**IMAGE RESOURCES NL**
**ABN 57 063 977 579**

# NOTICE OF GENERAL MEETING

**Date of Meeting**
**Thursday, 12 May 2016**

**Time of Meeting**
**10.00 am (Perth time)**

**Place of Meeting**
The Celtic Club
48 Ord Street
West Perth
Western Australia

**The Independent Expert has concluded that the Transactions with Murray Zircon and OZC are not fair but reasonable to Shareholders who are not associated with Murray Zircon or OZC. The Independent Expert has also concluded that the provision of the Short Term Loan Security and the Prepayment Facility Security is fair and reasonable to those Shareholders, and that the Offtake Agreement is also considered to be fair and reasonable.**

*This Notice of General Meeting, Explanatory Memorandum and the accompanying Independent Expert's Report should each be read in its entirety. If Shareholders are in doubt as to how they should vote, they should seek advice from their accountant, solicitor or other professional adviser prior to voting.*

*Should you wish to discuss the matters in this Notice of General Meeting, please do not hesitate to contact the Company on (+61 8) 9485 2410.*

**IMAGE RESOURCES NL**
**ABN 57 063 977 579**

## NOTICE OF GENERAL MEETING

Notice is hereby given that a General Meeting of Shareholders of Image Resources NL (**Company**) will be held at The Celtic Club, 48 Ord Street, West Perth, Western Australia on Thursday, 12 May 2016 at 10.00 am (Perth time).

The Explanatory Memorandum to this Notice provides additional information on matters to be considered at the General Meeting. The Explanatory Memorandum (including the annexures referred to therein) and Proxy Form form part of this Notice.

Terms used in this Notice will, unless the context otherwise requires, have the same meaning as given to them in the Glossary contained in the Explanatory Memorandum.

### AGENDA

Each of Resolutions 1 to 5 is conditional on each of the other Resolutions being passed so that, if any Resolution is not passed, then all of Resolutions 1 to 5 will be taken to have failed.

**Resolution 1 – Acquisition of relevant interest in Shares by Murray Zircon Parties**

To consider and, if thought fit, to pass, with or without amendment, the following resolution as an **ordinary resolution**:

> *"That, subject to the passing of Resolutions 2 to 5 (inclusive) and for the purposes of item 7 of section 611 of the Corporations Act and all other purposes, approval is given for the Company to issue to Murray Zircon, and for each Murray Zircon Party to acquire a relevant interest in:*
>
> *(a) the Completion Shares to be issued to Murray Zircon on completion of the Company's acquisition of the Assets; and*
>
> *(b) the Deferred Shares to be issued to Murray Zircon if a Decision to Mine occurs during the Decision Period,*
>
> *and, as a result, for the Murray Zircon Parties and their Associates to acquire voting power in the Company of up to 47% on the terms and conditions set out in the Explanatory Memorandum.*

**Voting Exclusion:** In accordance with item 7 of section 611 of the Corporations Act, the Murray Zircon Parties and their Associates are excluded from voting on Resolution 1 and the Company will disregard any votes cast on Resolution 1 by a Murray Zircon Party or any of its Associates.

**Resolution 2 - Acquisition of relevant interest in Shares by the Company**

To consider and, if thought fit, to pass, with or without amendment, the following resolution as an **ordinary resolution**:

> *"That, subject to the passing of Resolutions 1, 3, 4 and 5 and for the purposes of item 7 of section 611 of the Corporations Act and all other purposes, approval is given for the Company to acquire a relevant interest in its own Shares as a result of the restrictions imposed on Murray Zircon under the Share Consideration Deed in respect of the Completion Shares during the Restriction Period and, as a result, for the Company to acquire voting power in the Company of up to 42% on the terms and conditions set out in the Explanatory Memorandum.*

**Voting Exclusion:** In accordance with item 7 of section 611 of the Corporations Act, the Company and its Associates are excluded from voting on Resolution 2 and any votes cast on Resolution 2 by the Company or any of its Associates will be disregarded.

**Resolution 3 - Approval of grant of security to Murray Zircon**

To consider and, if thought fit, to pass, with or without amendment, the following resolution as an **ordinary resolution**:

> *"That, subject to the passing of Resolutions 1, 2, 4 and 5 and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to grant security in favour of Murray Zircon in accordance with the terms of the Short Term Loan Security, described in more detail in the Explanatory Memorandum."*

**Voting Exclusion:** In accordance with the ASX Listing Rules, Murray Zircon and its Associates are excluded from voting on Resolution 3 and the Company will disregard any votes cast on Resolution 3 by Murray Zircon or any of its Associates.

However, the Company need not disregard a vote if it is cast by a person as a proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form or it is cast by the chair of the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

**Resolution 4 - Approval of grant of security to OZC**

To consider and, if thought fit, to pass, with or without amendment, the following resolution as an **ordinary resolution**:

*"That, subject to the passing of Resolutions 1, 2, 3 and 5 and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to grant security in favour of OZC in accordance with the terms of the Prepayment Facility Security, described in more detail in the Explanatory Memorandum."*

**Voting Exclusion:** In accordance with the ASX Listing Rules, OZC and its Associates are excluded from voting on Resolution 4 and the Company will disregard any votes cast on Resolution 4 by OZC or any of its Associates.

However, the Company need not disregard a vote if it is cast by a person as a proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form or it is cast by the chair of the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

**Resolution 5 - Approval of Offtake Agreement**

To consider and, if thought fit, to pass, with or without amendment, the following resolution as an **ordinary resolution**:

*"That, subject to the passing of Resolutions 1 to 4 (inclusive) and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to enter into and perform the Offtake Agreement, described in more detail in the Explanatory Memorandum."*

**Voting Exclusion:** In accordance with the ASX Listing Rules, OZC and its Associates are excluded from voting on Resolution 5 and the Company will disregard any votes cast on Resolution 5 by OZC or any of its Associates.

However, the Company need not disregard a vote if it is cast by a person as a proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form or it is cast by the chair of the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

**EXPLANATORY MEMORANDUM**

The accompanying Explanatory Memorandum forms part of this Notice and should be read in conjunction with it.

Shareholders are specifically referred to the Glossary in the Explanatory Memorandum which contains definitions of capitalised terms used in this Notice and the Explanatory Memorandum.

**MAJORITY REQUIRED FOR RESOLUTIONS TO BE PASSED**

Each Resolution is an ordinary resolution and will be passed if more than 50% of the votes cast in respect of the Resolution (either in person, proxy, attorney or by corporate representative) are in favour of the Resolution. As mentioned above, each of the Resolutions is conditional on each of the other Resolutions being passed so that, if any Resolution is not passed, then all Resolutions will be taken to have failed.

**PROXIES**

A Proxy Form is attached to this Notice. This is to be used by Shareholders if they wish to appoint a representative (a "proxy") to vote in their place. All Shareholders are invited and encouraged to attend the Meeting or, if they are unable to attend in person, sign and return the Proxy Form to the Company in accordance with the instructions on the form. Lodgement of a Proxy Form will not preclude a Shareholder from attending and voting at the Meeting in person.

Please note that:

- a Shareholder entitled to attend and vote at the Meeting is entitled to appoint a proxy;
- a proxy need not be a Shareholder;
- a Shareholder may appoint a body corporate or an individual as its proxy; and
- a Shareholder entitled to cast two or more votes may appoint two proxies and may specify the proportion or number of votes each proxy is appointed to exercise, but where the proportion or number is not specified, each proxy may exercise half of the votes.

The enclosed Proxy Form provides further details on appointing proxies and lodging proxy forms. To be valid, properly completed Proxy Forms must be received by the Company's Share Registry no later than 10.00 am (Perth time) on Tuesday, 10 May 2016:

- by post to Security Transfer Registrars Pty Ltd, PO Box 535, Applecross, Western Australia 6953; or
- by facsimile to Security Transfer Registrars Pty Limited at (08) 9315 2233 (International: +61 8 9315 2233).

**VOTING ENTITLEMENTS**

For the purposes of Regulation 7.11.37 of the *Corporations Regulations 2001* (Cth), the Board has determined that a person's entitlement to vote at the Meeting will be the entitlement of that person set out in the register of Shareholders as at 5.00 pm (Perth time) on Wednesday, 11 May 2016. Accordingly, transactions registered after that time will be disregarded in determining Shareholders' entitlements to attend and vote at the Meeting.

**CORPORATE REPRESENTATIVE**

Any corporate Shareholder who has appointed a person to act as its corporate representative at the Meeting should provide that person with a certificate or letter executed in accordance with the Corporations Act authorising him or her to act as that company's representative. The authority may be sent to the Company or its share registry in advance of the Meeting or handed in at the Meeting when registering as a corporate representative.

By order of the Board.

Dennis Wilkins
Company Secretary
Date: 5 April 2016

# EXPLANATORY MEMORANDUM

This Explanatory Memorandum has been prepared for the information of Shareholders in connection with the business to be conducted at the General Meeting to be held at 10.00 am (Perth time) on Thursday, 12 May 2016 at The Celtic Club, 48 Ord Street, West Perth, Western Australia.

The purpose of this Explanatory Memorandum is to provide information which the Directors believe to be material to Shareholders in deciding whether or not to pass Resolutions 1 to 5 in the Notice of General Meeting.

This Explanatory Memorandum should be read in its entirety before making a decision as to how to vote at the Meeting and should be read in conjunction with the accompanying Notice of Meeting and the Independent Expert's Report.

## 1. Overview

Image is an ASX-listed, mineral sands exploration company whose main asset is its North Perth Basin Project consisting of a large mineral sands tenement holding stretching from near Gingin, approximately 65 kilometres north of Perth, to inland from Cervantes, approximately 200 kilometres north of Perth. Image's primary focus is the evaluation and development of various mineral sand deposits within the North Perth Basin Project. Image is also engaged in the ongoing exploration of several other prospective deposits within the project area.

On 9 February 2016, Image announced that it had entered into a binding agreement with Murray Zircon and its parent company, Guangdong Orient Zirconic Ind Sci & Tech Co., Ltd (**OZC**), in relation to a series of transactions (**Transactions**) to assist in advancing the development of mineral sand deposits in the North Perth Basin. The Transactions include:

- the Company acquiring from Murray Zircon a wet concentration plant and other assets for the processing of ore;
- Murray Zircon providing the Company with a A$4 million short term loan to provide interim working capital so as to facilitate the development of the Company's projects; and
- OZC agreeing to purchase 90% of zircon products produced from the Company's Core Tenements for life of mine, as well as providing the Company with a US$8 million prepayment loan facility to become available to the Company upon commencement of production.

As part of the Transactions, the Company will initially issue Murray Zircon a 42% shareholding in the Company. The Company will issue Murray Zircon with further Shares to take Murray Zircon's voting power in the Company up to a maximum of 47% if a Decision to Mine is made during the Decision Period. The Transactions are described in further detail in section 3 below, with the material terms of the various transactions summarised in Annexure A.

As a result of the number of Shares to be issued to Murray Zircon, the grant of security to Murray Zircon and OZC in connection with the proposed short term loan and prepayment loan facility respectively and the offtake arrangements with OZC, Shareholder approval is required for the Transactions to proceed; such approval is sought in any event given the nature, scale and consequences of the Transactions. The purpose of this Explanatory Memorandum is to provide information which the Directors believe to be material to Shareholders in deciding how to vote in respect of such matters.

To assist Shareholders in their consideration of the Transactions (and how to vote on the Resolutions), and to satisfy the requirements of the Corporations Act and ASX Listing Rules, the Board has engaged RSM Financial Services Australia Pty Ltd (**Independent Expert**) to opine on whether or not the Transactions are 'fair and reasonable' to Shareholders who are not associated with Murray Zircon or OZC (**Non-associated Shareholders**). The Independent Expert has concluded that the Transactions are **not fair but reasonable** to the Non-associated Shareholders.

The Independent Expert also separately opined on the proposed grant of security to Murray Zircon and OZC and the offtake arrangements with OZC as part of the Transactions. The Independent Expert has concluded that the grant of that security and those offtake arrangements are each **fair and reasonable** to the Non-associated Shareholders.

A complete copy of the Independent Expert Report is attached as Annexure C to this Explanatory Memorandum and is also available on the Company's website at www.imageres.com.au. Shareholders may request a hard copy of the Independent Expert's Report from the Company at no cost by contacting the Company by telephone on (+61 8) 9485 2410. Shareholders are urged to carefully read the Independent Expert's Report to understand its scope, the methodology of the valuation and the sources of information and assumptions made.

Your Directors consider that the Transactions represent, in all the circumstances, a meaningful opportunity that may allow the Company to make significant progress in the development of its mineral sand deposits in the North Perth Basin. Based on all the information available, including the information set out in this Explanatory Memorandum and the Independent Expert's Report, your Directors consider that the advantages of the Transactions outweigh the disadvantages of not proceeding with the Transactions.

On balance, in the absence of a superior proposal, in all the circumstances of the Company (including Shareholder sentiment as made known to the Board), and in light of equity and commodity markets, your Directors consider that the Transactions ought be put to Shareholders for them to consider and form their own view on the likely impact of the Transactions on the Share price, and then in light thereof, to vote upon the same.

Your Directors are of the view that in stronger equities and commodities markets a better outcome may have been able to have been achieved for existing Shareholders. Further, your Directors are of the view that there is considerable doubt about the realisable, as opposed to the

synergistic, value of the assets being acquired by the Company in the event they are never deployed in the operation of a mine at the Company's project at Boonanarring. Your Directors are of the view that the interaction of the respective contributions of the Company's assets and the assets acquired from Murray Zircon, when combined, will produce a total effect that is greater than the sum of the individual contributions.

As such, on balance and taking into account the advantages and disadvantages of the Transactions, your Directors unanimously recommend that, subject to no Superior Proposal arising and the Independent Expert not concluding at any time prior to Completion that the Transactions are not fair and not reasonable to Shareholders, Shareholders vote in favour of all Resolutions so as to enable the Transactions to proceed. Each Director intends to vote all Shares controlled by him in favour of each Resolution in the absence of a Superior Proposal.

## 2. Who is Murray Zircon and OZC?

Murray Zircon is an Australian proprietary company that owns and, until recently, operated the Mindarie mineral sands project in South Australia which it redeveloped in 2012. Murray Zircon also holds an exploration tenement portfolio covering more than 11,000 km² within the Murray Basin.

Murray Zircon is owned by OZC (79.3%, held through its wholly-owned Australian subsidiary, OZR) and XQ Enterprises (20.7%). OZC is one of China's largest zircon processing companies and is reported to manufacture one of the world's most comprehensive ranges of zirconium products. OZC is listed on the Shenzhen Stock Exchange (Code: 002167) with a market capitalisation of approximately RMB 4.7 billion (A$1.0 billion) as at close of market on 29 February 2016. Murray Zircon's other shareholder, XQ Enterprises, is a Hong Kong based company that manufactures toys and games for export. XQ Enterprises is owned by four private investors that reside in China and Hong Kong.

The assets which are to be acquired by the Company as a result of the Transactions are currently located at Murray Zircon's Mindarie project, where they were used by Murray Zircon for 3 years until mining operations ceased in April 2015. The Company has conducted comprehensive due diligence on the assets to be acquired from Murray Zircon and believes, based on independent expert advice and opinion, that, with only relatively minor upgrades, the processing equipment is of an appropriate specification to accommodate ore produced at the Company's Boonanarring deposit, and will result in a substantial reduction in the total capital costs otherwise required to bring its North Perth Basin Project into production.

As part of the Transaction, Murray Zircon has agreed at its own cost to dismantle the assets being acquired and load them onto an accessible hardstand for collection by the Company (certain plant will be dismantled and loaded directly onto trucks when collected), and securely store the assets being acquired until such time as they are collected by the Company.

## 3. Overview of the Transactions

Under the terms of the Transactions, the Company is to acquire the wet concentration plant (**Wet Plant**) and ancillary mining and processing equipment for the processing of ore (together the **Assets**) from Murray Zircon under the terms of the Asset Sale and Purchase Agreement.

As part of completion of the acquisition of those Assets by the Company under the Asset Sale and Purchase Agreement (**Completion**):

- Murray Zircon will provide the Company with a A$4 million loan on the terms of the Short Term Loan Agreement, to be secured against the Company's assets by the General Security Deed and Mining Mortgage (the **Short Term Loan Security**);
- the Company and OZC will enter into an Offtake Agreement under which OZC will purchase 90% of all zircon products produced by Image at its Core Tenements at prices set quarterly by reference to market prices;
- the Company and OZC will enter into the Prepayment Facility Agreement under which OZC agrees to provide the Company with a US$8 million prepayment loan facility, to be available for drawdown following production by the Company of the first 20,000 wet tonnes of heavy mineral concentrates (**First Production**), with the Company's obligations under that Prepayment Facility Agreement being secured against the Company's assets on the same terms as the General Security Deed and Mining Mortgage (the **Prepayment Facility Security**);
- as consideration for the above transactions, the Company will:
    - issue to Murray Zircon that number of Shares which would result in Murray Zircon holding 42% of the total Shares on issue immediately following Completion (**Completion Shares**) which, based on the Company's share capital as at 15 March 2016[1] would amount to the issue of 156,703,542 Shares; and
    - if a Decision to Mine is made during the 2 years after Completion (or 3 years if a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first 2 years) (**Decision Period**) and Murray Zircon has not materially breached any of the above agreements (or has remedied any such breach within agreed timeframes), issue to Murray Zircon that number of Shares (**Deferred Shares**) which, had they been issued at Completion, would have resulted in Murray Zircon holding,

[1] Being the last practicable date before finalisation of this Explanatory Memorandum.

together with the Completion Shares, 47% of the total Shares on issue immediately following Completion which, based on the Company's share capital as at 15 March 2016 will amount to 35,198,459 Shares.

Murray Zircon has also agreed to certain restrictions and undertakings during the 2 years after Completion or until a Decision to Mine is made if this occurs earlier (**Restriction Period**). These restrictions include escrow restrictions on the sale or transfer of the Completion Shares, restrictions on not increasing its voting power in the Company without the approval of the Company's Board and restrictions on taking steps to influence or control the composition of the Board or the management or policies of the Company. The restrictions and undertakings are subject to certain agreed exceptions, including permitting Murray Zircon to grant security over its shareholding in the Company, as part of its financing arrangements to, and for that security to be enforced by, the Bank of China and to permit the distribution of the Completion Shares pro-rata to Murray Zircon's shareholders (being OZR and XQ Enterprises) subject always to Murray Zircon's shareholders agreeing to be bound by the same restrictions and undertakings that would otherwise apply to Murray Zircon;

- Murray Zircon will grant the Company with a 3 year option to purchase its mineral separation plant currently located at its Mindarie project in South Australia for an exercise price of A$12 million, the equivalent in Shares or a combination of both (at the Company's election), with any exercise being subject to the approval of the Company's Shareholders (**Dry Plant Option**); and
- the Company will have the right to require Murray Zircon to participate pro-rata in any new equity raisings the Company undertakes during the 12 month period immediately following Completion (including by allocating equity to a sub-underwriter approved by the Company), subject to obtaining any necessary Shareholder and regulatory approvals (**Funding Right**).

Completion of the Company's acquisition of the Assets is subject to the following conditions precedent being satisfied or waived by no later than 7 June 2016 (being 120 days after the date of execution of the Asset Sale and Purchase Agreement):

- The Independent Expert concluding that the Transactions are and at all times up to Completion remain either fair and reasonable, or not fair but reasonable, to Shareholders not associated with Murray Zircon or OZC. As noted in section 1, as at the date of their report, the Independent Expert has concluded that the Transactions are not fair but reasonable (although the Independent Expert concluded that the provision of the Short Term Loan Security, the Prepayment Facility Security and the Offtake Agreement, each comprising a part of the Transactions, are fair and reasonable).
- Shareholder approval of the Transactions in accordance with item 7 of section 611 of the Corporations Act and Listing Rule 10.1 (where applicable), being the subject of the Resolutions set out in the attached Notice of General Meeting.
- The Company being satisfied that the A$4 million that is to be advanced by Murray Zircon under the Short Term Loan Agreement is available in an Australian bank account prior to Completion.
- All necessary Chinese regulatory approvals being obtained in connection with the funds being advanced under the Short Term Loan Agreement and not revoked or withdrawn prior to Completion. Under the Asset Sale and Purchase Agreement, OZC has warranted that no authorisations are required from the State-owned Assets Supervision and Administration Commission in the People's Republic of China in relation to the sale of the Assets to the Company or in relation to the provision of funding under the Short Term Loan Agreement. Further, OZC has informed the Company that it is of the view that the only necessary Chinese regulatory approvals required in connection with the Short Term Loan Agreement are the Bureau of Foreign Trade approval from the Guangdong Ministry of Commerce and the approval of the State Administration of Foreign Exchange of the People's Republic of China, and has warranted to the Company that these approvals have been obtained in relation to the funding to be provided under the Short Term Loan Agreement. As announced by the Company on 7 August 2015, Murray Zircon has informed the Company that it has already received the necessary approvals under the Foreign Acquisitions and Takeovers Act 1975 (Cth) in relation to the Transactions.
- To the extent that any investigation or inquiry by a governmental agency or judicial body against Murray Zircon, OZC or OZR or any of their directors or officers commences or is ongoing, there is a satisfactory resolution of any such proceedings prior to Completion.
- The Company entering into an employment contract with Murray Zircon's existing Chief Executive Officer, Mr Patrick Mutz, on terms acceptable to the Company whereby Mr Mutz is appointed as the Company's managing director with effect from, and subject to, Completion.
- Releases being executed for any outstanding encumbrances over the Assets.

As announced on 9 February 2016, Completion was also conditional on the Western Australian Minister of Mines and Petroleum approving the Company granting the Mining Mortgage over its Core Tenements. That approval has now been obtained.

If Resolutions 1 to 5 are approved by Shareholders and subject to any outstanding conditions precedent being satisfied or waived, Completion is to occur 10 business days after the date of the Meeting (or such later date as agreed). The parties have also agreed to customary deal protection provisions outlined in Annexure A.

The Company has the right to terminate the Asset Sale and Purchase Agreement if Murray Zircon materially breaches that agreement (including a warranty provided by Murray Zircon under that agreement), or there is a material breach of a warranty provided by OZC and that breach has not been remedied within the requisite cure period. Further, termination rights arise in the event of a change of control or an insolvency event in relation to Murray Zircon or OZC, a material adverse change in relation to Murray Zircon, OZC or OZR, or an adverse finding being made against Murray Zircon, OZC or OZR (or any of their directors or officers) in any investigation or enquiry conducted by a government agency or judicial body which a reasonable and prudent buyer in the position of the Company (having regard to the effect of the Transactions on the

Company) would consider to be likely to be materially adverse to the interests of the buyer if the information was known prior to executing the Asset Sale and Purchase Agreement.

Murray Zircon also has reciprocal rights to terminate the Asset Sale and Purchase Agreement in relation to the actions of, or events otherwise affecting, the Company (although there is no termination right in relation to a change of control of the Company).

Further details of the Transactions and summaries of the key terms of the agreements referred to above are set out in Annexure A to this Explanatory Memorandum.

## 4. Considerations relevant to your vote

This section sets out the key advantages and disadvantages of the Transactions that have been identified by your Directors as at the date of this document. Shareholders should carefully consider all of the advantages and disadvantages of the Transactions, and read the meeting documentation including the attached Independent Expert's Report in detail, before deciding how to vote on the Resolutions.

### 4.1 Key advantages of the Transactions

The Directors believe that the Transactions have the following key advantages.

*(a) Acquisition of the fit-for-purpose Wet Plant required to develop the Boonanarring mineral sands deposit*

Under the Transactions, the Company will acquire a wet concentration plant, including in-pit mine slurry unit, pipelines and booster pump skids, poles and wires, complete primary concentration plant including slimes thickener, associated water tanks and heavy mineral concentrate dewatering equipment, maintenance equipment and critical spares, laboratory equipment, mobile equipment and miscellaneous office and ablution buildings. Murray Zircon operated the wet concentration plant at its Mindarie project in South Australia for 3 years until April 2015.

The Company has conducted comprehensive due diligence on these assets and is confident that, with only relatively minor upgrades, the processing equipment is of an appropriate specification to accommodate ore produced at the Company's Boonanarring deposit, and will result in a substantial reduction in the total capital costs otherwise required to bring its North Perth Basin Project into production. A number of current Murray Zircon employees, with experience in re-constructing, commissioning and operating the Wet Plant, will be offered employment with the Company as part of the Transactions.

*(b) Funding package to assist in ensuring the Company is adequately funded to First Production and beyond*

The funding package to be provided to the Company as part of the Transactions includes:

- the provision to the Company of a A$4 million short term loan by Murray Zircon, to be made available and drawn in full at Completion;
- OZC's contractual commitment to provide to the Company a US$8 million prepayment loan facility, to be available for drawdown following First Production occurring; and
- an undertaking by Murray Zircon (at the Company's election) to participate pro-rata in any new equity raisings undertaken by the Company during the 12 month period immediately following Completion (including by allocating equity to a sub-underwriter approved by the Company), subject to obtaining (if necessary) Shareholder approval and any other necessary regulatory approvals.

This funding package, together with the acquisition of the Assets and the structuring of the Transactions, is thought, in all the circumstances, to represent the most tangible and only likely prospect of the Company, in the near term, funding the development of the Company's mineral sand deposits and have sufficient working capital during initial operations.

*(c) Addition of experienced management team with operational experience*

As part of the Transactions, Murray Zircon's current Chief Executive Officer, Mr Patrick Mutz, will become the Company's new Managing Director. Mr Mutz was responsible for overseeing project commissioning and mining and processing operations at Murray Zircon's Mindarie project in South Australia until April 2015 and has extensive resources experience. A number of Murray Zircon employees will also be offered the opportunity to join the Company's workforce and they will bring with them substantial experience in re-assembling, commissioning and operating the Wet Plant being acquired by the Company. The Board of the Company will also be reconstituted with effect from Completion to include Murray Zircon nominees who have significant experience in project development and mineral sands production.

*(d) Introduction of a strategic investor*

The Transactions introduce Murray Zircon as a key strategic investor in the Company. Murray Zircon owned, and until April 2015, operated the Mindarie mineral sands project in South Australia and brings both expertise with the development and operation of mineral sands projects, and a strong reputation as an innovative and efficient mineral sands producer. Murray Zircon's significant shareholding in the Company and the structure of the Transactions are thought to provide strong incentive for Murray Zircon to support and commit to the development of the Company's mineral sand deposits as well as the Company's other value-creating initiatives.

*(e) Zircon products offtake to assist with securing project finance*

Under the Transactions, OZC will undertake to purchase 90% of all zircon products produced by the Company from its Core Tenements at prices referable to market prices. OZC, which owns 79.3% of Murray Zircon, is one of China's largest zircon processing companies, is reported

to manufacture one of the most comprehensive ranges of zirconium products in the world and has a market capitalisation of A$1.0 billion (as at 29 February 2016).

Securing an experienced offtake partner for zircon (especially one with a vested interest in the producer) is expected to assist the Company in securing project finance, particularly as the Company expects zircon to represent the majority of the Boonanarring and Atlas project's total revenue. The Company retains the right to provide offtake to any alternative third party for all or part of the zircon products, subject to an effective matching right from OZC over 90% of the zircon products (further details of these rights are set out in the summary of the Offtake Agreement in section 5 of Annexure A).

*(f) The Independent Expert believes the Transactions are not fair but reasonable*

The Independent Expert has concluded that based on the likely advantages, disadvantages and other factors identified by the Independent Expert, the Transactions are not fair but reasonable to the Non-associated Shareholders. While the Independent Expert considered the Transactions not to be fair to Non-associated Shareholders (as the range of values for a share in the Company post-completion of the Transactions was assessed to be lower than the range of values for a share in the Company pre-completion of the Transactions), the Independent Expert concluded that the position of the Non-associated Shareholders if the Transactions are approved is more advantageous than if the Transactions are not approved, such that the Transactions are considered reasonable for Non-associated Shareholders.

In forming its conclusions, the Independent Expert noted the following key advantages of the Transactions:

- The Company will secure necessary equipment for its mineral sands projects.
- Experienced directors and management will join the Company.
- The Company will secure an offtake partner for its product at market rates.
- The Transactions will result in securing short term financing, as well as allow for short to medium term financing through a 12 month commitment by Murray Zircon to participate in future capital raisings and the provision of the prepayment loan facility on First Production.

However, the Independent Expert also noted the following key disadvantages:

- The Transactions will result in Non-associated Shareholders' interests in the Company being diluted.
- The existing composition of the Company's Board will change to include three directors nominated by Murray Zircon, three directors nominated by the Company and one independent director.
- The Company will require additional plant and equipment post Completion of the acquisition of the Assets.
- The Company will require additional finance post Completion of the acquisition of the Assets.
- The Company will incur the cost of transporting the equipment to the North Perth Basin Project when required.
- If there is a default under the terms of the Short Term Loan Agreement, the Company will need to repay the debt owing under that agreement (though if there is no default, the debt would only need to be repaid upon First Production).

The Independent Expert has separately considered the proposed provision of the Short Term Loan Security and Prepayment Facility Security to Murray Zircon and OZC respectively, and the entry into and performance of the Offtake Agreement, for the purposes of ASX Listing Rule 10.1, and considered that each of these elements of the Transactions is fair and reasonable to the Non-associated Shareholders. In forming this conclusion, the Independent Expert noted that the provision of each of the Short Term Loan Security and Prepayment Facility Security and execution of the Offtake Agreement, is required to enable the Company to complete the acquisition of the Assets from Murray Zircon. A copy of the Independent Expert's Report is attached to this Explanatory Memorandum as Annexure C.

### 4.2 Key disadvantages of the Transactions

**Shareholders must assess and form their own view as to whether the disadvantages and risks of the Transactions are acceptable.** The Directors believe that the Transactions have the following potentially significant disadvantages.

*(a) Dilution of Shareholder interests*

The issue of Shares to Murray Zircon will dilute the equity interests of existing non-associated Shareholders by 42% upon Completion, and up to 47% if a Decision to Mine is reached (including financing being secured) during the Decision Period. A more detailed indication of the maximum potential impact on Murray Zircon's voting power in the Company as a result of the issue of the Shares under the Murray Zircon Transactions is shown in section 5.1 below. There is the potential that Shareholders may have their interest in the Company diluted further as a result of the Murray Zircon Parties participation in any future equity raisings undertaken by the Company to assist in funding the development of its mineral sand deposits.

As the Shares are being issued as consideration for transactions including financing, offtake and the acquisition of the Assets which collectively give the Company a real prospect of developing its mineral sand deposits in the near term, and in light of the fact that the Independent Expert has concluded that the issue of Shares to Murray Zircon is not fair but reasonable to Non-associated Shareholders, the Directors believe that the benefits of the issue of the Shares to Murray Zircon under the Transactions (as outlined in section 4.1 above) likely outweigh the disadvantageous dilution of Shareholder interests that will occur as a result of that issue of Shares.

*(b) Murray Zircon will have significant influence as a major Shareholder of the Company*

Upon Completion, Murray Zircon will hold 42% of the issued share capital of the Company (with the potential to acquire additional shares to take its shareholding up to 47%). Further, on Completion, three representatives of Murray Zircon will be appointed to the Company's Board. Accordingly, from Completion, Murray Zircon will have significant influence (and, for all practical commercial purposes, control) over the Company's activities.

In view of the voting power Murray Zircon will acquire in the Company upon Completion, Murray Zircon has agreed to certain restrictions in relation to its shareholding for the Restriction Period directed at providing some stability to the Company's share register and Board structure in the period immediately following Completion. Details of these restrictions are set out in section 2 of Annexure A. Shareholders should be aware that Murray Zircon will grant security over its Shareholding in the Company to its financiers, and that these restrictions would cease to apply if Murray Zircon's financiers exercised that security over those Shares. Further, notwithstanding the protections afforded to the Company by these restrictions, the level of control which the Murray Zircon Parties will acquire over the Company if Completion occurs (both at Board and shareholder level) and the level of dependency the Company is likely to have on the Murray Zircon Parties in regards to the provision of future funding may negatively impact upon the prospects of the Company enforcing any of its contractual rights against the Murray Zircon Parties.

Given Murray Zircon's provision of short term loan funding to the Company and the provision by Murray Zircon's controlling shareholder, OZC, of a prepayment loan facility as well as the offtake arrangements, the interests of Murray Zircon can be expected, at times, not to align with the interests of other Shareholders with respect to project related decisions, such as funding, development and production decisions relating to the Company's mineral sand deposits, or in relation to corporate matters such as Board or executive appointments, dividend policy and equity raisings. The Transaction Documents provide for the Board to implement from Completion a conflicts protocol directed at managing conflicts of interest that arise at Board level. Further, both the Corporations Act and the ASX Listing Rules place restrictions on transactions with related parties and major shareholders which will have to be complied with in any transactions that occur between the Company and a Murray Zircon Party.

Shareholders should also be aware that the implementation of the Transactions will result in the Company being significantly exposed to the inherent counterparty risk associated with enforcing the performance by the Murray Zircon Parties of their contractual obligations, particularly as Murray Zircon's ultimate controllers are foreign corporations. The Company has sought to mitigate this risk somewhat by requiring that the A$4 million in short term loan funding to be made available to the Company on completion of the acquisition of the Wet Plant, although there remains some risk around the Company's ability to enforce the prepayment loan facility arrangements, the offtake commitments and the future funding obligations associated with the Transactions.

Murray Zircon's shareholding will reduce the likelihood of a takeover bid for the Company being made, and hence any opportunity for a control premium to be realised by existing Non-associated Shareholders. The shareholding held by Murray Zircon may also discourage other major Shareholders from acquiring further Shares, which could, quite foreseeably, result in a decrease in the liquidity of Shares on ASX. **Your Directors express no opinion as to the likely effect of the Transactions on the price of Shares on ASX.** Nevertheless, if the Company remains on track to make, and does make, a Decision to Mine within the timeframe required to trigger the obligation to issue the Deferred Shares, your Directors are cautiously optimistic that the Transactions will accrete value to the shareholdings of existing Shareholders. Further, your Directors are cautiously optimistic that the Transactions will afford the Company the best opportunity, in the current circumstances, to realise value from the exploration upside potential inherent in the Company's remaining projects, including cash flow from the Tronox royalty.

*(c) The Company is acquiring a Wet Plant in advance of obtaining project funding*

The Transactions involve the Company acquiring the Wet Plant at a time when it does not have certainty that the Company will have sufficient funds to take any of its mineral sand deposits into production. Accordingly, there is a risk that the Company will not be able to utilise the Wet Plant and that the net realisable value of the Wet Plant will be significantly less than the value ascribed to those assets by the Independent Expert. However, it is noted the Transactions involve short term financing through the provision of a A$4 million loan to provide interim working capital to enable the Company to continue to progress with the development of these projects, as well as a commitment by Murray Zircon to participate pro-rata in any new equity raisings the Company undertakes during the 12 month period immediately following Completion (subject to obtaining any necessary Shareholder and regulatory approvals). These commitments, together with the Offtake Agreement and Prepayment Facility Agreement to be provided by OZC, significantly enhance the prospects of the Company raising sufficient funds to take its Boonanarring and/or Atlas deposits into production.

The Company intends to use the short term financing provided to update the North Perth Basin Project feasibility study to reflect the Wet Plant acquired, a revised mine plan and latest cost estimates, commodity prices and foreign exchange rates. However, Shareholders should be aware that no guarantee is provided regarding the outcome of that updated feasibility study, which may take longer to complete, cost more or provide a less attractive outcome than expected. Conditional on the outcome of the feasibility study, it is expected that the Company will make a decision to proceed in the short term with project funding and development and that expectation, about which there is no certainty, underpins the Directors' recommendations herein.

The Company will be obligated to use best endeavours to determine the most appropriate method of implementing the steps to relocate the Wet Plant from Murray Zircon's Mindarie Project in South Australia. However, the Company is under no obligation to relocate the Wet Plant in the near term, during which it may remain in South Australia. The Company will be required to cover the cost of any maintenance from Completion.

*(d) The Company is intending to take on debt*

The Transactions involve the Company taking on debt pursuant to the Short Term Loan Agreement and Prepayment Facility Agreement. The loan under the Short Term Loan Agreement is repayable upon First Production and the Company is under no obligation to make repayment

early, although is entitled to do so with approval of the Board (excluding Murray Zircon nominees). The loan may be forgiven in certain circumstances if, despite using best endeavours, First Production is not achieved within 3 years of Completion. Repayment of the loan may also be deferred subject to availability of funds under the Prepayment Facility Agreement. The prepayment loan facility is to be available for drawdown upon First Production and will be repayable within 5 years of that date. The repayment terms under each facility significantly enhance the ability of the Company to meet its debt obligations as they fall due.

### 4.3 What happens if the Transactions do not proceed?

If Resolutions 1 to 5 are not approved by Shareholders, then a condition precedent to Completion will not be satisfied and the Transactions will not proceed.

In those circumstances, and in the absence of being able to secure alternative funding in the short term, the Company's financial position is such that it would need to urgently consider scaling (and likely would resolve to scale) back the level of activity undertaken in relation to the development of its North Perth Basin Project. This would in turn materially adversely affect the prospects of the Company being able to develop any of its mineral sand deposits in the short to medium term. Further, the ability of the Company to raise equity funding would likely, in such circumstance absent market sentiment improving, be at materially lower prices than prevailing at the date this Explanatory Memorandum was finalised and hence would likely be highly dilutive to existing Shareholders.

## 5. Effect of the Transactions on the Company

### 5.1 Effect on capital structure and control of the Company

Under the Transactions, Murray Zircon will be issued the Completion Shares at Completion, and will be issued the Deferred Shares if a Decision to Mine is made within the Decision Period.

The table below sets out the effect (based on the assumptions listed below the table) that the issue of the Completion Shares and the Deferred Shares to Murray Zircon will have on the Company's capital structure and the voting power of the Murray Zircon Parties and current Shareholders, both immediately following Completion and immediately following the issue of the Deferred Shares (assuming that a Decision to Mine is made during the Decision Period).

| | Current capital structure | | Capital structure after Completion | | Capital structure after issue of Deferred Shares | |
|---|---|---|---|---|---|---|
| | **Number** | **Voting Power[1] %** | **Number** | **Voting Power %** | **Number** | **Voting Power[1] %** |
| Shares held by existing Shareholders | 216,400,129 | 100 | 216,400,129 | 58 | 216,400,129 | 53 |
| Shares held by Murray Zircon Parties[2,4] | 0 | 0 | 156,703,542 | 42 | 191,902,046 | 47 |
| **Total Shares** | **216,400,129** | **100** | **373,103,671** | **100** | **408,302,130** | **100** |
| Options held by Murray Zircon Parties | - | - | - | - | - | - |
| Options held by existing optionholders[3] | 2,600,000 | - | 2,600,000 | - | 2,600,000 | - |
| **Total Options** | **2,600,000** | **-** | **2,600,000** | **-** | **2,600,000** | **-** |

**Explanatory notes and assumptions**

1. The Company does not issue any additional Shares after 15 March 2016, being the last practicable date before finalisation of this Explanatory Memorandum.
2. The Murray Zircon Parties and their Associates do not acquire any relevant interest in Shares after 15 March 2016, being the last practicable date before finalisation of this Explanatory Memorandum, other than in the Completion Shares and the Deferred Shares.
3. No Option holders convert their Options into Shares after 15 March 2016, being the last practicable date before the finalisation of this Explanatory Memorandum. The existing Options are currently 'out of the money' with an exercise price of $0.3908 compared to the Company's Share price which at close of trade on 15 March 2016 was $0.06.
4. The Company will also technically acquire a relevant interest in the Completion Shares and, therefore, voting power at Completion of 42%. Please refer to section 6.1 below for further information on this relevant interest.

Therefore, the maximum voting power that the Murray Zircon Parties and their Associates could hold after the issue of the Completion Shares and the Deferred Shares is 47%.

The maximum voting power that could be obtained solely as a consequence of the Transactions being implemented is 47% which would apply in the event and assuming that:

- Completion occurs and Murray Zircon is issued the Completion Shares;
- a Decision to Mine is made during the Decision Period and the Deferred Shares are issued to Murray Zircon; and
- no other Shares are issued by the Company before the Deferred Shares are issued.

The calculation of the maximum voting power that the Murray Zircon Parties and their Associates may acquire assumes that the Murray Zircon Parties and/or their Associates continue to hold the Completion Shares at the time Murray Zircon is issued the Deferred Shares[2].

If any of the above does not occur, the voting power of the Murray Zircon Parties and their Associates will differ. Accordingly, the Murray Zircon Parties and their Associates may not acquire the maximum voting power of 47% which Shareholders are being asked to approve in Resolution 1.

As noted in the table above, the Murray Zircon Parties do not (as at 15 March 2016[3]) hold a relevant interest in any Shares or voting power in the Company.

### 5.2 The Murray Zircon Parties' intentions for the Company

If Completion occurs, Murray Zircon has confirmed to the Company that the Murray Zircon Parties are supportive of the Company commencing work to update its feasibility study on the Boonanarring and Atlas deposits to reflect:

- a reduction in capital and operating costs associated with the use of the Wet Plant purchased from Murray Zircon;
- updated mine plans (based on recent exploration success and planned geotechnical drilling);
- updated operating costs based on current market rates; and
- updated commodity prices and exchange rates,

and, subject to the conclusions expressed in the feasibility study, they are supportive of the Company pursuing the development of, and production from, the Boonanarring and Atlas deposits at the earliest possible instance.

If the Transactions are approved by Shareholders and subsequently implemented, the Murray Zircon Parties have confirmed that, other than as disclosed elsewhere in this Explanatory Memorandum including the changes contemplated under the Transactions, the Murray Zircon Parties have no intention to:

- make any changes to the business of the Company;
- inject any further capital into the Company, although they reserve the right to do so should they be required to do so under the terms of the Transaction Documents;
- make any changes to the Company's existing employees;
- transfer any of the Company's assets between the Company and the Murray Zircon Parties or their Associates;
- redeploy any of the Company's fixed assets; or
- change the Company's financial or dividend distribution policies.

The statements set out above are statements of the current intention of the Murray Zircon Parties only and may vary as new information becomes available or circumstances change. The Murray Zircon Parties have provided the Company with this information to assist the Company to meet its obligations under ASIC Regulatory Guide 74. The Company takes no responsibility for any omission from, or any error or false or misleading statement in this section.

### 5.3 Effect of the Transactions on the Board and the Company's management

Following Completion, the Board of the Company will comprise:

- Mr Robert Besley as Chairman (current director of Murray Zircon);
- Mr Patrick Mutz as Managing Director (current Chief Executive Officer of Murray Zircon);
- Mr Chaodian Chen (current Chairman of Murray Zircon);
- Mr Fei (Eddy) Wu (current director of Murray Zircon);
- Mr Chong Veoy Soo (current director of the Company);
- Mr George Sakalidis (current director of the Company); and
- Mr Peter Thomas (current director of the Company).

At Completion, the Company's current Chairman, Mr John Jones, will resign from the Board. With the exception of Mr Jones with respect to his

---

[2] While the Completion Shares will be subject to escrow restrictions during the Restriction Period, there are exceptions to those restrictions (see section 3 above and section 2 of Annexure A). One exception is that Murray Zircon may distribute the Completion Shares pro-rata to its shareholders, OZR and XQ Enterprises. Whether or not each of the Murray Zircon Parties would retain the full 42% voting power in the Company arising from the Completion Shares following such a distribution will depend on the relationships between those parties at the time. For example, based on the current capital structures of the Murray Zircon Parties, XQ Enterprises would need to be an Associate of the other Murray Zircon Parties for the Murray Zircon Parties to continue to hold 42% voting power in the Company following the distribution of the Completion Shares.

[3] Being the last practicable date before finalisation of this Explanatory Memorandum.

resignation from the Board, each of the current Directors has confirmed to the Company that he does not have any interest in the Transactions or the Transaction Documents. Further information on the proposed new Directors is set out below in section 5.4.

As mentioned in section 3 above, Murray Zircon has undertaken that it will not take any steps to influence or control the composition of the Board or the Company's management or policies during the Restriction Period. Further Murray Zircon has undertaken to ensure that the chairman of the Board is an independent Director (as contemplated under the ASX Corporate Governance Principles and Recommendations) during this period. After the Restriction Period expires, Murray Zircon has undertaken to ensure that there are at least two independent Directors on the Board, of which one is to be the chairman of the Board.

In addition to these undertakings, upon Completion occurring the Company will implement arrangements which seek to ensure that after the Restriction Period expires, any Shareholder that holds more than 10% of the voting power in the Company is entitled to appoint a representative to the Company's Board (provided always that where there are more than two such Shareholders, only the two largest Shareholders would have that right).

In relation to the Company's management team, in addition to Patrick Mutz becoming Managing Director, Mr George Sakalidis will remain an Executive Director (Exploration) of the Company and Collis Thorp, the Company's current Chief Executive Officer, will become the Company's Chief Development Officer.

At Completion, it is proposed that a policy would be implemented to distribute annually as dividends all cash which the Board does not consider necessary or desirable to retain for the Company's future activities. Whilst your Directors are supportive of dividends being paid, any decision to pay a dividend is unlikely to be made before the Company is in production and even then will likely depend on various factors including the success of the Company's exploration, development and mining activities, as well as its profitability and financial position.

### 5.4 Information regarding proposed Directors

The following information is provided to Shareholders in relation to the proposed new directors to be appointed to the Board at Completion:

*(a) Mr Robert Besley (current director of Murray Zircon)*

Mr Besley is a director of KBL Mining Limited, Chairman of Silver City Minerals Ltd (ASX:SCI) and a director of Murray Zircon, and has more than 40 years' experience in the mining industry. Mr Besley has served in a number of Government advisory roles including several years as Deputy Chairman of the NSW Minerals Council. He holds a BSc (Hons) in Economic Geology from the University of Adelaide and is a Member of the Australian Institute of Geoscientists. He managed the creation, listing and operation of two successful mining companies; CBH Resources Limited which he led as Managing Director from a small exploration company to Australia's fourth largest zinc producer; and Australmin Holdings Limited (acquired by Newcrest) which brought into production a gold mine in Western Australia and a mineral sands mine in New South Wales.

More recently he was a founding director of KBL Mining Limited which operates the Mineral Hill copper-gold mine in New South Wales, is Chairman of Silver City Minerals Limited, which is actively exploring for silver-lead-zinc in the Broken Hill District and has been a non-executive director of Murray Zircon from commencement of development and production from the Mindarie mineral sands project.

Prior to this Mr Besley's early career was involved in the exploration and development of mineral deposits for Unocal's (now Chevron) mineral activities in South East Asia, North America, Latin America, Australia and the Pacific. His activities have covered projects in precious metals, base metals, ferroalloys, mineral sands, speciality metals, uranium and coal. Through his corporate management roles Mr Besley has played a central role in project and corporate financing covering a wide range of capital structures as well as acquisitions, mergers and asset sales.

Mr Besley will resign from his position as non-executive director of Murray Zircon upon Completion occurring and him being appointed as independent Chairman of the Company.

*(b) Mr Patrick Mutz (current Chief Executive Officer of Murray Zircon)*

Mr Mutz has more than thirty years of international mining industry experience in technical (metallurgist), managerial, consulting, executive and director roles in all aspects of the industry from exploration through project development, mining and mine rehabilitation. He has operational experience in open cut, underground, and in-situ mining and related processing, on projects in the USA, Germany, Africa and Australia.

Since his arrival in Australia from the USA in 1998, he has served as CEO / Managing Director of a number of publicly listed and private mining companies based in South Australia, Victoria and Western Australia, primarily involved with project development and company transitioning from exploration to production. Mr Mutz is a Fellow of the AusIMM and a member of the Australian Institute of Company Directors. He holds a Bachelor of Science (Honours) and an MBA from the University of Phoenix in the USA.

Mr Mutz joined Murray Zircon as a senior advisor in early 2012 and served as its Chief Operating Officer during the pivotal transition period from development to operational status in the latter part of 2012. In February 2013 he was invited to take on the role as CEO and to lead the company on its goal of becoming South Australia's newest mineral sands mining company.

*(c) Mr Chaodian Chen (current Chairman of Murray Zircon)*

Mr Chen founded OZC in 1995 and has built the company into a leading company in the zirconium industry. He served as President and Chairman of the company until mid-2013 when China National Nuclear Corporation became the largest shareholder in OZC. He became the Chairman of Murray Zircon when the company was founded in 2011 as a result of OZC's first investment in mining in Australia. Mr

Chen is the Vice President of China non-ferrous metals industry association titanium zirconium & Hafnium Branch. He holds an EMBA degree and is a Certified Engineer. He also owns a number of patents involving the processing of zircon.

(d) *Mr Fei (Eddy) Wu (current director of Murray Zircon)*

Mr Wu has solid operational experience in the Australian resource and mining industry. He specialises in combining the strengths of Australian upstream mining with Chinese downstream processing and end use to optimise the strategy for resource development and maximise the resource value. As the first CEO of Murray Zircon, he built and led the team to complete the development and start-up at the Mindarie mineral sands project in late 2012. Mr Wu was appointed as a Non-Executive Director of Murray Zircon in early 2013. He is currently the CEO and a Director of Queensland Mining Corporation Limited and the CEO of WIM Resources Pty Ltd. Mr Wu graduated from the University of Science and Technology, Beijing. He holds a Master's Degree in Commerce (Finance) from the Australian National University and a Master's Degree in Science from Cass Business School, City University London.

Each of the above proposed Directors has confirmed to the Company that other than his proposed appointment as a Director (including as Managing Director in the case of Patrick Mutz) and any interest which he holds in Murray Zircon and, where applicable, OZC, he does not have any interest in the Transactions or the Transaction Documents.

## 6. Corporations Act approval requirements

### 6.1 Why is Shareholder approval required under the Corporations Act?

(a) *Shareholder approval under item 7 of section 611 of the Corporations Act*

Section 606 of the Corporations Act contains a general prohibition on a person acquiring a relevant interest in issued voting shares in a listed company through a transaction which results in the voting power in the company of that person or another person increasing from below 20% to more than 20% or from a starting point of more than 20% to a higher percentage. However, an exception to that general prohibition is where the acquisition has been approved by a resolution of shareholders of the listed company under item 7 of section 611 of the Corporations Act.

A "relevant interest" in shares arises if (among other things):

- the person is the holder of the shares;
- the person has the power to, or controls the power to, exercise a right to vote attaching to the shares or dispose of the shares; or
- the person controls, or has voting power of 20% or more in, a company that has a relevant interest in the shares.

Pursuant to the Transactions, Murray Zircon will be issued, and will therefore acquire a relevant interest in, the Completion Shares and, if a Decision to Mine is made during the Decision Period, the Deferred Shares. As each of OZC, OZR and XQ Enterprises have voting power of more than 20% in Murray Zircon, each of them will also be deemed to acquire a relevant interest in the Completion Shares and any Deferred Shares issued.

Accordingly, Resolution 1 seeks the approval of Shareholders for the purposes of item 7 of section 611 of the Corporations Act to allow the Company to issue to Murray Zircon the Completion Shares and, if a Decision to Mine is made during the Decision Period, the Deferred Shares in accordance with the terms of the Transactions, and for the Murray Zircon Parties and their Associates to acquire voting power in the Company above the 20% threshold.

In addition to the approval sought by Resolution 1, the approval of Shareholders is also required for the purposes of item 7 of section 611 of the Corporations Act to permit certain restrictions and other undertakings proposed to be imposed on Murray Zircon's shareholding in the Company during the Restriction Period (the **Standstill Provisions**). These Standstill Provisions include:

- voluntary escrow restrictions on the Completion Shares prohibiting their sale or transfer during the Restriction Period;
- an undertaking by Murray Zircon to vote in favour of resolutions put to Shareholders (other than certain resolutions relating to a change of control of the Company) that are recommended by a majority of the Board; and
- an undertaking by Murray Zircon not to take any steps to influence or control the composition of the Board or the management or policies of the Company,

in each case subject to certain agreed exceptions. Further details of the Standstill Provisions are set out in section 3 above and in section 2 of Annexure A. As these Standstill Provisions provide the Company with the capacity to exercise negative control over the disposal of, and the right to vote attaching to, those Shares in certain circumstances, they technically result in the Company acquiring a relevant interest in the Completion Shares held by Murray Zircon.

Resolution 2 therefore seeks the approval of Shareholders to enable the Company to acquire a relevant interest in the Completion Shares for the purposes of item 7 of section 611 of the Corporations Act.

For the exemption in item 7 of section 611 of the Corporations Act to apply, Shareholders must be given all information known to the Murray Zircon Parties and their Associates, or known to the Company, that is material to the decision of how to vote on the resolution. Item 7 of section 611 and ASIC Regulatory Guide 74 set out specific information that should be provided to shareholders for the purposes of satisfying that disclosure requirement. For that information, please refer to section 6.2 below.

*(b) 15% issuing capacity under Listing Rule 7.1*

As shareholder approval is being sought under item 7 of section 611 of the Corporations Act for the issue of Shares under the Transactions, no separate approval is required for the purposes of Listing Rule 7.1 for the issue of the Completion Shares and the Deferred Shares, and those Shares will not count towards the Company's 15% "new issues" capacity under that Listing Rule.

### 6.2 Specific information required by item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74

The following information is provided for the purposes of item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74 in connection with Resolutions 1 and 2:

| | **Resolution 1 – Acquisition of a relevant interest by the Murray Zircon Parties** | **Resolution 2 – Acquisition of a technical relevant interest by the Company** |
|---|---|---|
| **Item 7(a) – Voting exclusions** | The Notice contains a voting exclusion statement for Resolution 1. | The Notice contains a voting exclusion statement for Resolution 2. |
| **Item 7(b)(i) – Identity of the persons proposing to make the acquisition and their associates** | Under the Transactions, the Murray Zircon Parties will acquire a relevant interest in the Completion Shares and the Deferred Shares. The Murray Zircon Parties comprise Murray Zircon, its two shareholders OZR and XQ Enterprises, and OZR's parent company OZC.<br>The Murray Zircon Parties do not have any Associates with respect to those Shares. | The Company will technically acquire a relevant interest in the Completion Shares as a result of the Standstill Provisions. The Company does not have any Associates with respect to those Shares. |
| **Item 7(b)(ii) to (v) – Voting power of the acquirers and their associates as a result of acquisition and the maximum extent of the increase in that voting power** | None of the Murray Zircon Parties or their Associates hold a relevant interest in any Shares.<br>The maximum voting power that the Murray Zircon Parties and their Associates will acquire in the Company as a result of Murray Zircon being issued the Completion Shares and Deferred Shares, and therefore the maximum extent of the increase in their voting power, is 47%.<br>Please refer to the table in section 5.1 on the effect of the Transactions on the capital structure and control of the Company. | The Company does not hold a relevant interest in any Shares. The maximum voting power that the Company will acquire as a result of its technical acquisition of a relevant interest in the Completion Shares, and therefore the maximum extent of the increase in its voting power, is 42%. |
| **Reasons for the proposed acquisition** | Please refer to sections 1 and 4 for the reasons for the proposed acquisition of a relevant interest in Shares by the Murray Zircon Parties and the Transactions. The Completion Shares and the Deferred Shares are being issued to Murray Zircon as consideration for the Company's acquisition of the Assets, for Murray Zircon entering into the Short Term Loan Agreement and OZC entering into the Prepayment Facility Agreement and the Offtake Agreement. | The Company's technical acquisition of a relevant interest in the Completion Shares arises because of the Standstill Provisions in the Share Consideration Deed. The primary reason for the Standstill Provisions is to provide some stability to the Company's share register and Board structure in the period immediately following Completion of the Transaction. |
| **Timing of the proposed acquisition** | The Completion Shares will be issued on Completion. Please refer to section 3 regarding the timing for Completion.<br>The Deferred Shares will be issued if a Decision to Mine is made during the Decision Period. As defined, the Decision Period will likely be a period of 2 years (unless a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first 2 years, in which case it will be a 3 year period). | The Completion Shares will be issued on Completion. Please refer to section 3 regarding the timing for Completion. |
| **Material terms of the proposed acquisition** | Please refer to section 3 and the summaries of the Transaction Documents in Annexure A. | Please refer to section 3 and the summaries of the Transaction Documents in Annexure A. |
| **Details of terms of other relevant agreements between the acquirers and the Company (or** | Please refer to section 3 and the summaries in Annexure A for details of the Transaction Documents. | Please refer to section 3 and the summaries in Annexure A for details of the Transaction Documents. |

| | Resolution 1 – Acquisition of a relevant interest by the Murray Zircon Parties | Resolution 2 – Acquisition of a technical relevant interest by the Company |
|---|---|---|
| **any of their Associates) conditional on Shareholder approval** | | |
| **The acquirers' intentions regarding the future of the Company** | Please refer to section 5.2. | Given the circumstances and as the Company is acquiring a relevant interest in its own Shares, the disclosures required here are not relevant as control of the Company will not change as a result of the Company's technical acquisition of a relevant interest in its own Shares. |
| **Interests of Directors in the acquisition or any of the above relevant agreements** | Please refer to section 5.3. | Please refer to section 5.3. |
| **Details of proposed Directors** | Please refer to section 5.4. | Please refer to section 5.4. |
| **Director recommendations** | Please refer to section 1. | Please refer to section 1. |
| **Independent Expert's Report** | Please refer to section 1. | Please refer to section 1. |

## 7. ASX Listing Rule approval requirements

### 7.1 Why is approval required?

Listing Rule 10.1 provides that an entity must ensure that neither it, nor any of its child entities, without the prior approval of the entity's shareholders acquires a substantial asset from, or disposes of a substantial asset to, amongst other persons, a substantial holder (holding voting power of 10% or more in the entity), one of its associates, or someone whose relationship with the entity is such that ASX is of the opinion that prior shareholder approval is required.

For the purposes of Listing Rule 10.1:

- 'Dispose' is defined as meaning to dispose, or agree to dispose, of something by any means, whether directly or through another person, and includes the use of an asset as collateral. Accordingly, the granting of the Short Term Loan Security to Murray Zircon and the Prepayment Facility Security to OZC in accordance with the Transactions is considered to be a disposal of an asset of the Company for the purposes of Listing Rule 10.1. In addition, the Offtake Agreement also involves an agreement to dispose of assets of the Company to OZC for the purposes of Listing Rule 10.1 (being 90% of the zircon products produced from the Core Tenements).
- An asset is 'substantial' if its value, or the value of the consideration for it, is 5% or more of the equity interests of the entity as set out in the latest accounts given to ASX under the ASX Listing Rules. The Short Term Loan Security and the Prepayment Facility Security will involve securities being granted over all of the Company's present and future property and therefore will amount to the 'disposal' of a substantial asset for the purposes of Listing Rule 10.1. Further, while the value of zircon to be sold to OZC under the Offtake Agreement is at this stage difficult to determine, it is likely to represent a significant part of the assets of the Company and therefore be a substantial asset for the purposes of Listing Rule 10.1.
- Although under the Transactions, both Murray Zircon and OZC will acquire voting power in the Company of up to 47%, at the time that Murray Zircon and OZC negotiated the terms of and agreed to enter into the Short Term Loan Agreement and Short Term Loan Security, the Prepayment Facility Agreement and Prepayment Facility Security, and the Offtake Agreement, neither party held a relevant interest in any Shares or voting power in the Company. Accordingly, the Board is of the view that those and all other Transaction Documents with Murray Zircon and OZC were negotiated at arm's length.

  However, ASX has determined that as the proposed security and offtake arrangements will be in place at a time during which Murray Zircon is a significant shareholder of the Company, the prior approval of Shareholders is required for the grant of the Short Term Loan Security and Prepayment Facility Security, and for the Offtake Agreement, for the purposes of Listing Rule 10.1.

Accordingly, Resolution 3 seeks the approval of Shareholders to the Company granting the Short Term Loan Security, Resolution 4 seeks the approval of Shareholders to the Company granting the Prepayment Facility Security and Resolution 5 seeks the approval of Shareholders to the Company entering into and performing the Offtake Agreement.

### 7.2 Specific information required by Listing Rule 10.10

As required by Listing Rule 10.10, the Notice contains a voting exclusion statement for each of Resolutions 3 to 5 and the Company has obtained the Independent Expert's Report for the purposes of Resolutions 3 to 5, further details of which are set out in sections 1 and 4.1 and a copy of which is attached to this Explanatory Memorandum as Annexure C.

## 8. Other material information

Other than as set out in this Notice, and other than information previously disclosed to Shareholders, there is no other information that is known to the Directors which may reasonably be expected to be material to the making of a decision by Shareholders whether or not to vote in favour of Resolutions 1 to 5.

## GLOSSARY

**ASIC** means **the** Australian Securities and Investments Commission**.**

**Asset Sale and Purchase Agreement** means the asset sale and purchase agreement entered into between the Company, Murray Zircon and OZC regarding the Company's acquisition of the Assets from Murray Zircon.

**Assets** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Associate** has the meaning given to that term in Part 1.2, Division 2 of the Corporations Act, except that a reference to "Associate" in relation to a Listing Rule has the meaning given to it in Listing Rule 19.12.

**ASX** means ASX Limited.

**Board** means the board of Directors of the Company.

**Chairman** means chairman of the Company.

**Company** or **Image** means Image Resources NL ACN 063 977 579**.**

**Completion** means completion of the Company's acquisition of the Assets in accordance with the Asset Sale and Purchase Agreement.

**Completion Shares** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Control Transaction** means a transaction which, if completed substantially in accordance with its terms, would result in a person other than Murray Zircon or any of its Associates:

(a) directly or indirectly acquiring a relevant interest or an economic interest in 20% or more of the Shares on issue or of the Company's share capital;

(b) directly or indirectly acquiring control of the Company;

(c) directly or indirectly acquiring or becoming the holder of all or a substantial portion of the business or assets of the Buyer; or

(d) otherwise acquiring or merging with the Buyer,

whether by way of takeover offer, scheme of arrangement, shareholder-approved acquisition, capital reduction, buy back, sale or purpose of shares or assets, joint venture, dual listed company structure (or other synthetic merger) or other transaction or other arrangement.

**Core Tenements** means the Company's tenements in the areas depicted in the map contained in Annexure B.

**Corporations Act** means the Corporations Act 2001 (Cth).

**Decision to Mine** has the meaning given to it in section 2 of Annexure A.

**Decision Period** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Deferred Shares** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Directors** mean the directors of the Company.

**Dry Plant Option** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Explanatory Memorandum** means this explanatory memorandum accompanying the Notice.

**First Production** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Funding Right** has the meaning given to it in section 3 of this Explanatory Memorandum.

**General Meeting** or **Meeting** means the meeting convened by the Notice.

**General Security Deed** means the general security deed to be entered into between the Company and Murray Zircon securing the Company's obligations under the Short Term Loan Agreement.

**Independent Expert** means RSM Financial Services Australia Pty Ltd.

**Independent Expert's Report** means the independent expert's report prepared by the Independent Expert annexed to the Notice as Annexure C.

**Listing Rules** means the Listing Rules of ASX.

**Mining Mortgage** means the mining mortgage to be provided by the Company to Murray Zircon to secure the Company's obligations under the Short Term Loan Agreement and the General Security Deed.

**Murray Zircon** means Murray Zircon Pty Ltd ACN 147 048 744.

**Murray Zircon Parties** means Murray Zircon, OZR, XQ Enterprises and OZC.

**Notice** or **Notice of General Meeting** means the notice of general meeting accompanying this Explanatory Memorandum.

**Offtake Agreement** means the offtake agreement for zircon products to be entered into between the Company and OZC at Completion under which OZC agrees to purchase 90% of the zircon products produced from the Core Tenements.

**Option** means an option to acquire a Share.

**OZC** means Guangdong Orient Zirconic Ind Sci & Tech Co., Ltd, a company incorporated in China.

**OZR** means Orient Zirconic Resources (Australia) Pty Ltd ACN 146 994 238, a wholly-owned subsidiary of OZC.

**Prepayment Facility Agreement** means the prepayment facility agreement to be entered into between the Company and OZC at Completion under which OZC will provide the Company with a US$8 million secured prepayment loan facility.

**Prepayment Facility Security** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Proxy Form** means the proxy form accompanying the Notice.

**Relevant Shareholders** means those persons who are registered as Shareholders at 5.00pm Perth time on the date Completion occurs.

