representativeness of metallurgical testwork undertaken, the nature of the metallurgical* | **Metallurgical Testwork**<br>The metallurgical testwork for each of the plant areas of comminution, beneficiation, roasting and leaching, and precipitation are summarised below:<br>• COMMINUTION:<br>o Crushing Work index<br>o Uniaxial compressive strength<br>o JK Drop-Weight<br>o Sag mill comminution test<br>o Abrasion index |

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| | *domaining applied and the corresponding metallurgical recovery factors applied.*<br>• *Any assumptions or allowances made for deleterious elements.*<br>• *The existence of any bulk sample or pilot-scale testwork and the degree to which such samples are considered representative of the orebody as a whole.*<br>• *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?* | o ROM materials handling<br>o Bond Ball Mill Work index.<br>• BENEFICIATION:<br>o DMS<br>o DTR<br>o Grind liberation<br>o Preparation of kiln vendor scouting sample<br>o Preparation of the pilot kiln vendor sample<br>o Variability testwork<br>o Derrick screening testwork<br>o Wet LIMS capacity verification<br>o Magnetic concentrate filtration<br>o Non-magnetic thickening<br>o Magnetic concentrate materials handling.<br>• ROAST AND LEACH:<br>o ALS Muffle furnace<br>o Metso batch kiln<br>o FLSmidth batch and pilot kiln.<br>• PRECIPITATION CIRCUIT:<br>o Desilication optimisation<br>o AMV precipitation optimisation.<br>**Design Basis**<br>The plant basis of design was developed using the metallurgical testwork results and standard industry assumptions for retention times and stockpile capacities made by competent engineers to align with the plant operating philosophy. Process engineers involved with this area of design have experience in vanadium processing operations.<br>The plant basis of design is to produce approximately 13 ktpa of $V_2O_5$ flake from magnetite ore bearing vanadium. The process can be broken down into six stages, summarised as follows:<br>2. Crushing and screening. ROM ore is crushed down to an 80% passing size of 8 mm. Allowance for coarse DMS to remove coarsely liberated gangue from the vanadium-bearing magnetite may be required in future.<br>3. Grinding and wet magnetic separation. The -8 mm concentrate is ground down to an 80% passing size of 0.25 mm, followed by wet magnetic separation to remove finely liberated gangue from the vanadium-bearing magnetite.<br>4. Roasting. The vanadium-bearing magnetite concentrate is mixed with a sodium-based salt and roasted to convert the $V_2O_5$ in the ore to water soluble sodium metavanadate. |

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| | | 5. Leaching and precipitation. The sodium metavanadate is leached out of the roasted product with water followed by re-precipitation of the vanadium in the form of AMV.<br>6. De-ammoniation and calcination – the ammonia is removed from the precipitated product to form a $V_2O_5$ powder. This powder is further melted and cooled down to produce the final $V_2O_5$ flake product.<br>7. Packaging – the final processing stage to package the saleable product to meet the requirements for offtake.<br>The process will be supplemented within the first five years of operation with the installation of a crystallisation plant, ion exchange and de-chrome circuits.<br>**Processing Recoveries Applied**<br>Processing recoveries are based on DTR results estimated within the block model to represent the LIMS process. The following recoveries were applied for the rest of the processing circuit:<br>• 85% RECOVERY FOR ROASTING<br>• 99% RECOVERY FOR LEACH/DESILICATION<br>• 95.7% RECOVERY OF AMV TO DE-AMMONIATION PRIOR TO THE ION EXCHANGE INSTALLATION IN YEAR 3–5, 99% RECOVERY FOR AMV TO DE-AMMONIATION POST ION EXCHANGE INSTALLATION.<br>• 99% RECOVERY FOR FLAKE PREPARATION.<br>The Southern Tenement DTR results were predominantly in line with the results from the Northern Block DTR testing undertaken in the FS. There is no evidence to suggest that the performance of the Southern Tenement material will vary significantly through roasting and the associated downstream beneficiation process. With the exception of the titanium recovery, the concentrate composition is comparable between the Southern Tenement and the Northern Block. |
| **Environmental** | • *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.* | **Social Environment**<br>Mining leases were first taken out in the Gabanintha area in 1895 and the town of Gabanintha was gazetted in 1898. Today the region is dominated by pastoral activities and mineral extraction.<br>The Project is located on Polelle and Yarrabubba Pastoral Stations, with the homestead of Polelle being 7 km east of M51/883 and Yarrabubba homestead 14km southeast of M51/884. A portion of M51/883 is on Common Reserve 10597 with other reserves associated with the historical townships of Gabanintha and Polelle.<br>The Gabanintha Vanadium Project is located within the Yugunga-Nya Native Title Claim area (WC1999/046). The claim was lodged in 1999 and is yet to be determined by the Native Title Tribunal. Technology Metals had a Heritage Agreement with Yamatji Marlpa Aboriginal Corporation as an agent for the Yugunga-Nya Claimant Group, which covers the process for commissioning heritage surveys, survey methodologies and how heritage information will be |

