HASTINGS
Technology Metals Limited

ASX Announcement

6 February 2023

YANGIBANA ORE RESERVES INCREASE BY 25%

- **Ore Reserves increased 25% to 20.93Mt at 0.90% Total Rare Earth Oxide (TREO) grade.**
- **TREO content increased 20% to 190.1Kt**
- **Contained Neodymium + Praseodymium (Nd_2O_3+Pr_6O_{11}) content increases by 19% to 69.5kt.**
- **Updated Ore Reserves extend mine life to 17 years.**

Hastings Technology Metals Ltd (ASX: HAS) (Hastings or the Company), is pleased to announce a significant increase in the Ore Reserve estimate at its Yangibana Rare Earths Project (Yangibana) in Western Australia's Gascoyne region.

Total Proved and Probable Ore Reserves have increased to 20.93 million tonnes (up from 16.7 million tonnes) at 0.90% TREO which includes a 37% component of Nd_2O_3+Pr_6O_{11} (NdPr). This is a 25% increase in Ore Reserve tonnes compared to that previously announced to ASX (Refer to "Yangibana Rare Earths Project Significant Ore Reserve tonnes increase of 37%, and NdPr tonnes up 18% to 58kt", dated 27 July 2021). The growth in the Ore Reserve is based on drilling, assaying and optimisation work from the 2021-2022 exploration program as well as the completion of the acquisition of the 30% Yangibana Joint Venture Interest from Cadence Minerals Plc announced on 25 January this year. The former joint venture ground contained 2.34Mt of Mineral Resources and 0.73Mt of Ore Reserves (Refer "Completion of Acquisition of 30% Yangibana Joint Venture Interest from Cadence Minerals Plc", dated 25 January 2023) that were attributable to Cadence.

Alwyn Vorster, Hastings Chief Executive Officer, said: *"We are delighted to announce this significant increase in the Ore Reserves at Yangibana, which is the result of our successful exploration programs over the last two years across existing deposits. It allows us to plan for a mine operating life of at least 17 years, building on Hastings strong record of organic growth from one of the most outstanding rare earths orebodies globally based on NdPr composition. Importantly, there remains substantial mineral resource upside potential at Yangibana, offering growth potential as approvals are secured in the future. This Ore Reserve increase further underpins our current design capacity of 15,000t per annum of MREC – equivalent to 3,400t of NdPr oxides when separated and is another key milestone in building momentum towards a funding solution to support main construction of the Project in 2023."*

Table 1: Total JORC (2012) Proved and Probable Reserve January 2023

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Proved	4.89	0.95	0.37	46,700
Probable	16.03	0.88	0.32	141,435
TOTAL	***20.93***	***0.90***	***0.33***	***188,135***

Proved and Probable Ore Reserves

Based on Definitive Feasibility level studies (DFS) information and recent updates to OPEX, pricing, geological, geotechnical, metallurgical and environmental work, independent consultant Intermine Engineering Consultants (Intermine) has completed an updated Ore Reserve estimate based on Measured and Indicated Mineral Resources at each of Bald Hill, Fraser's, Simon's Find, Auer, Auer North, Yangibana, and Yangibana North deposits (Figure 1). This Ore Reserve estimate used Whittle pit optimisation software to maximise ore recovery using conventional drill and blast, load and haul mining methods.

Modifying Factors used to estimate the new Ore Reserves are provided in the Table 1 Section 4 of the JORC Code (2012) at the end of this announcement.

The total Project Ore Reserve estimate as of 30th January 2023, is set out in Table 2 below:

Table 2: Total JORC (2012) Ore Reserves by deposit January 2023

Deposit	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	Nd_2O_3+Pr_6O_{11} as % of TREO
Bald Hill	8.12	0.79	0.32	41
Fraser's	1.77	1.01	0.43	43
Simons Find	2.69	0.53	0.28	53
Auer	2.83	0.96	0.34	35
Yangibana	1.31	0.79	0.37	47
Yangibana North	4.21	1.29	0.34	26
TOTAL	**20.93**	**0.90**	**0.33**	**37**

The increase in the Ore Reserves is based on the re-estimated and updated Mineral Resources for Bald Hill, Fraser's, and Simon's Find announced on 11 October 2022 (Refer ASX announcement: "Drilling along 8km long Bald Hill - Fraser's trend Increases Indicated Mineral Resources by 50%").

The increase in the 2022 Mineral Resource estimate (Table 3) was the result of a successful 13,334m drilling campaign at Yangibana during 2021-2022 targeting the 8km long Bald Hill – Simon's Find – Fraser's trend (Figure 1) which is in close proximity to the process plant.

The 2021-2022 drilling program increased the Indicated Mineral Resources along the Bald Hill - Simon's Find – Fraser's deposits by 50% to 9.84Mt or by a 31% increase for the Measured + Indicated Mineral Resources to 14.16Mt for the same deposits (Table 2.)

The resultant Mineral Resource upgrading has generated a new Ore Reserve of 20.93 million tonnes @ 0.90%TREO extending the mine life to 17 years. The extension to mine life is underpinned by additional classified ore tonnes developed from an infill drilling programme along the Bald Hill, Simon's Find and Fraser's ore zones, also being the closest pits to the processing plant. The Bald Hill pit alone continues to represent around 40% of the Total Ore Reserves and is forecast to supply feed to the processing plant for 8 of the 17 years of mine life.

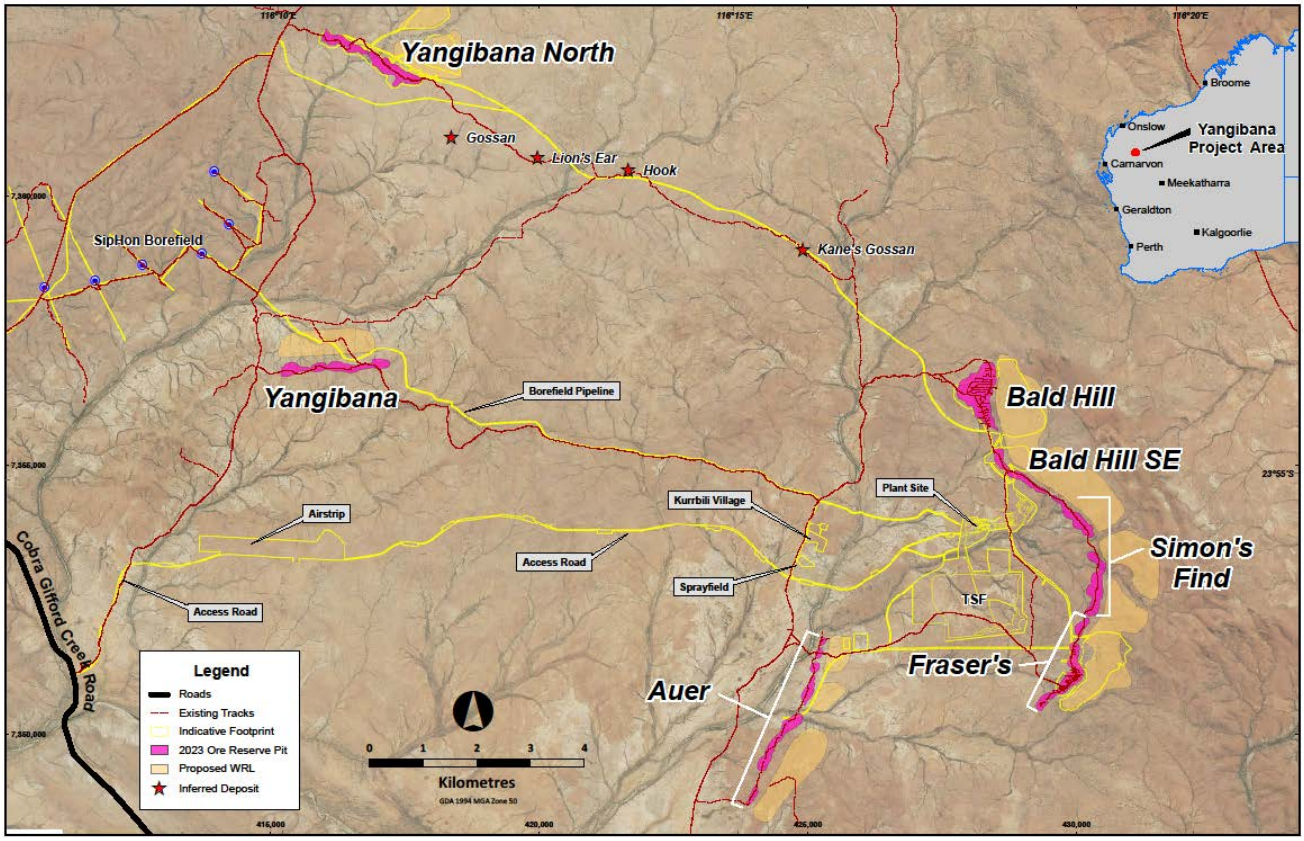

Figure 1 - Yangibana Project – Location of the Deposits Hosting JORC Resources

Mineral Resources

The Mineral Resources as of 11th of October 2022 (ASX: Drilling along 8km long Bald Hill - Fraser's trend Increases Indicated Mineral Resources by 50%) is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition. The Mineral Resources are reported inclusive of Ore Reserves.

Table 3: Total JORC (2012) Mineral Resources October 2022

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	4.97	0.96	0.37	47,721
Indicated	19.51	0.88	0.32	171,936
sub-total	24.49	0.90	0.33	219,657
Inferred	5.45	1.05	0.31	57,298
TOTAL	***29.93***	***0.93***	***0.32***	***276,955***

Numbers may not add due to rounding.

Geology

The near surface mineralisation throughout the Yangibana Project is hosted by iron oxides and hydroxides termed ironstone, being the alteration products of the primary hosts ferro-carbonatite and phoscorite intrusive veins. The main rare earths-bearing mineral is monazite which has locally undergone alteration at shallow depths (to 25m depth) to its hydrous equivalent rhabdophane and to rare earths-bearing aluminium-phosphates such as florencite.

The deposits occur as narrow but strike extensive veins that have a range of dips from almost horizontal (10-20^{o}) to sub-vertical. The Fraser's deposit has the most extreme range from 5^{o} in portions towards its north-eastern end to 65^{o} at its southwestern end. Average true thickness varies from 2.2m to 3.5m throughout the Yangibana deposits although locally true thicknesses in excess of 20m occur.

Drilling

The updated Yangibana Mineral Resource Estimate has been estimated using drilling covering the Bald Hill, Simon's Find, and Fraser's deposits. Auer, Yangibana, Yangibana North, Kane's Gossan, Gossan, Lion's Ear and Hook Mineral Resources are unchanged to those previously announced (ASX: "Measured and Indicated Mineral Resource Tonnes Up by 54%" 5 May 2021).

The 13,334m drilling program conducted from November 2021 to February 2022 was targeting remaining areas of Inferred Mineral Resource category material along the 8km long Bald Hill - Simon's Find - Fraser's trend. Drilling also targeted extensions to mineralisation outside of the currently defined mineralised envelopes at depth. Information on the drilling program was announced to the ASX on the 8th October 2021 titled "Resource definition drilling commences at Yangibana", 9th June 2022 titled "Drilling extends mineralisation with exceptional quality" and 25th July 2022 titled "Higher grades extend Bald Hill mineralisation".

The drilling program increased the Indicated Mineral Resources along the Bald Hill - Simon's Find - Frasers deposits by 50% to 9.84Mt or by a 31% increase for the Measured + Indicated Mineral Resources to 14.16Mt for the same deposits.

All Yangibana Project deposits outcrop at surface, with no overburden or waste stripping required and contain large coherent linear geological domains comprising high contents of Neodymium and Praseodymium rare earth elements.

The work undertaken to re-estimate the Bald Hill, Simon's Find and Fraser's deposits was completed by David Princep of Gill Lane Consulting and incorporates all of the information and data that was used in the previous Mineral Resource estimate plus the 2021-2022 drill program data (ASX: "Measured and Indicated Mineral Resource Tonnes Up by 54%" 5 May 2021).

Holes were initially drilled at 40m spacings along strike and down dip. Infill drilling in areas with Mineral Resource potential has been undertaken at 37.5m, or less spacing.

Most drillholes were vertical, subject to access availability, with holes into the steeper mineralised zones (Auer, the South-eastern portion of Fraser's, Bald Hill and Yangibana) being at -60^{o} or - 70^{o}. Internal surveys were carried out at 30m intervals downhole by the drilling contractors using a Reflex electronic single-shot camera within a stainless-steel drill rod.

Collar surveys were undertaken by the Survey Group using a DGPS surveying technique, with accuracies of approximately 10cm. The high-resolution Digital terrain Model commissioned by the Company has been used as the topographic control for all drillholes.