**Resolution** means a resolution set out in the Notice.

**Restriction Period** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Share** means a fully paid ordinary share in the capital of the Company.

**Share Consideration Deed** means the share consideration deed to be entered into between the Company and Murray Zircon at Completion which provides for the issue of Completion Shares and the Deferred Shares to Murray Zircon and certain undertakings being provided by, and the Funding Right being granted by, Murray Zircon.

**Shareholder** means a holder of a Share.

**Short Term Loan Agreement** means the loan agreement to be entered into between the Company and Murray Zircon at Completion under which Murray Zircon will provide to the Company with a A$4 million secured loan.

**Short Term Loan Security** has the meaning given to it in section 3 of this Explanatory Memorandum.

**Superior Proposal** means a bona fide Control Transaction proposal which the Board, acting in good faith, determines is more favourable to Shareholders (as a whole) than the Transactions.

**Transaction Documents** means the Asset Sale and Purchase Agreement, the Share Consideration Deed, the Short Term Loan Agreement and Short Term Loan Security, the Prepayment Facility Agreement and Prepayment Facility Security, and the Offtake Agreement.

**Transactions** has the meaning given to it in section 1 of this Explanatory Memorandum.

**XQ Enterprises** means XQ (HK) Enterprises Limited, a company incorporated in Hong Kong.

## ANNEXURE A – SUMMARY OF MURRAY ZIRCON TRANSACTIONS

### 1. Asset Sale and Purchase Agreement

The Company, Murray Zircon and OZC entered into the Asset Sale and Purchase Agreement under which the Company will acquire the Assets.

The material terms of the Asset Sale and Purchase Agreement are:

- (**Conditions precedent**) The conditions precedent set out in section 3 of the Explanatory Memorandum must be satisfied or waived by 7 June 2016 (or such other date as agreed). If Resolutions 1 to 5 are approved by Shareholders and subject to any outstanding conditions precedent being satisfied or waived, Completion is to occur 10 business days after the date of the Meeting (or such later date as agreed).
- (**Consideration**) On Completion, in consideration for the Assets, Murray Zircon entering into the Short Term Loan Agreement and OZC entering into the Prepayment Facility Agreement and Offtake Agreement, the Company must deliver to Murray Zircon a counterpart of the Share Consideration Deed duly executed by the Company, pursuant to which it will issue to Murray Zircon the Completion Shares and, if a Decision to Mine is made during the Decision Period, the Deferred Shares. A summary of the key terms of the Share Consideration Deed is set out in section 2 of this Annexure A below.
- (**Delivery of Assets**) Murray Zircon must, before Completion, at its own cost dismantle the Assets and load them onto an accessible hardstand (excluding certain primary concentration plant structures which Murray Zircon will dismantle and load onto a hardstand or directly onto trucks at the time the Assets are collected by the Company), securely store the Assets, maintain the Assets in good repair and condition and in satisfactory working order, maintain insurance over the Assets and not dispose of or grant any encumbrances over the Assets.
- (**Completion**) At Completion, among other things:
  - the Company and Murray Zircon must arrange for the other Transaction Documents to be executed;
  - the Company will execute a deed poll in favour of Shareholders under which it will use all reasonable endeavours to procure the Board, after the Restriction Period, to allow the two largest Shareholders who are not related or associated to the Murray Zircon Parties to each have a representative on the Board for so long as they have voting power in the Company of 10% or more. The deed poll may only be terminated by a unanimous resolution of the Board passed more than 2 years after the end of the Restriction Period;
  - Murray Zircon must advance to the Company the A$4 million under the Short Term Loan Agreement; and
  - the Board will be reconstituted as set out in section 5.3 of the Explanatory Memorandum and implement agreed conflict of interest protocols for the Board;
- (**MZ employees**) The Company has agreed to offer employment to select employees of Murray Zircon conditional on Completion on agreed terms.
- (**Dry Plant Option**) Murray Zircon will at Completion grant the Company an option to acquire Murray Zircon's dry mineral separation plant, which is also currently located in Mindarie, South Australia, for an exercise price of A$12 million in cash, an equivalent amount of Shares or a combination of both (at the Company's election). The exercise of the Dry Plant Option is subject to approval of Shareholders (disregarding votes cast by Murray Zircon and its related parties and Associates).
- (**Termination rights**) The Company and Murray Zircon each have rights to terminate the Asset Sale and Purchase Agreement prior to Completion on the occurrence of the events described in section 3 of the Explanatory Memorandum.
- (**Break fee and matching rights**) A break fee of A$250,000 will be payable by the Company to Murray Zircon, or by Murray Zircon to the Company, if:
  - that party breaches the Asset Sale and Purchase Agreement in a material respect as a result of its direct actions or a material adverse change occurs in relation to it resulting in the termination of the Asset Sale and Purchase Agreement;
  - for the Company, either it has not complied with the matching rights referred to below or the Board changes its recommendation of the Transactions where the Independent Expert is of the opinion that the Transactions are either "fair and reasonable" or "not fair but reasonable", and Shareholders do not approve the Transactions; or
  - for Murray Zircon, Completion does not occur due to either a necessary Chinese regulatory approval for the Short Term Loan Agreement not being obtained, OZC breaching one of its warranties or the condition precedent requiring releases to be executed for outstanding encumbrances over the Assets not being satisfied.

  Subject to the Board's fiduciary and statutory duties, if the Company receives a Superior Proposal from a third party, the Company must:
  - not enter into an agreement in relation to that Superior Proposal and use reasonable endeavours to ensure the no Directors change their recommendation or publicly recommend the Superior Proposal unless the Company has given Murray Zircon 5 days' written notice of its intention to do so accompanied by the key terms and conditions of the Superior Proposal (but is not required to identify the person making the proposal);

- review in good faith any counterproposal received from Murray Zircon during those 5 days; and
- if the Board determines the counterproposal would be more favourable to Shareholders than the Superior Proposal, not enter into an agreement in relation to the Superior Proposal and use reasonable endeavours to agree amendments to the Transaction Documents reasonably necessary to reflect the counterproposal.

- (**Warranties, representations and undertakings**) The Company, Murray Zircon and OZC have each provided warranties and representations, and agreed to limitations on liability and certain pre-Completion undertakings, customary for a transaction of this nature.

**2. Share Consideration Deed**

At Completion, the Company and Murray Zircon will enter into the Share Consideration Deed under which the Company will issue the Completion Shares and the Deferred Shares to Murray Zircon and Murray Zircon will grant the Funding Right to the Company and provide certain undertakings.

The material terms of the Share Consideration Deed are:

- (**Completion Shares**) On execution of the Share Consideration Deed, the Company will issue the Completion Shares to Murray Zircon.
- (**Deferred Shares**) If a Decision to Mine is made during the Decision Period and Murray Zircon has not materially breached any of the Transactions Documents (or has remedied any such breach within agreed timeframes), then the Company will issue the Deferred Shares to Murray Zircon.

  A **Decision to Mine** is a decision approved by a majority of the Board to incur the required costs in connection with the construction of a mining and processing operation required to commence commercial production at one or more of the Company's projects on the Company's tenements in circumstances where:

  - as part of that decision the Board has approved a target date for the commencement of commercial production from the relevant project that must be no later than 18 months after the date the decision is made; and
  - the Company has received all authorisations necessary or desirable in relation to the financing, construction and commencement of mining, financing facilities in place and available for drawdown which are sufficient to fund all of the anticipated costs to take the project through to full-capacity production and negotiated, finalised and prepared for execution all material contracts necessary or desirable for the construction and commencement of mining, and the production of zircon products (or any other valuable heavy or other mineral) from the project or projects, provided that no such authorisation, funding agreement (including drawdown under any financing facility) or material contract (or execution of it) is conditional on the completion of due diligence by the counterparty to that arrangement or the completion of equity funding.
- (**Funding Right**) For a period of 12 months immediately after Completion, Murray Zircon is required, at the Company's election, to participate pro-rata in any new Company equity raisings, subject to obtaining Shareholder and any other necessary regulatory approvals. Murray Zircon may appoint a sub-underwriter for its share of any new equity raisings, subject to approval by the Company (which is not to be unreasonably withheld).

  Murray Zircon must procure that any government approvals required for its participation in such equity raisings are obtained in sufficient time, and that the conditions of any such approvals are complied with. ASX has also determined that Shareholder approval for the purposes of Listing Rule 10.11 will be required (unless an exception in Listing Rule 10.12 applies) for any issue of Shares, or agreement to issue Shares, to Murray Zircon under the Funding Right based on the shareholding it is expected to have at Completion.
- (**Undertakings**) Given the significance of Murray Zircon's shareholding in the Company immediately following Completion, Murray Zircon has agreed to provide certain undertakings in connection with its shareholding, including:
  - during the Restriction Period:
    - to vote in favour of resolutions put to Shareholders (other than resolutions relating to certain Control Transactions) that are recommended by a majority of the Board;
    - not to take any steps to influence or control the composition of the Board or the Company's management or policies, including calling, requisitioning or seeking support for the calling or requisitioning of a general meeting of Shareholders to appoint or remove a Director other than one of its Board nominees;
    - not to increase its voting power in the Company without the prior written consent of the Board (with its Board nominees excluded from participating in any such decision), except where a Shareholder meeting has been convened to consider a Board-recommended Control Transaction; and
    - to procure that its Board nominees do not participate in any decision of the Board in relation to the Transaction Documents or to replace any of the existing Directors who are to remain on the Board after Completion (or their subsequent replacements); and
  - for so long as Murray Zircon holds voting power in the Company of more than 20% and less than 90%:
    - during the Restriction Period it must ensure that there is at least one independent Director (as contemplated under the ASX Corporate Governance Principles and Recommendations) who must be chairman of the Board;

- after the Restriction Period it must ensure that there are at least two independent Directors, of which one is the chairman of the Board;
- procure that the Company complies with the deed poll mentioned in section 1 of this Annexure A above regarding the appointment of Board nominees and the dividend policy mentioned in section 5.3 of the Explanatory Memorandum; and
- notify the Company of any intention to sell any Shares in order to allow the Company an opportunity to propose alternative buyers of the Shares.

- (**Voluntary escrow**) Murray Zircon undertakes to comply with voluntary escrow restrictions to apply to the Completion Shares on customary terms during the Restriction Period, subject to the Company agreeing to allow Murray Zircon to:
  - accept into a takeover bid on condition holders of 50% of the remaining Shares have accepted into the bid (and if the bid doesn't become unconditional the escrow restrictions continue to apply) or the Shares to be transferred or cancelled as part of a merger by scheme of arrangement;
  - Murray Zircon to distribute the Shares pro-rata to its shareholders, OZR and XQ Enterprises, subject to those shareholders agreeing to be bound to the Share Consideration Deed as if they were Murray Zircon and OZC guaranteeing Murray Zircon's obligations under the Asset Sale and Purchase Agreement; and
  - Murray Zircon to grant security over the Shares for the purposes of its financing arrangements with the Bank of China and, if that security is enforced, for the financier to sell those Shares without the same restrictions that apply to Murray Zircon.
- (**Benefit held for Shareholders**) The undertakings in the "Undertakings" and "Voluntary escrow" bullets above are being provided by Murray Zircon to the Company, both for its own benefit and for the benefit of Relevant Shareholders, and where the Company does not enforce compliance with an undertaking, a Relevant Shareholder may step in and require that compliance.
- (**Chinese approvals**) Murray Zircon has undertaken to procure that any Chinese regulatory approvals necessary for Murray Zircon to comply with its obligations to acquire Shares under the Funding Right or for OZC to advance funds in accordance with the Prepayment Facility Agreement are obtained in time to ensure those obligations are complied with.

**3. Short Term Loan Agreement**

At Completion, the Company and Murray Zircon will enter into the Short Term Loan Agreement under which Murray Zircon will advance to the Company in full at Completion an amount of A$4 million.

The material terms of the Short Term Loan Agreement are:

- (**Use of funds**) The Company may only use the funds advanced for interim working capital purposes to progress the development activities for producing and selling zircon from the Core Tenements, and to meet all corporate costs, head office costs and maintenance costs incurred in connection with any tenements of the Company.
- (**Interest**) Interest is payable on the loan at a rate of 5% per annum accruing daily, to be paid half yearly in arrears, and default interest may be incurred if there is unpaid money due and payable to Murray Zircon.
- (**Repayment**) The loan is repayable upon first production of 20,000 wet tonnes of heavy mineral concentrates from the Core Tenements by the Company (**First Production**). Early repayment of the loan is allowed at any time with the approval of the Board (excluding Murray Zircon nominees), however such amounts repaid may not be redrawn.

  If the Company has not been advanced sufficient funds under the Prepayment Facility Agreement to repay the amount of principal outstanding on the loan (other than because the Company has not issued a drawdown notice), repayment of that outstanding principal will be deferred until those funds have been advanced and no further interest will accrue on the principal during that deferral.
- (**Forgiveness of loan**) The Company must use best endeavours to remove all obstacles to production from the Core Tenements as soon as reasonably practicable after, and within 3 years of, Completion. If despite using best endeavours, First Production is not achieved within 3 years of Completion, the loan will be forgiven. However, that 3 year deadline will be extended by, and to the extent of, any delay caused by the following:
  - it not being possible to achieve First Production on an economically viable basis within those initial 3 years;
  - conditions outside the Company's control materially delaying the Company from making a Decision to Mine in time to achieve First Production during the initial 3 years or preventing First Production occurring during that period even if a Decision to Mine is made;
  - circumstances being such that no independent board of directors, acting reasonably, would ever make a Decision to Mine in time for First Production to be achieved in that initial 3 years; or
  - a law or regulation or government approval requirement being introduced or changed which will result in a prohibition of the Company from developing tenements in time to achieve First Production in the initial 3 years.
- (**Security**) The Company's obligations under the Short Term Loan Agreement including to repay amounts owing under the loan will be secured by the Short Term Loan Security. A summary of the material terms of the Short Term Loan Security is set out in section 4 of this

Annexure A.

- (**Events of default**) The Short Term Loan Agreement contains events of default customary for this type of loan including:
  - the Company failing to pay amounts due under or otherwise breaching the Short Term Loan Agreement and that failure or breach not being remedied within agreed timeframes; and
  - the Company disposing of all, or substantially all, of its assets without Murray Zircon's consent.
- (**Project finance**) If the Company arranges project finance, Murray Zircon agrees to do all things reasonably necessary to permit the security arrangements for the project finance to have a higher ranking priority over the Short Term Loan Security.
- (**Representations, warranties and undertakings**) The Company has provided representations, warranties and undertakings customary for a loan of this nature.

**4. Short Term Loan Security**

To secure the Company's obligations under the Short Term Loan Agreement, at Completion the Company and Murray Zircon will enter into the General Security Deed under which the Company will grant a first-ranking charge over all of its present and after-acquired property. The parties will also enter into the Mining Mortgage on the same terms as the General Security Deed for the purpose of perfecting the security over the Core Tenements.

The General Security Deed and Mining Mortgage contain customary terms for securities of that nature including representations, warranties and undertakings to be given by the Company, events of default, and the powers of Murray Zircon on default. Those terms include:

- (**Dealing with secured property**) The Company must not deal with the secured property (including granting additional security interests over the property) except in the ordinary course of business (and for fair value in the case of certain revolving assets) or where the property is tenements that are not the Core Tenements. The Company has also undertaken to do certain things to preserve the secured property including paying all rates, fees and other charges on, comply with all work, expenditure and other conditions and obligations applicable to, and refrain from acts that will prejudice, the Core Tenements.
- (**Events of default**) The events of default in the General Security Deed and Mining Mortgage reflect those in the Short Term Loan Agreement above. If an event of default occurs, the A$4 million provided under the Short Term Loan Agreement becomes immediately payable without prior notice, and Murray Zircon has certain rights including to appoint a receiver or exercise any power of a receiver.
- (**Indemnity**) The Company indemnifies Murray Zircon in relation to claims, costs, liabilities, losses and expenses in relation to the Short Term Loan Security.

**5. Offtake Agreement**

At Completion, OZC and the Company will enter into the Offtake Agreement under which OZC will purchase 90% of the zircon products produced by the Company over life of mine from the Core Tenements.

The material terms of the Offtake Agreement are:

- (**Products**) OZC agrees to purchase, and the Company agrees to sell to OZC, 90% of saleable zircon produced by the Company from the Core Tenements.
- (**Term**) The Offtake Agreement is effective on and from Completion and will run until terminated in accordance with the termination rights below or by mutual agreement.
- (**Price**) Zircon products will be sold to OZC at a CIF price (on the International Chamber of Commerce's 2010 Cost, Insurance and Freight International Commercial Terms) determined quarter by quarter on a port of discharge basis as follows:
  - the price will be the weighted average FOB price receivable for binding contracted sales (including spot sales) for the Company's zircon products by product type to persons other than OZC and its related parties contracted over the 90 days immediately preceding the date of determination adjusted to cover the costs of CIF over FOB provided the quantity sold to such third parties is at least 5% of the overall production of zircon products by product type during that 90 day period;
  - if there are insufficient sales to meet the 5% threshold above, then the price is to be the most current market price quoted in the TZ Minerals International Pty Ltd Zircon Quarter by Quarter Data Report adjusted for product grade, for zircon sourced from Australia and imported by China adjusted to cover the costs of CIF over FOB. TZ Minerals International Pty Ltd is a leading provider of product pricing information for mineral sands products; and
  - in the event a price cannot be determined under the above two bullets and the parties are unable to agree another market price determination method, the parties are to appoint TZ Minerals International Pty Ltd or another mutually agreed expert to make a determination of the price which determination shall be binding on the Company and OZC.
- (**Termination**)
  - The Company may terminate the Offtake Agreement if it finds an alternative third party for at least 90% of zircon products over at least 5 years at a higher price that OZC is unwilling or unable to match.

- Either party may terminate the Offtake Agreement for unremedied financial and non-financial defaults (the latter subject to force majeure provisions), or if First Production has not occurred within 7 years of Completion.

- (**Sale of tenements**) The Company's ability to sell a right or interest in a Core Tenement is subject to OZC exercising a first right of refusal to purchase zircon products from the third party on the terms of the Offtake Agreement.

- (**Third party financiers**) OZC agrees to act in good faith to facilitate the reasonable commercial requirements of any third party provider of project-recourse debt obtained by the Company to fund development costs within the North Perth Basin Project.

**6. Prepayment Facility Agreement**

At Completion, the Company and OZC will enter into the Prepayment Facility Agreement under which OZC will, from First Production occurring, provide the Company with a secured US$8 million loan facility which will assist in ensuring the Company is adequately funded for the ramp-up of production.

The materials terms of the Prepayment Facility Agreement are:

- (**Conditions to drawdown**) OZC's obligation to advance funds to the Company under the facility is conditional on the following being satisfied or waived:
  - First Production occurring;
  - OZC being satisfied that no material adverse change has occurred in relation to the Company's business, assets or financial performance;
  - for the first drawdown, the Company providing to OZC a certified copy of its operational plans and budget for the first 12 months of scheduled production;
  - the Company providing the Prepayment Facility Security; and
  - other customary conditions for a facility of this nature.
- (**Use of funds**) The Company may only use the funds advanced under the facility for the purpose of funding exploration and development of, and planned future production from, its Core Tenements (including capital expenditure and working capital), as well as repaying the loan under the Short Term Loan Agreement. OZC's consent is required to use funds for exploration activities.
- (**Availability of facility**) The facility will end on the third anniversary of First Production occurring.
- (**Interest**) Interest is payable on drawdowns at a rate of 9% per annum accruing daily, to be paid quarterly in arrears, and default interest may be incurred if there is unpaid money due and payable to OZC.
- (**Repayment**) Amounts outstanding under the Prepayment Facility Agreement must be repaid within 5 years of First Production. Early repayment of amounts drawn down is allowed at any time by cash payment or the issue of a credit invoice for zircon products delivered to OZC pursuant to the Offtake Agreement. However, amounts repaid early may not be redrawn under the facility.
- (**Security**) The Company's obligations under the Prepayment Facility Agreement including to repay amounts owing under the facility will be secured by the Prepayment Facility Security. A summary of the key terms of the Prepayment Facility Security are set out below.
- (**Events of default**) The Prepayment Facility Agreement contains events of default customary for this type of facility including:
  - the Company failing to pay amounts due under the facility or breaching the Prepayment Facility Agreement or the Prepayment Facility Security and that failure or breach not being remedied within agreed timeframes;
  - the Company defaulting on payment of present or future monetary obligations exceeding US$250,000, or an encumbrance becomes enforceable against the Company in respect of an amount exceeding US$250,000 (except where the Company is disputing the default or obligation in good faith); and
  - any event or series of events occurs, whether related or not, which in the opinion of OZC has had, or could reasonably be expected to have, a material adverse effect on the Company's business, assets or financial performance.
- (**Project finance**) If the Company arranges project finance, OZC agrees to do all things reasonably necessary to permit the security arrangements for the project finance to have a higher ranking priority over the Prepayment Facility Security.
- (**Representations, warranties and undertakings**) The Company has provided representations, warranties and undertakings customary for a facility of this nature, including an undertaking to comply with its obligations under the Offtake Agreement.

**7. Prepayment Facility Security**

The Prepayment Facility Security will comprise a general security deed and mining mortgage on the same terms as the Short Term Loan Security. The key terms of the Short Term Loan Security are summarised in section 4 of this Annexure A above. The Prepayment Facility Security will only secure the Company's obligations under the Prepayment Facility Agreement. The Prepayment Facility Security will only remain in place until the prepayment facility is no longer available for drawdown and has been repaid in full.

### 8. Waivers, variations and consents

The Company may not waive or vary, or agree to any waiver or variation, of a provision of any of the Transaction Documents, nor provide any consent under any of the Transaction Documents, after Completion without the waiver, variation or consent being approved by:

- a unanimous resolution of the Board (disregarding any votes cast by Directors whose votes must be disregarded under any of the Transaction Documents, the conflict policy mentioned in section 1 of this Annexure A or by law); or
- an ordinary resolution of Shareholders where any votes cast by Murray Zircon or persons associated or related with it must be disregarded.

## ANNEXURE B – CORE TENEMENTS

6,650,000 mN

6,600,000 mN

6,550,000 mN

350,000 mE

400,000 mE

JURIEN BAY

CERVANTES

LANCELLIN

LEDGE POINT

GUILDERTON

YANCHEP

MOORA

GINGIN

MUCHEA

*Helene*

*Hyperion*

**M70/1305***

*Cooljarloo*

*Atlas*

**P70/1516**

**COOLJARLOO**

**E70/3997**

**E70/3966**

**QUINNS HILL**

**M70/1192**

**E70/3100**

*Red Gully*

*Bidaminna*

**E70/4077**

**M70/1311**

**E70/3720**

**E70/3192**

**RED GULLY**

*Boonanarring*

**G70/0250**

**E70/3041**

**M70/1194**

**E70/3041**

**M70/1193**

**E70/4689**

*Gingin North*

**E70/3192**

**E70/3192**

**E70/3494**

**E70/3032**

**M70/0448**

**GINGIN**

*Gingin South*

BRAND HIGHWAY

LANCELIN ROAD

WANNEROO ROAD

THE MIDLANDS ROAD

BINDOON MOORA ROAD

Image Key Tenements

Image HM Resources

* M70/1305 is an application only and not a granted tenement

0 10 20

kilometres

**NORTH PERTH BASIN**
**KEY TENEMENTS**

Drawn: TD Date: 25/02/2016 Scale:

Workspace: NPB056 - Key Tenements.wor

image resources

## ANNEXURE C – INDEPENDENT EXPERT'S REPORT

# IMAGE RESOURCES NL

Financial Services Guide and Independent Expert Report – April 2016

**We have concluded that:**

**The Proposed Transaction is Not Fair but Reasonable to Shareholders of Image Resources NL.**

**The issue of the Security is Fair and Reasonable to Shareholders of Image Resources NL.**

**The Offtake is Fair and Reasonable to Shareholders of Image Resources NL.**

# FINANCIAL SERVICES GUIDE

4 April 2016

RSM Financial Services Australia Pty Ltd ABN 22 009 176 354 AFSL 238 282 ("RSM Financial Services Australia Pty Ltd" or "we" or "us" or "ours" as appropriate) has been engaged to provide general financial product advice in the form of an independent expert's report to be provided to you.

In the above circumstances we are required to issue to you, as a retail client, a Financial Services Guide ("FSG"). This FSG is designed to help retail clients make a decision as to their use of our services and to ensure that we comply with our obligations as a financial services licensee.

This FSG includes information about:

- who we are and how we can be contacted;
- the financial services that we will be providing to you under our Australian Financial Services Licence, Licence No 238282;
- remuneration that we and/or our staff and any associates receive in connection with the financial services that we will be providing to you;
- any relevant associations or relationships we have; and
- Our complaints handling procedures and how you may access them.

## Financial services we will provide

For the purpose of our report and this FSG, the financial service which we will be providing to you is the provision of general financial product advice in relation to securities.

We provide financial product advice by virtue of an engagement to issue a report in connection with a financial product of another person. Our report will include a description of the circumstances of our engagement and identify the person who has engaged us. You will not have engaged us directly but will be provided with a copy of the report as a retail client because of your connection to the matters in respect of which we have been engaged to report.

Any report we provide is provided on our own behalf as a financial services licensee authorised to provide the financial product advice contained in the report.

## General Financial Product Advice

In our report we provide general financial product advice, not personal financial product advice, because it has been prepared without taking into account your personal objectives, financial situation or needs.

You should consider the appropriateness of this general advice having regard to your own objectives, financial situation and needs before you act on the advice. Where the advice relates to the acquisition or possible acquisition of a financial product, you should also obtain a product disclosure statement relating to the product and consider that statement before making any decision about whether to acquire the product.

## Benefits that we may receive

We charge various fees for providing various different financial services. However in respect of the financial services being provided to you by us, fees will be agreed with, and paid by, the person who engages us to provide the report and such fees will be agreed on either a fixed fee or time cost basis.. You will not pay to us any fees for our services; the Company will pay our fees. These fees are disclosed in the Report.

Of the fee we receive RSM Financial Services Australia Pty Ltd will retain 5% for the provision of licensing services and transfer 95% to RSM Australia. For example if RSM Financial Services Australia Pty Ltd were to be paid $50,000, we would retain $2,500 and pay $47,500 to RSM Australia.

Except for the fees referred to above, neither RSM Financial Services Australia Pty Ltd, nor any of its directors, employees or related entities, receive any pecuniary benefit or other benefit, directly or indirectly, for or in connection with the provision of the report.

## Remuneration or other benefits received by our employees

All of our employees who provide or provided services in relation to the financial services being provided to you receive a salary. However, other employees of RSM Financial Services Australia Pty Ltd may be remunerated in other ways, such as salaries with the entitlement to earn a bonus, depending on meeting revenue, compliance and marketing targets throughout any given financial year. Such other remuneration structures are not relevant to the financial services being provided to you.

## Referrals

We do not pay commissions or provide any other benefits to any person for referring customers to us in connection with the reports that we are licensed to provide.

## Associations and relationships

RSM Financial Services Australia Pty Ltd is wholly owned by the partners of RSM Australia, a large national firm of chartered accountants and business advisers. Our directors are partners of RSM Australia Partners.

From time to time, RSM Financial Services Australia Pty Ltd, RSM Australia Partners, RSM Australia and / or RSM related entities may provide professional services, including audit, tax and financial advisory services, to financial product issuers in the ordinary course of its business.

## Complaints Resolution

*Internal complaints resolution process*

As the holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints should be directed to The Complaints Officer, RSM Financial Services Australia Pty Ltd, PO Box R1253, Perth, WA, 6844, +61 (0) 8 9261 9100

When we receive a complaint we will record the complaint, acknowledge receipt of the complaint within 15 days and investigate the issues raised. As soon as practical, and not more than 45 days after receiving the written complaint, we will advise the complainant in writing of our determination.

*Referral to External Dispute Resolution Scheme*

A complainant not satisfied with the outcome of the above process, or our determination, has the right to refer the matter to the Financial Ombudsman Service ("FOS"). FOS is an independent company that has been established to provide free advice and assistance to consumers to help in resolving complaints relating to the financial services industry.

Further details about FOS are available at the FOS website or by contacting them directly via the details set out below.

Financial Ombudsman Service
GPO Box 3
Melbourne VIC 3001
Toll Free: 1300 78 08 08
Facsimile: (03) 9613 6399
Email: info@fos.org.au

## Contact Details

You may contact us using the details set out at the top of our letterhead on page 1 of this report

# Independent Expert's Report

TABLE OF CONTENTS Page


1. Introduction ..... 5
2. Summary and Conclusion – Proposed Transaction ..... 8
3. Summary and Conclusion – the Security ..... 11
4. Summary and Conclusion – the Offtake ..... 12
5. Summary of Transaction ..... 13
6. Scope of the Report ..... 16
7. Profile of IMA ..... 19
8. Profile of Murray Zircon and Orient Zirconic ..... 24
9. Industry Profile ..... 26
10. Valuation Approach ..... 27
11. Valuation of IMA Prior to the Proposed Transaction ..... 30
12. Valuation of IMA Following the Proposed Transaction ..... 36
13. Is the Proposed Transaction Fair to IMA Shareholders ..... 39
14. Is the Proposed Transaction Reasonable ..... 40

Appendix 1 – Declarations and Disclaimers

Appendix 2 – Sources of Information

Appendix 3 – Glossary of Terms

Appendix 4 – Calculation of Weighted Average Cost of Capital

Appendix 5 – Specialist Report – CSA Global Pty Ltd

Direct Line: (08) 9261 9447
Email: andy.gilmour@rsmi.com.au

4 April 2016

Shareholders
Image Resources NL
Ground Floor
23 Ventnor Avenue
WEST PERTH WA 6005

Dear Shareholders

## Independent Expert's Report ("Report")

## 1. Introduction

1.1. This Independent Expert's Report (the "Report" or "IER") has been prepared for inclusion in a Notice of General Meeting to shareholders for a General Meeting of Image Resources NL ("IMA" or "the Company") to be held on or around 12 May 2016, at which shareholder approval will be sought for various transactions with Murray Zircon Pty Ltd ("Murray Zircon") and its major shareholder, Guangdong Orient Zirconic Ind Sci & Tech Co. ("Orient Zirconic"), which include the following ("Proposed Transaction"):

- The acquisition by IMA of a wet concentration plant together with certain ancillary equipment which have been operated by Murray Zircon;
- The completion of an offtake agreement with Orient Zirconic for 90% of all zircon products produced by IMA from its core tenements ("Offtake");
- Murray Zircon to provide, for draw down at completion of the acquisition ("Completion"), a short term loan in an amount of A$4 million. Security will be granted by IMA to Murray Zircon to secure IMA's obligations under the loan;
- Upon first production, Orient Zirconic will provide a US$8 million cash prepayment facility for zircon products. Security will be granted to Orient Zirconic to secure IMA's obligations under the prepayment facility on the same terms as the security granted to Murray Zircon (the security granted to Murray Zircon and Orient Zirconic is referred to as "the Security" throughout this document);
- Murray Zircon will receive 42% of the expanded issued capital of IMA at Completion ("Completion Shares"). If a decision to mine is reached within two years of Completion (or three years if a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first two years) and project finance is secured then Murray Zircon will receive additional shares to reflect a total interest of 47% in the expanded issued capital of IMA based on IMA's issued capital at Completion ("Deferred Shares");
- IMA's board will be reconstituted to comprise three directors nominated by IMA, three directors nominated by Murray Zircon and an independent chairman;

- At IMA's election, Murray Zircon will be required to participate on a pro-rata basis in accordance with its equity interest, in any capital raisings undertaken by IMA in the 12 months after Completion; and
- Subject to agreed exceptions, Murray Zircon will be subject to various restrictions for two years (or until a decision to mine is reached, if this occurs earlier) ("the Restriction Period"), including restrictions on increasing its percentage interest in IMA, restrictions on any sale or transfer of its interest in IMA and Murray Zircon will not take steps to influence or control the composition of the Board or the management or policies of IMA.

1.2. As a result of issue of the Completion Shares, Murray Zircon will obtain a 42% interest in the expanded issued capital of IMA at Completion. Subsequent to the issue of the Deferred Shares, Murray Zircon's interest will increase to up to 47% of the expanded issued capital of IMA. In accordance with Item 7, Section 611 of the Corporations Act ("the Act"), shareholder approval is required if a shareholder increases its interest from below 20% to above 20%.

1.3. As a result of the restrictions placed on Murray Zircon's interest in IMA, IMA will acquire a technical "relevant interest" in the Completion Shares held by Murray Zircon because the Company will have the capacity to exercise negative control over the disposal of, and the right to vote attaching to, those shares. When considering the substance of the Proposed Transaction and IMA's "relevant interest" in the shares held by Murray Zircon, we have only considered the Proposed Transaction as it relates to the issue of shares to Murray Zircon. Due to the interrelated nature of the Proposed Transaction, our opinion on the fairness and reasonableness of IMA's relevant interest in its own shares would be the same as that of the Proposed Transaction.

1.4. In addition, ASX Listing Rule 10.1 states that an entity must ensure that neither it, nor any of its child entities, acquires a substantial asset from, or disposes of a substantial asset to, a substantial shareholder or any of its associates without the approval of holders of the entity's ordinary securities.

1.5. Assets offered as security are considered to have the potential to be transferred because a call can be made for those assets. The ASX has determined that shareholder approval will be necessary for the issue of the Security.

1.6. Also, the Offtake could be considered to involve the disposal of a substantial asset of IMA given the potential value of the product to IMA. Again, the ASX has determined that shareholder approval is required for IMA to enter into and perform the Offtake.

1.7. The Directors of IMA have requested that RSM Financial Services Australia Pty Ltd ("RSM FSA"), being independent and qualified for the purpose, express an opinion as to whether the Proposed Transaction, the issue of the Security and the Offtake are fair and reasonable to shareholders who are not a party, or associated to a party, to the Proposed Transaction ("Non-Associated Shareholders"). We have considered each of these transactions in isolation and provide three separate opinions.

1.8. The request for approval of the Proposed Transaction, the Security and the Offtake are included as Resolutions 1 to 5 in the Notice of General Meeting. We have restated these resolutions below (with certain capitalised terms having the meaning given to them in the Glossary in the Notice of General Meeting):

Resolution 1:

*"That, subject to the passing of Resolutions 2 to 5 (inclusive) and for the purposes of item 7 of section 611 of the Corporations Act and all other purposes, approval is given for the Company to issue to Murray Zircon, and for each Murray Zircon Party to acquire a relevant interest in:*

*(a) the Completion Shares to be issued to Murray Zircon on completion of the Company's acquisition of the Assets; and*

*(b) the Deferred Shares to be issued to Murray Zircon if a Decision to Mine occurs during the Decision Period,*

*and, as a result, for the Murray Zircon Parties and their Associates to acquire voting power in the Company of up to 47% on the terms and conditions set out in the Explanatory Memorandum.*

Resolution 2:

*"That, subject to the passing of Resolutions 1, 3, 4 and 5 and for the purposes of item 7 of section 611 of the Corporations Act and all other purposes, approval is given for the Company to acquire a relevant interest in its own Shares as a result of the restrictions imposed on Murray Zircon under the Share Consideration Deed in respect of the Completion Shares during the Restriction Period, and, as a result, for the Company to acquire voting power in the Company of up to 42% on the terms and conditions set out in the Explanatory Memorandum.*

Resolution 3:

*"That, subject to the passing of Resolutions 1, 2, 4 and 5 and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to grant security in favour of Murray Zircon in accordance with the terms of the Short Term Loan Security, described in more detail in the Explanatory Memorandum."*

Resolution 4:

*"That, subject to the passing of Resolutions 1, 2, 3 and 5 and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to grant security in favour of OZC in accordance with the terms of the Prepayment Facility Security, described in more detail in the Explanatory Memorandum."*

Resolution 5:

*"That, subject to the passing of Resolutions 1 to 4 (inclusive) and for the purposes of ASX Listing Rule 10.1 and all other purposes, approval is given for the Company to enter into and perform the Offtake Agreement, described in more detail in the Explanatory Memorandum."*

1.9. The ultimate decision whether to approve the Proposed Transaction should be based on each Shareholder's assessment of their circumstances, including their risk profile, liquidity preference, tax position and expectations as to value and future market conditions. If in doubt as to the action they should take with regard to the Proposed Transaction, or the matters dealt with in this Report, Shareholders should seek independent professional advice.

1.10. Our assessment of the Proposed Transaction, the Security and the Offtake is based on economic, market and other conditions prevailing at the date of this Report.

## 2. Summary and Conclusion – Proposed Transaction

### Opinion

2.1. In our opinion, and for the reasons set out in Sections 13 and 14 of this Report, the Proposed Transaction is **not fair but reasonable** to the Non-Associated Shareholders of IMA.

### Approach

2.2. In assessing whether the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders, we have considered Australian Securities and Investment Commission ("ASIC") Regulatory Guide 111 – Content of Expert Reports ("RG 111"), which provides specific guidance as to how an expert is to appraise transactions.

2.3. Where an issue of shares by a company otherwise prohibited under section 606 of the Act is approved under item 7 of section 611, and the effect on the company shareholding is comparable to a takeover bid, such as the Proposed Transaction, RG 111 states that the transaction should be analysed as if it was a takeover bid.

2.4. Therefore we have considered whether or not the Proposed Transaction is "fair" to the Non-Associated Shareholders by assessing and comparing:

- The Fair Value of a share in IMA on a control basis pre the Proposed Transaction; with
- The Fair Value of a share in IMA on a non-control basis immediately post completion of the Proposed Transaction,

and, considered whether the Proposed Transaction is "reasonable" to the Non-Associated Shareholders by undertaking an analysis of the other factors relating to the Proposed Transaction which are likely to be relevant to the Non-Associated Shareholders in their decision of whether or not to approve the Proposed Transaction.

2.5. Further information of the approach we have employed in assessing whether the Proposed Transaction is "fair and reasonable" is set out at Section 6 of this Report.

## Fairness

2.6. Our assessment values of an IMA share prior to and immediately after the Proposed Transaction, are summarised in the table and figures below.

| | | Value per Share | |
|---|---|---|---|
| **Assessment of fairness** | **Ref** | **Low** | **High** |
| Fair value of a IMA share pre the Proposed Transaction - Control basis | 11.29 | $0.052 | $0.112 |
| Fair value of a IMA share post the Proposed Transaction - Non controlling basis | 12.1 | $0.044 | $0.095 |

**Table 1: Assessed value of IMA share pre and post the Proposed Transaction (Source: RSM FSA analysis)**

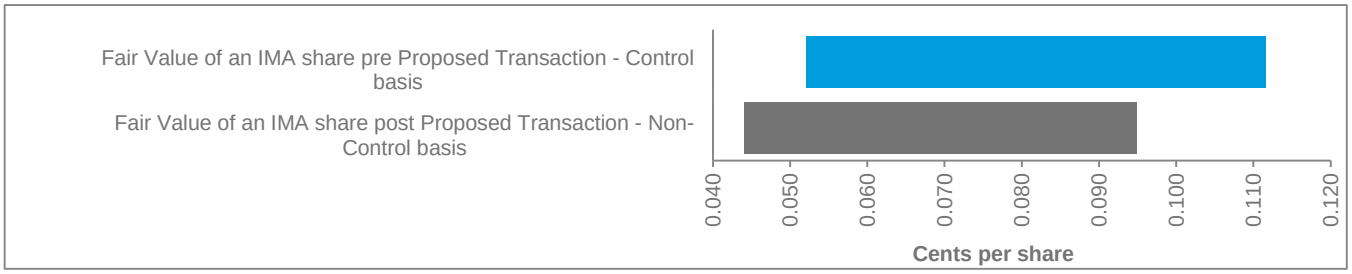



**Figure 1: IMA Share Valuation Graphical Representation (*Source: RSM FSA Analysis)***

2.7. In accordance with the guidance set out in ASIC RG 111, and in the absence of any other relevant information, for the purposes of Section 611, Item 7 of the Corporations Act 2001, we consider the Proposed Transaction to be not fair to the Non-Associated Shareholders of IMA, as the range of values of an IMA share post the Proposed Transaction is lower than the range of values of a IMA share pre the Proposed Transaction.

## Reasonableness

2.8. RG 111 establishes that an offer is reasonable if it is fair. It might also be reasonable if, despite not being fair, there are sufficient reasons for security holders to accept the offer in the absence of any superior alternative before the offer closes. As such, we have also considered the following factors in relation to the reasonableness aspects of the Proposed Transaction:

- The future prospects of the Company if the Proposed Transaction does not proceed; and
- Any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

2.9. IMA requires plant and equipment similar to the plant and equipment being acquired as part of the Proposed Transaction to develop its mineral sands projects. If the Proposed Transaction does not proceed then IMA will be required to source alternative new or used equipment. Further, IMA would need to source sufficient funds or issue equity to acquire any necessary plant and equipment.

2.10. The key advantages of the Proposed Transaction are:

- IMA will secure necessary equipment for its mineral sands projects;
- Experienced Board and management will join IMA;
- IMA will secure an offtake partner for its product at market rates;

- The Proposed Transaction will result in secured short term financing; and
- The Proposed Transaction will allow for additional short to medium term financing in a 12 month commitment to future capital raisings and a prepayment facility available on first production.

2.11. The key disadvantages of the Proposed Transaction are:

- The Proposed Transaction will result in Non-Associate Shareholders' interests in IMA being diluted;
- The existing composition of the Board will change to include three directors nominated by Murray Zircon, three directors nominated by IMA and one independent director;
- IMA will require additional plant and equipment post the Proposed Transaction;
- IMA will require additional finance post the Proposed Transaction;
- IMA will incur the cost of transporting the equipment to the project area when required; and
- If there is a default of the terms of the Short Term Loan Agreement, IMA will need to repay the short term debt. We note that, if there is no default, this debt would only need to be repaid upon First Production. See paragraph 14.19 for more detail.

2.12. We are not aware of any alternative proposals which may provide a greater benefit to the Non-Associated Shareholders of IMA at this time.

2.13. In our opinion, the position of the Non-Associated Shareholders of IMA if the Proposed Transaction is approved is more advantageous than if the Proposed Transaction is not approved. Therefore, in the absence of any other relevant information and/or a superior offer, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of IMA.

## 3. Summary and Conclusion – the Security

### Opinion

3.1. In our opinion, the issue of the Security is fair and reasonable to the Non-Associated Shareholders of IMA.

### Fairness

3.2. The Security is limited to the value of the debt owed to Murray Zircon and Orient Zirconic, plus other amounts otherwise owed to Murray Zircon and Orient Zirconic. As such, Murray Zircon or Orient Zirconic will not receive any value from the Security that is greater than the debt owing to them. For the purpose of our analysis we have not considered any additional interest charges or additional amounts that may become payable as the quantum of such is not predictable and not material to our opinion of fairness.

3.3. In accordance with the guidance set out in RG 111 issued by ASIC, and in the absence of any other relevant information, for the purpose of ASX Listing Rule 10.1, we consider the issue of the Security to be fair to the Non-Associated Shareholders of IMA, as the value of the Security cannot be greater than the value of the debt owed to Murray Zircon and Orient Zirconic.

### Reasonableness

3.4. RG 111 establishes that a transaction is reasonable if it is fair. It might also be reasonable if, despite not being fair, there are sufficient reasons for the security holders to approve the transaction in the absence of a superior alternative. In assessing the reasonableness of Security, we have considered the following factors in our assessment:

- The future prospects of the Company if the Security is issued; and
- Any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of issuing the Security.

3.5. The issue of the Security is a condition of the Proposed Transaction. If the issue of the Security is not approved, then the Proposed Transaction will not proceed and the Company will need to source plant from another supplier and finance from alternative parties.

3.6. We consider the key advantages of issuing the Security to be as follows:

- The issue of the Security is fair; and
- The issue of the Security allows the Proposed Transaction to take place which will allow IMA to obtain necessary plant and equipment to develop its projects and access short to medium term finance.

3.7. The key disadvantage of issuing the Security is:

- If, in an event of default by IMA, Murray Zircon or Orient Zirconic enforce the Security, then some or all of IMA's assets may be sold (to the extent required to enable Murray Zircon or Orient Zirconic to recover the debt) and IMA may not be left with any operating assets.

3.8. In our opinion, the position of the Non-Associated Shareholders of IMA if the Security is issued is more advantageous than if the Security is not issued. Therefore, in the absence of any other relevant information and/ or a superior transaction, we consider that the issue of the Security is reasonable for the Non-Associated Shareholder of IMA.

3.9. Non-Associated Shareholders should have particular regard to the potential advantages and disadvantages set out above in the context of their own risk profile and investment strategy.

## 4. Summary and Conclusion – the Offtake

### Opinion

4.1. In our opinion, the Offtake is fair and reasonable to the Non-Associated Shareholders of IMA.

### Fairness

4.2. The price to be paid by Orient Zirconic under the terms of the Offtake will be based on market prices achieved by IMA or recorded in the TZ Minerals International Pty Ltd Zircon Quarter by Quarter Data Report.

4.3. In accordance with the guidance set out in RG 111 issued by ASIC, and in the absence of any other relevant information, for the purpose of ASX Listing Rule 10.1, we consider the Offtake to be fair to the Non-Associated Shareholders of IMA, as the value of the Offtake is based on market rates. This means that the price IMA will receive for its product will be equivalent to a price it could achieve on the open market.

### Reasonableness

4.4. RG 111 establishes that a transaction is reasonable if it is fair. It might also be reasonable if, despite not being fair, there are sufficient reasons for the security holders to approve the transaction in the absence of a superior alternative. In assessing the reasonableness of the Offtake, we have considered the following factors in our assessment:

- The future prospects of the Company if the Offtake; and
- Any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Offtake.

4.5. The Offtake is a condition of the Proposed Transaction. If the Offtake is not approved, then the Proposed Transaction will not proceed and the Company will need to source plant from another supplier and finance from alternative parties.

4.6. We consider the key advantages of the Offtake to be as follows:

- The Offtake is fair; and
- The Offtake guarantees a buyer for IMA's product;
- The Offtake allows the Proposed Transaction to take place which will allow IMA to obtain necessary plant and equipment to develop its projects and access short to medium term finance.

4.7. In our opinion, the position of the Non-Associated Shareholders of IMA if the Offtake is approved is more advantageous than if the Offtake is not approved. Therefore, in the absence of any other relevant information and/ or a superior transaction, we consider that the Offtake is reasonable for the Non-Associated Shareholder of IMA.

4.8. Non-Associated Shareholders should have particular regard to the potential advantages and disadvantages set out above in the context of their own risk profile and investment strategy.

## 5. Summary of Transaction

### Overview

5.1. IMA has entered into an Asset Sale and Purchase Agreement, and at Completion will enter into the following agreements, with Murray Zircon and/or Orient Zirconic:

- Share Consideration Deed
- Short Term Loan Agreement
- Zircon Products Offtake Agreement
- Zircon Products Prepayment Facility Agreement
- General Security Deed
- Mining Mortgage
- Director Appointment Deed Poll

5.2. These agreements are summarised below:

*Asset Sale and Purchase Agreement*

- Under this agreement IMA has agreed to acquire the wet concentration plant and certain ancillary equipment which has been operated by Murray Zircon.
- Consideration for the sale of the assets, Murray Zircon agreeing to enter into the Short Term Loan Agreement and Orient Zirconic agreeing to enter into the Offtake and Prepayment Facility Agreement is the issue of the Completion Shares and Deferred Shares.

*Share Consideration Deed*

- On Completion IMA must issue the equivalent of 42% of the expanded issue capital of IMA shares to Murray Zircon which will be placed in escrow for the Restriction Period.
- If a decision to mine occurs within two years of Completion (or three years if a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first two years), IMA will issue an additional interest in IMA which is the equivalent of 5% of the expanded issued capital of IMA at Completion to Murray Zircon.

*Short Term Loan Agreement*

- Under this agreement Murray Zircon will provide IMA with a loan facility of $4 million with a 5% interest rate per annum. The loan must be repaid once production first reaches 20,000 wet tonnes of heavy mineral concentrates from IMA's core tenements ("First Production").

*Zircon Products Offtake Agreement*

- This agreement outlines that IMA agrees to sell, and Orient Zirconic agrees to purchase, 90% of the zircon products produced by IMA from its core tenements.

- The price of zircon products sold under this agreement will be based on an FOB market price determined and fixed on a quarterly basis and adjusted to reflect CIF. If IMA sells at least 50% of its product not subject to the Offtake in a quarter, market price will be determined by prices received by IMA from purchasers other than Orient Zirconic in the quarter prior to the quarter in which the price is being set. If IMA does not sell at least 50% of its product that is not subject to the Offtake in the quarter prior to the quarter where a price is being established, the market price is based on the TZ Minerals International Pty Ltd Zircon Quarter by Quarter Data Report.

- The zircon products will be delivered to Port of Shantou, Guangdong China or other ports as advised by Orient Zirconic.

*Zircon Products Prepayment Facility Agreement*

- Orient Zirconic has agreed to provide an US$8 million prepayment facility to IMA.

- The annual interest rate charged on the facility will be 9% simple interest per annum.

- The facility will be available for drawdown from First Production for a period of three years and repayable within five years.

- IMA's obligations under this agreement and the Offtake, including to pay amounts owing to Orient Zirconic, will be secured by a general security deed and mining mortgage on the same terms as the General Security Deed and the Mining Mortgage mentioned below and will remain in place until the facility is no longer available for drawdown and has been repaid in full.

*General Security Deed*

- The General Security Deed states that IMA's obligations under the Short Term Loan Agreement, including payment of amounts owing to Murray Zircon under that agreement, are to be secured against all the assets held by IMA. Other costs incurred by Murray Zircon on behalf of IMA and any other charges deemed relevant by Murray Zircon can also be captured under the General Security Deed. As such, although it is specific to the Short Term Loan Agreement, it is possible that additional amounts owed to Murray Zircon could be captured under the security deed.

- The Security could be called if IMA is unable to meet its obligations to Murray Zircon or an event of default occurs. The repayment of the Murray Zircon loan is due on the date of First Production. Key events of default include the sale of all or substantially all of IMA's assets or the appointment of external administrators.

*Mining Mortgage*

- The Mining Mortgage is in favour of Murray Zircon and secures IMA's obligations in the Short Term Loan Agreement, including payment of amounts owing under that agreement, over IMA's core tenements.

*Director Appointment Deed Poll*

- Under this deed, after the Restriction Period, IMA will use all reasonable endeavours to procure the Board to appoint nominees of IMA's two largest shareholders holding an interest greater than 10% and who are not associated with Murray Zircon or Orient Zirconic.

## Rationale for the Proposed Transaction

5.3. The Proposed Transaction will result in IMA obtaining necessary plant and equipment, short term financing and relevant experience to progress the development of its key mineral sands projects.

## Impact of the Proposed Transaction on IMA's Capital Structure

5.4. The Proposed Transaction will result in Murray Zircon holding an initial interest in IMA of 42%.

5.5. The table below sets out a summary of the capital structure of IMA prior to and post the Proposed Transaction.

| | Prior to Proposed Transaction | | Post Proposed Transaction Completion Shares | | Post Proposed Transaction Completion and Deferred Shares | |
|---|---|---|---|---|---|---|
| **Shares on issue** | | | | | | |
| Existing shareholders | 216,400,129 | 100% | 216,400,129 | 58% | 216,400,129 | 53% |
| Murray Zircon | | | | | | |
| Completion Shares | - | 0% | 156,703,542 | 42% | 156,703,542 | 38% |
| Deferred Shares | - | 0% | - | 0% | 35,198,459 | 9% |
| **Total shares on issue** | **216,400,129** | **100%** | **373,103,671** | **100%** | **408,302,130** | **100%** |
| ***Out of the money derivatives*** | | | | | | |
| **Options** | | | | | | |
| Existing optionholders | 2,600,000 | 100% | 2,600,000 | 100% | 2,600,000 | 100% |
| **Total unlisted options on issue** | **2,600,000** | **100%** | **2,600,000** | **100%** | **2,600,000** | **100%** |

**Table 2: Share structure of IMA before and after the Proposed Transaction**

5.6. The table shows that Murray Zircon will receive an initial interest of 42% in IMA and that current IMA shareholders will initially dilute from 100% to 58% prior to the issue of Deferred Shares.

5.7. Murray Zircon will increase its interest in IMA to up to 47% if a decision to mine is reached and project finance is secured within two years of Completion (or three years if a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first two years).

## 6. Scope of the Report

**Corporations Act – Proposed Transaction**

6.1. Section 606 of the Act prohibits a person from acquiring a relevant interest in the issued voting shares of a public company if the acquisition results in that person's voting interest in the company increasing from a starting point that is below 20% to an interest that is above 20%. Completion of the Proposed Transaction will result in Murray Zircon and other related parties increasing their relevant interest in IMA from nil to approximately 42%, increasing to 47% (based on the shares on issue at Completion) if the Deferred Shares are issued.

6.2. Under Item 7 of Section 611 of the Act, the prohibition contained in Section 606 does not apply if the acquisition has been approved by the Non-Associated Shareholders of the company.

6.3. Accordingly, the Company is seeking approval from the Non-Associated Shareholders for Resolutions 1 and 2 under Item 7 of Section 611 of the Act.

6.4. Section 611(7) of the Act states that shareholders must be given all information that is material to the decision on how to vote at the meeting. ASIC Regulatory Guide 111 ("RG 111") advises the requirement to commission an Independent Expert's Report in such circumstances and provides guidance on the content.

**Listing Rules – Security and Offtake**

6.5. ASX Listing Rule 10.1 states that an entity must ensure that neither it, nor any of its child entities, acquires a substantial asset from, or disposes of a substantial asset to, a substantial shareholder, a related party or any of its associates without the approval of holders of the entity's ordinary securities.

6.6. Although Murray Zircon (and Orient Zirconic as a shareholder of Murray Zircon) was not a substantial holder at the time of agreeing the Security and Offtake, after the Proposed Transaction, Murray Zircon will hold a substantial interest (42%) in IMA and will also have common directors. The ASX has determined that shareholder approval will be necessary for the issue of the Security and the Offtake.

6.7. An asset is considered substantial "if its value; or the value of the consideration for it is, or in the ASX's opinion is 5% or more of the equity interest of the entity as set out in the latest financial statements given to the ASX".

6.8. The "equity interests" of IMA as at 31 December 2015 were $0.9 million. The Security will be granted over all of IMA's present and future property and therefore will exceed 5% of IMA's equity interests. Although the exact current value of the zircon to be sold under the Offtake is difficult to determine at this stage, it is likely to represent a significant part of IMA's assets and exceed 5% of IMA's equity interests.

6.9. ASX Listing Rule 10.10 states that the notice for the shareholders' meeting required under ASX Listing Rule 10.1 must include a report on the transaction from an independent expert. The report must state whether, in the expert's opinion, the transaction is fair and reasonable to the Non-Associated Shareholders.

6.10. Accordingly, IMA is seeking approval for the issue of the Security and the Offtake. The Company has engaged RSM FSA, to prepare a report which sets out our opinion as to whether the issue of the Security and Offtake are fair and reasonable to Non-Associated Shareholders.

**Regulatory guidance – Proposed Transaction**

6.11. In determining whether the Proposed Transaction is "fair and reasonable" we have given regard to the views expressed by ASIC in RG 111.

6.12. RG 111 provides ASIC's views on how an expert can help security holders make informed decisions about transactions. Specifically, it gives guidance to experts on how to evaluate whether or not a proposed transaction is fair and reasonable.

6.13. RG 111 states that the expert report should focus on:

- the issues facing the security holders for whom the report is being prepared; and
- the substance of the transaction rather than the legal mechanism used to achieve it.

6.14. Where an issue of shares by a company otherwise prohibited under section 606 is approved under Item 7 of Section 611 and the effect on the company shareholding is comparable to a takeover bid, RG 111 states that the transaction should be analysed as if it was a takeover bid.

6.15. RG 111 applies the "fair and reasonable" test as two distinct criteria in the circumstance of a takeover offer, stating:

- A takeover offer is considered "fair" if the value of the offer price or consideration is equal to or greater than the value of the securities that are the subject of the offer; and
- A takeover offer is considered "reasonable" if it is fair or, where the offer is "not fair", it may still be "reasonable" if the expert believes that there are sufficient reasons for security holders to accept the offer.

6.16. Consistent with the guidelines in RG 111, in determining whether the Proposed Transaction is "fair and reasonable" to the Non-Associated Shareholders, the analysis undertaken is as follows:

- A comparison of the fair value of an ordinary share in IMA prior to (on a control basis) and immediately following (on a non-control basis) the Proposed Transaction, being the 'consideration' for the Non-Associated Shareholders – fairness; and
- A review of other significant factors which the Non-Associated Shareholders might consider prior to approving the Proposed Transaction – reasonableness.

6.17. In particular, in reviewing the significant factors, we have considered the advantages and disadvantages of the Proposed Transaction in the event that it proceeds or does not proceed including:

- The future prospects of the Company if the Proposed Transaction does not proceed; and
- Any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

**Regulatory guidelines – the Security and the Offtake**

6.18. In determining whether the issues of the Security and the Offtake are "fair and reasonable" we have also given regard to the views expressed by the ASIC in RG 111.

6.19. RG 111 states that in relation to related party transactions the expert' assessment of fair and reasonable should not be applied as a composite test – that is, there should be a separate assessment of whether the transaction is "fair and reasonable" as in a control transaction.

6.20. Distinct from the requirements for the analysis of the Proposed Transaction, for the purpose of the Security and the Offtake, we do not need to consider a premium for control.

6.21. In assessing whether the issue of the Security is fair and reasonable to Non-Associated Shareholders, the analysis undertaken is as follows:

- Whether the value of the assets secured is greater than the value of the debt that will be owed in accordance with the terms of the Security – fairness; and
- A review of other significant factors which Non-Associated Shareholders might consider prior to approving the Security – reasonableness.

6.22. In assessing whether the Offtake is fair and reasonable to Non-Associated Shareholders, the analysis undertaken is as follows:

- Whether the calculation of the price payable for offtake produced by IMA reflects market value – fairness; and
- A review of other significant factors which Non-Associated Shareholders might consider prior to approving the Offtake – reasonableness.

6.23. The other significant factors to be considered when assessing the reasonableness of the Security and the Offtake include:

- The future prospects of the Company if the Security or the Offtake is not provided; and
- Any other commercial advantages and disadvantages to the Non-Associated Shareholders as consequence of issuing the Security or the Offtake.

6.24. Our assessment of the Security and the Offtake is based on economic, market and other conditions prevailing at the date of this Report.

## 7. Profile of IMA

7.1. IMA is a company listed on the ASX which is focused on the exploration and development of heavy mineral sands deposits in the North Perth Basin. The Company's projects are located between 40km and 200km north of Perth, in Western Australia. The location is an established minerals sand province and has existing infrastructure and a local workforce with experience in mineral sands.

7.2. As at 15 February 2016 the Company had a market capitalisation of $11 million. Cash at 31 December 2015 was $0.9 million. The Company has no debt.

7.3. IMA's key development projects include the Boonanarring and Atlas Projects. IMA also has a number of exploration projects. The following table summarises IMA's key projects.

| Stage | Project | Description |
|---|---|---|
| Development | Boonanarring Project | The Boonanarring project is located 90km north of Perth and covers an area of 50.37km$^2$ comprising of one Exploration Licence (E70/3041) and two Mining Leases (M70/1194 and M70/1311). All licences and leases are 100% held by IMA. The project represents a total resource of 21.5 million tonnes @ 8.3% heavy minerals. |
| | Atlas Project | The Atlas project is located 170km north of Perth and covers an area of 71.14km$^2$, comprising of Mining Lease M70/1305 which is currently pending and Exploration Licence E70/3997. The project represents a total resource of 10.78 million tonnes @ 7.9% heavy minerals. |
| High-grade HMS Projects | Cooljarloo North | The Cooljaroo North project is located 180km northwest of Perth. The project is covered by Retention Licence R70/0051, with an area of approximately 26.7km$^2$. The project has a mineral resource of 15.2million tonnes @ 5.3% heavy minerals. |
| | Gingin South | The Gingin South resource is located 60km north of Perth and 10.5km south of the town of Gingin in Western Australia. The project is covered by two tenements and comprises an area of approximately 40km$^2$ . The total mineral resource represents 8.08 million tonnes @ 6.1% heavy minerals. |
| | Gingin North | The Gingin North resource is located approximately 75 km north of Perth and is held under Mining Lease M70/1193 which covers an area of 0.81km$^2$. The deposit has a mineral resource of 2.41million tonnes @ 5.5% heavy minerals. |
| | Red Gully | The Red Gully deposit is located approximately 100km north of Perth and is covered under Mining Lease M70/1192 which is 7.8km$^2$ in size. The Red Gully deposit has a mineral resource of 5.98 million tonnes @ 7.7% heavy minerals. |
| Large-scale HMS Projects | Bidaminna | The Bidaminna deposit is located approximately 98km north of Perth and is covered under three Exploration Licences of E70/3298, E70/2844 and E70/3298. The three licences comprise an area of 67.46km$^{2.}$ IMA has a 90% interest in E70/3298 and 100% interest in the other licences. The Bidaminna deposit has a mineral resource of 44.6 million tonnes @ 3% heavy minerals. |
| | Cooljarloo | The Cooljarloo project is located approximately 170km north of Perth and is located next to Cooljarloo Mine which is an operating Mine held by Tronox Limited. The project represents a total resource of 191.6 million tonnes at 1.9% heavy minerals. |
| Exploration | Winooka | The Winooka project is located approximately 120 km north of Perth is represented by one Exploration Licence E70/4245 which is 58.97km$^2$ in size. |

7.4. Further details are available in the independent specialist report prepared by CSA Global and included at Appendix 5 of this Report.

## Directors and management

7.5. The directors of IMA are summarised in the table below.

| Name | Title | Experience |
|---|---|---|
| Mr John Jones | Chairman | Mr Jones was appointed Chairman on 29 October 2014. Mr Jones has 30 years of experience in the Australian contract mining industry. |
| Mr Peter Thomas | Non-Executive Director | Mr Thomas has served on ASX listed company boards for 30 years and has been a non-executive director of Image Resources NL since 10 April 2002. He resigned as Chair on 29 October 2014. For over 30 years, he ran a legal practise specialising in the delivery of legal, corporate and commercial advice to listed explorers and miners. |
| Mr George Sakalidis | Executive Director–Exploration | Mr Sakalidis is an exploration geophysicist with over 30 years' industry experience. His career has included gold, diamond, base metals and mineral sands exploration. |
| Mr Aaron Chong Veoy Soo | Non-Executive Director | Mr Soo has been a long term shareholder in Image Resources. Mr Soo is an advocate & solicitor practising in West Malaysia with 16 years of experience in legal practice and currently a partner in Stanley Ponniah, Ng & Soo, Advocates & Solicitors. |
| Mr Dennis Wilkins | Company Secretary | Mr Wilkins is the founder and principal of DW Corporate Pty Ltd, a privately held corporate advisory firm servicing the natural resources industry. Since 1994, he has been a director of, and involved in the executive management of, several publicly listed resource companies with operations in Australia, PNG, Scandinavia and Africa. |

**Table 3: IMA Directors** ***(Source: Company announcements)***

## Financial Performance

7.6. The following table sets out a summary of the financial performance of IMA for the years ended 30 June 2014 ("FY14") and 30 June 2015 ("FY15") and for the six months ended 31 December 2015 ("HY16").

| $ | Ref | Year ended 31-Dec-15 Reviewed | Year ended 30-Jun-15 Audited | Year ended 30-Jun-14 Audited |
|---|---|---|---|---|
| **Revenue** | | | | |
| Interest and dividend income | | 9,894 | 24,477 | 77,703 |
| Other revenue | 7.8 | 126,180 | 497,900 | 46,131 |
| | | | | |
| **Expenses** | | | | |
| Depreciation expense | | (9,434) | (22,223) | (26,490) |
| Exploration and evaluation expenses | 7.9 | (943,224) | (2,328,834) | (1,814,800) |
| Other expenses | 7.10 | (1,340,890) | (1,629,980) | (1,550,526) |
| **(Loss) before income tax expense** | | **(2,157,474)** | **(3,458,660)** | **(3,267,982)** |
| Income tax expense | | - | 179,675 | 1,001,061 |
| **(Loss) from continuing operations** | | **(2,157,474)** | **(3,278,985)** | **(2,266,921)** |
| | | | | |
| **Other comprehensive income** | | | | |
| Changes in fair value of available for sale financial assets | | 77,573 | (7,340) | 14,760 |
| Other comprehensive income for the year, net of tax | | 77,573 | (7,340) | 14,760 |
| **Total profit or (loss) and other comprehensive income for the year attributable to member of the Company** | | **(2,079,901)** | **(3,286,325)** | **(2,252,161)** |

**Table 4: Financial Performance** ***(Source: IMA Financial Statements)***

7.7. The Statement of Comprehensive Income is indicative of an exploration company, with very little revenue and the majority of expenditure on exploration and administration.

