

27 June 2023

## PRE-FEASIBILITY STUDY RESULTS – BIDAMINNA MINERAL SANDS PROJECT

Image Resources NL (ASX: IMA) ("Image" or "the Company") is pleased to provide pre-feasibility study ("PFS") results and maiden Ore Reserve estimate for its 100%-owned, Bidaminna mineral sands project ("Bidaminna") located in the infrastructure-rich North Perth Basin in Western Australia.

#### **PFS Highlights:**

- Pre-tax NPV<sup>8</sup>: A\$192 million
- Pre-tax IRR<sup>8</sup>: 28%
- Capital estimate: A\$194 million
- Capital payback (post first revenue): 3.8 years
- EBITDA: A\$379 million
- Forecast mine-life: 10.5 years
- Total Heavy Mineral Concentrate ("HMC") production: 2.1 Mt

#### Ore Reserve Highlights:

- 123 million tonnes Probable Ore Reserves at 1.8% total heavy minerals ("HM")
- 2.2 million tonnes total contained HM
- High-value mineral assemblage with 93% valuable heavy minerals ("VHM") in HM
  - o 12% leucoxene, 72% ilmenite, 5% zircon, 4% rutile and 0.3% monazite
- High-grade ilmenite suitable feedstock for upgrading to synthetic rutile
- Predominantly medium-grained free-flowing sand with 4% slimes and 4% oversize
- Amenable to low-cost dredge mining
- Forecast ore processing rate: 11.8 Mt per annum
- Forecast HMC production rate: 207 kt per annum

The PFS and Ore Reserve estimate were prepared by IHC Mining (formerly IHC Robbins).

Based on the PFS results, Image will proceed immediately to a definitive feasibility study ("**DFS**") which will include capital and operating costs optimization steps as well as the inclusion of a mineral separation plant ("**MSP**") which is currently under independent feasibility study. The MSP will likely be located at the current Boonanarring operation to take advantage of existing installed infrastructure of water, power (including solar farm), roads, civils, as well as established service facilities and some offices.

Current capital estimates assume all new equipment including a floating, conventional wet concentration plant ("WCP"). Optimisation steps will include evaluation of a WCP utilising the smaller diameter CT-1 spirals by Mineral Technologies, stationary vs floating WCP, single dredge options and potential for used equipment to minimise capital costs.

The DFS will also likely include the addition of a significant value-adding step of converting Bidaminna ilmenite into synthetic rutile ("SR"). SR production testing has been commissioned and involves the use of a fluidized bed reactor and hydrogen as the reductant (instead of rotary kiln and coal as the reductant in the

current industry standard and 50+ year old Becher process), to substantially reduce carbon dioxide emissions. The Company is also investigating the production of green hydrogen from the hydrolysis of water using its existing solar farm at Boonanarring.

Additional drilling is planned for CY2023 to determine the HM grade of 40 million tonnes of "Dilution" material which is currently assumed to have 0% HM grade. This step could potentially add significantly to the total tonnes of HM in the Ore Reserve.

This Ore Reserve estimate is based on a Mineral Resource estimate completed by Snowden Optiro as of December 2022 (refer to the Company's ASX announcement dated 28 February 2023). The Ore Reserve estimate was prepared and reported by IHC Mining in accordance with the guidelines of the JORC Code (2012). The Ore Reserve estimate is shown in Table 1, and additional details are available in Schedule 1. This is the maiden Ore Reserve estimate for the Bidaminna deposit.

Classification	Ore Tonnes	НМ	Slimes	Oversize	Mineral Assemblage (% of HM)				
	Million	%	%	%	Zircon	Rutile	Leucoxene	Ilmenite	Monazite
Proved	-	-	-	-	-	-	-	-	-
Probable	83	2.6	4.0	3.0	5.0	4.1	12.6	71.7	0.3
Dilution	40	-	3.0	6.0	-	-	-	-	-
Total	123	1.8	4.0	4.0	5.0	4.1	12.6	71.7	0.3

Table 1: June 2023 Bidaminna Project Ore Reserve Summary<sup>1-3</sup>

Table 1 notes:

1. Estimates have been rounded to the nearest 1,000,000t of ore, 0.1% for HM / Zircon / Rutile / Leucoxene / Monazite and 0% for Slimes / Oversize / Ilmenite.

- 2. All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus some of the columns may not be equal.
- 3. The Ore Reserves are based upon an FX rate US\$0.70:A\$1.00; and HMC product pricing is based upon a detailed pricing model contained within existing offtake agreements for Boonanarring and Atlas and which can and may be applied to Bidaminna. These agreements are commercial-in-confidence.

#### Table 2: February 2023 Bidaminna Dredge Mining Project Mineral Resource Summary<sup>1-4</sup>

Classification	Ore Tonnes	HM	Slimes	Oversize	Mineral Assemblage (% of HM)					
	Million	%	%	%	VHM	Zircon	Rutile	Leucoxene	Monazite	Ilmenite
Measured	86	2.8	3.9	3.2	93	4.9	4.0	12	0.3	72
Indicated	13	2.1	4.7	2.3	93	4.9	4.2	13	0.3	71
Inferred	10	0.7	3.2	1.8	93	4.6	5.6	17	0.2	66
Total	109	2.5	3.9	3.0	93	4.9	4.0	12	0.3	72

Table 2 notes:

1. Mineral Resources have been reported as inclusive of Ore Reserves.

2. The mineral assemblages are reported as a percentage of in-situ HM content.

3. Mineral Resources are based upon a cut-off grade of 0.5% total heavy minerals.

4. Tonnes and grade data have been rounded to one decimal place. Discrepancies in summations may occur due to rounding.

Refer to Schedule 1 containing the Ore Reserves Estimate Executive Summary for further information on the outcomes and material assumptions defining the updated Ore Reserve estimate. Figure 1 shows the Ore Reserve Pit Footprint and Site Layout.

This Ore Reserve estimate incorporates cost inputs for mining and processing, product pricing and other study assumptions to reflect the current project development status.



#### Figure 1: Bidaminna Ore Reserve Pit Footprint and Site Layout

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#### PRE-FEASIBILITY STUDY

The Bidaminna Project is a mineral sands deposit located in the Mid-West region of Western Australia, approximately 120 km north-northwest of Perth in the Shire of Gingin. The entrance to the project is from Orange Springs Road, near Cowalla. Image has 100% interest in the project which is wholly contained within Exploration Licences E70/2844 and E70/3298.

The Bidaminna Project Pre-Feasibility Study ("**PFS**") proposes a dredge mining operation, as the deposit is located below the water table. However, for removal of overburden located above the water table (at approximately 54.5 mRL), the PFS proposes the conventional 'dry mining' method utilising a small fleet of scrapers, trucks, and excavators.

Within the top 15-25 metres of the dredging material, those materials designated as overburden or waste material are proposed to be mined with a Beaver cutter suction dredge ("**Overburden Dredge**") with a 25metre reach. The ore and mineralised waste below the overburden are proposed to be mined by a jet suction dredge ("**Ore Dredge**") with capability to mine down to 60+ metres from the surface of the water. All Ore Dredge material is proposed to be processed through a floating wet concentrator plant ("**WCP**") at a design feed rate of 1,477 tph to the rougher spirals.

Dredge operations and WCP processing are proposed to be undertaken in-house by Image employees. The dry mining is proposed to be performed by a mining contractor under a fixed and variable schedule of rates contract. Clearing and grubbing of vegetation is completed before dry overburden removal, which is followed by overburden removal by the Overburden Dredge to expose scheduled mining blocks. Ore mining rates are based on providing an average annualised production rate of 11.8 Mt of ore.

This Ore Reserve estimate is based on Modifying Factors and processing inputs determined from IHC Mining technical studies and Image Resource's historical and calculated figures informed, where relevant, by analysis of actual operating performance at Image's Boonanarring mine site. Boonanarring operations are located 20 km southeast of Bidaminna and actual ore processing operations experiences are deemed to be directly applicable to the processing of Bidaminna ore.

Mineral Resources are converted to Ore Reserves by open pit optimisation software (Datamine MaxiPit) to provide a guide for detailed design and scheduling. The software uses the Lerch-Grossmann algorithm to generate a series of nested pit shells. The shells were preliminarily scheduled to test HMC production profiles, final production requirements, and financial investment decisions. The preferred pit shell was then selected for more detailed mine planning and scheduling.

During the pit optimisation study, all material below the reach of the Overburden Dredge was assumed to be mined by the Ore Dredge and processed through the WCP regardless of its classification. Material that was not classified as either Measured or Indicated Mineral Resources, was treated as 'dilution' material with zero HM grade and therefore assumed to generate no HMC product or revenue. In reality, this 'dilution' material may contain some recoverable HM grade, however, additional drilling is required to determine grades and recoverability.