RC holes have been drilled using a nominal 5¼ inch diameter face-sampling bit. Samples have been collected through a built-in cyclone with a triple-tier riffle-splitting system providing a large sample of approximately 25kg and a sub-sample of 2-4kg of which selected samples were sent for analysis, from each metre drilled. Field duplicates, blanks and Reference Standards were inserted at a rate of approximately 1 in 20.

Block Modelling Parameters – Bald Hill, Simon's Find and Fraser's Resources only

Due to the complexity and generally narrow nature of the mineralisation the Mineral Resource estimates were undertaken on 'flattened' block models following the allocation of block proportions from the updated mineralisation wireframes. This flattening process allowed for the use of Ordinary Kriging estimation techniques. One metre down hole compositing based on the assay data and wireframes was used to regularise the assayed intervals. Summary statistics for each deposit were used to identify the presence of outliers. Due to the distribution of grades within the mineralisation and the relatively un-skewed data population no top cuts were deemed necessary.

For each deposit, variograms of TREO were defined and used in the mineral resource estimate. In all instances the directional trends evident in the variogram maps are evident to some extent in plan views of the sample data, and they normally conform to the orientation of the mineralisation within the wireframes. As expected, variogram model ranges in the vertical direction are relatively short due to the predominantly thin nature of the mineralisation. The majority of variograms display reasonable structure, with anisotropies reflecting those observed in the variogram maps.

All re-estimated mineral resources were created with the same original block size of 2m x 2m x 1m. This size was chosen as a compromise between the average drill spacing (up to 50m x 50m in some areas), size of the mineralisation wireframes (in order to limit resulting low mineralised proportions), orientation of mineralisation (ideally, the blocks would have been orientated with the mineralisation however this results in a model that is unusable for pit optimisation purposes), grade distribution within the mineralisation and the models' ultimate use for mine planning purposes. A re-blocked (to 4m x 4m x 2m) model was provided for mine planning purposes in order to reduce the overall size of the Mineral Resource models, this resulted in the addition of minor amounts of dilution being incorporated into these models. The reporting within this announcement is based on the re-blocked models in order to provide a more direct comparison to any future Ore Reserve estimates.

The Mineral Resources have been classified in the Measured, Indicated and Inferred categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC(2012)) by the Competent Person. A range of criteria was considered in determining the classification including geological and grade continuity, data quality, drill hole spacing, and modelling technique and kriging output parameters.

As a general rule, the following spacings characterise the Mineral Resource classification.

- Infill drilling between 20m by 20m and 35m by 35m – Measured Category
- Drill spacing up to 50m by 50m – Indicated Category
- Drill spacing 100m by 50m to 100m by 100m – Inferred Category

Mineral Resources – by Deposit

The Ore Reserves quoted in this document are derived from Measured and Indicated Resources as reported in the ASX announcement titled "Drilling along 8km long Bald Hill - Fraser's trend Increases Indicated Mineral Resources by 50%" dated 11 October 2022. The current total Mineral Resources for the Yangibana Project that include the Probable Ore Reserves are as shown in Table 4.

Table 4 Yangibana Project – Total JORC Mineral Resources October 2022

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	4.97	0.96	0.37	47,721
Indicated	19.51	0.88	0.32	171,936
sub-total	24.49	0.90	0.33	219,657
Inferred	5.45	1.05	0.31	57,298
TOTAL	***29.93***	***0.93***	***0.32***	***276,955***

These resources are located at ten different deposits within the overall project area as shown in Figure 1.

Proved and Probable Ore Reserves have been derived from the Measured and Indicated Mineral Resources at Bald Hill (M09/157 and M09/162 –Table 5), Simon's Find (M09/176 – Table 6) Fraser's (M09/158 –

Table 7), Auer (E09/177, E09/178 – Table 8), Yangibana (M09/165 and M09/163 – Table 9) and Yangibana North (M09/160, M09/159 – Table 10) within tenements in which Hastings holds 100% interest.

Table 5 Bald Hill Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	3.55	0.82	0.34	29,136
Indicated	5.23	0.75	0.30	39,290
sub-total	**8.79**	**0.78**	**0.31**	**68,425**
Inferred	1.17	0.67	0.27	7,787
TOTAL	**9.96**	**0.77**	**0.31**	**76,212**

Table 6 Simon's Find Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	-	-	-	-
Indicated	3.14	0.52	0.27	16,206
sub-total	**3.14**	**0.52**	**0.27**	**16,206**
Inferred	0.05	0.60	0.31	295
TOTAL	**3.19**	**0.52**	**0.27**	**16,501**

Table 7 Fraser's Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	0.75	1.25	0.53	9,407
Indicated	1.47	0.75	0.32	11,001
sub-total	**2.23**	**0.92**	**0.39**	**20,408**
Inferred	0.01	0.60	0.25	44
TOTAL	**2.24**	**0.91**	**0.39**	**20,452**

Table 8 Auer Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	-	-	-	-
Indicated	3.54	0.93	0.32	32,796
sub-total	***3.54***	***0.93***	***0.32***	***32,796***
Inferred	1.10	0.76	0.24	8,297
TOTAL	**4.64**	**0.89**	**0.30**	**41,093**

Table 9 Yangibana Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	-	-	-	-
Indicated	1.98	0.71	0.34	14,034
sub-total	***1.98***	***0.71***	***0.34***	***14,034***
Inferred	0.33	0.64	0.31	2,146
TOTAL	**2.31**	**0.70**	**0.33**	**16,180**

Table 10 Yangibana North Mineral Resource

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Measured	0.66	1.39	0.36	9,179
Indicated	4.15	1.41	0.36	58,609
sub-total	***4.81***	***1.41***	***0.36***	***67,788***
Inferred	0.97	1.43	0.37	13,914
TOTAL	***5.78***	***1.41***	***0.36***	**81,702**

Mineral Resources for Gossan, Lions Ear and Kane's Gossan are not utilised in this Ore Reserve Estimate and they are shown here for the sake of clarity only.

JORC Inferred Mineral Resources at Gossan, Lion's Ear, Hook and Kane's Gossan are shown in Table 11.

Table 11 Mineral Resources other prospects Inferred Only

Category	M Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO t
Gossan	0.25	1.43	0.35	3,518
Lion's Ear	0.71	1.54	0.39	10,934
Hook	0.29	1.52	0.33	4,393
Kane's Gossan	0.57	1.04	0.29	5,970
TOTAL	**1.82**	**1.39**	**0.34**	**24,814**

Metallurgical Factors and Assumptions

A DFS was completed in November 2017 on the Bald Hill and Fraser's deposits, and this is now progressing to detailed design. The metallurgical flowsheet developed from that study was then used as the basis of assessment of additional satellite deposits.

The metallurgical performance of samples from each satellite deposit has been assessed through the standard bench-scale flowsheet, the results of the testwork, as well as impacts on operating costs have been used for the prefeasibility-level study on each satellite deposit. The deposits of Auer, Auer North, Yangibana, Yangibana North were included in the Ore Reserve update of 4th November 2019.

Testwork has been completed with the same methodology during 2020-2021 for inclusion of Simon's Find mineralisation in the Ore Reserves estimates. A change to the DFS process flowsheet has been developed after publishing of that study, testwork has been undertaken across the project deposits to assess the metallurgical performance impact, both in the ore sorting unit process, and also downstream impacts on the DFS flowsheet due to the addition of this processing step.

Additional variability testwork has been completed on samples from the 2022 drilling program to ensure sample representativity geospatially and geo-chemically.

Process and Flowsheet

The metallurgical process comprises ore beneficiation followed by hydrometallurgical (hydromet) extraction to produce a valuable Mixed Rare Earths Carbonate (MREC) product. The beneficiation unit processes include crushing, ore sorting, grinding, rougher flotation, regrinding and cleaner flotation. The ore sorting unit process was added post DFS.

The hydromet unit processes include acid bake, water leach, impurity removal and MREC product precipitation. Since the DFS the hydromet process has been geographically relocated to Onslow to improve access to services and ports, but no major changes to the process flowsheet have been made.

The simple and effective metallurgical process flowsheet has been developed with the best known available technology and industrial practice by the Hastings Technical Team, which has been well tested in both laboratory scale and pilot scale during the Bald Hill and Fraser's DFS, with the exception of ore sorting. Ore sorting has been tested to a Pre-feasibility study level post DFS, including assessment of the impact on downstream unit processes. The unit processes selected for inclusion in the beneficiation and hydromet process flowsheet are based on known technologies, both in the rare earths (RE) industries and other mining applications.

Ore Feed Chemistry Tolerances

Assessment of ore mineralogy across the project deposits has identified the main RE-bearing mineral in the ore is monazite. The main gangue minerals are iron oxides and hydroxides, biotite-type minerals and apatite. Iron carbonate (siderite) has been identified at depth in Yangibana North. The siderite boundary has been mapped and higher siderite-bearing portions have been excluded from the planned mill feed ore, pending further metallurgical developments on treating that material.

The ratio of RE elements contained in the monazite differs between the deposits. This is reflected in the financial analysis but has no impact on the performance of the beneficiation flowsheet. Compared to DFS ore source concentrate, there may be some variation on concentrate mineralogy. This can be managed in the hydromet circuit through varying process conditions.

Where required limits have been set for TREO and deleterious elements in the beneficiation circuit feed and these limits have been considered in the mine development and ore scheduling process.

Testwork

Pilot plant campaigns for both the beneficiation flowsheet and the hydromet flowsheet have proved the circuits can be run on a continuous basis and that the selected unit processes are able to selectively concentrate the RE-bearing mineral monazite and remove or control the major product impurities of manganese, iron, thorium and uranium within acceptable product range. Over 50kg of high-purity MREC produced from the pilot plant was sent to 11 customers for evaluation. The product quality is acceptable to separation plant operators.

Bench-scale testwork for the satellite deposits of Auer, Auer North, Yangibana and Yangibana North was mostly carried out in 2017 and 2018 at a number of commercial laboratories in Australia. Bench scale testwork on Simon's Find was carried out in 2020-2021. Beneficiation testwork has been completed at KYSPY Met and ALS Metallurgy. Hydromet testwork has been completed at SGS Minerals Metallurgy and ANSTO.

Assessment of metallurgical processing performance of all satellite deposits was based on batch testwork, using the standard DFS comminution and flotation flowsheet, and comparison against the performance achieved with DFS ore sources. A standard acid bake and water leach test was completed for assessment of the hydromet performance. Liquor chemistry post-water leach was used to compare against DFS ore sources. A dedicated programme to understand the impact on precipitation circuit performance from varying levels of Mn in the leach liquor was also undertaken.

Assessment of comminution requirements was undertaken using a standard suite of comminution tests including SMC, UCS, Bond Ball Mill work index, Bond Crusher work index, and abrasion index.

All results indicate that the satellite deposits are suitable for processing through the comminution circuit as designed in the DFS.

Detailed mineralogy and variability testwork have been carried out on multiple samples for each deposit. Mineralogical assessment has been undertaken using QEMSCAN at the target primary grind size, to understand mineralogy as well as liberation and association of the minerals. Variability flotation testwork has been undertaken of the samples and concentrate from selected samples tested through the hydromet variability program.

Ore sorting has been added to the front end of the Beneficiation Process Flowsheet. After initial scoping testwork to prove the concept, a bulk sample (approximately 1.6 tonnes) was tested through the ore sorting process. The bulk sample produced by trenching within the Bald Hill deposit area. Following bulk testwork, a total of 12 PQ diamond drill core variability samples were tested through the ore sorting process, followed by flotation of sorted product, vs unsorted samples to assess the impact of the ore sorting outcomes on the flotation process.

The Life of Mine average metallurgical recovery for all deposits is

- 96.0% TREO recovery though ore sorting,
- 87.6% TREO recovery in the beneficiation circuit,
- 86.3% TREO recovery in the hydrometallurgy circuit,
- resulting in an overall metallurgical recovery of 72.6%.

Environmental Factors

The increased Ore Reserve estimate is within the scope of the Yangibana Expansion 1 (YE1) footprint referred to the Western Australian (WA) Environmental Protection Authority (EPA) and Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Act 1999 (Commonwealth), respectively. The EPA and DCCEEW determined that the Proposal will be assessed as a Public Environmental Review with a 4-week advertisement assessment. The Environmental Scoping Document was approved on 14 September 2021. Hastings is now completing baseline and impact assessments for the YE1 project and proposes to submit the Environmental Review Document in mid-2023. A brief outline of the key environmental factors being assessed for the YE1 project are provided below.