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| | | protected. Unfortunately, due to changes in legal representation the current agreement is no longer valid and will need to be replaced. A draft Project Cultural Heritage Management Plan has been developed and will be finalised with input from Yugunga-Nya.<br>**Air Quality and Noise**<br>Whilst the Project has the potential to generate the following emissions it is unlikely, given the remote location, that these emissions will impact any sensitive receptors. Emission types include:<br>• Ammonia ($NH_3$)<br>• Oxides of nitrogen (NOx)<br>• Particulates (as $PM_{10}$ and $PM_{2.5}$)<br>• Vanadium pentoxide ($V_2O_5$)<br>• Sulphur dioxide ($SO_2$).<br>Similarly, noise is unlikely to affect any sensitive receptors, with the closest receptors being the homesteads associated with the Polelle (7 km) and Yarrabubba (14 km) Pastoral Stations. |
| **Infrastructure** | • *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation*<br>• *(particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.* | The Gabanintha Vanadium Project is located 40 km southeast of Meekatharra in the mid-west region of Western Australia. A suitable airfield for fly-in/fly-out labour out of Perth, Western Australia is located at Meekatharra. Intermittent mobile network coverage is available on site, this will be complimented with a communication provider mobile booster station.<br>Project support infrastructure includes:<br>• Water supply, treatment and reticulation<br>• Site preparation, bulk earthworks and drainage<br>• Fuel supply, storage and distribution facilities for diesel fuel and natural gas<br>• Power generation and distribution<br>• Civil and earthworks including bulk earthworks, hydrology/drainage and roads<br>• Plant buildings and structures including reagent and explosives storage<br>• Accommodation facilities and structures for operational personnel.<br>The water supply, storage and distribution will generally consist of the borefield, remote borefield storage tank and pumps, raw water storage at the village, raw water and process water storage at the processing facility, as well as raw water storage at the mining services area.<br>A site raw water pond shall serve as reserve capacity for the site.<br>Reverse osmosis plants shall be located next to each raw water storage tank at the village and processing plant to enable the required production of potable water to be provided. |

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| | | Fuel for the Project will be a combination of natural gas supplied by a natural gas pipeline and trucked diesel fuel.<br>The main electrical power for the Project will be provided from a standalone power station, generating power requirements for the main process plant and non-process infrastructure.<br>A road train haul road will be required to be constructed to haul ROM from the Southern Tenement to the ROM pad adjacent to the processing facility. The Meekatharra–Sandstone Road can connect the Southern Tenement to the Northern Block of tenements with approximately 8 km of additional haul road construction. |
| **Costs** | • *The derivation of, or assumptions made, regarding projected capital costs in the study.*<br>• *The methodology used to estimate operating costs.*<br>• *Allowances made for the content of deleterious elements.*<br>• *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.*<br>• *The source of exchange rates used in the study.*<br>• *Derivation of transportation charges.*<br>• *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.*<br>• *The allowances made for royalties payable, both Government and private.* | The capital cost estimate (CCE) for the Gabanintha Project FS is an estimate with an accuracy range of approximately -5% to +15% based on the accuracy levels as defined by the American Association of Cost Engineers' (AACE) Cost Estimation Classification System (As Applied for the Mining and Mineral Processing Industries).<br>The capital cost estimate (capex) is a bottom-up estimate, as far as practically possible, generated from preliminary design and market information. A small percentage (4.7%) were priced on industry norms and typical estimating factors.<br>The FS operating cost estimate (opex) was developed as a "bottom-up" estimate over a 16-year mine life to obtain average operating costs. All significant and measurable items are itemised. However, smaller items are factored as per industry practice. The level of effort for each of the line items meets the estimate as defined by the AACE and the extent of work performed allows for a -15% +15% accuracy.<br>The opex was generated utilising the information from the mass balance, direct process engineering input for heat loading and reagent usage, mining operating costs and the equipment maintenance aligned with the capex equipment. The organisational chart was developed with Technology Metals and the wages were sought from the Wave database in conjunction with recognised industry sources. The manning, inclusive of mining contractor personnel, was used to derive flights and accommodation costs.<br>An electrical power load list was calculated using equipment size and expected run hours for each piece of equipment to establish power generation requirements for the Project. A formal market request to provide power generation for the required load was distributed to tender for a Build-Own-Operate power which has been used to calculate power costs and fuel gas consumption.<br>Reagent usage was calculated from pilot/bench-scale testwork and METSIM modelling software. Reagent (including transport) costs were obtained from supplier's budget quotations.<br>Transport costs were calculated by a specialist logistics consultant who was engaged to price the cost of product transport and back haulage. |