Pit slopes for the mining voids have been assumed at 24 degrees, which was assessed to be suitable in wet conditions.

Measured and Indicated Mineral Resources have been converted to Probable Ore Reserves. Inferred Mineral Resources & unclassified material are not included in the reported Ore Reserve. 58% of the Probable Ore Reserves tonnes have been derived from Measured Mineral Resources, with the balance from Indicated Mineral Resources. A mining recovery factor of 99% was applied when using the Lerch-Grossmann algorithm to undertake economic evaluation and the generation of the pit shells. Following more detailed mining void design, planning and scheduling, a mining inventory or mining reserve for the production schedule was prepared. The Ore Reserves as reported are in-situ material tonnes and grade with no assumptions for recovery other than dilution. Mining recovery also makes provision for a 0.25 m topsoil & 0.30 m subsoil profiles.

Processing of Bidaminna ore will be through a floating WCP to produce HMC, which will then be trucked to the Port of Bunbury and shipped to international customers. WCP mineral recoveries use estimates of 96.7%

(ZrO<sub>2</sub>) and 91.3% (TiO<sub>2</sub>) based on bulk sample test work on Bidaminna ore feed samples. The WCP will use traditional mineral sand gravity separation techniques.

Waste streams, including dry overburden, the Overburden Dredge wet overburden and the WCP sand tails shall initially be placed off of the mine path in a surface tailings storage facility ("**TSF**") until a mine void is available for direct depositing. Waste materials including oversize material, sand tails and clay fines stored in the TSF will be managed as part of the mine rehabilitation management plan.

The ultimate pit has been prepared using optimisation software on a cashflow basis with an individual cut-off applied to each cell within the block model. The calculations consider, among other things, HMC revenue based on individual mineral and product values, operating costs, and other practical considerations (including ore and overburden variabilities) and HM and product recoveries. Pit shells, upon which final pit designs are generated, use this economic cut-off. Key Project Assumptions used for the study are shown in Table 3.

A value model was developed that assigns mining and processing recoveries, costs, and revenue to the geological model. This value model follows the entire mining process from initial land clearing, through mining and WCP processing to final rehabilitation. This value model calculates a value per tonne and applies that to the geological model. This model is then used for the pit optimisation process using the Lersch-Grossman algorithm for determining the ultimate pit limits. This task is performed for incremental changes in HMC values (due to assemblage changes) to determine the sensitivity of pit limits to higher and lower HMC values. An optimal pit shell is then selected based on meeting criteria such as continuity of mineralisation, delivering maximum NPV, whilst at the same time delivering an HMC production schedule that meets desired sales requirements.

The Competent Person has confirmed that the mining and processing methods selected are typical for mineral sands and have been demonstrated in various other mineral sand operations. Mining and processing methods are considered a low risk of negatively impacting the Ore Reserves. The Modifying Factors have been developed from the PFS completed by IHC Mining and Image and have been prepared to a level of accuracy of at least ±20%. HMC pricing is based on the TZMI endorsed, market based HMC pricing model used in Image's current off-take contracts with existing customers. These offtake contracts relate to the sale of HMC from Image's Boonanarring mine and have been operating successfully since the beginning of CY2019. The HMC pricing model and offtake model are deemed to be credible and applicable sales models and are likely to be used for the sale of HMC from Bidaminna.

Key Assumptions	Units	Quantity
Mining Method	Note	Dry Mining - Load & Haul then Wet Mining - Dredge
Dry Overburden Removal	bcm	143kt per month
Beaver Dredge	bcm	409 kt per month
WCP Feed Rate (Rougher)	tph	1477
Mining Dilution (Average)	%	31%
Mining Recovery	%	99%
WCP Process Recovery (ZrO <sub>2</sub> )	%	96.7%
WCP Process Recovery (TiO <sub>2</sub> )	%	91.3%
HMC Grade	% HM in HMC	95.0%
Overall Slope Angle	Degree	24
FX Rate	A\$:US\$	1.00:0.70
Total Royalty	%	5%

## **Table 3: Key Project Assumptions**

The Ore and Waste Movement from the Pit is shown in Figure 2.

#### Figure 2: Ore and Waste Movement



The Life of Mine ("LoM") Mining and Production Summary is shown in Table 4 and Bidaminna HMC Production is shown in Figure 3.

The Ore Reserves underpinning the production target have been prepared by Mr Greg Jones of IHC Mining, who has sufficient experience in Ore Reserves estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the JORC Code (2012), in accordance with the requirements of the JORC Code (2012).

Mining & Production Statistics	Units	Quantity
Mining		
Ore	kbcm	76,387
Waste	kbcm	72,752
Topsoil	kbcm	779
Subsoil	kbcm	919
Strip Ratio	Waste t: Ore t	0.95:1.0
Processing		
Ore Processed	kt	123,273
HM Grade (in Ore)	%	1.8%
HMC Production		
HMC Produced (Dry Tonnes)	kt	2,154
HM Grade (in HMC)	%	95%

#### Table 4: LoM Mining & Production Summary



Figure 3: Bidaminna HMC Production

Mining and processing infrastructure will be located on Crown land. Additional infrastructure works will be required for power, communication, and road access, which have been planned for and costed accordingly. Costs for power have come from Western Power and roads & communication cost estimates were based on quotes from specialised contractors. Labour will be sourced from the local area and surrounds, with rosters based on a similar drive-in / drive-out model successfully used at Boonanarring

Capital costs have primarily been developed by IHC Mining and are based on supplier quotes and tenders. The Bidaminna project is estimated to require a direct capital expenditure of A\$194M including A\$17.2M contingency. An indirect capital estimate of A\$9.5M is allocated for expenditures associated with upgrading external roads and a power line upgrade. The pre-production cost of A\$7.0M includes environmental approvals and technical assessments. The capital costs as presented in Table 5 are estimated or quoted within  $\pm 20\%$  accuracy after applying an average contingency of 9.7% (reflecting current market conditions & inflationary pressures).

The project will be funded by Image from existing cash reserves plus a combination of debt and equity. Image has existing relationships with debt providers and a recent successful track record of securing debt and equity funding for the Boonanarring project. The Boonanarring project debt funding was fully repaid earlier than originally scheduled. In order to secure funding, it is anticipated that offtake agreements will need to be in place and the Company continues to have strong interest from potential off-takers, including the existing off-takers for the Boonanarring and Atlas projects. Image intends to advance off-take options and negotiations, as well as debt and equity funding options, as part of the DFS.

Area	A\$ 1,000
Operational Establishment	7,000
Power Infrastructure	15,000
Dredges	65,562
WCP	75,103
Construction and Commissioning	2,401
Administrative/Non-Process Infrastructure	2,300
Indirects	9,500

#### Table 5: Capital cost estimate summary

Total (without contingency)	176,866
Contingency	17,234
Total (with contingency)	194,100

Variable mining cost inputs are estimated from site support costs, including all Image staff, administration and external road maintenance. Logistics costs include provision for handling, transport to port, port costs and shipping. HMC haulage to Bunbury and port-related costs are based on haulage contractor-submitted unit rates allowing for 3% moisture in the HMC. Shipping costs are estimated based on current shipping rates per metric tonnes. Royalties include a 5% WA State Government royalty (less allowable deductions, i.e., shipping) and a separate Native Title royalty of 0.6% (calculated on the same basis of the WA State Government royalty).

Stress testing of operating cash flow shows the project remains positive well beyond the stated accuracy of the cost estimates at  $\pm 20\%$ .

LoM C1 & AISC costs are summarised in Table 6 and Figure 4.

LoM C1 and AISC Costs Per HMC Tonne	Units	A\$/t
Mining	A\$/t HMC	97.21
Pre-Strip	A\$/t HMC	4.69
Processing	A\$/t HMC	83.98
Site Support & Fixed Costs	A\$/t HMC	17.90
Logistics (Inc Shipping)	A\$/t HMC	93.40
Total C1 Cash Costs	A\$/t HMC	297.18
Royalties	A\$/t HMC	29.62
Total – AISC	A\$/t HMC	326.80

## Table 6: LoM C1 & AISC Costs per HMC tonne

Notes:

- 1. Pre-strip cost is allocated as capitalized operating cost
- 2. C1 cash costs include mining, processing, general administration and HMC transport costs
- 3. All-in sustaining costs (AISC) include C1 plus royalties and sustaining capital (included in maintenance costs)



#### Figure 4: AISC Distribution

Image uses independent third-party reports as a guide as to future supply/demand, and hence potential pricing, for the underlying products contained within its HMC and applies these projected prices to its HMC sales price forecasts adjusted, where necessary, for assemblage and expected quality differences of underlying products and expected specific demand for Image HMC.