- Flora and fauna: Baseline flora and fauna surveys have been conducted over 55,650 Ha of tenements. Targeted flora surveys have been conducted over the YE1 footprint. No significant impact will occur to conservation significant terrestrial flora or fauna. Subterranean fauna sampling is underway.
- Baseline ground and surface water: A hydrology study has determined that mining and the majority of infrastructure falls outside flood impact zones. Groundwater studies, including, a pit dewatering assessment and post-closure pit lake modelling, are being updated to incorporate the YE1 pit designs.
- Baseline soil and radiation: Topsoil analysis has been conducted and mapped over the YE1 footprint. Baseline radiation surveys and radiation waste characterisation studies have determined that naturally occurring radioactive materials (NORM) are associated with the orebody. Gamma radiation surveys have been conducted over the YE1 footprint.
- Waste rock geochemical characterisation: The Yangibana, Auer and Simon's Find pit lithologies are consistent with other pits on-site, which have been characterised geochemically and classify as benign and non-acid forming. The mineralogy of the project is not associated with asbestiform minerals. Erodibility parameters were determined for waste rock and topsoil and will inform the waste rock landforms' design for Yangibana, Auer and Simon's Find.
- Baseline air quality: A radiation impact assessment for the YE1 footprint has determined that dust containing NORM will not pose a risk to the surrounding environment. A baseline air quality assessment and greenhouse gas emissions assessment for the YE1 project are in progress.
- Cultural heritage: The YE1 footprint have been surveyed for cultural heritage sites. There are no cultural heritage sites within the footprint

- Closure: A landform evolution study is being undertaken for the YE1 project and will update current landform design specifications that aim to ensure site landforms will maintain their integrity for 1,000 years post-closure.

Market Assessment

The Yangibana Project will produce a Mixed Rare Earth Carbonate (MREC) that has a high neodymium (Nd) and praseodymium (Pr) content (averaging 36% with a maximum of 52% of TREO content) as the predominant value elements. It is estimated that Pr_6O_{11}, Nd_2O_3, Tb_4O_7 and Dy_2O_3 will contribute around 96% of the economic value per kilogram of production.

- Market demand for Nd_2O_3 and Pr_6O_{11} oxides is expected to grow at 8.3% p.a. compounded average growth rate (CAGR) in the period 2021 to 2038 as the shift towards electrification and decarbonisation technologies accelerates.
- CRU Consulting* supplied non-disclosable price forecasts for RE oxides in August 2022 covering the period 2023 to 2038.
- Hastings subscribes to the Wood Mackenzie Global Rare Earths Investment Outlook covering the period 2023 to 2032.
- The plant has a design capacity of 15,000t of MREC per annum.
- The MREC, when further processed and separated, results in TREO of approximately 8,500t per annum.

Hastings has previously announced the following key offtake agreements that relate to the Yangibana Project:

- Offtake contract with thyssenkrupp Materials Trading GmbH for the supply of a total of 70,000 tonnes of MREC over a 10 year period. The contract grants thyssenkrupp exclusive rights to market and distribute Hastings' Yangibana high quality rare earths product on a worldwide basis except for certain excluded customers of Hastings. (refer ASX Announcement "*Hastings Signs Major Offtake Contract with thyssenkrupp Materials Trading GmbH*" dated 20 April 2021).
- Solvay and Hastings Technology Metals Limited have signed a non-binding offtake Memorandum of Understanding (MOU) which outlines the intent of both parties to enter into a binding commercial offtake agreement for the supply of Mixed Rare Earth Carbonate (MREC). Under the agreement, the supply of an initial 2,500 tonnes per annum of MREC will be sent from Hastings' Yangibana rare earth project in Western Australia to Solvay's plant in La Rochelle, France. (Refer ASX Announcement "*Solvay and Hastings sign Memorandum of Understanding for supply of mixed rare earth carbonate*" dated 11 October 2022)
- Offtake Memorandum of Understanding (MOU) with Schaeffler AG for the supply of to be agreed quantity of MREC from the Yangibana Project (Refer ASX Announcement "*Offtake MOU Agreement Signed with Schaeffler AG*" dated 11 June 2019

**CRU Consulting is an independent research and advisory service group that provides data-backed insight, analysis and forecasting in select emerging areas such as the rare earths industry. The company monitors key industry and market developments to support its price forecasting.*

Social

Hastings is implementing a Stakeholder Engagement Plan. The overall response to the project has been very positive. A Land Access Agreement has been negotiated and ratified with the pastoral lessee. A Native Title Agreement has been negotiated and ratified with the Native Title claimants as reported in the ASX announcement titled "Hastings Signs Native Title Agreement with Thiin-Mah Warriyangha, Tharrkari and Jiwarli People" dated 14th November 2017.

The workforce will be recruited from the region, and where this is not possible, more broadly with most plant operations specialists sourced from Perth.

Hastings is currently developing systems and processes to ensure it maintains its social licence to operate, to ensure its workforce are competent in their respective roles and have a culture of safety and compliance.

Infrastructure

The Yangibana Project is located approximately 200km north of Gascoyne Junction in the Upper Gascoyne region. Beneficiation and production of a concentrate will be conducted at the Yangibana Project site. The Concentrate will then be trucked to the Onslow Hydromet facility for cracking and leaching. The MREC product will be exported from the Onslow port.

The Yangibana Beneficiation process plant is located on a greenfield site and all supporting infrastructure must be constructed. The proposed infrastructure for the project will include:

- Comminution plant
- Beneficiation plant
- Access and site roads
- Water supply bore field
- Tailings storage facility (TSF) and Hydromet waste storage
- Mining buildings
- Fuel storage
- Security and fencing
- Employee housing and transportation
- Water treatment and mine site sewage
- Data and communications infrastructure
- LNG fuelled power station.

The Onslow Hydromet process plant infrastructure for the project will include:

- Hydromet plant (Kiln and water leach)
- Access and site roads
- Water supply bores
- Evaporation pond
- Process buildings
- Security and fencing
- Water treatment and mine site sewage
- Data and communications infrastructure
- Natural gas let down station.
- Mains grid electrical switchyard

As of January 2023, early site works include the commencement of construction of the site access road from the Cobra–Gifford Creek Road to the plant site, airstrip, accommodation village, borefields drilling and microwave tower communications packages.

Mining Plan

Mining will be undertaken at the Yangibana Project by a mining contractor utilising a standard truck and shovel arrangement. Ore and waste will be broken by conventional drill and blast practices and mined on discrete flitches, the height of which will be dependent on material type (ore or waste) and ore body geometry.

Grade control is likely to be undertaken on a campaign basis by close spaced, angled RC drilling at 20m intervals.

The deposits considered in the mining plan have different degrees of weathering with each of the deposits hosted by:

- An upper horizon comprising saprolite that requires little or no blasting,
- A transition zone of decreasing alteration that will require blasting, and
- Deeper, fresh granite that will require blasting.

The deposits occur in a range of dips as shown in Table 12, with Fraser's having the most extreme variation from 5° towards its north-eastern end to 65° at its south-western end.

Average true thickness varies from 3.0m to 4.9m throughout the Ore Reserve deposits although locally true thicknesses in excess of 20m occur.

Table 12 Basic dimensions of the Yangibana deposits hosting Ore Reserves

Deposit	Declination (degs)	Ave true thickness (m)
Bald Hill	0 to 60	4.6
Fraser's	5 to 65	3.0
Auer	60 to 80	4.3
Auer North	65 to 85	3.2
Simons Find	25 to 55	3.4
Yangibana	30 to 65	3.3
Yangibana North	5 to 30	4.4

Cut-Off Parameters

A cut-off grade of 0.20% TREO has been used to interpret the mineralisation of potential economic interest. The cut-off coincides generally with the visual geology of the deposits, with target minerals being hosted predominantly by ironstone, and to a much lesser extent by phoscorite or carbonatite.

The economic cut-off grade for the project was determined on a block value basis and is based on calculating revenue from recovered metal less selling and processing costs on a block-by-block (diluted) basis. With the introduction of ore sorting there are now two ore streams that will be reporting to the process plant. The determination of blocks that require sorting and blocks that bypass the sorter and report directly to the SAG mill is based on the combined aluminium (Al) and silica (Si) content, determined at the grade control phase. Blocks with an Al Si content of less than 25% are considered clean and bypass sorting. Cut-off grades for

both ore types are based on a revenue basis. Blocks with revenue greater than the sum of the processing costs were above the cut-off for processing and included as ore in the optimisation process:

Mining Factors

Mining Recovery and Dilution

The ironstone unit that hosts the bulk of the rare earths is visually distinct from the host rock providing good visual control for ore identification. RC grade control drilling will be carried out prior to mining to clearly delineate the mining boundaries of the blocks containing economic rare earths against blocks containing uneconomic waste material, ore types by TREO grades and deleterious elements for blending via stockpiles and sortable and non-sortable ore types. Aside from inherent block dilution added from the re-blocking process (read below) an additional ore loss of 2% has been applied to all blocks mined selected for processing.

Blasting and mining near and in the ore zones will require careful planning to minimise dilution and allow removal of the hanging-wall waste to expose and selectively mine the ore. Due to the high value of the ore, a high ore recovery is the focus of mining. As such, the recent resource update has extended the wireframes out to the edge of TREO mineralisation with a 0.20% limit, which effectively emulates an inflated grade envelope.

All re-estimated mineral resources were created with the same block size of 2m x 2m x 1m. This size was chosen as a compromise between the average drill spacing, size of the mineralisation wireframes, orientation of mineralisation, grade distribution within the mineralisation and the models' ultimate use for mine planning. A re-blocked (to 4m x 4m x 2m) model was provided for mine planning purposes in order to reduce the overall size of the Mineral Resource models, this resulted in the addition of minor amounts of dilution being incorporated into these models.

On this basis no additional dilution has been factored into the optimisation and reserve reporting.

Geotechnical

Based on an updated geotechnical review pit optimisations incorporated a 28^{o} overall wall angle in the saprolite, and 60^{o} in weathered and fresh granite except at Yangibana where overall wall angles were kept at 28^{o} in the saprolite and 35 to 40^{o} in weathered and fresh granite . Simons Find wall angles have been interpolated from Bald Hill and Frasers values as it sits midway between the two deposits along the same line of strike.

A geotechnical programme to incorporate Simons Find is planned for 2024.

Ground Water

Ground water at all deposits sits at approximately 45m below the natural surface level. Pits will be dewatered ahead of mining using bores or by in-pit pumping from sumps to dedicated temporary storage facilities at the pit edge. Stormwater will be managed in-pit using sumps pumped externally to the pit.

Waste Material

Mine waste from each pit is stored in adjacent waste dumps. All waste is considered non-reactive and not considered to pose an Acid Rock Drainage (ARD) issue and therefore will not require additional treatment or contained dumping strategies. An additional waste stream will be generated via the ore sorter, this will consist of a course crushed product and will be co disposed with general mine waste in either of the Eastern Belt waste landforms.

Ore Material

Mined Ore from the pit is transferred either directly to the Run-Of-Mine (ROM) pad or to low-grade stockpiles by mining trucks. For pits remote from the plant the long hauls are achieved by road trains.

Optimisation Parameters

Pit optimisations were completed using the Whittle optimisation software to determine the economic mining limits for each deposit. Only Measured and Indicated Resources were considered for processing and all Inferred material is considered to have no economic value in this process.

Pits were then designed in stages to enable the required ore tonnages and grades and waste volumes to be optimised based on plant requirements.

Pit optimisation studies and designs have defined the total Proved and Probable Ore Reserves for the Yangibana Project as shown in Table 1. (Note that rounding discrepancies may appear in the following tables.)

Mine Design

The design parameters for pit design have been updated from the previous reserve update to include 90° face batters and 6.5m berm width in transitional and fresh material in all deposits except at Yangibana. The designs have been based on shells using Revenue Factor 0.8 at Yangibana, 0.84 at Auer, 0.86 at Bald Hill, Simons Find and Frasers and 1 at Yangibana North West. The latest designs are compared with the previous July 2021 Ore Reserve designs in Figures 2 to 8 below.