7.8. Other income includes profit on sale of tenements, profit on sale of plant and equipment and research and development tax rebate.

7.9. The exploration and evaluation expense relates to exploration expenditure incurred during the period. IMA has a policy of expensing all exploration expenditure.

7.10. Other expenses comprise (among others) occupancy costs, filing and ASX fees, corporate and management fees.

7.11. The financial statements are audited by Somes Cooke. The auditor provided an unqualified audit opinion for the year ended 30 June 2015.

## Financial Position

7.12. The table below sets out a summary of the financial position of IMA as at 30 June 2014, 30 June 2015 and 31 December 2015.

| $ | Ref | 31-Dec-15 Reviewed | 30-Jun-15 Audited | 30-Jun-14 Audited |
|---|---|---|---|---|
| **Current Assets** | | | | |
| Cash and cash equivalents | 7.13 | 877,603 | 965,131 | 1,288,461 |
| Trade and other receivables | | 2,384 | 8,981 | 20,331 |
| Other assets | 7.14 | 305,493 | 328,515 | 100,885 |
| **Total Current Assets** | | **1,185,480** | **1,302,627** | **1,409,677** |
| **Non-Current Assets** | | | | |
| Property, plant and equipment | | 54,042 | 57,641 | 113,735 |
| Other financial assets | 7.15 | 131,875 | 54,302 | 200,393 |
| **Total Non-Current Assets** | | **185,917** | **111,943** | **314,128** |
| **Total Assets** | | **1,371,397** | **1,414,570** | **1,723,805** |
| **Liabilities** | | | | |
| **Current Liabilities** | | | | |
| Trade and other payables | 7.16 | 408,532 | 341,147 | 225,849 |
| Provisions | | 38,902 | 24,061 | 8,839 |
| **Total Current Liabilities** | | **447,434** | **365,208** | **234,688** |
| **Total Liabilities** | | **447,434** | **365,208** | **234,688** |
| **Net Assets** | 7.13 | **923,963** | **1,049,362** | **1,489,117** |
| **Equity** | | | | |
| Contributed equity | | 42,018,708 | 40,064,206 | 37,218,636 |
| Reserves | | 468,633 | 391,060 | 1,127,250 |
| Accumulated/ (losses) | | (41,563,378) | (39,405,904) | (36,856,769) |
| **Total Equity** | | **923,963** | **1,049,362** | **1,489,117** |

**Table 5: Financial Position** ***(Source: IMA Financial Statements)***

7.13. As at 31 December 2015, IMA had net assets of approximately $923,963. IMA had no debt and a cash balance of approximately $877,603.

7.14. Other assets at 31 December 2015 included restricted cash (security for guarantees), rental bonds and prepayments.

7.15. Other financial assets related to shares held in Meteoric Resources NL and other listed companies.

7.16. Trade and other payables at 31 December 2015 comprised of trade creditors, accruals and GST and tax payable.

## Capital Structure

7.17. IMA has 216,400,129 ordinary shares on issue as at 16 March 2016.

7.18. The Top 20 shareholders of IMA as at 16 March 2016 are set out below.

| | Shareholders | Number of shares | % of Total Shareholding |
|---|---|---|---|
| 1 | Million Up Ltd | 12,500,000 | 5.8% |
| 2 | Pontian Orico Plantations | 11,539,728 | 5.3% |
| 3 | Ava Cartel Sdn Bhd | 9,988,861 | 4.6% |
| 4 | Soo Lim Pang | 6,250,000 | 2.9% |
| 5 | Ku Choy Fuan | 6,000,000 | 2.8% |
| 6 | Citicorp Nom PL | 5,944,668 | 2.8% |
| 7 | Ribton Frederick Denis L | 5,336,370 | 2.5% |
| 8 | New Eastern Intnl Inv PL | 5,000,000 | 2.3% |
| 9 | Lim Choon Kong | 4,235,624 | 2.0% |
| 10 | Target Range PL | 4,200,000 | 1.9% |
| 11 | Wit Team Entps Ltd | 3,984,600 | 1.8% |
| 12 | Lim Choon Kong | 3,300,000 | 1.5% |
| 13 | Wallis Drilling PL | 3,230,770 | 1.5% |
| 14 | Eminent Hldgs PL | 3,165,000 | 1.5% |
| 15 | Gfi Inv PL | 2,905,000 | 1.3% |
| 16 | Dbs Vickers Sec Singapore | 2,700,000 | 1.3% |
| 17 | Dance Barrington + J P | 2,639,500 | 1.2% |
| 18 | Auto Mgnt PL | 2,611,924 | 1.2% |
| 19 | J P Morgan Nom Aust Ltd | 2,531,463 | 1.2% |
| 20 | Haank Jan G + Chiao C L | 2,500,000 | 1.2% |
| | | **100,563,508** | 46.5% |
| | Remainder | 115,836,621 | 53.5% |
| | **Total IMA shareholders** | **216,400,129** | **100.0%** |

**Table 6: IMA Top 20 shareholders *(Source: IMA)***

7.19. IMA has 2,600,000 options with an exercise price of $0.3908 per option and an expiry date of 27 December 2016. As the options are significantly out of the money, we have not considered them in our Report.

## Share price performance

7.20. The figure below sets out a summary of IMA's closing share prices and traded volumes for the 12 months to February 2016.

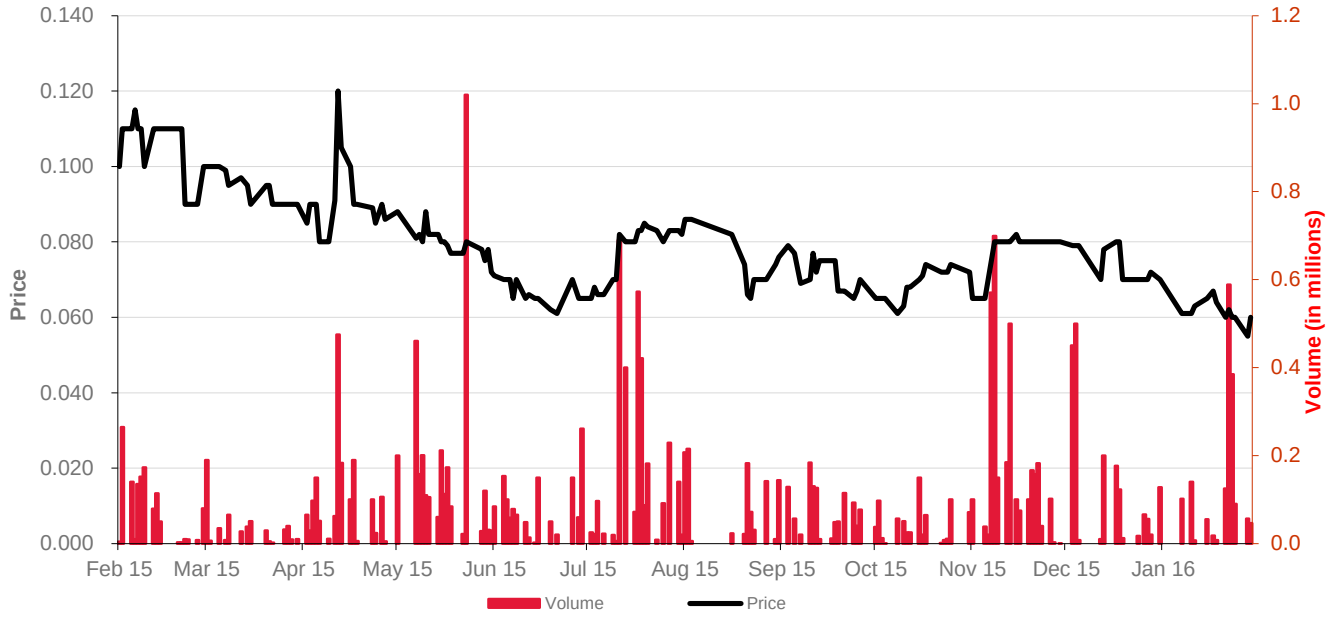



**Figure 2: IMA's Daily Closing Share Price and Traded Volumes (Source: ASX/S&P Capital IQ)**

7.21. Between February 2015 and July 2015, IMA's share price was in decline. On 30 April 2015, there was a spike in the share price of IMA following the announcement of the Proposed Transaction, which corresponded with the 12 monthly high of $0.12. The share price reached a 12 monthly low of $0.055 on 15 February 2016.

7.22. During the last 12 months there have been a number of capital raisings which were undertaken by IMA, as set out below:

- On 25 May 2015, $1,402,400 was raised through the issue of 17,530,000 shares at an issue price of $0.08.
- On 30 July 2015, $1,624,000 was raised through the issue of 2,030,000 shares at an issue price of $0.08.
- On 9 September 2015, $1,860,000 was raised through the issue of 23,250,000 shares at an issue price of $0.08.
- On 24 February 2016, $800,000 was raised through the issue of 16,000,000 shares at an issue price of $0.05.

7.23. IMA's share price performance is discussed in more detail in Paragraph 11.20.

## 8. Profile of Murray Zircon and Orient Zirconic

### Background

8.1. Murray Zircon Pty was formed in June 2011 with Orient Zirconic as a major shareholder. The company is a mineral sands mining company which focused on the production of heavy mineral concentrate ("HMC") in the Murray the Basin in South Australia.

8.2. Murray Zircon's main asset is the Mindarie Mineral Sands Project which is located 150km east of Adelaide in the Mallee region of South Australia. The Mindarie operations involved the mining of mineral sands strandlines located on individual Mineral Leases and ceased operating in April 2015.

8.3. The HMC product from Mindarie was exported to China where it was separated into various heavy minerals including zircon, ilmenite and rutile. Murray Zircon also holds an exploration tenement portfolio covering more than 11,000 km² within the Murray Basin, and conducts active exploration.

8.4. Orient Zirconic is headquartered in Shantou in Guangdong Province in southeast China and is one of China's largest zircon processing and zirconium product manufacturing companies. Orient Zirconic employs over 1,700 people and is listed on the Shenzhen Stock Exchange (SZSE:002167), with a market capitalisation of $1.0 billion.

### Directors and management

8.5. The directors of Murray Zircon are summarised in the table below.

| Name | Title | Experience |
|---|---|---|
| Mr Chaodian Chen | Chairman | Mr Chen is the President of Guangdong Orient Zirconic Ind Sci &Tech Co., Ltd. Mr Chen is currently a Delegate of the China National People's Congress. He is also the Deputy-director of Commission of Zirconium & Hafnium, Titanium/Zirconium/Hafnium Subcommittee of the China Nonferrous Metals Industry Association the Director of Guangdong Private Technology Enterprises Association and the Vice-president of Guangdong Nonferrous Metals Industry Association.<br><br>Mr Chen holds an EMBA degree and is a Certified Engineer. |
| Mr Fei Wu | Director | Mr Fei Wu serves as the Chief Executive Officer of Murray Zircon Pty Ltd. Mr Wu has a finance and management background and has worked in the Australian mining industry since June 2007. He holds a Master's Degree in Commerce (Finance) from the Australian National University and a Master's Degree in Science from Cass Business School, City University London. |
| Mr Robert Besley | Director | Mr Robert Ellis Besley is a geologist and has more than 40 years' experience in the minerals industry in Asia, the Middle East, North and South America, Australia and the Pacific Rim. He is a Fellow of the Australasian Institute of Mining and Metallurgy as well as the American Institute of Mining Engineers. Mr. Besley holds a Bachelor of Science with Honours in geology from the University of Adelaide. |
| Mr Songhui Xu | Director | Mr Xu is the President of Quanyu Toys & Crafts Company which he established in 2000 in Guangdong, China. He is also the founder of Xinning Toys & Crafts Manufacturing Company which was established by him in 1982 in Chenghai and has over 1,000 employees. Mr Xu's companies manufacture toys and festive products for well-known international companies such as Disney, Warner, Coca Cola, and McDonalds. |

**Table 7: Murray Zircon Directors *(Source: Company websites)***

8.6. The directors of Orient Zirconic are summarised in the table below.

| Name | Title | Experience |
|---|---|---|
| Mr Chaodian Chen | Chairman | Mr Chen is the President of Guangdong Orient Zirconic Ind Sci &Tech Co., Ltd. Mr Chen is currently a Delegate of the China National People's Congress. He is also the Deputy-director of Commission of Zirconium & Hafnium, Titanium/Zirconium/Hafnium Subcommittee of the China Nonferrous Metals Industry Association the Director of Guangdong Private Technology Enterprises Association and the Vice-president of Guangdong Nonferrous Metals Industry Association. |
| Mr Chao Hua Huang | Director | Chao Hua Huang has been Executive Deputy General Manager and Chief Engineer at Orient Zirconic since September 2006 and serves as its Head of the Technical Department. He is a member of the committee of experts for zirconium and hafnium of the Zirconium and Hafnium branch of the China Non-Ferrous Metal Industry Association. Mr Huang is an Engineer and has a postgraduate degree. |
| Mr Zhong Cong Chen | Independent Director | Zhong Cong Chen serves as a Deputy Chief Engineer of Orient Zirconic. As a core technical staff, Mr Chen is the developer of the compound zirconia. He has been at Orient Zirconic since December 1995 |
| Mr Wen Bin Li | Director | Wen Bin Li has been Assistant to the General Manager of Orient Zirconic since September 2006. He joined Guangdong Orient in 1995 where he successively served as the equipment custodian, manager of the operations department. He has an associate degree and is an engineer. |
| Mr Jin Peng Wu | Director | Jin Peng Wu has been Deputy General Manager of Orient Zirconic since September 2006. Mr Wu joined Orient Zirconic in 1995, where he served as the Manager for Production and Production Technology, Manager of the Technology Department, General Manager of the Heping branch, assistant to the General Manager and Deputy General Manager. Mr Wu has a Bachelor's degree and is a Senior Engineer. |
| Mr Shao He Cai | Independent Director | Mr Cai has been an Independent Director of Orient Zirconic since September 2003. He served as an Independent Director at Guangdong Rieys Group Co. Ltd. Mr Cai is a delegate of the Chenghai People's Political Consultative Congress. He serves as a Member of the Executive Committee of Chenghai Business Association. He serves as an Executive Officer of the Chenghai Accounting Association. He serves as an Executive Officer of Chenghai Foreign Investment Enterprise Association. Mr Cai has a master's degree and is a Certified Public Account and a certified tax agent. |
| Mr Dan Ming Lin | Independent Director | Dan Ming Lin has been serving as the Teaching Assistant, Lecturer, Assistant Professor, Professor, and Postgraduate Instructor in the School of Economics, School of Law & Business, and School of business of Sun Yat-Sen University since June 1989. He has served as Independent Director of Orient Zirconic since September 2003. |
| Mr Zhang Xin | Independent Director | Zhang Xin successively served as the teaching assistant, lecturer, assistant professor, professor, and postgraduate instructor of the School of Management of Shantou University since July 1986. He has been an Independent Director of Orient Zirconic since September 2003. Mr. Xin has a doctorate degree and is a professor and a postgraduate instructor. |

**Table 8: Orient Zirconic Directors *(Source: Capital IQ)***

## 9. Industry Profile

9.1. The mineral sands industry includes mining and production of zircon and titanium dioxide products such as ilmenite, rutile and leucoxene. The two products categories have different properties, different end use markets and prices. The performance of the industry is affected by demand for titanium and zircon from downstream processors and manufacturers and the price is driven by the level of demand.

9.2. Mineral sands deposits typically contain both zircon and titanium dioxide mineral, however the proportion of Zircon is normally minor. The weighting between titanium dioxide and zircon varies between different deposits.

### Zircon

9.3. Zircon is a colourless or off-white material which is 4.6 to 4.7 times heavier than water and is hard wearing. The primary use of this material is in ceramics as a speciality glaze and a foundry medium. It is also used as raw material for making foundry moulds and bricks. The chemical sector is the fastest growing user of zircon material. In the chemical sector, zircon processed and used in catalytic converters in vehicles, used in tubing in nuclear fuel plants, used in roads, and used in electronics with pressure and oxygen sensors. The increase in the chemical sector use is attributable to an increase in the use of consumer demand for electronic and communications products, energy efficiency measures and emissions controls.

9.4. In 2014, approximately 1.1 million tonnes of zircon was produced globally with Australia being the largest zircon producing country. The three main producers of zircon include Iluka Resources Limited ("Iluka"), Rio Tinto Limited ("Rio Tinto") and Tronox Limited ("Tronox"), who produce a combined 67% of total zircon globally.

9.5. The main growth drivers for zircon include urbanisation, construction and industrial production. The industry is strongly influenced by tile production and consumption.

### Titanium Dioxide

9.6. Titanium dioxide is mined as ilmenite, rutile and leucoxene. It is mainly used as a whitening pigment in paints, plastics and paper. The raw materials are also used in the manufacture of titanium metal and welding flux wire cord.

9.7. Ilmenite is the most abundant titanium dioxide material, containing 35-65% titanium dioxide. It is used for sulphate or chloride titanium pigment paint as direct feedstock. Prices for ilmenite are set over long-term contracts, and it is cheaper than rutile.

9.8. Rutile contains between 95-100% titanium oxide. It is used as direct feedstock for chloride route titanium pigment plants and manufacture of welding electrodes. Again, prices are typically agreed over long term contracts.

9.9. Leucoxene contains between 65-92% titanium dioxide and is mainly used as direct feedstock for chloride route titanium pigment paints and in the manufacturing of welding electrodes. Titanium metal demand has been growing due to its strength and corrosive resistance which is ideal for aerospace, offshore oil and gas drilling component and industrial chemicals.

9.10. In 2014 around 7.25 million tonnes of titanium dioxide was produced globally with Iluka, Rio Tinto and Tronox being the largest producers of titanium dioxide.

# 10. Valuation Approach

## Valuation methodologies

10.1. In assessing the Fair Value of an ordinary IMA share prior to and immediately following the Proposed Transaction, we have considered a range of valuation methodologies. RG 111 proposes that it is generally appropriate for an expert to consider using the following methodologies:

- the discounted cash flow ("DCF") method and the estimated realisable value of any surplus assets;
- the application of earnings multiples to the estimated future maintainable earnings or cash flows added to the estimated realisable value of any surplus assets;
- the amount which would be available for distribution on an orderly realisation of assets;
- the quoted price for listed securities; and
- any recent genuine offers received.

10.2. We consider that the valuation methodologies proposed by RG 111 can be split into three valuation methodology categories, as follows.

**Market based methods**

10.3. Market based methods estimate the Fair Value by considering the market value of a company's securities or the market value of comparable companies. Market based methods include;

- The quoted price for listed securities; and
- Industry specific methods.

10.4. The recent quoted price for listed securities method provides evidence of the fair market value of a company's securities where they are publicly traded in an informed and liquid market.

10.5. Industry specific methods usually involve the use of industry rules of thumb to estimate the fair market value of a company and its securities. Generally rules of thumb provide less persuasive evidence of the fair market value of a company than other market based valuation methods because they may not account for company specific risks and factors.

**Income based**

10.6. Income based methods estimate value by calculating the present value of a company's estimated future stream of earnings or cash flows. Income based methods include:

- Capitalisation of maintainable earnings; and
- Discounted cash flow methods.

10.7. The capitalisation of earnings methodology is generally considered a short form DCF, where an estimation of the Future Maintainable Earnings ("FME") of the business, rather than a stream of cash flows is capitalised based on an appropriate capitalisation multiple. Multiples are derived from the analysis of transactions involving comparable companies and the trading multiples of comparable companies.

10.8. The DCF technique has a strong theoretical basis, valuing a business on the net present value of its future cash flows. It requires an analysis of future cash flows, the capital structure and costs of capital and an assessment of the residual value or the terminal value of the company's cash flows at the end of the forecast period. This method of valuation is appropriate when valuing companies where future cash flow projections can be made with a reasonable degree of confidence.

**Asset based methods**

10.9. Asset based methodologies estimate the Fair Value of a company's securities based on the realisable value of its identifiable net assets. Asset based methods include:

- orderly realisation of assets method;
- liquidation of assets method; and
- net assets on a going concern basis.

10.10. The value achievable in an orderly realisation of assets is estimated by determining the net realisable value of the assets of a company which would be distributed to security holders after payment of all liabilities, including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner. This technique is particularly appropriate for businesses with relatively high asset values compared to earnings and cash flows.

10.11. The liquidation of assets method is similar to the orderly realisation of assets method except the liquidation method assumes that the assets are sold in a shorter time frame.

10.12. The net assets on a going concern method estimates the market values of the net assets of a company but unlike the orderly realisation of assets method it does not take into account realisation costs. Asset based methods are appropriate when companies are not profitable, a significant proportion of the company's assets are liquid, or for asset holding companies.

## Selection of Valuation Methodologies

**Valuation of an IMA share pre the Proposed Transaction (control basis)**

10.13. In assessing the value of a IMA share prior to the Proposed Transaction we have utilised a sum of parts valuation which combines the following methodologies:

- for all exploration assets – methodologies as selected by an independent specialist (detailed in paragraph 10.14 below); and
- for all other assets and liabilities – net assets on a going concern.

10.14. We have instructed CSA Global Pty Ltd ("CSA") to act as an independent specialist to value the exploration assets held by IMA. CSA has used the DCF as the primary methodology to value the exploration assets held by IMA. CSA used the Yardstick methodology as a cross check of valuation performed using DCF.

10.15. Where the DCF methodology has been used by CSA, we have considered the availability of project finance and applied sensitivities and scenario analysis to potential financing options.

10.16. In our opinion the methodology adopted by CSA is appropriate for the current status of IMA's exploration assets. Further information on CSA's adopted valuation methodology and valuation can be found in CSA's report included as Appendix 5.

10.17. We have also utilised the quoted market price methodology as a secondary valuation methodology.

10.18. We did not consider the FME methodology as IMA does not have a history of profits.

**Valuation of an IMA share post the Proposed Transaction (non-control basis)**

10.19. In accordance with the requirements of RG 111, we have assessed the value of an ordinary IMA share immediately post the Proposed Transaction on a non-control basis, through the application of an appropriate portfolio discount to the assessed value of an IMA share on a control basis, after the impact of the Proposed Transaction.

10.20. We have prepared our valuation on a similar basis to that used for our valuation pre the Proposed Transaction. However, where applicable, we have only applied the values calculated by CSA that include the assumption that the Mindarie plant is purchased from Murray Zircon.

10.21. Further, we have instructed Engineering & Project Management Services ("EPMS") to act as an independent specialist to value the plant and equipment held by Murray. EPMS has prepared its assessment on a replacement valuation and condition based valuation in situ.

10.22. In our opinion the methodology adopted by EPMS is appropriate for the current status of the plant and equipment. Further information on adopted valuation methodology of EPMS and valuation can be found in the EPMS report included in the CSA report at Appendix 5.

10.23. The value of IMA and an IMA share on a non-controlling basis immediately post the Proposed Transaction, using the sum of parts methodology, has been assessed by considering the value of IMA pre the Proposed Transaction and reflecting the impact of the Proposed Transaction in two separate scenarios:

- Scenario 1 – Exclusion of the 32,595,987 Deferred Shares; and
- Scenario 2 – Inclusion of the 32,595,987 Deferred Shares.

10.24. In addition, where the DCF methodology has been used by CSA, we have considered the availability of project finance and applied sensitivities and scenario analysis to potential financing options.

**The Security**

10.25. We have assessed the value of the Security based on the maximum face value of debt that could be owed to Murray Zircon and Orient Zirconic in accordance with the Short Term Loan Agreement and the Zircon Products Prepayment Facility Agreement. We have not considered any additional costs that may be secured in accordance with the agreements because there is no certainty on what the nature of these amounts could be or their quantum.

**The Offtake**

10.26. It is not possible to value the Offtake as it is dependent on future pricing which we do not consider we have a reasonable basis to estimate. In order to assess the fairness of the Offtake, we have considered the terms of the Offtake and assessed whether these terms would result in IMA receiving a market price for its product.

## 11. Valuation of IMA Prior to the Proposed Transaction

11.1. As stated at paragraph 10.13 we have assessed the value of an IMA share prior to the Proposed Transaction on a sum of parts basis and have also considered the quoted price of its listed securities. In both valuations, we have included a premium for control.

### Sum of parts valuation

11.2. We have assessed the value of an IMA share on a control basis to be between $0.049 and $0.407 per share (undiluted) and between $0.052 and $0.112 per share (diluted), prior to the Proposed Transaction, based on the sum of parts valuation methodology, as summarised in the table below.

| Value assuming new plant | Ref. | 31-Dec-15 | Low | High |
|---|---|---|---|---|
| | | $ | $ | $ |
| Exploration and development assets | | | | |
| Value of Pre-development Projects | 11.4 | - | 841,445 | 54,188,530 |
| Value of Exploration and Advanced Exploration Projects | 11.13 | - | 8,100,000 | 32,200,000 |
| Cash | 11.15 | 877,603 | 1,677,603 | 1,677,603 |
| Other assets and liabilities | 7.12 | 46,360 | 46,360 | 46,360 |
| **Net assets (sum of parts)** | | **923,963** | **10,665,408** | **88,112,493** |
| Actual number of shares on issue | 7.18 | | 216,400,129 | 216,400,129 |
| **Value per share (undiluted)** | | | **$0.049** | **$0.407** |
| **Dilution for future project financing** | | | | |
| Add: Cash from equity funding | 11.16 | | 57,000,000 | 57,000,000 |
| **Adjusted net assets (sum of parts)** | | | **67,665,408** | **145,112,493** |
| Issue of Shares | 11.16 | | 1,083,924,436 | 1,083,924,436 |
| Diluted shares on issue | | | 1,300,324,565 | 1,300,324,565 |
| **Value per share (diluted)** | | | **$0.052** | **$0.112** |

**Table 9: Assessed Fair Value of an IMA Share – sum of parts basis *(Source: RSM FSA Analysis)***

11.3. Our assessment has been based on the net assets of IMA as at 31 December 2015 of $923,963 as per the Company's financial statements. We have been advised that, except for adjustments noted below and normal operating costs, there has been no significant change in the net assets of IMA since 31 December 2015.

*Exploration expenditure*

11.4. We have included the values calculated by CSA but have adjusted those values for a higher discount rate. The CSA Independent Valuation report is attached at Appendix 5.

11.5. CSA has utilised the DCF methodology for valuing the pre-development assets held by IMA. The DCF methodology values the project on the net present value of its future cash flows. It requires an analysis of future cash flows, the capital structure and costs of capital.

11.6. In the DCF model CSA has considered two options for the project. The first option included the use of refurbished plant and the second option considered the use of new plant. Based on the two options CSA has provided two valuations for the project. As we are considering the value of an IMA share based on the purchase of refurbished plant, we have only considered this valuation in our assessment.

11.7. CSA has also considered the Yardstick approach as a cross check for the valuation prepared under the DCF approach. The Yardstick approach involves employing the concept of an arbitrarily ascribed current in situ net value to any Ore Reserve by using existing data on tonnage and grade. The range of values calculated by CSA under the Yardstick Methodology are $49.1m to $117.2m. In our opinion the DCF approach provides a more relevant valuation based on generally accepted valuation theory. As such we have not relied on the Yardstick approach where a DCF methodology is applicable. We note, however, that the Yardstick values support the high end of the DCF values.

11.8. We note that CSA has used a discount rate of 10%. This discount rate was applied to the real, pre-tax cash flows included in the IMA model. Following a review of comparable companies, we consider a higher discount rate is applicable and we have adopted a real, pre-tax discount rate of 14%. Our discount rate calculation is detailed in Appendix 4.

11.9. The values calculated by CSA using the 10% pre-tax discount rate and the adjust values using our 14% discount rate are summarised below:

| Value of exploration assets | Low | High |
|---|---|---|
| **Assuming refurbished plant** | **$'000** | **$'000** |
| **Using 10% pre-tax discount** | | |
| Value of Pre-developed Projects (DCF Approach) | 18,000 | 84,000 |
| **Using 14% pre-tax discount** | | |
| Value of Pre-developed Projects (DCF Approach) | 10,995 | 65,945 |

**Table 10: Market value of exploration assets assuming refurbished plant *(Source: CSA valuation and adjusted CSA model)***

11.10. As presented in the table above, the change in the discount rate used from 10% to 14% reduces the value range of the pre-development projects.

11.11. We have also updated CSA's valuation for more recent commodity price estimates. The table below outlines the updated commodity prices sourced from the most recently available consensus data:

| USD Real | 2016E | 2017E | 2018E | 2019E | 2020E | LT |
|---|---|---|---|---|---|---|
| Zircon | $991 | $1,013 | $1,033 | $1,068 | $1,097 | $1,169 |
| Rutile | $742 | $768 | $792 | $823 | $856 | $1,038 |
| Ilmenite | $103 | $109 | $117 | $125 | $132 | $164 |

**Table 11: Forecast commodity prices *(Source: consensus pricing)***

11.12. The impact on the value of the pre-development assets following our change in commodity prices and discount rate is included in Table 9.

11.13. The exploration and advanced exploration assets have been valued by CSA using the comparable transaction and yardstick methodologies. CSA has preferred the use of the comparable transaction methodology because it is a market related method. This has resulted in a range of values between $8.1 million and $32.2 million. We consider CSA's methodology and analysis appropriate.

11.14. More details of the valuation methods used by CSA are included in the report attached at Appendix 5.

*Cash*

11.15. We have included the recent capital raising announced on 24 February 2016 of $800,000.

*Dilution for future financing*

11.16. If the Proposed Transaction does not proceed, the model prepared by IMA indicates a requirement for $57 million in funding in order to develop the pre-development projects. In order to demonstrate the impact of this possible future dilution, we have assumed that the $57 million is secured through equity funding. In order to secure this amount through equity, IMA would need to issue 1,083,924,436 new shares assuming any new share are issued at a 15% discount to the 10 day VWAP for Image as at 19 February 2016 (being $0.052). This discount in share price reflects discount rates observed in similar sized capital raisings on the ASX.

11.17. We consider it reasonable that IMA would have the capacity to raise capital, given MZI Resources Limited (ASX:MZI) recently announced capital raising of approximately $45 million through equity funding and its previous debt funding arrangement of US$64 million. MZI's market capitalisation at the announcement of the capital raising was $36 million.

11.18. We note that the assumed dilution is indicative only. It is likely that any capital raisings would be staged, rather than undertaken in a single transaction. We also note that it is possible that IMA raise finance through debt. At a corporate level, raising capital through debt has a limited impact on the undiluted value of an IMA share because the value of the cash received is offset by the value of the debt owing.

11.19. We have set out a sensitivity table below that shows the impact on the value of an IMA share assuming varying leverage ratios:

| | Assumed Leverage | | | | | |
|---|---|---|---|---|---|---|
| **Debt** | **0%** | **20%** | **40%** | **60%** | **80%** | **100%** |
| **Equity** | **100%** | **80%** | **60%** | **40%** | **20%** | **0%** |
| Low value per share ($) | 0.052 | 0.052 | 0.052 | 0.051 | 0.051 | 0.049 |
| High value per share ($) | 0.112 | 0.123 | 0.141 | 0.171 | 0.230 | 0.407 |

**Table 12: Sensitivity analysis for various leverage assumptions *(Source: RSM FSA analysis)***

## Quoted Price of Listed Securities (secondary method)

11.20. In order to provide a comparison and cross check to our sum of parts valuation of IMA, we have considered the recent quoted market price for IMA's shares on the ASX prior to the announcement of the Proposed Transaction.

*Analysis of recent trading in IMA shares*

11.21. The figure below sets out a summary of IMA's closing share price and volume of IMA shares traded in the 12 months to 29 April 2015, the date prior to the announcement of the Proposed Transaction. The assessment only reflects trading prior to the announcement of the Proposed Transaction in order to avoid the influence of any movement in price that may have occurred as a result of the announcement.

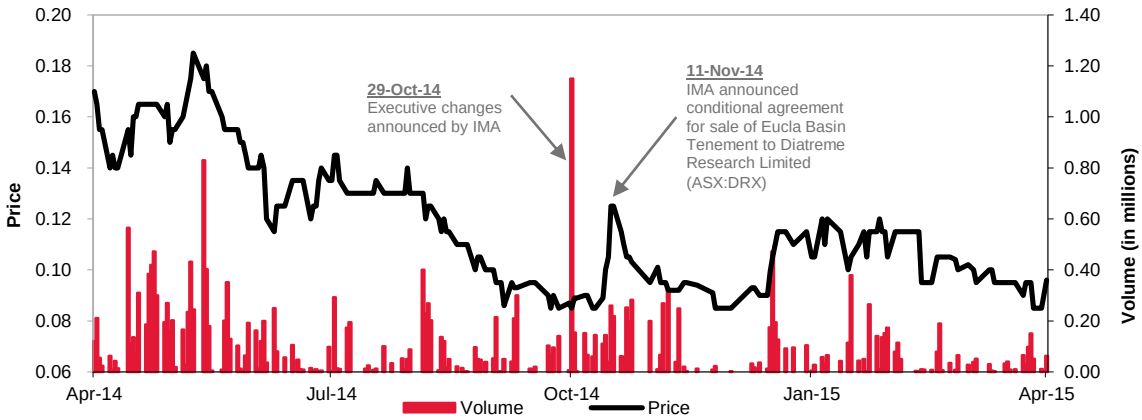



**Figure 3: IMA Share Price Volume Graph (Source: S&P Capital IQ)**

11.22. Over the trading period prior to the announcement of the Proposed Transaction, IMA shares have traded at a high of $0.18 and a low of $0.08. The trading volumes have been low over this period.

11.23. To provide further analysis of the quoted market prices for IMA's shares, we have considered the VWAP over a number of trading day periods ending 29 April 2015. An analysis of the volume in trading in IMA's shares for the 1, 5, 10, 30, 60, 90,120 and 180 day trading periods is set out in the table below.

| VWAP as at 29 April 2015 | 1 Day | 5 Day | 10 Day | 30 Day | 60 Day | 90 Day | 120 Day | 180 Day |
|---|---|---|---|---|---|---|---|---|
| **VWAP ($)** | 0.090 | 0.089 | 0.089 | 0.093 | 0.101 | 0.101 | 0.099 | 0.099 |
| Total Volume (000's) | 62 | 275 | 478 | 1,096 | 2,978 | 4,459 | 7,475 | 12,378 |
| Total Volume as a % of Total Shares | 0.04% | 0.17% | 0.30% | 0.70% | 1.89% | 2.83% | 4.74% | 7.85% |
| Low Price ($) | 0.090 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.080 | 0.076 |
| High Price ($) | 0.091 | 0.091 | 0.091 | 0.100 | 0.115 | 0.115 | 0.120 | 0.135 |
| Trading Days (no.) | 1 | 4 | 8 | 23 | 45 | 62 | 85 | 131 |

**Table 13: Traded volumes of IMA Shares to 29 April 2015 (Source: S&P Capital IQ)**

11.24. The table above indicates low volume and illiquidity in IMA shares, with 0.70% of total shares traded over 30 trading days. This is reflective of an illiquid stock.

*Value of an IMA Share on a control minority basis*

11.25. In our opinion, the 30 day volume weighted average price of $0.093 reflects the quoted market price valuation of an IMA share on a minority basis prior to the Proposed Transaction.

**Control valuation of an IMA share**

11.26. Our valuation of an IMA share, on the basis of the recent quoted market price including a premium for control is between $0.116 and $0.126, as summarised in the table below.

| | Ref. | Low | High |
|---|---|---|---|
| 30-day VWAP of an IMA share at 29 April 2015 | | $0.093 | $0.093 |
| Add premium for control | | 25% | 35% |
| **Quoted market price controlling value** | | **$0.116** | **$0.126** |

**Table 13: Assessed value of an IMA share – Quoted Price of Listed Securities (Source: RSM FSA analysis)**

**Key assumptions**

*Control Premium*

11.27. The value derived at paragraph 11.26 is indicative of the value of a marketable parcel of shares assuming the shareholder does not have control of IMA. RG 111.11 states that when considering the value of a company's shares the expert should consider a premium for control. If the Proposed Transaction is successful, Murray Zircon will hold an interest of at least 42% of the issued share capital of IMA and, therefore, as explained in paragraph 6.16, our assessment of the fair value of an IMA share must include a premium for control.

11.28. In selecting a control premium we have given consideration to the RSM 2013 Control Premium Study. The study performed an analysis of control premiums paid over a 7-year period to 31 December 2012 in 345 successful takeovers and schemes of arrangements of companies listed on the ASX. Our study concluded that, on average, control premiums in takeovers and schemes of arrangements involving Australian companies in the mining and metals sectors was in the range of 25% to 35%. In valuing an ordinary IMA Share prior to the Proposed Transaction using the quoted price of listed securities methodology we have reflected a premium for control in the range of 25% to 35%.

## Valuation summary and conclusion

11.29. A summary of our assessed values of an ordinary IMA share on a control basis pre the Proposed Transaction, derived under the two methodologies, is set out in the table below.

| | Ref. | Low | High |
|---|---|---|---|
| Sum of parts | 11.2 | $0.052 | $0.112 |
| Quoted market value | 11.26 | $0.116 | $0.126 |
| **Preferred valuation** | | **$0.052** | **$0.112** |

**Table 14: IMA Share valuation summary *(Source: RSM FSA analysis)***

11.30. In our opinion we consider that the sum of parts valuation methodology provides a better indicator of the fair value of an IMA share for the following reasons:

- Our analysis of the trading in IMA's shares prior to the announcement of the Proposed Transaction indicates that the market for IMA's shares is not deep enough to provide an assessment of their fair value.

- The Proposed Transaction was announced approximately 10 months ago which means there is a period of market changes that are not factored into our share price analysis included in the quote market price methodology.

11.31. As such, the value of an IMA share pre the Proposed Transaction is in the range of $0.052 and $0.112 per share. This large range is due to uncertainty in commodity prices which we consider acceptable for exploration and development companies such as IMA. In our opinion, the fair value of an IMA share pre the Proposed Transaction is between $0.052 and $0.112 on a controlling and fully diluted basis.

## 12. Valuation of IMA Following the Proposed Transaction

12.1. We summarise our valuation of an IMA share subsequent to the Proposed Transaction on a sum of parts basis in the table below.

| Post Proposed Transaction | Ref: | 31-Dec-15 $ | Low Value $ | High Value $ |
|---|---|---|---|---|
| Exploration and development assets | | | | |
| Value of Pre-Developed Projects | 12.4 - 12.9 | - | 14,460,033 | 70,120,308 |
| Value of Exploration and Advanced Exploration Projects | 12.4 - 12.9 | - | 8,100,000 | 32,200,000 |
| Cash | 11.15 | 877,603 | 1,677,603 | 1,677,603 |
| Other assets and liabilities | 7.12 | 46,360 | 46,360 | 46,360 |
| **Net assets (sum of parts)** | | **923,963** | **24,283,996** | **104,044,271** |
| Actual number of shares on issue | 7.18 | | 216,400,129 | 216,400,129 |
| Completion Shares issued to Murray Zircon | 12.10 | | 156,703,542 | 156,703,542 |
| **Total shares after Proposed Transaction** | | | **373,103,671** | **373,103,671** |
| Undiluted value per share | | | $0.065 | $0.279 |
| Discount for minority interest | 12.12 | | ($0.013) | ($0.072) |
| **Minority value per share (undiluted)** | | | **$0.052** | **$0.207** |
| **Minority value per share after Deferred shares (undiluted)** | 12.11 | | **$0.048** | **$0.189** |
| **Minority value per share fully funded (diluted)** | 12.14 | | **$0.044** | **$0.095** |

**Table 15: Assessed Value of IMA on Net Assets Basis (post-Proposed Transaction)**

12.2. We consider that the non-control value of a IMA share post the Proposed Transaction is between $0.052 and $0.207 before the issue of Deferred Shares, $0.048 to $0.189 assuming the Deferred Shares are issued and $0.044 to $0.095 assuming full dilution for future project finance of $36 million.

12.3. We have adjusted the net asset value and shares on issue of IMA for the following.

*Exploration expenditure*

12.4. As discussed in Paragraphs 11.4 to 11.14, we have considered the values for pre-development assets as calculated by CSA (and updated for more recent forecast commodity price data). However, we have made the following adjustments to CSA's valuation to reflect post Proposed Transaction events:

- We have reduced capital expenditure included in the model by the value of the plant and equipment acquired by IMA via the Proposed Transaction;
- We have applied a discount rate of 13.1% to the real, pre-tax cash flows included in the model; and
- We have included the impact of any agreed project funding in accordance with the Proposed Transaction.

12.5. The value of the plant and equipment to be acquired by IMA has been calculated by EPMS and included in the CSA report. EPMS utilised the replacement valuation methodology, the condition based valuation

methodology and the benchmarking methodology when estimating the value of the plant and equipment. EPMS considers the condition based methodology to be the most appropriate methodology to use for valuing the plant and equipment. We consider this reasonable because it is a direct assessment of the value of the plant and equipment being acquired. As a result, the value of the plant and equipment being acquired by IMA under the Proposed Transaction is $11.9 million.

12.6. As noted previously, CSA has used a 10% real, pre-tax discount rate. We have applied a discount rate of 13.1% to the cash flows included in the post transaction model. We have used a slightly lower discount rate than was applied to the pre transaction model because this reflects the reduced risk of sourcing the plant and equipment that is subject to the Proposed Transaction and the potential time delays that could come from sourcing refurbished plant and equipment. Our discount rate calculation is detailed in Appendix 6.

12.7. The changes above result in a value of between $14.5 million and $70.1 million for the pre-development assets.

12.8. We have not made any changes to the value of exploration and advanced exploration assets as valued by CSA.

12.9. More details of the valuation methods used by CSA are included in the report attached at Appendix 5.

*Issue of Completion and Deferred Shares*

12.10. The terms of the agreement with Murray Zircon, require IMA to issue approximately 156,703,542 Completion Shares on completion of the Proposed Transaction and 35,198,459 Deferred Shares if a decision to mine is made and project finance secured within two years (or three years if a Director who is not a nominee of Murray Zircon unreasonably frustrates such a decision being made during the first two years).

12.11. We have considered the value of an IMA share post the Proposed Transaction but prior to the issue of Deferred Shares so that shareholders can consider the impact of the Proposed Transaction without the deferred shares. The following table summarises the impact the issue of Deferred Shares has on the value per share.

| | Ref | Low Value $ | High Value $ |
|---|---|---|---|
| Net assets (sum of parts) | 12.1 | 34,388,692 | 115,744,444 |
| Shares after the Proposed Transaction (before Deferred Shares) | 12.1 | 373,103,671 | 373,103,671 |
| Issue of Deferred Shares to Murray Zircon | 12.10 | 35,198,459 | 35,198,459 |
| Total shares after the Proposed Transaction (after Deferred Shares) | | 408,302,130 | 408,302,130 |
| Value per share | | $0.084 | $0.283 |
| Discount for minority interest | 12.12 | ($0.017) | ($0.073) |
| **Minority value per share (undiluted)** | | **$0.067** | **$0.210** |

**Table 16: Value per share Post Transaction and after Deferred Shares**

*Minority interest discount*

12.12. In selecting a minority discount we have given consideration to our control premium applied in Paragraph 11.28, where we established a range of a control premium of between 25% and 35%. The corresponding minority discount range based on said control premiums is between 20% and 26%.

*Required financing*

12.13. If the Proposed Transaction does proceed, in order to continue development of the pre-development project, the model indicates that IMA would need to secure an additional $36 million in funding. As with our pre-Proposed Transaction valuation, we have assumed that the $36 million is secured through equity funding, however this could also be secured through debt funding.

12.14. Funding of $36 million would require the issue of 684,583,854 new shares at an issue price of $0.052 per share (a 15% discount to the VWAP to 19 February 2016). The following table summarises the fully diluted impact of the issue of new shares in order to secure the required financing detailed above.

| | Ref | Low Value $ | High Value $ |
|---|---|---|---|
| Net assets (sum of parts) | 12.1 | 24,283,996 | 104,044,271 |
| Add: Cash from equity funding | 12.13 | 36,000,000 | 36,000,000 |
| Net assets (sum of parts) after equity funding | | 60,283,996 | 140,044,271 |
| | | | |
| Shares after the Proposed Transaction prior to equity financing | 12.11 | 408,302,130 | 408,302,130 |
| Issue of shares to secure required financing | 12.13 | 684,583,854 | 684,583,854 |
| Total shares after the Proposed Transaction and financing | | 1,092,885,984 | 1,092,885,984 |
| | | | |
| Value per share | | $0.055 | $0.128 |
| Discount for minority interest | 12.12 | ($0.011) | ($0.033) |
| **Minority value per share (undiluted)** | | **$0.044** | **$0.095** |

**Table 17: Value per share Post Transaction and after new financing**

12.15. We have also performed a sensitivity analysis on the impact on the value of an IMA share post the Proposed Transaction assuming different leverage ratios for any subsequent capital raisings.

| | Assumed Leverage | | | | | |
|---|---|---|---|---|---|---|
| **Debt** | **0%** | **20%** | **40%** | **60%** | **80%** | **100%** |
| **Equity** | **100%** | **80%** | **60%** | **40%** | **20%** | **0%** |
| Low value per share ($) | 0.044 | 0.044 | 0.045 | 0.045 | 0.046 | 0.048 |
| High value per share ($) | 0.095 | 0.103 | 0.114 | 0.129 | 0.151 | 0.189 |

**Table 18: Sensitivity analysis for various leverage assumptions *(Source: RSM FSA analysis)***

## 13. Is the Proposed Transaction Fair to IMA Shareholders

13.1. Our assessment values of an IMA share prior to and immediately after the Proposed Transaction, are summarised in the table and figures below.

| | | Value per Share | |
|---|---|---|---|
| **Assessment of fairness** | **Ref** | **Low** | **High** |
| Fair value of a IMA share pre the Proposed Transaction - Control basis | 11.29 | $0.052 | $0.112 |
| Fair value of a IMA share post the Proposed Transaction - Non controlling basis | 12.1 | $0.044 | $0.095 |

**Table 19: Assessed value of IMA share pre and post the Proposed Transaction (Source: RSM FSA analysis)**

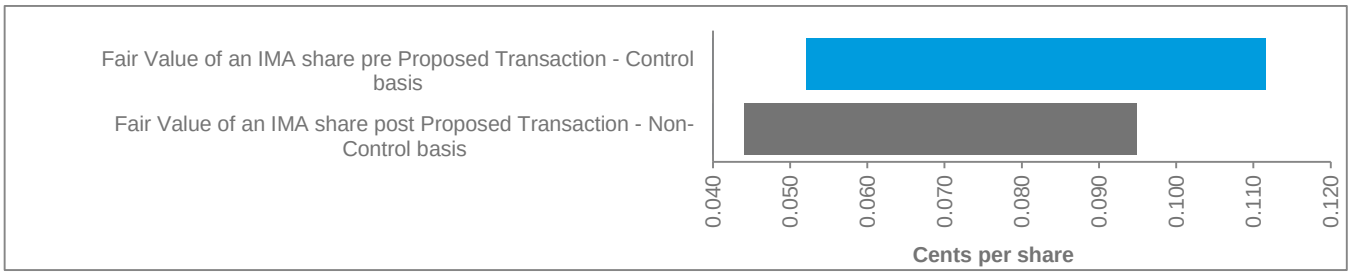



**Figure 4: IMA Share Valuation Graphical Representation (*Source: RSM FSA Analysis)***

13.2. In accordance with the guidance set out in ASIC RG 111, and in the absence of any other relevant information, for the purposes of Section 611, Item 7 of the Corporations Act 2001, we consider the Proposed Transaction to be not fair to the Non-Associated Shareholders of IMA, as the range of values of an IMA share post the Proposed Transaction is lower than the range of values of a IMA share pre the Proposed Transaction.

## 14. Is the Proposed Transaction Reasonable

14.1. RG111 establishes that an offer is reasonable if it is fair. If an offer is not fair it may still be reasonable after considering the specific circumstances applicable to the offer. In our assessment of the reasonableness of the Proposed Transaction, we have given consideration to:

- The future prospects of IMA if the Proposed Transaction does not proceed; and
- Other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

**Stated Intentions of Murray Zircon in relation to the Proposed Transaction**

14.2. The stated intentions of Murray Zircon in relation to the Proposed Transaction are not to make any significant changes to the business of the Company, subject to the Proposed Transaction.

**Future prospects of IMA if the Proposed Transaction does not proceed**

14.3. If the Proposed Transaction does not proceed then IMA will need find alternative new or used plant and equipment to acquire. It will also need to continue to seek an offtake partner for its end product. It will also be required to source additional financing as the Proposed Transaction includes short term finance that can be used to advance the pre-development projects.

**Trading in IMA shares following the announcement of the Proposed Transaction**

14.4. As demonstrated in the chart below, there was initially a positive response followed by a decline after the announcement of the Proposed Transaction.

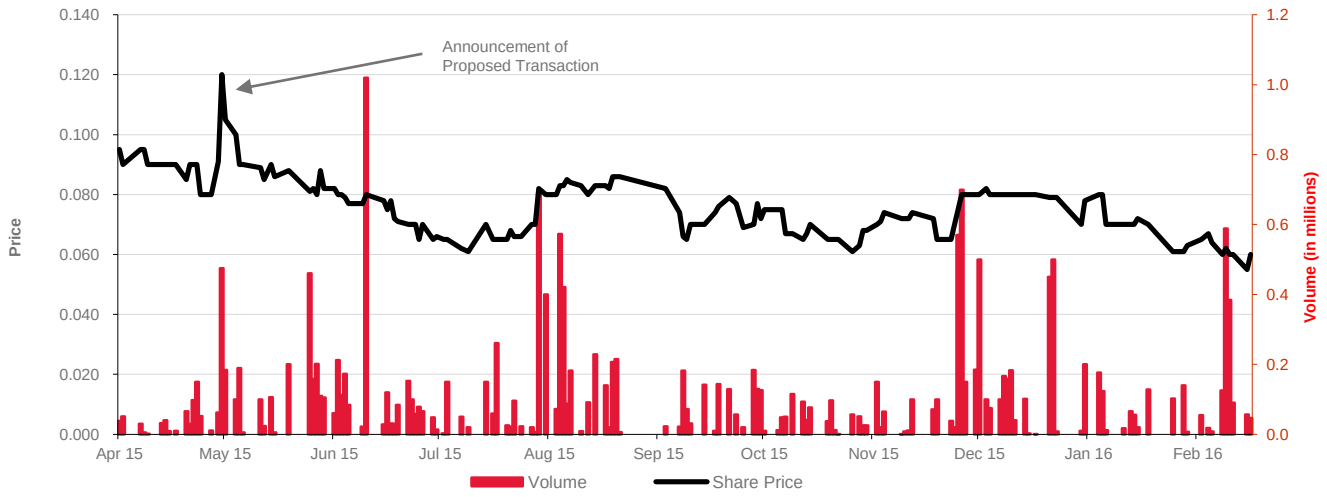



**Figure 5: IMA Post Announcement Share Price Volume Graph (Source: S&P Capital IQ)**

14.5. The chart shows that the IMA share price declined following the announcement of the Proposed Transaction reaching a low of $0.055 on 15 February 2016. We note that the share price has traded in a range of between $0.06 and $0.08 for an extended period of time following the announcement.

## Advantages and disadvantages

14.6. In assessing whether the Non-Associated Shareholders are likely to be better off if the Proposed Transaction proceeds than if it does not, we have also considered various advantages and disadvantages that are likely to accrue to the Non-Associated Shareholders.

### *Advantages of approving the Proposed Transaction*

*Advantage 1 –Plant and equipment secured for pre-development projects*

14.7. The Proposed Transaction would allow for IMA to secure some of the required equipment to proceed in the development of its mineral sands projects in Western Australia. The Proposed Transaction would result in IMA securing plant and equipment that is suitable for its requirements which should result in shortening the timeline to development. It also means that IMA does not have to source alternative plant and equipment that may not be suitable for its pre-development projects.

*Advantage 2 – Experienced Board and management acquired*

14.8. Under the terms of the Proposed Transaction, experienced Board members from Murray Zircon and Orient Zirconic will join the Board of IMA. These Board members have experience in mineral sands markets, developing mineral sands projects and experience with the plant and equipment acquired by IMA. Further, IMA is proposing to acquire management and operational staff that have experience in operating a mineral sands project and have direct experience with the plant and equipment acquired by IMA.

*Advantage 3 – Secure offtake partner at market rates*

14.9. If the Proposed Transaction is approved then IMA would secure sales of its zircon products at market rates. Under the agreement with Orient Zirconic, IMA agrees to sell and Orient Zirconic agrees to purchase 90% of zircon products produced by IMA from its tenements. This guarantees a buyer and reduces the risk that IMA would not be able to source an offtake partner prior to development.

*Advantage 4 – Secure short term finance*

14.10. The Proposed Transaction includes the provision by Murray Zircon of short term finance which will not be required to be repaid until First Production. This means that IMA will not be required to source alternative funding in the immediate term.

*Advantage 5 – Secure medium term finance*

14.11. If the Prosed Transaction is approved, IMA will secure additional medium term finance in the form of a prepayment for offtake upon First Production. This means that IMA will receive a positive working capital payment which can be used to fund operations during early stage production and ramp up.

*Advantage 6 – Commitment for additional finance*

14.12. Murray Zircon will commit to participating on a pro-rata basis in any additional capital raisings required by IMA over the 12 months following Completion. This means that there will be a certain level of support for any required funding and may also provide confidence to other potential investors.

***Disadvantages of approving the Proposed Transaction***

*Disadvantage 1 – Dilution of shareholders' interests in IMA*

14.13. The Proposed Transaction will result in diluting the current Non-Associated Shareholders' interest in IMA on an undiluted basis from 100% to 58% if the Completion Shares are issued and to 53% if the Deferred Shares are issued. As a result, Non-Associated Shareholder influence on the outcome of shareholder votes will be significantly reduced.

*Disadvantage 2 – Introduction of a controlling shareholder*

14.14. Murray Zircon will hold an interest of at least 42% in IMA (increasing to up to 47% if the Deferred Shares are issued). This means that Murray Zircon will be able to block special resolutions. However, on the assumption that not all shareholders vote at meetings, it is likely that Murray Zircon will be able to pass general resolutions and special resolutions. As such, Murray Zircon is likely to be able to exert control over shareholder voting in IMA.

14.15. We note that Murray Zircon has committed, for the Restriction Period, to certain restrictions in relation to its voting rights which include voting for resolutions recommended by the majority of the Board and not taking steps to influence the composition of the Board. As such, for the Restriction Period, Murray Zircon's influence over decision making as a shareholder will be restricted.

*Disadvantage 3 – Change in composition of the board*

14.16. The Proposed Transaction will result in changes to the composition of the IMA board which will include three nominees of IMA and three nominees of Murray Zircon, plus an independent chairman. This will result in a reduction in influence of the original Board of IMA and an increase in influence by new Board members nominated by Murray Zircon.

*Disadvantage 4 – IMA will still require additional finance*

14.17. As noted in our assessment of fairness, IMA will still require additional finance to develop the pre-development projects. However, we note that securing offtake and the finance as part of the Proposed Transaction is likely to assist in securing additional finance.

*Disadvantage 5 – IMA will need to transport the equipment to the Project area*

14.18. IMA will need to transport the equipment to the Project area and will therefore incur transport costs. However, it is possible for IMA to leave the plant and equipment on hard stand at the current location. This means that IMA will not need to coordinate or fund the transport until the plant and equipment is required to be in the project area.

*Disadvantage 6 – Repayment of debt*

14.19. IMA will need to repay the debt borrowed under the Short Term Loan Agreement if the pre-development project does not proceed and there is an event of default under the agreement, being one of the following:

- IMA defaults or commits a breach under this agreement and, by written notice to IMA, Murray Zircon requires remedy of the default or breach within 14 days or any longer period Murray Zircon allows, but IMA is still in default or breach at the end of that period;

- The Security granted to Murray Zircon is not binding;
- There is a default under the Security or the Security becomes enforceable and, by written notice to IMA, Murray Zircon requires remedy of the default or the circumstance giving rise to the Security becoming enforceable within 14 days or any longer period Murray Zircon allows, but IMA is still in default or that circumstance still exists at the end of that period;
- IMA becomes an externally-administered body corporate (within the meaning of section 9 of the Corporations Act);
- A person appoints or commences to appoint a controller (within the meaning of section 9 of the Corporations Act);
- IMA disposes of all, or substantially all, of its assets without Murray Zircon's consent.

14.20. We note that, unless one of the above events happens or IMA achieves First Production from its pre-development assets, the Short Term Loan Agreement is structured so that the loan amount does not become repayable upon First Production.

**Alternative Proposal**

14.21. We are not aware of any alternative proposal at the current time which might offer the Non-Associated Shareholders of IMA a greater benefit than the Proposed Transaction.

**Conclusion on Reasonableness**

14.22. In our opinion, the position of the Non-Associated Shareholders if the Proposed Transaction is approved is more advantageous than the position if it is not approved. Therefore, in the absence of any other relevant information and/or a superior offer, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of IMA.

14.23. An individual shareholder's decision in relation to the Proposed Transaction may be influenced by his or her individual circumstances. If in doubt, shareholders should consult an independent advisor.

Yours faithfully

**RSM FINANCIAL SERVICES AUSTRALIA PTY LTD**

**A GILMOUR**

Director

**G YATES**

Director

# APPENDIX 1

## Declarations and Disclosures

RSM Financial Services Australia Pty Ltd holds Australian Financial Services Licence 238282 issued by ASIC pursuant to which they are licensed to prepare reports for the purpose of advising clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate reconstructions or share issues.

## Qualifications

Our report has been prepared in accordance with professional standard APES 225 “Valuation Services” issued by the Accounting Professional & Ethical Standards Board.

RSM Financial Services Australia Pty Ltd is beneficially owned by the partners of RSM Australia Pty Ltd (RSM) a large national firm of chartered accountants and business advisors.

Mr. Andrew Gilmour and Mr Glyn Yates are directors of RSM Financial Services Australia Pty Ltd. Both Mr Gilmour and Mr Yates are Chartered Accountants with extensive experience in the field of corporate valuations and the provision of independent expert’s reports for transactions involving publicly listed and unlisted companies in Australia.

## Reliance on this Report

This report has been prepared solely for the purpose of assisting IMA Shareholders in considering the Proposed Transaction. We do not assume any responsibility or liability to any party as a result of reliance on this report for any other purpose.

## Reliance on Information

Statements and opinions contained in this report are given in good faith. In the preparation of this report, we have relied upon information provided by the Directors and management of Image Resources NL and we have no reason to believe that this information was inaccurate, misleading or incomplete. RSM Financial Services Australia Pty Ltd does not imply, nor should it be construed that it has carried out any form of audit or verification on the information and records supplied to us.

The opinion of RSM Financial Services Australia Pty Ltd is based on economic, market and other conditions prevailing at the date of this report. Such conditions can change significantly over relatively short periods of time.

In addition, we have considered publicly available information which we believe to be reliable. We have not, however, sought to independently verify any of the publicly available information which we have utilised for the purposes of this report.

We assume no responsibility or liability for any loss suffered by any party as a result of our reliance on information supplied to us.

## Disclosure of Interest

At the date of this report, none of RSM Financial Services Australia Pty Ltd, RSM, Andrew Gilmour, Glyn Yates, nor any other member, director, partner or employee of RSM Financial Services Australia Pty Ltd and RSM has any interest in the outcome of the Proposed Transaction, except that RSM Financial Services Australia Pty Ltd are expected to receive a fee of $27,500 based on time occupied at normal professional rates for the preparation of this report. The fees are payable regardless of whether Image Resources NL receives Shareholder approval for the Proposed Transaction, or otherwise.

## Consents

RSM Financial Services Australia Pty Ltd consents to the inclusion of this report in the form and context in which it is included with the Notice of General Meeting and Explanatory Memorandum to be issued to Shareholders. Other than this report, none of RSM Financial Services Australia Pty Ltd or RSM Australia Pty Ltd or has been involved in the preparation of the Notice of General Meeting and Explanatory Memorandum. Accordingly, we take no responsibility for the content of the Notice of General Meeting and Explanatory Statement.

# APPENDIX 2

## Sources of Information

In preparing this Report we have relied upon the following principal sources of information:

- Drafts and final copies of the Notice of Meeting;
- Audited financial statements for IMA for the years ended 30 June 2013, 30 June 2014 and 30 June 2015;
- Reviewed half yearly accounts for the period to 31 December 2015;
- ASX announcements of IMA;
- Specialist report prepared by CSA Global Pty Ltd, dated 20 November 2015;
- Specialist report prepared by Engineering & Project Management Services and included in the CSA report;
- Share Consideration Deed
- Short Term Loan Agreement
- Zircon Products Offtake Agreement
- Zircon Products Prepayment Facility Agreement
- Asset Sale and Purchase Agreement
- General Security Deed and Mining Mortgage
- Director Appointment Deed Poll
- S&P Capital IQ database; and
- Discussions with Directors, Management and staff of IMA.

## APPENDIX 3

## Glossary of Terms and Abbreviations

| Term or Abbreviation | Definition |
|---|---|
| **$** | Australian Dollar |
| **Act** | Corporations Act 2001 (Cth) |
| **APES** | Accounting Professional & Ethical Standards Board |
| **ASIC** | Australian Securities & Investments Commission |
| **ASX** | Australian Securities Exchange |
| **CAGR** | Compound annual growth rate |
| **Connect 4** | An entity of Thompson Reuters which is an aggregator of ASX listed company announcements and disclosures |
| **Company** | IMA |
| **Control basis** | As assessment of the fair value on an equity interest, which assumes the holder or holders have control of entity in which the equity is held |
| **DCF** | A method within the income approach whereby the present value of future expected net cash flows is calculated using a discount rate |
| **Directors** | Directors of IMA |
| **EBIT** | Earnings, Before, Interest and Tax |
| **EBITDA** | Earnings, Before, Interest, Tax, Depreciation and Amortisation |
| **Equity** | The owner's interest in property after deduction of all liabilities |
| **EV** | Enterprise Value, meaning, the total value of the equity in a business plus the value of its debt or debt-related liabilities, minus any cash or cash equivalents available to meet those liabilities |
| **Fair Value** | the amount at which an asset could be exchanged between a knowledgeable and willing but not anxious seller and a knowledgeable and willing but not anxious buyer, both acting at arm's length |
| **FME** | Future Maintainable Earnings |
| **FOS** | Financial Ombudsman Service |
| **FSG** | Financial Services Guide |
| **FY##** | Financial year ended 30 June |
| **IBIS** | IBIS World, producer of industry reports |
| **IMA** | Image Resources NL |
| **IER** | This Independent Expert Report |
| **MEE** | Multiple of exploration expenditure |
| **Non Associated Shareholders** | Shareholders who are not a party, or associated to a party, to the Proposed Transaction |
| **Non control basis** | As assessment of the fair value on an equity interest, which assumes the holder or holders do not have control of entity in which the equity is held |
| **Notice** | The notice of meeting to vote on the Proposed Transaction |

| Term or Abbreviation | Definition |
|---|---|
| **NPBT** | Net Profit Before Tax |
| **NPAT** | Net Profit After Tax |
| **Proposed Transaction** | It has the meaning given to the term in paragraph 1.1 of this Report |
| **Regulations** | Corporations Act Regulations 2001 (Cth) |
| **Report** | This Independent Experts Report prepared by RSM FSA dated 24 February 2016 |
| **RG 111** | ASIC Regulatory Guide 111 Contents of Expert's Reports |
| **RSM FSA** | RSM Financial Services Australia Pty Ltd |
| **S&P Capital IQ** | An entity of Standard and Poors which is a third party provider of company and other financial information |
| **VWAP** | Volume weighted average share price |

# APPENDIX 4

## WACC Assessment

When assessing an appropriate discount rate to use in a discounted cash flow valuation, due regard must be given to the rates of return available in the marketplace, the degree of risk attached to the business, shares or project and the required rate of return.