Revenue estimates for pit optimisation studies and final financial models are based on a value per unit of  $ZrO_2$  and  $TiO_2$  contained within the HMC as determined based on a detailed HMC pricing model developed by Image for the sale of HMC from Boonanarring.

Image's HMC pricing model uses benchmark market pricing for individual commodities (zircon, rutile, ilmenite, leucoxene and monazite) which have been indexed based on specific product quality as determined independently by TZMI. The model also includes allowances for downstream dry processing costs incurred by the customer in its MSP and includes deductions for local transport costs from port to MSP, mineral recoveries (losses) and an operating profit. TZMI endorsed the pricing model as fair and market based.

Image has been successfully selling its HMC from Boonanarring under life-of-mine offtake agreements which incorporates the HMC pricing model since the start of CY2019. The pricing model and offtake agreements are commercial in confidence.

Product pricing for the Bidaminna PFS is based on Image's detailed HMC pricing model and offtake agreements currently used for the sale of HMC at Boonanarring and committed for use at Image's Atlas project. For the PFS it has been assumed that 100% of HMC produced at Bidaminna is contracted under similar LoM offtake agreements. This assumption is based on information from Image that the current HMC off-takers and several new potential offtakers have expressed strong interest in securing off-take agreements for the Bidaminna HMC using the same offtake model.

The underlying pricing assumptions of contained HM products (zircon, ilmenite, rutile, and leucoxene) for Bidaminna are based upon TZMI long term prices adjusted for product quality and other factors. Macroeconomic assumptions used in the economic analysis of the Ore Reserves, such as foreign exchange and discount rate, have been internally generated and determined through detailed analysis by Image and benchmarked against commercially available consensus data where applicable.

Long term average US\$:A\$ foreign exchange rates tend to range between 0.70 and 0.79 but more recently the rate has averaged to the lower end of this range. For example, as at 31 May 2023, the 5-year monthly average closing US\$:A\$ foreign exchange rate is 0.707 and the 2-year equivalent is 0.673. Consistent with other mining feasibility studies a long-term rate of 0.70 has been used. Similarly, a discount rate consistent with other mining feasibility studies of 8% was applied.

Final economic evaluation was conducted by Image using a standalone financial model and LoM schedule produced by IHC. Contribution to LoM revenue is expected to be relatively equally split between ZrO<sub>2</sub> and TiO<sub>2</sub>. Cumulative cash flow turns positive from year 5. Rehabilitation expenditure, inclusive of mine closure and Banksia Woodland restoration, is estimated at A\$114M. The Bidaminna Project has a net pre-tax project cash flow of A\$379M. Net (Pre-Tax) Project Cashflow summary is shown in Table 7. The net cashflow from operations is shown in Figure 5.

Net Project Cashflow Summary	A\$M
Mining	\$217
Processing Cost	\$179
Site Support & Other Fixed Cost	\$38
Transport & Port Handling	\$109
Shipping & Royalties	\$91
Rehabilitation	\$114
Total Operating Cost	\$748
Revenue	\$1,292
Net Operating Cashflow	\$544
Capital Cost	\$(194)
Capital Recovery	\$28
Net Project Cashflow Summary	\$379

#### Table 7: Net Project Cashflow Summary



#### Figure 5: Bidaminna Project Cashflows (post-tax)

\*Note that cumulative cashflow includes rehabilitation expensed in the final year of production for the NPV calculation, however rehabilitation costs are spent up to 10 years post mining and are discounted to 2036 A\$ equivalent.

Based on the Project Financial model and cash flows, the Project Pre-tax NPV8 is A\$192 million with a Pretax IRR8 of 28%. The capital payback, post first revenue, is estimated at 3.8 years and the project EBITDA is estimated at A\$379 million. Project sensitivity analysis was conducted on key variables ( $\pm 20\%$ ) based on undiscounted cashflows (Figure 5). The Bidaminna Project is reasonably insensitive to changes in capital and operating costs and is most sensitive to those variables that directly impact on the revenue stream, such as pricing and recovery/grade and FX.

Development of the Bidaminna Project requires several approvals some of which are still in progress. The most significant of these is Ministerial Approval under the Environmental Protection Act, 1986, based around assessment and recommendations made by the Environmental Protection Agency ("**EPA**"). The proposal was referred to the EPA in November 2022 with a decision to assess the Project as a Public Environmental Review with a 6-week public review period. Environmental studies which contribute to the Environmental Review Document ("**ERD**") have been largely completed.

The project area is located on unallocated Crown land which is largely vegetated with Banksia Woodland and is adjacent to the Moore River National Park. The nearest freehold land is zoned rural and the nearest town is located approximately 20km to the west. Key studies include detailed flora and vegetation assessment, fauna studies and groundwater investigations. Release of the ERD for public review is expected in Q4 2023. Based on experience with Image's Atlas Project, finalisation of the EPA Report and Recommendations takes nearly 12 months after the ERD release. Image believes that the proposal will meet the EPA Objectives for all key Environmental Factors with offsets proposed to counter residual impacts of threatened ecological communities and threatened fauna.

The project has also been referred to the Commonwealth for assessment under the Environmental Protection and Biodiversity Conservation Act 1999. The Commonwealth determined that the project is a controlled action and will be assessed by accredited assessment under the WA EPA approval process. The Matters of National Environmental Significance ("**MNES**") which are relevant to the Commonwealth assessment are Listed Threatened species and communities, primarily Banksia Woodland of the Swan Coastal Plain TEC and Carnaby's Cockatoo. These two factors form the basis of the offset requirements for both the state and federal approvals. Other required state approvals, including the Mining Proposal / Mine Closure Plan, Groundwater abstraction licences, Radiation Management Plan and a Works Approval application and subsequent site operating licence, have either been submitted or will be submitted to allow parallel processing to allow approval shortly after the Ministerial Approval under the Environmental Protection Act. At this stage all approvals are anticipated to be in place by the end of CY2024.



## Figure 6: Bidaminna Project Sensitivities

Note: For the purpose of project sensitivity analysis Operating Costs (Opex) includes capitalised operating costs

The Company anticipates a Definitive Feasibility Study/Bankable Feasibility Study (DFS/BFS) to be finalised in CY2024.

This document is authorised for release to the market by the Managing Director. For further information, please contact:

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## FORWARD LOOKING STATEMENTS

Certain statements made during or in connection with this communication, including, without limitation, those concerning the economic outlook for the mining industry, expectations regarding prices, exploration or development costs and other operating results, growth prospects and the outlook of Image's operations contain or comprise certain forward-looking statements regarding Image's operations, economic performance and financial condition. Although Image believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes that could result from future acquisitions of new exploration properties, the risks and hazards inherent in the mining business (including industrial accidents, environmental hazards or geologically related conditions), changes in the regulatory environment and other government actions, risks inherent in the ownership, exploration and operation of or investment in mining properties, fluctuations in prices and exchange rates and business and operations risks management, as well as generally those additional factors set forth in our periodic filings with ASX. Image undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

## COMPETENT PERSON'S STATEMENTS – MINERAL RESOURCES AND ORE RESERVES

The information in this report that relates to the Bidaminna Mineral Resource estimate is extracted from the Company's ASX announcement dated 28 February 2023, which is available on the Company's website. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of mineral resources or ore reserves, that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this report that relates to the estimation of Ore Reserves for the Bidaminna mine is based on, and fairly represents, information and supporting documentation prepared by Mr Greg Jones an employee of IHC Mining, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Jones has sufficient experience in Ore Reserves estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Jones confirms there is no potential for a conflict of interest in acting as a Competent Person and has provided his prior written consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Schedule 1

## Bidaminna Mineral Sands Deposit Ore Reserve Estimate – 2023

## **EXECUTIVE SUMMARY**

## **INTRODUCTION AND BACKGROUND**

Image Resources NL (Image) intends to establish a mining and processing operation at its Bidaminna Project.

Image commissioned IHC Mining (IHC) to conduct a Pre-Feasibility Study to:

- Prepare a pit optimisation and mine plan of the deposit;
- Complete a dredging study;
- Develop the process plant design, based on metallurgical test work completed by IHC;
- Develop the site layout and engineering requirements for establishing a mining and processing operation; and
- Model the economics of mining and processing Bidaminna ore to support a JORC Ore Reserve estimate.

This report presents the findings from the modelling of the economics of mining and processing Bidaminna ore to support a JORC Ore Reserve statement.