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| | | Mining costs have been developed based on a mining contractor operation with Q2 2019 rates tendered by contractors to implement the mining schedule. These cost estimates remain relevant and within the level of accuracy required to support the Ore Reserve estimate.<br>Capital and operating costs for the Southern Tenement road train haulage have been prepared by CSA Global using a first principles methodology, supported by benchmarked costs for labour, with a 30% margin added for contractor indirect costs and mark-up. All other costs for the Southern Tenement have been applied as in the FS.<br>Royalties have been applied at a rate of 5% on Revenue.<br>An exchange rate of A$1.00=US$0.70 has been applied throughout the financial evaluation of the Project.<br>The selling costs applied in the financial model include transport from Gabanintha to Fremantle Port based on a Free Onboard price. |
| **Revenue factors** | • *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.*<br>• *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.* | The grade of the process feed and metal content is supported by the information in the Mineral Resource estimate and driven by the mining and production schedule.<br>Processing recoveries are based on DTR results estimated within the block model to represent the LIMS process, 85% recovery for roasting, 99% recovery for leach/desilication, 95.7% recovery of AMV to de-ammoniation prior to the ion exchange installation in year 2, 99% recovery for AMV to deammoniation post ion exchange installation, and 99% recovery for flake preparation. The cumulative processing recovery is approximately 81% pre ion exchange installation and approximately 84% post ion exchange installation.<br>Technology Metals has based the revenue projections in the financial model on forecast prices from Roskill Consulting Group Pty Ltd, a UK based market research company specialising in providing comprehensive research on the supply, demand and price trends for metals and minerals markets.<br>These price forecasts are based on a 2019–2020 rollout of the new Chinese rebar standards and limited supply side response until new primary producer "greenfields" development enter the market. This scenario sees elevated $V_2O_5$ prices in the period up to 2024 and then prices ranging between US10.99/lb and US$10.54 out to 2028. Technology Metals believe that this scenario is required as a minimum to provide the "incentive pricing" to support development of "greenfields" vanadium primary producers and the level of vanadium supply required to meet the expected demand growth.<br>The pricing for $V_2O_5$ used in the FS financial model is for delivery of the product to a Fremantle Port based on a Free Onboard price. |
| **Market assessment** | • *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* | Technology Metals' strategy with regard to product marketing is to secure medium to long term offtake agreements over the majority of its forecast vanadium production, aiming to establish a diversified customer base across both geographic location and vanadium industry. Technology Metals has conducted a series of discussions with vanadium market participants and end- |

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| | • *A customer and competitor analysis along with the identification of likely market windows for the product.*<br>• *Price and volume forecasts and the basis for these forecasts.*<br>• *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.* | users in both the steel industry, the VRB/electrolyte sector, specialty alloy/chemical industry and metal traders with a view to forming long-term strategic alliances and negotiating formal vanadium offtake arrangements. As part of this process, samples of high purity final $V_2O_5$ product have been sent to a number of these parties, confirming the exceptional purity of the Gabanintha vanadium product and its suitability for the range of end-users.<br>Technology Metals has prepared and circulated several draft memorandums of understanding (MOUs) and Term Sheets to facilitate ongoing discussions with a range of parties.<br>On 27 April 2020, Technology Metals announced a binding offtake agreement with CNMC Ningxia Orient Group Company Ltd, a controlled subsidiary of China Nonferrous Metal Mining (Group) Co. Ltd. The offtake agreement, with agreed key terms including a take-or-pay annual offtake quantity of 2 kt $V_2O_5$. Pricing referenced to the published European and Chinese domestic $V_2O_5$ price. The offtake term is three years with an option to renew for an additional three years.<br>On 1 October 2019, Technology Metals announced an MOU with Shaanxi Fengyuan Vanadium Technology Development Co. Ltd, one of China's leading producers of vanadium nitrogen alloy. The MOU established the framework for a binding $V_2O_5$ offtake agreement covering 3 ktpa of Technology Metals' production.<br>On 20 May 2020, Technology Metals signed an MOU with Big Power Electrical Technology Xiangyang Inc. Co. Ltd, agreeing to investigate establishing a joint venture to produce vanadium electrolyte and VRFB manufacturing in Australia. The MOU established the framework for a binding $V_2O_5$ offtake agreement covering 5 ktpa of Technology Metals' production.<br>Discussions with potential customers have indicated a high level of interest in securing supply of $V_2O_5$ from a primary mining source such as Gabanintha, with security of supply from a stable jurisdiction such as Western Australia a key consideration.<br>Technology Metals' strategy with regard to product marketing is to secure medium to long term offtake agreements over the majority of its forecast vanadium production from Gabanintha.<br>Pricing strategy will be determined in conjunction with negotiation of offtake agreements but is expected to use moving average prices over a set contract period based on reference prices.<br>Commentary suggests that China intends to sell more high-end technologically advanced final products and less of the underlying components. The expectation is that most of the raw materials will remain in China for Chinese manufacturers to utilise, particularly vanadium where China produces 57% of global supply of vanadium products across the supply chain. It is this dynamic that makes it crucial for non-Chinese manufacturers to secure vanadium sources outside of China. With the Gabanintha production plant in Australia, |