Figure 2: Bald Hill and Bald Hill South Designs (Grey) overlain with previous pit design crest (Blue)

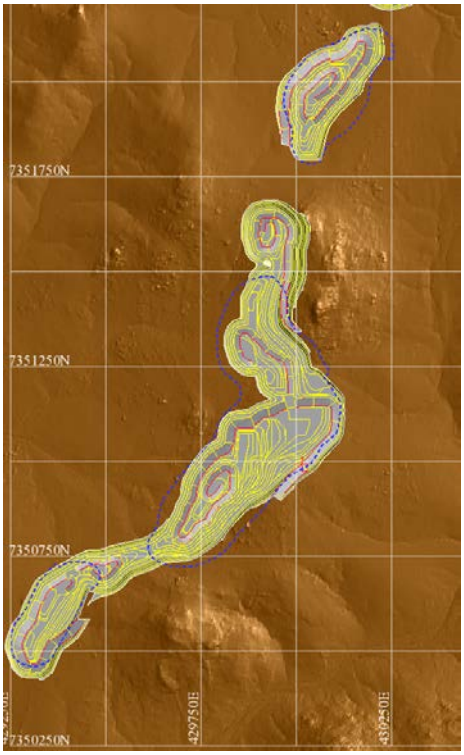

Figure 3: Fraser's Designs (Grey) overlain with previous pit design crest (Blue)

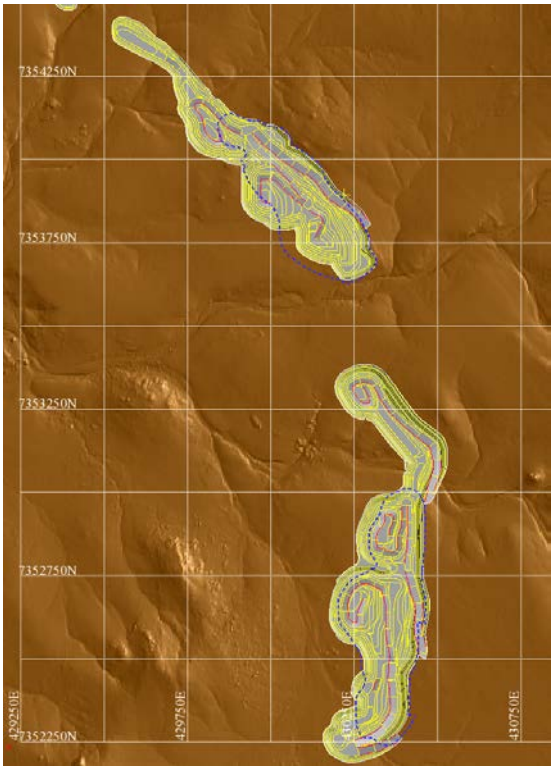

Figure 4: Simon's Find Open Pit Mine Designs with 2021 previous pit design crest (Blue)

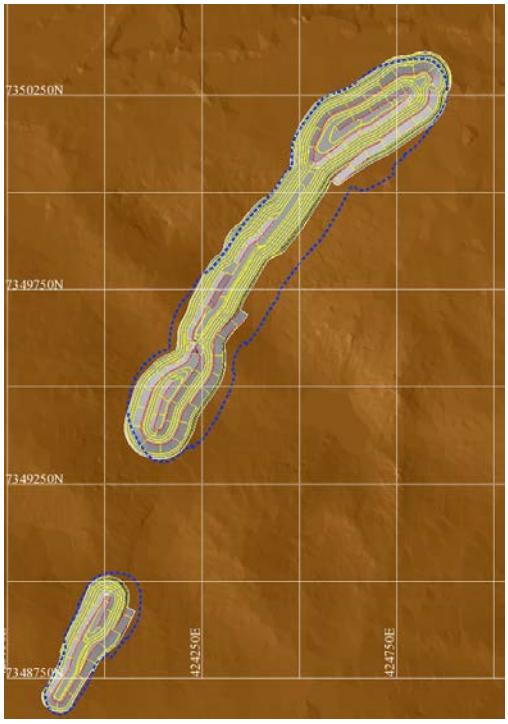

Figure 5 Auer Designs (Grey) with 2021 previous pit design crest (Blue)

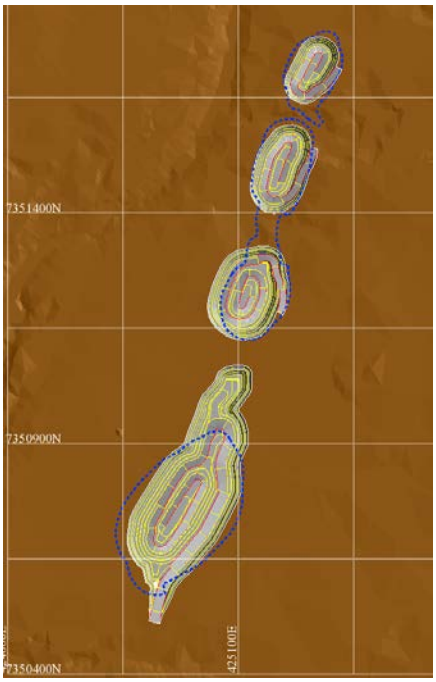

Figure 6 Auer North Designs (Grey) overlain with previous pit design crest (Blue)

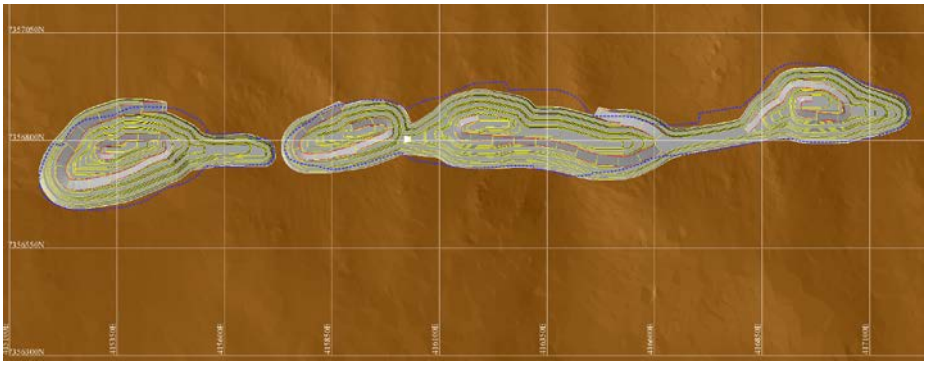

Figure 7 Yangibana Design (Grey) with 2021 previous pit design crest (Blue)

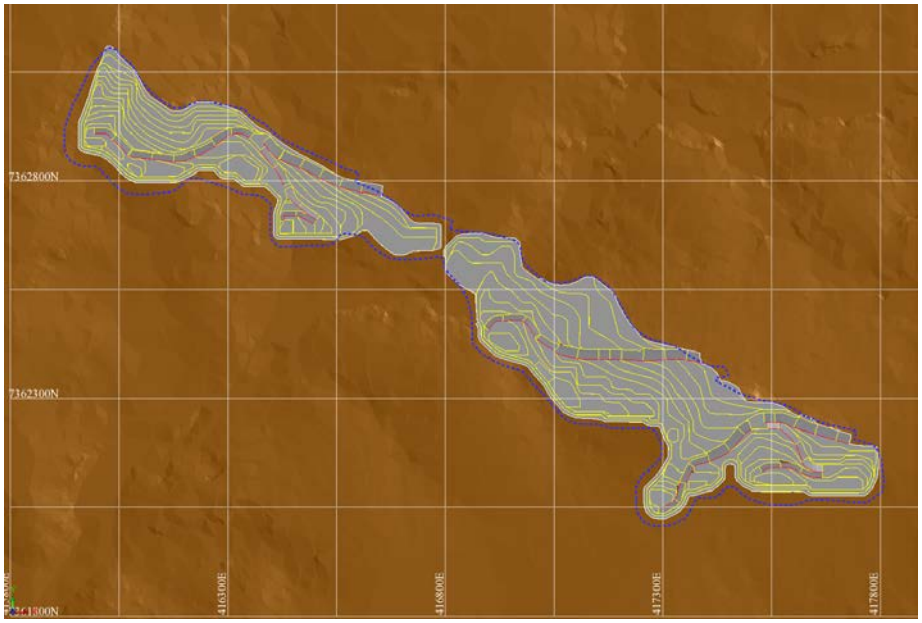

Figure 8 Yangibana North Design (Grey) overlain with previous pit design crest (Blue)

Proved and Probable Ore Reserves and the grades of $Nd_2O_3+Pr_6O_{11}$ and TREO are shown below in Table 13 and 14.

Table 13 Yangibana Project – Proved Ore Reserves by deposit January 2023

Deposit	M Tonnes	%TREO	%$Nd_2O_3+Pr_6O_{11}$	$Nd_2O_3+Pr_6O_{11}$ as % of TREO
Bald Hill	3.49	0.82	0.34	41
Fraser's	0.73	1.24	0.53	43
Simon's Find	-	-	-	-
Auer	-	-	-	-
Yangibana	-	-	-	-
Yangibana North	0.67	1.35	0.35	26
TOTAL	**4.89**	**0.95**	**0.37**	**39**

Table 14 Yangibana Project - Probable Ore Reserves by deposit January 2023

Deposit	M Tonnes	%TREO	%$Nd_2O_3+Pr_6O_{11}$	$Nd_2O_3+Pr_6O_{11}$ as % of TREO
Bald Hill	4.63	0.77	0.30	39
Fraser's	1.03	0.84	0.35	42
Simons Find	2.69	0.53	0.28	53
Auer	2.83	0.96	0.34	35
Yangibana	1.31	0.79	0.37	47
Yangibana North	3.54	1.28	0.33	26
TOTAL	***16.03***	***0.89***	***0.32***	***36***

Cost Assumptions

The key Ore Reserve cost parameters developed from the current evaluation are shown in Table 15 below.

Table 15 Yangibana Project – DFS Ore Reserve Parameters

Pre-Feasibility Study Parameters	Parameter
Status of JORC Resources used for financial evaluation	Measured and Indicated
Mining Method	Conventional Open Pit narrow vein mining methods with drill and blast
Mining Dilution – inherent in the wireframing of the May 2021 updated OK resource modelling.	variable
Mining Recovery	98%
Processing Route	Flotation, Acid Bake – Water Leach and MREC Precipitation
Overall Processing Recovery (TREO) – Ore to MREC (Inclusive of Ore Sorting)	72.6%
Design Capacity Rate (Mixed Rare Earths Carbonate)	15,000 tpa
Design Capacity Contained $Nd_2O_3+Pr_6O_{11}$	3,400 tpa
Operating Costs	A$27.81/kg TREO
Basket Value of MREC product (inc. separation costs, offtake fees and discounts and VAT)	US$51.23/kg TREO
Exchange Rate US$:A$	0.72
Discount Rate	8%

This financial evaluation includes the production targets based on all deposits incorporated in the mine plan for a Proved and Probable Ore Reserve of 20.93 million tonnes.

Operating costs

A LOM contract mining cost of A$4.73/DMT for ore and waste mined is realised based on prices estimated by MACA Contracting in 2021 and validated recently in a benchmarking exercise against similar projects. The MACA pricing was applied directly to the Bald Hill, Frasers and Simons Find deposits as ore costs where inclusive of haulage directly to the ROM. For the Auer, Yangibana and Yangibana North deposits an additional ore haulage cost was applied.

Processing costs for Bald Hill and Fraser's applied in the optimisation are shown in Table 16 Yangibana Project – Optimisation processing costs.

Table 16 Yangibana Project – Optimisation processing costs

OPEX	Frasers	Bald Hill	Simons Find	Yangibana NW	Yangibana	Auer	Auer Nth
Ore Haulage	-	-	-	4.00	4.00	2.50	2.50
Beneficiation	20.79	20.79	20.79	20.79	20.79	20.79	20.79
Ore Sorting	1.86*	1.86*	1.86*	1.86*	1.86*	1.86*	1.86*
G & A	72.31	72.31	72.31	72.31	72.31	72.31	72.31
Hydromet	59.73	59.73	55.95	58.85	56.04	59.63	59.83
Con. Transport	2.29	2.29	2.29	2.29	2.29	2.29	2.29
Tails Transport	1.86	1.86	1.86	1.86	1.86	1.86	1.86
Total $/t Ore	***156.98 158.84****	***156.98 158.84****	***153.20 155.06****	***160.10 161.96****	***157.29 159.15****	***159.38 161.24****	***159.58 161.44.****

*Denotes Ore sorting $/t ROM cost for diluted ore type.

Selling costs included a state royalty cost of 2.5%, no other royalties were considered for ore processed.

The project will provide a MREC product for sale and the separated oxide prices used for the economic evaluation are the Blended forecasts for the period 2023 to 2039. Annual year-on-year pricing was applied on an individual RE oxide basis, as supplied in the forecasts.

A deducted Net Metal price was calculated by KPMG, considering separation costs, offtake charges, offtake discounts and VAT from the CRU pricing forecast.

The Net pricing is calculated as:

Net Pricing = Gross Blended pricing – VAT – Offtake charges – Offtake discounts – separation charges.

As an example, LOM basket pricing based on the Yangibana assemblage and Blended Wood Mackenzie and CRU Consulting forecasts CRU forecasting is USD $71.27 and reduces to $51.23 after charges are applied. For the optimisation and reserve update, the Net pricing was applied to each RE oxide separately.

A cost of $68.18 per tonne of MREC produced was also applied with road transport to Port Hedland assumed and with offtakes on an FOB basis.

The derived MREC basket price applied in the evaluation, using the formula stated in MREC revenue, is shown below in 17.