## **PROJECT DESCRIPTION**

The Bidaminna Project is a mineral sands deposit located in the Mid-West region of Western Australia approximately 120 km north-northwest of Perth in the Shire of Gingin. The entrance to the project is from Orange Springs Road, near Cowalla. immediately south of the Moore River. Image has 100% interest in the project which is wholly contained within Exploration Licences E70/2844 and E70/3298.

#### SITE VISIT

A site visit has been carried out by the Competent Person which involved reconnaissance of the access to Orange Springs Road, appraisal of the Banksia Woodland vegetation and inspection of drill samples from the most recent drilling program.

#### **MINERAL RESOURCES**

The Bidaminna Project sits within the north of the Perth Basin. The Perth Basin is a north to north-northwesttrending sedimentary basin that extends approximately 1,000 km along the southwestern margin of the Australian continent and which averages 65 km in width.

The 2023 Mineral Resource estimate for the Bidaminna deposit is reported in Table 8. This has been classified and reported in accordance with the guidelines of the JORC Code (2012) and is reported above a cut-off grade of 0.5% total HM.

Classification Tonnes Total		Total HM	Slimes	Oversize	% of total HM				
	(Mt)	%	%	%	Ilmenite	Leucoxene	Rutile	Zircon	Monazite
Measured	86	2.8	3.9	3.2	72	12	4.0	4.9	0.34
Indicated	13	2.1	4.7	2.3	71	13	4.2	4.9	0.33
Inferred	10	0.7	3.2	1.8	66	17	5.6	4.6	0.19
Total	109	2.5	3.9	3.0	72	12	4.0	4.9	0.33

#### Table 8: Bidaminna - 2023 Mineral Resource reported above a cut-off grade of 0.5% total HM

Notes:

• Reported above a cut-off grade of 0.5% total HM.

• Mineral Resource has been classified and reported in accordance with the guidelines of JORC Code (2012).

- Estimates of the mineral assemblage (zircon, ilmenite, rutile, leucoxene and monazite) are presented as percentages of the total HM component of the deposit, as determined by QEMSCAN analysis. The breakpoints used for definition of the titania minerals are: ilmenite 45–70% TiO2; leucoxene 70–95% TiO2; rutile ≥95% TiO2.
- All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal.

## **OPERATIONS**

In consideration of the relatively deep basement of the mineral deposit when compared to the level of the water table, dredging is the most economically and practically viable method of winning the ore.

The PFS is based on a dual dredger scenario to excavate the Bidaminna deposit. Material above the water table will be mined using conventional dry mining equipment, whereas the overburden/low grade layers below the water table will be dredged by an 'off the shelf' type dredger. A dedicated, custom built mining dredger can be utilised to transport material to the wet concentrator plant (WCP) with sufficiently high head grade.

The ore is fed to a floating WCP, where the resultant HMC is transported off site and loaded onto ships for sale and transportation to customers.

Ore mining is planned to average 11.78 Mtpa with mining rates for the dredging operation averaging 1,582 tph. The WCP feed rate is assumed to be 11 Mtpa with an average hourly throughput of 1,477 tph.



The mining operation sequence is shown in Figure 7.

Figure 7: Bidaminna Mining Operation Schematic

## STUDY DERIVED ECOMONIC PARAMETERS / MODIFYING FACTORS

All economic parameters used in this study have been provided by Image or developed by IHC. The cost, recovery and price parameters ("Modifying Factors") were applied to the modified resource model using the Datamine software and the resultant cash value derived.

The following scenario was modelled: material above the water table was mined using conventional dry mining equipment, and all mined material below the water table was assumed to be dredged by one of two dredges. Material classified as ore would be dredged using a jet suction dredge (JSD) dredge and pumped to the WCP for further processing, and waste would be mined by cutter suction dredge (CSD) and ultimately returned as backfill to the pond.

The model was optimised using the MaxiPit software application and a series of incremental pit shells generated. Twenty-one pits (50% to 150% of revenue) were generated, and high-level mining inventory and financial analysis was generated for review.

#### ECONOMIC EVALUATION FOR RESERVE ESTIMATION

The results of the nested pits had high level mining schedules developed and a financial model analysis was undertaken. The selection of the REVFAC shell from the MaxiPit process was undertaken using the following criteria:

• The point where the increase in contained HM becomes greatly reduced;

- The point where the pit geometry and continuity in a north-south and east-west direction becomes stable or is at a maximum inflection point;
- The point at which the grade drop-off becomes minimal;
- The point at which the mine life is at a maximum inflection point; and
- The maximum inflection point for Free Cash (after Tax).

Considering all of the above criteria, the REVFAC95 (that being the 95% revenue factor) pit shell was selected as the basis for a final pit design.

## **OPEN PIT RESERVES AND SCHEDULING**

This final design (the ultimate pit) was developed, and a detailed mine schedule created for financial modelling. This final design took into consideration:

- the geotechnical test work and batter angles of 24 degrees,
- the water table test work assumption of 54.5 m RL,
- the sterilisation requirements of topsoil and subsoil layers,
- impact of Orange Springs Road to the north, and the Moore River National Park to the south.
- Multiple dredging benches below the water table to reduce dilution and over-mining.

Mine scheduling has been undertaken assuming a 24/7 year-round dredge mining operation, and an annual ore production target of 11.8 Mt. Scheduling of overburden removal, wet waste dredging and tails backfilling was also incorporated into the overall LOM schedule.

## **ORE RESERVE ESTIMATION**

The Ore Reserve estimate for the Bidaminna Deposit as at 15/06/2023 is presented in Table 9. Tonnages and grades are rounded as appropriate for public disclosure and mineral assemblage is reported as a % of in situ HM. The reference point for the Ore Reserves is the point of feed to the JSD, i.e., the tonnes and grade reported are in situ.

Classification	Ore Tonnes	НМ	Slimes	Oversize	Mineral Assemblage (% of HM)				
	Million	%	%	%	Zircon	Rutile	Leucoxene	Ilmenite	Monazite
Proved	-	-	-	-	-	-	-	-	-
Probable	83	2.6	4.0	3.0	5.0	4.1	12.6	71.7	0.3
Dilution	40	-	3.0	6.0	-	-	-	-	-
Total	123	1.8	4.0	4.0	5.0	4.1	12.6	71.7	0.3

#### Table 9: Ore Reserve Estimate Tabulation (as at 15/06/2023)

## STUDY OUTCOMES

The key findings from the PFS were:

- Pre-Tax / Pre-Debt (real) NPV @ 8% discount rate of A\$192M
- Post-Tax / Pre-Debt (real) NPV @ 8% discount rate of A\$113M
- LOM revenue A\$1,292M, EBITDA A\$379M, NPAT A\$265M,
- Free cash flow (pre-tax) A\$379M, free cash flow (post-tax) A\$265M.
- Pre-tax IRR 28%, post-tax IRR 20%
- Revenue to cost of sales ratio of 1.73.
- Capex cost of A\$194M (including a contingency of A\$17.2M)
- Annual averages (excluding first and last partial operating years):
  - o Revenue A\$125.5M
  - Operating costs of A\$60.6M
  - o EBITDA A\$64.9M
  - NPAT A\$34.3M
  - Pre-tax free cash flow A\$64.9M
  - Post-tax free cash flow A\$50.2M

These outcomes are indicative of a project that is economically viable and supports the decision taken to proceed to a Definitive Feasibility Study and declaration of an Ore Reserve estimation.

The PFS was based on a mining inventory subset of the Mineral Resource estimate of 99 Mt at average grades of 2.7% HM and 4.0% SLIMES.

The PFS demonstrates that the prospects of economic extraction could be reasonably justified.

#### CONCLUSIONS AND RECOMMENDATIONS

The outcomes from the PFS indicate a project that is economically viable and supports the decision taken to proceed to a Definitive Feasibility Study (DFS) and declaration of an Ore Reserve estimation. The PFS was based on a mining inventory subset of the Mineral Resource estimate of 99 Mt at average grades of 2.7% HM and 4.0% SLIMES.