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| | | Technology Metals is poised to benefit from this new arrangement of the global supply chain. |
| **Economic** | • *The inputs to the economic analysis to produce the NPV in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*<br>• *NPV ranges and sensitivity to variations in the significant assumptions and inputs.* | The economic analysis is based on capital cost estimates described in the FS and cash flows driven by the production schedule.<br>The cash flow projections include: initial and sustaining capital estimates; mining, processing and concentrate logistics costs to the customer; revenue estimates based on concentrate pricing adjusted for fees, charges and royalties; and an 8% discount factor.<br>The sensitivity analysis completed in the FS indicates that the Project results remain favourable when the key project parameters (revenue, exchange rate, grade, metallurgical recovery, capital and operating costs) are individually flexed to ±20% of the FS average values.<br>CSA Global conducted an economic analysis of the Southern Tenement, concluding that the Southern Tenement provided a positive impact to the Project's NPV.<br>Sensitivity analysis was completed on the Southern Tenement by flexing the selling price to minus 20% and 30%. The Southern Tenement project results remained favourable with these values. |
| **Social** | • *The status of agreements with key stakeholders and matters leading to social licence to operate.* | The site is in a remote region that has hosted multiple mining projects. However, over time the larger project footprint may have a marginal impact on pastoral leases. Technology Metals has established a process of stakeholder engagement and will continue to proactively manage this. |
| **Other** | • *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*<br>• *Any identified material naturally occurring risks.*<br>• *The status of material legal agreements and marketing arrangements.*<br>• *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the PFS or FS. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.* | No material naturally occurring risks have been identified.<br>Technology Metals' tenements have either been granted or are currently being progressed with the expectation that these will be granted.<br>There are no apparent impediments to obtaining all government approvals required for the Gabanintha Vanadium Project. |

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| **Classification** | • *The basis for the classification of the Ore Reserves into varying confidence categories.*<br>• *Whether the result appropriately reflects the Competent Person's view of the deposit.*<br>• *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).* | Proven Ore Reserves were estimated from Measured Resources and Probable Ore Reserves were estimated from Indicated Resources as per the JORC (2012) guidelines.<br>Three percent of Ore Reserves have been based on Measured Mineral Resources.<br>Mr Daniel Grosso, the Competent Person for this Ore Reserve estimation has reviewed the work undertaken to date and considers that it is sufficiently detailed and relevant to the deposit to allow those Ore Reserves derived from Indicated Mineral Resources to be classified as Probable, and Ore Reserves derived from Measured to be classified as Proven. |
| **Audits or reviews** | • *The results of any audits or reviews of Ore Reserve estimates.* | The FS has been internally reviewed by Technology Metals and Wave. The Mineral Resource estimate, mine design, scheduling, and mining cost model has been subject to internal peer review processes by CSA Global. No material flaws have been identified.<br>No independent external audits or reviews have been completed on the current Gabanintha Vanadium Project studies. |
| **Discussion of relative accuracy/confidence** | • *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.*<br>• *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.*<br>• *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.*<br>• *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and* | This Ore Reserve estimate is supported by the Gabanintha Vanadium Project FS completed in August 2019.<br>The Gabanintha Vanadium Project has an internal rate of return and NPV which makes it robust in terms of cost variations. The Project is most sensitive to price variations for the $V_2O_5$ product.<br>All estimates are based on local costs in A$. Standard industry practices have been used in the estimation process.<br>Capital and operating expenditure estimates within the FS are considered to be within -5% /+15% accuracy.<br>Capital and operating costs for the Southern Tenement are considered to be within -25%/+25% and appropriate for a PFS level of accuracy.<br>There has been no production at the Project to date, so no comprehensive comparison or reconciliation of data has been made. |

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| | *confidence of the estimate should be compared with production data, where available.* | |