Businesses are normally funded by a mix of debt and equity. The Weighted Average Cost of Capital ("WACC") is a widely used and accepted basis to calculate the "representative" rate of returns required by debt and equity investors. We have applied the WACC methodology to determine an appropriate discount rate to be used in assessing the fair value of IMA cashflows.

The Capital Asset Pricing Model ("CAPM") is the most frequently used model in determining the cost of equity of an investment or project and the required rate of return for debt funding is determined having regard to current borrowing costs and prevailing credit ratings. The cost of equity and cost of debt are weighted by the respective proportions of equity and debt funding to arrive at the WACC.

### *WACC*

The cash flows analysed by CSA were pre-tax and real (not adjusted for inflation). As such, the WACC formula we have used calculates a pre-tax real rate of return. The generally accepted WACC formula is shown below:

WACC = [1 + [Re / (1 – t) * E/V] + [Rd * D/V]] / [1+i] - 1

Where:

| | | |
|---|---|---|
| Re | = | Expected equity investment return or cost of equity |
| Rd | = | Interest rate on debt (pre-tax) |
| t | = | Corporate tax rate |
| E | = | Market value of equity |
| D | = | Market value of debt |
| V | = | Market value of debt plus equity |
| i | = | Inflation |

### *CAPM*

The CAPM is based on the theory that the prudent investor will price investments so that the expected return is equal to the risk free rate of return plus a premium for risk. CAPM assumes that there is a positive relationship between risk and return; that is, investors are risk averse and therefore demand higher returns for accepting higher levels of risk.

The CAPM calculates the cost of equity through the following formula:

Re = Rf + β[E(Rm) – Rf]

Where:

| | | |
|---|---|---|
| Re | = | Cost of equity capital or expected return on the investment. |
| Rf | = | Risk free rate of return. |
| E(Rm) | = | Expected return on the market. |

| | | |
|---|---|---|
| E(Rm) - Rf | = | Market risk premium |
| β | = | Beta |

We have considered each component of the CAPM below.

### *Risk free rate - Rf*

We have assumed a risk free rate of 2.46% being the average yield on the 10-year Australian Government Bond for the last 10 years, as published by the RBA. We have used the 10-year bond rate as this is typically used as a proxy for the long-term risk-free rate.

### *Market Risk Premium – E(Rm) - Rf*

Market risk premium represents the level of return investors require over and above the risk free rate in order to compensate them for the non-diversifiable risks associated with an investment in a market portfolio. Strictly speaking, the market risk premium is equal to the expected return from holding shares over and above the return from holding risk-free government securities.

Various empirical studies undertaken in Australia and overseas show that historical market risk premiums vary across markets; the Australian market is generally in line with the overall range of other developed countries but is slightly higher than the world average.

Having regard to this information, we have assumed a market risk premium of 6% in our determination of the discount rate.

### *Beta - β*

The beta coefficient measures the systematic risk of the company compared to the market as a whole. A beta of 1 indicates that the company's risk is comparable to that of the market.

The choice of a beta requires judgement and necessarily involves subjective assessment as observations of beta in comparable companies may be subject measurement issues and other variations. Accordingly, depending upon circumstance, a sector average, or a basket of comparable companies may present a more reliable beta, rather than relying on a single comparable company.

Beta can be expressed as an equity beta (which includes the effect of gearing on equity returns) or as an asset beta (where the impact of gearing is removed). The asset beta will be lower than the equity beta for any given investments, with the difference dependent upon the level of gearing in the capital structure.

The selection of an appropriate beta involves a degree of professional judgement, particularly where the performance drivers of the company being valued are not directly aligned with the most comparable listed companies.

The comparable company data included in the table below illustrates the observed beta coefficients for public listed companies we consider most comparable to IMA.

In assessing companies comparable to the IMA, we have considered companies involved in mineral sand resources industry in Australia, whose securities are listed on the Australian Securities Exchange.

The ungeared equity beta's for the companies selected ranged from a low of 0.173 to a high of 2.845, with an average of 1.527 as set out in the table below.

| Company | Levered Beta | Total Debt/ Equity | Unlevered Beta |
|---|---|---|---|
| Image Resources NL | 1.557 | 0.0% | 1.557 |
| Austpac Resources NL | 2.171 | 5.6% | 2.089 |
| Strandline Resources Limited | 1.558 | 0.0% | 1.558 |
| Diatreme Resources Limited | 0.173 | 4.7% | 0.168 |
| Broken Hill Prospecting Limited | 2.366 | 0.0% | 2.366 |
| BMG Resources Limited | 2.845 | 25.6% | 2.413 |
| MZI Resources Ltd. | 1.321 | 208.4% | 0.537 |
| Altech Chemicals Limited | 0.242 | 6.1% | 0.232 |
| Metallica Minerals Limited | 1.024 | 0.0% | 1.024 |
| World Titanium Resources Ltd. | -0.120 | 0.0% | -0.120 |
| **Average** | 1.314 | 25% | 1.527 |

We have assessed the average ungeared beta of 1.527 pre the Proposed Transaction and an ungeared beta of 1.4 post the Proposed Transaction.

We provide descriptions of the comparable companies in the table below.

| Ticker | Company Description |
|---|---|
| ASX:IMA | Image Resources NL engages in the exploration, evaluation, and development of heavy mineral sands deposits in the North Perth basin of Western Australia. The company primarily holds interest in the Boonanarring and Atlas deposits comprising part of Image's North Perth Basin Heavy Mineral Sands Project in Western Australia. Image Resources NL is based in West Perth, Australia. |
| ASX:APG | Austpac Resources N.L., a minerals technology company, develops mineral processing technology for the titanium, steel, and iron ore industries in Australia. The company offers Enhanced Roasting and Magnetic Separation (ERMS) SR, a controlled roasting process, which conditions ilmenite for selective magnetic separation of gangue minerals and rapid leaching in hydrochloric acid for the generation of synthetic rutile; and Enhanced Acid Regeneration System (EARS), a process to regenerate strong hydrochloric acid from spent iron chloride leach liquor. It also provides Austpac Direct Reduced Iron, a process to enhance the ERMS SR process by reducing the iron oxide pellets produced by the EARS acid regeneration process, to iron metal pellets; and Low Temperature Roasting for upgrading contaminated ilmenite concentrates. In addition, the company is involved in the exploration and development of mineral sands deposits and gold deposits. Austpac Resources N.L. is based in Sydney, Australia. |
| ASX:STA | Strandline Resources Limited engages in the exploration and evaluation of mineral sands in Australia and Tanzania. The company holds 100% working interests in 16 granted mineral sands exploration tenements covering approximately 2000 square kilometres located along the coast of Tanzania; and Coburn Heavy Mineral Sands project located in Western Australia. It also holds interest in the Mount Gunson Copper Exploration project located in South Australia; Mount Gunson Copper Project-MG14/Windabout Excised areas located in South Australia; Fowlers Bay Nickel project located in South Australia; and Tennant Creek Gold–Copper Exploration project located in Northern Territory. The company was formerly known as Gunson Resources Limited and changed its name in December 2014. Strandline Resources Limited was founded in 2000 and is headquartered in West Perth, Australia. |
| ASX:DRX | Diatreme Resources Limited explores for heavy mineral sands, copper, gold, and base metals in Australia. Its flagship asset is the Cyclone Zircon project located in Western Australia's Eucla Basin. It also holds interest in the Eucla Basin tenement, which includes heavy mineral resources. The company was incorporated in 1993 and is based in Spring Hill, Australia. |
| ASX:BPL | Broken Hill Prospecting Limited operates as a mining and exploration company in Australia. It primarily explores for cobalt, zinc, lead, and silver deposits. The company holds a 100% interest in the Thackaringa cobalt-pyrite project, which consists of two exploration licenses, EL6622 and EL8143; and two mining leases, ML86 and ML87 located to the south west of Broken Hill, New South Wales. It also holds interests in heavy mineral sand deposits containing titanium, zirconium, ilmenite, rutile, and leucoxene minerals that are located to the south of Broken Hill. The company was formerly known as Broken Hill Cobalt Limited and changed its name to Broken Hill Prospecting Limited in November 2009. Broken Hill Prospecting Limited was incorporated in 1986 and is based in Sydney, Australia. |
| ASX:BMG | BMG Resources Limited, a diversified mineral exploration company, explores for base and precious metals in the Republic of Cyprus. The company primarily explores for copper, gold, zinc, silver, nickel, and cobalt. It holds interest in the Treasure project comprising 18 licenses over areas, including Black Pine, Kalavassos, Kambia, and Verchia covering 144 square kilometers, as well as various prospects and abandoned mines located in Cyprus. It also holds an option to acquire a 90 % interest in the Harts Range project, an advanced heavy mineral sands project located in the Northern Territory in Australia. The company is based in Perth, Australia. |

| | |
|---|---|
| ASX:MZI | MZI Resources Limited explores for, develops, and produces mineral sands. The company focuses on zircon, rutile, and leucoxene products. It holds interests in the Keysbrook project covering an area of approximately 1,406 hectares located in the south west of Western Australia; and the Kilimiraka prospect situated in the Tiwi Islands, Northern Territory of Australia. MZI Resources Limited is headquartered in East Perth, Australia. |
| ASX:ATC | Altech Chemicals Limited engages in the exploration of mineral resources. It explores for titanium, iron ore, and graphite deposits. The company holds various exploration licenses that regulate its exploration activities in Western Australia and Queensland. It also develops high purity alumina. The company was formerly known as Australia Minerals and Mining Group Limited and changed its name to Altech Chemicals Limited in November 2014. Altech Chemicals Limited was founded in 2007 and is based in Subiaco, Australia. |
| ASX:MLM | Metallica Minerals Limited explores, evaluates, and develops mineral properties in Australia. It explores for zircon-rutile, bauxite, nickel, cobalt, and scandium resources. The company primarily holds interest in Cape York Heavy Mineral Sand and Bauxite project, which is located on the west coast of Queensland's Cape York; and 100% interest in SCONI nickel-cobalt and scandium Tri-Metal project, which is located in Greenvale, North Queensland. Metallica Minerals Limited was founded in 1997 and is based in East Brisbane, Australia. |
| ASX:WTR | World Titanium Resources Limited engages in the exploration, evaluation, and development of mineral sands deposits in Madagascar. The company primarily explores for ilmenite, rutile, and zircon minerals. It owns a 100% interest in the Toliara sands project comprising the Morombe, Ankililoaka, and Basibasy deposits located to the north of the port of Toliara in south-west Madagascar. The company is headquartered in Melbourne, Australia. |

### *Cost of debt – Kd*

Cost of debt is based on the interest charged by Murray Zircon and Orient Zirconic for the debt to be provided to IMA.

### *WACC calculation*

We set out the detailed calculation of the WACC in the table below.

| WACC | Pre Proposed Transaction | Post Proposed Transaction |
|---|---|---|
| **Cost of Equity (CAPM) (Ke)** | | |
| Risk Free Rate, Rf | 2.5% | 2.5% |
| Beta, B | 2.596 | 2.380 |
| Market Risk Premium, Mrp | 6% | 6% |
| Size Premium | 0% | 0% |
| Standard (Vanilla) Capm Cost Of Equity (Pre-Tax Nominal) | 25.8% | 23.9% |
| Equity portion of finance | 50% | 50% |
| Cost of equity portion (Ke) | 12.9% | 12.0% |
| | | |
| Assumed capital structure | | |
| Debt portion of finance | 50% | 50% |
| Cost of Debt, Kd | 8% | 8% |
| Cost of debt portion (Kd) | 4% | 4% |
| | | |
| Weighted Average Cost Of Capital (Pre-Tax Real) – inflation of 2.5% ([1 + Ke + Kd] / [1 + i] - 1) | 14.0% | 13.1% |

We have not considered company specific risk given the broad range of comparable companies used to calculate a company specific beta. As a result, a broad range of risks are already reflected in the beta. However, we have reduced the beta to 2.38 (based on an ungeared beta of 1.4) when assessing the post Proposed Transaction WACC in order to reflect the decrease in risk of securing a portion of finance and plant and equipment.

Based on the assumptions set out above, we have assessed the pre-tax, real WACC to be 14.0% pre the Proposed Transaction and 13.1% post the Proposed Transaction.

## APPENDIX 5

## Independent Specialist Report – CSA Global Pty Ltd

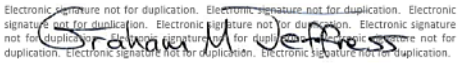
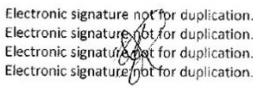
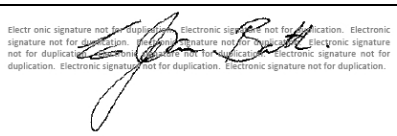
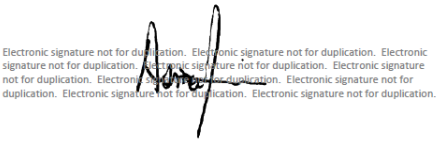
CSA Global
Mining Industry Consultants

# Independent Technical Specialists Report: Valuation of the Mineral Assets of Image Resources and of the Mindarie Plant and Equipment of Murray Zircon Pty Ltd

Report № R280.2015
20th November 2015

www.csaglobal.com

# Author and Reviewer Signatures

| | | | |
|---|---|---|---|
| Coordinating Author | Graham M. Jeffress BSC(Hons), FAIG, RPGeo, FAusIMM, FSEG | Signature |  |
| Contributing Author: | Trivindren Naidoo MSc., MAusIMM, MGSSA, Pr.Sci.Nat | Signature: |  |
| Contributing Author: | Joan Bath BEng (Mining), MBA, FAusIMM | Signature: |  |
| Contributing Author: | Karl van Olden BSc.(Eng) (Mining), MBA, FAusIMM | Signature: |  |
| Principal Reviewer: | Aaron Meakin BSc. (Hons), GDipAppFin, MAppFin, MAusIMM (CP Geo), F Fin | Signature: |  |
| CSA Global Authorisation: | | | |


# Client Information

| | |
|---|---|
| Client Name: | RSM on behalf of Image Resources NL |
| Contact Name: | Peter Gray |
| Contact Title: | Senior Manager |
| Office Address: | 8 St Georges Terrace<br>Perth WA 6000 |

# Executive Summary

Image Resources NL (Image) is a Perth-based Australian mineral exploration and development company that is listed on the Australian Securities Exchange (ASX).

Image Resources has been listed on ASX since 2002. The company is focused on the exploration and development of heavy mineral sands (HMS) deposits in the North Perth Basin, extending from 40 km to 200 km north of Perth in Western Australia. This region is a well-established minerals sands province, with excellent existing infrastructure and a local workforce with extensive mineral sands operating experience.

Image's principal activity has been the evaluation of the 100% owned Boonanarring and Atlas deposits, which comprise part of the North Perth Basin project, are located near Gingin and inland from Cervantes, respectively. Work has included mining studies, gaining environmental approvals and the completion of a feasibility study, together with related Mineral Resource estimation work, environmental studies, and applications for approvals.

RSM Bird Cameron Corporate Pty Ltd (RSM) has been engaged by the Directors of Image to prepare an Independent Expert's Report (IER) in relation to a proposed acquisition of processing plant and equipment from Murray Zircon Pty Ltd (Murray) in exchange for approximately 42% of the expanded issued capital of Image ("Proposed Transaction"). Image will also receive funding and an offtake package. RSM are to prepare an IER stating whether, in the expert's opinion, the Proposed Transaction is fair and reasonable to the non-associated Shareholders of Image. RSM have engaged CSA Global Pty Ltd to provide independent technical advice concerning the mineral assets of Image and the Mindarie plant and equipment, and to report to RSM in relation to preparation of its IER.

Image has a number of exploration and development assets in the North Perth Basin in Western Australia that form a significant component of the value of the Company. Ore Reserves and Mineral Resources have been reported in accordance with the JORC Code (2004 Edition) within the tenements. The total JORC Code (2004 Edition) compliant Ore Reserves at Boonanarring and Atlas are 24 million tonnes at 8.2% heavy minerals (HM), of which 19.1% is zircon. A review to report the Mineral Resources in accordance with the JORC Code (2012 Edition) is in progress.

The projects lie on the eastern margin of the Swan Coastal Plain, covering Pleistocene to Recent sediments of the Perth Basin. The Darling Fault lies immediately to the east of the project area, with the Darling Scarp, a steep rise in topography, being the expression of the Darling Fault. The Dandaragan Plateau, a wedge-shaped formation of Mesozoic Perth Basin sediments, lies between the Swan Coastal Plain and the Darling Fault. The Gingin Scarp, an offshoot of the Darling Scarp, is a marine erosion scarp and forms the eastern margin of the Swan Coastal Plain.

The Yoganup Formation at the base of the Gingin Scarp is the principal target for possible economic accumulations of HM. This formation mainly comprises yellow sands and represents a prograding shoreline deposit.

The Boonanarring mineralisation occurs in the Yoganup Formation and is interpreted to have formed during periods of sea level stability within a cycle of shoreline regression. The Yoganup Formation sits unconformably on Mesozoic sediments, which are colloquially referred to as the basement rocks. Overlying the Yoganup Formation are silty, clayey and sandy sediments of mainly alluvial and colluvial origin assigned to the Guildford Formation.

The Boonanarring Deposit and its extensions consist of two strandlines deposited in a historical shoreline environment along the Gingin Scarp, formed during a rise in sea level during the Pleistocene period. This strandline is distinguished by its high heavy mineral (HM) grades and corresponding high zircon content.

Boonanarring and Atlas contain total Mineral Resources of 32.3 Mt at 8.1% HM, as detailed in Table 1.

*Table 1: Boonanarring and Atlas HM Mineral Resources, September 2015. HM>2.5%*

| Deposit | JORC Classification | kt | % HM | % Slimes | HM Tonnes | VHM (%) | Ilmenite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Atlas | Measured | 9,700 | 8.5 | 15.3 | 820,000 | 76 | 52 | 5 | 8 | 11 |
| | Indicated | 1,080 | 3.2 | 19.2 | 34,000 | 74 | 53 | 8 | 7 | 6 |
| | Total | 10,780 | 7.9 | 15.7 | 854,000 | 76 | 52 | 5 | 8 | 10 |
| Boonanarring | Measured | 3,000 | 7.8 | 10.1 | 230,000 | 70 | 49 | 1 | 3 | 17 |
| | Indicated | 14,300 | 9 | 17.2 | 1,270,000 | 80 | 49 | 6 | 3 | 22 |
| | Inferred | 4,200 | 6.5 | 17.4 | 270,000 | 83 | 51 | 8 | 7 | 18 |
| | Total | 21,500 | 8.3 | 16.2 | 1,770,000 | 79 | 49 | 6 | 4 | 21 |

Image propose mining the deposits at a rate of 3.3 Mtpa over a projected 9-year mine life. Annual production from the mine is expected to average 100,000 t of ilmenite, 6,000 t of leucoxene, 10,000 t of rutile and 36,400 t of zircon for a combined annual production of HM of 152,000 t.

Conversion from Mineral Resources to Ore Reserves (Table 2) has been carried out through open pit optimisation and economic modelling, and widely publicised industry pricing forecasts.

*Table 2: Boonanarring and Atlas Ore Reserves*

| Deposit | JORC Classification | kt | % HM | Zircon in HM% | VHM in % HM | % Slimes |
|---|---|---|---|---|---|---|
| Boonanarring [1] | Probable | 14,420 | 8.3 | 24.5 | 80.3 | 17.0 |
| Atlas [2] | Probable | 9,600 | 8.1 | 11.0 | 74.1 | 15.5 |
| Total | Probable | 24,020 | 8.2 | 19.1 | 77.8 | 16.4 |
| *Excluded Mineral Resources* | | | | | | |
| *Boonanarring* | Inferred | 2,800 | 5.8 | 17.3 | 84.4 | 17.5 |
| *Atlas* | Inferred | 50 | 8.9 | 9.1 | 80.7 | 8 |

1: Boonanarring Probable Reserves include 1.67Mt of 'Unclassified' material at 2.1%HM which is treated as planned dilution.

2: 17kt of 'Unclassified' material at 0.7%HM is treated as planned dilution at Atlas

Refer to the 31 May ASX release http://www.asx.com.au/asxpdf/20130531/pdf/42g6v9v0jxn3hg.pdf for full details of the Boonanarring Mineral Resource/Reserve Estimate

High-grade deposits consist of strandlines deposited in an historical shoreline environment formed during a rise in sea level during the Pleistocene period. The HM grains are well rounded and exhibit features consistent with a marine environment of deposition. Mineral Resources are reported above a cut-off grade of 2.5% HM.

Large-scale resources are interpreted to be either strand lines (Telesto and Titan deposits), or of fluvial origin (Calypso deposit), formed in ancient river channels. Calypso is postulated to be of Mesozoic age, geologically older than the strandline deposits. Mineral Resources are reported above a cut-off grade of 1% HM.

High-grade and large-scale Mineral Resources, additional to the Atlas and Boonanarring Mineral Resources, are shown in Table 3 and Table 4 respectively.

*Table 3: Additional Image North Perth Basin High-grade Mineral Resources, September 2015. HM>2.5%.*

| Deposit | JORC Classification | kt | % HM | % Slimes | HM Tonnes | VHM (%) | Ilmenite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Gingin North | Indicated | 1,320 | 6 | 15.7 | 80,000 | 75 | 57 | 9 | 3 | 5 |
| | Inferred | 1,090 | 5 | 14 | 60,000 | 78 | 57 | 11 | 4 | 6 |
| | Total | 2,410 | 6 | 15 | 140,000 | 77 | 57 | 10 | 3 | 6 |
| Gingin South | Measured | 1,530 | 4 | 7.2 | 67,000 | 79 | 51 | 15 | 6 | 8 |
| | Indicated | 5,820 | 7 | 7.1 | 380,000 | 91 | 68 | 10 | 5 | 8 |
| | Inferred | 730 | 7 | 8.4 | 48,000 | 92 | 67 | 8 | 6 | 11 |
| | Total | 8,080 | 6 | 7.3 | 495,000 | 89 | 65 | 10 | 5 | 8 |
| Helene | Indicated | 11,500 | 5 | 18.6 | 520,000 | 84 | 70 | 1 | 3 | 11 |
| Hyperion | Indicated | 3,700 | 8 | 19.3 | 290,000 | 71 | 56 | 0 | 6 | 9 |
| Cooljarloo Nth Total | Total | 15,200 | 5 | 18.7 | 810,000 | 79 | 64 | 0 | 4 | 9 |
| Red Gully | Indicated | 3,410 | 8 | 11.5 | 270,000 | 90 | 66 | 8 | 3 | 12 |
| | Inferred | 2,570 | 8 | 10.7 | 190,000 | 90 | 66 | 8 | 3 | 12 |
| | Total | 5,980 | 8 | 11.2 | 460,000 | 90 | 66 | 8 | 3 | 12 |

*Table 4: Additional Image North Perth Basin Large-scale Resources, September 2015. HM>1%.*

| Deposit | JORC Classification | kt | % HM | % Slimes | HM Tonnes | VHM (%) | Ilmenite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Bidaminna | Inferred | 44,600 | 3.0 | 3.6 | 1,350,000 | 96.0 | 82.4 | 7.2 | 1.0 | 5.4 |
| Titan | Indicated | 21,200 | 1.8 | 22.1 | 380,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| | Inferred | 115,400 | 1.9 | 18.9 | 2,210,000 | 84.3 | 71.8 | 2.0 | 1.0 | 9.5 |
| | Total | 136,600 | 1.9 | 19.4 | 2,590,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| Telesto | Indicated | 3,500 | 3.8 | 18.4 | 130,000 | 82.6 | 67.5 | 3.4 | 2.2 | 9.5 |
| Calypso | Inferred | 51,500 | 1.7 | 13.7 | 850,000 | 84.6 | 68.8 | 3.5 | 1.6 | 10.6 |

## Valuation of Image Mineral Assets

The valuation presented in this Report was completed on behalf of RSM using information provided by and with the full support of Image. The valuation reference date is 6th November 2015 and could alter over time depending on exploration results, mineral prices and other relevant market factors. The Report has been prepared in accordance with the VALMIN Code[1].

[1] Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports. The VALMIN Code, 2005 Edition. Prepared by the VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Mineral Industry Consultants Association with participation of the Australian Securities and Investments Commission, the Australian Stock Exchange Limited, the Minerals Council of Australia, the Securities Association of Australia and representatives from the Australian Finance Sector.

Valuation of Image's projects has chiefly relied on the discounted cash flow (DCF) Income Approach and the Market Approach (Comparable Transactions) methods. The Geoscience Factor (Kilburn) and Yardstick methods have also been used as cross-checks on the Income and Market Approach results.

CSA Global considered the exploration / development stage of each project in deciding what valuation methods would be suitable in assessing the value of each project area (Table 5).

*Table 5: Exploration Stages and Valuation Methods used for each project*

| Image Project Grouping | Project | VALMIN Classification | Tenements | Tenement Area ($km^2$) | Contained Resource (HM tonnes) | Valuation Method |
|---|---|---|---|---|---|---|
| Development | Boonanarring | Pre-development | M70/1194#, M70/1311# E70/3041, G70/0250 | 50.49 | 1,770,000 | Ore Reserves: DCF, Yardstick Remaining Mineral Resources: Transactions, Yardstick Exploration area: Transactions, Kilburn |
| | Atlas | Pre-development | M70/1305# E70/3997 | 71.14 | 854,000 | |
| High-grade | Cooljarloo North | Advanced Exploration | R70/0051# | 26.65 | 810,000 | Mineral Resources: Comparable Transactions, Yardstick Exploration area: Transactions, Kilburn |
| | Gingin South | Advanced Exploration | M70/0448# E70/3032 | 40.56 | 495,000 | |
| | Gingin North | Advanced Exploration | M70/1193# | 0.81 | 140,000 | |
| | Red Gully | Advanced Exploration | M70/1192# E70/3966, E70/4077, E70/3100, E70/3192, E70/3494, E70/3720, E70/4689 | 207.99 | 460,000 | |
| Large-scale | Bidaminna | Advanced Exploration | E70/3298#& E70/2844, E70/3411 | 67.46 | 1,350,000 | |
| | Cooljarloo | Advanced Exploration | E70/2636#, E70/2898# P70/1520, E70/4244, E70/4631, E70/4656, E70/4663 | 357.81 | 3,570,000 | |
| Exploration Other | Winooka | Exploration | E70/4245 | 58.97 | | Comparable Transactions, Kilburn |

# Tenement contains declared Mineral Resource

& Image interest 90%

CSA Global considers Image's Boonanarring and Atlas Projects to be Pre-Development stage projects, as defined by the Valmin Code. It is therefore permissible to assess its value using the Income approach.

CSA Global was provided a financial model by Image, and found it to be a reasonable basis for valuation of these assets. In reaching this conclusion CSA Global reviewed the mining and mineral processing inputs to the DCF model which has been prepared for the North Perth Basin Mineral Sands Project including:

- Mineral Resources and Ore Reserves
- Mining physicals (including proposed production schedules, mining recovery and grade)
- Processing assumptions (including products and recovery, scheduling, process recoveries and plant utilisation)
- Operating costs (including but not limited to surface mining, general site costs, haulage, processing, corporate office, royalties)
- Non-operating and other costs (including but not limited to reclamation, surface mining pre-stripping, and proposed capital costs)
- Capital expenditure (including but not limited to sustaining capital expenditure).

CSA Global considers that all applied inputs are reasonable.

CSA Global has gathered additional information and developed opinions on appropriate project parameters, with which to adjust the DCF model to reach an adjusted value. The model extends to consider taxation and many other financial aspects of the project. CSA Global did not consider any aspects beyond the pre-tax value of cash flow from operations. The valuation expressed by CSA Global is the value of pre-tax cash flow from operations measured at the mine gate, including the cost of the MSP toll treating costs. Two values have been generated involving:

(1) Acquisition of a new Wet Plant; and

(2) Acquisition of the Murray Mindarie Wet Plant.

The DCF model has been adjusted to reflect a valuation date of 1st September 2015.

The results of the DCF model are significantly sensitive to commodity prices. A sensitivity test shows that varying the commodity prices produces significant swings in the value of the project. These swings are greater than sensitivity ranges on any other parameter. Price sensitivity was tested using an asymmetric distribution of –5% and +10%. The reason for the asymmetry is that there remains opportunity to optimise the implementation of the operation in terms of efficiencies and operating cost initiatives. The price sensitivity is used as an analogue to represent these revenue and operating cost opportunities. A fixed exchange rate of AU$0.72 / US$1.00 has been applied to the DCF model.

The cash flow from operations, including toll treatment MCP and pre-tax cash flow, discounted at a rate of 10% is shown in Table 6.

*Table 6: Price Sensitivity and Valuation of Boonanarring and Atlas Project*

| | **Valuation with Refurbished WCP $Million** | **Valuation with New WCP $Million** |
|---|---|---|
| 95% Commodity Price | 18 | -4 |
| 100% Commodity Price | 40 | 18 |
| 110% Commodity Price | 84 | 62 |
| Preferred Value | 35 | 15 |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

CSA Global estimate that the value of the Atlas and Boonanarring pre-development stage project, assuming acquisition of a refurbished WCP, lies between $18 million and $84 million with a Preferred Value of $35 million.

In selecting the preferred value for the Boonanarring and Atlas Projects based on the Income approach, CSA Global considered a range of factors:

- The fact that the project is yet to be built is an uncertainty that justifies a lower valuation than the outputs of the DCF modelling;
- The relatively high grade of the resources reduces risks;
- The current market conditions are particularly difficult, with poor commodity prices and heavily discounted market capitalisations, warranting selection of lower values;
- Comparison with peer companies, in particular MZI Resources who are developing the Keysbrook Project, a project of similar scale but lower grades, supports the valuation.

As a cross check CSA Global completed a Yardstick valuation of the Ore Reserves at Boonanarring and Atlas, and this exercise complements the DCF valuation range.

Image also hold numerous mineral assets in addition to those which have been valued using the Income approach. In choosing a Preferred Value and Valuation Range for these projects, CSA Global considered the valuation ranges and the preferred values from a range of methodologies. The weighting of each method in considering the overall valuation ranges and Preferred Values varied based on the stage of development of the project and CSA Global's view of the applicability of each method to each project. Valuations are shown in Table 7.

*Table 7: Preferred Value of mineral assets additional to the Atlas and Boonanarring Project*

| Project | Note | Low (A$) | Pref. (A$) | High (A$) |
|---|---|---|---|---|
| *Atlas and Boonanarring Project* | | | | |
| Boonanarring | Remaining Mineral Resources not included in the DCF model | 1.00 | 1.10 | 3.00 |
| Atlas | Remaining Mineral Resources not included in the DCF model | 0.10 | 0.15 | 0.50 |
| Boonanarring | Exploration tenure | 0.10 | 0.20 | 0.70 |
| Atlas | Exploration tenure | 0.20 | 0.30 | 0.90 |
| *High Grade Projects* | | | | |
| Cooljarloo North | Mineral Resources | 1.50 | 1.60 | 5.00 |
| Gingin South | Mineral Resources | 1.00 | 1.20 | 3.00 |
| Gingin North | Mineral Resources | 0.25 | 0.30 | 0.75 |
| Red Gully | Mineral Resources | 0.75 | 1.00 | 3.00 |
| Gingin South | Exploration tenure | 0.13 | 0.20 | 0.70 |
| Red Gully | Exploration tenure | 0.60 | 0.70 | 2.00 |
| *Large Scale Projects* | | | | |
| Bidaminna | Mineral Resources | 0.40 | 0.50 | 2.00 |
| Cooljarloo | Mineral Resources | 1.00 | 1.50 | 6.00 |
| Bidaminna | Exploration tenure | 0.18 | 0.22 | 0.90 |
| Cooljarloo | Exploration tenure | 0.80 | 1.00 | 3.20 |
| *Exploration Projects* | | | | |
| Winooka | Exploration tenure | 0.10 | 0.20 | 0.50 |
| | **Totals** | **8.1** | **10.2** | **32.2** |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

CSA Global estimate that the value of the mineral assets held by Image additional to the Atlas and Boonanarring pre-development stage project lies **between A$8.1 million and A$32.2 million with a Preferred Value of A$10.2 million**.

There is significant range in the values derived for Image's Mineral Assets. CSA Global has considered this range and concludes that it provides a reasonable representation of possible valuation outcomes for the projects, given the uncertainties inherent in valuing early stage and pre-development exploration projects.

It is stressed that the valuation is an opinion as to likely values, not absolute values, which can only be tested by going to the market.

Therefore, overall, CSA Global has selected the Preferred Value of Image's Mineral Assets to be

**A$45.2 million from a range extending from A$26.1–116.2 million.**

## Valuation of Mindarie Plant and Equipment

The Murray Zircon's (MZ) Mindarie mine is located approximately 200 km northeast of Adelaide in the Mallee region of South Australia. The processing facility consists of a Slurry Mining Unit (SMU), Primary Concentrator Plant (PCP), Concentrate Upgrade Plant (CUP), Mineral Separation Plant (MSP), and associated ancillary areas. Until the plant ceased operation in March 2015 the operations produced a heavy mineral concentrate (HMC) by processing mined ore through the SMU and PCP only.

A site visit was made to inform a valuation of the plant and equipment, as well as assess the suitability of the plant for use by Image in their North Perth Basin HMS projects. Only the SMU, PCP areas and support areas of the Mindarie Operations have been assessed as a part of this suitability and valuation report. The Mindarie CUP, MSP and associated ancillary areas have not been included in this assessment.

Valuation estimates were developed for the replacement value, condition based value, and a benchmark value. The capital cost estimates have been developed to an accuracy of ±30% using industry accepted methods and criteria dictated by the Australian Institute of Mining and Metallurgy (AusIMM). These estimates were based on process flowsheets provided by MZ in addition to information gathered during a site visit on 27th October 2015.

The replacement value is an estimate of the capital expenditure required to construct a new identical processing facility and ancillary areas in 2015. Mechanical equipment costs were obtained from recent previous projects for identical or similar equipment in the EPMS Capital Cost Database. A replacement value estimate for overall plant costs was developed by factoring from mechanical equipment.

It is noted that other methodologies may provide a wider range of valuations, (for example a "second hand" equipment based estimate is likely to offer a significantly lower valuation). Based on the information provided by MZ, EPMS have elected to prepare valuation estimates based on two different methodologies, namely

1) replacement value and
2) a condition based valuation estimate of the existing Mindarie Plant.

The condition-based valuation is for the Mindarie plant *in situ*. As Image intend to relocate the plant there will be additional design, management, transport, civil and electrical costs incurred to make the plant operable again.

When developing a methodology for composing the replacement value estimate, it was decided that in light of the proposed level of accuracy (±30%), available information and the compressed timeframe that this be treated as per the criteria dictated by the AusIMM in the Cost Estimation Handbook for a scoping / prefeasibility level study.

The conclusion from the process review was that the Mindarie Plant is fit for purpose for use for the Image Resources duty with exception of a few process and operational modifications. It is recommended

that further test work be carried out to further optimise the process circuit and ensure that no equipment is relocated that may be redundant at the new site.

As a check to the above two valuation methods, three similar plants were used to generate a benchmark relationship between capital cost and plant throughput. A benchmark estimate for the MZ MCP was generated by interpolating directly from the cost/throughput relationship of these three sample plants.

Table 8 below summarises the total capital expenditure value for the Mindarie Plant based on new replacement, used condition based and benchmarking valuation methods. Note that the benchmarking total capital expenditure does not include some of the items that were allowed for in the condition based valuation including – light vehicles, site offices and admin buildings, store's inventory etc.

Due to the small market for used processing plants it is difficult to give an accurate present day market valuation for the plant as the value of the sum of individual used components would be significantly less than the value of a full operational plant. The value of the plant to Image is higher than this as the plant is in general suited to their proposed mining operations. The other advantage to Image is the acceleration of schedule (estimated at around 12 months) due to minimal additional design and construction being required. Equipment may be relocated and installed whilst any long lead equipment items such as the thickener can be procured very soon after purchase of the plant.

*Table 8: Total Capital Expenditure for Each Valuation Method*

| Method | Plant Costs A$M | Infrastructure Costs A$M | Total Cost A$M |
|---|---|---|---|
| Replacement Valuation | 23.3 | 3.0 | 26.3 |
| Condition Based Valuation | 9.7 | 2.3 | 12.0 |
| Benchmarking Valuation | 18.5 | 3.0# | 21.5 |

# NOTE for comparison the infrastructure allowance from the replacement valuation was not included in the benchmarking project costs

**Based on the information contained in the report it is expected that most reasonable methodology to use for valuation for the plant would be the Condition-based Valuation which gives a total value for the Mindarie plant and infrastructure as A$12 million ±30% (A$8.4–15.6 million).**

# Contents

**AUTHOR AND REVIEWER SIGNATURES** ..... I

**CLIENT INFORMATION** ..... I

**EXECUTIVE SUMMARY** ..... II

VALUATION OF IMAGE MINERAL ASSETS ..... IV
VALUATION OF MINDARIE PLANT AND EQUIPMENT ..... VIII

**1 INTRODUCTION** ..... 1

1.1 CONTEXT, SCOPE AND TERMS OF REFERENCE ..... 1
1.2 COMPLIANCE WITH THE VALMIN AND JORC CODES ..... 1
1.3 PRINCIPAL SOURCES OF INFORMATION ..... 2
1.4 AUTHORS OF THE REPORT – QUALIFICATIONS, EXPERIENCE AND COMPETENCE ..... 2
1.5 PRIOR ASSOCIATION AND INDEPENDENCE ..... 4
1.6 DECLARATIONS AND LIMITATIONS ..... 4

**2 IMAGE PROJECTS** ..... 6

2.1 LOCATION ..... 6
2.2 REGIONAL GEOLOGY ..... 7
2.3 PRE-DEVELOPMENT PROJECTS ..... 8
*2.3.1 Boonanarring Project* ..... *8*
*2.3.2 Atlas Project* ..... *12*
2.4 HIGH-GRADE HMS PROJECTS ..... 16
*2.4.1 Cooljarloo North* ..... *16*
*2.4.2 Gingin South* ..... *16*
*2.4.3 Gingin North* ..... *18*
*2.4.4 Red Gully* ..... *20*
2.5 LARGE-SCALE HMS PROJECTS ..... 22
*2.5.1 Bidaminna* ..... *22*
*2.5.2 Cooljarloo* ..... *24*
2.6 EXPLORATION STAGE HMS PROJECTS ..... 26
*2.6.1 Winooka* ..... *26*
2.7 OTHER PROJECTS ..... 28
*2.7.1 Erayinia JV* ..... *28*
*2.7.2 Royalty interest* ..... *28*
2.8 MINERAL RESOURCES ..... 28
*2.8.1 High-grade Resources* ..... *30*
*2.8.2 Large-scale Resources* ..... *31*
*2.8.3 CSA Global Assessment* ..... *32*

**3 MINING STUDIES – BOONANARRING AND ATLAS PROJECTS** ..... 34

3.1 HISTORY AND BACKGROUND ..... 34
3.2 INFRASTRUCTURE ..... 34
*3.2.1 Location and Access* ..... *34*
*3.2.2 Power and Fuel Supply* ..... *35*
*3.2.3 Water Supply* ..... *35*
*3.2.4 Other Site Infrastructure and Facilities* ..... *35*
3.3 PROJECT APPROVALS ..... 36
3.4 PROJECT TENEMENTS AND OWNERSHIP ..... 37
3.5 MINING ..... 37
*3.5.1 Mining Method* ..... *37*
*3.5.2 Mine Planning and Ore Reserves* ..... *38*
*3.5.3 Cut-off Grade* ..... *38*
*3.5.4 Production Scheduling* ..... *39*

*3.5.5 Environmental ..... 39*
3.6 PROCESSING ..... 39
*3.6.1 Metallurgy ..... 39*
*3.6.2 Processing ..... 40*
*3.6.3 Mineral Separation ..... 41*
3.7 PRODUCTS ..... 41

**4 VALUATION METHODOLOGY ..... 42**

4.1 BACKGROUND ..... 42
4.2 VALUATION METHODS FOR EXPLORATION PROJECTS ..... 43
*4.2.1 Cost ..... 43*
*Appraised Value or Exploration Expenditure Method ..... 43*
*4.2.2 Market ..... 44*
*Market Approach Method or Comparable Transactions ..... 44*
*4.2.3 Geoscience Factors ..... 45*
*Geoscience Factor Method ..... 45*
*4.2.4 Yardstick ..... 45*
*The Rule-of-Thumb (Yardstick) Method ..... 45*
*4.2.5 Income ..... 46*
*The Income Approach ..... 46*

**5 VALUATION OF IMAGE'S MINERAL ASSETS ..... 48**

5.1 VALUATION APPROACH ..... 48
5.2 PREVIOUS VALUATIONS ..... 48
5.3 OTHER EXPLORATION ASSETS ..... 49
5.4 INCOME APPROACH VALUATION OF THE BOONANARRING AND ATLAS PROJECTS ..... 49
*5.4.1 Cash Flow Models and Financial Analysis ..... 49*
*5.4.2 Commodity Pricing Assumptions ..... 49*
*5.4.3 Foreign Exchange Rates ..... 49*
*5.4.4 Discount Rate ..... 50*
*5.4.5 Mineral Resources and Ore Reserves ..... 50*
*5.4.6 Mining Physicals ..... 50*
*5.4.7 Processing Assumptions ..... 50*
*5.4.8 Operating Costs ..... 51*
*5.4.9 Non-operating and Other Costs ..... 51*
*5.4.10 Capital Expenditure ..... 51*
*5.4.11 Cash Flows Scenarios ..... 52*
*5.4.12 Income-based Valuation of the Pre-development Projects ..... 52*
5.5 MARKET APPROACH ..... 52
*5.5.1 Heavy Mineral Sands Mineral Resources ..... 52*
*5.5.2 Exploration Tenure ..... 53*
5.6 YARDSTICK CROSS-CHECK ..... 55
5.7 GEOSCIENTIFIC FACTOR METHOD – 'KILBURN' METHOD ..... 55
5.8 PREFERRED VALUES ..... 57
*5.8.1 Pre-Development Projects ..... 57*
*5.8.2 Exploration and Advanced Exploration Projects ..... 57*

**6 VALUATION OF MURRAY ZIRCON'S PLANT AND EQUIPMENT ..... 59**

**7 BIBLIOGRAPHY ..... 61**

7.1 MINERAL PROPERTY VALUATION REFERENCES ..... 61
7.2 PROJECT SOURCES OF INFORMATION ..... 61

**8 GLOSSARY ..... 62**

**Figures**

Figure 1: North Perth Basin Project Location 6
Figure 2: Boonanarring Mineral Resource and project area 9
Figure 3: Atlas Mineral Resource and project area 13
Figure 4: Atlas South project area 15
Figure 5: Gingin South Mineral Resource and project area 17
Figure 6: Gingin North Mineral Resource 19
Figure 7: Red Gully Mineral Resource and project area 21
Figure 8: Bidaminna Mineral Resource and project area 23
Figure 9: Cooljarloo Mineral Resource and project area 25
Figure 10: Winooka project area 27
Figure 11: West – East Cross Section, Boonanarring, Block D. 27,100 m N. 31

## Tables

Table 1: Boonanarring and Atlas HM Mineral Resources, September 2015. HM>2.5% III
Table 2: Boonanarring and Atlas Ore Reserves III
Table 3: Additional Image North Perth Basin High-grade Mineral Resources, September 2015. HM>2.5%. IV
Table 4: Additional Image North Perth Basin Large-scale Resources, September 2015. HM>1%. IV
Table 5: Exploration Stages and Valuation Methods used for each project V
Table 6: Price Sensitivity and Valuation of Boonanarring and Atlas Project VI
Table 7: Preferred Value of mineral assets additional to the Atlas and Boonanarring Project VII
Table 8: Total Capital Expenditure for Each Valuation Method IX
Table 9: Tenement summary for Boonanarring project (Image 100%) 10
Table 10: Boonanarring Heavy Mineral Resources (2.5% HM cut-off) 11
Table 11: Tenement summary for Atlas project (Image 100%) 12
Table 12: Atlas Heavy Mineral Resources (2.5% HM cut-off) 14
Table 13: Tenement summary for the Cooljarloo North project (Image 100%) 16
Table 14: Cooljarloo North Project Heavy Mineral Resources (2.5% HM cut-off) 16
Table 15: Tenement summary for the Gingin South project (Image 100%) 17
Table 16: Gingin South Heavy Mineral Resources (2.5% HM cut-off) 18
Table 17: Tenement summary for Gingin North project (Image 100%) 18
Table 18: Gingin North Heavy Mineral Resources (2.5% HM cut-off) 20
Table 19: Tenement summary for Red Gully project (Image 100%) 20
Table 20: Red Gully Heavy Mineral Resources (2.5% HM cut-off) 22
Table 21: Tenement summary for Bidaminna project 23
Table 22: Biddaminna Dredge Heavy Mineral Resources (1.0% HM cut-off) 24
Table 23: Tenement summary for the Cooljarloo project (Image 100%) 25
Table 24: Cooljarloo Dredge Heavy Mineral Resources (1.0% HM cut-off) 26
Table 25: Tenement summary for Winooka project (Image 100%) 27
Table 26: North Perth Basin HM Mineral Resources, September 2015. HM>2.5% 29
Table 27: Mineral Resources, North Perth Basin Large-scale Resources, September 2015. HM>1%30
Table 28: Boonanarring Project Approvals 36
Table 29: Ore Reserve Estimate, FS2013 38
Table 30: Production Schedule 39
Table 31: HMC Test Work Results (Further metallurgical testing is planned) 40
Table 32: Prospectivity Enhancement Multiplier (PEM) Factors 44
Table 33: Valuation Approaches for different Types of Mineral Properties (CIMVAL, 2003) 46
Table 34: Geoscientific Factor Ranking 47
Table 35: Exploration Stages and Valuation Methods used for each project 48
Table 36: Consensus Mineral Sands Forecast (29 October 2015) 49
Table 37: New and Refurbished WCP capital costs 51
Table 38: Price Sensitivity and Valuation 52
Table 39: Summary of Valuations based on Comparable Transactions 53
Table 40: Summary of Valuations based on Exploration Area Transactions 54

Table 41: Summary of Valuations based on Yardstick Factors 55
Table 42: Estimation of the BAC for West Australian Exploration Licences (non-pastoral land) 56
Table 43: Summary of Geoscience Rating (Kilburn) Method Valuation of North Perth Basin projects 56
Table 44: Preferred Valuation of the Pre-development Projects 57
Table 45: Valuation of mineral assets additional to the Atlas and Boonanarring Project 58
Table 46: Total Capital Expenditure for Each Valuation Method 60

## Appendices

Appendix 1. Tenement Schedule 63
Appendix 2. Comparable Transactions, HMS Resources 65
Appendix 3. Comparable Transactions, HMS Exploration areas 66
Appendix 4. Geoscientific Factors 67
Appendix 5. Murray Zircon Mindarie Plant Suitability and Valuation Report 68

# 1 Introduction

## 1.1 Context, Scope and Terms of Reference

Image Resources NL ("Image" or "the Company") is a Perth-based Australian mineral exploration and development company that is listed on the Australian Securities Exchange (ASX). Image have a large portfolio of tenements in the North Perth Basin in Western Australia. Ore Reserves and Mineral Resources have been reported in accordance with the JORC Code (2004 Edition) within the tenements.

RSM Bird Cameron Corporate Pty Ltd (RSM) has been engaged by the Directors of Image to prepare an Independent Expert's Report (IER) in relation to a proposed acquisition of processing plant and equipment from Murray Zircon Pty Ltd (Murray) in exchange for approximately 42% of the expanded issued capital of Image ("Proposed Transaction"). Image will also receive funding and an offtake package. RSM are to prepare an IER stating whether, in the expert's opinion, the Proposed Transaction is fair and reasonable to the non-associated Shareholders of Image. RSM have engaged CSA Global Pty Ltd to provide independent technical advice concerning the mineral assets of Image and the Mindarie plant and equipment, and to report to RSM in relation to preparation of its IER.

Image has a number of exploration and development assets in Western Australia that form a significant component of the value of the Company.

CSA Global Pty Ltd (CSA Global) has been tasked with completing a valuation of the Mineral Assets owned by Image and the plant and equipment owned by Murray ("the Report"), which will be relied upon by RSM as an input in the IER. CSA Global will use a range of valuation methodologies to reach a conclusion on the value of the assets.

The Report will be a Technical Assessment and Valuation subject to the VALMIN Code[2]. The Report will contain a technical appraisal of the mineral assets held by Image, including geological, mining and metallurgical aspects. A valuation of the assets will also be completed. The report will also contain an assessment of Murray's plant and equipment that is to be acquired in relation to the proposed transaction. This will include an assessment of the suitability of this equipment to process Image's North Perth Basin Mineral Sands Project (NPBMSP) Ore Reserves and a valuation of the plant and equipment.

## 1.2 Compliance with the VALMIN and JORC Codes

The Report has been prepared in accordance with the VALMIN Code, which is binding upon Members of the Australian Institute of Geoscientists (AIG) and the Australasian Institute of Mining and Metallurgy (AusIMM), the JORC Code[3] and the rules and guidelines issued by such bodies as the Australian Securities and Investments Commission (ASIC) and ASX that pertain to IER's.

[2] Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports. The VALMIN Code, 2005 Edition. Prepared by the VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Mineral Industry Consultants Association with participation of the Australian Securities and Investments Commission, the Australian Stock Exchange Limited, the Minerals Council of Australia, the Securities Association of Australia and representatives from the Australian Finance Sector.

[3] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

The authors have taken due note of the rules and guidelines issued by such bodies as ASIC and ASX, including ASIC Regulatory Guide 111 – Content of Expert Reports, and ASIC Regulatory Guide 112 – Independence of Experts.

## 1.3 Principal Sources of Information

The Report has been based upon information available up to and including 6th November 2015 ("Valuation Date"). The information was provided to CSA Global by Image or has been sourced from the public domain, and includes both published and unpublished technical reports prepared by consultants, and other data relevant to Image's projects.

The authors have endeavoured, by making all reasonable enquiries within the timeframe available, to confirm the authenticity and completeness of the technical data upon which this report is based.

CSA Global elected not to undertake a site visit to the Image properties specifically for this report as one of the authors had visited the site within the last three years and no development work has been undertaken. CSA Global elected not to undertake site visits to Image's exploration properties due to the relatively grassroots nature of most of these projects.

CSA Global did visit the Murray's Mindarie site to inspect plant and equipment which are the subject of this valuation.

Tenement information was provided by Image. Full details are contained in Appendix 1.

CSA Global completed checks of the tenements on the relevant government websites in Western Australia.

CSA Global reviewed the status of the licences using data obtained by CSA Global from the WA Department of Mines and Petroleum eMiTs (Mineral Titles Online) system on 1st September 2015. Licences are in different years of their first and later terms. The tenement status as checked by CSA Global matched the information provided by Image. CSA Global relies in good faith on the independent tenement status report prepared by tenement management specialists MMTS and dated 22nd September 2015. Based on CSA Global's enquiries and MMTS's report, all licences appear to be in good standing.

CSA Global makes no other assessment or assertion as to the legal title of tenements and is not qualified to do so.

## 1.4 Authors of the Report – Qualifications, Experience and Competence

The Report has been prepared by CSA Global, a privately-owned consulting company that has been operating from Perth, Western Australia for over 25 years.

CSA Global provides multi-disciplinary services to clients in the global resources industry and has worked for major clients globally and many junior resource companies. CSA Global provides services including all aspects of the mining industry from project generation, to exploration, resource estimation, project evaluation, development studies, operations assistance and corporate advice, such as valuations and independent technical documentation. CSA Global has been involved in the preparation of Independent Technical Assessment Reports for Canadian, Australian, United States of America and United Kingdom listed companies.

The valuation of exploration properties was completed by CSA Global Senior Consultant Mr Trivindren Naidoo MSc, MAusIMM, Pr.Sci.Nat, and MGSSA. Mr Naidoo is a consulting geologist with over 15 years' experience in the minerals industry, including 10 years as a consultant. He has an extensive background in mineral exploration, and specialises in due diligence reviews, project evaluations and valuations, as

well as code-compliant reporting. His knowledge is broad-based, and he has wide-ranging experience in the field of mineral exploration, having managed or consulted on various projects ranging from first-pass grassroots exploration to brownfields exploration and evaluation, including the assessment of operating mines.

Mr Naidoo has the relevant qualifications, experience, competence and independence to be considered an “Expert” under the definitions provided in the VALMIN Code and a “Competent Person” as defined in the JORC Code.

Technical aspects of this report concerning Mineral Resources have been prepared by CSA Global Principal Geologist Mr David Williams, MAusIMM. David is a geologist with over 20 years' experience in mining, resource development and exploration. His primary areas of expertise are in resource estimation and mine geology. David's commodity experience includes mineral sands, gold, iron ore, graphite, copper, silver, lead, zinc, uranium and nickel.

Mr Williams has the relevant qualifications, experience, competence and independence to be considered a “Competent Person” as defined in the JORC Code.

Technical aspects of this report concerning mining matters have been prepared by CSA Global Principal Engineer Karl Van Olden, FAusIMM, MAICD. Karl also reviewed the inputs to the discounted cash flow model which was prepared by BDO. Karl is a mining engineer with 25 years' experience in planning, development and operation of a diverse range of open pit and underground resources assets across Africa and Australia. Karl's broad expertise includes mining engineering, business process development, business and mine planning, Ore Reserves, financial analysis and project management. His experience has been gained from operating assets, driving technical excellence within major gold producing companies and global consulting roles, providing a deep understanding of the key drivers for success in the resource industry.

Mr van Olden has the relevant qualifications, experience, competence and independence to be considered an “Expert” under the definitions provided in the VALMIN Code and a “Competent Person” as defined in the JORC Code.

Technical aspects of this report concerning mining matters have been prepared by CSA Global Principal Mining Engineer Joan Bath, FAusIMM. Joan also reviewed the inputs to the discounted cash flow model prepared by Azure Capital (Azure) and identified opportunities for upside project sensitivities. Joan is a mining engineer with 40 years' experience in resources and reserve estimation, and planning, development and operation of a diverse range of open pit and surface mining projects in Australia. Joan has experience across a range of mineral commodities, including mineral sands in both Eastern and Western Australia, working multiple operations and in environmentally sensitive locations. In recent years, Joan has concentrated on development studies for projects throughout the world.

Ms Bath has the relevant qualifications, experience, competence and independence to be considered a “Competent Person” as defined in the JORC Code.

Technical Aspects of this report concerning the Mindarie Processing Plant and equipment have been prepared by Engineering and Project Management Services (“EPMS”) Principal Process Engineer Mike Kevan, MAusIMM. Mike completed a site visit to the Mindarie Processing Plant, assessed the suitability of this plant to process the Mineral Resources owned by Image and completed a valuation of the plant and equipment. Mike has over 20 years’ experience in the Australian minerals industry and has a strong background in industrial minerals, gold, nickel, zinc and iron ore process design and project management.

Mr Kevan has the relevant qualifications, experience, competence and independence to be considered a “Competent Person” as defined in the JORC Code.

The primary reviewer of the report is CSA Global Manager – Corporate, Mr Aaron Meakin, MAusIMM (CP Geo), F Fin. Aaron is a geologist with over 20 years' experience in mining, resource development and exploration. His primary areas of expertise are in resource estimation and mine geology. Aaron's commodity experience includes gold, copper, silver, lead, zinc, manganese, graphite, magnesite and iron ore.

Mr Meakin has the relevant qualifications, experience and competence and independence to be considered a "Competent Person" as defined in the JORC Code.

## 1.5 Prior Association and Independence

The authors of this report have no prior association with Image in regard to the mineral assets. Neither CSA Global, nor the authors of this report, have or have had previously, any material interest in Image or the mineral properties in which Image have an interest. CSA Global's relationship with Image is solely one of professional association between client and independent consultant.

CSA Global is an independent geological consultancy. This report is prepared in return for professional fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report. The fee for the preparation of this report is approximately $54,000.

No member or employee of CSA Global is, or is intended to be, a director, officer or other direct employee of Image. No member or employee of CSA Global has, or has had, any shareholding in Image. There is no formal agreement between CSA Global and Image to CSA Global conducting further work for Image.

## 1.6 Declarations and Limitations

This Report has been prepared by CSA Global at the request of, and for the sole benefit of RSM. Its purpose is to provide an Independent Technical Assessment and Valuation of Image's projects in Western Australia and plant and equipment owned by Murray currently located at the Mindarie project site in South Australia. The Report is to be included in its entirety or in summary form within an IER to be prepared by RSM**.** It is not intended to serve any purpose beyond that stated and should not be relied upon for any other purpose.

CSA Global has consented to the inclusion of the Report within the IER in the form and context in which it is to appear. Neither the whole nor any part of the Report, nor any reference to it, may be included in or with, or attached to any other documents, circular, resolution, letter or statement without the prior written consent of CSA Global as to the form and context in which it is to appear.

The statements and opinions contained in this report are given in good faith and in the belief that they are not false or misleading. This report has been compiled based on information available up to and including the date of this report. The statements and opinions are based on the reference date of 6$^{th}$ November 2015 and could alter over time depending on exploration results, mineral prices and other relevant market factors.

All parties have consented to the inclusion of their work for the purposes of this announcement.

The interpretations and conclusions reached in this report are based on current geological understanding and the best evidence available to the authors at the time of writing. It is the nature of all scientific conclusions that they are founded on an assessment of probabilities and, however high these probabilities might be, they make no claim for absolute certainty.

CSA Global has provided and not withdrawn written consent for the inclusion of the Report in the IER, and to the inclusion of statements made by CSA Global and to the references to its name in other sections of the IER, in the form and context in which the Report and those statements appear.

CSA Global accepts responsibility for the Report for the purposes of an Independent Technical Assessment and Valuation. Having taken all reasonable care to ensure that such is the case, CSA Global and the authors confirm that, to the best of their knowledge, the information contained in the Report is in accordance with the facts, contains no omission likely to affect its import, and no change has occurred since 6th November 2015 that would require any amendment to the Report.

A final draft of the Report was provided to Image and RSM, along with a written request to identify any material errors or omissions prior to lodgement. Where appropriate, and in accordance with ASIC Regulatory Guide 111, consent has been obtained to quote data and opinions expressed in unpublished reports prepared by other professionals on the properties concerned.

# 2 Image Projects

Information in this section of the report has been sourced from the Image website and the Base Case Feasibility Study document for the Boonanarring Mineral Sands Project, dated 30 September 2013.

## 2.1 Location

Images' NPBMSP is located between 60 km and 180 km north of Perth in Western Australia (Figure 1).


*Figure 1: North Perth Basin Project Location (Source: Image)*

The NPBMSB consists of a total of 27 granted tenements and two tenement applications covering a total area of approximately 882 km$^2$. Within these tenements Image has identified nine heavy mineral sands (HMS) Mineral Resources that it believes may be economic to mine. The Mineral Resources stretch along the Gingin Scarp from south of Gingin to 15 km inland from the township of Cervantes.

The Brand Highway is the major access route to all of the tenements and consists of a bituminised highway with single lanes in either direction that is chiefly used for heavy haulage, including the haulage of Heavy Mineral Concentrate (HMC) from Tronox's Cooljarloo mine site to its Chandala (Muchea) processing plants. The Gingin to Red Gully Deposits are located adjacent to the Brand Highway and the Cooljarloo Deposits are located on well-formed gravel roads 20 km to 25 km west of the Brand Highway.

The Bidaminna Deposit is isolated from the others and lies 18 km west of the Brand Highway with access via the bituminised Orange Springs Road and Cowalla Road.

## 2.2 Regional Geology

The Project area lies on the eastern margin of the Swan Coastal Plain covering Pleistocene to Recent sediments of the Perth Basin. The Perth Basin is part of an ancient rift valley, formed during the break up of Gondwanaland, and is separated from the much older Yilgarn Craton by the Darling Fault. The Yilgarn Craton is a stable craton of Archaean mixed granitoid, gneisses and greenstones that occupy much of the southern half of Western Australia. The Darling Fault, which lies immediately east of the project area, extends for almost 1000 km in a north–south alignment. The surface expression of the Darling Fault is called the Darling Scarp and there is a steep rise in topography from the eastern edge of the coastal plain up to the hills.

Between the Swan Coastal Plain and the Darling Fault lies the Dandaragan Plateau, which is a wedge-shaped formation of Mesozoic Perth Basin sediments located between the Darling Scarp to the east and the Gingin Scarp to the west, north of Bullsbrook. The Gingin Scarp, which is an offshoot of the Darling Scarp, is a significant west-facing Pliocene – Pleistocene marine erosion scarp cut into Mesozoic sediments of the Coolyena and Warnbro Groups as a result of marine transgressive events. In this area, it forms the eastern margin of the Swan Coastal Plain.

There are three distinct ages of sedimentation in the area:

- Quaternary – Tertiary sedimentation including lateritisation of the exposed Mesozoic formations, the Yoganup Formation, the Guildford Formation and the Bassendean Sand;
- Cretaceous Leederville Formation and Coolyena Group; and
- Jurassic Yarragadee and Parmelia Formations.

Tertiary lateritisation of the Coolyeena and other Mesozoic sediments outcropping on the Dandaragan Plateau is represented by significant breakaway cliffs directly east of the project area. The most easterly feature of the Late Tertiary – Quaternary coastal plain sediments is the so-called Ridge Hill Shelf, which now forms part of the foothills of the Darling and Gingin Scarps. This unit can be traced as a narrow zone 2 km to 3 km wide and consists of the remnants of two former Pleistocene shoreline deposits: the Ridge Hill Sandstone and the younger Yoganup Formation. The Pleistocene Yoganup Formation lies further to the west and at a lower elevation than the Ridge Hill Sandstone. The Yoganup Formation at the base of the Gingin Scarp is the principal target for possible economic accumulations of heavy minerals.

The Yoganup Formation mainly comprises yellow sands and represents a prograding shoreline deposit. The main units include a basal beach conglomerate, beach deposits, dunes and occasional deltaic deposits. The formation is thought to be of Middle Pleistocene age, based on stratigraphy and

geomorphologic evidence. The Boonanarring mineralisation occurs in the Yoganup Formation and is interpreted to have formed during periods of sea level stability within a cycle of shoreline regression. The Yoganup Formation sits unconformably on Mesozoic sediments which are colloquially referred to as the basement rocks. Overlying the Yoganup Formation are silty, clayey and sandy sediments of mainly alluvial and colluvial origin assigned to the Guildford Formation. To the west and covering Guildford Formation lithologies are the Bassendean Dunes, consisting of low dunes of yellow quartz sand which are interpreted to have been leached of calcium carbonate.

The Mesozoic sediments of the Perth Basin in this area comprise the Coolyena Group overlying the Leederville Formation of the Warnbro Group. The Coolyena Group consists of a glauconitic shale, siltstone and silty to clayey sandstone in the east and characteristically glauconitic interbedded sandstone, siltstone, shale and claystone of the Osborne Formation in the west. The Pinjar Member of the Leederville Formation underlies the Coolyena Group in this area and consists of discontinuous, interbedded sandstones, siltstones and shales of marine and non-marine origin. It is underlain by the interbedded sandstones, siltstones and shales of the Yarragadee Formation and Parmelia Group.

## 2.3 Pre-Development Projects

Image has selected the Boonanarring and Atlas projects to develop. A description of these projects is provided below.

### *2.3.1 Boonanarring Project*

*Location, Access and Infrastructure*

The Boonanarring Deposit is located 90 km north of Perth and between 12 km and 24 km north of Gingin (Figure 2). The Boonanarring project area lies 3 km east of the Brand Highway towards the southern end and abuts the Brand Highway towards the northern end. The Brand Highway is one of the major transport routes to the north of Western Australia.

*Description of Mineral Assets*

The project area is held within one Exploration Licence (E70/3041) which covers an area of 40.58 km$^2$ and two Mining Leases (M70/1194 and M70/1311) which cover a total area of approximately 9.79 km$^2$ (Figure 2 and Table 9). In addition, Image holds a general purpose licence of approximately 0.12 km$^2$. All tenements are 100% held by Image, and are currently live and granted.