The PFS demonstrates that there are reasonable prospects of eventual economic extraction and that the project is viable in the current assumptions around mining, processing and Modifying Factors. The following are recommended during the next study phase:

- 1. Site visit:
  - A detailed site visit is recommended prior to commencement of DFS for the purpose of inspecting start up pit locations, TSF location and other detailed site planning requirements.
- 2. Improve pit open area requirements:
  - The dredge pond has a total working length, during operations, of around 900-1000 m and this has an impact on:
  - the open or disturbed area;
  - the requirement to send material to a sizeable TSF;
  - the evaporation rate of the operation; and
  - the ability to close the area behind the mining and to instigate rehabilitation.
  - Therefore, as a part of the next phase of work, more investigation needs to be undertaken on improving the tailings pond angles, either through thickening of tailings or insertion of batters (artificial or in situ) in the pond floor to reduce the toe position of the tailings backfill.
- 3. Refine CAPEX requirements:
  - The Bidaminna project is relatively sensitive to CAPEX, and this is an opportunity for improving the NPV. Currently there is an allowance of 9.7% contingency on the total project CAPEX amounting to A\$17.2M. Reductions in the CAPEX estimate will realise further improvements to the NPV.
  - Investigation of floating WCP vs land based would be one line of study, along with the investigation of alternative hybrid/Green power sources within the budgeted A\$15M for power supply.
- 4. Refine pricing model:
  - The pricing model used for the pit optimisation and financial modelling was developed on a static and current price model developed by Image and signed off by TZMI. This static model does present a potential exposure for the project to movements in price given that the project NPV is sensitive to changes in mineral sands revenue and FX.
- 5. Securing access and environmental offsets:
  - A pathway has been established by Image to apply for and secure the necessary governmental approvals, and that needs to be the focus as a lead-in to the DFS.
- 6. Off-path storage and backfilling:
  - Opportunities to improve the NPV through further rationalisation of the OPEX. Optimisation of overburden movements to off-path stockpiles and tailings would improve

the mining costs. There are tailings and backfilling opportunities that can be investigated in more detail at the DFS phase.

- For example, the size of the dredging pond could be reduced, allowing for earlier direct placement of dry and wet overburden in the mined out void behind the mining and concentration operations.
- Opportunities to improve TSF rehandle costs back to void through use of hydraulic reclamation techniques.
- 7. Further geotechnical investigation:
  - The JSD will require free flowing sand with very little OS and easy digging characteristics. To de-risk this dredging option, further geotechnical investigation needs to be undertaken which targets areas of the deposit where patches of induration were recorded by field logging during exploration activities.
- 8. Improvements to Ore Reserve development:
  - The development of the Ore Reserves for Bidaminna followed a non-linear, iterative pathway which resulted in some delays and re-work. The project experienced delays brought about by COVID-19, poor weather and a bourgeoning resource sector workload resulting in limited and delayed availability of drilling, assaying and geotechnical services/consultants.
- 9. Further exploration:
  - Further drilling, assaying and mineralogy development is required to convert Inferred / unclassified material to Measured / Indicated Mineral Resources. This will allow the dilution material to contribute contained HM to the final Ore Reserve / HMC production estimate and will improve the project economics.

10. Water table variability:

- Further hydrogeological and hydrology work needs to be undertaken to understand the full water table variability from a geographical and seasonal standpoint. This will lead to a more robust understanding of the total mass water balance.
- 11. Dry mining of higher clay material below water table:
  - There are some areas of elevated clay within the upper wet overburden profile and it was considered, but not fully modelled or tested, as an option to mine this with conventional dry mining equipment.
  - This would prevent some clay dissolution into the dredge pond, limiting the potential contamination to process water for the floating WCP.
  - It is recommended that this option is investigated further during the DFS stage.

12. Further downstream processing:

- One of the options tested during the financial modelling was the inclusion of an MSP as part of a downstream processing and value adding stage. Testing this with a pit optimisation study utilising the MaxiPit multi REVFAC approach would be mandatory.
- This scenario was only supported with estimates of typical mineral product recoveries and order of magnitude CAPEX/OPEX and therefore has not been reported as a part of the PFS results. It did improve the NPV of the project, coupled with an addition in CAPEX.
- It is recommended that this MSP scenario be modelled fully in the next phase of study for the Bidaminna project.
- The next phase of study will also likely include the addition of a significant value-adding step of converting Bidaminna ilmenite into SR.

## Appendix A JORC Code Table 1 criteria

The table below summaries the assessment and reporting criteria used for the Bidaminna deposit Mineral Resource estimate and reflects the guidelines in Table 1 of *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code, 2012).

Criteria	JORC Code explanation	Commentary
	Nature and quality of sampling. These examples should not be taken as limiting the broad meaning of sampling.	Sampling of the deposit has been by a vertical reverse-circulation air-core method (RCAC). This is a mineral sands industry-standard drilling technique.
Sampling techniques	to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	For resource definition drilling, duplicate samples were taken at the rotary splitter on the rig for QAQC analysis and to assess the
	mineralisation that are Material to the Public Report.	repeatability of the samples.
	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc)	All Image RCAC drill holes are drilled vertically using an NQ-sized (76 mm diameter) drill bit.
Drilling techniques	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).	Geopeko RCAC drill holes were vertical and were drilled using either an AQ-sized drill bit or NQ sized drill bit.
		Water injection is used to convert the sample to a slurry so it can be incrementally sampled by a rotary splitter.
	Method of recording and assessing core and chip sample recoveries and results assessed.	At the drill site, the Image geologist estimates sample recovery qualitatively (as good, moderate or poor) for each 1 m down hole
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	sampling interval. Specifically, the supervising geologist visually estimates the volume recovered to
Drill sample recovery	Whether a relationship exists between sample recovery and grade and whether sample bias may have	sample and reject bags based on prior experience as to what constitutes good recovery.
	of fine/coarse material.	Several holes drilled during 2022 were discarded on the basis of poor recovery and re-drilled by a different drilling contractor to achieve acceptable sample recoveries.
	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.	The Image supervising geologist logs the sample reject material at the rig and pans a small sub-sample of the reject, to visually estimate the proportions of sands, heavy mineral (HM) sands, 'slimes' (clays), and
Logging	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	in a semi-quantitative manner. The geologist also logs colour, grain
	The total length and percentage of the relevant intersections logged.	size, an estimate of induration (a hardness estimate) and sample 'washability' (ease of separation of slimes from sands by manual attrition).

Criteria	JORC Code explanation	Commentary
		To preclude data entry and transcription errors, the logging data is captured into a digital data logger at the rig, which contains pre-set logging codes.
		No photographs of samples are taken. HMC concentrates are retained.
		The digital logs are downloaded daily and emailed to the Image head office for data security and compilation into the main database server.
		Samples visually estimated by the geologist to contain more than 0.5% HM (by weight) are despatched for analysis along with the 1 m intervals above and below the mineralised interval.
		Over 99% of the drilling has been logged. The level and detail of logging is of sufficient quality to support Mineral Resource estimates.
Subsampling 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.	Samples were selected for analysis following visual estimation of the total HM content. Almost 60% of samples were analysed for total HM, slimes and oversize and almost 57% of the samples sent for analysis have been taken over intervals of 1 m. The sample from the internal RC rods is directed to a cyclone and then through a 'rotating-chute' custom- built splitting device. This device allows different fraction splits from the cyclone sample stream to be directed to either 25 cm by 35 cm calico bags (as the laboratory despatch samples) or to large plastic polyweave bags for the sample rejects. The rotary splitter directs D 10 increments from the stream to the laboratory despatch samples, for a specified sampling interval. Sample tickets with the interval's unique sample ID are placed in each bag. For resource definition drilling, two splits are collected from the rotary splitter into a pre-numbered calico bag (1/8 mass) and pre-numbered polyweave bag (7/8 mass) for each 1 m down hole interval. A selection of the duplicate samples is later collected and analysed to quantify field sampling precision, or as samples contributing to potential

Criteria	JORC Code explanation	Commentary
		Geopeko reports that samples drilled using NQ sized bits were split at the rig using a circular splitter and that the AQ samples did not require splitting.
		Image considers the nature, quality and size of the sub-samples collected are consistent with best industry practices of mineral sands explorers in the Perth Basin region.
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.	Image and Geopeko used industry standard approaches to estimate the contents of total HM, slimes and oversize involving screening to remove oversize, washing slimes from samples and then extracting the heavy minerals from the residual sands using heavy media. Image engaged Western GeoLabs and Diamantina Laboratories for sample preparation and analysis. Geopeko used Western Geochem Laboratories, now Western GeoLabs. Image inserted standards for drilling undertaken during 2015 to 2022. Both Geopeko and Image collected duplicate samples including field- duplicates of the primary sample, laboratory subsampling stage (post de-sliming) and laboratory re- submission duplicates to the original or alternative laboratories used by Geopeko and/or Image. Analysis of QAQC data for the drilling programmes indicates that it is of moderate to high quality and supports Mineral Resource
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.	Image collected primary data on hard copy logs and also used a data logger. Data from laboratories was provided in digital form and compiled in Microsoft Access databases and spreadsheets. No twinned holes have been drilled. Global comparison of the total HM and slimes data obtained by Image and Geopeko has provided confidence in the Geopeko data. All of the Image composite samples were analysed by QEMSCAN and XRF, which was used to verify the QEMSCAN mineral counts. Historical mineral assemblage data was determined by grain counting. This data has been calibrated with the QEMSCAN data.