Table 17: Yangibana Project realised basket prices

Project (LOM)	Gross	Net
Basket Value (US$/kg TREO)	71.27	51.23

The annual MREC production volume (as kg TREO) is calculated through the application of beneficiation and hydrometallurgy elemental recovery factors (derived from pilot plant and laboratory testing) to a monthly mining schedule.

Production Targets

The current Ore Reserve Statement has ore reserve estimates resulting from the design of several open pits that will produce MREC over the current life of the project.

In this Ore Reserve Statement;

- Proved Ore Reserves are derived from Measured Mineral Resources.
- Probable Ore Reserves are derived from Indicated Mineral Resources.
- No Inferred Mineral Resources are included in the Ore Reserves.

The Ore Reserves classifications are considered appropriate because;

- All the pits are well drilled and geologically understood.
- Extensive metallurgical test work and the results of two phases of pilot plant testwork support the estimation.

Capital and Operating costs are derived by independent third-party industry recognised specialists.

Operating costs reflect the mining and infrastructure setup costs of all pits within the mining schedule.

Additionally, over the life of the project a $17M allowance has been made in the operating cost for miscellaneous mining items for all the open pits within the mining schedule, including;

- Clearing and grubbing;
- Topsoil to stockpiles;
- Haul Road formation;
- Haul Road earthworks cut and fill
- Culvert construction
- Construction of settling ponds; and
- Construction of drainage ponds.

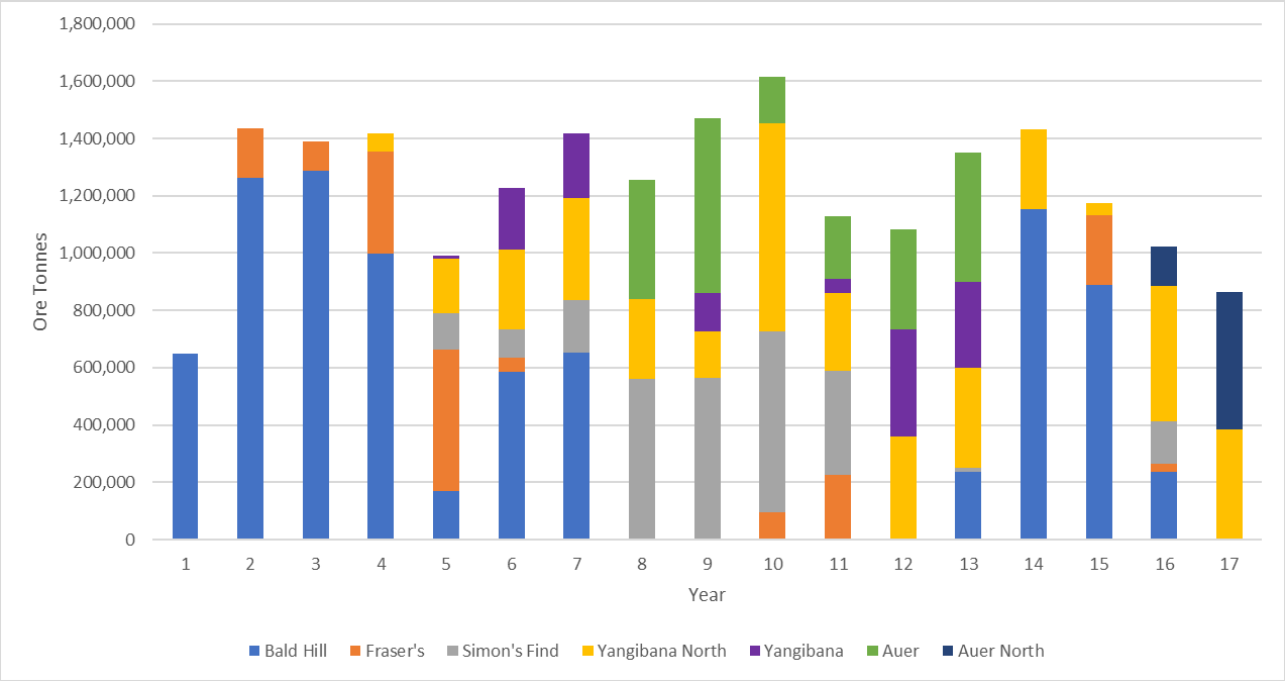

Figure 6 – Yangibana Project Annualised Ore Production by deposit

Current production targets on an annualised basis are listed in Figure **6** above to produce up to 15,000 tpa of MREC. The MREC will contain up to 8,850 tpa Total Rare Earths Oxides, of which up to 3,400 tpa will be neodymium oxide (Nd_2O_3) + praseodymium oxide (Pr_6O_{11}).

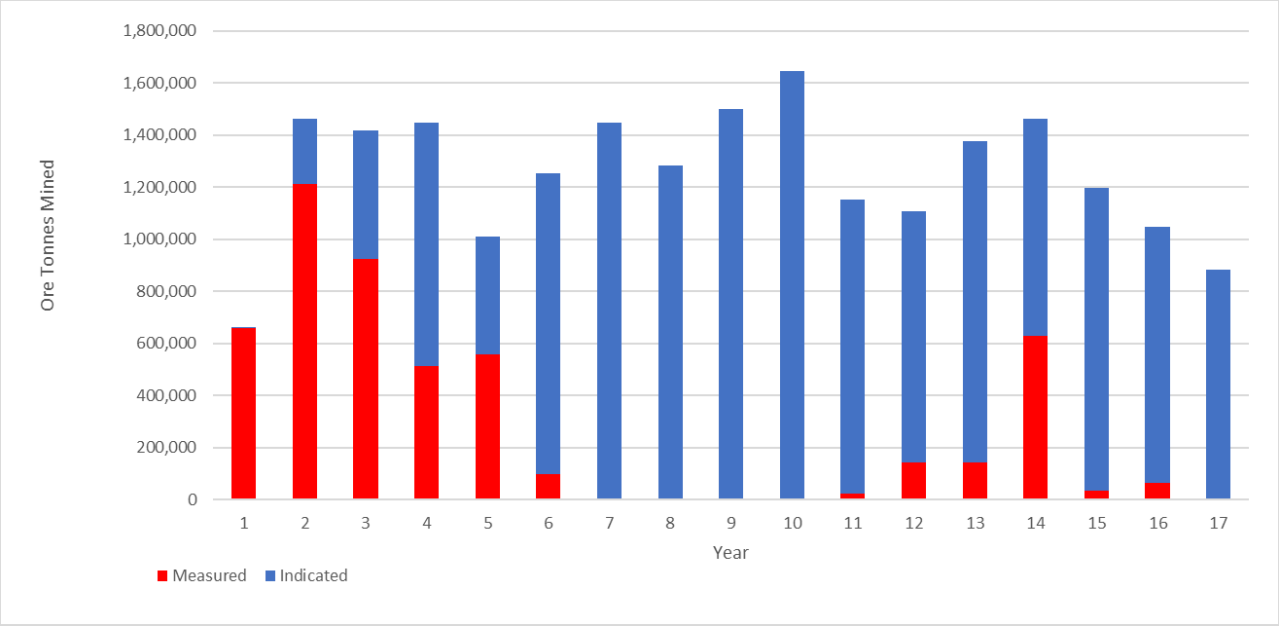

Figure 7 – Yangibana Project Mining of Resource Categories

Figure 7 shows the various resource category tonnages to be mined on an annualised basis. 100% of the Probable Ore Reserves are derived from Measured and Indicated Mineral Resources only.

Audits and Reviews

All aspects of the project including the resources and reserves were reviewed extensively by Behre Dolbear Australia (BDA) between 2019 and 2021.

Relative Accuracy/Confidence

The estimates in this study relating to mining, processing and cost performance are underpinned by an updated DFS that has a confidence range of +15%/ -10%.

Competent Person Statements

The information in this announcement that relates to Mineral Resources is based on information compiled by David Princep. Mr. Princep is an independent consultant to the Company and a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Princep has sufficient experience relevant to the styles of mineralisation and types of deposits which are covered in this announcement 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 Princep consents to the inclusion in this announcement of the matters based on their information in the form and context in which it appears.

The information in this announcement that relates to Mineral Resources has been extracted from Hastings' previous ASX announcements including the ASX announcement dated 11 October 2022: "Drilling along 8km long Bald Hill - Fraser's trend Increases Indicated Mineral Resources by 50%". A copy of the announcements are available at www.asx.com.au or at https://hastingstechmetals.com/investor-relations/announcements/. Hastings confirms that it is not aware of any new information or data that materially affects the information included in these announcements and, in relation to the estimates of Mineral Resources, confirms that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Competent Persons for the announcements were David Princep and Lynn Widenbar. Hastings confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the announcements.

The information in this announcement that relates to the Ore Reserves at Bald Hill, Simon's Find, Fraser's, Auer, Auer North, Yangibana, Yangibana North is based on information reviewed or work undertaken by Mr. Stephen O'Grady, member of the Australasian Institute of Mining and Metallurgy, and a Director of Intermine Engineering Consultants. Mr O'Grady has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the preparation of mining studies to qualify as a Competent Person as defined by the JORC Code 2012. Mr O'Grady consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Hastings confirms that it is not aware of any new information or data that materially affects the information included in these announcements and, in relation to the estimates of Mineral Resources, confirms that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Competent Persons for the announcements were David Princep and Lynn Widenbar. Hastings confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the announcements.] The scientific and technical information in this announcement and that relates to process metallurgy is based on information reviewed by Ms. Narelle Marriott (Manger Process Development) Hastings Technology Metals Limited. Ms. Marriott is a member of the AusIMM and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined by the JORC Code 2012. Ms. Marriott consents to the inclusion in this announcement of the matters based on their information in the form and context in which it appears.

DISCLAIMER

The production target in this announcement is 100% underpinned by the Ore Reserves (23.3% Proven Ore Reserve and 76.6% Probable Ore Reserve) estimated at the Yangibana Project pursuant to the JORC Code (2012 edition). The Inferred category Mineral Resources have not been included in the Ore Reserves or production target in this announcement and have not been included when determining the forecast financial information detailed in this announcement. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources (or Ore Reserves) in relation to that mineralisation.

The production target and the financial forecasts for the Yangibana Project are based on the material assumptions outlined in this announcement and are subject to various risk factors. While Hastings considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the Mineral Resource and Ore Reserve estimates are accurate or that the production target or financial forecasts as indicated in this announcement will be achieved.

TERMINOLOGY USED IN THIS REPORT

Total Rare Earths Oxides, TREO, is the sum of the oxides of the light rare earth elements lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), and samarium (Sm) and the heavy rare earth elements europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y).

This announcement has been approved by the Board for release to the ASX.

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About Hastings Technology Metals Limited

Hastings Technology Metals Limited (ASX: HAS) is a Perth based rare earths company primed to become the world's next producer of neodymium and praseodymium concentrate (NdPr). NdPr are vital components in the manufacture of permanent magnets used every day in advanced technology products ranging from electric vehicles to wind turbines, robotics, medical applications, digital devices, etc.

Hastings' flagship Yangibana Project (which comprises a mine and beneficiation plant at the Yangibana site, and a hydrometallurgical plant at Onslow), in the Gascoyne and Pilbara regions of Western Australia, contains one of the most highly valued NdPr deposits in the world with NdPr:TREO ratio of up to 52%. The Project is permitted for long-life production and with offtake contracts signed and debt finance in advanced stage. First product on ship is targeted for 1H 2025.

Hastings also owns and operates the Brockman project, Australia's largest heavy rare earths deposit, near Halls Creek in the Kimberley.

For further information on the Company and its projects visit www.hastingstechmetals.com

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	• Samples used to assess the numerous deposits of the Yangibana Project have been derived from both reverse circulation (RC) and diamond drilling. Fourteen drilling programmes have been completed to date with more than 2,500 holes drilled for >130,000m. • Samples from reverse circulation drilling were collected from each metre from a rig mounted cyclone and split using a 3-level riffle splitter from which 2-4kg samples were sent for analysis Field duplicates, blanks and Reference Standards were inserted at a rate of approximately 1 in 20. • Samples are prepared by drying, crushing, weighing splitting and pulverising the split samples to produce a representative sample for sodium peroxide fusion and ICP-MS, ICP-OES analysis. • Field duplicates, blanks and Reference Standards were inserted at a rate of approximately 1 in 20. • RC and diamond drilling leading to the establishment of JORC Mineral Resources has been carried out at Bald Hill, Simon's Find, Frasers's, Yangibana North, Auer, Auer North, and Yangibana, within tenements held 100% by Hastings, and at Yangibana and Yangibana North, Gossan, Lion's Ear, Hook, Kane's and Gossan in tenements in which Hastings has a 70% interest.
Drilling techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• Reverse Circulation drilling at the various targets utilised a nominal 5 ¼-inch diameter face-sampling hammer. • Diamond drilling at various targets has been NQ and HQ diameter.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Recoveries are recorded by the geologist in the field at the time of drilling/logging. • If poor sample recovery is encountered during drilling, the geologist and driller have endeavoured to rectify the problem to ensure maximum sample recovery. Visual assessment is made for moisture and contamination. An integrated cyclone and splitter system were used to ensure representative samples and were routinely cleaned. • Sample recoveries to date have generally been reasonable, and moisture in samples minimal. Insufficient data is available at present to determine if a relationship exists between recovery and grade. • Some holes returned low sample weights on some 1m samples within the significant intercept most likely related to cavities.
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	• All drill chip samples are geologically logged at 1m intervals from surface to the bottom of each individual hole to a level that supports appropriate future Mineral Resource studies. • Logging (geological) is considered to be semi-quantitative given the nature of reverse circulation drill chips. • All RC and diamond drill holes were logged in full.