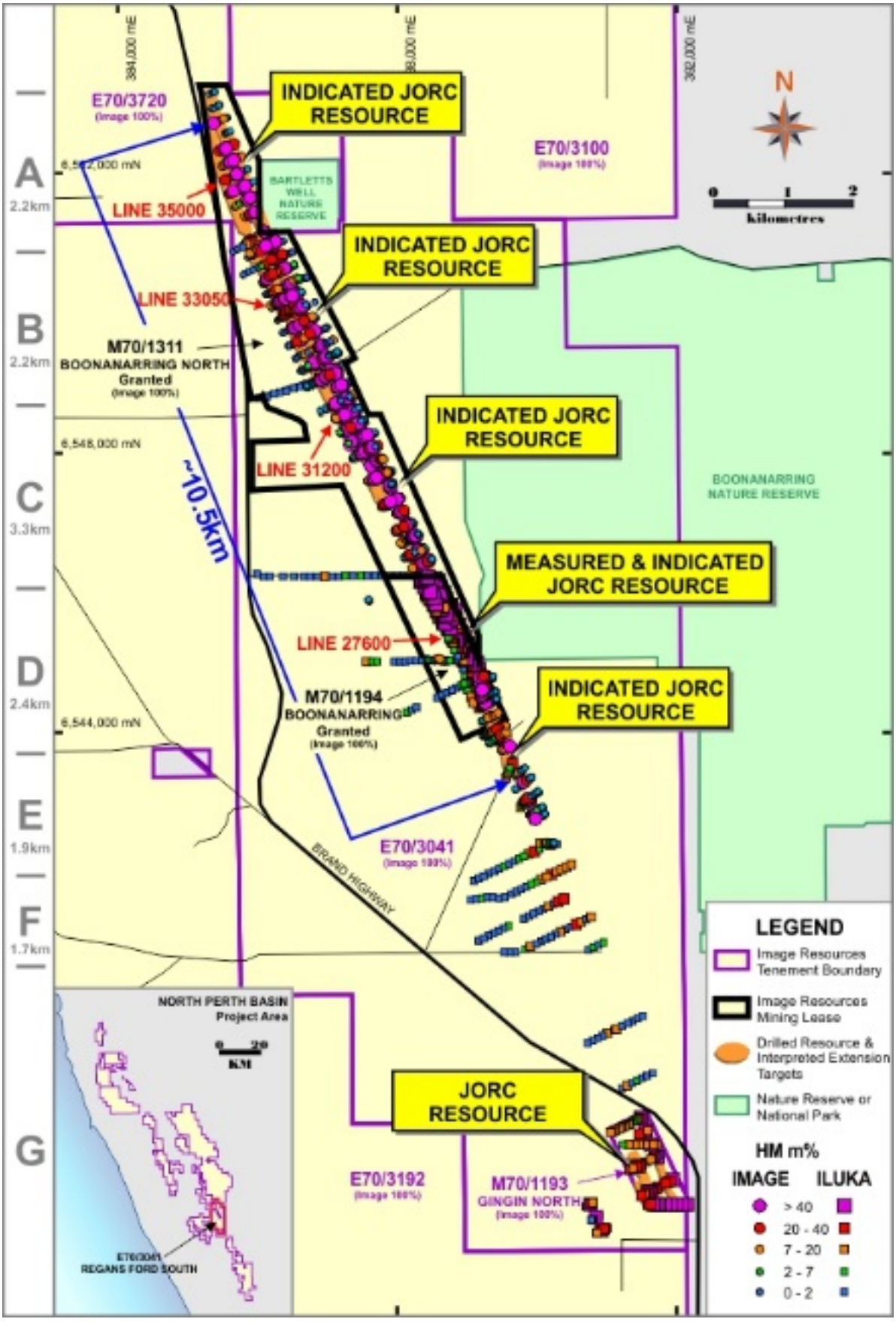



*Figure 2: Boonanarring Mineral Resource and project area (Source: Image)*

*Table 9: Tenement summary for Boonanarring project (Image 100%)*

| Tenement ID | Type | Status | Area (km²) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| M70/1194# | Mining Lease | Live | 1.74 | 16-Dec-05 | 15-Dec-26 |
| M70/1311# | Mining Lease | Live | 8.05 | 12-Mar-13 | 11-Mar-34 |
| E70/3041# | Exploration Licence | Live | 40.58 | 10-Jun-08 | 9-Jun-18 |
| G70/250 | General purpose licence | Live | 0.12 | 8-May-13 | 7-May-34 |

# - Combined Report 151/2011

*Project Geology*

*Stratigraphy*

The Boonanarring Deposit and its extensions consist of two strandlines deposited in a historical shoreline environment along the Gingin Scarp, formed during a rise in sea level during the Pleistocene period. This strandline is distinguished by its high HM grades and corresponding high zircon content. The stratigraphy of the deposit has been divided into four main units that are always present, with sub-units appearing in some parts. The units from youngest to oldest are:

**Surface Sands –** Low slime, yellowish coloured and generally uncemented sands sitting between the surface and 4 m to 10 m depth. It in part covers a lateritised surface that formed on the underlying red cover sands. This unit is tentatively correlated with the Bassendean Sands.

**Red Cover Sands –** Iron rich sands of red to brown colour containing varying levels of induration and often containing high clay lenses, often towards the base of the unit. Oversize material is common in the majority of intervals logged and often gives rise to false HM contents generated by goethite / limonite chips reporting as HM. The sands are often coarse, suggesting a high energy environment and HM grains are angular to round with iron oxide adhesions. This unit is tentatively correlated with the Guildford Formation.

**Host Sands –** Clean sands with less than 15% slime content and clay sands between 15% and 30% slimes. The sands are brown – light grey, fine to medium grained, coarsening towards the base and generally well sorted. The Host Sands contain the two strands units and are differentiated from the strands by HM content (generally less than 0.5%) and HM textures, where strand material is generally more rounded and smooth. The Host Sands may contain isolated pockets of low grade (1–2%) HM, but they do not form contiguous zones across sections and can often be associated with iron-cemented horizons. The Host Sands are correlated with Yoganup Formation.

Within the Host Sands three sub-units have been defined:

**Mineralised Strands** – Two strand concentrations have been identified, the high grade Eastern Strand and the lower grade Western Strand. The HM grains are well rounded and mostly devoid of surface coatings, exhibiting features consistent with a marine environment of deposition. The strands exhibit the same lithological characteristics as the Host Sands, being differentiated chiefly by HM grade with a natural cut-off around 2.5% HM. At the top of the strands there is often a transition zone marked by iron oxide cementation of the sands and heavy minerals. This is interpreted as an erosion surface or unconformity between the Guildford and Yoganup sands. In other areas, the top of the strands are covered by clean, un-cemented, well sorted barren sands. The base of the eastern strand sits at between 65 m Australian Height Datum (AHD) and 69 m AHD and has a steep incline, whereas the western strand sits at 64 m AHD to 66 m AHD, with a more level base.

**Basal Granular Sand –** Consists of very coarse to pebbly sand units occurring at the base of the Host Unit. It is interpreted as a probable surf zone to upper shore face formed during the deposition of the Host Sands. This unit is well represented in Block B, but is less well developed in Blocks A, C and D – E.

It may contain significant HM, but also contains crushed ironstone, some pyrite / marcasite and finer grained heavy minerals.

**Clay –** In Block B, a basal clay unit was observed that contained 30–70% slimes and moderate HM grades with high zircon contents. This is interpreted as upper to lower shore face sands formed during the marine incursion.

**Cretaceous Basement –** Consisting of dark grey to black carbonaceous shales and clays, with occasional coarse sandstone in parts. The sandstone units vary from very fine to very coarse, poorly sorted sands that may grade into pebbly, poorly sorted sands and clayey sands. Pebbles and granules are generally angular to sub-rounded and appear to be of alluvial origin. A Laterite cap may form on the basement contact, especially in Blocks D and E, sometimes stopping drill hole penetration into the basement proper.

**Induration Zones –** Several induration zones occur in the stratigraphy. These zones are marked by drilling hardness that starts around 3, and occasionally reaches 5, where penetration by aircore drilling becomes impossible. Drill logs show these zones as rock units (sandstone, iron sandstone, rock) with oversize greater than 50%. Typically, induration is due to iron cementation. The main zones of induration are found in the Red Sand unit directly below the main lateritised horizon in the surface sands. Another zone of induration is found in the basal granular sand and at the basement contact where there is evidence of laterisation of the basement. Palaeo-groundwater may have played a part in the somewhat scattered iron cemented rafts within the sand sequences.

*Mineralisation*

The mineralisation is almost exclusively strand accumulated HM concentration with significant zircon concentration occurring in the nose of the eastern strand. Zircon contents up to 71% have been recorded in high HM grade accumulations. The general trend for the eastern strand contains higher zircon content and zircon tends to be concentrated in the eastern “nose” or shoreward side of the strands, with lower concentrations in the western “tail” or offshore end of the strand.

*Mineral Resources*

Mineral Resources are discussed in detail in section 2.8 of this report. The Boonanarring Mineral Resources are summarised in Table 10.

*Table 10: Boonanarring Heavy Mineral Resources (2.5% HM cut-off)*

| JORC Classification | Tonnes | HM (%) | Slimes (%) | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Measured | 3,000,000 | 7.8 | 10.1 | 230,000 | 70 | 49 | 1 | 3 | 17 |
| Indicated | 14,300,000 | 9.0 | 17.2 | 1,270,000 | 80 | 49 | 6 | 3 | 22 |
| Inferred | 4,200,000 | 6.5 | 17.4 | 270,000 | 83 | 51 | 8 | 7 | 18 |
| Total | 21,500,000 | 8.3 | 16.2 | 1,770,000 | 79 | 49 | 6 | 4 | 21 |

*Metallurgical and Processing Aspects*

The majority of the Ilmenite from this Mineral Resource contains around 55% Titanium Dioxide ($TiO_2$) which is too primary to be suitable as raw feedstock for Synthetic Rutile (SR) production. Test work has indicated that approximately 40% of the Ilmenite could be separated into a high $TiO_2$ (+58% $TiO_2$) suitable as SR feedstock. Iron staining is quite common on the zircon, with extreme levels of staining visible in the Block A material. Without reagent attritioning, it is expected that only 60% could be marketed into the global 'Premium' or ‘Standard’ grade zircon markets. Levels of Leucoxene and Rutile are relatively stable, with the occasional high Rutile content reported in parts of Block B and C. Non-economic (trash) minerals make up between 10% and 15% of the HM assemblage with staurolite,

tourmaline and kyanite, constituting around about 10% in near equal levels. Monazite varies between 0.1% and 1.7% of the HM assemblage and demonstrates a strong positive correlation with zircon grade.

### *2.3.2 Atlas Project*

*Location, Access and Infrastructure*

The Atlas Mineral Resource is located approximately 170 km north of Perth and 18 km east of Cervantes (Figure 3). It is located to the north and west of the Tronox Cooljarloo mine. The Atlas Mineral Resource lies approximately 21 km west of the Brand Highway. Access is gained via the unsealed Wongonderrah Road which extends from the highway to the southern edge of the main Atlas Mineral Resource. Munbinea Road travels north from Wongonderrah Road between 0.5 km and 1.5 km west of the project area.

*Description of Mineral Assets*

This project was a part of the Cooljarloo Project. A mining lease application (MLA70/1305) covers an area of approximately 9.5 $km^2$ which contains the Mineral Resources (Table 11). The project area includes one exploration licences (E70/3997) that covers an area of approximately 62 $km^2$ immediately to the south of the Mineral Resource (Figure 3).

*Table 11: Tenement summary for Atlas project (Image 100%)*

| Tenement ID | Type | Status | Area ($km^2$) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| M70/1305 | Mining Lease Application | Pending | 9.48 | Pending | - |
| E70/3997[#] | Exploration Licence | Live | 61.66 | 11-Oct-11 | 10-Oct-16 |

[#] - Combined Report 97/2007

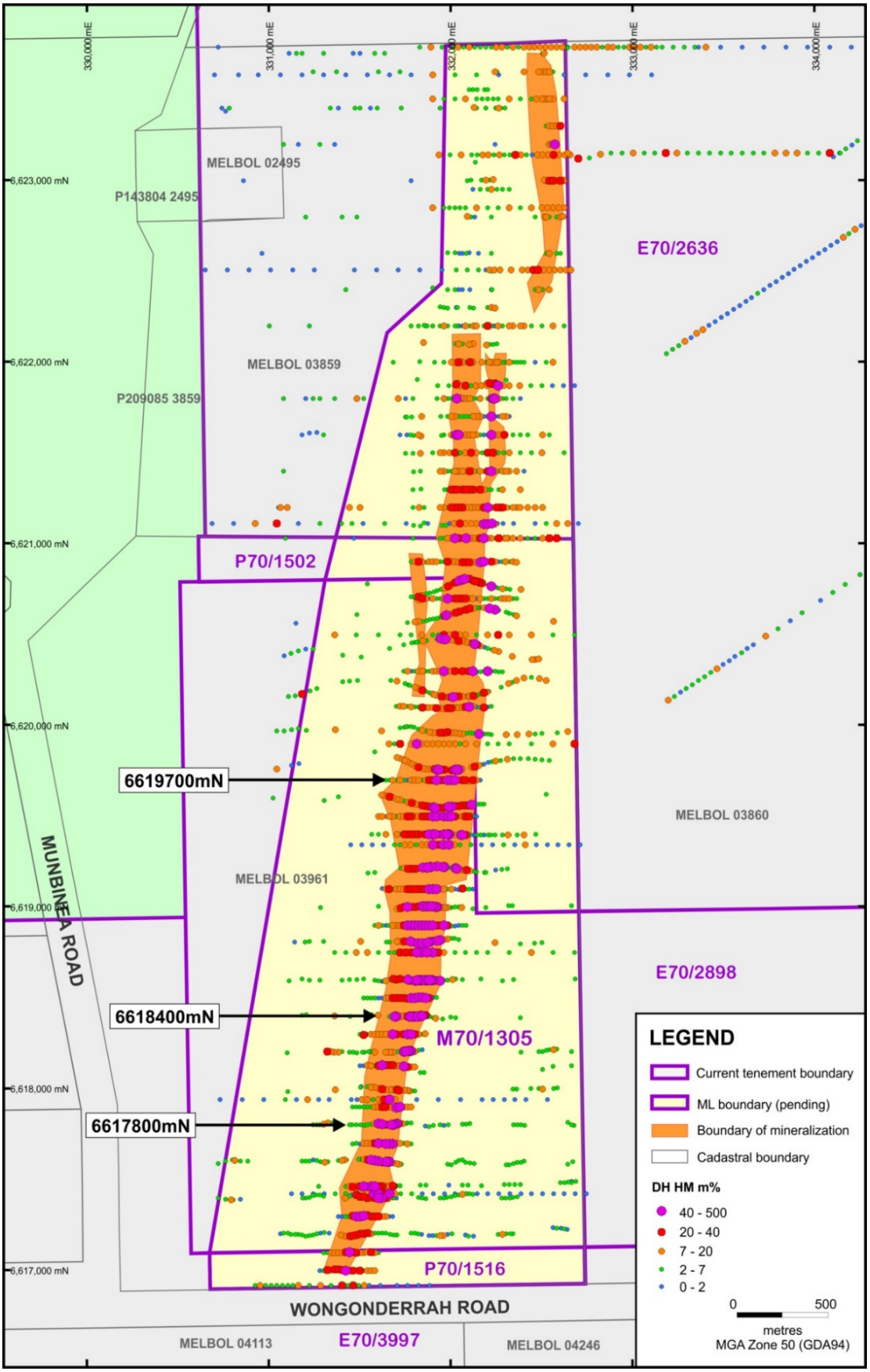



*Figure 3: Atlas Mineral Resource and project area (Source: Image)*

*Project Geology*

The Atlas Deposit is formed in surficial marine sediments eroded into Cretaceous basal sediments during the Pleistocene marine transgressions. The deposit is formed in generally fine to medium, well sorted sands and clayey sands. The mineralisation at a 2.5% HM cut-off often starts at surface, but can be up to 15 m deep. Average cover is 3 m, with an average thickness of 4 m and maximum thickness of 12 m. The HM concentration exhibits typical strand morphology with higher HM grades and increased high specific gravity HM heavy minerals (zircon and Ilmenite) in the eastern side of the strand, corresponding with the zone of maximum concentration at the shore face. The zircon grade also increases to the south, with the southern 2.5 km containing +10% HM as zircon, correlating with higher HM grades in this area.

The deposit has been drilled to 100 m by 20 m spacing over most of its length with 1.2 km north of 6,622,400 m N, drilled at approximately 200 m by 40 m spacing.

*Stratigraphy*

The stratigraphy of the Atlas Deposit is much simpler than that at Boonanarring. A general low grade (<1.0% HM) layer has been defined sitting above the strand zone. This definition is based on HM grade rather than geological differentiation. The zone sits over the strand zones and then to the east and west of the strands sits directly on Mesozoic Basement. There have been eight separate strands defined based on mineralogy and location for modelling purposes.

Where the mineralisation is covered by barren sands, the sands tend to be clean and well sorted, ranging from fine to coarse grained and often containing a layer of increased fines up to 50% at about 3 m to 6 m depth. Two zones of iron oxide induration are present in the stratigraphy. The first is located on the contact with the basal Cretaceous sediments (basement) and the second occurs as a layer above the mineralisation, where it is covered by later sands.

The basement units are predominantly very fine to granular or pebbly, poorly sorted sands and clayey sands. Occasional silt and clay units are also intersected on the edges of the deposit, most likely reflective of facies changes in the underlying Yarragadee Formation and other Jurassic units.

*Mineralisation*

*T*he mineralisation has been subdivided into separate strands, based on mineralogy, grade variations and location.

*Mineral Resources*

The mineral resources for the Atlas project are presented in Table 12 and discussed further in Section 2.8 of this report.

*Table 12: Atlas Heavy Mineral Resources (2.5% HM cut-off)*

| JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Measured | 9,700,000 | 8.5 | 15.3 | 820,000 | 76 | 52 | 5 | 8 | 11 |
| Indicated | 1,080,000 | 3.2 | 19.2 | 34,000 | 74 | 53 | 8 | 7 | 6 |
| Total | 10,780,000 | 7.9 | 15.7 | 854,000 | 76 | 52 | 5 | 8 | 10 |

*Exploration Potential*

The Atlas South Project is located approximately 165 km north of Perth and directly south of Wongonderrah Rd as a continuation of the Atlas Deposit (Figure 4).

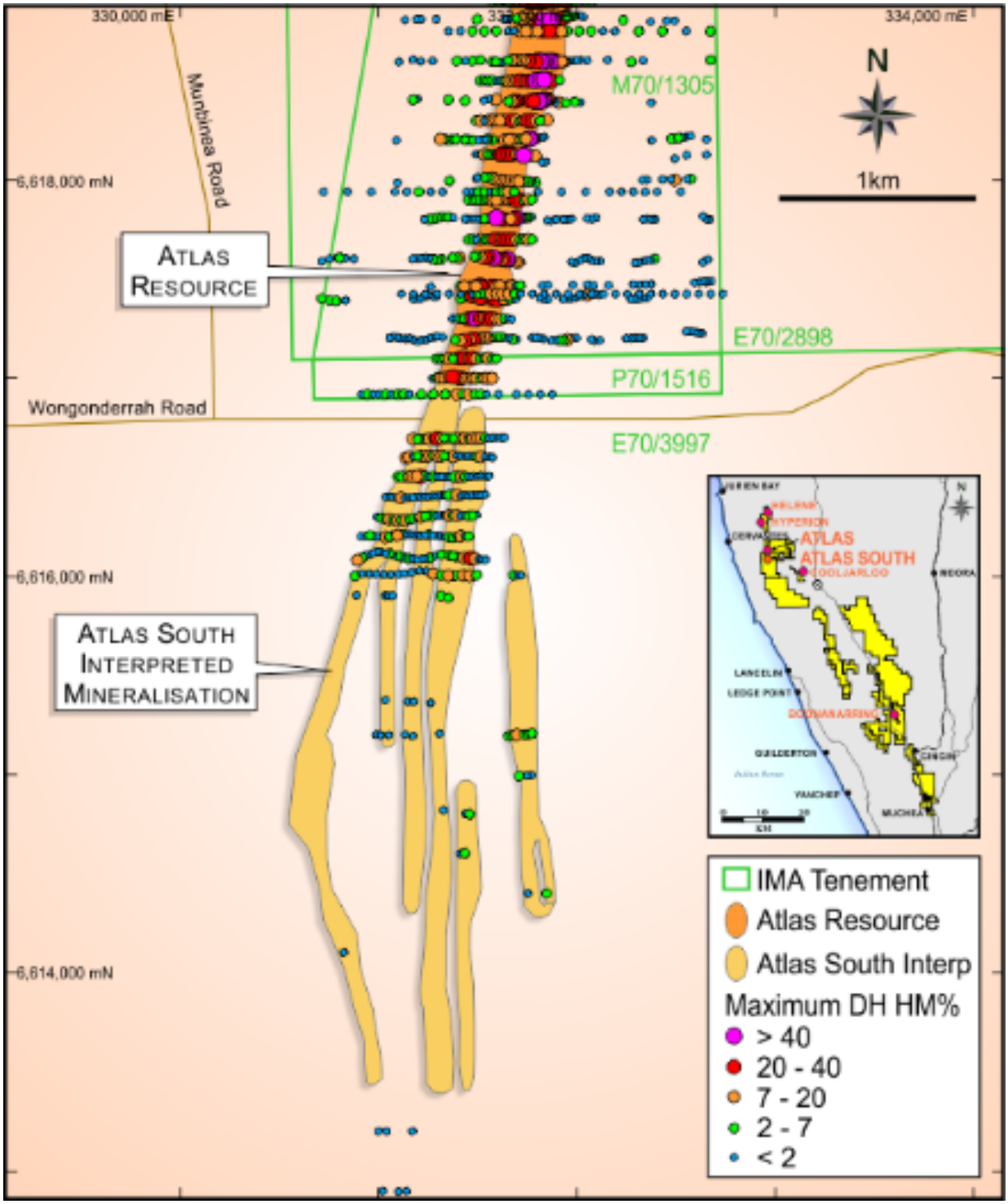



*Figure 4:* *Atlas South project area*
*(Source: Image)*

Drilling by Image in 2012 delineated a 700 m extension to the Atlas strandline south of Wongonderrah Road. Further work is planned in 2014 to examine the potential for further extensions and links to the Woolka targets to the south.

## 2.4 High-grade HMS Projects

### *2.4.1 Cooljarloo North*

*Location, Access and Infrastructure*

The Cooljarloo North project is situated approximately 18 km east of the town of Cervantes and about 180 km north-northwest of Perth (Figure 9).

*Description of Mineral Assets*

The project is covered by Retention Licence R70/0051, with an area of approximately 26.7 km$^2$ (Table 13).

*Table 13: Tenement summary for the Cooljarloo North project (Image 100%)*

| Tenement ID | Type | Status | Area (km$^2$) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| R70/0051[#] | Retention Licence | Live | 26.65 | 05-Feb-14 | 04-Feb-19 |

[#] - Combined Report 97/2007

*Project Geology*

The project is on the Swan Coastal Plain west of and abutting the Gingin Scarp.

Helene, in the north of the exploration area (Figure 9), comprises three subparallel strandlines and has produced consistently high-grade drill intersections mostly in excess of 5% HM with a maximum around 20% HM.

*Current and Historical Mineral Sands Exploration*

Ground magnetic surveys and follow up drilling at Cooljarloo North have confirmed the presence of numerous, north-northwesterly trending magnetic anomalies representing mineralized palaeostrandlines. Of these, two highly mineralized strandline systems (Hyperion and Helene) each extend continuously for more than 4.5 km.

*Mineral Resources*

Mineral Resources for Helene and Hyperion are shown in Table 14 and discussed in more detail in Section 2.8 of this report.

*Table 14: Cooljarloo North Project Heavy Mineral Resources (2.5% HM cut-off)*

| Project | JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Helene | Indicated | 11,500,000 | 4.6 | 18.6 | 520,000 | 84 | 70 | 1 | 3 | 11 |
| Hyperion | Indicated | 3,700,000 | 7.8 | 19.3 | 290,000 | 71 | 56 | 0 | 6 | 9 |
| Total | | 15,200,000 | 5.3 | 18.7 | 810,000 | 79 | 64 | 0 | 4 | 9 |

### *2.4.2 Gingin South*

*Location, Access and Infrastructure*

The Gingin South Mineral Resource is located approximately 60 km north of Perth and between 5 km and 10.5 km south of the town of Gingin in Western Australia.

*Description of Mineral Assets*

Gingin South is held under two tenements covering approximately 40 km$^2$, Mining Lease M70/448, which was acquired from Iluka Resources, and Exploration Licence E70/3032 (Figure 5 and Table 15). Both of these tenements are owned 100% by Image.

*Table 15: Tenement summary for the Gingin South project (Image 100%)*

| Tenement ID | Type | Status | Area (km²) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| M70/0448# | Mining Lease | Live | 1.05 | 03-May-90 | 06-May-32 |
| E70/3032# | Exploration Licence | Live | 39.51 | 15-Oct-08 | 14-Oct-18 |

# - Combined Report 71/2010

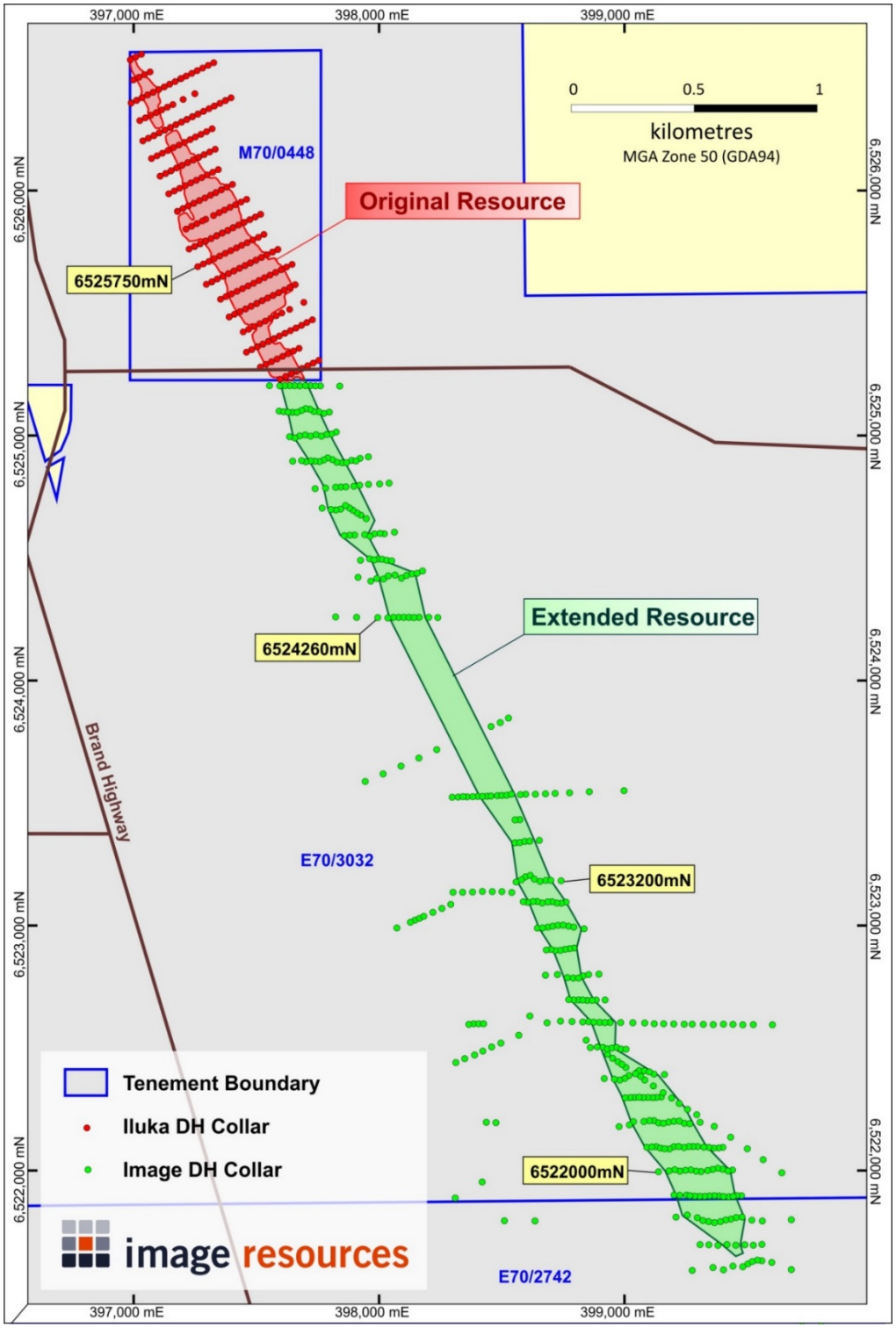



*Figure 5: Gingin South Mineral Resource and project area (Source: Image)*

*Project Geology*

The Gingin South Deposit and its extension consist of two strands deposited in a shoreline environment along the Gingin Scarp when it was formed by transgression of the ocean in the Pleistocene. The western strandline occurs at an elevation of 64 m RL and rises sharply to the east to between 72 m RL and 74 m RL. The easternmost shoreline occurs at 74 m RL with a gentle westerly dip. In some areas the 74 m RL strand appears to merge with the 64 m RL strand. Widths vary between 40 m and 250 m and average 120 m. The deposits lie on a base of grey clays, silts and sands interpreted to be Cretaceous Coolyena Group.

*Current and Historical Mineral Sands Exploration*

The deposit extends for 5.5 km, with the southern 4 km having been identified from ground magnetic surveys. All except for 1.4 km of the deposit has been drilled to a density of 100 m line spacing and on 20 m hole centres. The remainder is drilled at approximately 200 m by 20 m.

*Mineral Resources*

Mineral Resources are shown in Table 16 and discussed in more detail in Section 2.8 of this report.

*Table 16: Gingin South Heavy Mineral Resources (2.5% HM cut-off)*

| JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Measured | 1,530,000 | 4.4 | 7.2 | 67,000 | 79 | 51 | 15 | 6 | 8 |
| Indicated | 5,820,000 | 6.5 | 7.1 | 380,000 | 91 | 68 | 10 | 5 | 8 |
| Inferred | 730,000 | 6.5 | 8.4 | 48,000 | 92 | 67 | 8 | 6 | 11 |
| Total | 8,080,000 | 6.1 | 7.3 | 495,000 | 89 | 65 | 10 | 5 | 8 |

### *2.4.3 Gingin North*

*Location, Access and Infrastructure*

The Gingin North Mineral Resource is located approximately 75 km north of Perth and between 7 km and 8.5 km north-west of the town of Gingin in Western Australia. The project is located 12 km south of the proposed Boonanarring plant site.

*Description of Mineral Assets*

The Gingin North Mineral Resource is held under Mining Lease M70/1193 which covers an area of approximately 0.81 km$^2$ (Table 17 and Figure 6). The Mining Lease is surrounded by Image's 100% owned Exploration Licence E70/3041, which is part of the Boonanarring Project.

*Table 17: Tenement summary for Gingin North project (Image 100%)*

| Tenement ID | Type | Status | Area (km$^2$) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| M70/1193[#] | Mining Lease | Live | 0.81 | 31-May-06 | 05-Jun-27 |

[#] - Combined Report 151/2011

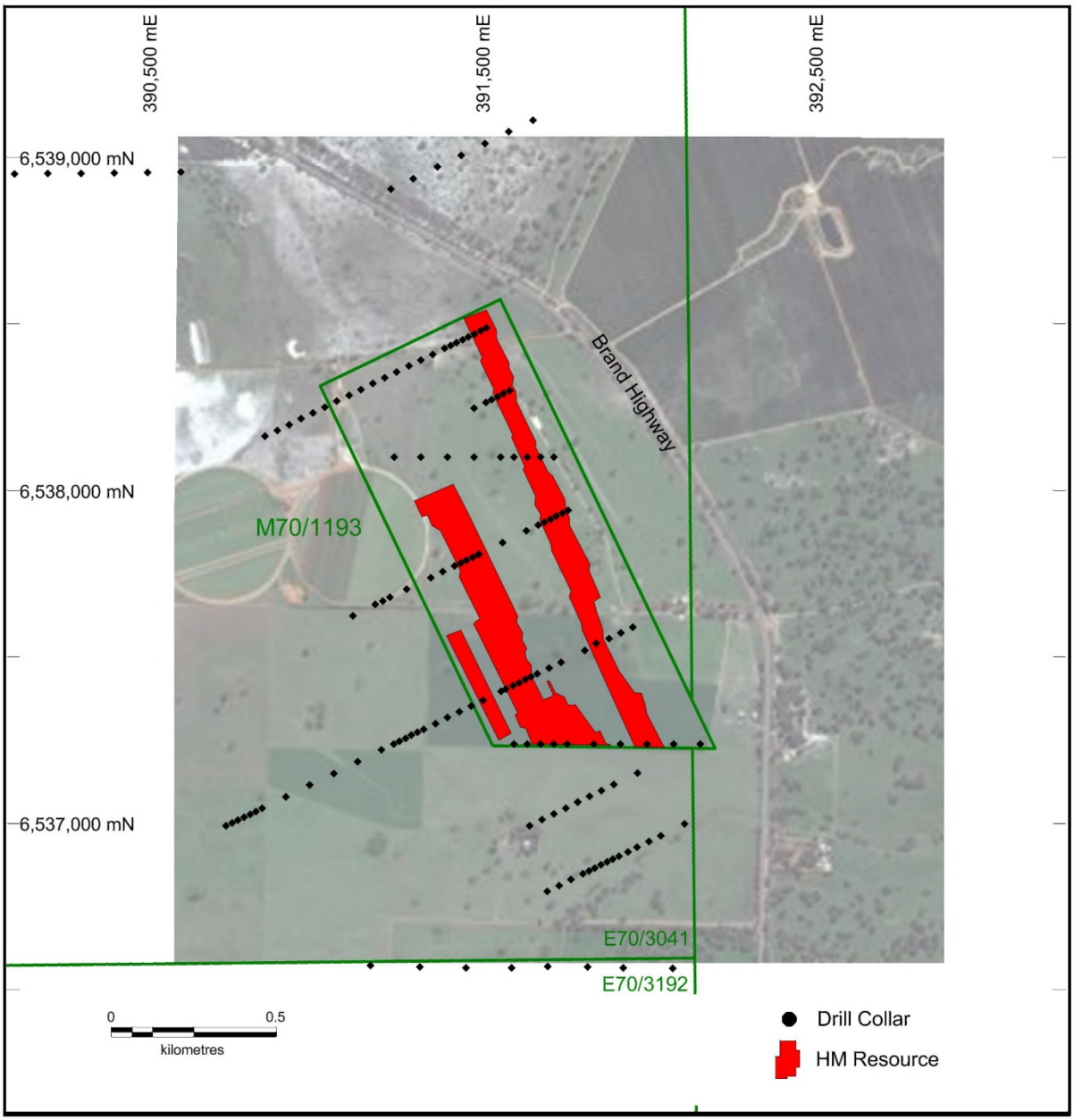



*Figure 6: Gingin North Mineral Resource*
*(Source: Image)*

*Project Geology*

The Mineral Resource has been drilled by Iluka Resources at between 200 m and 400 m line spacing with holes at 40 m centres, closing down to 20 m over the strands. The geology is similar to the other deposits in the area with a basement of Mesozoic Leederville formation overlain by Yoganup Formation marine sands that contain the mineralisation. These are in turn overlain by 5 m to 10 m of poorly sorted sandy clay of the Guildford formation. The mineralisation is contained in two main strands the eastern strand of which is defined for 1.4 km and between 60 m and 100 m wide. It is open to both the north and south. The western strand is between 100 m and 180 m wide and 800 m long. It is open to the south.

*Mineral Resources*

The Mineral Resource is shown in Table 18 and discussed in more detail in Section 2.8 of this report.

*Table 18: Gingin North Heavy Mineral Resources (2.5% HM cut-off)*

| JORC Classification | Tonnes | %HM | % slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Indicated | 1,320,000 | 5.7 | 15.7 | 80,000 | 75 | 57 | 9 | 3 | 5 |
| Inferred | 1,090,000 | 5.2 | 14.0 | 60,000 | 78 | 57 | 11 | 4 | 6 |
| Total | 2,410,000 | 5.5 | 15.0 | 140,000 | 77 | 57 | 10 | 3 | 6 |

### *2.4.4 Red Gully*

*Location, Access and Infrastructure*

The Red Gully project is located approximately 100 km north of Perth and between 33 km and 42 km north of the town of Gingin in Western Australia.

*Description of Mineral Assets*

The Red Gully Mineral Resource lies within Image's 100% owned Mining Lease M70/1192, which covers approximately 7.8 km$^2$ (Figure 7). This is surrounded by a group of seven other exploration licences, covering a total of approximately 200 km$^2$ (Table 19).

*Table 19: Tenement summary for Red Gully project (Image 100%)*

| Tenement ID | Type | Status | Area (km$^2$) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| M70/1192# | Mining Lease | Live | 7.77 | 20-May-09 | 19-May-30 |
| E70/3966# | Exploration Licence | Live | 4.99 | 26-Nov-10 | 25-Nov-15 |
| E70/4077# | Exploration Licence | Live | 11.51 | 11-Oct-12 | 10-Oct-17 |
| E70/3100# | Exploration Licence | Live | 58.76 | 04-May-10 | 03-May-15 |
| E70/3192# | Exploration Licence | Live | 92.84 | 21-May-09 | 20-May-19 |
| E70/3494# | Exploration Licence | Live | 5.26 | 05-Oct-11 | 04-Oct-16 |
| E70/3720# | Exploration Licence | Live | 21.37 | 30-Oct-10 | 29-Dec-15 |
| E70/4689# | Exploration Licence | Live | 5.49 | 24-Feb-15 | 23-Feb-20 |

# - Combined Report 151/2011

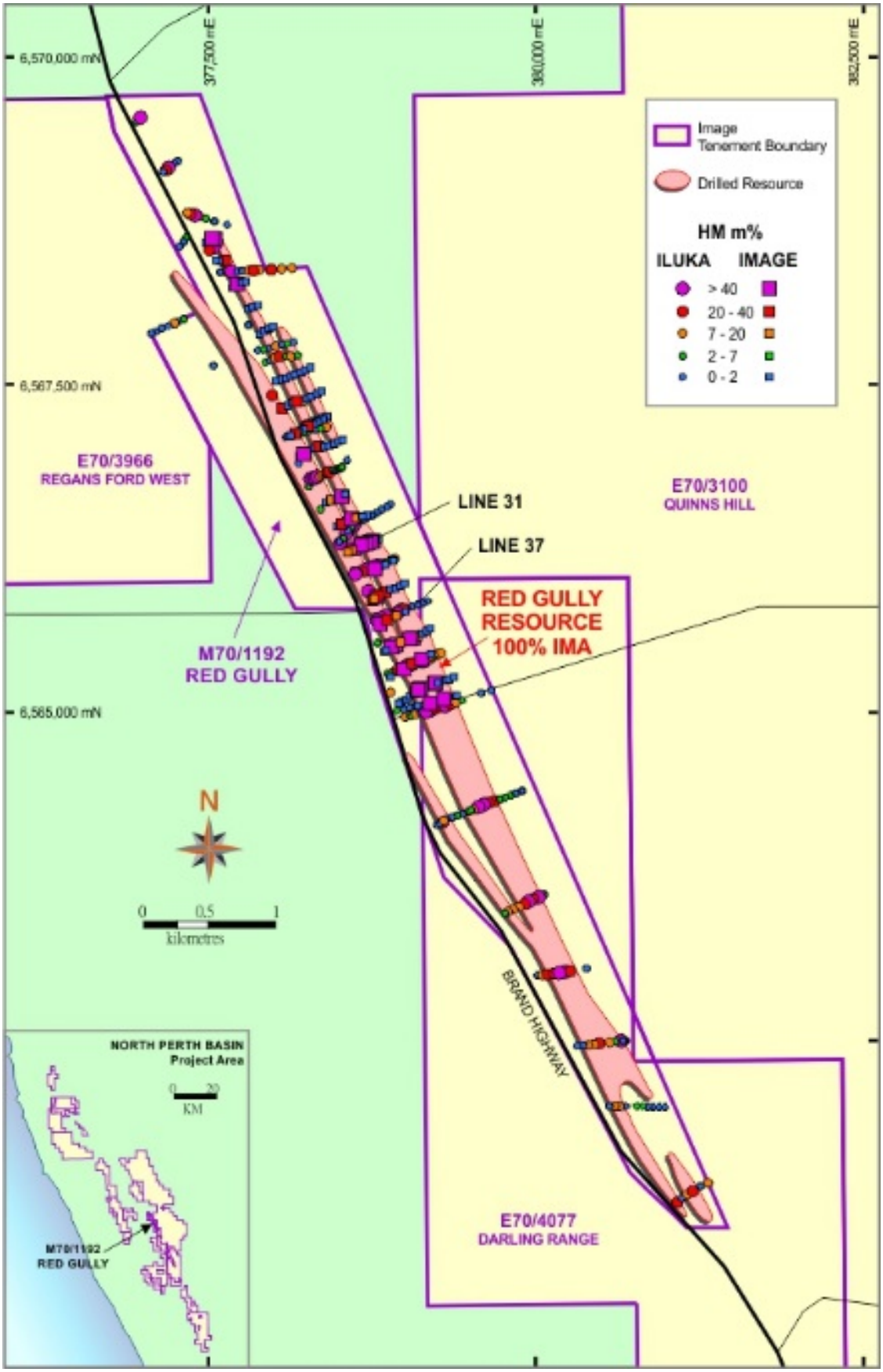



*Figure 7: Red Gully Mineral Resource and project area (Source: Image)*

*Project Geology*

The Red Gully Deposit consists of two strands deposited in a shoreline environment along the Gingin Scarp when it was formed by transgression of the ocean in the Pleistocene. The deposit occurs in a sequence of sands and clayey sands of the Yoganup Formation and sits on a basement of Leederville Formation micaceous clayey sands and clays.

*Current and Historical Mineral Sands Exploration*

In 2011 Image acquired a 100% interest in the Red Gully mining lease (M70/1192) from Iluka Resources. The identified Mineral Resource extends over 8 km in length making it one of Image's longest HM deposits.

In the 2011 Scoping Study (ASX Release 25 August 2011) Red Gully was identified as a priority deposit and consequently Image initiated a drill programme to increase the drill density on the accessible northern half of the deposit (Indicated Mineral Resource) to 200 m by 20 m and to compare the Image drilling results with the Iluka results. This drilling program was completed in December 2011 with 179 holes totalling 6,431 m. In addition, the southern half which has been sparsely drilled was surveyed by Image's ground magnetic team. This survey has confirmed the continuity of the mineralisation and highlighted the potential for high grade zones to be defined in this area. With the shift in focus to the Boonanarring Deposit in mid-2012, no further work has been undertaken on Red Gully. However, with the completion of the BCFS Image has now begun to re-assess the deposit and is reviewing the drilling results with particular focus on the Central and South area where the ground magnetic response is significantly enhanced.

*Mineral Resources*

The Red Gully mineral resources are presented in Table 20 and discussed further in Section 2.8 of this report.

*Table 20: Red Gully Heavy Mineral Resources (2.5% HM cut-off)*

| JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Indicated | 3,410,000 | 7.8 | 11.5 | 270,000 | 90 | 66 | 8 | 3 | 12 |
| Inferred | 2,570,000 | 7.5 | 10.7 | 190,000 | 90 | 66 | 8 | 3 | 12 |
| Total | 5,980,000 | 7.7 | 11.2 | 460,000 | 90 | 66 | 8 | 3 | 12 |

## 2.5 Large-scale HMS Projects

### *2.5.1 Bidaminna*

*Location, Access and Infrastructure*

The Bidaminna Deposit is located approximately 98 km north of Perth and 21 km east of Ledge Point on the Western Australian coast.

*Description of Mineral Assets*

The project area is held within three Exploration Licences which cover an area of 67.46 km$^2$ (Figure 8 and Table 21). Image has a 90% interest in E70/3298, which is the exploration licence that hosts the Mineral Resource. E70/2844 and E70/3411 are 100% held by Image, and all licences are currently live and granted.

*Table 21: Tenement summary for Bidaminna project*

| Tenement ID | Type | Status | Area (km²) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| E70/3298[&#] | Exploration Licence | Live | 11.54 | 26-Mar-09 | 25-Mar-19 |
| E70/2844[#] | Exploration Licence | Live | 32.37 | 01-Apr-08 | 31-Mar-17 |
| E70/3411[#] | Exploration Licence | Live | 23.55 | 13-May-09 | 12-May-19 |

[#] - Combined Report 46/2009

[&]- Image 90%

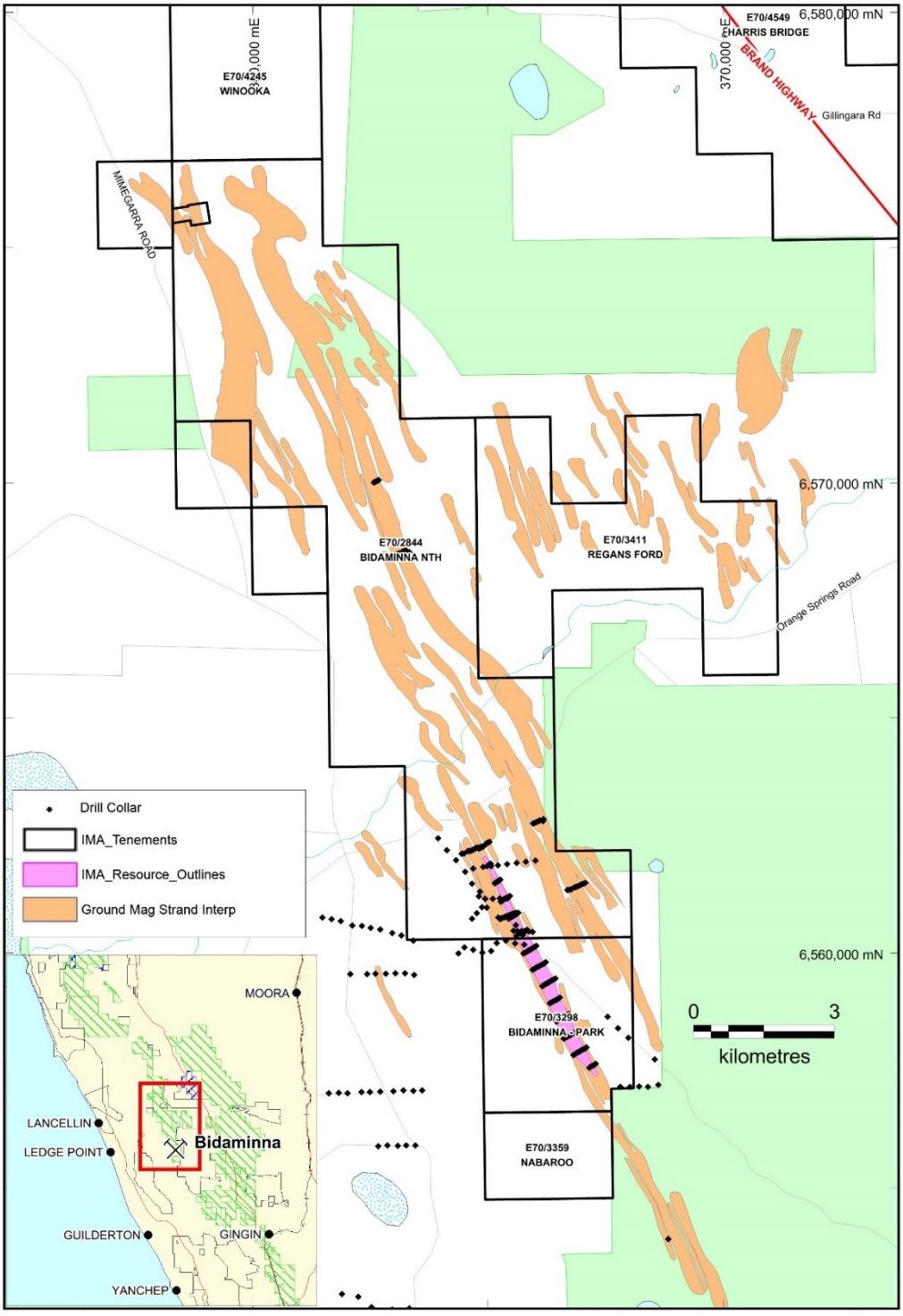



*Figure 8: Bidaminna Mineral Resource and project area (Source: Image)*

*Project Geology*

The deposit is located in within the Guildford Formation in clean fine to medium-grained sands. Below the Guildford Formation is a second mineralised horizon that is correlated with the Yoganup Formation. The Guildford Formation is covered by younger dunes of the Bassendean Sands, which cross-cut the deposit and increase overburden by up to 10 m.

*Current and Historical Mineral Sands Exploration*

The Bidaminna Deposit was drilled by Geopeko along a 5.2 km strike using air core drilling on 400 m spaced lines and 40 m hole spacing. This work defined a deposit between 100 m and 200 m wide and up to 38 m thick, overlain by about 18 m of barren overburden.

Since acquiring the project area, Image has conducted a series of ground magnetic surveys over the tenements and has identified several large magnetic anomalies, including extensions of the Bidaminna Deposit to both the north and south (Figure 8). The southern extension trends right through the Moore River National Park and comes out on to the Bidaminna South Project 15 km away. To the north, the target extends 2 km to the Moore River and up to 4 km north of the Moore River on Image's tenements. There is also a large target immediately to the east of the Bidaminna Deposit that may represent a new mineralised horizon.

In 2011 Image commenced exploration on the area north of the Bidaminna Deposit with six drill lines completed. One hole in the southernmost line (BN018) was found to contain a 30 m thick mineralised zone from 27 m depth which averaged 7.7% HM (using a 1% HM cut-off) and includes a 3 m intersection averaging 34.7% HM.

This grade is significantly higher than reported in the adjacent historical drillholes and was confirmed visually by a twinned hole and holes drilled 20 m either side across strike. Drillhole BN030 has 8m at 9.2% HM and BN031 had 7.5m at 24% HM.

This unexpected high-grade intersection has encouraged Image to re-assess the prospectivity of the Bidaminna Deposit and drilling has been scheduled for late 2013 or early 2014 to follow up the potential for a high-grade core to the deposit as well as to further investigate the other large targets in the area.

Mineral Resources

The Biddaminna Mineral Resource is shown in Table 22 and is discussed in more detail in Section 2.8 of this report.

*Table 22: Biddaminna Dredge Heavy Mineral Resources (1.0% HM cut-off)*

| JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|
| Inferred | 44,600,000 | 3 | 3.6 | 1,350,000 | 96.0 | 82.4 | 7.2 | 1.0 | 5.4 |

### *2.5.2 Cooljarloo*

*Location, Access and Infrastructure*

The Cooljarloo Project is located approximately 170 km north of Perth and its western border is 16 km east of the town of Cervantes on the Western Australian coast. The project adjoins the ground held by Tronox's Cooljarloo HM sands mine and is situated on HM strandlines extending northwest from the mine.

*Description of Mineral Assets*

The Atlas Deposit was initially a part of this project, but has been selected for development along with Boonanarring. Therefore the Titan, Telesto and Calypso declared Mineral Resources fall within the two Exploration Licences that hosted the Atlas Deposit, E70/2636 and E70/2898. In addition, the Cooljarloo Project includes four other Exploration Licences and one Prospecting Permit in the immediate area, covering a further 356 km$^2$ (Table 23 and Figure 9).

*Table 23: Tenement summary for the Cooljarloo project (Image 100%)*

| Tenement ID | Type | Status | Area (km$^2$) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| P70/1520[&] | Prospecting Permit | Pending | 1.34 | - | - |
| E70/2636[#] | Exploration Licence | Live | 53.21 | 20-Feb-06 | 19-Feb-16 |
| E70/2898[#] | Exploration Licence | Live | 24.22 | 14-Nov-06 | 13-Nov-15 |
| E70/4244[#] | Exploration Licence | Live | 150.59 | 12-Mar-13 | 11-Mar-18 |
| E70/4631[#] | Exploration Licence | Live | 7.40 | 07-Oct-14 | 06-Oct-19 |
| E70/4656[#] | Exploration Licence | Live | 17.59 | 28-Oct-14 | 27-Oct-19 |
| E70/4663[#] | Exploration Licence | Live | 103.46 | 10-Dec-14 | 09-Dec-19 |

[#] - Combined Report 97/2007

[&] - Transfer to Image from Metal Sands JV pending

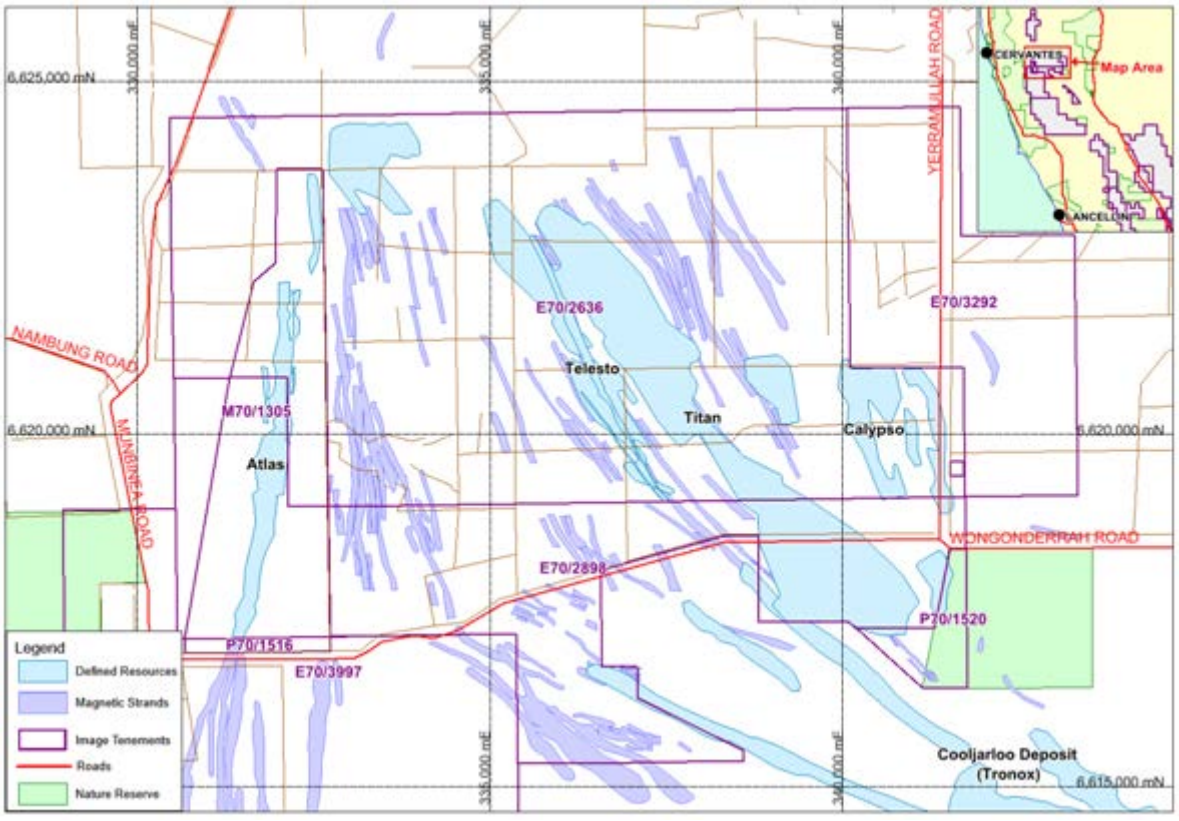



*Figure 9: Cooljarloo Mineral Resource and project area (Source: Image)*

*Project Geology*

To the east of Atlas, Image has defined three large tonnage mineral sands deposits, which have been named Titan, Telesto and Calypso. Titan and Telesto are standard strand type deposits. Telesto consists of two sub-parallel strandlines separated by about 100 m. The easternmost is the oldest, richest,

widest and longest of the two. Both are very shallow, with overburden: ore ratios of less than one and frequently outcropping.

Titan was formerly named "Mid-Level". The mineralisation of this deposit appears to have been formed during a regressive period. It lies within sediments widely interpreted to be of Mesozoic age. The mineralised zone averages 7 m thick, 930 m wide and is 8,200 m long.

The Calypso Deposit is interpreted to be of fluvial origin, it appears to be facies controlled and is hosted in Mesozoic sediments. The sediment hosting the mineralisation is typically a very clean fine to medium sand. It is bounded by clay rich sediment barren of heavy minerals. The sands are interpreted to be braided streams and the clays thought to represent quiet swamp environs. There are clay intercalations within the sands. The mineralisation as defined is typically 1600 m long, 300 m wide and between 15 m and 40 m thick and is covered by between 20 m and 60 m of unmineralised sands.

*Current and Historical Mineral Sands Exploration*

This area has yielded a total of 95 km of strandline targets (including the Atlas, Titan, Telesto, and Calypso) identified by ground magnetic surveys and follow-up aircore drilling. The Atlas Deposit is now being treated as a separate project in its own right.

*Mineral Resources*

Titan and Calypso are both large tonnage, moderate grade deposits with high VHM contents (>80%) and moderate zircon grades (9.5% to 10%), as shown in Table 24. The Telesto Deposit is a smaller tonnage higher-grade deposit that has potential to provide a satellite feed to a large scale mining operation at Titan.

*Table 24: Cooljarloo Dredge Heavy Mineral Resources (1.0% HM cut-off)*

| Project | JORC Classification | Tonnes | %HM | % Slimes | HM tonnes | VHM (%) | Ilmemite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Titan | Indicated | 21,200,000 | 1.8 | 22.1 | 380,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| | Inferred | 115,400,000 | 1.9 | 18.9 | 2,210,000 | 84.3 | 71.8 | 2.0 | 1.0 | 9.5 |
| | Total | 136,600,000 | 1.9 | 19.4 | 2,590,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| Telesto | Indicated | 3,500,000 | 3.8 | 18.4 | 130,000 | 82.6 | 67.5 | 3.4 | 2.2 | 9.5 |
| Calypso | Inferred | 51,500,000 | 1.7 | 13.7 | 850,000 | 84.6 | 68.8 | 3.5 | 1.6 | 10.6 |
| Cooljarloo | Indicated | 24,700,000 | 2.1 | 21.6 | 510,000 | 86.1 | 72.5 | 2.4 | 1.6 | 9.6 |
| | Inferred | 166,900,000 | 1.8 | 17.3 | 3,060,000 | 84.6 | 71.1 | 2.5 | 1.2 | 9.8 |
| | Total | 191,600,000 | 1.9 | 17.8 | 3,570,000 | 84.8 | 71.3 | 2.4 | 1.2 | 9.8 |

## 2.6 Exploration Stage HMS Projects

### *2.6.1 Winooka*

*Location, Access and Infrastructure*

The Winooka project is located approximately 120 km north of Perth and between 22 km northeast of the town of Lancelin on the coast of Western Australia (Figure 10).

*Description of Mineral Assets*

This project is contained within Exploration Licence E70/4245, which covers an area of approximately 59 km$^2$ (Table 25). The project area is 2.7 km south of the Woolka project to the north and abuts the northern end of the Bidaminna project. It covers approximately 18 km of prospective shoreline strike sub-parallel to Iluka's Cataby deposit.

*Table 25: Tenement summary for Winooka project (Image 100%)*

| Tenement ID | Type | Status | Area (km²) | Grant date | Expiry Date |
|---|---|---|---|---|---|
| E70/4245# | Exploration Licence | Live | 58.97 | 03-Sep-12 | 02-Sep-17 |

# - Combined Report 46/2009

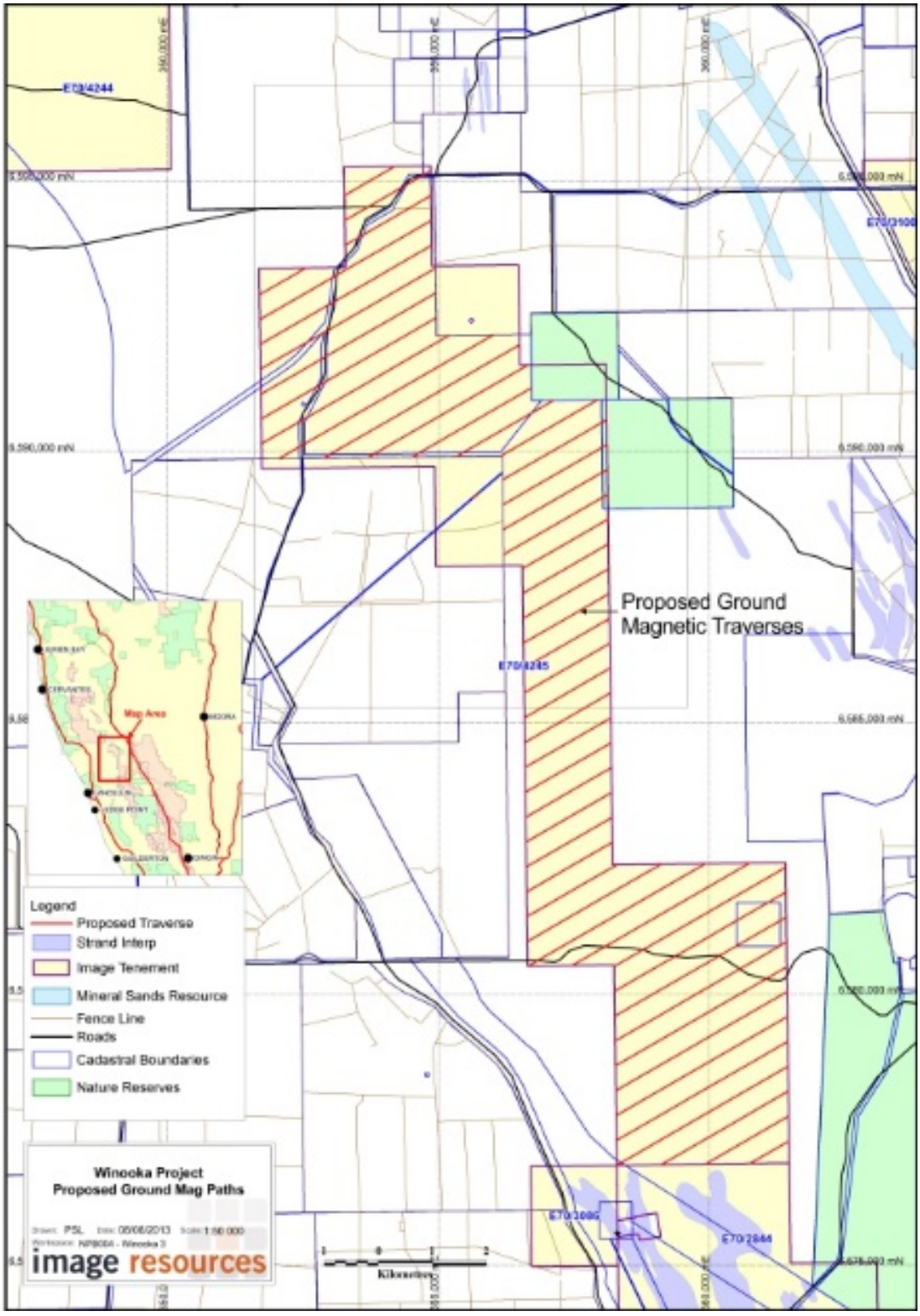



*Figure 10: Winooka project area (Source: Image)*

*Current and Historical Mineral Sands Exploration*

The tenement was acquired as a result of interpretation of the DMP magnetic survey over the area. Image is mapping the crown land portion of the tenement with a 140 line km ground magnetic survey aimed at detecting large scale (>10 km) strandlines. These strands are thought to relate to the Bidaminna shoreline further south.

## 2.7 Other Projects

### *2.7.1 Erayinia JV*

Image currently holds a 16.1% interest, which it is diluting, in two licences (E28/1895 and E28/2071) that form a part of the Erayinia JV managed by Integra.