Criteria	JORC Code explanation	Commentary
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	Drill hole collars at Bidaminna have been surveyed using hand-held GPS and RTK DGPS methods, with the latter method deemed most accurate. The collar coordinates and survey ground controls have been tied to the Landgate GOLA database by a registered surveyor. The topographic model for Bidaminna is based on a drone photogrammetric survey carried out during 2022. The data provider claims +/- 0.07m accuracy. All collars for the Mineral Resource estimate have been adjusted to this 2022 topographic model. Data for Bidaminna has been surveyed in MGA Zone 50 GDA94. The Mineral Resource has been estimated in a local grid system
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.	based on a two-point transformation. The nominal drill spacing is approximately 40 m across strike on section lines spaced at 200 m along strike. HM mineral assemblage is based on QEMSCAN analysis. Samples for HM assemblage determination were composited on intervals according to a combination of primary assay grade (HM, slimes and OS), geology and sachet logs of heavy minerals. Approximately three composites have been analysed on each section of 2022 drilling (one composites sample per mineralised domain, sections mostly 400 m apart, 33 composites from 2,090 sample intervals in total). The 2022 assemblage data replaces historic assemblage data is appropriate to reflect resource estimation domains. The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation procedure and classification applied.
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.	All drill holes are vertical and intersect sub-horizontal strata. This is appropriate for the orientation of the mineralisation and will not have introduced a bias.

Criteria	JORC Code explanation	Commentary
	The measures taken to ensure sample security.	All samples are collected from site by the Image staff as soon as practicable once drilling is completed and then delivered to the Image locked storage sheds.
Sample security		The Image staff deliver samples to the laboratory and collect heavy mineral floats from the laboratory, which are also stored in the Image locked storage.
		Image considers there is negligible risk of deliberate or accidental contamination of samples. Occasional sample mix-ups are corrected using Image checking and quality control procedures.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	The results and logging have been reviewed internally by the Image senior exploration personnel including checking of masses despatched and delivered, checking standard results, and verification logging of significant intercepts.
		In 2019 audits were conducted at Western GeoLabs by Image contractors.

## Section 2 Reporting of Exploration Results

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 Bidaminna deposit is within Exploration Licences E70/2844 and E70/3298. Image has a 100% interest in each of these licences and both tenements are in good standing. E70/3298 expires on 25/03/2023 and E70/2844 expires on 31/03/2023. Image is intending to apply for a retention licence to cover the Bidaminna deposit.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	The Bidaminna deposit was discovered by International Nickel Australia Ltd in 1976 and Geopeko drilled it to resource status in 1990.
Geology	Deposit type, geological setting and style of mineralisation.	Bidaminna is hosted in the Perth Basin, in the Guildford and Yoganup Formations on the eastern margin of the Swan Coastal Plain.
		The Yoganup Formation is a buried pro-graded shoreline deposit, with dunes, beach ridge and deltaic facies. This formation lies unconformably over the Lower Cretaceous Leederville Formation and is overlain by the Pleistocene Guildford Formation and Bassendean Sand.

Criteria	JORC Code explanation	Commentary
		The Yoganup Formation consists of unconsolidated poorly sorted sands and gravels, with local interstitial clay and heavy minerals that occur sporadically along the Gingin Scarp, which is interpreted to be an ancient shoreline that was stable during a period of marine regression.
		The overlying Guildford Formation consists of silty and slightly sandy clay and commonly contains lenses of fine- to coarse-grained, very poorly sorted, conglomeratic and (in places) shelly sand at its base.
		Two mineralised strandlines have been interpreted using a nominal cut- off grade of 1% total HM. Lower grade mineralisation is present within the sediments of the lower horizon of the Guildford Formation and within the Yoganup Formation.
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:	Not relevant – Mineral Resource defined. Exploration results are not being reported for the Mineral Resource area.
	easting and northing of the drill hole collar	
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	dip and azimuth of the hole	
	down hole length and interception depth	
	hole length.	
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
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.	Not relevant – Mineral Resource defined. Exploration results are not being reported for the Mineral Resource area. There are no metal equivalent values assumptions applied in the Mineral Resource reporting.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	

Criteria	JORC Code explanation	Commentary
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	The geometry of the Bidaminna mineralisation is effectively horizontal and the vertical drill holes used to
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	approximate true thicknesses of mineralisation.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Refer to diagrams in report
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Not relevant – Mineral Resource defined. Exploration results are not being reported for the Mineral Resource area.
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.	Bulk density is reported under "Bulk Density".
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Image plans to extend resource drill coverage to the west during 2023. This is to provide suitable assay coverage for the western extent of the proposed dredge pond so that HM grades can be estimated to a suitable level of precision. This material will most likely be subeconomic dilution of incremental ore.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	

## 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.	The drill hole database is managed by Image. Maintenance of the database includes internal data validation protocols by Image.

Criteria	JORC Code explanation	Commentary
		For the Mineral Resource estimate the drill hole data was extracted directly from the Access drill hole database maintained by Image and provided to Snowden Optiro as csv and Datamine format files.
		Data was further verified and validated by Snowden Optiro using mining software (Datamine) validation protocols, and visually in plan and section views.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Mrs Christine Standing (CP for the Mineral Resource estimate) has not visited the Bidaminna deposit. She has visited other mineral sands deposits in the North Perth Basin including the Image Boonanarring deposit during December 2016.
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.	Two stratigraphic (Guildford and Yoganup Formations) units within the deposit area were defined using a combination of total HM, slimes and oversize data and drill hole lithological logs. These units were used in combination with grade criteria (nominal grade cut- off of 1% total HM) to define two mineralised strandlines within the Guildford and Yoganup Formations. There is good confidence in the geological interpretation of the mineralised strandlines.
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.	Two mineralised strandlines have been interpreted within the resource area that have a strike length of 6.7 km. The historical Geopeko drilling indicates that the strandline mineralisation may extend to the north for an additional 2.8 km. The upper strandline mineralisation, towards the base of the Guildford Formation, ranges in across strike width from 60 m to 405 m. The top of the upper strandline mineralisation has a minimum vertical depth of 11 m and ranges in thickness from 1 m to 27 m with an average thickness of 12 m. The lower strandline mineralisation, that is within the Yoganup Formation, ranges in width from 260 m to 600 m. The top of the lower strandline mineralisation has a minimum vertical depth of 36 m and ranges in thickness from 1 m to 18 m with an average thickness of 9 m.

Criteria	JORC Code explanation	Commentary		
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	Data analysis and estimation was undertaken by Snowden Optiro using Snowden Supervisor and Datamine software.		
	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.	Snowden Optiro assessed the robustness of the mineralised strandline domains by critically examining the geological interpretation and by using a variety of measures, including statistical and geostatistical analysis. The domains		
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes	are considered geologically robust in the context of the resource classification applied to the estimate.		
	appropriate account of such data. The assumptions made regarding	Drill hole sample data was flagged from the three-dimensional interpretation of the mineralised		
	recovery of by-products.	horizons.		
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Samples are from intervals of 1 m and 1.5 m, 2 m and 3 m. As the majority of samples (88%) within the mineralised strandlines are from intervals of 1 m the data was composited to 1 m		
	In the case of block model	downhole intervals for resource estimation.		
	to the average sample spacing and the search employed.	The nominal drill spacing is approximately 40 m across strike on		
	Any assumptions behind modelling of section lines spaced at strike.	section lines spaced at 200 m along strike.		
	Any assumptions about correlation between variables.	Block dimensions of 10 m by 50 m by 1 m were selected from kriging neighbourhood analysis and reflect		
	Description of how the geological interpretation was used to control the resource estimates.	the variability of the deposit. Sub-cells to a minimum dimension of 2.5 mE by 12.5 mN by 0.25 mRL were used to		
	Discussion of basis for using or not using grade cutting or capping	represent volume. Extrapolation of the mineralised		
	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if	The process of validation, the hecking process used, the omparison of model data to drillhole lata, and use of reconciliation data if	domains is up to 100 m along strike and approximately half the drill spacing across strike was used for the interpretation.
		Total HM grade was estimated using ordinary kriging (OK) and inverse distance cubed (ID3) into parent blocks of 10 mE by 50 mN by 1 mRL. Slimes was estimated using OK into the parent blocks and oversize was estimated using ID3.		
		Total HM, slimes and oversize were estimated into the mineralised strandlines (domains 11 and 20) and the surrounding lower grade material in the Guildford Formation (domain 10). Hard boundaries were applied between the mineralised strandlines, the lower grade halo within the Guildford Formation and the surrounding sediments.		