Criteria	JORC Code explanation	Commentary
	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. The total length and percentage of the relevant intersections logged.	
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• The RC drilling rig is equipped with an in-built cyclone and triple tier riffle splitting system, which provided one bulk sample of approximately 25kg, and a sub-sample of 2-4kg per metre drilled. • All samples were split using the system described above to maximise and maintain consistent representivity. Most samples were dry. For wet samples the cleanliness of the cyclone and splitter was constantly monitored by the geologist and maintained to avoid contamination. • Bulk samples were placed in green plastic bags, with the sub-samples collected placed in calico sample bags. • Field duplicates were collected directly from the splitter as drilling proceeded through a secondary sample chute. These duplicates were designed for lab checks as well as lab umpire analysis. • A sample size of 2-4kg was collected and considered appropriate and representative for the grain size and style of mineralisation. • Diamond core was cut in half using a diamond core saw, with half placed in a calico bag and dispatched to the assay laboratory.
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• Intertek Genalysis (Perth) was used for all analysis work carried out on the 1m drill chip samples and drill core. The laboratory techniques below are for all samples submitted to Genalysis and are considered appropriate for the style of mineralisation defined at the Yangibana REE Project: FP6/MS • Blind field duplicates of RC samples were collected at a rate of approximately 1 duplicate for every 40 samples that are to be submitted to Genalysis for laboratory analysis. Field duplicates were split directly from the splitter as drilling proceeded at the request of the supervising geologist.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• At least two company personnel verify all significant intersections. • All geological logging and sampling information is entered into OCRIS logging software in the field on a Surface Pro laptop computer and uploaded following QA/QC checks into a proprietary database managed by Expedio. Electronic copies of all information are backed up daily. • No adjustments of assay data are considered necessary.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Final drillhole collars completed were collected by Survey Group Surveyors using DGPS utilising a locally established control point. Accuracies of the drillhole collar locations collected by Survey Group Surveyors is better than 0.1m. • Down hole surveys were conducted by the drill contractors using a gyro system. The instrument is not affected by magnetic lithologies. • Holes drilled in 2021-2022 were downhole surveyed by ABIM Solutions using a density probe, magnetic susceptibility probe and a natural gamma probe providing 10cm readings. • Grid system used is MGA 94 (Zone 50)

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• Substantial areas of the Fraser's, Simon's Find and Bald Hill deposit have been infill drilled at a staggered 25m x 50m pattern, giving an effective 40m x 40 spacing. In general, and where allowed by the kriging parameters and data quality, this would allow portions of the deposit to be classified in the Measured category. Areas of 50m x 50m spacing, including Auer, Auer North, Yangibana and Yangibana North are generally classified as Indicated, while zones with wider spacing or where blocks are extrapolated are generally classified as Inferred category. • No sample compositing of RC samples is used in this report, all results detailed are the product of 1m downhole sample intervals. DD holes were composited to 1m intervals in order to provide for equivalent samples.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• Most drill holes in the recent programme are angled and collared at -60° or -90° in order to appropriately intersect the mineralization.
Sample security	• The measures taken to ensure sample security.	• The chain of custody is managed by the project geologist who places calico sample bags in polyweave sacks. Up to 10 calico sample bags are placed in each sack. Each sack is clearly labelled with: • Hastings Technology Metals Ltd • Address of laboratory • Sample range • Samples were transported by RM Transport from site to Perth and delivered Genalysis. • The freight provider delivers the samples directly to the laboratory. Detailed records are kept of all samples that are dispatched, including details of chain of custody.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• An audit of sampling has been completed following major drilling campaigns in 2020 and reviewed as part of the May 2021 Resource Update.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• The updated resources are from the Hastings Technology Metals Ltd Yangibana REE Project. Frasers, Simon's Find and Bald Hill Areas lie within M09/158, E09/2018, E09/1943, M09/157, M09/161 and M09/162. These tenements are wholly owned by Yangibana Pty Ltd or Gascoyne Metals Pty Ltd, both wholly owned entities of Hastings Technology Metals Limited. The tenements are in good standing and no known impediments exist.

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• All RC and Diamond Drilling on the tenement has been undertaken by Hasting's Technology Metals. The discovery and delineation of Mineral Resources at Frasers, Simon's Find and Bald Hill is entirely the result of work performed by Hastings Technology Metals.
Geology	• Deposit type, geological setting and style of mineralisation.	• REE mineralisation at the Yangibana REE Project is hosted within carbonatites and associated phoscorite dykes emplaced within a variety of rock types but predominantly in granites. • Economic mineralisation is hosted within in the completely weathered and oxidised portions of the carbonatite-phoscorite rocks which occur as ironstones. • The nature of weathering and oxidation means that all resources occur in the near surface. Transitional zones from completely weathered ironstones to primary carbonatite have rarely been intersected in drilling across the Yangibana REE Project as drilling has focused primarily on relatively shallow mineralisation.
Drill hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: ▪ easting and northing of the drill hole collar ▪ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ▪ dip and azimuth of the hole of down hole length and ▪ hole depth • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Not applicable as no exploration results are being announced.
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Not applicable as no exploration results are being announced
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only the down hole lengths are reported, there should be a	• True widths are generally estimated to be about 70% of the down-hole width.

Criteria	JORC Code explanation	Commentary
	clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional view.	• Not applicable as no exploration results are being announced. • Exploration results incorporated into the mineral resource estimates the subject of this announcement were previously reported to the ASX on the 8th October 2021 titled 'Resource definition drilling commences at Yangibana', 9th June 2022 titled 'Drilling extends mineralisation with exceptional quality' and 25th July 2022 titled 'Higher grades extend Bald Hill mineralisation'
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• Not applicable as no exploration results are being announced.
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Not applicable as no exploration results are being announced
Further work	• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Further work will include infill and step out drilling. This work will be designed to improve confidence in, and test potential extensions to the current mineral resource estimates and to provide necessary sample material for additional and ongoing metallurgical studies

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	• Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.	• Data was provided as a .csv data dump from an externally managed database and was digitally imported into Micromine Mining software. Micromine validation routines were run to confirm validity of all data. • Individual drill logs from site have been previously checked with the electronic database on a random basis to check for validity. • Analytical results have all been electronically merged to avoid any transcription errors.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.	• The Competent Person for the updated and re-estimated Mineral Resources has not yet visited the project area. The Mineral Resource estimate detailed in the announcement was undertaken as a confirmation of the Mineral Resource estimate used in the DFS and there was insufficient time to carry out a site visit. It is expected that a site visit will be undertaken in due course. • Mr Lyn Widenbar who completed the Mineral Resources that were not updated was the Competent Person who visited site from 15-16th December 2016 and reviewed geology and drilling.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.	• Confidence in the geological interpretation is considered to be high. • Detailed geological logging and surface mapping allows extrapolation of drill intersections between adjacent sections. • Alternative interpretations would result in similar tonnage and grade estimation techniques. • Geological boundaries are determined by the spatial locations of the various mineralised structures. • Continuous ironstone units comprising iron oxides and hydroxides, minor quartz rich zones, and locally carbonate and apatite host the rare earths mineralisation and are the key factors providing continuity of geology and grade. The mineralised zones may be described as visually distinctive anastomosing iron rich veins with excellent strike and down dip continuity.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• Bald Hill mineralisation dips shallowly (maximum 30°) but variably to the southwest and ranges from 1m to 10m thick. Maximum depth of the resource is to a vertical depth of 80 metres below surface. • Fraser's mineralisation dips steeply (70-80°) in the western portion becoming more shallow (to 30°) in the east and ranges from 1m to 6m thick. Maximum depth of the resource is to a vertical depth of 140 metres below surface. • Simon's Find mineralisation dips shallowly (variably between 30° and 40°) to the west and southwest and ranges from 2m to 11m thick. Maximum depth of the resource is to a vertical depth of 70 metres below surface. • Yangibana mineralisation dips shallowly (maximum 30°) but variably to the south and ranges from 1m to 5m thick. Maximum depth of the resource is to a vertical depth of 100 metres below surface. • Yangibana North mineralisation dips shallowly (maximum 30°) but variably to the south and ranges from 1m to 5m thick. Maximum depth of the resource is to a vertical depth of 140 metres below surface.

Criteria	JORC Code explanation	• Commentary
		• Auer is a steeply dipping zone of mineralisation extending Northeast-Southwest over a total strike length of approximately 2.4 km and to a depth of 150m below surface. • Auer North is a steeply dipping zone over a strike length of 1,400m and has been tested to 120m below surface. Auer North is separated from Auer by an area of limited drilling and is expected to form a continuous zone once infill drilling is completed. The Auer deposit extends over a total length of 4km.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	• The mineral Resources detailed in this announcement were estimated using Ordinary Kriging (OK) techniques. • The OK parameters used were a primary block size of 2m x 2m x 1m and an escalating search generally starting at 25m and increasing to 100m radius. Search directions were orientated to align with the main directions within the mineralised wireframes. • The block models and sample data were flattened in Micromine for the estimation run in order to remove the variable dips encountered in the mineralisation and preserve the local grade variability. • Data analysis was conducted in order to derive element correlations to enable a reduction in the number of variogrammes required within the estimation process. As a result, variography was performed on the TREO value, using this process allowed for maintenance of element correlations when calculating final estimate TREO, HREO and LREO values. • Estimation has been carried out for the following economic variables: • CeO_2_ppm, Dy_2O_3_ppm, Er_2O_3_ppm, Eu_2O_3_ppm, Gd_2O_3_ppm, Ho_2O_3_ppm, La_2O_3_ppm, Lu_2O_3_ppm, Nd_2O_3_ppm, Pr_6O_{11}_ppm, Sm_2O_3_ppm, Tb_4O_7_ppm, Tm_2O_3_ppm, Y_2O_3_ppm, Yb_2O_3_ppm, LREO_ppm, HREO_ppm, TREO_% and Nd_2O_3+Pr_6O_{11}_% along with rock composition major elements, U, Th, Nb and Ta. • Drill hole spacing is variable, and the block sizes were chosen to reflect the best compromise between spacing and the necessity to define the geological detail of each deposit. In general, block sizes are 2 m along strike, 2m across strike and 1m vertically. • As a result of the mineralisation distribution within the wireframes and element populations no top cuts were employed. • Following the initial estimation, the block model was re-blocked to a block size of 4m x 4m x 2m in order to limit the total size of the model for mine planning purposes. In order to maintain consistency with the mining model the re-blocked model has been reported in this announcement. • Block model validation has been carried out by several methods, including: • Drill Hole Plan and Section Review • Model versus Data Statistics by Domain • Easting, Northing and RL swathe plots • Comparison to previous Mineral Resources • All validation methods have produced acceptable results. • As these Mineral Resource estimates were completed following on from the previous OK and MIK estimates and a

Criteria	JORC Code explanation	• Commentary
		reasonable correlation exists between the two it can be taken that the previous estimates substantially validate the updated Mineral Resource estimate given that there is no change in the underlying data.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Tonnages are estimated on a dry basis.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	• A nominal downhole cut-off of 0.20% TREO has been used in conjunction with logging of ironstone to define mineralised intersections. This is a departure from the previous OK estimate and negates the need to add an encompassing dilution skin. For reporting purposes, a 0.24% TREO cut-off has been applied to all Mineral Resources used to define Ore Reserves based on NSR values derived from mining studies. The NSR calculations used Hastings commodity prices and recoveries for all of the elements comprising the TREO value along with defined processing costs.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• Mining is assumed to be by conventional open pit mining methods • It is expected that conventional ore loss and dilution would be applied to the Mineral Resource estimate as a modifying factor during pit optimisation and mine planning work.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• The initial process flowsheet design was developed using samples from Bald Hill and Fraser's deposits. A large composite created from RC drilling materials was used for this work. Subsequent variability testwork was undertaken on samples from Bald Hill, Fraser's, Auer, Auer North, Yangibana, Yangibana North, Bald Hill South and Simon's find. A mix of both RC chips and drill core was used for these variability samples. Drill core samples were also collected for comminution testwork. • Beneficiation testwork has shown that the rare earths mineralisation (largely monazite) can be upgraded readily using standard froth flotation techniques and commercially available reagents. Hydrometallurgical testwork has demonstrated that the monazite concentrate can be treated through an acid bake and water leach process to crack the monazite mineral and selectively separate the rare earths elements into a high grade Mixed Rare Earths Carbonate (MREC) product. Optimisation and variability testwork programs have been undertaken to understand impacts of deleterious gangue minerals and elements on the beneficiation and hydrometallurgical process flowsheets, and mitigation strategies developed where required. • Individual deposit variability testwork results have been used for metallurgical performance (recovery, grade and operating cost) parameters. Where new drilling programs have extended resources, an assessment whether the existing testwork