### *2.7.2 Royalty interest*

Image has a royalty interest in two tenements (E70/4129 and E70/4130) that were recently sold to Tronox. These tenements are not currently being mined, and do not contain Mineral Resources.

Image also holds a royalty interest in retention licence R69/001, which was sold to Diatreme. This tenement is not currently being mined, but does contain a Mineral Resource.

## 2.8 Mineral Resources

High-grade deposits consist of strandlines deposited in an historical shoreline environment formed during a rise in sea level during the Pleistocene period. The HM grains are well rounded and exhibit features consistent with a marine environment of deposition. Mineral Resources are reported above a cut-off grade of 2.5% HM.

Large-scale resources are interpreted to be either strand lines (Telesto and Titan Deposits), or of fluvial origin (Calypso Deposit), formed in ancient river channels. Calypso is postulated to be of Mesozoic age, geologically older than the strandline deposits. Mineral Resources are reported above a cut-off grade of 1% HM.

High-grade and Large-scale Mineral Resources are shown in Table 26 and Table 27 respectively.

The Feasibility Study completed in 2013 (Davies, 2013) was based upon the Boonanarring and Atlas Mineral Resources and the Scoping Study completed in 2011 by Image was based upon the Hyperion, Helene, Gingin South, Gingin North and Red Gully Mineral Resources.

All Mineral Resources were reported according to the JORC Code (2004), and were also reviewed for suitability for reporting under the JORC Code 2012 by Murphy et al. (2014), who concluded that

The Boonanarring Mineral Resource estimate was reported on 31st May 2013; the Atlas Mineral Resource estimate was reported on the 20th April 2011; and the other high-grade Mineral Resource estimates were reported on 25th August 2011. The Large-scale Mineral Resource estimates were reported on 8th May 2008. No material changes have been made to the Mineral Resource estimates since these dates.

Key aims of the review completed by CSA Global were to:

- assess the integrity of the data used in the Mineral Resource estimates;
- assess the reasonableness of the geological interpretation which was adopted;
- assess the grade estimation methodology, including but not limited to checking the appropriateness of the estimation method, underlying assumptions and domaining;
- review the Mineral Resource classification methodology; and

- verify that the Mineral Resource estimates are compliant with the JORC Code.

CSA Global were provided with access to a digital data room, within which Image placed numerous files relating to the Mineral Resource estimates. The data room was not exhaustive and CSA Global largely relied upon technical reports. Digital files, where available, were reviewed using appropriate geological software when questions arising from the technical report required a deeper understanding of the adopted methodologies.

Mineral Resource estimates were prepared by Mr. Lynn Widenbar of Widenbar and Associates (Widenbar), with the exception of the Bidaminna Mineral Resource which was prepared by GeoPeko in 1992. The Quarterly Report announced to the market on 30th October 2015 names Mr. Widenbar as the Competent Person (CP) as defined by the JORC Code for all Mineral Resources.

*Table 26: North Perth Basin HM Mineral Resources, September 2015. HM>2.5%*

| Deposit | JORC Classification | Tonnes | % HM | % Slimes | HM Tonnes | VHM (%) | Ilmenite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Atlas | Measured | 9,700,000 | 8.5 | 15.3 | 820,000 | 76 | 52 | 5 | 8 | 11 |
| | Indicated | 1,080,000 | 3.2 | 19.2 | 34,000 | 74 | 53 | 8 | 7 | 6 |
| | Total | 10,780,000 | 7.9 | 15.7 | 854,000 | 76 | 52 | 5 | 8 | 10 |
| Boonanarring | Measured | 3,000,000 | 7.8 | 10.1 | 230,000 | 70 | 49 | 1 | 3 | 17 |
| | Indicated | 14,300,000 | 9 | 17.2 | 1,270,000 | 80 | 49 | 6 | 3 | 22 |
| | Inferred | 4,200,000 | 6.5 | 17.4 | 270,000 | 83 | 51 | 8 | 7 | 18 |
| | Total | 21,500,000 | 8.3 | 16.2 | 1,770,000 | 79 | 49 | 6 | 4 | 21 |
| Gingin North | Indicated | 1,320,000 | 5.7 | 15.7 | 80,000 | 75 | 57 | 9 | 3 | 5 |
| | Inferred | 1,090,000 | 5.2 | 14.0 | 60,000 | 78 | 57 | 11 | 4 | 6 |
| | Total | 2,410,000 | 5.5 | 15.0 | 140,000 | 77 | 57 | 10 | 3 | 6 |
| Gingin South | Measured | 1,530,000 | 4.4 | 7.2 | 67,000 | 79 | 51 | 15 | 6 | 8 |
| | Indicated | 5,820,000 | 6.5 | 7.1 | 380,000 | 91 | 68 | 10 | 5 | 8 |
| | Inferred | 730,000 | 6.5 | 8.4 | 48,000 | 92 | 67 | 8 | 6 | 11 |
| | Total | 8,080,000 | 6.1 | 7.3 | 495,000 | 89 | 65 | 10 | 5 | 8 |
| Helene | Indicated | 11,500,000 | 4.6 | 18.6 | 520,000 | 84 | 70 | 1 | 3 | 11 |
| Hyperion | Indicated | 3,700,000 | 7.8 | 19.3 | 290,000 | 71 | 56 | 0 | 6 | 9 |
| Cooljarloo Nth | Total | 15,200,000 | 5.3 | 18.7 | 810,000 | 79 | 64 | 0 | 4 | 9 |
| Red Gully | Indicated | 3,410,000 | 7.8 | 11.5 | 270,000 | 90 | 66 | 8 | 3 | 12 |
| | Inferred | 2,570,000 | 7.5 | 10.7 | 190,000 | 90 | 66 | 8 | 3 | 12 |
| | Total | 5,980,000 | 7.7 | 11.2 | 460,000 | 90 | 66 | 8 | 3 | 12 |
| Grand Total | | 63,950,000 | 7.1 | 13.9 | 4,529,000 | 80 | 57 | 6 | 5 | 13 |

*Table 27: Mineral Resources, North Perth Basin Large-scale Resources, September 2015. HM>1%*

| Deposit | JORC Classification | Tonnes | % HM | % Slimes | HM Tonnes | VHM (%) | Ilmenite (%) | Leucoxene (%) | Rutile (%) | Zircon (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Bidaminna | Inferred | 44,600,000 | 3.0 | 3.6 | 1,350,000 | 96.0 | 82.4 | 7.2 | 1.0 | 5.4 |
| Titan | Indicated | 21,200,000 | 1.8 | 22.1 | 380,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| | Inferred | 115,400,000 | 1.9 | 18.9 | 2,210,000 | 84.3 | 71.8 | 2.0 | 1.0 | 9.5 |
| | Total | 136,600,000 | 1.9 | 19.4 | 2,590,000 | 84.4 | 71.9 | 2.0 | 1.0 | 9.5 |
| Telesto | Indicated | 3,500,000 | 3.8 | 18.4 | 130,000 | 82.6 | 67.5 | 3.4 | 2.2 | 9.5 |
| Calypso | Inferred | 51,500,000 | 1.7 | 13.7 | 850,000 | 84.6 | 68.8 | 3.5 | 1.6 | 10.6 |
| Grand Total | | 236,200,000 | 2.1 | 15.1 | 4,920,000 | 84.3 | 65.6 | 4.6 | 2.9 | 11.3 |

### *2.8.1 High-grade Resources*

Image has reported Mineral Resources for the Boonanarring and Atlas pre-development projects, and High-grade Resources for Hyperion, Helene, Gingin South, Gingin North and Red Gully.

All drilling used the aircore method, with samples collected at 1 m intervals. Drill samples were dispatched to 1 of 3 analytical laboratories experienced in the analyses of mineral sands. The Boonanarring drill hole database was prepared and validated by CSA Global, with an extract provided to Image and Widenbar prior to modelling of the Mineral Resource estimate. The drill hole database supporting the other Mineral Resource estimates were maintained by Image. A rigorous Quality Assurance and Quality Control (QA/QC) programme covering the sample collection and subsequent analyses was managed by Image, with field duplicates, certified reference materials, laboratory and umpire duplicates used to ensure the drill hole samples and analyses met the QA/QC requirements for the reporting of Mineral Resources. A programme of twin drilling was carried out at Boonanarring, with 23 aircore holes drilled in close proximity to pre-selected aircore holes, with the geological logs and sample analyses from the twinned samples compared, with good correlation observed.

CSA Global carried out a review and audit of the exploration procedures and processes employed by Image during the drilling of the Boonanarring Deposit in late 2012 (Muggeridge, 2013), prior to the update of the Boonanarring Mineral Resource estimate in 2013. The review and audit did not identify any major material deficiencies with the practises either in the field, the laboratory or estimation protocols. Analyses for mineralogy were carried out by several methods, and results were reviewed by Muggeridge (2013), with no significant issues noted.

Image carried out geological interpretations of the HM mineralisation, with string files sent to Widenbar for wireframing. A typical cross section within Boonanarring Block D is presented in Figure *11*. Widenbar carried out a geostatistical analysis of the HM, Slimes and oversize (OS) for all drill samples constrained within the mineralisation wireframe domains. Variograms were modelled for Boonanarring and Hyperion for HM, Slimes and OS for the domains populated with the most drill hole samples. The variogram model outputs were used to support grade interpolation.

Block models were constructed for Boonanarring, Atlas, Hyperion, Helene, Gingin South, Gingin North and Red Gully, with each separately interpolated with grades for HM, Slimes and OS. The Boonanarring and Hyperion block models using ordinary kriging grade interpolation techniques while the other models used inverse distance squared methods. Density was applied to the models using a formula provided by Image, based upon the interpolated HM grade in each block.

Mineral assemblage data was interpolated into block models using a nearest neighbour method, with data for Ilmenite, leucoxene, rutile, zircon, kyanite, monazite, staurolite and tourmaline interpolated.

The block models were validated by the Competent Person and then classified in accordance with the JORC Code (2004 edition) as a combination of Measured, Indicated and Inferred. JORC Table 1 was not completed due to the fact that the Mineral Resources were prepared and reported prior to release of the JORC Code (2012 edition).

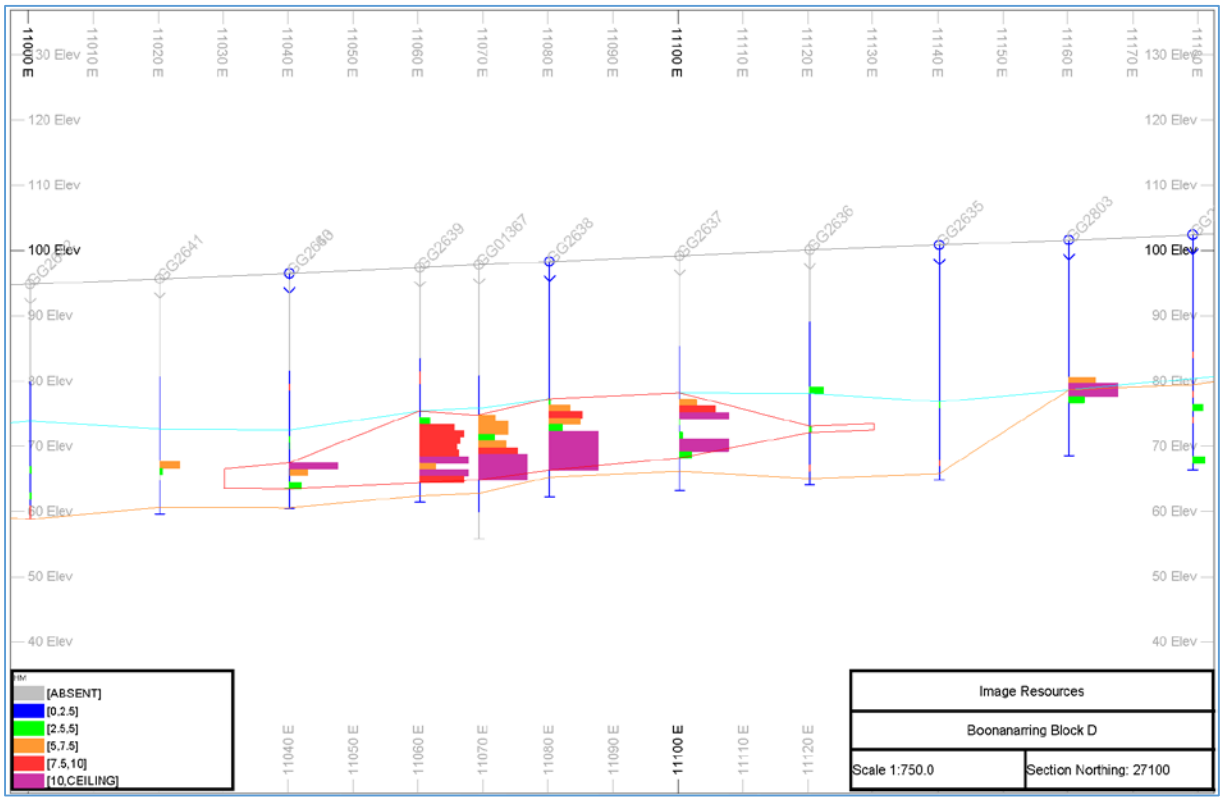



*Figure* 11*:* *West – East Cross Section, Boonanarring, Block D. 27,100 m N.*

*Drill holes with HM grades, mineralisation outline (red), base of cover (blue), top of basement (orange).*

### *2.8.2 Large-scale Resources*

Image has reported large tonnage, low grade Mineral Resource for the Bidaminna Deposit (90% Image ownership) and the Cooljarloo Deposit (100% Image). These are regarded as dredge mining targets (Image, 2011). Mineral Resources are presented in Table 27.

.Bidaminna

The Bidaminna Mineral Resource was prepared in 1992 by Geopeko (Rothnie, 1992) using polygonal methods. Image reviewed the Mineral Resource and accepted it as being of sufficient quality to be classified as an Inferred Resource, reported as per the 2004 JORC Code (Davies, 2013).

Rothnie (1992) discusses the drilling and sampling techniques, with NQ and AQ aircore drilling used. Rothnie notes that most of the HM bearing samples were taken from below the water table, with the likelihood of some or all of the samples being partially washed of clays. The Slimes value reported in

Table 27 is considered by Rothnie to be a minimum figure. Davies (2015) also notes that AQ size aircore drilling has been shown to underestimate HM grades in other deposits (non-Image).

Davies (2013) describes a Mineral Resource model prepared by Widenbar, and this model was provided to CSA Global for the current review. No wireframes or other relevant model data were provided. CSA Global reported a grade and tonnage of 45.5 Mt @ 2.6% HM from the Widenbar model, which corresponds to a similar tonnage but lower grade than the reported Mineral Resource (Table 27). CSA Global note that the Mineral Resource prepared by Geopeko in 1992 continues to be reported by Image.

*Cooljarloo*

The Cooljarloo Project includes three low-grade deposits (Titan, Telesto and Calypso) in addition to the higher grade Mineral Resources (Helene and Hyperion). CSA Global did not receive any digital files related to the Mineral Resource models, and have relied upon Davies (2013) for a discussion on the preparation of the Mineral Resource models.

Drill samples were derived from aircore drilling. The block models were interpolated with grade using the inverse distance weighting method. Titan and Telesto were classified as Indicated and Inferred, whilst Calypso was classified as Inferred.

Davies (2013) notes that one landowner who owns most of the Cooljarloo Project land remains intransigent and negotiation of access to the land remains a challenge; including for the purpose of further drilling activities. CSA Global still considers that the project has reasonable prospects for eventual economic extraction.

### *2.8.3 CSA Global Assessment*

*North Perth Basin High-grade Resources*

CSA Global carried out a review and audit of the exploration procedures and processes employed by Image during the drilling of the Boonanarring Deposit in late 2012, prior to the update of the Boonanarring Mineral Resource estimate in 2013. The review and audit did not identify any major material deficiencies with the practises either in the field, the laboratory or estimation work.

The block models reviewed appear to be globally robust, with no significant flaws detected. All processes from block model construction to grade interpolation appear reasonable. The Mineral Resource estimates are likely to reasonably represent the mineralisation, which exist at the deposits.

QA/QC procedures and results support the classification applied to the Mineral Resource estimates, with results from field duplicates, laboratory repeats, umpire analyses and twin drilling providing confidence to the Competent Person that the drill data is of sufficient quality to be used in the Mineral Resource estimates.

Grade interpolation has been carried out using ordinary kriging and inverse distance squared methods. Whilst CSA Global believe the use of inverse distance squared in estimating block grades is justified, it would be preferable in future work programmes to use ordinary kriging with variogram parameters borrowed from Boonanarring or Hyperion, modified to suit the deposit in question. However CSA Global acknowledges the detailed model validation steps employed by Widenbar and Image do not show any issues with the interpolated block grades.

CSA Global considers that the approach adopted to classify the Mineral Resources is reasonable given the style of mineralisation under consideration. The Mineral Resources were classified according to the JORC Code (2004) which is the precursor to the current JORC Code (2012). CSA Global recommends the Mineral Resource inventories be reported in accordance with the 2012 JORC Code. This will not require re-modelling or reclassification of the block models, but will require preparation of JORC

Table 1, which provide an itemised discussion on all factors used in the preparation of the Mineral Resource estimate. Compilation of JORC Table 1 should be viewed as the minimum requirement to ensure transparency, one of the underlying principles of the JORC Code.

*North Perth Basin Large-scale Resources*

Image regard the Large-scale deposits to be amenable to dredge mining. The Mineral Resources were reported by Image in accordance with the JORC Code (2004).

The Bidaminna Mineral Resource estimate was prepared by Geopeko in 1992 and continues to be reported by Image. The Mineral Resource is based upon a polygonal method of grade and tonnage estimation, which Image reviewed and classified as Inferred as per the JORC Code (2004). Geopeko noted that the reported Slimes grade should be regarded as a minimum amount due to clays being washed out of the primary sample during drilling activities. The inclusion of samples from AQ size aircore samples has been shown by other workers to underestimate HM grades in other deposits. QA/QC results reported by Geopeko were limited to laboratory duplicates for HM and Slimes, with a good correlation observed in the results for HM.

CSA Global consider the drilling procedures employed at Bidaminna and the sample analyses are at the lower end of suitability for inclusion in a Mineral Resource estimate, with the Inferred classification a suitable decision.

CSA Global acknowledge that polygonal, or manual, Mineral Resource models can be reported under the JORC Code provided the Competent Person has sufficient experience in the modelling methodology. The Inferred classification level is considered by CSA Global as appropriate for the Bidaminna Mineral Resource estimate, based upon the drilling procedures and sample analyses reviewed by CSA Global.

The Titan, Telesto and Calypso Mineral Resources were prepared by Widenbar using conventional block modelling and grade interpolation techniques. Drill samples were derived from aircore drilling. The grade–tonnage models were classified as Indicated and Inferred (Titan and Telesto) and wholly Inferred (Calypso).

CSA Global reviewed the strategies for Mineral Resource classification and believes they are reasonable, based upon the information provided for the current review.

# 3 Mining Studies – Boonanarring and Atlas Projects

## 3.1 History and Background

The Boonanarring project area covers the Gingin Scarp which has been known to be prospective for mineral sands deposits since the 1970s. Westralian Sands Ltd, now Iluka Resources Ltd (Iluka) pegged the Boonanarring area in 1996. Image purchased M70/1194 from Iluka in March 2011.

Image earned a 70% interest in E70/3041 from Kingsreef Resources Pty Ltd (Kingsreef) in December 2011 and acquired the remaining 30% in January 2012 for a consideration of fully paid Image shares.

The Atlas Deposit was previously identified by RGC Exploration and explored by them between 1987 and 1999. They relinquished the tenements in 2003.

A Base Case Feasibility Study (FS2013) was completed for the Boonanarring and Atlas Projects in 2013. This study was prepared in-house by Image using a number of consultants for the various investigations required. In September 2014, a Project Summary was prepared to provide a concise version of the FS2013 report. This summary identified options and / or opportunities that could have a material impact on the Project, incorporated the results of ongoing project development work and identified additional work required to complete a Definitive Feasibility Study (DFS).

Image is currently planning or undertaking programmes of work to complete the DFS. This work is not sufficiently advanced to be included in this Technical Assessment and Valuation.

## 3.2 Infrastructure

### *3.2.1 Location and Access*

The Boonanarring Deposit is approximately 20 km north of the town of Gingin, which is approximately 100 km north of Perth and the Atlas Deposit is approximately 80 km further north, 18 km east of Cervantes.

The Boonanarring site is adjacent to the Brand Highway with the proposed site for the offices and processing plant being accessed via a sealed access road.

The Atlas Mineral Resource lies approximately 21 km west of the Brand Highway. Access road will be via the unsealed Wongonderrah Road which extends from the highway to the southern edge of the main Atlas project area. Munbinea Road travels north from Wongonderrah Road approximately 0.5 km to 1.5 km west of the project area.

The site access roads will provide turn-offs for light vehicles to minimise the interaction between heavy vehicle movements to and from site. Site access routes for haulage of HMC will require modification of intersections with the Brand Highway, incorporating acceleration and deceleration lanes designed in accordance with DMR requirements and appropriate for the specifications of the selected haulage fleet.

At Boonanarring, mining activities will be on cleared freehold farmland. An option to purchase is in place with the land owner where mining operations are expected to commence. Lease or purchase arrangements are under discussion / negotiation with the other five landowners in the mining path.

Other constraints on access to the Boonanarring Mineral Resource include easements for the Brand Highway and the major gas pipeline running beside it to the north. There is a gas processing plant and gas pipeline easement cutting across the deposit on the south side of Wannamal Road West and

Bartlett's Well Nature Reserve to the north east also curtails development of the deposit. These constraints have been taken into account in project planning.

At Atlas, the majority of the mineralisation occurs on un-allocated Crown Land. A formal agreement with the registered Native Title claimants is in late draft. Access discussions have not yet commenced with the one freehold landowner.

### *3.2.2 Power and Fuel Supply*

Power to the Boonanarring site will be from the existing Western Power 22 kV grid, which has sufficient spare network capacity to meet estimated site requirements. An Access Offer from Western Power has been accepted by Image Resources in September 2015.

Given the remoteness and the relatively low power demand for Atlas, on-site power generation is proposed using gas-fuelled generators, until further investigation is undertaken to determine optimal power strategy. Gas will be stored in conventional storage bullets, replenished by road.

### *3.2.3 Water Supply*

Boonanarring process water, sourced from the Yarragadee aquifer, is estimated to be 172 $m^3$ /hr or 1.6 GL/a. A water extraction licence application for 2.0 GL/a will be submitted, which includes contingency for extreme seasonal conditions. In addition, water will be recycled from various sources from around site, including dewatering of the mining pit and thickener overflow.

The water samples extracted from the Yarragadee, Leederville and Superficial aquifers have shown to be of good quality, with low Electro-Conductivity (EC) and low Total Dissolved Solids (TDS). However, levels of both EC and TDS may have some downstream effects on electrostatic mineral separation in the Dry Mill.

The Department of Water has approved the Detailed Operating Strategy – Boonanarring Mineral Sands Project in August 2015 which will form the basis of the conditions of any licence issued.

Process water from pit dewatering during the earlier stages of mining can deliver adequate water for the Atlas project initially, before requiring a supplemented supply from production bores into the Yarragadee aquifer. Further hydrological test work will be required at Atlas during the next stage of technical studies.

Potable water for the Project will be sourced locally and transported to site as required. Water storage will be in poly water tanks and will be distributed to the necessary site facilities.

### *3.2.4 Other Site Infrastructure and Facilities*

Other site infrastructure which will be required includes:

- Administration facilities and offices
- Mining contractor site facilities
- Fuel storage
- Site security
- Light vehicle wash down
- Weighbridge
- Sanitation
- Communications and IT
- Temporary construction facilities.

Given the close proximity to the town of Gingin and being within daily commuting distances of the northern suburbs of Perth, no camp facilities or fly-in / fly-out arrangements are planned for Boonanarring. As the Atlas Deposit is more remote, the establishment of accommodation and messing facilities in nearby Cervantes is being considered, with employees being bussed to and from site.

## 3.3 Project Approvals

The State regulatory approvals required to implement the Boonanarring Project are summarised in Table 28.

*Table 28: Boonanarring Project Approvals*

| Project Approval | Status |
|---|---|
| Tenure of Mining Leases (ML), General Purpose Lease and Miscellaneous Leases | The majority of Boonanarring is covered by two granted MLs with the balance held under an exploration licence and a General Purpose Lease. Applications for a third ML covering the Boonanarring south end and Atlas' mining inventory are planned for later in 2014 and 2015 respectively. |
| Agreements with private landowners | Mining access agreements with private landowners for surface rights to their land are well advanced and not expected to delay the Project. |
| Primary environmental approval (Part IV Environmental Protection Act 1986) | Boonanarring has been assessed at the level of Public Environmental Review (PER), and subsequently approved by the Minister for Environment in August 2014. |
| Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 | Formal confirmation received from Federal Department of Environment that no further assessment and approval for Boonanarring required. |
| Licenses to abstract groundwater | Hydrological investigations to support water extraction licence applications have been completed at Boonanarring and the first stage of similar studies has been completed at Atlas. The Detailed Operating Strategy for Boonanarring has been approved by the Department of Water in August 2015, which will form the basis of conditions for the water extraction licence. |
| Planning, health and building approvals | All necessary approvals from the local government Shires of Gingin and Dandaragan. |
| Part V (Environmental Protection Act 1986) approvals | Part V (Environmental Protection Act 1986) approvals from the Department of Environment Regulation – submissions being prepared. |
| Mining Proposals | Mining Proposal, incorporating Mine Closure Plans, and Project Management Plan approval from the Department of Mines and Petroleum (DMP) – being prepared. |
| Sundry permits and approvals | Including, but not limited to external road intersection design approvals, product haulage permits. Either being progressed or will be addressed at the appropriate time in the project development schedule. |

Similar approvals will be required for the Atlas Project, all of which would be expected to be obtained within two to three years of formally commencing the environmental process.

## 3.4 Project Tenements and Ownership

Image holds the properties which constitute the NPBMSP under a combination of Exploration Licences, Prospecting Licences and Mining Leases.

The Boonanarring Project is located on two Mining Leases, M70/1194 and M70/1311, a General Purpose Lease G70/250 and an Exploration Lease E70/3041. Possible extensions of the Boonanarring Deposit, being Gingin South, Gingin North and Red Gully are covered by Mining Leases and Exploration Licences.

The defined Mineral Resources at the Atlas project are covered by two Exploration Licences (E70/2636 and E70/2898) and the potential southern extensions of the resource occur on Exploration Lease E70/3997. An Application for Mining Lease MLA70/1305 over the defined resource and adjacent areas was lodged in January 2012, grant of which is expected following finalisation of Native Title Act 1993 processes.

Details of Images tenements relevant to the Boonanarring and Atlas projects are shown in Table 9 and Table 11.

## 3.5 Mining

### *3.5.1 Mining Method*

The mining method proposed is based on conventional dry mining techniques, typical of current mineral sands mining practice in the Western Australian region. These techniques entail overburden removal by hydraulic excavator and trucks, with ore mining by front-end loader (FEL), dozers and excavators, loading into a Mine Feed Unit (MFU) located in pit. A conventional continuous mining and mineral processing operation is planned allowing for concurrent mining, processing and tails reclamation that minimise materials re-handling. Image proposes using a mining contractor for mining and support earthmoving activities under a contract mining agreement, incorporating a standard Schedule of Rates and Day works provisions.

The mining process will generally consist of the following:

- vegetation is cleared and stockpiled
- topsoil and subsoil is stripped and stockpiled
- overburden is removed, then initially stockpiled until sufficient void becomes available for direct deposition back in the mining void
- ore is mined using FEL's and supporting dozers before being fed at a nominal 450 tph into the in-pit mobile feed preparation unit consisting of coarse oversize grizzly, scrubber, trommel and slurry pumps, collectively referred to as the MFU. The ore is slurried with water, trash and oversize material is screened out and returned to the void behind the mine face
- underflow from the MFU (-4 mm) is pumped out of the pit to the Wet Concentrate Plant (WCP) in order to achieve a maximum RHF rate of 350 tph, which accounts for oversize and clay losses during feed preparation prior to the WCP. A series of surface feed booster pumps will be introduced where necessary to extend field pumping capability
- sand tailings from the WCP are deposited in the mine void, typically on top of overburden using conventional tailings cyclone stackers
- clay fines (slimes) from the WCP thickener underflow is pumped to solar drying ponds constructed on sand tails within the mining disturbance area

- once the clay fines are dried, they are mixed with coarse tailings and contoured to design before subsoil and topsoil is replaced and surface drainage and re-vegetation works are undertaken.

Geotechnical evaluation has been undertaken by consulting firm ATC Williams. Tests conducted indicated uniform foundation conditions (medium dense sand) across the proposed Boonanarring plant site area, where an allowable bearing pressure of 200 kPa is considered appropriate for foundation design. Groundwater was anticipated to lie at approximately 30 m below ground surface.

Slope stability analyses were also performed to assess factors of safety (FOS) for circular slip surface development. The analyses indicated that an overall design slope of 34 degrees appears appropriate to achieve FOS of 1.3 during operations. ATCW concluded that given the occurrence of layers of harder material within the pit wall profile it may be possible to steepen wall angles beyond 34 degrees. All pit optimisation and scheduling work has been carried out using wall angles of 35 degrees.

*CSA Global Assessment*

*CSA Global considers that the mining approach is appropriate for the deposit. The approach applies methods that are established in other similar mines, using conventional equipment and techniques. There may be opportunity to reduce the strip ratio for the Boonanarring Deposit should additional geotechnical investigations show that overall pit slopes could be increased beyond 35$^{o}$. It is understood that Image is planning additional geotechnical drilling*.

### *3.5.2 Mine Planning and Ore Reserves*

The mining strategy has been based on extracting higher grade material early in the mine life to maximise Net Present Value (NPV); commence operations close to the proposed plant location; minimising up front pre-strip costs and backfill re-handle; provide time to test the effect of dewatering the superficial aquifer; and delay mining blocks whose viability is currently undetermined.

Mining dilution has been accounted for by the inclusion of 1,670 kt of unclassified material in the mining inventory which was the result of re-blocking the Mineral Resource model prior to optimisation. Mining recovery of 100% has been assumed based on the proposed grade control methodology and close pit control.

Table 29 gives the Ore Reserves as stated in the FS2013. No update for these Ore Reserves has been publically released.

*Table 29: Ore Reserve Estimate, FS2013*

| Site | JORC Classification | Ore Reserves | | | | |
|---|---|---|---|---|---|---|
| | | Tonnes kt | %HM | Zircon in HM % | VHM in HM % | % Slimes |
| Boonanarring # | Probable | 14,420 | 8.3 | 24.5 | 80.3 | 17.0 |
| Atlas | Probable | 9,603 | 8.1 | 11.0 | 74.1 | 15.5 |
| Total | Probable | 24,023 | 8.2 | 15.0 | 77.7 | 16.4 |
| Excluded Resources | | | | | | |
| Boonanarring | Inferred | 2,811 | 5.8 | 17.3 | 84.4 | 17.5 |
| Atlas | Inferred | 54 | 8.9 | 9.1 | 80.7 | 8 |

# Boonanarring Probable Reserves include 1.67 Mt 'Unclassified' material at 2.1% HM which is treated as planned dilution. 17 kt of 'Unclassified' material at 0.7% HM is treated as planned dilution at Atlas.

### *3.5.3 Cut-off Grade*

Mineral Resources were reported using a cut-off grade of 2.5% HM in 2013. At this time, the Mineral Resource estimate has not been updated. The cut-off was chosen by Image on the basis of an economic analysis carried out using the costs of a 2008 Scoping Study and then verified based on a 2011 Scoping Study. The calculation used a long term price US$1400/t for zircon. Assuming an average assemblage

grade for all Image deposits, the cut-off grade would likely lie in the range 2.0% to 3.2% HM. For the February 2014 Mineral Resource estimate, it was decided to retain the 2.5% HM cut-off to maintain compatibility with previous estimates.

Optimisation studies adopted a block value approach, so a specific HM cut-off grade was not defined.

### *3.5.4 Production Scheduling*

The LOM schedule provided in the financial model provided to CSA Global comprises the Ore Reserves and a component of Inferred Mineral Resources. The LOM schedule contains 26.8 Mt.

*Table 30: Production Schedule*

| | Life of Mine (kt) | Average Year (kt) |
|---|---|---|
| Feed to MFU | 26,888 (#) | 3,090,536 |
| HMC | 2,138 | 246 |
| Ilmenite | 1,070 | 123 |
| Leucoxene | 89 | 10 |
| Rutile | 110 | 13 |
| Zircon | 406 | 47 |

# Includes 2.8 Mt of Inferred Resources (refer Table 29)

*CSA Global Assessment*

*The Mineral Resources, Ore Reserves, pit optimisation and production scheduling have all been estimated at a time of high commodity prices and have been estimated in accordance with JORC Code 2004. All this work requires updating in accordance with JORC Code 2012, to include all additional drilling.*

*In the absence of more recent work, the figures provide a reasonable basis for this Report*.

### *3.5.5 Environmental*

Environmental permitting for Boonanarring is well advanced, with the Public Environmental Review being approved in August 2014. Subsequent approvals required have either been granted or are being progressed, as shown in Table 28. For Atlas, environmental approvals are expected to take two to three years prior to site development.

## 3.6 Processing

### *3.6.1 Metallurgy*

Extensive metallurgical test work has been undertaken by Allied Mineral Laboratories Pty Ltd (AML), focussed on:

- Development of a wet gravity circuit metallurgical flowsheet and subsequent flowsheet design; and
- Determination of the production of marketable ilmenite, zircon, rutile and leucoxene.

Bulk composites of drill samples were drawn from Blocks B and C within the proposed pit outline for Boonanarring and from across the full extent of Atlas mineralisation.

Test work results are summarised in Table 31.

*Table 31: HMC Test Work Results (Further metallurgical testing is planned)*

| Test Work Outcome | Boonanarring | Atlas |
|---|---|---|
| HMC Grade | 98.2% | 97.5% |
| HM Recovery | 75.9% | 76.3% |
| $TiO_2$ Grade | 30.5% | 42.7% |
| $TiO_2$ Recovery | 77.7% | 80.3% |
| $ZrO_2$ Grade | 26.6% | 9.0% |
| $ZrO_2$ Recovery | 95.1% | 93.5% |

For Boonanarring, $TiO_2$ bearing minerals showed low recovery, mainly lost as conglomerates, apparently due to the creation of 'clayballs' in the trommel oversize that have resulted in losses of $TiO_2$ and zircon. Further test work is planned.

Settling test work on Boonanarring slimes achieved underflow densities above 25%, suitable for solar drying and recycling of process water.

The truncated laboratory Dry Mill metallurgical test work showed that in general, the ilmenite will be separated into two fractions, one suitable for slag plant feed or sulphate pigment plant feed, and one high-$TiO_2$ product (grading 60.0% $TiO_2$), suitable for either Synthetic Rutile (SR) production or chloride pigment plant feed. The distribution of the Boonanarring zircon product is expected to be 10% premium, 50% standard grade and 40% of a lower quality zircon. The premium zircon product meets typical market expectations for a premium grade product.

The recovery of $TiO_2$ bearing minerals was lower than expected on the Atlas sample primarily due to the poor recovery of lower specific gravity leucoxene minerals, attributed mainly to laboratory procedural issues. Further work will be required to confirm metallurgical performance.

The ilmenite from Atlas is all high-$TiO_2$ material suitable for either SR production or chloride pigment plant feed. Samples of zircon from Atlas have been examined and assayed, and is expected to have a distribution of approximately 65% premium grade and 20% standard grade, with the balance being made up of a lower grade zircon product.

### *3.6.2 Processing*

The metallurgical processing route adopted is considered industry standard practice for similar heavy mineral operations in Western Australia, based on the selection of proven gravity separation techniques and equipment. The circuit is considered robust and has been designed to maximise the recovery of VHM, whilst being capable of handling fluctuation in head grade and slimes content in the ore feed.

The design of the processing facility is integrated with the mining, tailings and water management plan based on a continuous mining and rehabilitation sequence through to mine closure. This minimises the impact on the environment and the community and the extent of disturbed land at any one time, whilst employing industry best practices. The core elements to the processing facility, as illustrated in Figure 7.2, are characterised by discreet stages as follows:

- Stage 1 – a mobile MFU located at the mining area is used to wash and screen ore prior to presentation to the Wet Concentrate Plant (WCP), with the MFU proposed to be supplied and operated by the mining contractor
- Stage 2 – a deslime circuit comprising a set of deslime cyclones followed by a Constant Density Tank (CD Tank), which provides steady state deslimed feed to the gravity spiral circuit of the WCP

- Stage 3 – a mobile Primary Concentrate Plant (PCP), which employs a rougher and scavenger gravity circuit to produce a primary HM concentrate and a coarse tailings for direct reject back to the mining void
- Stage 4 – a fixed Secondary Concentrate Plant (SCP), which receives primary concentrates from the PCP and processes it through a cleaner and re-cleaner spiral circuit followed by attritioning and classifying to produce a final HMC for export
- Stage 5 – a tailings and water management circuit, which comprises a borefield, process water dams, tails thickeners and coarse tailings and slime disposal systems.

The WCP has been designed for rates up to 3.6 Mtpa ore to a single MFU and 2.8 Mtpa of Rougher Head Feed to the WCP. The WCP has been designed to allow separation into a mobile PCP and a semi mobile SCP to permit optimisation of staged pumping and tailings return costs.

CSA Global Assessment

*CSA Global considers that the proposed processing route and plant design to produce an HMC concentrate is conventional and reflects current practice for WA dry mining mineral sands operations. The losses occurring due to the formation of clay balls requires further investigation, which it is understood is planned for the DFS.*

*The use of the Murray Zircon (MZ) Mindarie plant needs to be matched into the plant design and production schedules to determine the effect on project economic.*

### *3.6.3 Mineral Separation*

The FS 2013 envisages toll treatment at either Bunbury or Geraldton for the Mineral Separation Plant. An option was also identified for a stand-alone Dry Mill which requires further investigation.

## 3.7 Products

The main revenue stream for the project will come from zircon and ilmenite.

Ilmenite from Boonanarring will be separated into two fractions, one suitable for slag plant feed or Sulphate pigment plant feed and one suitable for either SR production or chloride pigment plant feed. The ilmenite from Atlas is all high $TiO_2$ material suitable for either SR production or chloride pigment plant feed.

Zircon from Atlas is expected to consist of 65% premium grade material, 20% standard grade and 15% lower quality zircon. Due to iron staining, the Boonanarring zircon is expected to be 10% premium, 50% standard and 40% lower quality. Further treatment of the Boonanarring zircon is being investigated for upgrading the Boonanarring zircon quality.

# 4 Valuation Methodology

## 4.1 Background

Mineral assets are defined in the VALMIN Code as all property including, but not limited to real property, intellectual property, and / or mining and exploration tenements held or acquired in connection with the exploration, development and / or production from those tenements together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals in connection with those tenements.

Business valuers typically define market value as "The price that would be negotiated in an open and unrestricted market between a knowledgeable, willing, but not anxious buyer, and a knowledgeable, willing but not anxious seller acting at arm's length." The accounting criterion for a market valuation is that it is an assessment of "fair value", which is defined in the accounting standards as "the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction." The VALMIN Code defines the value of a mineral asset as its Fair Market Value, which is the estimated amount of money or the cash equivalent of some other consideration for which, in the opinion of the expert or specialist reached in accordance with the provisions of the VALMIN Code, the mineral asset should change hands on the valuation date between a willing buyer and a willing seller in an arm's length transaction, wherein each party has acted knowledgeably, prudently and without compulsion.

Fair Market Value usually consists of two components, the underlying or technical value, and a premium or discount relating to market, strategic or other considerations. The VALMIN Code recommends that a preferred or most-likely value be selected as the most likely figure within a range after taking into account those factors which might impact on Value.

The concept of Fair Market Value hinges upon the notion of an asset changing hands in an arm's length transaction. Fair Market Value must therefore take into account, inter alia, market considerations, which can only be determined by reference to "comparable transactions". Generally, truly comparable transactions for mineral assets are difficult to identify due to the infrequency of transactions involving producing assets and / or Mineral Resources, the great diversity of mineral exploration properties, the stage to which their evaluation has progressed, perceptions of prospectivity, tenement types, the commodity involved and so on.

For exploration tenements, the notion of value is very often based on considerations unrelated to the amount of cash which might change hands in the event of an outright sale, and in fact, for the majority of tenements being valued, there is unlikely to be any "cash equivalent of some other consideration". Whilst acknowledging these limitations, CSA Global has identified what it considers to be comparable transactions that have been used in assessing the values to be attributed to the mineral assets.

For the Boonanarring and Atlas Projects, several detailed studies have been undertaken and a Feasibility Study is now in preparation. There are Ore Reserves and Life of Mine production planning available, including several financial models. These have been assessed to verify the technical soundness and viability of the proposed development. For Valuation of these deposits, the use of differing methodologies has been considered and the discounted cash flow (DCF) method has been selected as the most appropriate for valuing the Image asset.

CSA Global's valuations are based on information provided by Image, Murray and public domain information. This information has been supplemented by independent enquiries, but has not been independently verified. No audit of any financial data has been conducted. The valuations discussed in

this Report have been prepared at a valuation date of 01 September 2015. It is stressed that the values are opinions as to likely values, not absolute values, which can only be tested by going to the market.

## 4.2 Valuation Methods for Exploration Projects

The choice of valuation methodology applied to mineral assets, including exploration licences, will depend on the amount of data available and the reliability of that data.

The VALMIN Code classifies mineral assets into categories that represent a spectrum from areas in which mineralisation may or may not have been found through to Operating Mines which have well-defined Ore Reserves, as listed below:

- "**Exploration Areas**" – properties where mineralisation may or may not have been identified, but where a Mineral or Petroleum Resource has not been identified.
- "**Advanced Exploration Areas**" – properties where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A resource estimate may or may not have been made but sufficient work will have been undertaken on, at least, one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the projects to the resource category.
- "**Pre-Development Projects**" – properties where Mineral or Petroleum Resources have been identified and their extent estimated (possibly incompletely) but where a decision to proceed with development has not been made.
- "**Development Projects**" – properties for which a decision has been made to proceed with construction and/or production, but which are not yet commissioned or are not yet operating at design levels.
- "**Operating Mines**" - mineral properties, particularly mines and processing plants that have been commissioned and are in production.

Each of these different categories will require different valuation methodologies, but regardless of the technique employed, consideration must be given to the perceived "fair market valuation".

The Fair Market Value of Exploration Properties and Undeveloped Mineral Resources can be determined by four general approaches: Cost; Market; Geoscience Factor or Income.

### *4.2.1 Cost*

Appraised Value or Exploration Expenditure Method considers the costs and results of historical exploration.

The Appraised Value Method utilises a Multiple of Exploration Expenditure (MEE), which involves the allocation of a premium or discount to past expenditure through the use of the Prospectivity Enhancement Multiplier (PEM). This involves a factor which is directly related to the success (or failure) of the exploration completed to date, during the life of the current tenements.

Guidelines for the selection of a PEM factor have been proposed by several authors in the field of mineral asset valuation (Onley, 1994). Table 32 lists the PEM factors and criteria used in this report.

*Table 32: Prospectivity Enhancement Multiplier (PEM) Factors*

| PEM Range | Criteria |
|---|---|
| 0.2–0.5 | Exploration (past and present) has downgraded the tenement prospectivity, no mineralisation identified |
| 0.5–1.0 | Exploration potential has been maintained (rather than enhanced) by past and present activity from regional mapping |
| 1.0–1.3 | Exploration has maintained, or slightly enhanced (but not downgraded) the prospectivity |
| 1.3–1.5 | Exploration has considerably increased the prospectivity (geological mapping, geochemical or geophysical activities) |
| 1.5–2.0 | Scout drilling (RAB, aircore, RCP) has identified interesting intersections of mineralisation |
| 2.0–2.5 | Detailed drilling has defined targets with potential economic interest |
| 2.5–3.0 | A Mineral Resource has been estimated at Inferred JORC category, no concept or scoping study has been completed |
| 3.0–4.0 | Indicated Mineral Resources have been estimated that are likely to form the basis of a Pre-feasibility Study |
| 4.0–5.0 | Indicated and Measured Resources have been estimated and economic parameters are available for assessment |

### *4.2.2 Market*

*Market Approach Method or Comparable Transactions* looks at prior transactions for the property and recent arm's length transactions for comparable properties.

The Comparable Transaction method provides a useful guide where a mineral asset that is comparable in location and commodity has in the recent past been the subject of an "arm's length" transaction, for either cash or shares.

In an exploration joint venture or farm-in, an equity interest in a tenement or group of tenements is usually earned in exchange for spending on exploration, rather than a simple cash payment to the tenement holder. The joint venture or farm-in terms, of themselves, do not represent the Value of the tenements concerned. To determine a Value, the expenditure commitments should be discounted for time and the probability that the commitment will be met. Whilst some practitioners invoke complex assessments of the likelihood that commitments will be met, these are difficult to justify at the outset of a joint venture, and it seems more reasonable to assume a 50:50 chance that a joint venture agreement will run its term. Therefore, in analysing joint venture terms, a 50% discount may be applied to future committed exploration, which is then "grossed up" according to the interest to be earned to derive an estimate of the Value of the tenements at the time that the agreement was entered into.

Where a progressively increasing interest is to be earned in stages, it is likely that a commitment to the second or subsequent stages of expenditure will be so heavily contingent upon the results achieved during the earlier phases of exploration that assigning a probability to the subsequent stages proceeding will in most cases be meaningless. A commitment to a minimum level of expenditure before an incoming party can withdraw must reflect that party's perception of minimum value and should not be discounted. Similarly, any up-front cash payments should not be discounted.

The terms of a sale or joint venture agreement should reflect the agreed value of the tenements at the time, irrespective of transactions or historical exploration expenditure prior to that date. Hence the current Value of a tenement or tenements will be the Value implied from the terms of the most recent transaction involving it/them, plus any change in Value as a result of subsequent exploration. Where the tenements comprise applications over previously open ground, little to no exploration work has been completed and they are not subject to any dealings, it is thought reasonable to assume that they have minimal, if any Value, except perhaps, the cost to apply for, and therefore secure a prior right to the ground, unless of course there is competition for the ground and it was keenly sought after. Such tenements are unlikely to have any Value until some exploration has been completed, or a deal has been struck to sell or joint venture them, implying that a market for them exists.

High quality mineral assets are likely to trade at a premium over the general market. On the other hand exploration tenements that have no defined attributes apart from interesting geology or a "good address" may well trade at a discount to the general market. Market Values for exploration tenements may also be impacted by the size of the land holding, with a large, consolidated holding in an area with good exploration potential attracting a premium due to its appeal to large companies.

### *4.2.3 Geoscience Factors*

*Geoscience Factor Method* seeks to rank and weight geological aspects, including proximity to mines, deposits and the significance of the camp and the commodity sought.

The Geoscience Factor (or Kilburn) method, as described by Kilburn (1990), provides an approach for the technical valuation of the exploration potential of mineral properties, on which there are no defined resources.

Valuation is based upon a calculation in which the geological prospectivity, commodity markets, and mineral property markets are assessed independently. The Kilburn method is essentially a technique to define a Value based upon geological prospectivity. The method appraises a variety of mineral property characteristics:

- Location with respect to any off-property mineral occurrence of value, or favourable geological, geochemical or geophysical anomalies:
- Location and nature of any mineralisation, geochemical, geological or geophysical anomaly within the property and the tenor of any mineralisation known to exist on the property being valued:
- Number and relative position of anomalies on the property being valued;
- Geological models appropriate to the property being valued.

The Geoscientific Factor method systematically assesses and grades these four key technical attributes of a tenement to arrive at a series of multiplier factors (Table 34).

The Basic Acquisition Cost (BAC) is an important input to the Kilburn Method and it is calculated by summing the application fees, annual rent, work required to facilitate granting (e.g. native title, environmental etc.) and statutory expenditure for a period of 12 months. Each factor is then multiplied serially by the BAC to establish the overall technical value of each mineral property. A fifth factor, the market factor, is then multiplied by the technical value to arrive at the fair market value.

### *4.2.4 Yardstick*

*The Rule-of-Thumb (Yardstick) Method* is relevant to exploration properties where some data on tonnage and grade exist may be valued by methods that employ the concept of an arbitrarily ascribed current in situ net value to any Ore Reserves (or Mineral Resources) outlined within the tenement (Lawrence 2001, 2012).

Rules-of-Thumb (Yardstick) Methods are commonly used where a Mineral Resource remains is in the Inferred category and available technical/economic information is limited. This approach ascribes a heavily discounted in situ value to the Resources, based upon a subjective estimate of the future profit or net value (say per tonne of ore) to derive a rule-of-thumb.

This yardstick multiplier factor applied to the Resources delineated (depending upon category) varies depending on the commodity. Typically a range from 0.4–3 per cent is used for base metals and PGM, whereas for gold and diamonds a range of 2–4.5 per cent is used. The method estimates the in situ gross metal content value of the mineralisation delineated (using the spot metal price and appropriate metal equivalents for polymetallic mineralisation as at the valuation date).

The chosen percentage is based upon the valuer's risk assessment of the assigned JORC Code's Mineral Resource category, the commodity's likely extraction and treatment costs, availability/proximity of transport and other infrastructure (particularly a suitable processing facility), physiography and maturity of the mineral field, as well as the depth of the potential mining operation.

### *4.2.5 Income*

*The Income Approach* is relevant to exploration properties on which undeveloped Mineral Resources have been identified by drilling. Value can be derived with a reasonable degree of confidence by forecasting the cash flows that would accrue from mining the deposit, discounting to the present day and determining a NPV.

The Income Approach is not appropriate for properties without Mineral Resources.

Regardless of the technical application of various valuation methods and guidelines, the valuer should strive to adequately reflect the carefully considered risks and potentials of the various projects in the valuation ranges and the preferred values, with the overriding objective of determining the "fair market value".

Table 33 shows the valuation approaches that are generally considered appropriate to apply to each type of mineral property.

*Table 33: Valuation Approaches for different Types of Mineral Properties (CIMVAL, 2003)*

| Valuation Approach | Exploration Properties | Mineral Resource Properties | Development Properties | Production Properties |
|---|---|---|---|---|
| Income | No | In some cases | Yes | Yes |
| Market | Yes | Yes | Yes | Yes |
| Cost | Yes | In some cases | No | No |

*Table 34: Geoscientific Factor Ranking*

| Rating | Address/Off Property Factor | On Property Factor | Anomaly Factor | Geological Factor |
|---|---|---|---|---|
| 0.5 | Very little chance of mineralisation; concept unsuitable to the environment | Very little chance of mineralisation; concept unsuitable to the environment | Extensive previous exploration with poor results | Generally unfavourable lithology<br>No alteration of interest |
| 1 | Exploration model support;<br>Indications of prospectivity<br>Concept validated | Exploration model support;<br>Indications of prospectivity<br>Concept validated | Extensive previous exploration with encouraging results<br>Regional targets | Deep Cover;<br>But generally favourable lithology/alteration (70%) |
| 1.5 | Recon (RAB/AC) drilling with some scattered favourable results<br>Minor Workings | Exploratory Sampling with encouragement | Several early stage targets outlined from geochemistry and geophysics | Shallow cover<br>Generally favourable lithology/alteration 50-60% |
| 2 | Several Old Workings<br>Significant RCP drilling leading to advanced project | Several Old Workings<br>Recon drilling or RCP drilling with encouraging intersections | Several well defined targets supported by recon drilling data | Exposed favourable lithology/alteration |
| 2.5 | Abundant Workings<br>Grid drilling with encouraging results on adjacent sections | Abundant Workings<br>Core drilling after RCP with encouragement | Several well defined targets with encouraging drilling results | Strongly favourable lithology, alteration |
| 3 | Mineral Resource areas defined | Advanced Res Def. drilling (early stages) | Several significant sub-economic targets<br>No indication of 'size' | Generally favourable lithology with structures along strike of a major mine;<br>Very prospective geology |
| 3.5 | Abundant Workings/mines with significant historical production<br>Adjacent to known mineralisation at PFS stage | Abundant Workings/mines with significant historical production<br>Mineral Resource areas defined | Several significant sub-economic targets<br>Potential for significant 'size'<br>Early stage drilling | |
| 4 | Along strike or adjacent to Resources at DFS stage | Adjacent to known mineralisation at PFS stage | Marginally economic targets of significant 'size' advanced drilling | |
| 4.5 | Adjacent to development stage project | Along strike or adjacent to Resources at DFS stage | Marginal economic targets of significant 'size'<br>Well drilled Inferred Resources | |
| 5 | Along strike from operating major mine(s) | Adjacent to development stage project | Several significant ore grade co-relatable intersections | |

# 5 Valuation of Image's Mineral Assets

## 5.1 Valuation Approach

A schedule of the tenements valued is provided in Appendix 1. CSA Global considered the exploration / development stage of each project in deciding what valuation methods would be suitable in assessing the value of each project area (Table 35).

*Table 35: Exploration Stages and Valuation Methods used for each project*

| Image Project Grouping | Project | VALMIN Classification | Tenements | Tenement Area (km²) | Contained Resource (HM tonnes) | Valuation Method |
|---|---|---|---|---|---|---|
| Development | Boonanarring | Pre-development | M70/1194#, M70/1311# E70/3041, G70/0250 | 50.49 | 1,770,000 | Reserves: DCF, Yardstick Remaining Resources: Transactions, Yardstick Exploration area: Transactions, Kilburn |
| | Atlas | Pre-development | M70/1305# E70/3997 | 71.14 | 854,000 | |
| High-grade | Cooljarloo North | Advanced Exploration | R70/0051# | 26.65 | 810,000 | Resources: Transactions, Yardstick Exploration area: Transactions, Kilburn |
| | Gingin South | Advanced Exploration | M70/0448# E70/3032 | 40.56 | 495,000 | |
| | Gingin North | Advanced Exploration | M70/1193# | 0.81 | 140,000 | |
| | Red Gully | Advanced Exploration | M70/1192# E70/3966, E70/4077, E70/3100, E70/3192, E70/3494, E70/3720, E70/4689 | 207.99 | 460,000 | |
| Large-scale | Bidaminna | Advanced Exploration | E70/3298#& E70/2844, E70/3411 | 67.46 | 1,350,000 | |
| | Cooljarloo | Advanced Exploration | E70/2636#, E70/2898# P70/1520, E70/4244, E70/4631, E70/4656, E70/4663 | 357.81 | 3,570,000 | |
| Exploration Other | Winooka | Exploration | E70/4245 | 58.97 | | Transactions, Kilburn |

# Tenement contains declared Mineral Resource

& Image interest 90%

## 5.2 Previous Valuations

CSA Global is not aware, nor have we been made aware, of any previous valuations completed on the Image tenement portfolio.

## 5.3 Other Exploration assets

CSA Global does not consider Image's diluting minority interest in the two Erayinia JV tenements or the royalty interests to be currently material. CSA Global does however note that the royalty interest in retention licence R69/1 may become material in the future, should Diatreme commence mining the resource on retention licence R69/1. The royalty interest on the Mullering tenements are not likely to be material in the near future.

## 5.4 Income Approach valuation of the Boonanarring and Atlas Projects

CSA Global considers Image's Boonanarring and Atlas Projects[4] to be a Pre-Development project. It is therefore permissible to assess its value using the Income approach. CSA Global has considered a DCF model of the project.

### *5.4.1 Cash Flow Models and Financial Analysis*

CSA Global has conducted checks and analysis of the DCF model and found it to be a reasonable basis for Valuation. CSA Global has gathered additional information and developed opinions on appropriate project parameters, with which to adjust the DCF model to reach an adjusted value. The model extends to consider taxation and many other financial aspects of the project. CSA Global did not consider any aspects beyond the pre-tax value of cash flow from operations. The valuation expressed by CSA Global is the value of pre-tax cash flow from operations measured at the mine gate, including the cost of the MSP toll treating costs. Two scenarios have been generated in this manner, being:

(1) Acquisition of a new Wet Plant and

(2) Acquisition of the Murray Mindarie Wet Plant.

The DCF model has been adjusted to reflect a valuation date of 1st September 2015.

### *5.4.2 Commodity Pricing Assumptions*

Pricing for Zircon and titanium minerals peaked in 2012 and has since declined. The main revenue stream for the projects will come from Ilmenite and Zircon. In these two products, the project will only produce between 1% and 2% of global production. Image will therefore be a price taker, not a price maker.

CSA Global has obtained an updated consensus-pricing forecast from Azure Capital and has applied this updated forecast to the DCF model. (Table 36)

*Table 36: Consensus Mineral Sands Forecast (29 October 2015)*

| USD Real | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | L-Term |
|---|---|---|---|---|---|---|---|
| **Zircon** | 1,049 | 1,021 | 1,114 | 1,124 | 1,145 | 1,151 | 1,115 |
| **Rutile** | 763 | 758 | 888 | 910 | 920 | 927 | 858 |
| **Ilmenite** | 14 | 136 | 151 | 153 | 156 | 158 | 163 |

### *5.4.3 Foreign Exchange Rates*

The DCF model includes a number of exchange rate scenarios. A 1.00 A$ = 0.72 US$ exchange rate has been adopted for this Valuation. An exchange rate value aligning with the current value has been adopted as the commodity price forecasts used in the valuation are expressed in real 2015 terms.

[4] Note that Image refers to these projects as "development" projects, but this is their internal usage describing the project status and not the VALMIN classification

### *5.4.4 Discount Rate*

A weighted average cost of capital (WACC) of 10% has been adopted for the financial model and used as the discount rate for the DCF. A comparison with other valuations recently undertaken by CSA Global indicates that this is a reasonable value, given the company size of Image.

### *5.4.5 Mineral Resources and Ore Reserves*

Mineral Resources for the Boonanarring and Atlas Deposits have been prepared using appropriate methodologies. CSA Global considers that the manner in which the Mineral Resource estimation was completed does not represent a material risk to the ongoing development, mining or global value of the project. Mineral Resources have only been reported however according to the JORC Code (2004 Edition).

The Ore Reserves are reasonable; however, the production schedule does include a proportion of Inferred Mineral Resources being approximately 10% of scheduled tonnage. Inferred Mineral Resources are, by definition, of lower confidence. It should be noted that, when compared to the Measured and Indicated Mineral Resource, the grade of the Boonanarring Inferred Material is considerably lower in HM grade. It is understood that further drilling has been undertaken since the Mineral Resource Estimate, covering the areas of Inferred material included in the production schedule.

Ore Reserves have also only been reported in accordance with JORC 2004 Guidelines and as such, no specific detailed assessment of modifying factors is available. Review of the Image documentation indicates that the parameters and modifying factors in the estimation of Ore Reserves are appropriate for use in the cash flow model.

### *5.4.6 Mining Physicals*

The mining physicals have been established through appropriate methods and reflect a reasonable reflection of expected performance. It should be noted that only limited geotechnical investigations have been undertaken for slope stability estimation. A relatively conservative overall pit slope angle of 34-degrees has been adopted for both deposits. The presence of clays and induration at Boonanarring may allow pit slope angles to be steepened, reducing waste movement by possibly up to 10% and reducing the project footprint by approximately 15%, with reduced associated surface disturbance and rehabilitation costs. CSA Global has adjusted the cost of waste movement and surface disturbance costs by these proportions to reflect the preferred values.

### *5.4.7 Processing Assumptions*

Ore processed, plant availabilities and HM recoveries are considered reasonable.

Separation into individual saleable products has yet to be finalised, with toll treatment at either Bunbury or Geraldton being investigated, as is a Mineral Separation Plant (MSP) located at or near the Boonanarring site. Estimated MSP operating costs vary and a most-likely value has been assumed. Previous studies undertaken by CSA Global for a similar mineral sands project in 2013 included budget toll treatment charges and these have been used as the basis of our assumption.

The WCP is designed to have a throughput capacity significantly higher than the scheduled throughput, allowing very high availability and utilisation to be achieved. No adjustments to throughput have been made in the cash flow modelling.

Slimes disposal has been planned to use solar drying ponds with later incorporation into the sand tailings prior to topsoil return and rehabilitation. This technique has been successfully used in Western Australia for a number of years and slimes thickening tests have shown that the required thickened densities can be achieved for this disposal technique. Murray have been successfully using co-disposal at their Mindarie operation. This technique may be suitable for Boonanarring and Atlas, with associated operating cost savings. No allowance for this has been made in the cash flow modelling.

In summary, test work and industry experience indicate that the processing assumptions in the cash flow models provided are considered reasonable.

### *5.4.8 Operating Costs*

Operating costs used for the two project studies and the two financial models made available for this evaluation were all generated for the 2013 Feasibility Study. Mine operating costs were based on a indicative mining cost proposal from an experienced mineral sand mining contractor in Western Australia, dated June 2013. At this time, commodity prices were still relatively high and earthmoving prices reflected the increased activity in the industry. Comparison with CSA Global database mining costs indicated that the unit variable costs appeared high. In the current mining climate, earthmoving contractors are offering more competitive prices.

Processing costs were estimated by an engineering and consulting group experienced in mineral sand plants and operations. Details of the build-up of the costs were not made available, however they compare reasonably with CSA Global data from other mineral sands projects.

HMC and product trucking and storage costs were estimated in July 2013, based on new equipment and fuel These costs are higher than budget figures obtained by CSA Global at a similar time, however they are based on hauling around the outskirts of Perth from Boonanarring to Bunbury, which limits the size of truck combinations that can be used.

Although operating costs are generally of the expected quantum, the estimates are generally more than two years old, and are based on indicative prices, not detailed quotations.

Changes on various operating cost components have been considered in this valuation. CSA Global has reduced the ore mining unit operating cost.

### *5.4.9 Non-operating and Other Costs*

Site and corporate administration costs have been included in the financial model. Other cash flow models and financial analysis has generally excluded a proportion of the corporate off-site costs which are not associated directly with the Boonanarring and Atlas projects.

Costs associated with environmental compliance, rehabilitation, closure, Native Title, land acquisition, land owner compensation payments, taxes and royalties are included in the financial model. This model also includes financing options, however these have not been considered in this evaluation.

### *5.4.10 Capital Expenditure*

CSA Global has generated two versions of the valuation model. The only difference between the two models is the capital expenditure relating to the WCP. The difference comprises a new installation or the refurbishment and relocation of the MZ Mindarie plant. CSA Global has adjusted the capital expenditure to reflect the acquisition and relocation of the MZ Mindarie plant based on the estimates of due diligence review completed by an external consulting firm.

The capital cost estimate for the new plant has been based on the capital cost estimates initially reported in the 2013 Feasibility Study and updated in the 2014 Project Summary Study contained in the current version of the DCF model.

The relevant Capital expenditure estimates are shown in Table 37.

*Table 37: New and Refurbished WCP capital costs*

| Plant | Capital Cost |
|---|---|
| MZ Minadrie Plant | $ 27,614 |
| New WCP | $ 50,707 |

The level of capital costs are considered reasonable, but require detailing and updating as the project advances.

*5.4.11 Cash Flows Scenarios*

Two scenarios were modelled using the Azure financial model. Both models are identical except for the capital cost related to the WCP.

*5.4.12 Income-based Valuation of the Pre-development Projects*

The results of the DCF model are significantly sensitive to commodity prices. A sensitivity test shows that varying the commodity prices produces significant swings in the value of the project. These swings are greater than sensitivity ranges on any other parameter. Price sensitivity was tested in an asymmetric distribution of -5% and + 10%. The reason for the asymmetry is to reflect opportunities to optimise the implementation of the operation in terms of efficiencies and operating cost initiatives. The price sensitivity is used as an analogue to represent these revenue and operating cost opportunities.

The cash flow from operations, including toll treatment MSP and pre-tax cash flow, discounted at a rate of 10% is shown in Table 38.

*Table 38: Price Sensitivity and Valuation*

| | Valuation with Refurbished WCP $Million | Valuation with New WCP $Million |
|---|---|---|
| 95% Commodity Price | 18 | -4 |
| 100% Commodity Price | 40 | 18 |
| 110% Commodity Price | 84 | 62 |
| **CSA Global Preferred Value** | **35** | **17** |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

CSA Global estimate that the value of the Atlas and Boonanarring pre-development stage project, assuming acquisition of a refurbished WCP, lies between $18 million and $84 million with a Preferred Value of $35 million. The preferred value basis is discussed below.