Criteria	JORC Code explanation	Commentary
		Zircon, leucoxene, rutile and ilmenite percentages within the HM fraction were estimated using ID3 into the parent blocks within the mineralised strandlines. Mineral assemblage components were assigned to the lower grade material surrounding the mineralised strandlines.
		The majority of the total HM and slimes, total HM and oversize, and slimes and oversize data is uncorrelated.
		Correlation coefficients of the mineral assemblage data indicate a high positive correlation between rutile and leucoxene and a high negative correlation between rutile and ilmenite and between leucoxene and ilmenite, a moderate negative correlation between rutile and monazite and between leucoxene and monazite and a poor positive correlation between ilmenite and monazite. The other variables are not correlated.
		All variables were estimated separately and independently.
		Grade capping (top-cutting) was applied to total HM % within the overlying sediments (domain 100) and within the sediments at the base of the Yoganup Formation (domain 300) with high FeOx contents. The top cut level was determined using a combination of top cut analysis tools, including grade histograms, log probability plots and the coefficient of variation. Total HM within the mineralised domains and lower grade surrounding sediments has a low coefficient of variation and a top-cut grade was not required.
		Variogram analysis was undertaken to determine the kriging estimation parameters used for OK estimation of HM and slimes and the search dimensions used for ID estimation of HM, oversize and mineral assemblage components.
		HM mineralisation continuity was interpreted from variogram analyses. Maximum continuity ranges are 300 m along strike, 108 m across strike and 16 m vertical within domain 10 and are 160 m along strike, 77 m across strike and 8.8 m vertical within domain 11. Within domain 20, maximum continuity ranges are 720 m along strike range, 170 m, across strike and 5.3 m vertical.

Criteria	JORC Code explanation	Commentary
		Kriging neighbourhood analysis was performed in order to determine the block size, sample numbers and discretisation levels.
		Three estimation passes were used for HM; the first search was based upon the variogram ranges; the second search was double the initial search with reduced sample numbers required for estimation and the third search was expanded to almost complete grade estimation within each of the mineralised domains.
		Approximately 98% of the total HM block grades were estimated in the first search pass, 2% within the second search pass and the remaining <0.01% estimated in the third search pass.
		The total HM, slimes and oversize estimated block model grades were visually validated against the input drill hole data and comparisons were carried out against the declustered drill hole data and by northing, easting and elevation slices.
		The estimated block model grades for zircon, ilmenite, leucoxene and rutile were visually validated against the input drill hole data and comparisons were carried out against the drill hole data and by northing and easting slices.
		No production has occurred from the deposit.
		An Indicated and Inferred Mineral Resource of 102 million tonnes with an average grade of 2.2% total HM was reported was reported for the Bidaminna deposit in 2021. Comparison of the total 2021 Mineral Resource with the 2023 Mineral Resource indicates an overall 7% increase in tonnes and a 15% increase in total HM, resulting in a 23% increase in contained heavy minerals.
		The additional drilling and use of a consistent data set for the mineral assemblage has improved confidence in the resource model with 87% of the 2023 Mineral Resource classified as Measured.
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.

Criteria	JORC Code explanation	Commentary
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The Mineral Resource estimate for the Bidaminna deposit has been reported above a 0.5% total HM cut- off. This cut-off grade was selected by Image based on technical and economic assessment and consideration of a dredge mining operation.
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.	Much of the Bidaminna mineralisation is below the water table and, as such, is being considered for bulk mining by a dredge operation. Mining factors such as dilution and ore loss have not been applied.
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.	Mineral assemblage data within the Mineral Resource estimate has been sourced from QEMSCAN analysis. Image considers there are no metallurgical factors which are likely to affect the assumption that the deposit has reasonable prospects for eventual economic extraction.
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.	There are no known significant environmental impediments to the project's viability from the currently available information.
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.	A combination of lithology and grades (total HM and slimes) were used to determine the density values for the resource model. Bulk density formulae were developed by Image during 2019 for the Boonanarring deposit (also in the Perth Basin) using bulk density measurements from a geotechnical drilling programme and in-pit density measurements. The formulae were verified and adjusted where required using data obtained at Boonanarring during 2020. These formulae have been applied at Bidaminna for density estimation.

Criteria	JORC Code explanation	Commentary
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	The estimate has been classified according to the guidelines of the JORC Code (2012), into Measured, Indicated and Inferred Resources taking into account data quality, data density, geological continuity, grade continuity and confidence in estimation of heavy mineral content and mineral assemblage. In plan, polygons were used to define zones of different classification within each of the mineralised domains. Measured Resources are defined within the mineralised domains (10, 11 and 20) where the majority of the drilling is on a 40 m by 200 m spacing, and where the mineral assemblage data is on a spacing of 800 m along strike and covers the full across strike extent of the domain. Indicated Mineral Resources are defined within the mineralised domains where the majority of the drilling is on a 40 m by 200 m spacing, and where there is limited mineral assemblage data. Inferred Mineral Resources are defined within the sediments surrounding mineralised domains (Domains 200 and 300) that are above and/or between the mineralised domains.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource has been reviewed internally as part of normal validation processes by Snowden Optiro. No external audit or review of the current Mineral Resource has been conducted.
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.	The assigned classification of Measured, Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource 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 confidence levels reflect production volumes on an annual basis. No production has occurred from the deposit.

The table below summaries the assessment and reporting criteria used for the Atlas deposit Ore Reserves estimates and reflects the guidelines in Table 1 of *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code, 2012).

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	This Ore Reserve is based entirely on the Measured and Indicated portion of the current reported Mineral Resources at Bidaminna (as reported in February 2023).
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person has visited the site.
	If no site visits have been undertaken indicate why this is the case.	
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	The study supporting the Ore Reserve has been completed to a preliminary feasibility level.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	study level have been applied (± 20%). The resulting mine plan is technically achievable and economically viable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	A value model was developed that assigns mining and processing recoveries, costs, and revenue to the geological model. This value model follows the entire mining process from initial land clearing, through mining and WCP processing to final rehabilitation.

# Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling. The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). The mining dilution factors used. The mining recovery factors used. Any minimum mining widths used. The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. The infrastructure requirements of the selected mining methods.	<ul> <li>Mineral Resources are converted to Ore Reserves by open pit optimisation software (Datamine MaxiPit) to provide a guide for detailed design and scheduling. The software uses the Lerch-Grossmann algorithm to generate a series of nested pit shells. The shells were preliminarily scheduled to test HMC production profiles, final production requirements, and financial investment decisions. The preferred pit shell was then selected for more detailed mine planning and scheduling.</li> <li>During the optimisation study, all material below the reach of the wetwaste dredge was assumed to be mined and processed in the WCP regardless of its classification; of this material that which was not classified as Measured or Indicated was treated as dilution and generated no product or revenue.</li> <li>Pit slopes for the mining shapes have been assumed at 24 degree.</li> <li>A mining recovery factor of 99% was applied when using the Lerch-Grossmann algorithm to undertake economic evaluation and the generation of the pit shells. Following more detailed mining shape design, planning and scheduling, a mining recovery factor of 99% was applied to the Ore Reserve estimate. The Ore Reserves as reported are in situ material tonnes and grade with no assumptions for recovery other than dilution.</li> <li>Mining recovery also makes provision for a 0.25 m topsoil &amp; 0.30 m subsoil profiles.</li> </ul>

Criteria	JORC Code explanation	Commentary
Criteria Metallurgical factors or assumptions	JORC Code explanation The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature. The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. Any assumptions or allowances made for deleterious elements. The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Commentary The ore is processed via screens, thickeners and spirals as in almost every other mineral sands operation to produce a concentrate. The plant design is based on the results of metallurgical test work conducted as part of the prefeasibility study. Wet Plant Recovery is 94.9%, 92.3%, 97.2%, 75.0% for Ilmenite, Rutile, Zircon and Leucoxene respectively Wet Plant Recovery for DOMAIN 10 & 11, 99.10%, 90.90%, 86.40%, 99.10%, 97.60%, 80.10% for Ilmenite, Leucoxene, Rutile, Zircon, Monazite and Other respectively. DOMAIN 20, 98.20%, 79.70%, 77.90%, 98.50%, 98.60%, 78.90% for Ilmenite, Leucoxene, Rutile, Zircon, Monazite and Other respectively. ALL Other DOMAINS, zero recovery for Ilmenite, Leucoxene, Rutile, Zircon, Monazite and Other
		The Mineral Resource estimate upon which this Ore Reserve incorporates 594 individual drill holes and 31,233 m.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	All environmental approvals are being obtained. Base-line monitoring programs have been established which will continue through the operational phase. Dry overburden will be transported initially to an ex-pit storage facility until sufficient mining void is established, after which appropriate in-pit deposition assumptions have been applied.
		There are two tailings streams: sand and clay. The sand tails are clean sand having been washed in the concentrator (WCP). The fine (clay) tails are flocculated and thickened prior to co-disposal with the sand tails. Sand tails will be pumped initially to an ex-pit tailings storage facility until sufficient mining void is established, after which appropriate in-pit tails deposition assumptions have been applied