Criteria	JORC Code explanation	• Commentary
		sample set is representative of the new drilling results or if additional samples should be tested to ensure that the metallurgical testwork has been carried out on a representative sample set. • Pilot plant campaigns have been undertaken on both the Beneficiation process flowsheet and the Hydrometallurgical process flowsheet. Pilot plant campaigns were used to understand scaleup and continuous operation of the process flowsheets, to collect engineering data and to produce samples for subsequent testwork and customer analysis.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• Environmental studies have been carried out on site with Level 1 Flora and Fauna surveys and Level 2 Flora and Fauna surveys completed. No declared rare species or threatened ecological communities have been identified. • • Subterranean fauna studies have located both troglofaunal and stygofauna with most species occurring both inside and outside of the expected pit areas.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	• Bulk density/specific gravity have been measured by the Company on core from Yangibana North, and at independent laboratories on core from Bald Hill, Bald Hill South, Fraser's, Yangibana, Auer, Auer North and Yangibana North. Samples have been taken from each of oxidised, partially oxidised and fresh mineralisation with results feeding into the resource estimations. • Bulk density/specific gravity measurements have also been carried out at an independent laboratory on samples of oxidised, partially oxidised and fresh host rock, granite. In situ bulk densities for the individual deposits have ranged from 1.70 to 3.50 tonnes per cubic metre. • During the 2020 drilling some 55 drill holes were downhole logged for density using a gamma – gamma tool and in 2021-2022 121 holes were logged. The downhole gamma derived density values were validated against both logged geology and existing measured bulk densities and were found to be consistent. Data was logged at 1cm intervals and composited to 1m values and used to define bulk density factors for each of the deposits estimated. These factors were used to assign bulk density values by depth within the block models for both mineralised and un-mineralised intervals. Final calibration of the downhole gamma density values has being carried out by an external geophysical consultant.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal	• The Mineral Resource has been classified in the Measured, Indicated and Inferred categories, in accordance with the 2012 Australasian Code for Reporting of Mineral Resources and Ore Reserves (JORC Code). A range of criteria has been considered in determining this classification including: • Geological and grade continuity

Criteria	JORC Code explanation	• Commentary
	values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	• Data quality. • Drill hole spacing. • Modelling technique and kriging output parameters. • The Competent Person is in agreement with this classification of the resource.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	• A review of previous Mineral Resource estimates has been completed as part of the DFS financing process and the updated Mineral Resource estimate incorporates feedback from the review. It is expected that the Mineral Resources outlined in this announcement will be similarly reviewed.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The relative accuracy of the various resource estimates is reflected in the JORC resource categories. • At the Measured and Indicated Resource classification level, the resources represent local estimates that can be used for further mining studies. • Inferred Resources are considered global in nature.

Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3 also apply to this section.)

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Mineral Resource for conversion to Mineral Reserves</td><td>The resource models used for mine planning were:
Bald Hill, Frasers and Simon's Find - BH_SF_FR_220818_full_all_elements_fbm
Yangibana North West - bm_yangibana_NW_all_elements.fbm
Yangibana – bm_yangibana_ok_210311_all_elements_reblock_planning.fbm
Auer/Auer North – bm_auer_ok_2100308_all_elements_reblock_planning.fbm

Only Measured and Indicated Resources were considered for inclusion in the Ore Reserve.</td></tr>
<tr><td>Site visits</td><td>Site visits were completed by the following Competent Persons:
<table>
<tr><th>Competent Persons</th><th>Items</th><th>Date of site visit</th></tr>
<tr><td>Stephen O'Grady</td><td>Mining</td><td>N/A</td></tr>
<tr><td>David Princep</td><td>Resources</td><td>N/A</td></tr>
<tr><td>Narelle Marriott</td><td>Metallurgy beneficiation</td><td>August 2016</td></tr>
</table>
The Mining and Resources Competent Person did not visit the site and were comfortable relying on the report of staff who have visited the site.</td></tr>
<tr><td>Study status</td><td>The Yangibana REO Project has previously had a Definitive Feasibility Study (DFS) released on 28 November 2017, with a further update on21 February 2022, based on all deposits. Some environmental assessments are ongoing; initial results indicate there are currently no encumbrances to the project from the environmental assessments.</td></tr>
<tr><td>Cut-off parameters</td><td>The economic cut-off grade for the project was determined on a block value basis and is based on calculating revenue from recovered metal and selling and processing costs on a block-by-block (diluted) basis. With the introduction of ore sorting there are now two ore streams that will be reporting to the process plant. The determination of blocks that require sorting and blocks that bypass the sorter and report directly to the SAG mill is based on the combined Al Si content, determined at the grade control phase. Blocks with an Al Si content of less than 25% are considered clean and bypass sorting. Cut off grades for both ore types are based on a revenue basis. Blocks with revenue greater than the sum of the processing costs are included as ore in the optimisation process:</td></tr>
<tr><td>Mining factors and assumptions</td><td>The following Modifying Factors were considered in relation to the development of the Yangibana Ore Reserves:
Geotechnical: For pit optimisation, a 28° overall wall angle was applied for saprolite, and 35° to 40° was applied to weathered and fresh granite at Yangibana, with 28° overall wall angle was applied for saprolite, and 60° applied to weathered and fresh granite at all other deposits.
The ironstone unit that hosts the bulk of the rare earths is visually distinct from the host rock providing good visual control for ore identification. RC grade control drilling will be carried out prior to mining to clearly delineate the mining boundaries of the blocks containing economic rare earths against blocks containing uneconomic waste material, ore types by TREO grades and deleterious elements for blending via stockpiles and sortable and non-sortable ore types. An ore loss of 2% has been applied to all blocks mined selected for processing.
Blasting and mining near and in the ore zones will require careful planning to minimise dilution and allow removal of the hanging-wall waste to expose and selectively mine the ore. Due to the high value of the ore, a high ore recovery is the focus of mining. As such, the recent resource update has extended the wireframes out to the edge of TREO mineralisation with a 0.20% limit, which effectively emulates an inflated grade envelope.
All re-estimated mineral resources were created with the same block size of 2m x 2m x 1m. This size was chosen as a compromise between the average drill spacing, size of the mineralisation wireframes, orientation of mineralisation, grade distribution within the mineralisation and the models' ultimate use for mine planning. A re-blocked (to 4m x 4m x 2m) model was provided for mine planning purposes in order to reduce the overall size of the Mineral Resource models, this resulted in the addition of minor amounts of dilution being incorporated into these models.</td></tr>
</table>

Criteria	Commentary
	On this basis no additional dilution has been factored into the optimisation and reserve reporting.
Metallurgical factors and assumptions	A DFS was completed in November 2017 on the Bald Hill and Fraser's deposits and this is now progressing to detailed design. The metallurgical flowsheet developed from that study was then used as the basis of assessment of additional satellite deposits. The metallurgical performance of samples from each satellite deposit has been assessed through the standard bench-scale flowsheet, the results of the testwork, as well as impacts on operating costs have been used for the prefeasibility-level study on each satellite deposit. The deposits of Auer, Auer North, Yangibana, Yangibana North in the reserves update 4th November 2019. Testwork has been completed with the same methodology in 2020-2021 for inclusion of Simon's Find mineralisation in the reserves estimates. A change to the DFS process flowsheet has been developed after publishing of that study, testwork has been undertaken across the project deposits to assess the metallurgical performance impact, both in the ore sorting unit process, and also downstream impacts on the DFS flowsheet due to the addition of this processing step Process and flowsheet The metallurgical process comprises ore beneficiation followed by hydrometallurgical (hydromet) extraction to produce a valuable Mixed Rare Earths Carbonate (MREC) product. The beneficiation unit processes include crushing, ore sorting, grinding, rougher flotation, regrinding and cleaner flotation. The ore sorting unit process was added post DFS. The hydromet unit processes include acid bake, water leach, impurity removal and MREC product precipitation. Since the DFS the hydromet process has been geographically relocated to a coastal location to improve access to services and ports, but no major changes to the process flowsheet have been made. The simple and effective metallurgical process flowsheet developed with the best known available technology and industrial practice by the Hastings Technical Team, has been well tested in both laboratory scale and pilot scale during the Bald Hill and Fraser's DFS, with the exception of ore sorting. Ore sorting has been tested to a Pre-feasibility study level post DFS, including assessment of the impact on downstream unit processes. The unit processes selected for inclusion in the beneficiation and hydromet process flowsheet are based on known technologies, both in the rare earths (RE) industries and other mining applications. Ore feed chemistry tolerances Assessment of ore mineralogy across the project deposits has identified the main RE-bearing mineral in the ore is monazite. The main gangue minerals are iron oxides and hydroxides, biotite-type minerals and apatite. Iron carbonate (siderite) has been identified at depth in Yangibana North. The siderite boundary has been mapped and higher siderite-bearing portions have been excluded from the planned mill feed ore. The ratio of RE elements contained in the monazite differs between the deposits. This is reflected in the financial analysis but has no impact on the performance of the beneficiation flowsheet. Compared to DFS ore source concentrate, there may be some variation on concentrate mineralogy. This can be managed in the hydromet circuit through varying process conditions. Where required limits have been set for TREO and deleterious elements in the beneficiation circuit feed and these limits have been taken into account in the mine development and ore scheduling process. Testwork Pilot plant campaigns for both the beneficiation flowsheet and the hydromet flowsheet have proved the circuits can be run on a continuous basis and that the selected unit processes are able to selectively concentrate the RE-bearing mineral monazite and remove or control the major product impurities of manganese, iron, thorium and uranium within acceptable product range. Over 50 kg of high-purity MREC produced from the pilot plant was sent to 11 customers for evaluation. The product quality is acceptable to separation plant operators. Bench-scale testwork for the satellite deposits of Auer, Auer North, Yangibana and Yangibana North was mostly carried out in 2017 and 2018 at a number of commercial laboratories in Australia. Bench scale testwork on Simon's Find was carried out in 2020-2021. Beneficiation testwork has been completed at KYSPY Met and ALS Metallurgy. Hydromet testwork has been completed at SGS Minerals Metallurgy and ANSTO. Assessment of metallurgical processing performance of all satellite deposits was based on batch testwork, using the standard DFS comminution and flotation flowsheet, and comparison against the performance achieved with DFS ore sources. A standard acid bake and water leach test was completed for assessment of the hydromet performance. Liquor chemistry post-water leach was used to compare against DFS ore sources. A dedicated programme to understand the impact on precipitation circuit performance from varying levels of Mn in the leach liquor was also undertaken. Assessment of comminution requirements was undertaken using a standard suite of comminution tests including SMC, UCS, Bond Ball Mill work index, Bond Crusher work index, and abrasion index.

Criteria	Commentary

Deposit	No. of comminution samples Completed
Bald Hill	8
Fraser's	5
Auer	4
Auer North	4
Yangibana	5
Yangibana West	3
Yangibana North	1
Simon's Find	1

All results indicate that the satellite deposits are suitable for processing through the comminution circuit as designed in the DFS.

Detailed mineralogy and variability testwork have been carried out on multiple samples for each deposit, as shown below. Mineralogical assessment has been undertaken using QEMSCAN at the target primary grind size, to understand mineralogy as well as liberation and association of the minerals. Variability flotation testwork has been undertaken of the samples and concentrate from selected samples tested through the hydromet variability program.

Deposit	No. of samples		
	Mineralogy	Flotation Variability	Composite
Bald Hill	10	8	2
Fraser's	5	5	2
Auer	18	18	1
Auer North	8	8	1
Yangibana	12	12	2
Yangibana West	6	2	3
Yangibana North	8	4	
Simon's Find	22	22	1

Ore Sorting

The unit process of ore sorting was added to the front end of the Beneficiation Process Flowsheet post the DFS. After initial scoping testwork to prove the concept, a bulk sample (approximately 1.6 tonnes) was tested through the ore sorting process. The bulk sample produced by trenching within the Bald Hill deposit area. Following bulk testwork, a total of 12 PQ diamond drill core variability samples were tested through the ore sorting process, followed by flotation of sorted product, vs unsorted samples to assess the impact of the ore sorting outcomes on the flotation process.