## 5.5 Market Approach

CSA Global attempted to use at least one Market Approach in assessing the value of each project area (Table 35). For the projects that included declared Mineral Resources, this included assessing the value by using a factor obtained from the analysis of comparative resource transactions. For the exploration projects, the value was assessed by using a factor obtained from the analysis of comparative exploration area transactions. The Yardstick approach was used as a crosscheck for the Boonanarring and Atlas Ore Reserves, as well as the remaining Mineral Resources for these projects, and the Mineral Resources for all other projects.

*5.5.1 Heavy Mineral Sands Mineral Resources*

CSA Global considered over a dozen transactions involving heavy mineral sands projects with declared resources that were announced post-January 2010. Sufficient information was available in the public domain for the analysis of eight transactions that included heavy mineral sands projects that may be considered as potentially suitable comparatives of Image's heavy mineral sands projects. Six of these transactions included Australian projects, with the remaining projects in Kenya and Sri Lanka. Details of the transactions analysed are provided in Appendix 2.

In analysing the transactions, all amounts were converted to A$ at the relevant exchange rate at the time of the transaction announcement. Share considerations were treated at a 10% discount to cash, and share prices at the time of the transaction were considered, unless the shares were issued at a particular

deemed price. The implied A$/t transaction price was also normalised to the August 2015 zircon price, using the average annual zircon prices published by Iluka in their ASX notice of 19 February 2015.

The transactions were analysed in terms of the implied transaction price in A$/t of contained heavy minerals. This ranged from A$0.16/t to A$76.04/t, with a median of A$3.02/t, a mean of A$12.41/t and a weighted average of A$2.20/t. When the transaction with the implied value of A$76.04/t was removed, the maximum fell to A$10.75/t and the median dropped to A$0.75/t with a mean of A$3.32/t and a weighted average of A$4.26/t. When normalised to the August 2015 zircon price, this changed to a range of A$0.15/t to A$10.04/t, with a median of A$0.42/t, a mean of A$2.51/t and a weighted average of A$2.97/t.

When only the Australian transactions were considered (excluding the previously identified high outlier), the range was A$0.27/t to A$10.75/t with a median of A$5.30/t, a mean of A$4.54/t and a weighted average of A$5.77/t. This normalised to a range of A$0.28/t to A$10.04/t, with a median of A$3.02/t, a mean of A$3.40/t and a weighted average of A$3.94/t.

CSA Global also split the five remaining transactions into low grade (<2.0% HM) and other projects. There were Australian transactions for two low-grade projects and three other projects. The low grade projects had a range of A$0.27/t to A$5.65/t with a median of A$2.96/t, a mean of A$2.96/t and a weighted average of A$5.04/t. This normalised to a range of A$0.28/t to A$3.22/t, with a median of A$1.75/t, a mean of A$1.75/t and a weighted average of A$2.88/t. The other projects had a range of A$0.75/t to A$10.75/t with a median of A$5.30/t, a mean of A$5.60/t and a weighted average of A$7.86/t. This normalised to a range of A$0.42/t to A$10.04/t, with a median of A$3.02/t, a mean of A$4.49/t and a weighted average of A$6.96/t.

From this analysis, CSA Global concluded that a suitable valuation range for low grade projects would be based on a low factor of A$0.28/t (based on Diatreme's acquisition of Cyclone Extended in November 2014) and a high factor of A$1.75/t, with a preferred factor of A$0.42/t.

CSA Global further concluded that a suitable valuation factor for non-low grade projects would be based on a low factor of A$1.64/t and a high factor of A$6.96/t, with a preferred factor of A$3.94/t.

A summary of the valuations, which are based on comparable transactions, is presented in Table 39.

*Table 39: Summary of Valuations based on Comparable Transactions*

| Project | Contained HM (tonnes) | Low (A$M) | Preferred (A$M) | High (A$M) |
|---|---|---|---|---|
| Boonanarring Remaining Resources[&] | 580,000 | 0.95 | 2.28 | 4.04 |
| Atlas Remaining Resources[&] | 74,000 | 0.12 | 0.29 | 0.51 |
| Cooljarloo North[&] | 810,000 | 1.33 | 3.19 | 5.64 |
| Gingin South[&] | 495,000 | 0.81 | 1.95 | 3.44 |
| Gingin North[&] | 140,000 | 0.23 | 0.55 | 0.97 |
| Red Gully[&] | 460,000 | 0.75 | 1.81 | 3.20 |
| Bidaminna[#%] | 1,350,000 | 0.38 | 0.57 | 2.36 |
| Cooljarloo[#] | 3,570,000 | 1.01 | 1.51 | 6.25 |
| | 7,479,000 | 5.58 | 12.15 | 26.41 |

[#] Low factor A$0.28/t, High factor A$1.75/t, Preferred factor A$0.42/t

[&] Low factor A$1.64/t, High factor A$6.96/t, Preferred factor A$3.94/t

[%] Valued at 100% basis. Image has a 90% interest in E70/3298

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

### *5.5.2 Exploration Tenure*

CSA Global considered four recent transactions involving Australian heavy mineral sands exploration projects. Details of the transactions analysed are provided in Appendix 3.

In analysing the transactions, all amounts were converted to A$ at the relevant exchange rate at the time of the transaction announcement. Share considerations were treated at a 10% discount to cash, and share prices at the time of the transaction were considered, unless the shares were issued at a particular deemed price.

The transactions were analysed in terms of the implied transaction price in A$/km$^2$ of granted tenement areas. This ranged from AS$3,116/km$^2$ to A$10,909/km$^2$, with a median of A$5,954/km$^2$, a mean of A$6,483/km$^2$ and a weighted average of A$5,572/km$^2$.

From this analysis, CSA Global concluded that a suitable preferred valuation factor based on contained tenement area is A$5,572/km$^2$, with a low factor of A$3,116/km$^2$ and a high factor of US$10,909/km$^2$.

*Table 40: Summary of Valuations based on Exploration Area Transactions*

| Project | Tenements[#] | Area (km$^2$) | Low (A$) | Pref. (A$) | High (A$) |
|---|---|---|---|---|---|
| Boonanarring | E70/3041, G70/0250 | 40.70 | 0.13 | 0.23 | 0.44 |
| Atlas | E70/3997 | 61.66 | 0.19 | 0.34 | 0.67 |
| Gingin South | E70/3032 | 39.51 | 0.12 | 0.22 | 0.43 |
| Red Gully | E70/3966, E70/4077, E70/3100, E70/3192, E70/3494, E70/3720, E70/4689 | 200.22 | 0.62 | 1.12 | 2.18 |
| Bidaminna | E70/2844, E70/3411 | 55.92 | 0.17 | 0.31 | 0.61 |
| Cooljarloo | P70/1520, E70/4244, E70/4631, E70/4656, E70/4663 | 280.38 | 0.87 | 1.56 | 3.06 |
| Winooka | E70/4245 | 58.97 | 0.18 | 0.33 | 0.64 |
| | | **737.36** | **2.28** | **4.11** | **8.03** |

[#] Only tenements that do not contain declared resources are considered

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

## 5.6 Yardstick cross-check

CSA Global used the Yardstick method as a reasonableness check on the Boonanarring and Atlas DCF valuation and on the valuations that were completed using comparable transactions.

For the Yardstick valuation, CSA Global used the following commodity spot prices and process recovery factors:

- Zircon: A$1,492.50/t 94% to 96% recovery
- Rutile: A$1,136.70/t 91% to 93% recovery
- Ilmenite: A$207.90/t 85% to 93% recovery
- Leucoxene: A$416.70/t 75% to 77% recovery

In addition, CSA Global utilised the following commonly used yardstick valuation factors:

- Inferred Resources: 0.5% to 1% of spot price
- Indicated Resources: 1% to 2% of spot price
- Measured Resources: 2% to 5% of spot price
- Ore Reserves: 5% to 10% of spot price

A summary of the valuations which were based on Yardstick Factors is presented in Table 41.

*Table 41: Summary of Valuations based on Yardstick Factors*

| Project | Contained HM (tonnes) | Low (A$M) | Pref. (A$M) | High (A$M) |
|---|---|---|---|---|
| Boonanarring Ore Reserves | 1,190,000 | 28.44 | 43.63 | 58.82 |
| Atlas Ore Reserves | 780,000 | 12.76 | 19.68 | 26.61 |
| Boonanarring Remaining Mineral Resources | 580,000 | 1.28 | 1.97 | 2.65 |
| Atlas Remaining Mineral Resources | 74,000 | 0.24 | 0.38 | 0.51 |
| Cooljarloo North | 810,000 | 2.27 | 3.53 | 4.78 |
| Gingin South | 495,000 | 1.70 | 2.74 | 3.78 |
| Gingin North | 140,000 | 0.26 | 0.41 | 0.55 |
| Red Gully | 460,000 | 1.24 | 1.93 | 2.61 |
| Bidaminna# | 1,350,000 | 1.72 | 2.68 | 3.65 |
| Cooljarloo | 3,570,000 | 5.75 | 8.93 | 12.12 |
| **Total** | **9,449,000** | **55.66** | **85.88** | **116.08** |

# Valued at 100% basis. Image has a 90% interest in E70/3298

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

## 5.7 Geoscientific Factor Method – 'Kilburn' Method

The Geoscientific Factor Method of valuation requires the consideration of those aspects of a mineral property, which enhance or downgrade the intrinsic value of the property. The first and key aspect of the Geoscientific Factor method described by Kilburn (1990) is the derivation of the BAC that is the basis for the valuation. Goulevitch and Eupene (1994) discuss the derivation of BAC. The BAC represents the average cost to identify, apply for and retain a base unit of area of tenement.

A BAC for West Australian exploration licences has been estimated using the following data:

- Based on the WAMEX database of active Prospecting Licences and Retention Licences in West Australia as of August 2015 and the West Australian mining code, it is determined that the average age of Exploration Licences in West Australia is 4 years, and the average size of these licences is approximately 81 $km^2$.

- An average cost to identify an area of interest of A$10,000 was chosen, as well as A$20,000 for the cost of landowner notices, negotiations, legal costs and compensation.
- An application fee of A$1,290.25 per licence is payable.
- The holding cost includes a rent of A$40.7 per km$^2$ per annum for the initial 3 years and A$63.3 per km$^2$ for the fourth year.
- West Australian mining law includes a minimum annual expenditure requirement of A$333.33 per km$^2$ for the initial 3 years and A$500 per km$^2$ for the fourth year.

Altogether, this gives a BAC for the average West Australian Exploration Licence of A$2,170 per km$^2$, as shown in Table 42.

*Table 42: Estimation of the BAC for West Australian Exploration Licences (non-pastoral land)*

| Statistic | Unit | Value |
|---|---|---|
| Average Licence size | km$^2$ | 81 |
| Average licence age | Years | 4 |
| Application fee | A$ per licence | 1290.25 |
| Annual Rent Year 1-3 | A$ per km$^2$ | 40.7 |
| Annual Rent Year 4 | A$ per km$^2$ | 63.3 |
| Minimal Annual Expenditure Year 1-3 | A$ per km$^2$ | 333.33 |
| Minimal Annual Expenditure Year 4 | A$ per km$^2$ | 500 |
| Deemed Cost of Identification of a licence | A$ per licence | 10,000 |
| Costs of Landowner notices, negotiations, legal costs and compensation | A$ per licence | 20,000 |
| Annual costs of Local Govt rates | A$ per licence | 2,000 |
| BAC of Average licence | A$ per km$^2$ | 2,170 |

CSA Global considered the various factors indicated in Table 34 in assessing the Technical Value of each project area. The ratings for each project are indicated in Appendix 4.

A Market Factor of 25% was applied in deriving a Fair Market Value from the Technical Value obtained from the rating matrix. This factor was chosen such that the average value for the tenement package considered is consistent with the range of valuation factors obtained from the analysis of comparative transactions. CSA Global is of the view that this adequately accounts for market factors on an empirical basis.

*Table 43: Summary of Geoscience Rating (Kilburn) Method Valuation of North Perth Basin projects*

| Project | Area (km$^2$) | Low (A$M) | Preferred (A$M) | High (A$M) |
|---|---|---|---|---|
| Boonanarring | 40.7 | 0.60 | 1.53 | 2.47 |
| Atlas | 61.66 | 0.88 | 1.57 | 2.26 |
| Gingin South | 39.51 | 0.32 | 0.74 | 1.16 |
| Red Gully | 200.22 | 0.51 | 1.25 | 2.00 |
| Bidaminna | 55.92 | 0.20 | 0.74 | 1.28 |
| Cooljarloo | 280.38 | 0.74 | 2.08 | 3.43 |
| Winooka | 58.97 | 0.06 | 0.10 | 0.14 |
| **Total** | **737.36** | **3.3** | **8.0** | **12.7** |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

## 5.8 Preferred Values

In choosing a Preferred Value and Valuation Range for these projects, CSA Global considered the valuation ranges and the preferred values from a range of methodologies. The weighting of each method in considering the overall valuation ranges and Preferred Values varied based on the stage of development of the project and CSA Global's view of the applicability of each method to each project.

### *5.8.1 Pre-Development Projects*

In selecting the preferred value for the Boonanarring and Atlas Projects based on the Income approach, CSA Global considered a range of factors:

- The fact that the project is yet to be built is an uncertainty that justifies a lower valuation than the outputs of the DCF modelling;
- The relatively high grade of the resources reduces risks;
- The current market conditions are particularly difficult, with poor commodity prices and heavily discounted market capitalisations, warranting selection of lower values;
- Comparison with peer companies, in particular MZI Resources who are developing the Keysbrook Project, a project of similar scale but lower grades, supports the valuation.

As a cross check CSA Global completed a Yardstick valuations of the Ore Reserves at Boonanarring and Atlas, and this exercise complements DCF valuation range.

Valuations are shown in Table 45.

*Table 44: Preferred Valuation of the Pre-development Projects*

| Valuation with Refurbished WCP | Low A$ Million | Pref. A$ Million | High A$ Million |
|---|---|---|---|
| **Income Approach** | **18** | **35** | **84** |
| Yardstick Approach | 41 | 63 | 85 |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

CSA Global estimate that the value of the Atlas and Boonanarring pre-development stage project, assuming acquisition of the Murray Zircon refurbished WCP, lies **between A$18 million and A$84 million with a Preferred Value of A$35 million**.

### *5.8.2 Exploration and Advanced Exploration Projects*

In choosing Preferred Values and Valuation Ranges for the Advanced Exploration projects containing Mineral Resources, CSA Global considered the preferred values and the valuation ranges derived using the comparable transactions method and the Yardstick method. CSA Global prefers basing the valuation ranges primarily on the values derived using the comparable transactions method, and has used the Yardstick valuation as a reasonableness check. CSA Global has chosen Preferred Values close to the low end of the Valuation Ranges in light of current market conditions and generally low investor appetite.

In choosing Preferred Values and Valuation Ranges for the Exploration Areas, CSA Global considered the valuation ranges and preferred values derived by using the comparable transactions method and the Kilburn method. In general, the Kilburn method produced higher values than the transactions method did, as it considers the exploration potential of the individual tenements. As the transactions method is a more market-related method, CSA Global has chosen to place a greater weighting on these values than the Kilburn values. Preferred values are therefore primarily based on the Comparable transactions value, with the Kilburn values being used to adjust for the exploration potential. CSA Global has chosen Preferred Values close to the low end of the Valuation Ranges in light of the poor current market conditions and generally low investor appetite for mining projects.

CSA Global's preferred values for the Image Exploration and Advanced Exploration Projects are provided in Table 45

*Table 45: Valuation of mineral assets additional to the Atlas and Boonanarring Project*

| Project | Note | Low (A$) | Preferred (A$) | High (A$) |
|---|---|---|---|---|
| *Atlas and Boonanarring Project* | | | | |
| Boonanarring | Remaining Mineral Resources not included in the DCF model | 1.00 | 1.10 | 3.00 |
| Atlas | Remaining Mineral Resources not included in the DCF model | 0.10 | 0.15 | 0.50 |
| Boonanarring | Exploration tenure | 0.10 | 0.20 | 0.70 |
| Atlas | Exploration tenure | 0.20 | 0.30 | 0.90 |
| *High Grade Projects* | | | | |
| Cooljarloo North | Mineral Resources | 1.50 | 1.60 | 5.00 |
| Gingin South | Mineral Resources | 1.00 | 1.20 | 3.00 |
| Gingin North | Mineral Resources | 0.25 | 0.30 | 0.75 |
| Red Gully | Mineral Resources | 0.75 | 1.00 | 3.00 |
| Gingin South | Exploration tenure | 0.13 | 0.20 | 0.70 |
| Red Gully | Exploration tenure | 0.60 | 0.70 | 2.00 |
| *Large Scale Projects* | | | | |
| Bidaminna | Mineral Resources | 0.40 | 0.50 | 2.00 |
| Cooljarloo | Mineral Resources | 1.00 | 1.50 | 6.00 |
| Bidaminna | Exploration tenure | 0.18 | 0.22 | 0.90 |
| Cooljarloo | Exploration tenure | 0.80 | 1.00 | 3.20 |
| *Exploration Projects* | | | | |
| Winooka | Exploration tenure | 0.10 | 0.20 | 0.50 |
| **Total** | | **8.1** | **10.2** | **32.2** |

The valuation has been compiled to an appropriate level of precision and minor rounding errors may occur.

CSA Global estimate that the value of the mineral assets held by Image additional to the Atlas and Boonanarring pre-development stage project lies **between A$8.1 million and A$32.2 million with a Preferred Value of $10.2 million**.

There is significant range in the values derived for Image's Mineral Assets. CSA Global has considered this range and concludes that it provides a reasonable representation of possible valuation outcomes for the projects, given the uncertainties inherent in valuing early stage and pre-development exploration projects.

It is stressed that the valuation is an opinion as to likely values, not absolute values, which can only be tested by going to the market.

Therefore, overall, CSA Global has selected the Preferred Value of Image's Mineral Assets to be

**$45.2 million from a range extending from A$26.1–116.2 million.**

# 6 Valuation of Murray Zircon's Plant and equipment

The Mindarie mine is located approximately 200 km northeast of Adelaide in the Mallee region of South Australia. The processing facility consists of a Slurry Mining Unit (SMU), Primary Concentrator Plant (PCP), Concentrate Upgrade Plant (CUP), Mineral Separation Plant (MSP), and associated ancillary areas. Until the plant ceased operation in March 2015 the operations produced a heavy mineral concentrate (HMC) by processing mined ore through the SMU and PCP only.

Only the SMU, PCP areas and support areas of the Mindarie Operations have been assessed as a part of this suitability and valuation report. The equipment is included on the Process Flow Diagrams:

- 356-A-120001: 500 tph SMU
- 356-A-130001: Feed Preparation
- 356-A-140001: Spiral Concentrator.

The Murray CUP, MSP and associated ancillary areas have not been included in this assessment.

Full details of the valuation and site visit report are provided in Appendix 5.

Valuation estimates were developed for the replacement value, condition based value, and a benchmark value. The capital cost estimates have been developed to an accuracy of ±30% using industry accepted methods and criteria dictated by the Australian Institute of Mining and Metallurgy (AusIMM).

These estimates were completed by CSA Global associates EPMS and were based on process flowsheets provided by Murray in addition to information gathered during a site visit to the Mindarie site by Mike Kevan on 27th October 2015.

The replacement value is an estimate of the capital expenditure required to construct a new identical processing facility and ancillary areas in 2015. Mechanical equipment costs were obtained from recent previous projects for identical or similar equipment in the EPMS Capital Cost Database. A replacement value estimate for overall plant costs was developed by factoring from mechanical equipment.

EPMS engineer Mike Kevan visited the Mindarie site to assess the condition of equipment in the processing and support areas. Items were identified using original design flowsheets, and the acquisition register provided by Murray and Image. These were rated according to their presence and fitness for duty.

It is noted that other methodologies may provide a wider range of valuations, (for example a "second hand" equipment based estimate is likely to offer a significantly lower valuation). Based on the information provided by Murray, EPMS have elected to prepare valuation estimates based on two different methodologies, namely 1) replacement value and 2) a condition based valuation estimate of the existing Mindarie Plant. The condition based valuation is for the Mindarie plant in situ. As Image intend to relocate the plant there will be additional design, management, transport, civil and electrical costs incurred to make the plant operable again.

When developing a methodology for composing the replacement value estimate, it was decided that in light of the proposed level of accuracy (±30%), available information and the compressed timeframe that this be treated as per the criteria dictated by the AusIMM in the Cost Estimation Handbook for a scoping / prefeasibility level study.

The result from the process review was that the Mindarie Plant is fit for purpose for use for the Image Resources duty with exception of a few process and operational modifications. It is recommended that

further test work be carried out to further optimise the process circuit and ensure that no equipment is relocated that may be redundant at the new site.

As a check to the above two valuation methods, three similar plants were used to generate a benchmark relationship between capital cost and plant throughput. A benchmark estimate for the MZ MCP was generated by interpolating directly from the cost/throughput relationship of these three sample plants.

Table 46 below summarises the total capital expenditure value for the Mindarie Plant based on new replacement, used condition based and benchmarking valuation methods. Note that the benchmarking total capital expenditure does not include some of the items that were allowed for in the condition based valuation including – light vehicles, site offices and admin buildings, store's inventory etc.

Due to the small market for used processing plants it is difficult to give an accurate present day market valuation for the plant as the value of the sum of individual used components would be significantly less than the value of a full operational plant. The value of the plant to Image is higher than this as the plant is in general suited to their proposed mining operations. The other advantage to Image is the acceleration of schedule (estimated at around 12 months) due to minimal additional design and construction being required. Equipment may be relocated and installed whilst any long lead equipment items such as the thickener can be procured very soon after purchase of the plant.

*Table 46: Total Capital Expenditure for Each Valuation Method*

| Method | Cost (A$M) |
|---|---|
| Replacement Valuation | $ 23.3 |
| Condition Based Valuation | $ 9.7 |
| Benchmarking Valuation | $ 18.5 # |

# note this figure does not include allowance for infrastructure which adds up to $6.4M in the replacement valuation

**Based on the information contained in the report it is expected that most reasonable methodology to use for valuation for the plant would be the Condition-based Valuation which gives a total value for the Mindarie plant and infrastructure as A$12 million ±30% (A$8.4–15.6 million).**

# 7 Bibliography

## 7.1 Mineral Property Valuation References

AusIMM (1998): "Valmin 94 – Mineral Valuation Methodologies". Conference Proceedings.

AusIMM (2012): “VALMIN Seminar Series 2011-12”. Conference Proceedings, 161pp

CIMVAL (2003). Standards and Guidelines for Valuation of Mineral Properties.

Gregg, L. T. and Pickering, S.M. Jr (2007). Methods for Valuing Previous Exploration Programs during Consideration of Prospective Mineral Ventures in 42nd Industrial Minerals Forum in Asheville, NC.

Kilburn, L.C. (1990). Valuation of mineral properties which do not contain exploitable reserve, CIM Bulletin, 83, p.90-93.

Lawrence, R.D. (2000). Valuation of Mineral Properties without Mineral Resources: A Review of Market-Based Approaches in Special Session on Valuation of Mineral Properties, Mining Millennium 2000, Toronto, Canada.

Onley, P.G. (2004). Multiples of Exploration Expenditure as a Basis for Mineral Property Valuation. In Mineral Valuation Methodologies Conference. AusIMM. pp191–197.

Thompson, I.S. (2000) A critique of Valuation Methods for Exploration Properties And Undeveloped Mineral Resources in Special Session on Valuation of Mineral Properties, Mining Millennium 2000, Toronto, Canada.

VALMIN Committee (2005). “Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports”, 2005 edition.

## 7.2 Project Sources of Information

150910_Image NPB_Azure_SENT Financial Model Spreadsheet supplied by Azure Capital

CRISTAL Image Resources HMC426 Sample Second Interim Assessment Report, 7 September 2015

Davies, P. 2013 Base Case Feasibility Study, Boonanarring Mineral Sands Project. Image Resources NL.

Image NPB FS model V2.06 – Jan 2016 start & EMCF price forecasts Financial Model Spreadsheet, prepared by Northwind Resources Pty Ltd

Image Resources Base Case Feasibility Study, Prepared by P.J. Davies, 30 September 2013 and Appendices

Image Resources NL (2011). Feasibility Study to Commence. ASX Release, 25 August 2011.

Image Resources North Perth Basin Mineral sands project Summary, prepared by P Hearse, September 2014.

Muggeridge, G. 2013 Review and Audit of Exploration Procedures at the Boonanarring Mineral Sands Project, Gingin Area, Perth Basin. CSA Global Pty Ltd Report R107_2013A

Rothnie, C. W. 1992 Cataby J.V. E70/489 and E70/791 Annual Report, Nabaroo and Bidaminna, North Perth Basin, May 1991 to April 1992. Geopeko report WA 93/3S

# 8 Glossary

The reader is referred to online resources such as Wikipedia for explanations of unfamiliar term.

# Appendix 1. Tenement Schedule

**IMA - IMAGE RESOURCES NL FULL TENEMENT SCHEDULE as at the 22/09/2015**

| LIVE APPLICATIONS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TID | TSTATUS | MANAGER | PROJECT | HOLDER1 | SHARES1 | HOLDER2 | SHARES2 | CURAREA | AUNIT | GRTDATE | APPDATE | EXPDATE | REDDATE | EXPCOM | RENT | GRNO | GRPREP | COMMENTS |
| E70/2636 | LIVE | *IMAG | COOLJARLOO | IMAG | 100 | | | 18 | SB | 20-Feb-06 | 12-Nov-03 | 19-Feb-16 | | $70,000 | $9,011 | C 97/2007 | Cooljarloo | OLD ACT; |
| E70/2844 | LIVE | *IMAG | BIDAMINNA NTH | IMAG | 100 | | | 11 | SB | 01-Apr-08 | 03-Aug-05 | 31-Mar-17 | | $70,000 | $5,507 | C 46/2009 | Bidaminna | OLD ACT |
| E70/2898 | LIVE | *IMAG | COOLJARLOO | IMAG | 100 | | | 10 | SB | 14-Nov-06 | 19-Dec-05 | 13-Nov-15 | | $70,000 | $5,006 | C 97/2007 | Cooljarloo | OLD ACT; |
| E70/3032 | LIVE | *IMAG | GINGIN | IMAG | 100 | | | 14 | SB | 15-Oct-08 | 05-Jul-06 | 14-Oct-18 | | $50,000 | $7,008 | C 71/2010 | Gingin | PRIVATE PROPERT INCLUSION; VPS 5/13 COMPLIED |
| E70/3041 | LIVE | *IMAG | REGANS FORD SOUTH | IMAG | 100 | | | 17 | SB | 10-Jun-08 | 20-Jul-06 | 09-Jun-18 | | $70,000 | $8,510 | C151/2011 | Red Gully | PRIVATE PROPERTY RIGHTS; |
| E70/3100 | LIVE | *IMAG | QUINNS HILL | IMAG | 100 | | | 20 | SB | 04-May-10 | 11-Jan-07 | 03-May-20 | | $50,000 | $5,287 | C151/2011 | Red Gully | SURFACE RIGHTS |
| E70/3192 | LIVE | *IMAG | BOOTINE | IMAG | 100 | | | 32 | SB | 21-May-09 | 03-May-07 | 20-May-19 | | $64,000 | $16,019 | C151/2011 | Red Gully | PRIVATE PROPERTY INCLUDED; cps lodged13/3/15 |
| E70/3298 | LIVE | *IMAG | BIDAMINNA - PARK | IMAG | 90 | MASL | 10 | 4 | SB | 26-Mar-09 | 21-Sep-07 | 25-Mar-19 | | $30,000 | $2,002 | C 46/2009 | Bidaminna | IMAG CAVEAT |
| E70/3411 | LIVE | *IMAG | REGANS FORD | IMAG | 100 | | | 8 | SB | 13-May-09 | 06-Mar-08 | 12-May-19 | | $50,000 | $4,005 | C 46/2009 | Red Gully | vps 5/13 complied; INCLUSION OF PRIVATE PROPERTY |
| E70/3494 | LIVE | *IMAG | BRYALANA | IMAG | 100 | | | 2 | SB | 05-Oct-11 | 17-Jun-08 | 04-Oct-16 | | $20,000 | $390 | C151/2011 | Red Gully | private property rights; ; VPS 5/13 4 complied |
| E70/3720 | LIVE | *IMAG | BLUE LAKE | IMAG | 100 | | | 8 | SB | 30-Dec-10 | 21-Oct-09 | 29-Dec-15 | | $30,000 | $2,115 | C151/2011 | Red Gully | SURFACE RIGHTS |
| E70/3966 | LIVE | *IMAG | REGANS FORD WEST | IMAG | 100 | | | 2 | SB | 26-Nov-10 | 20-Aug-10 | 25-Nov-15 | | $20,000 | $529 | C151/2011 | Red Gully | |
| E70/3997 | LIVE | *IMAG | MUNBINIA | IMAG | 100 | | | 21 | SB | 11-Oct-11 | 02-Nov-10 | 10-Oct-16 | 10-Oct-17 | $31,500 | $4,092 | C 97/2007 | Cooljarloo | SURFACE RIGHTS |
| E70/4077 | LIVE | *IMAG | DARLING RANGE | IMAG | 100 | | | 5 | SB | 11-Oct-12 | 09-Mar-11 | 10-Oct-17 | | $15,000 | $974 | C151/2011 | Red Gully | |
| E70/4244 | LIVE | *IMAG | WOOLKA | IMAG | 100 | | | 51 | SB | 12-Mar-13 | 07-Oct-11 | 11-Mar-18 | 11-Mar-19 | $51,000 | $9,937 | C 97/2007 | Cooljarloo | |
| E70/4245 | LIVE | *IMAG | WINOOKA | IMAG | 100 | | | 20 | SB | 03-Sep-12 | 07-Oct-11 | 02-Sep-17 | 02-Sep-18 | $20,000 | $2,505 | C 46/2009 | Bidaminna | NO MINING ON A CLASS RESERVE; |
| E70/4631 | LIVE | *IMAG | MUNBINIA WEST | IMAG | 100 | | | 3 | SB | 07-Oct-14 | 09-Jul-14 | 06-Oct-19 | | $15,000 | $376 | C 97/2007 | Cooljarloo | |
| E70/4656 | LIVE | *IMAG | WINOOKA NORTH | IMAG | 100 | | | 6 | SB | 28-Oct-14 | 11-Aug-14 | 27-Oct-19 | | $20,000 | $752 | C 97/2007 | Cooljarloo | |
| E70/4663 | LIVE | *IMAG | BIBBY SPRINGS | IMAG | 100 | | | 35 | SB | 10-Dec-14 | 19-Sep-14 | 09-Dec-19 | 09-Dec-20 | $35,000 | $4,384 | C97/2007 | Cooljarloo | |
| E70/4689 | LIVE | *IMAG | BOONANARRING WEST | IMAG | 100 | | | 2 | SB | 24-Feb-15 | 24-Dec-14 | 23-Feb-20 | | $15,000 | $251 | C151/2011 | Red Gully | |
| G70/0250 | LIVE | *IMAG | BOONANARRING | IMAG | 100 | | | 12 | HA | 08-May-13 | 28-Dec-12 | 07-May-34 | | $0 | $175 | | | |
| M70/0448 | LIVE | *IMAG | GINGIN SOUTH | IMAG | 100 | | | 105 | HA | 07-May-90 | 21-Oct-88 | 06-May-32 | | $10,500 | $1,733 | C 71/2010 | Gingin | PRIVATE PROPERTY INCLUDED |
| M70/1192 | LIVE | *IMAG | RED GULLY | IMAG | 100 | | | 776 | HA | 20-May-09 | 17-Jan-05 | 19-May-30 | | $77,600 | $12,804 | C151/2011 | Red Gully | SURFACE RIGHTS; FURTHER SOUGHT 9/6/11 |
| M70/1193 | LIVE | *IMAG | GINGIN NORTH | IMAG | 100 | | | 81 | HA | 06-Jun-06 | 17-Jan-05 | 05-Jun-27 | | $10,000 | $1,337 | C151/2011 | Red Gully | surface rights |
| M70/1194 | LIVE | *IMAG | BOONANARRING | IMAG | 100 | | | 174 | HA | 16-Dec-05 | 17-Jan-05 | 15-Dec-26 | | $17,400 | $2,871 | C151/2011 | Red Gully | |
| M70/1311 | LIVE | *IMAG | BOONANARRING | IMAG | 100 | | | 805 | HA | 12-Mar-13 | 20-Dec-12 | 11-Mar-34 | | $80,500 | $13,283 | C151/2011 | Red Gully | PRIVATE PROPERTY |
| P70/1516 | LIVE | *IMAG | COOLJARLOO JV | IMAG | 100 | | | 42 | HA | 28-May-07 | 10-Oct-06 | | | $2,000 | $101 | C 97/2007 | Cooljarloo | CONV TO M70/1305 |
| R70/0051 | LIVE | *IMAG | COOLJARLOO | IMAG | 100 | | | 2663 | HA | 05-Feb-14 | 08-Oct-13 | 04-Feb-19 | | $0 | $19,174 | C 97/2007 | Cooljarloo | |
| | | | | | | | | | | | | | | $994,500 | $140,135 | | | |

| PENDING APPLICATIONS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TID | TSTATUS | MANAGER | PROJECT | HOLDER1 | SHARES1 | HOLDER2 | SHARES2 | CURAREA | AUNIT | GRTDATE | APPDATE | EXPDATE | REDDATE | EXPCOM | RENT | GRNO | GRPREP | COMMENTS |
| M70/1305 | PENDING | *IMAG | ATLAS | IMAG | 100 | | | 947 | HA | | 17-Jan-12 | | | $94,700 | $15,626 | | | AP 17/1/12; PT CONV OF E70/2636, 2898, P70/1502; NT AD CLOSE 2/9/12 |
| P70/1520 | PENDING | *IMAG | COOLJARLOO | MTSA | 100 | | | 134 | HA | | 10-Nov-06 | | | $5,360 | $322 | | | AP 10/11/06; TRANSFER FOR 100% ON FILE |
| | | | | | | | | | | | | | | | | | | |
| ROYALTY INTEREST | | | | | | | | | | | | | | | | | | |
| TID | TSTATUS | MANAGER | PROJECT | HOLDER1 | SHARES1 | HOLDER2 | SHARES2 | CURAREA | AUNIT | GRTDATE | APPDATE | EXPDATE | REDDATE | EXPCOM | RENT | GRNO | GRPREP | COMMENTS |
| E52/2627 | LIVE | *REMG | WILTHORPE | REMG | 100 | | | 1 | SB | 26-Nov-10 | 22-Sep-10 | 25-Nov-15 | | $10,000 | $301 | C259/2011 | Wilthorpe | Meteoric Resources sold to Resourceful Mining Group Pty Ltd |
| M52/1067 | LIVE | *REMG | WILTHORPE | REMG | 100 | | | 619 | HA | 14-May-15 | 10-Nov-14 | 13-May-36 | | $61,900 | $10,214 | C259/2011 | Wilthorpe | Meteoric Resources sold to Resourceful Mining Group Pty Ltd |
| E70/4129 | LIVE | TRON | MULLERING SOUTH | TRON | 50 | YALG | 50 | 6 | SB | 18-May-12 | 20-May-11 | 17-May-17 | | $30,000 | $1,169 | C 97/2007 | Cooljarloo | being sold to tronox - royalty being retained |
| E70/4130 | LIVE | TRON | MULLERING NORTH | TRON | 50 | YALG | 50 | 1 | SB | 18-May-12 | 20-May-11 | 17-May-17 | | $10,000 | $301 | C 97/2007 | Cooljarloo | being sold to tronox - royalty being retained |
| | | | | | | | | | | | | | | $111,900 | $11,985 | | | |

| NON_MANAGED TENEMENTS | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TID | TSTATUS | MANAGER | PROJECT | HOLDER1 | SHARES1 | HOLDER2 | SHARES2 | CURAREA | AUNIT | GRTDATE | APPDATE | EXPDATE | REDDATE | EXPCOM | RENT | GRNO | GRPREP | COMMENTS |
| | | | | | | | | | | | | | | | | | | |
| E28/1895 | LIVE | SLIN | KING (ERAYINIA JV) | IMAG | 30 | SLIN | 70 | 35 | SB | 23-Sep-10 | 06-Oct-08 | 22-Sep-15 | 22-Sep-16 | $52,500 | $9,252 | C 85/2011 | Erayina JV | |
| E28/2071 | LIVE | SLIN | TALC LAKE | IMAG | 30 | SLIN | 70 | 9 | SB | 05-Apr-11 | 08-Apr-10 | 04-Apr-16 | | $30,000 | $2,379 | C 85/2011 | Erayina JV | |
| E70/3418 | LIVE | POTW | BELL | IMAG | 100 | | | 32 | SB | 08-Feb-11 | 18-Mar-08 | 07-Feb-16 | 07-Feb-17 | $48,000 | $8,459 | C 41/2013 | Dandarangan Trough | POTASH WEST CAVEAT |
| E70/3892 | LIVE | *DOMS | CHAPMAN HILL | IMAG | 100 | | | 16 | SB | 01-Nov-12 | 03-May-10 | 31-Oct-17 | 31-Oct-18 | $20,000 | $3,118 | | | PRIVATE PROPERTY; DORAL CAVEAT |
| R69/0001 | LIVE | DIAT | SERPENTINE LAKES | IMAG | 100 | | | 2621 | HA | 25-Aug-14 | 29-Jul-13 | 24-Aug-17 | | $0 | $18,871 | | | |
| E52/2627 | LIVE | *REMG | WILTHORPE | REMG | 100 | | | 1 | SB | 26-Nov-10 | 22-Sep-10 | 25-Nov-15 | | $10,000 | $301 | C259/2011 | Wilthorpe | Meteoric Resources sold to Resourceful Mining Group Pty Ltd. Royalty being retained. |
| M52/1067 | LIVE | *REMG | WILTHORPE | REMG | 100 | | | 619 | HA | 14-May-15 | 10-Nov-14 | 13-May-36 | | $61,900 | $10,214 | C259/2011 | Wilthorpe | Meteoric Resources sold to Resourceful Mining Group Pty Ltd. Royalty being retained. |
| E70/4129 | LIVE | TRON | MULLERING SOUTH | TRON | 50 | YALG | 50 | 6 | SB | 18-May-12 | 20-May-11 | 17-May-17 | | $30,000 | $1,169 | C 97/2007 | Cooljarloo | being sold to tronox - royalty being retained |
| E70/4130 | LIVE | TRON | MULLERING NORTH | TRON | 50 | YALG | 50 | 1 | SB | 18-May-12 | 20-May-11 | 17-May-17 | | $10,000 | $301 | C 97/2007 | Cooljarloo | being sold to tronox - royalty being retained |

# Appendix 2. Comparable Transactions, HMS Resources

| Name | Assets | Date | Buyer | Seller | Equity | Synopsis | Country | Stage | Tonnage | Grade | Contained | Commodity | Primary HM | % above Inferred | Area | Implied $/t contained |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Image acquisition of Cooljarloo | Cooljarloo | Jul-11 | Image Resources NL | Metal Sands Pty Ltd | 30% | In July 2011, Image acquired the remaining 30% interest in the Cooljarloo project from JV partner Metal Sands for AUD100,000 cash and 3M shares. | Australia | Advanced Exploration | 10,776,000 | 7.8 | 844,000 | Ilmenite, Zircon, Rutile, HiTi, Leucoxene, Garnet | Ilmenite | 100% | 150 | 5.30 |
| Perpetual investment in Cyclone | Cyclone | Jul-13 | Perpetual Mining Holding Limited | Diatreme Resources Limited | 6% | In July 2013, Diatreme Resources Limited and Perpetual Mining Holding Limited entered into an LOI, pursuant to which the latter will invest AUD2M on the Cyclone Project to earn an initial 6% interest. The parties announced that a Head of Agreement was being drafted to reflect the conditions of the conduct of the Farm-In and JV. | Australia | Feasibility | 136,000,000 | 2.3 | 3,100,000 | Zircon, Leucoxene, Rutile | Zircon | 100% | 16 | 10.75 |
| Image acquisition of North Perth Basin mining leases | North Perth Basin | Mar-11 | Image Resources NL | Iluka Resources Limited | 100% | Image has acquired four mining leases from Iluka for AUD190,000 cash and 1.2M shares. | Australia | Feasibility | 14,300,000 | 6.7 | 955,000 | Ilmenite, Leucoxene, Zircon, Rutile | Ilmenite | 92% | 11 | 0.75 |
| Ozore investment in Urquhart Point | Urquhart Point | Aug-14 | Ozore Resources Pty Ltd | Metallica Minerals Limited | 50% | Metallica Minerals Limited ("MML") executed a JV agreement with a private Chinese investor, whereby the latter will provide AUD7.5M in funding to develop the Urquhart Point deposit and explore for other heavy mineral sand and bauxite deposits on MML's tenements in the western side of Queensland's Cape York Peninsula. | Australia | Feasibility | 3,310,800 | 5.96 | 197,275 | Ilmenite, Rutile, Zircon | Ilmenite | 100% | 2500 | 76.04 |
| Base acquisition of Kwale | Kwale Mineral Sands Project | Feb-10 | Base Iron Limited | Tiomin Resources Inc. | 100% | In February 2010, Base agreed to acquire the Kwale Mineral Sands Project, all the intellectual property associated with Tiomin's mineral sands projects in Africa and an option to acquire Tiomin Kenya Limited. Consideration was US$3 million in cash on closing, and a cash royalty of 1.5% of all product revenue (FOB Mombasa) from Kwale, paid monthly. | Kenya | Feasibility | 255,000,000 | 3.48 | 8,870,000 | Ilmenite, Rutile, Zircon | Ilmenite | 100% | 56 | 0.34 |
| POSCO investment in Coburn | Coburn Zircon Project | Aug-12 | POSCO | Gunson Resources Limited | 40% | In August 2013 POSCO agreed to invest in a 40% interest in the Coburn zircon project by making an initial payment of $7 million and then contributing the first $21 million of Gunson's mine development expenditure. | Australia | Feasibility | 979,000,000 | 1.27 | 12,389,000 | Ilmenite, Zircon | Zircon | 73% | 964 | 5.65 |
| Iluka acquisition of EL170 | PQ Resource | Aug-13 | Iluka Resources Limited | PKD Resources | 100% | | Sri Lanka | Advanced Exploration | 350,000,000 | 9.3 | 32,000,000 | Ilmenite, Zircon, Rutile, Leucoxene | Ilmenite | 81% | | 0.16 |
| Diatreme acquisition of Cyclone Extended | Cyclone Extended deposit | Nov-14 | Diatreme Resources Limited | Image Resources NL | 100% | In November 2014, Diatreme agreed to acquire the Cyclone Extended deposit in the Eucla Basin for A$435,000 in cash, to be paid in 2 tranches. Image would retain a 1% production royalty, which Diatreme has the option to acquire at an agreed value of A$435,000, exercisable by 1 January 2017. | Australia | Advanced Exploration | 86,300,000 | 1.9 | 1,600,000 | Zircon, Leucoxene, Rutile | Zircon | 90% | 26.26 | 0.27 |

# Appendix 3. Comparable Transactions, HMS Exploration areas

| Name | Assets | Commodity | Date Announced | Buyer | Seller | Equity | Synopsis | Stage | Area (km²) | Implied $/km² | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheffield acquires Iluka HMS tenements | West Mine North and Ellengail | HMS | Dec-10 | Sheffield Resources | Iluka | 100% | In December 2010, Sheffield acquired three mining leases and a retention licence located near Eneabba in WA. Consideration was A$150,000 and a 1.5% gross sales royalty. | Advanced Exploration | 13.75 | 10,909 | |
| Sheffield acquires McCalls | McCall's Project | HMS | Aug-10 | Sheffield Resources | Unnamed Prospecting Syndicate | 100% | As outlined in its prospectus, Sheffield entered into an option agreement in August 2010 to purchase the McCalls project from a prospecting syndicate for A$30,000 in cash and 500,000 Sheffield shares. Sheffield announced in January 2011 that it had exercised the option and acquired the project. | Advanced Exploration | 47.17 | 3,116 | Large Exploration Target declared |
| Tronox acquisition of Mullering tenements | Mullering tenements | HMS | Apr-15 | Tronox Limited | Image Resources NL | 100% | In April 2015, Tronox acquired two exploration licences from Image for A$50,000 in cash and a sliding royalty. | Advanced Exploration | 7.91 | 6,321 | Small licence area in direct path of dredge mining operations. Value of sliding royalty not included. |
| Ozore investment in Urquhart Point | Urquhart Point | HMS and Bauxite | Aug-14 | Ozore Resources Pty Ltd | Metallica Minerals Limited | 50% | Metallica Minerals Limited executed a JV agreement with a private Chinese investor, whereby the latter will provide AUD7.5M in funding to develop the Urquhart Point deposit and explore for other heavy mineral sand and bauxite deposits on MML's tenements in the western side of Queensland's Cape York Peninsula. | Feasibility | 2500 | 5,587 | Transaction appears to be driven more by large area than by small resource |

# Appendix 4. Geoscientific Factors

| | | | | Off Property | | On Property | | Anomaly | | Geological | | Market fa | Tenement Valuation | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project | Tenement | Area | BAC | Low | High | Low | High | Low | High | Low | High | | Low | High | Preferred |
| | E70/3041 | 40.58 | 88,077 | 3 | 4 | 3 | 3.5 | 2 | 4 | 1.5 | 2 | 0.25 | 594,523 | 2,466,168.94 | 1,530,346 |
| Boonanarring | **G70/0250** | **0.12** | **260** | **3** | **4** | **3** | **3.5** | **2** | **2.5** | **1.5** | **2** | **0.25** | **1,758** | **4,557.98** | **3,158** |
| **Atlas** | **E70/3997** | **61.66** | **133,831** | **3.5** | **4.5** | **2.5** | **3** | **2** | **2.5** | **1.5** | **2** | **0.25** | **878,265** | **2,258,395.77** | **1,568,330** |
| Cooljarloo North | | | - | | | | | | | | | 0.25 | - | - | - |
| **Gingin South** | **E70/3032** | **39.51** | **85,755** | **2** | **3** | **2.5** | **3** | **2** | **3** | **1.5** | **2** | **0.25** | **321,581** | **1,157,693.38** | **739,637** |
| Gingin North | | | - | | | | | | | | | 0.25 | - | - | - |
| | E70/3966 | 4.99 | 10,831 | 2 | 3 | 1.5 | 2 | 1.5 | 2 | 1.5 | 2 | 0.25 | 18,277 | 64,983.72 | 41,630 |
| | E70/4077 | 11.51 | 24,982 | 2 | 3 | 1.5 | 2 | 2 | 2.5 | 1.5 | 2 | 0.25 | 56,210 | 187,365.38 | 121,787 |
| | E70/3100 | 58.76 | 127,537 | 2 | 3 | 1 | 1.5 | 1.5 | 2 | 1.5 | 2 | 0.25 | 143,479 | 573,914.31 | 358,696 |
| | E70/3192 | 92.84 | 201,506 | 2 | 3 | 1 | 1.5 | 1.5 | 2 | 1.5 | 2 | 0.25 | 226,694 | 906,776.79 | 566,735 |
| | E70/3494 | 5.26 | 11,417 | 2 | 3 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 0.25 | 5,708 | 28,898.38 | 17,303 |
| | E70/3720 | 21.37 | 46,383 | 2 | 3 | 1.5 | 2 | 1 | 1.5 | 1.5 | 2 | 0.25 | 52,181 | 208,722.75 | 130,452 |
| Red Gully | **E70/4689** | **5.49** | **11,916** | **2** | **3** | **1** | **1.5** | **1** | **1.5** | **1** | **1.5** | **0.25** | **5,958** | **30,162.00** | **18,060** |
| | E70/2844 | 32.37 | 70,258 | 2 | 3 | 2 | 3 | 1.5 | 3.5 | 1.5 | 2 | 0.25 | 158,080 | 1,106,562.65 | 632,322 |
| Bidaminna | **E70/3411** | **23.55** | **51,114** | **2** | **3** | **1** | **1.5** | **1.5** | **2** | **1** | **1.5** | **0.25** | **38,336** | **172,511.26** | **105,424** |
| | P70/1520 | 1.34 | 2,908 | 3 | 3.5 | 3 | 3.5 | 2 | 3 | 1.5 | 2 | 0.25 | 19,632 | 53,442.27 | 36,537 |
| | E70/4244 | 150.59 | 326,850 | 2 | 3 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 0.25 | 163,425 | 827,339.81 | 495,382 |
| | E70/4631 | 7.4 | 16,061 | 2 | 3 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 0.25 | 8,031 | 40,655.52 | 24,343 |
| | E70/4656 | 17.59 | 38,178 | 3 | 3.5 | 1 | 1.5 | 1 | 1.5 | 1.5 | 2 | 0.25 | 42,951 | 150,327.75 | 96,639 |
| Cooljarloo | **E70/4663** | **103.46** | **224,556** | **2** | **3.5** | **2** | **3** | **1.5** | **2** | **1.5** | **2** | **0.25** | **505,252** | **2,357,841.04** | **1,431,546** |
| **Winooka** | **E70/4245** | **58.97** | **127,992** | **2** | **3** | **1** | **1** | **1** | **1** | **1** | **1.5** | **0.25** | **63,996** | **143,991.35** | **103,994** |
| | | ***737.36*** | | | | | | | | | | | ***3,304,336*** | ***12,740,311*** | ***8,022,324*** |

BAC A$2,170/km$^2$, Market factor 25%

# Appendix 5. Murray Zircon Mindarie Plant Suitability and Valuation Report

epms | engineering & project management services

Developing Partnerships.
Engineering Solutions.

# Murray Zircon Mindarie Plant Suitability and Valuation Report

**E7501-GRP-001**

## DOCUMENT HISTORY & STATUS

| Revision | Date Issued | Prepared | Checked | Approved | Revision Type |
|---|---|---|---|---|---|
| A | 02 Nov 2015 | MK | RH | DR | DRAFT |
| B | 06 Nov 2015 | MK | RH | DR | ISSUED FINAL |
| C | 16 Nov 2015 | MK | RH | DR | AMMENDED ASSET TRANSFER LIST |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | |
|---|---|
| Author | Mike Kevan |
| Project Manager | David Robinson |
| Name of Client | CSA Global Pty Ltd |
| Name of Project | Murray Zircon Mindarie Plant Suitability and Valuation |
| Name of Document | Valuation Report |
| Document Revision | C |

# TABLE OF CONTENTS


| | | |
|---|---|---|
| **1** | **INTRODUCTION** | **3** |
| 1.1 | Murray Zircon Plant Battery Limits | 3 |
| **2** | **MURRAY ZIRCON PLANT CONDITION REPORT** | **4** |
| 2.1 | Introduction | 4 |
| 2.2 | General Comment on Condition by Main Areas | 6 |
| 2.3 | Exclusions | 18 |
| **3** | **MURRAY ZIRCON PLANT VALUATION** | **19** |
| 3.1 | Valuation Scope and Methodology | 19 |
| 3.2 | Plant Condition Rating | 19 |
| 3.3 | Method of Valuation | 20 |
| 3.4 | Benchmarking Process | 22 |
| **4** | **PROCESS REVIEW – MURRAY ZIRCON PLANT FOR IMAGE RESOURCES APPLICATION** | **26** |
| **5** | **CONCLUSION** | **28** |
| **6** | **REFERENCE DOCUMENTS** | **29** |

**APPENDICES**

APPENDIX A – Murray Zircon Plant Valuation Tables

APPENDIX B – Process Comparison Table

## DISCLAIMER

EPMS does not warrant the accuracy, completeness, currency, suitability or efficacy, merchantability or fitness for purpose of any EPMS furnished data or any other information contained or referenced in this document. The client relies on the information contained or referenced in this document entirely at its own risk. The client warrants that in using this document it releases and will indemnify EPMS against any claims made against EPMS for any loss, damage and expenses arising in anything connected with the use or application of the information contained or referenced in this document.

# 1 INTRODUCTION

EPMS Consultants Pty Ltd (EPMS) has been contracted by CSA Global Pty Ltd (CSA) to conduct a valuation of the Murray Zircon (MZ) Mindarie mineral sands mine processing facility. The Mindarie mine is located approximately 200 km northeast of Adelaide in the Mallee region of South Australia. The processing facility consists of a Slurry Mining Unit (SMU), Primary Concentrator Plant (PCP), Concentrate Upgrade Plant (CUP), Mineral Separation Plant (MSP), and associated ancillary areas. Until the plant ceased operation in March 2015 the operations produced a heavy mineral concentrate (HMC) by processing mined ore through the SMU and PCP only.

EPMS has applied valuation estimates for the replacement value, condition based value, and a benchmarked value. These estimates were based on process flowsheets provided by Murray Zircon and information gathered during a site visit by Mike Kevan on 27th October 2015. The following sections outline the valuations and the methodology used in their development.

## 1.1 Murray Zircon Plant Battery Limits

Only the SMU, PCP and support areas of the Mindarie Operations have been assessed as a part of this suitability and valuation report. The equipment is included on the Process Flow Diagrams:

a) 356-A-120001: 500 tph Slurry Mining Unit
b) 356-A-130001: Feed Preparation
c) 356-A-140001: Spiral Concentrator

The Murray Zircon CUP, MSP, and associated ancillary areas have not been included in this assessment as they were not included in the asset transfer register.

# 2 MURRAY ZIRCON PLANT CONDITION REPORT

## 2.1 Introduction

During the site visit conducted by Mike Kevan on 27th October, 2015, the condition of all equipment in the SMU, PCP and supporting areas of the Mindarie Operations was appraised. Mike Kevan was shown around the Mindarie site by MZ's General Manager Albert Vandenberg and the Mechanical Manager Wayne Oliver.

By using the original design flowsheets and the Mindarie acquisition register, items were identified for their presence and fitness for duty. The inspection also captured and appraised the condition of any additional equipment that may be installed or present on the site and not listed in the acquisition register or process flowsheet.

The site visit was limited to a visual condition inspection of the equipment as presented, no testing was undertaken to determine any physical properties of the equipment. All efforts were made to inspect the equipment as presented to EPMS by MZ however, not all equipment was inspected due to access limitations.

The Mindarie operations have been in care and maintenance since March 2015 therefore the plant was not able to be viewed in operation.

Each item was appraised in accordance with Table 1 on the following page.

In order to provide a present day (2015) valuation of the plant (installed from 2007 through 2008 and upgraded in 2012), a methodology was developed to determine the operating value of the individual equipment and hence the overall processing circuit and operations. The method involved taking the mechanical equipment values and extrapolating the overall plant value using industry accepted factors for other elements, namely low voltage electrical equipment, structural steel and plate work, piping, civils and EPCM including construction.

For the purposes of this study, the term "utility" value has been defined as the value of the equipment to the client in order to fulfil the intended duty, i.e. the value the client would be obliged to pay to purchase another unit in 2015 to perform the duty required with a devaluation factor applied in consideration of its current condition. A description of each devaluation factor is offered in Table 1 on the following page.

**Table 1 - Devaluation Factors by Rating**

| Rating | Criteria | Example | Devaluation Factor | Description |
|---|---|---|---|---|
| 0 | The item is new, unused or under construction. | New field pumping skids unused and sealed. | 0% | Item is valued as per its 2015 value. |
| 1 | The item is in service and performing. The item requires regular scheduled maintenance only. | Fire water pumps and tanks, while older, have been subject to regular maintenance and perform their duty. | 10% | Item is devalued by 10% to allow for costs associated with ongoing maintenance and current wear. |
| 2 | The item is in serviceable condition.<br><br>The item may require adjustment, check or statutory inspection. | Pumps in the PCP have external damage and corrosion not affecting the performance of the unit. | 20% | Item is devalued by 20% in consideration of works to be undertaken to reintroduce to service such as greasing, checks, readjustment and recommissioning. |
| 3 | The item may be in service, however may be well progressed through the duty life cycle<br><br>The item is out of service with minor damage, corrosion or repairs being required. | Spirals have no significant replaceable parts on the trough and as such have a finite life before replacement of the whole unit is required.<br><br>The structures of the spirals, are significantly corroded and may not transport well without remedial action. | 50% | Item is devalued by 50% to reflect potential replacement parts and labour cost **and/or** in recognition of present position in service life cycle. |
| 4 | Out of service with major overhaul required prior to return to service.<br><br>The item may exhibit signs of significant damage or corrosion and may be missing major parts. | The SMU feed hoppers, conveyors and trommel will require repairs prior to returning to service. | 70% | Item is devalued by 70% to reflect significant replacement parts and labour cost recognition of progress through service life cycle or redesign required to upgrade the equipment. |
| 5 | The item exists<br><br>Useful parts or components may be salvaged for reuse or has scrap value. | The launders and cyclones exist in the PCP however these are significantly corroded and very difficult to access and maintain. | 95% | Item is devalued by 95% due to the unusable condition of the asset; however in recognition of potential for usable components or inherent scrap value the item is not entirely written off. |
| 6 | Item is missing / not present. | Trash conveyors from the SMU trommel and PCP trommel are not present. | 100% | Item is totally devalued to reflect replacement cost at 2015. |

Values for equipment were sourced from two main resources; firstly, EPMS database values derived from recent studies and projects where the market was approached for pricing and secondly, the listed value as recorded in the acquisition register.

Where a new replacement value has been applied from a similar project quotation, EPMS has used the stated supplier wherever possible. However, due to the limited information for some items, an alternative manufacturer has been quoted.

## 2.2 General Comment on Condition by Main Areas

The Mindarie plant, when it was operational comprised of an infield SMU located within the mine area, which slurries the pit ore for pumping up to a distance of 8 km to the PCP. The PCP recovers HMC by gravity concentration using spirals, with the resulting concentrate shipped off-site for mineral separation.

Tailings from the PCP are thickened, pumped and co-disposed with mine waste. Located with the PCP is the main administration and maintenance workshop/warehouse, laydown area, and a MSP which includes a CUP.

### 2.2.1 Area 08 – Administration, Workshop and Diesel Storage Areas

Area 08 includes the structure housing the laboratory (Figure 3), workshop, stores and administration (Figure 1) with a lean-to and diesel storage area (Figure 2).

These have all presented well and appear to be in good working order. The wet laboratory glass and sensitive equipment has been securely wrapped and packaged.

**Figure 1 – Administration, Workshop and Diesel Storage Areas**


**Figure 2 – Diesel Storage Area**

**Figure 3 – Wet Laboratory**

### 2.2.2 Areas 11 & 12 – SMU, Field Equipment & Tails Booster Skid

The SMU has had a number of improvements made over its short life and has been incrementally changed and adjusted to its present state. Refinements to the mining method including the use of scrapers to homogenise the sand as it is being mined contributed to the improvement in the SMU throughout. The SMU trommel and feed bin were upgraded in 2013 to handle design tonnage of 600 tph and operated up to 600 tph with clay content (slimes assay) up to 15%+ with good reliability. This exceeds the requirements for the Image Resources ore however the mining and blending of slimes into the SMU will need to be managed to prevent HMC loss in the clay balls. MZ have found the larger aperture panels in the SMU trommel resulted in small clay ball material reporting to trommel undersize which is pumped to the PCP. The combination of residence time in the pipeline and multistage pumping was reported to result in effective de-agglomeration of any clay balls.

The SMU feed hopper and grizzly feeder has been damaged over time by constant impact from the earthmoving equipment. It is normal to expect some damage when feeding or cleaning around the feed unit

with heavy equipment and these areas are repaired and reinforced over time during routine maintenance. It is evident from the visual inspection that the SMU feeder module will need to be repaired prior to return to service.

The feed conveyors and the trommel steelwork requires some minor repairs around the skid based and the trommel feed chute, however the overall condition of the skid based mining unit is serviceable.

**Figure 4 – SMU Grizzly Showing Damage**

**Figure 5 – SMU Trommel Support and Electrical Cables in Good Condition**

**Figure 6 – SMU Feeder Underside in Good Condition**

**Figure 7 – SMU Trommel Conveyor in Reasonable Condition**

**Figure 8 – SMU Trommel in Good Condition. Only the Guards Showing Surface Corrosion.**

At the time of inspection, the SMU had been removed from active service and was in storage adjacent to the administration building. The SMU had been disassembled and cleaned down.

The existing two twin pump booster stations have been cleaned down and appear to be in good condition.

Two further new booster stations have been fabricated and delivered however have not been in service. These have been included in the valuation.

**Figure 9 – Multiple Booster Pumps All in Good to Very Good Condition**

Also within this area fall a number of ancillary field items such as mobile crib rooms, water reclamation pumps and a field rheology skid which, while older, are in relatively good condition and are either in service or have recently been in service.

The skid based field water tanks and pumps are all in very good condition.

### 2.2.3 Area 21 – Pre-Concentration Plant (PCP)

The PCP consists of seven skid based modules containing stick steel erected structural steel framing. There are five x 6.4 m wide x 15.6 m long modules, and two x 7.4 m wide x 15.6 m long modules. The modules are interconnected by pipework, electrical/pneumatic cable trays and launders only. The modules contain the following equipment units:

| | |
|---|---|
| 21A | Trommel and de-slime sump and pumps |
| 21B | Deslime cyclones, constant density tank and slimes transfer sump and pumps |
| 21C-1 | Rougher spirals |
| 21C-2 | Mids scavenger spirals, sumps and pumps |
| 21C-3 | Tails scavenger, cleaner, recleaner, recleaner scavenger spirals, sumps and pumps |
| 21C-4 | Tails cyclones, sump and pumps |
| 21E | Tails pumps, switchrooms and control room |

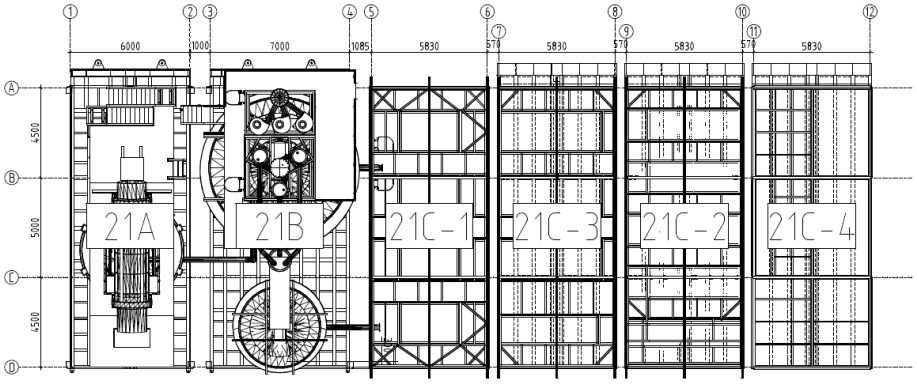



**Figure 10 – Primary Concentrator Plant Module Arrangement (21E Electrical not shown)**

The current condition is that all pneumatic piping, electrical cables and lights have been removed from the plant. Instrumentation and valves have physically been disconnected by cutting the cables/pneumatic piping as close as possible to the end termination point. Motor cables have been severed leaving some metres of cable left at each pump.

**Figure 11 – PCP Pumps All in Reasonable Condition. Electrical Cables Coiled.**

The PCP has recently been in service and has been valued accordingly. A large portion of items in this plant were sourced second hand from a Salt Project and fitted to a new structure. The spirals and pumps are generally in a serviceable condition in the short to medium term, if they continue to be subjected to a normal operational maintenance regime. The scrubber, cyclones, launders, samplers and majority of the valves are in very poor condition.

**Figure 12 – PCP Trommel in Poor Condition. Significant Corrosion through the Barrel.**

**Figure 13 – PCP Trommel in Poor Condition, Significant Corrosion Through the Screen Mounts.**

The spiral separators in the PCP, after approximately 5 years running, could be expected to be approximately half way through their nominal service life. It is evident that there is extensive corrosion to the spiral frames, particularly in the modules and some UV related deterioration of polyurethane and rubber components. Further lining thickness testing could be undertaken to determine actual life remaining.

**Figure 14 – PCP Spirals Are Reasonable, However the Spiral Frames Have Significant Corrosion**

**Figure 15 – PCP Samplers Are All in Poor Condition and Have Significant Corrosion**

MZ has retained the services of three maintenance personnel to progressively repair and repaint the skid, structure and tank bases where required. It is estimated one third of the structure and tank bases have been repaired.