Criteria	JORC Code explanation	Commentary
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.	The Bidaminna project is located in Western Australia and specifically in the North Perth Basin between the towns of Lancelin to the West and Regans Ford to the East. The deposit is located approximately 120 km north of Perth.
		A new entry road will be established from the product storage areas to the site boundary for connection into local area transport routes. Also, infrastructure for power is available as the area is supported by a 132-kV Western Power transmission line running approximately parallel to the Brand Highway, to the East, and a similar 132-kV Western Power transmission line that runs approximately parallel to the Indian Ocean Drive, to the West of the Bidaminna project locations.
		The development of the Bidaminna Project will incorporate all the infrastructure required to support the mining, concentration, haulage and shipment of approximately 207kt/yr of HMC product. Additionally, temporary infrastructure will be required to support the early construction activities.
		The study estimates the costs for the development of all necessary infrastructure items.
Costs	The derivation of, or assumptions made, regarding projected capital	All cost estimates have been prepared on AUS Dollar basis.
	Costs in the study. The methodology used to estimate operating costs. Allowances made for the content of	Royalties include provision for Western Government royalties and are assigned based on a percentage of sales price less transport. A
	deleterious elements.	Royalty of 5% is used in this study.
	The source of exchange rates used in the study.	Ore Reserve was conducted using the prefeasibility study cost assumptions that was considered suitable for block model coding,
	Derivation of transportation charges.	
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. The allowances made for royalties payable, both Government and	strategic planning and mine design.
		refining charges applied, and minerals are sold as finished products.
	private.	Capital cost is estimated at A\$194M (+20%/-20%) based on preliminary engineering and budget quotes from vendors, to establish unit rates that reflect the market conditions in Western Australia for all earthworks, concrete, SMP and buildings contractors.
		Power, diesel and LNG prices are based on supplier quotes.

Criteria	JORC Code explanation	Commentary
		General and administration operating costs were derived from existing Image operations, PFS manning schedules, labour work rosters, and other administration-related fixed costs such as communications, IT, consultants, recruitment and annual tenement costs.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co- products.	The revenue is a function of block modelled grade and mineral assemblage, which is then comprehensively modelled through the mining, wet concentrator processes to estimate final products which is expected to be delivered to an off taker at a forecast price. During the evaluation of the resource model, twenty-one pit shells where generated using a range of 5% revenue decrements from the original 100% of revenue using the MaxiPit Software. High level scheduling and financial modelling of all pit shells was undertaken to identify a pit shell (95%) that met production requirements and an acceptable EBITDA and return on investment. This pit shell provided the basis for more detailed mine planning and scheduling. The mine planning underpinning the Ore Reserve was conducted using preliminary product pricing that was suitable for block model coding, strategic planning and mine design. In the final financial analysis, revenue from ore deliveries were then recalculated using an updated pricing and sales product mix. The Ore Reserve are feasible and economic under both pricing schedules. Product pricing forecasts is derived from Image internal supply/demand analysis and prevailing market conditions. Prices for products used in the evaluation of the resource model are
		аз юлоws ( <i>Афг.).</i> НМС - А\$635.28
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	Demand for mineral sands products has generally been closely linked to growth in global GDP. Historically demand growth for ilmenite, rutile and zircon has averaged close to 3% per annum.

Criteria	JORC Code explanation	Commentary
	A customer and competitor analysis along with the identification of likely market windows for the product. Price and volume forecasts and the basis for these forecasts. For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	Image has existing customers for its HMC products from its other operation, and test work indicates product quality should be achievable and suitable for a range of products from the Ranobe deposit. Contracts and agreements pertaining to Image are confidential.
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs.	The post-tax NPV of A\$113M reported in the PFS used an 8% discount rate. No inflation rate was used. Sensitivity to changes in cost, revenue etc are discussed in the body of the text.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Image is working closely with local communities, government and other key stakeholders to ensure all agreements will be in place to allow construction, mining and processing to commence. Image operates a comprehensive Stakeholder Engagement Plan in concert with a Community Development Plan. Close liaison with stakeholders will be maintained through the operation by a series of liaison committees representing those affected by the mines presence. This is discussed in detail in the body of the text.
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: Any identified material naturally occurring risks. The status of material legal agreements and marketing arrangements. The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	All naturally occurring risks are assumed to have adequate prospects for control and mitigation. The Bidaminna deposit is located on Crown Land and access is granted with the issue of Exploration Licences which are currently held by Image. Access for mining is granted with the issue of Mining Lease and Image considers there are reasonable grounds for a Mining Lease to be granted. Image considers there are reasonable grounds for the Company to obtain any remaining heritage and environmental approvals required. Marketing arrangements are commercially sensitive but detailed test work suggests that the expected product specifications are within marketable ranges.

ClassificationThe basis for the classification of the Ore Reserves into varying confidence categories.Measured Mineral Resources and Indicated Mineral Resources are converted to Probable Ore Reserves Inferred Mineral Resources & Unclassified material are not include in the reported Ore Reserve.Whether the result appropriately reflects the Competent Person's view of the deposit.Inferred Mineral Resources & Unclassified material are not include in the reported Ore Reserve.The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).The results of any audits or reviews of Ore Reserve estimates.Audits or reviewsThe results of any audits or reviews of Ore Reserve estimates.No external audit of the Ore Reserve estimate has been undertaken.Discussion of relative accuracy/ confidenceWhere appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures of upantify bor relevie or quantify	Criteria	JORC Code explanation	Commentary
Whether the result appropriately reflects the Competent Person's view of the deposit.Inferred Mineral Resources & Unclassified material are not include in the reported Ore Reserve.The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).The results reflect the Competent Persons view of the deposit.Audits or reviewsThe results of any audits or reviews of Ore Reserve estimates.No external audit of the Ore Reserve estimate has been undertaken.Discussion of relative accuracy/ confidenceWhere appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the ore Reserve.Mining and processing methods selected are typical for mineral sand operations, they are considered a la risk of impacting the Ore Reserves.	Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	Measured Mineral Resources and Indicated Mineral Resources are converted to Probable Ore Reserves.
The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).The results reflect the Competent Persons view of the deposit.Audits or reviewsThe results of any audits or reviews of Ore Reserve estimates.No external audit of the Ore Reserve estimate has been undertaken.Discussion of relative accuracy/ confidenceWhere appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the 		Whether the result appropriately reflects the Competent Person's view of the deposit.	Inferred Mineral Resources & Unclassified material are not included in the reported Ore Reserve.
Audits or reviewsThe results of any audits or reviews of Ore Reserve estimates.No external audit of the Ore Reserve estimate has been undertaken.Discussion of relative accuracy/ confidenceWhere appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reactionNo external audit of the Ore Reserve estimate has been undertaken.No production data is available 		The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	The results reflect the Competent Persons view of the deposit. 58% of the Probable Ore Reserves tonnes, or 89% of the contained HM tonnes, have been derived from Measured Mineral Resources.
Audits or reviewsThe results of any audits or reviews of Ore Reserve estimates.No external audit of the Ore Reserve estimate has been undertaken.Discussion of relative accuracy/ confidenceWhere appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserveMining and processing methods selected are typical for mineral sand operations, they are considered a lo risk of impacting the Ore Reserve.			
Discussion of relative accuracy/ confidence Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the competent Person. For example, the application of statistical or geostatistical procedures to quantify	Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	No external audit of the Ore Reserve estimate has been undertaken.
<ul> <li>a the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to nages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>Accuracy and confidence discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with product on data where</li> </ul>	Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant to nages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. Accuracy and confidence discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data where	Mining and processing methods selected are typical for mineral sands and have been demonstrated in various other mineral sand operations, they are considered a low risk of impacting the Ore Reserves. No production data is available against which the Ore Reserve estimates may be reconciled. Capital cost estimate is considered to be -20% to +20%. Stress testing of operating cash flow shows this remains positive well beyond the stated accuracy of the cost estimates. Detailed mine design has been undertaken for LOM. As additional resource definition drilling, processing test work and other key project parameters and costs are updated, the mine design will be updated accordingly. Additional drilling is planned to take the Inferred Mineral Resource estimate portion of the deposit which is currently incorporated as waste dilution - incurring a mining and processing cost but without generating HMC product or revenue generation - through to at least Indicated Mineral Resources.