Deposit	No. of Ore sorting samples Completed
Bald Hill	4 + bulk
Fraser's	2
Auer	1
Auer North	0

Criteria	Commentary
	<table><tr><td>Yangibana</td><td>1</td></tr><tr><td>Yangibana North</td><td>1</td></tr><tr><td>Simon's Find</td><td>3</td></tr></table> Overall Metallurgical recovery The Life of Mine average metallurgical recovery for all deposits is 96.0% TREO recovery for ore sorting, 87.6% TREO recovery in the beneficiation circuit, 86.3% TREO recovery in the hydrometallurgy circuit, giving an overall metallurgical recovery of 72.6%.
Environmental	This feasibility study (FS) was updated for the Environmental and Social Baseline section and includes data from the 2017 definitive feasibility study (DFS), but has been updated to reflect: Flora and fauna: Baseline flora and fauna surveys have been conducted over 55,650 Ha of tenements. Targeted flora surveys have been conducted over all disturbance areas including the pits and waste rock landforms of the 2020 drilling program. No significant impact will occur to conservation significant terrestrial flora or fauna. Subterranean fauna sampling has been completed at Yangibana and Auer and is currently underway at Simon's Find. Baseline ground and surface water: A hydrology study has determined that mining and the majority of infrastructure falls outside flood impact zones. Groundwater studies of fractured rock aquifers within the ore body at Yangibana, Auer and Simon's Find is underway and is expected to further supplement the project's water demands. The remaining 80% of water demands will be sourced from the paleochannel bore field. A pit dewatering assessment and post-closure pit lake modelling has been completed for Yangibana North and is planned to be undertaken for Auer, Auer North and Yangibana pit areas. Baseline soil and radiation: Topsoil analysis has been conducted and mapped over Project areas including the Auer, Yangibana and Simon's Find areas. Baseline radiation surveys and radiation waste characterisation studies have determined that naturally occurring radioactive materials (NORM) are associated with the orebody. Gamma radiation surveys are required over Auer, Yangibana and Simon's Find areas. Waste rock geochemical characterisation: The Yangibana, Auer and Simon's Find pit lithologies are consistent with other pits on-site, which have been characterised geochemically and classify as benign and non-acid forming. The mineralogy of the project is not associated with asbestiform minerals. Erodibility parameters were determined for waste rock and topsoil and will inform the waste rock landforms' design for Yangibana, Auer and Simon's Find. Waste rock geochemical characterisation for Yangibana, Auer and Simon's Find is underway. Baseline air quality: A baseline air quality assessment and greenhouse gas emissions assessment for the Project have been completed. A radiation impact assessment has determined that dust containing NORM will not pose a risk to the surrounding environment. However, these studies will be reviewed to confirm the conclusions are current for the expansion of additional pits and waste rock landforms and tailings storage facilities.

Criteria	Commentary
	Cultural heritage: Yangibana, Auer and Simon's Find pit areas and the majority of waste rock landform footprints have been surveyed for cultural heritage sites. There are no cultural heritage sites within the pit areas. Waste rock landforms will be designed to avoid impact to cultural heritage sites in areas that are yet to be surveyed. Closure: The mine closure plan has been approved for the Bald Hill, Frasers and Yangibana NW and an addendum is ongoing for the addition of Auer, Simons Find and Yangibana deposits. A landform evolution study has identified landform design specifications that aim to ensure site landforms will maintain their integrity for 1,000 years post-closure. A landform evolution study will be revised subject to outcomes of waste rock characterisation studies' findings in Auer, Yangibana and Simon's Find if results differ from those of the DFS ore sources. The mining plan has been approved for Bald Hill, Frasers and Yangibana NW, an addendum is required for Auer, Simons Find and Yangibana and will be submitted after EPA approvals are granted for the Simons Find, Auer and Yangibana. Water abstraction license (5c) has been approved, addendums for pit dewatering for the Auer, Simons Find and Yangibana deposits are ongoing. Yangibana Expansion 1 includes Auer, Yangibana and an amalgamated Bald Hill-Simon's Find-Fraser's pit and associated WRLs, and additional capacity of the Tailings Storage Facility. The Yangibana Expansion 1 was referred to the Western Australian (WA) Environmental Protection Authority (EPA) and Commonwealth Department of Water, Agriculture and the Environment (DAWE) under the Environmental Protection Act 1986 (WA) and Environment Protection and Biodiversity Act 1999 (Commonwealth), respectively. The EPA and DAWE determined that the Proposal will be assessed as a Public Environmental Review with a 4-week advertisement assessment. The Proposal is currently in Phase 3 of the assessment with the Environmental Scoping Document under assessment for approval by the EPA Board.

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Infrastructure</td><td>Recent changes in the Project layout have seen the Beneficiation and Hydromet plants decoupled. The Yangibana Project is located approximately 200 km north of Gascoyne Junction in the Upper Gascoyne region. The process plant is located on a greenfield site and all supporting infrastructure must be constructed. The proposed infrastructure for the project will include:
Comminution plant
Beneficiation plant
Access and site roads
Water supply bore field
Tailings storage facility (TSF) and evaporation plant
Mining buildings
Fuel storage
Security and fencing
Bore field
Employee housing and transportation
Water treatment and mine site sewage
Data and communications infrastructure
LNG fuelled power station.

As of December 2018, early site works include the construction of the water supply bore and pipeline, the 300-room accommodation village and the access road from the Cobra – Gifford Creek Road to the plant site. Of the above, construction has started on the bore and pipeline and off-site fabrication and delivery to site of the accommodation village buildings.

At the Onslow Hydromet facility the infrastructure list will include:

Access and site roads
Water bores
Evaporation Pond
Process and admin buildings
NG connection and let down station
Security and fencing
Water treatment and mine site sewage
Data and communications infrastructure
Grid power reticulation and switchyard

Work has progressed on site layouts for the Hydromet site, additionally front-end engineering continues for the long lead items, such as the kiln and gas scrubber.</td></tr>
<tr><td>Costs</td><td>Mining
An average contract mining cost of A$4.73/DMT mined was estimated by Hastings based upon quotations received in 2021.
Process
Processing costs applied in the optimisation are:
<table>
<tr><th>OPEX</th><th>Frasers</th><th>Bald Hill</th><th>Simons Find</th><th>Yangibana NW</th><th>Yangibana</th><th>Auer</th><th>Auer Nth</th></tr>
<tr><td>Ore Haulage</td><td>-</td><td>-</td><td>-</td><td>4.00</td><td>4.00</td><td>2.50</td><td>2.50</td></tr>
<tr><td>Beneficiation</td><td>20.79</td><td>20.79</td><td>20.79</td><td>20.79</td><td>20.79</td><td>20.79</td><td>20.79</td></tr>
<tr><td>Ore Sorting</td><td>1.86*</td><td>1.86*</td><td>1.86*</td><td>1.86*</td><td>1.86*</td><td>1.86*</td><td>1.86*</td></tr>
<tr><td>G & A</td><td>72.31</td><td>72.31</td><td>72.31</td><td>72.31</td><td>72.31</td><td>72.31</td><td>72.31</td></tr>
<tr><td>Hydromet</td><td>59.73</td><td>59.73</td><td>55.95</td><td>58.85</td><td>56.04</td><td>59.63</td><td>59.83</td></tr>
<tr><td>Con. Transport</td><td>2.29</td><td>2.29</td><td>2.29</td><td>2.29</td><td>2.29</td><td>2.29</td><td>2.29</td></tr>
</table></td></tr>
</table>

Criteria	Commentary

Costs (cont'd)

Tails Transport	1.86	1.86	1.86	1.86	1.86	1.86	1.86
Total $/t Ore	156.98 158.84*	156.98 158.84*	153.20 155.06*	160.10 161.96*	157.29 159.15*	159.38 161.24*	159.58 161.44.*

*Denotes Ore sorting $/t ROM cost for diluted ore type.

Selling costs

Selling costs included a state royalty cost of 2.5%, no other royalties were considered for ore processed.

The project will provide a MREC product for sale and the separated oxide prices used for the economic evaluation are the Cru Consulting forecasts for the period 2023 to 2038. Annual year-on-year pricing was applied on an individual RE oxide basis, as supplied in the forecasts.

A deducted Net Metal price was calculated by KPMG, considering separation costs, offtake charges, offtake discounts and VAT from the CRU pricing forecast.

The Net pricing is calculated as:

Net Pricing = CRU pricing – VAT – Offtake charges – Offtake discounts – separation charges.

As an example, LOM basket pricing based on the Yangibana assemblage and CRU forecasting is USD $71.27 and reduces to $51.23 after charges are applied. For the optimisation and reserve update, the Net pricing was applied to each RE oxide separately.

A cost of $68.18 per tonne of MREC produced was also applied with road transport to Port Hedland assumed and with offtakes on an FOB basis.

Revenue factors

The project will provide a MREC product for sale.

The separated oxide prices used for the economic evaluation are the Blended Wood Mackenzie and CRU Consulting forecasts for the period 2023 to 2038. Annual year-on-year escalation was applied on an individual RE oxide basis, as supplied in the forecasts. The derived MREC basket price applied in the evaluation, using the formula stated in revenue factors, is shown below:

Project (LOM)	Gross	Net
Basket Value (US$/kg TREO)	71.27	51.23

The annual MREC production volume (as kg TREO) is calculated through the application of beneficiation and hydrometallurgy elemental recovery factors (derived from pilot plant and laboratory testing) to a quarterly mining schedule.

The MREC revenue is calculated as:

TREO Basket Price
minus Customer Separation Quote
minus Customer Impurity Removal Charges
minus VAT
= MREC Product Price

Criteria	Commentary
Market assessment	The Yangibana Project will produce a MREC that has a high neodymium (Nd) and praseodymium (Pr) content (up to 52% of TREO content) as the predominant value elements. It is estimated that Pr6O11, Nd2O3, Tb4O7 and Dy2O3 will contribute to around 95% of the economic value per kilogram of production. It is particularly in the Nd2O3 and Pr6O11 oxides where substantial supply shortages and rapid demand growth are anticipated in the decade of the 2020s. Cru Consulting supplied real price forecasts for RE oxides in January 2021 covering the period 2023 to 2038. The Beneficiation plant will have a design capacity of 37,000t of Concentrate per annum. The Hydromet plant will have a design capacity of 15,000 t of MREC per annum. The Hydromet plant will have a design capacity of 8,500 t per annum of TREO. The MREC, when further processed and separated, results in TREO of approximately 8,500t per annum. Hastings has previously announced the following key offtake agreements that relate to the Yangibana Project: Offtake contract with thyssenkrupp Materials Trading GmbH for the supply of a total of 70,000 tonnes of MREC over a 10 year period. The contract grants thyssenkrupp exclusive rights to market and distribute Hastings' Yangibana high quality rare earths product on a worldwide basis except for certain excluded customers of Hastings. (refer ASX Announcement "Hastings Signs Major Offtake Contract with thyssenkrupp Materials Trading GmbH" dated 20 April 2021). Solvay and Hastings Technology Metals Limited have signed a non-binding offtake Memorandum of Understanding (MOU) which outlines the intent of both parties to enter into a binding commercial offtake agreement for the supply of Mixed Rare Earth Carbonate (MREC). Under the agreement, the supply of an initial 2,500 tonnes per annum of MREC will be sent from Hastings' Yangibana rare earth project in Western Australia to Solvay's plant in La Rochelle, France. (Refer ASX Announcement "Solvay and Hastings sign Memorandum of Understanding for supply of mixed rare earth carbonate" dated 11 October 2022) Offtake Memorandum of Understanding (MOU) with Schaeffler AG for the supply of to be agreed quantity of MREC from the Yangibana Project (Refer ASX Announcement "Offtake MOU Agreement Signed with Schaeffler AG" dated 11 June 2019
Economic	N/A
Social	Hastings is implementing a Stakeholder Engagement Plan. The overall response to the project has been very positive. A Land Access Agreement has been negotiated and ratified with the pastoral lessee. A Native Title Agreement has been negotiated and ratified with the Native Title claimants. The workforce will be recruited from the region, and where this is not possible, more broadly with most plant operations specialists sourced from Perth. Hastings is currently developing systems and processes to ensure it maintains its social licence to operate, to ensure its workforce are competent in their respective roles and have a culture of safety and compliance.
Classification	The Mineral Reserve is classified as a Proved and Probable Ore Reserve using the guidelines of the JORC Code (2012 Edition).
Audits or reviews	All aspects of the project including the resources and reserves have been reviewed extensively by Behre Dolbear Australia (BDA).
Relative accuracy/ confidence	The estimates in this study relating to mining, processing and cost performance are underpinned by an updated DFS which has a confidence range of +15%/ -10%.