**Figure 16 – PCP Sumps Following Site Based Repair**

The original design intent for this plant was to have it relocatable during the life of the mine and as such it was built on skids. The superstructure of this plant is serviceable, though some corrosion remediation may be required along with the replacement of some bracing, the condition of the skids would need to be more closely appraised. While these have been subjected to considerable wet spillage in the past and encased in wet sand for extended periods the skids have now been cleaned down and can be inspected. It is strongly recommended to inspect the skids in detail including thickness testing as these are showing signs of significant corrosion.

Extensive surface-type rust is present in most places on the upper skin of the skid. The skids have been inspected internally and all skids have been found to contain water and slurry. It is assumed that the internals and the bottom skin will be in similar condition to the top.

There are areas of deck which “feel” thin underfoot. The tailings pumps have been upgraded by MZ and these do not sit on the original bases and are not fully supported with sub-members resulting in some localised vibration. This could not be adequately investigated as the plant has not been operating.

Process pipework in the plant is complete and in service. It can be anticipated that some pipes will require replacing soon given the corrosion of temporary steel pipes. The pipe is mostly supported by chain which is often in a poor state. It is recommended to replace badly corroded chain and pipe clamps prior to resuming operation.
It was noted that the water addition control valves are inaccessible, in most cases.

The rubber and urethane steel launders show signs of extensive corrosion and are barely serviceable. A number of launders and transfer boxes have been removed by MZ and have been either repaired or refabricated off site. Is it strongly suggested HDPE piping is used for collection launders to replace the steel launders prior to resuming operation.

**Figure 17 – PCP Launders in Very Poor Condition**

**Figure 18 – PCP Tailings Cyclones Showing Significant Corrosion around the Distributor and Launder**

### 2.2.4 Electrical and Instrumentation

All electrical and instrumentation cabling and been completely stripped form the PCP. The remaining distribution boards within the plant are in poor condition and of limited value.

**Figure 19 – PCP Electrical and Instrumentation Junction Boxes All in Poor Condition**

The switchrooms remain in good condition however these may be better located on the ground behind the PCP if it is relocated. The transformers are on the lower level beneath the switchrooms with no containment. Should the switchrooms and transformers be located away from the plant there would be no need to transport the skid 21E.

**Figure 20 – PCP as Viewed from the South East, Note the Containerised Switchrooms**

The level of instrumentation is minimal and perhaps not as extensive as seen in other similar Australian operations however, that which is present is in poor condition.

It is understood that the control software is old and has used almost all of the allocations of IO and screens but has been subject to considerable change since the resumption of operations and is at a serviceable level.

### 2.2.5 CONS Trommel

MZ had incorporated a second trommel screening stage into the final cleaner circuit to upgrade their concentrate product by removing coarse quartz grains at 500 micron. The hardware in this circuit has been included in this valuation in addition to those items shown on the flowsheet however the condition of the plant is quite poor. The unit would only be of use to Image should coarse quartz be present in the final cons due to a high recovery rates pulling fine concentrate. The added primary trommel oversize conveyors have been similarly factored.

**Figure 21 – CONS Trommel in Poor Condition.**

### 2.2.6 Areas 51 & 52 – Process Water

Area 51 encompasses the process water circuit for the primary stages of the mining operations while Area 52 services the CUP and MSP.

The components within Area 51 are generally in poor condition with a 40 m diameter in ground thickener being the major component. This unit was built at the time of initial erection with a second hand underflow cone, drive, rakes, bridge, caisson, feedwell, etc, with new wall segments and dam liner installed. It is evident that a number of precautionary and remedial works on the side walls as these have not been suitable for the working conditions.

The centre of the feed well has corroded and collapsed out and is not sitting on the rakes. The rakes and internal components are all in poor condition and have been valued accordingly. The testwork for the Image resource has indicated a 26 m thickener is required which is less than half the settling area of the MZ thickener. It is strongly recommended to pursue a new thickener designed for the Image slimes rather than attempt to relocate and refurbish this equipment.

**Figure 22 – PCP Thickener in Poor Condition. Significant Corrosion and Collapsed Feed Well Base**

The flocculant mixing tank seems to have been left with some reagent still inside and as the handles were broken from the control panel it was unable to determine the condition of other components.

### 2.2.7 Ancillary Equipment

As with any mining operation there is a large contingent of equipment that is required in support of the extraction and processing activities.

Where an item has appeared on the acquisition register it has been specifically included in this valuation along with larger and more valuable items to be found in the scrap-yard such as pump skids.

Further to this, light and heavy vehicles and equipment have been included or excluded as they stand on the acquisition register. No 2014 value standardisation has been applied to light vehicles.

Given the nature of light vehicle usage, EPMS was unable to visually inspect all light vehicles.

While it was not practical to note the exact amount of piping material in the field, the amount shown on the acquisition register was standardised according to the year of purchase and assumed to be in serviceable condition. All piping purchased in 2014, assumed to be 355mm HDPE, has been removed from the valuation as this does not appear on the acquisition register.

Other field equipment not captured within the main plant areas are accounted for and include as examples such items as the bores, boom gates, and radio repeater trailer. The contents of the laboratory, workshops and service vehicles were taken to be as per the acquisition register.

## 2.3 Exclusions

Wherever possible all areas of the site were appraised for their value and condition. EPMS was however unable to undertake an account of the available stock held in the designated stores building and in the basement floor of the Dry MSP. It is believed that at the time of the inspection MZ were in the process of undertaking a stock take of spares held.

# 3 MURRAY ZIRCON PLANT VALUATION

## 3.1 Valuation Scope and Methodology

CSA requested that EPMS undertake plant valuations for the SMU and PCP along with associated ancillary thickening and process water areas. The CUP and MSP have not been included in this scope. Valuation estimates were developed for the replacement value, condition based value, and a benchmark value. The capital cost estimates have been developed to an accuracy of ±30% using industry accepted methods and criteria dictated by the Australian Institute of Mining and Metallurgy (AusIMM).

The replacement value (Table 1 in Appendix A) is an estimate of the capital expenditure required to construct a new identical processing facility and ancillary areas in 2015. Mechanical equipment costs were obtained from recent previous projects for identical or similar equipment in the EPMS Capital Cost Database. A replacement value estimate for overall plant costs was developed by factoring from mechanical equipment.

## 3.2 Plant Condition Rating

EPMS engineer Mike Kevan visited the Mindarie site on the 27th October 2015 to assess the condition of equipment in the processing and support areas. Items were identified using original design flowsheets, and the acquisition register provided by MZ and Image Resources. These were rated according to their presence and fitness for duty.as described in Table 1.

The rating was used to apply a devaluation factor to the 2015 equipment cost. This 'utility' cost is the current value of the equipment to MZ, and has been used to develop the condition based capital cost (Table 2 in Appendix A) is. An overall Condition Based plant costs was developed by factoring from mechanical equipment. The typical weighting of each discipline is described in the following section.

Table 2 below summarises the overall plant costs for the replacement and condition-based valuations for the SMU, PCP, Water and associated infrastructure. This is a high-level cost estimate (expressed as a range and preferred valuation), based on a number of approaches, e.g. cost of an equivalent plant; depreciated cost of the current plant.

**Table 2 - Valuations**

| Replacement Valuation | Condition Based Valuation |
|---|---|
| $27,339,000 | $12,345,000 |

It is noted that other methodologies may provide a wider range of valuations, (for example a "second hand" equipment based estimate is likely to offer a significantly lower valuation). Based on the information provided by MZ, EPMS have elected to prepare valuation estimates based on two different methodologies, 1) replacement value and 2) a condition based valuation estimate of the existing Mindarie Plant. The condition based valuation is for the Mindarie plant "In Situ". As Image intend to relocate the plant there will be additional design, management, transport, civil and electrical costs incurred to make the plant operable again.

When developing a methodology for composing the replacement value estimate, it was decided that in light of the proposed level of accuracy (±30%), available information and the compressed timeframe that this be treated as per the criteria dictated by the Australian Institute of Mining and Metallurgy (AUSIMM) in the Cost Estimation Handbook for a scoping / prefeasibility level study.

Some of the available information was of a higher level of accuracy, in particular regarding flowsheets and layouts, however due to the compressed timeframe it was not possible to undertake rigorous material take offs that may satisfy the requirements necessary for a higher level of accuracy.

## 3.3 Method of Valuation

The following methodology was used to develop the replacement value estimate. Equipment was identified through a comparison of information gathered during the site visit with the Murray Zircon transfer asset register and the process flow diagrams. It is noted that some installed equipment in the plant was bought second hand, however the estimate is based on new equipment pricing. The capital costs of the mechanical equipment were obtained from recent previous project pricing for similar pieces of equipment. Where possible, pricing from the same vendors as currently installed equipment has been used. However, in the majority of cases, alternative supplier information was used.

The cost estimate for mechanical equipment was used as the basis for factoring overall plant costs. The typical weighting of each discipline is described in the following section. These factors are based on industry experience for similar mineral sand mining and concentration plants.

These factors have been applied to processing plant equipment to develop a replacement cost valuation estimate for the Mindarie Plant. Ancillary areas have been identified as complete items, and therefore have not been factored. A breakdown per discipline area has not been included in the valuation summary. However, typical weighting factors are:

### 3.3.1 Mechanical Equipment

The supply prices for major mechanical equipment were in most cases obtained from the EPMS database as described above using recognised equipment vendors. The accuracy of Vendor quotations is ±20%.

### 3.3.2 Transport

The transport cost has been calculated using a factor of 5.0% of the mechanical supply costs. This factor is typical for remote location projects. Transport has been included in the condition based for valuation only. This is not the transport cost to relocate the plant to Western Australia.

### 3.3.3 Earthworks and Civils (including supply and install of Concrete)

As there is limited earthworks and civils these factors have only been applied to the Tailings and process water areas. The SMU and PCP are mobile and require no civils. The cost has been calculated by taking a 20% factor from the sum of mechanical equipment cost.

.

### 3.3.4 Structural Steel

For the replacement value of structural steel the cost has been calculated by taking a 25% factor from the sum of mechanical equipment cost. The SMU has not been factored as the equipment cost is all inclusive of a full SMU including skids, feed bins and structure.
For the condition based plant valuation the structure is in good condition and so uses the same factor.

### 3.3.5 Platework, Tanks, Hoppers, launders and Chutes

The replacement value platework cost has been calculated by taking a 10% factor from the sum of mechanical equipment cost.
For the condition based plant valuation the launders are unusable and so the factor used in the valuation has been reduced accordingly. Additionally the majority of the pump tanks require repair and surface treatment, some of which has already been completed.

The platework on the SMU requires repair and strengthening prior to returning to service.

### 3.3.6 Piping

As this is a wet process with a simple flowsheet and plant layout the replacement value piping cost has been calculated by taking a 20% factor from the sum of mechanical equipment. These costs are considered to be ±30% accurate. The majority of the piping is in reasonable condition.
For the condition based plant valuation the piping is in reasonable condition and has the same factor applied.

### 3.3.7 Electrical

The replacement value electrical equipment costs are generated by taking a 23% factor of the sum of mechanical equipment cost.

While the switchrooms and the electrical hardware remain intact all electrical and instrumentation cable has been stripped from the PCP. This will require a complete electrical redesign and install which is why the electrical factor for the PCP is zero.

The SMU has not been factored as the equipment cost is all inclusive. The electrical condition of the SMU is good and will only require minor modifications to make it complainant and suitable for prolonged service.

### 3.3.8 Instrumentation and Control

The replacement value instrumentation and control costs were generated by taking a 17% factor of the sum of mechanical equipment and tankage cost for the majority of the areas except infrastructure and general.

The plant has limited instrumentation and what remained in the PCP was in poor condition. It has been assumed all new instrumentation, with the exception of density meters, and cabling, will be required which is why the electrical factor for the PCP is zero.

### 3.3.9 Mechanical and Platework Installation

An estimate for the total cost of installation was based on the Mineral Processing Handbook from SME which states a maximum of 25% of the equipment cost to be used for Australian construction project. The installation would include the assembly of the skid and initial assembly of the conveyors.

### 3.3.10 Engineering, Procurement and Construction Management

EPCM costs are factored as a percentage of mechanical and equipment costs; the factors used are based upon plant complexities and are adjusted accordingly. A base factored rate of 15% is used for this estimate due to the small equipment sizes and skid mounted and relocatable design.

## 3.4 Benchmarking Process

The prices determined for the valuations have been benchmarked against three cases as detailed in subsequent paragraphs. The benchmarking cases were all feasibility studies from the EPMS database that were built up from vendor quotes for major equipment items and factored estimates where relevant for structural steel, civil, electrical, and all EPCM services including commissioning. The scope of these benchmarking projects was very similar to the Mindarie Plant and the major equipment included for each benchmarking case is detailed below. The major exclusions from all of the benchmarking project costs is the administration, site support infrastructure and light vehicles which is listed separately in the Mindarie valuation above but not allowed for in the benchmarking Projects. The allowance in the benchmarking projects for pumping from the SMU to the PCP is also less than the Mindarie case due to the feasibility studies being based on a CAPEX at start of mining versus Mindarie which includes all pipework and pumping to transport slurry from the SMU to PCP at its furthest mine operating range. Note that due to the downturn in mining industry of Australia and relatively recent prices obtained from benchmarking projects the prices have not been escalated from original project estimates.

### 3.4.1 Benchmarking Case 1 – 2013 Prices – African Project (some WA Supply) – 1,000 tph Feed

The first benchmark case is from a 1,000 tph designed mining slurry unit and wet primary concentrator plant. This project was located in Africa and was priced in 2013 using vendor quotations and factored estimates. Equipment was priced assuming some supply from Western Australia with the balance from around the world, in some cases the cost of freight to Africa was higher than would be expected to Australia however this is offset by the overall cheaper labour rates for installation. The overall specification and costs for this project is summarised below:

1,000 tph feed into dozer trap
86 tph HMC Produced from PCP

Plant Included:

SMU

- Dump Hopper
- Conveyors/Feeders
- Pit Screen
- Feed Pumps + Boosters

PCP

- PCP Screen
- Spirals
- Attritioners
- Cyclones – Tails Stacker, HMC Stacker etc
- Hydrosizer
- Thickener

Total Cost for the SMU = $4.7 M
Total Cost PCP = $27.7 M

**Total Project Cost for 1,000 tph plant = $32.4 M AUD**

### 3.4.2 Case 2 – WA Project – 2015 Prices – WA Project – 545 tph Feed

This benchmark pricing is based on a feasibility study carried out for a WA based mineral sands project with a 545 tph feed into a SMU and subsequent PCP. Pricing was based on local equipment and labour supply where possible.

545 tph feed into dozer trap
24 tph HMC Produced from PCP

Plant Included:

SMU

- Dozer Trap including feeder.
- Grizzly Screen (dry).
- Conveyors/Feeders
- Wet screen
- Feed Pumps + Boosters

PCP

- Spirals
- Cyclones – Tails Stacker, HMC Stacker etc
- Hydrosizer
- Attritioners
- Belt Filter for dewatering prior to HMC discharge
- Thickener

Total cost for the SMU = $6.1 M
Total cost for the PCP = $14.0 M

**Total Project Cost for 280 tph plant = $20.1 M AUD**

### 3.4.3 Case 3 – 2013 Prices – WA Project – 280 tph Feed

This benchmark pricing is based on a feasibility study carried out for a WA based mineral sands project with a 280 tph feed into a SMU and subsequent PCP. Pricing was based on local equipment and labour supply where possible.

280 tph feed into dozer trap
21 tph HMC produced from PCP

Plant Included:

SMU

- Dozer Trap including feeder.
- Grizzly Screen (dry).
- Conveyors/Feeders
- Wet screen
- Feed Pumps + Boosters

PCP

- Spirals
- Cyclones – Tails Stacker, HMC Stacker etc
- Hydrosizer
- LIMS/WHIMS
- Thickener

Total cost for the SMU = $2.3 M
Total cost for the PCP = $13.5 M

**Total Project Cost for 280 tph plant = $15.8 M AUD**

### 3.4.4 Benchmarking Summary

Due to the very similar scope/inclusions for the above projects no additional factors where applied to the prices before comparing the plant throughput with the Murray Zircon Mindarie Plant. The total plant cost was plotted against the plant throughput for each case as shown in Figure 23 and an exponential trend line was determined. The trend line was then used to interpolate the cost of the Murray Zircon Plant to be $18.5 M AUD using a SMU Feed Rate of 450 tph as shown in Table 3.

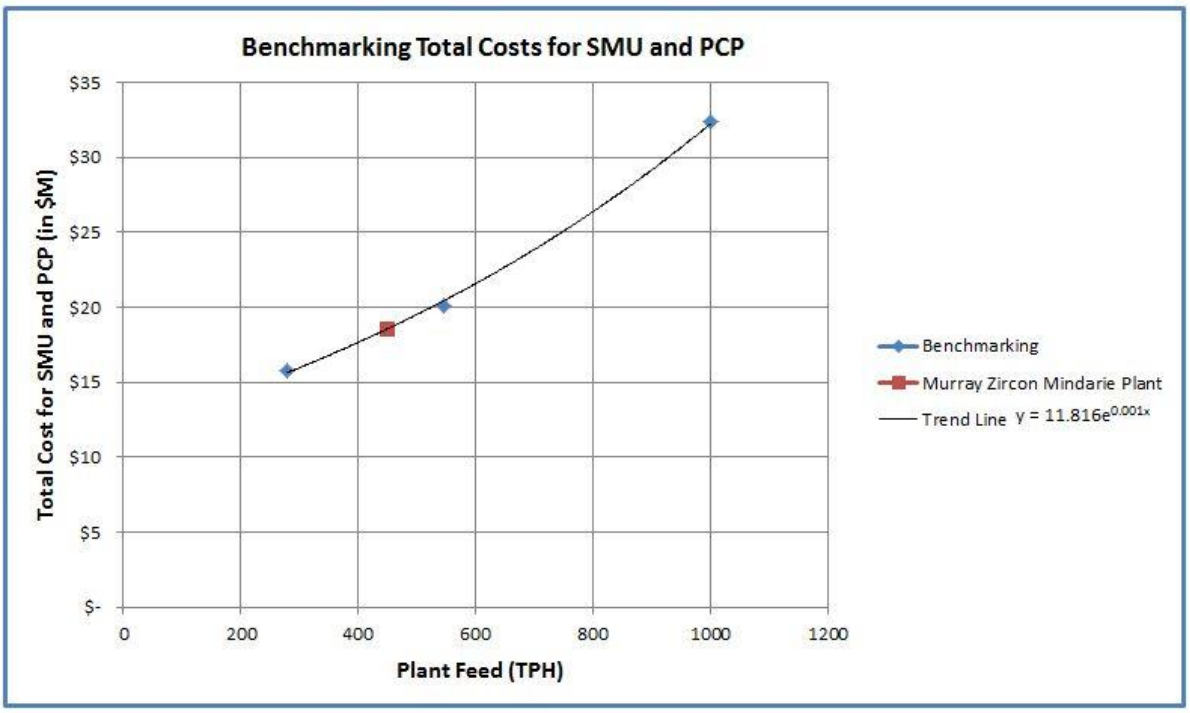



**Figure 23 – Benchmarking Costs vs Plant Feed**

**Table 3 – Benchmarking Summary**

| Benchmark Case Number | Plant Feed (TPH) | Cost ($M AUD)* |
|---|---|---|
| 1 | 1,000 | $ 32.4 |
| 2 | 545 | $ 20.1 |
| 3 | 280 | $ 15.8 |
| Murray Zircon Mindarie Plant | 450 | $ 18.5<br>*Cost Interpolated from trend line* |

** NOTE these costs do not include any allowances for infrastructure*

# 4 PROCESS REVIEW – MURRAY ZIRCON PLANT FOR IMAGE RESOURCES APPLICATION

An assessment of Murray Zircon's plant and it's suitability to Image's North Perth ore bodies was carried out with results described below.

In order to review the process suitability of Murray Zircon's Plant for Image Plant, all major process equipment has been listed and compared in Appendix B.

In summary, the Murray Zircon Mindarie plant is generally suitable for the Image process requirements. The Murray Zircon Plant has a slightly higher throughput than Image's requirement as listed in table below.

**Table 4 – Image Plant Feed Requirements vs Murray Zircon Rated Capacity**

| Plant Sections | Image Plant Requirement (solids feed rate tph) | Murray Zircon Mindarie Plant (solids feed rate tph) |
|---|---|---|
| SMU | 450 | 600 |
| Deslime Module | 425 | 500 |
| PCP | 350 | 422 |
| SCP | 80 | 116 |
| Slimes Thickener | 74.3 | 77 |
| Coarse Tailings | 320 | 406 |

Note: The following issues will need to be addressed for smooth operation of the Murray Zircon Plant for the Image Resources application:

1. SMU: Image and Murray Zircon have two different concepts towards SMU arrangement. Image proposes to use scrubber to break up any clay balls which may contain valuable HM particles. The scrubbed slurry flows into a trommel to separate +4mm oversize.

By comparison the Murray Zircon SMU trommel has small scrubbing function built-in however this is very short and has a limited residence time. The Murray Zircon trommel is purely for removing large rock at +25 mm. Any smaller pebbles and clay balls less than 25 mm will be pumped to a second trommel at the PCP with the intention the clay balls will de-agglomerate through the long-run 8 km piping system. This stream gets another chance to separate at the plant trommel which has a 4 mm aperture screen.

The current SMU trommel installed at Murray Zircon operation has a larger screen aperture than Image requires. The Murray Zircon plant trommel has a similar screen aperture and a slightly higher throughput.

EPMS recommend extending the trommel section on the scrubber unit to replace the need for two units and double handling. The scrubbers' functions would be scrubbing at the front half and screening out +4mm material at the back half.

2. Deslime Module: Originally Image proposed a single-stage of desliming with multiple cyclones which is different to Murray Zircon's current approach. The Murray Zircon plant contains two-stage desliming using

three cyclones in each stage. Two-stage desliming in principle should yield better performance, especially in cases like Image with higher slimes content in the feed. EPMS would recommend conducting further testwork for this two-stage desliming scenario.

The constant density tank at Murray Zircon plant is designed to handle slightly higher flow than the Image requirement so should not pose any issues.

3. PCP: Murray Zircon's rougher spirals are Mineral Technologies HC1 (High Capacity 1) which are different to Image's stated MT MG6.3. Based on AML's preliminary suitability testwork, the HC1 spirals would still be able to perform the rougher duty for Image's requirements. The testwork determined that in order to achieve better performance, the HC1 spirals would need to be fed at a slower rate of 2.8 tph compared to Images flowsheet rate of 3.6 tph. The slower feed rate would mean that Image may sacrifice performance slightly by using the Murray Zircon rougher spiral circuit or could employ additional spirals at extra cost to accommodate the reduction in flow rate.

EPMS recommends Image considering using the tails scavenger spiral circuit (Module 21C-3) as its rougher spiral circuit. In Image's flowsheet, the tails scavenger spirals will be made redundant due to the fact it is not necessary to process the rougher tails material as the levels of economic minerals in the rougher tailings were low based on AML's finding. Conveniently this tails scavenger spiral circuit is of almost the same capacity and process condition as Image's requirement for a rougher circuit.

Images deslime and PCP modules are designed to be relocated as the SMU advances. This option would need to be carefully evaluated as the volume of the slimes stream may require additional pumping power. Additionally the savings in PCP coarse tailings pumping may not outweigh the cost of having to frequently relocating the two modules.

Due to the potential change in PCP spiral selection the current Image flowsheet and mass balance would most likely be altered. Given the different performance of the HC1 and MG6.3 spirals it is difficult to estimate the required capacity for the mid scavenger spirals. As a result comparison couldn't be made. EPMS recommend conducting further testwork to understand the potential impact on the mid scavenger spiral circuit.

4. Secondary Concentrator Plant (SCP): Image's mass balance and detail process flowsheet was unavailable for this comparison. Given the different performance of the HC1 and MG6.3 spirals it is difficult to estimate the required throughput for the cleaner spirals and recleaner spiral. EPMS recommend conducting further testwork to understand the potential impact on mid scavenger spiral circuit. It would be ideal to setup the testwork parameters to replicate Murray Zircon's current plant configuration. It would provide a better understand and direct comparison between two plants.

5. Slimes Thickener: The 40 m in-ground thickener would appear to be too large compared with Image's required 27 m thickener. Outotec has conducted thickener related testwork which would form a good basis for the selection of an appropriate new thickener, note that Image will need to include an allowance in their budget for procurement of the new thickener.

# 5 CONCLUSION

The result from the process review was that the Murray Zircon Plant is fit for purpose for use for the Image Resources duty with exception to a few process and operational modifications. It is recommended that further testwork be carried out to further optimise the process circuit and ensure that no equipment is relocated that may be redundant at the new site.

Table 5 below summarises the total CAPEX value for the Mindarie Plant based on new replacement, used condition based and benchmarking valuation methods. Note that the benchmarking total CAPEX does not include some of the items that were allowed for in the condition based valuation including – light vehicles, site offices and admin buildings, store's inventory etc.

Due to the small market for used processing plants it is difficult to give an accurate present day market valuation for the plant as the value of the sum of individual used components would be significantly less than the value of a full operational plant. The value of the plant to Image Resources is higher than this as the plant is in general suited to their proposed mining operations. The other advantage to Image Resources is the acceleration of schedule (estimated at around 12 months) due to minimal additional design and construction being required. Equipment may be relocated and installed whilst any long lead equipment items such as the thickener can be procured very soon after purchase of the plant.

**Table 5 - Total CAPEX for Each Valuation Method**

| Method | Plant Cost ($M AUD) | Infra Cost ($M AUD) | Total Cost ($M AUD) |
|---|---|---|---|
| Replacement Valuation | $ 23.25 | $ 2.96 | $ 26.21 |
| Condition Based Valuation | $ 9.66 | $ 2.27 | $ 11.94 |
| Benchmarking Valuation | $ 18.50 | $ 2.96* | $ 21.46 |

** NOTE for comparison the infrastructure allowance from the replacement valuation was used as infrastructure was not included in the benchmarking project costs*

Based on the information contained in the report it is expected that most reasonable methodology to use for valuation for the plant would be the Condition Based Valuation which gives a total value for the Murray Zircon Mindarie plant and infrastructure as $11.94M AUD +/- 30% ($8.4M – $15.5M).

# 6 REFERENCE DOCUMENTS

The following documents were used as reference information for identifying equipment. The Murray Zircon CPG Mineral Technologies flowsheet has been used for the SMU and PCP. The CUP, MSP, and associated ancillary areas were not included in the scope.

Multiple alterations to the plant have been made so that the process flow diagrams are not a true reflection of installed equipment. As a result, information gathered during the site visit has also been used to develop the valuations.

a) 356-A-120001: 500 tph Mine Slurry Unit Process Flow Diagram
b) 356-A-130001: Feed Preparation Plant Process Flow Diagram
c) 356-A-140001: Spiral Concentrator Process Flow Diagram
d) Boonanarring Deposit Wet Plant and Dry Mill Report – AML April 2013
e) Boonanarring Thickening Testwork - Outotec
f) Boonanarring Internal Feasibility Study Independent Review – Mineral Technologies May 2013
g) MSP Engineering– Image Resources Boonanarring Mineral Sands Project Internal Feasibility Study Report [24.Nov.2014];
h) Boonanarring Internal Feasibility Study Deliverables 1854 – MSPE July 2013 (two volumes)
i) 500 tph SMU Capital Estimate Report – MSPE May 2013
j) AML Report 495 Image Resources HC1 Spiral Preliminary Test
k) Appendix 1 High Level Plant Condition Summary
l) Appendix 4 Estimated Cost for Transport , Refurbishment and Assembly
m) AML Report 492 Ore Comparison and Gap Analyses Rev 1
n) 439-PM0001 Mindarie Valuation Report rev 1
o) Mineral Technologies – Murray Zircon Mindarie Zircon Mine Valuation Report [10.Nov.2014]
p) AML – Image Resources Ore Comparison and Gap Analyses: Murray Zircon Due Diligence [Jun.2015]
q) AML – Image Resources HC1 Spiral Preliminary Tests [Jul.2015]
r) BatteryLimits – Murray Zircon Mindarie Plant Due Diligence Review [Jul.2015]
s) Image Resources – North Perth Basin Mineral Sands Project Summary [Sep.2014]
t) Image Resources - Corrs Chambers Westgarth – Asset Sale and Purchase Agreement - Schedule 3 – Asset List

# Appendix A - Murray Zircon Plant Valuation Tables

# Murray Zircon Pty Ltd
# Mindarie Mineral Sands Plant

# Processing Plant Valuation

## E7501
## Document No.

| Revision | Description | Prepared | Checked | Approved by | Date |
|---|---|---|---|---|---|
| A | Issued for Valuation | MK | RH | DR | 2/11/2015 |
| B | Updated Asset List | MK | RH | DR | 16/11/2015 |

**Table 1**

| 1. Estimated Replacement Value for Mindarie Operations | | | Transport | Earthworks and Civils | Structural Steel Supply and Install | Platework & launders Supply | Piping Supply and Install | Electrical & Instrument Supply and Install | Mech and Plate Install | EPCM | Total Installed Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mechanical | 5.0% | 20.0% | 25.0% | 10.0% | 20.0% | 40.0% | 25.0% | 15.0% | AUD |
| | Ancillary Equipment | $ 1,110,000 | | | | | | | | | $1,110,000 |
| | Administration, Workshop and Stores | $ 1,610,000 | | | | | | | | | $1,610,000 |
| | Area Network and Communications | $ 240,000 | | | | | | | | | $240,000 |
| **Infrastructure Sub Total** | | | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$2,960,000** |
| 11 | SMU & Field Equipment | $ 5,617,000 | $280,850 | | | | | | | $842,550 | $6,740,400 |
| 12 | Tailings | $ 320,000 | $16,000 | $63,905 | $80,000 | $32,000 | $64,000 | $128,000 | $80,000 | $48,000 | $831,905 |
| 21 | PCP | $ 3,566,000 | $178,300 | | $891,500 | $356,600 | $713,200 | $1,426,400 | $891,500 | $534,900 | $8,558,400 |
| 51 | Process Water | $ 2,738,000 | $136,900 | $546,787 | $684,500 | $273,800 | $547,600 | $1,095,200 | $684,500 | $410,700 | $7,117,987 |
| **Process Plant Subtotal** | | | **$475,150** | **$63,905** | **$971,500** | **$388,600** | **$777,200** | **$1,554,400** | **$971,500** | **$1,425,450** | **$23,248,692** |
| **TOTAL REPLACEMENT PLANT VALUE** | | | **$475,150** | **$63,905** | **$971,500** | **$388,600** | **$777,200** | **$1,554,400** | **$971,500** | **$1,425,450** | **$26,208,692** |

N.B Total processing plant values have been factored from the total mechanical estimate in Table 3.

**Table 2**

| 2. Estimated Condition Based Value for Mindarie Operations ( In Situ) | | | Transport | Earthworks and Civils | Structural Steel Supply and Install | Platework & launders Supply | Piping Supply and Install | Electrical & Instrument Supply and Install | Mech and Plate Install | EPCM | Total Installed Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mechanical | 5.0% | 20.0% | 25.0% | 5.0% | 20.0% | 40.0% | 25.0% | 15.0% | AUD |
| | Ancillary Equipment | $ 880,000 | | | | | | | | | $880,000 |
| | Administration, Workshop and Stores | $ 1,210,000 | | | | | | | | | $1,210,000 |
| | Area Network and Communications | $ 180,000 | | | | | | | | | $180,000 |
| **Infrastructure Sub Total** | | | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$2,270,000** |
| 11 | SMU & Field Equipment | $ 2,938,000 | $146,900 | | | | | | | $440,700 | $3,525,600 |
| 12 | Tailings | $ 256,000 | $12,800 | $51,124 | $64,000 | $12,800 | $51,200 | $102,400 | $64,000 | $38,400 | $652,724 |
| 21 | PCP | $ 2,173,000 | $108,650 | | $543,250 | $108,650 | $434,600 | | $543,250 | $325,950 | $4,237,350 |
| 51 | Process Water | $ 490,000 | $24,500 | $97,854 | $122,500 | $24,500 | $98,000 | $196,000 | $122,500 | $73,500 | $1,249,354 |
| **Process Plant Subtotal** | | | **$292,850** | **$148,978** | **$729,750** | **$145,950** | **$583,800** | **$298,400** | **$729,750** | **$878,550** | **$9,665,028** |
| **TOTAL CONDITION BASED PLANT VALUE** | | | **$292,850** | **$148,978** | **$729,750** | **$145,950** | **$583,800** | **$298,400** | **$729,750** | **$878,550** | **$11,935,028** |

N.B Total processing plant values have been factored from the total mechanical estimate in Table 4

# TABLE 3 - REPLACEMENT COST VALUATION

## MECHANICAL EQUIPMENT

| AREA | EQUIPMENT DESIGNATION | EQUIPMENT NUMBER | DESCRIPTION/DUTY | EQUIPMENT SPECIFICATION | NUMBER OF ITEMS | UNIT | QTY | INCUMBENT SUPPLIER | NOMINATED SUPPLIER FOR REPLACEMENT PRICING | MATERIALS & EQUIPMENT RATE AUD | MATERIALS & EQUIPMENT COST AUD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AREA 08** | | **ADMIN, WORKSHOP & DIESEL FARM** | | | | | | | | | |
| | | AM00009 | Olympian emergency genset | | 1 | ea | 1 | Various | Various | $9,260 | $9,260 |
| | | MT00001 | 18m x 8m open ended shed | | 1 | ea | 1 | Various | Various | $11,495 | $11,495 |
| | | LAB00001 | Laboratory Area | | 1 | ea | 1 | Various | Various | $48,503 | $48,503 |
| | | LAB00002 | Sample Preparation Shed | | 1 | ea | 1 | Various | Various | $30,143 | $30,143 |
| | | FU00001 | 2x 61000 litre fuel tanks | | 1 | ea | 1 | Various | Various | $326,111 | $326,111 |
| | LAB | EQUI | Laboratory Equipment 2011 | Assorted Lab Equipment Purchased 2011 | 1 | ea | 1 | Various | Various | $254,970 | $254,970 |
| | LAB | EQUI | Laboratory Equipment 2012 | Assorted Lab Equipment Purchased 2012 | 1 | ea | 1 | Various | Various | $165,600 | $165,600 |
| | LAB | EQUI | Laboratory Equipment 2013 | Assorted Lab Equipment Purchased 2013 | 1 | ea | 1 | Various | Various | $38,851 | $38,851 |
| | LAB | EQUI | Laboratory Equipment 2014 | Assorted Lab Equipment Purchased 2014 | 1 | ea | 1 | Various | Various | $36,531 | $36,531 |
| LAB00024 | | LAB0 | Lab Lean-to Annexe | 15.5x5.5x4 Leanto | 1 | ea | 1 | Various | Various | $15,284 | $15,284 |
| LAB00025 | | LAB0 | Concrete Pad for the Oven | Oven pad - concrete | 1 | ea | 1 | Various | Various | $1,554 | $1,554 |
| WSHOP | | EQUI | Stores/Workshop Shed | Allowed for 30x 24x 6m Portal Frame Shed | 1 | ea | 1 | Various | Various | $250,000 | $250,000 |
| WSHOP | | EQUI | Workshop Tools etc | Workshop/Ancilliary Items Purchased 2011 | 1 | ea | 1 | Various | Various | $21,141 | $21,141 |
| WSHOP | | EQUI | Workshop Tools etc | Workshop/Ancilliary Items Purchased 2012 | 1 | ea | 1 | Various | Various | $165,600 | $165,600 |
| WSHOP | | EQUI | Workshop Tools etc | Workshop/Ancilliary Items Purchased 2013 | 1 | ea | 1 | Various | Various | $35,866 | $35,866 |
| WSHOP | | EQUI | Workshop Tools etc | Workshop/Ancilliary Items Purchased 2014 | 1 | ea | 1 | Various | Various | $10,887 | $10,887 |
| | FIRE | EQUI | Fire Fighting Area | Fire Equipment 2011 Purchases | 1 | ea | 1 | Various | Various | $165,403 | $165,403 |
| | | | | Fire Equipment 2012 Purchases | 1 | ea | 1 | Various | Various | $8,317 | $8,317 |
| | | | | Fire Equipment 2014 Purchases | 1 | ea | 1 | Various | Various | $1,091 | $1,091 |
| | | FLM00001 | | Flammable Goods Yard | 1 | ea | 1 | Various | Various | $3,417 | $3,417 |
| | | MT00005 | | 20' sea container | 1 | ea | 1 | Various | Various | $1,597 | $1,597 |
| | | MT00006 | | 20' store office & contents | 1 | ea | 1 | Various | Various | $4,790 | $4,790 |
| | | | | | | | | | | | **$1,606,412** |
| **AREA 11** | | **SMU** | | | | | | | | | |
| | **SMU including** | | | | | | | | | | |
| | | SMU0 | Mining Unit | Slurry Mining Unit | 1 | ea | 1 | Fabricator | Fabricator | $3,605,499 | $3,605,499 |
| | | SMU0 | Feeder | SMU feed skid/hopper | 1 | ea | 1 | Unknown | Dakota | $247,890 | $247,890 |
| | | SMU0 | Trommel | SMU - Replacement Trommel | 1 | ea | 1 | ECPU | ECPU | $188,148 | $188,148 |
| | **PIT AMENITIES** | | | | | | | | | | |
| | | | Mining Unit Amenities Facility | Skid, AUSCO Hut Control Room and Porta-Loo | 1 | ea | 1 | AUSCO | AUSCO | $25,000 | $25,000 |
| 11G | SK | 01 | Skid Mounted Crib Room & Toilet Facility 1 | inc Water Tank, Treatment Tanks and Diesel Gen | 1 | ea | 1 | Fabricator | Fabricator | $25,000 | $25,000 |
| | **FIELD EQUIPMENT** | | | | | | | | | | |
| 11D | PU | XX | Bow Hill Tank 2 Water Pump | Goulds GR5 | 1 | ea | 1 | Goulds | KSB | $28,380 | $28,380 |
| 11F | SK | 01 | Reology Modifier Floc Skid | CIBA Floc Plant Bulka Bag | 1 | ea | 1 | Fabricator | Fabricator | $102,179 | $102,179 |
| 11G | SK | 01 | Skid Mounted Crib Room & Toilet Facility 1 | inc Water Tank, Treatment Tanks and Diesel Gen | 1 | ea | 1 | Fabricator | Fabricator | $25,000 | $25,000 |
| 11 | PU | 10 | Water Reclamation | Deutz-GR Pump Diesel Pumpset | 1 | ea | 1 | GR | Allight Sykes | $33,850 | $33,850 |
| 11 | | | PCP Feed Booster 1 | inc 2x TKL 200 | 1 | ea | 1 | Fabricator | Fabricator | $320,000 | $320,000 |
| 11 | | | PCP Feed Booster 2 | inc 2x TKL 200 | 1 | ea | 1 | Fabricator | Fabricator | $320,000 | $320,000 |
| 11 | | | PCP Feed Booster New 3 | inc 2x 200RSCWBH Pumps | 1 | ea | 1 | Fabricator | Fabricator | $348,187 | $348,187 |
| 11 | | | PCP Feed Booster New 4 | inc 2x 200RSCWBH Pumps | 1 | ea | 1 | Fabricator | Fabricator | $348,187 | $348,187 |
| | | | | | | | | | | | **$5,617,319** |
| **AREA 12** | | **TAILINGS** | | | | | | | | | |
| | **MISCELLANEOUS** | | | | | | | | | | |
| 12 | PU | XX | Tails Pumping Skid | 2 Pump Booster Skid | 1 | ea | 1 | Fabricator | Fabricator | $320,000 | $320,000 |
| | | | | | | | | | | | **$320,000** |
| **AREA 21** | | **PRE-CONCENTRATOR PLANT** | | | | | | | | | |
| | **PUMPS** | | | | | | | | | | |
| 21 | PU | 01 | De-Slime Cyclone Feed Pump | 300GGMM | 1 | ea | 1 | TKL | Warman | $67,843 | $67,843 |
| 21 | PU | 02 | Rougher Spiral Feed Pump | 250GGMM | 1 | ea | 1 | TKL | Warman | $61,058 | $61,058 |
| 21 | PU | 03 | Deslime Cyclone Feed Pump | 250FGMN | 1 | ea | 1 | TKL | Warman | $61,058 | $61,058 |
| 21 | PU | 04 | Tails Scav Sump Pump | 250FGMM | 1 | ea | 1 | TKL | Warman | $61,058 | $61,058 |
| 21 | PU | 05 | Mids Scav Sump Pump | 200FGMM | 1 | ea | 1 | TKL | Warman | $41,317 | $41,317 |
| 21 | PU | 06 | Cleaner Sump Pump | 150DGRM | 1 | ea | 1 | TKL | Warman | $21,171 | $21,171 |
| 21 | PU | 07 | Recleaner Sump Pump | 75CGMM | 1 | ea | 1 | TKL | Warman | $16,514 | $16,514 |
| 21 | PU | 08 | Final Cleaner Sump Pump | 50BGMM | 1 | ea | 1 | TKL | Warman | $13,120 | $13,120 |
| 21 | PU | 09A | HMC Sump Pump | 75CGMM | 1 | ea | 1 | TKL | Warman | $16,514 | $16,514 |
| 21 | PU | 09B | HMC Sump Pump | 75CGMM | 1 | ea | 1 | TKL | Warman | $16,514 | $16,514 |
| 21 | PU | 10 | Tails Pump | 250x200 G | 1 | ea | 1 | TKL | Warman | $61,058 | $61,058 |
| 21 | PU | 12 | Tails Pump | 200x150 F HP | 1 | ea | 1 | TKL | Warman | $41,317 | $41,317 |
| 21 | PU | 13 | Tailings Transfer Sump Pump | 250FGMM | 1 | ea | 1 | TKL | Warman | $61,058 | $61,058 |
| 21 | PU | 14 | Tails Scav Sump Pump | 150DGMM | 1 | ea | 1 | TKL | Warman | $21,171 | $21,171 |
| 21 | PU | 15 | Density Control Pump | 150-250 | 1 | ea | 1 | KSB | Warman | $21,171 | $21,171 |
| 21 | PU | 16 | Fluidisation Pump | 125-250 | 1 | ea | 1 | KSB | Warman | $21,171 | $21,171 |
| 21 | PU | 17 | Floor Sump Pump | 40GPS | 1 | ea | 1 | Warman | Warman | $16,470 | $16,470 |
| 21 | PU | 20 | PCP Water Supply Pump | KSB100 | 1 | ea | 1 | KSB | KSB | $28,380 | $28,380 |
| 21 | PU | XX | Cons Trommel O/S Pump | 75CGMM | 1 | ea | 1 | TKL | Warman | $16,514 | $16,514 |
| 21 | PU | XX | Cons Trommel U/S Pump | 75CGMM | 1 | ea | 1 | TKL | Warman | $16,514 | $16,514 |
| XX | PU | XX | CONS Trommel Spray Bar Pump | CR5 | 1 | ea | 1 | Grundfos | Grundfos | $1,400 | $1,400 |
| XX | PU | XX | Vertical Sump Pump | 40QV | 1 | ea | 1 | M&Q | M&Q | $12,750 | $12,750 |
| | **DISTRIBUTORS** | | | | | | | | | | |
| 21 | PD | 01 | Rougher Spirals Distributor | 4 Way | 1 | ea | 1 | Fabricator | MT | $24,000 | $24,000 |
| 21 | PD | 02 | Tails Scavenger Spirals Distributor | 3 Way | 1 | ea | 1 | Fabricator | MT | $24,000 | $24,000 |
| 21 | PD | 03 | Mid Scav Spirals Distributor | 4 Way | 1 | ea | 1 | Fabricator | MT | $24,000 | $24,000 |
| 21 | PD | 04 | Cleaner Spirals Distributor | 2 Way | 1 | ea | 1 | Fabricator | MT | $24,000 | $24,000 |
| | **CYCLONES** | | | | | | | | | | |
| 21 | CY | 01 | Primary Desliming Cyclone | 3 off 675mm Dia. Desliming | 1 | ea | 1 | Linatex | FL Smidth Krebs | $130,000 | $130,000 |
| 21 | CY | 02 | Secondary Desliming Cyclone | 3 off 500mm Dia. Desliming | 1 | ea | 1 | FL Smidth Krebs | FL Smidth Krebs | $101,000 | $101,000 |
| 21 | CY | 03 | Tails Dewatering Cyclone | 3 off 660mm Dia. Dewatering | 1 | ea | 1 | Weir | FL Smidth Krebs | $123,000 | $123,000 |
| 21 | CY | 04 | Water Recovery Cyclone | 660mm Dia. Dewatering | 1 | ea | 1 | Weir | FL Smidth Krebs | $10,500 | $10,500 |
| 21 | CY | 05 | HMC Stockpile Dewatering Cyclone | 250mm Dia. Dewatering | 1 | ea | 1 | Mincotech | FL Smidth Krebs | $5,000 | $5,000 |
| | **SAMPLERS** | | | | | | | | | | |
| 21 | SA | 04 | Trommel Undersize Sampler | Rotary Vezin Sampler | 1 | ea | 1 | Consep | Consep | $12,600 | $12,600 |
| 21 | SA | 01 | Final Tailings Sampler | Rotary Vezin Sampler | 1 | ea | 1 | Consep | Consep | $12,600 | $12,600 |
| 21 | SA | 02 | Rougher Spirals Feed Sampler | Rotary Vezin Sampler | 1 | ea | 1 | Consep | Consep | $12,600 | $12,600 |
| 21 | SA | 03 | HMC Sampler | Rotary Vezin Sampler | 1 | ea | 1 | Consep | Consep | $12,600 | $12,600 |
| 21 | SA | 05 | Tails Dewatering Cyclone Sampler | Rotary Vezin Sampler | 1 | ea | 1 | Consep | Consep | $12,600 | $12,600 |
| | **GRAVITY SEPARATION** | | | | | | | | | | |
| 21 | SP | 01 | Rougher Spirals | HC1 - 4 Banks of 6 quad starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $500,000 | $500,000 |
| 21 | SP | 02 | Tails Scav Spirals | HC1 - 3 Banks of 10 Quad starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $630,000 | $630,000 |
| 21 | SP | 03 | Mids Scav Spirals | MG4CF - 4 Banks of 12 Triple starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $420,000 | $420,000 |
| 21 | SP | 04 | Cleaner Spirals | MG6.3 - 2 Banks of 12 Triple starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $260,000 | $260,000 |
| 21 | SP | 05 | Recleaner Spirals | HG10 - 8 Triple starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $106,000 | $106,000 |
| 21 | SP | 06 | Final Cleaner Spirals | HG10 - 6 Triple starts | 1 | ea | 1 | Mineral Technolo | Mineral Technolo | $80,000 | $80,000 |
| | **MISCELLANEOUS** | | | | | | | | | | |
| 21 | TR | 01 | PCP Trommel | 2.5m dia 4mm Screen | 1 | ea | 1 | ECPU | ECPU | $190,000 | $190,000 |
| 21 | TR | 01 | PCP Cons Trommel | | 1 | ea | 1 | ECPU | ECPU | $46,000 | $46,000 |
| 21 | GC | 01 | Electric Hoist | 2 tonne Chain Block | 1 | ea | 1 | Beaver | PWB Anchor | $2,700 | $2,700 |
| 21 | GC | 02 | Electric Hoist | 1 tonne Chain Block | 1 | ea | 1 | Beaver | PWB Anchor | $2,700 | $2,700 |
| 21 | GC | 03 | Electric Hoist | 1 tonne Chain Block | 1 | ea | 1 | Beaver | PWB Anchor | $2,700 | $2,700 |

# TABLE 3 - REPLACEMENT COST VALUATION

| AREA | EQUIPMENT DESIGNATION | EQUIPMENT NUMBER | DESCRIPTION/DUTY | EQUIPMENT SPECIFICATION | NUMBER OF ITEMS | UNIT | QTY | INCUMBENT SUPPLIER | NOMINATED SUPPLIER FOR REPLACEMENT PRICING | MATERIALS & EQUIPMENT | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | RATE | COST |
| | | | | | | | | | | AUD | AUD |
| 21F | SK | 01 | Skid Mounted Crib Room and Toilet Facility | inc Water Tank, Treatment Tanks and Diesel Gen | 1 | ea | 1 | Fabricator | Fabricator | $25,000 | $25,000 |
| XX | BC | XX | Trommel O/Size CV 1 of 3 | 450 WIDE x approx 8m | 1 | ea | 1 | SANKI | SANKI | $19,860 | $19,860 |
| XX | BC | XX | Trommel O/Size CV 2 of 3 | 450 WIDE x approx 8m | 1 | ea | 1 | SANKI | SANKI | $19,860 | $19,860 |
| XX | BC | XX | Trommel O/Size CV 3 of 3 | 450 WIDE x approx 6m | 1 | ea | 1 | SANKI | SANKI | $13,500 | $13,500 |
| XX | AC | XX | Air Compressor 1 | WS0400 | 1 | ea | 1 | SULLAIR | Atlas Copco | $12,000 | $12,000 |
| XX | AC | XX | Air Compressor 2 | CSI 11 | 1 | ea | 1 | CHAMPION | Atlas Copco | $12,000 | $12,000 |
| | | | | | | | | | | | **$3,565,961** |
| **AREA 51** | **PROCESS WATER CIRCUIT** | | | | | | | | | | |
| | **PUMPS** | | | | | | | | | | |
| 51 | PU | 01A | Thickener Underflow Pump 1 | 150/125 KSB | 1 | ea | 1 | KSB | Warman | $43,055 | $43,055 |
| 51 | PU | 01B | Thickener Underflow Pump 2 | 150/125 | 1 | ea | 1 | KSB | Warman | $43,055 | $43,055 |
| 51 | PU | 02 | Clarified Water to Floc Plants | 150/125 | 1 | ea | 1 | KSB | Warman | $43,055 | $43,055 |
| 51 | PU | 06 | Thickener Overflow | 8/6 AH | 1 | ea | 1 | Warman | Warman | $32,906 | $32,906 |
| 51 | PU | 06A | Bowhill Water Pump | LCC 100 | 1 | ea | 1 | KSB | Warman | $37,567 | $37,567 |
| 51 | PU | 06B | Bowhill Water Pump 2 | LCC 100 | 1 | ea | 1 | KSB | Warman | $37,567 | $37,567 |
| 51 | PU | 08 | From thickener feed pipe | 100 DSFM | 1 | ea | 1 | TKL | Warman | $28,380 | $28,380 |
| 51 | PU | 11A | Field Process Water Supply | 150RCWBH | 1 | ea | 1 | Warman | Warman | $124,548 | $124,548 |
| 51 | PU | 11B | Field Process Water Supply 2 | 150RCWBH | 1 | ea | 1 | Warman | Warman | $124,548 | $124,548 |
| 51 | PU | XX | Flocculant Water Addition | 125 x 80-200 | 1 | ea | 1 | Southern Cross | Warman | $8,050 | $8,050 |
| | **MISCELLANEOUS** | | | | | | | | | | |
| 51 | FP | 01 | Flocculant Plant Skid 1 | | 1 | ea | 1 | Fabricator/CIBA | SNF | $321,000 | $321,000 |
| 51 | FP | 02 | Flocculant Plant Skid 2 | | 1 | ea | 1 | Fabricator/CIBA | SNF | $321,000 | $321,000 |
| 51 | TH | 01 | Tailings Thickener | | 1 | ea | 1 | Supaflo | Outotec | $1,252,000 | $1,252,000 |
| 51 | FL | | Rheology Modifyer Flocculant Skid | | 1 | ea | 1 | Fabricator/CIBA | SNF | $321,000 | $321,000 |
| | | | | | | | | | | | **$2,737,731** |
| | **ANCILLIARY ITEMS** | | | | | | | | | | |
| | **HEAVY EQUIPMENT** | | | | | | | | | | |
| XX | HV | 31 | Telehandler | 2005 Manitou Telehandler | 1 | ea | 1 | | Manitou | $70,249 | $70,249 |
| XX | HV | 34 | Forklift | Hyster H2.50DX Forklift | 1 | ea | 1 | | Hyster | $14,369 | $14,369 |
| XX | HV | 35 | Forklift | Hyster H2.50DX Forklift | 1 | ea | 1 | | Hyster | $14,369 | $14,369 |
| XX | HV | 36 | Articulated Crane | Franna AT16 Crane SB18EQ | 1 | ea | 1 | | Hyster | $201,765 | $201,765 |
| | **HDPE PIPING** | | | | | | | | | | |
| XX | XX | XX | HDPE Field Piping | Pipe in Stock | 1 | ea | 1 | | Kingston Bridge | $208,877 | $208,877 |
| | **BOREFIELD** | | | | | | | | | | |
| XX | PU | XX | Bores | 7x 30m-50m Downhole Bore Pumps | 1 | ea | 1 | | Grundfos | $350,000 | $350,000 |
| | **FIELD HARDWARE** | | | | | | | | | | |
| XX | XX | XX | Fire Tender Trailer | | 1 | ea | 1 | | | $5,313 | $5,313 |
| XX | XX | XX | Boomgates | | 1 | ea | 1 | | | $35,776 | $35,776 |
| XX | XX | XX | Radio Repeater System | | 1 | ea | 1 | | | $27,124 | $27,124 |
| | | BHT0 | Generator | 1250KVAgenset Kato/Detroit V16 | 1 | ea | 1 | M&Q | | $22,352 | $22,352 |
| | | BHT0 | Diesel Storage Tank | Blue fuel tank | 1 | ea | 1 | Fabricator | | $2,235 | $2,235 |
| | | BHT0 | Field Pump | Sykes 64 field pump on skid | 1 | ea | 1 | Sykes | Allight Sykes | $6,386 | $6,386 |
| | **LIGHT VEHICLES** | | | | | | | | | | |
| | LV41 | | Light Vehicle | 2008 Mazda BT50 DX S947 AHC | 1 | ea | 1 | | | $19,706 | $19,706 |
| | EE00001 | | Light Vehicle | Ute Canopy and Canvas Covering | 1 | ea | 1 | | | $3,200 | $3,200 |
| | LV04 | | Light Vehicle | Toyota Prado - XOA-296 | 1 | ea | 1 | | | $21,074 | $21,074 |
| | LV10 | | Light Vehicle | 1993 Nissan Traytop WBC 583 | 1 | ea | 1 | | | $3,832 | $3,832 |
| | LV22 | | Light Vehicle | Toyota Hilux 4x4 - XPN-589 | 1 | ea | 1 | | | $16,604 | $16,604 |
| | LV46 | | Light Vehicle | Holden Colorado Single Cab Ute | 1 | ea | 1 | | | $19,732 | $19,732 |
| | LV48 | | Light Vehicle | Toyota Hilux 2011 Xtra Cab | 1 | ea | 1 | | | $22,432 | $22,432 |
| | LV50 | | Light Vehicle | Toyota Hilux DCab 2011 S328BBO | 1 | ea | 1 | | | $27,575 | $27,575 |
| | LV51 | | Light Vehicle | Holden 2010 Colarado S052BCA | 1 | ea | 1 | | | $20,500 | $20,500 |
| | | | | | | | | | | | **$1,113,472** |
| | | | | | | | | | | **REPLACEMENT VALUE MECHANICAL GRAND TOTAL** | **$14,960,896** |

# TABLE 4 - CONDITION BASED COST VALUATION

| AREA | EQUIPMENT DESIGNATION | EQUIPMENT NUMBER | DESCRIPTION/DUTY | EQUIPMENT SPECIFICATION | NOMINATED SUPPLIER FOR REPLACEMENT PRICING | NUMBER OF ITEMS | UNIT | QTY | TOTAL ADJUSTED VALUE | CONDITION RATING | CONDITION CONSIDERED VALUE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MECHANICAL EQUIPMENT** | | | | | | | | | | | |
| **AREA 08** | | **ADMIN, WORKSHOP & DIESEL FARM** | | | | | | | | | |
| | AM00009 | | | Olympian emergency genset | | 1 | ea | 1 | $8,653 | 1 | $7,788 |
| | MT00001 | | | 18m x 8m open ended shed | | 1 | ea | 1 | $10,742 | 1 | $9,668 |
| | LAB00001 | | | Laboratory Area | | 1 | ea | 1 | $45,326 | 1 | $40,794 |
| | LAB00002 | | | Sample Preparation Shed | | 1 | ea | 1 | $28,168 | 1 | $25,352 |
| | FU00001 | | | 61000 litre fuel tanks | | 1 | ea | 2 | $192,000 | 1 | $172,800 |
| | LAB | EQUIP | Laboratory Equipment 2011 | Assorted Lab Equipment Purchased 2011 | | 1 | ea | 1 | $238,268 | 1 | $214,442 |
| | LAB | EQUIP | Laboratory Equipment 2012 | Assorted Lab Equipment Purchased 2012 | | 1 | ea | 1 | $158,287 | 1 | $142,458 |
| | LAB | EQUIP | Laboratory Equipment 2013 | Assorted Lab Equipment Purchased 2013 | | 1 | ea | 1 | $37,983 | 1 | $34,185 |
| | LAB | EQUIP | Laboratory Equipment 2014 | Assorted Lab Equipment Purchased 2014 | | 1 | ea | 1 | $36,531 | 1 | $32,878 |
| LAB00024 | AB0002 | | Concrete Pad for the Oven | 15.5x5.5x4 Leanto | | 1 | ea | 1 | $14,943 | 2 | $11,954 |
| WSHOP | EQUIP | | Stores/Workshop Shed | Allowed for 30x 24x 6m Portal Frame Shed | | 1 | ea | 1 | $250,000 | 2 | $200,000 |
| WSHOP | EQUIP | | Workshop Tools etc | Workshop/Ancillary Items Purchased 2011 | | 1 | ea | 1 | $19,756 | 2 | $15,805 |
| WSHOP | EQUIP | | Workshop Tools etc | Workshop/Ancillary Items Purchased 2012 | | 1 | ea | 1 | $158,287 | 2 | $126,630 |
| WSHOP | EQUIP | | Workshop Tools etc | Workshop/Ancillary Items Purchased 2013 | | 1 | ea | 1 | $35,065 | 2 | $28,052 |
| WSHOP | EQUIP | | Workshop Tools etc | Workshop/Ancillary Items Purchased 2014 | | 1 | ea | 1 | $10,887 | 2 | $8,710 |
| | FIRE | EQUIP | Fire Fighting Area | Fire Equipment 2011 Purchases | | 1 | ea | 1 | $154,569 | 2 | $123,655 |
| | | | | Fire Equipment 2012 Purchases | | 1 | ea | 1 | $7,950 | 2 | $6,360 |
| | | | | Fire Equipment 2014 Purchases | | 1 | ea | 1 | $1,091 | 2 | $873 |
| | FLM00001 | | | Flammable Goods Yard | | 1 | ea | 1 | $3,193 | 1 | $2,874 |
| | MT00005 | | | 20' sea container | | 1 | ea | 1 | $1,492 | 3 | $746 |
| | MT00006 | | | 20' store office & contents | | 1 | ea | 1 | $4,476 | 3 | $2,238 |
| | | | | | | | | | | | **$1,208,260** |
| **AREA 11** | | **Mining Feed Unit** | | | | | | | | | |
| | SMU000 | | Mining Unit | Slurry Mining Unit | | 1 | ea | 1 | $3,446,275 | 3 | $1,723,137 |
| | SMU000 | | Feeder | SMU feed skid/hopper | | 1 | ea | 1 | $247,890 | 2 | $198,312 |
| | SMU000 | | Trommel | SMU - Replacement Trommel | | 1 | ea | 1 | $188,148 | 3 | $94,074 |
| | | | Mining Unit Amenities Facility | Skid, AUSCO Hut Control Room and Porta-Loo | | 1 | ea | 1 | $25,000 | 2 | $20,000 |
| 11D | PU | XX | Bow Hill Tank 2 Water Pump | Goulds GR5 | KSB | 1 | ea | 1 | $28,380 | 2 | $22,704 |
| 11F | SK | 01 | Reology Modifier Floc Skid | | | 1 | ea | 1 | $95,485 | 4 | $28,646 |
| 11G | SK | 01 | Skid Mounted Crib Room & Toilet Facility 1 | inc Water Tank, Treatment Tanks and Diesel Gen | | 1 | ea | 1 | $25,000 | 4 | $7,500 |
| 11 | PU | 10 | Water Reclamation | Deutz-GR Pump Diesel Pumpset | Allight Sykes | 1 | ea | 1 | $33,850 | 1 | $30,465 |
| 11 | | | PCP Feed Booster 1 | inc 2x TKL 200 | | 1 | ea | 1 | $320,000 | 4 | $96,000 |
| 11 | | | PCP Feed Booster 2 | inc 2x TKL 200 | | 1 | ea | 1 | $320,000 | 3 | $160,000 |
| 11 | | | PCP Feed Booster New 3 | inc 2x 200RSCWBH Pumps | | 1 | ea | 1 | $348,187 | 2 | $278,550 |
| 11 | | | PCP Feed Booster New 4 | inc 2x 200RSCWBH Pumps | | 1 | ea | 1 | $348,187 | 2 | $278,550 |
| | | | | | | | | | | | **$2,937,937** |
| **AREA 12** | | **TAILINGS** | | | | | | | | | |
| 12 | PU | XX | Tails Pumping Skid | 2 Pump Booster Skid | | 1 | ea | 1 | $320,000 | 2 | $256,000 |
| | | | | | | | | | | | **$256,000** |
| **AREA 21** | | **PRE-CONCENTRATOR PLANT** | | | | | | | | | |
| 21 | BN | 01 | Deslime Sump | 5m Dia. | | 1 | ea | 1 | $61,058 | 3 | $30,529 |
| 21 | BN | 02 | Surge Bin | | | 1 | ea | 1 | $61,058 | 2 | $48,846 |
| 21 | BN | 03 | Slimes Transfer Sump | | | 1 | ea | 1 | $41,317 | 2 | $33,054 |
| 21 | BN | 04 | Tails Scav Sump | | | 1 | ea | 1 | $28,380 | 2 | $22,704 |
| 21 | BN | 05 | Mids Scav Sump | | | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | BN | 06 | Cleaner Sump | | | 1 | ea | 1 | $13,120 | 2 | $10,496 |
| 21 | BN | 07 | Recleaner Sump | | | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | BN | 08 | Final Cleaner Sump | | | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | BN | 09 | HMC Sump | | | 1 | ea | 1 | $61,058 | 3 | $30,529 |
| 21 | BN | 10 | Tailings Transfer Sump | | | 1 | ea | 1 | $41,317 | 3 | $20,659 |
| 21 | BN | 11 | Tailings Sump | | | 1 | ea | 1 | $61,058 | 3 | $30,529 |
| 21 | BN | 12 | Tailings Scavenger Overflow Sump | | | 1 | ea | 1 | $28,380 | 4 | $8,514 |
| 21 | CS | 01 | HMC Stockpile Stacker | Structural Assembly | | 1 | ea | 2 | $56,760 | 2 | $45,408 |
| 21 | CY | 01 | Primary Desliming Cyclone | 3 x 675mm Dia. | FL Smidth Krebs | 1 | ea | 1 | $28,380 | 3 | $14,190 |
| 21 | CY | 02 | Secondary Desliming Cyclone | 3 x GMAX20-3140 500mm Dia. | FL Smidth Krebs | 1 | ea | 1 | $16,470 | 3 | $8,235 |
| 21 | CY | 03 | Tails Dewatering Cyclone | | FL Smidth Krebs | 1 | ea | 1 | $123,000 | 3 | $61,500 |
| 21 | CY | 04 | Tails Scav Overflow Cyclone | | FL Smidth Krebs | 1 | ea | 1 | $10,500 | 6 | $0 |
| 21 | CY | 05 | HMC Stockpile Dewatering Cyclone | | FL Smidth Krebs | 1 | ea | 2 | $10,000 | 6 | $0 |
| 21 | PD | 01 | Rougher Spirals Distributor | 4 Way | MT | 1 | ea | 1 | $24,000 | 2 | $19,200 |
| 21 | PD | 02 | Tails Scavenger Spirals Distributor | 3 Way | MT | 1 | ea | 1 | $24,000 | 2 | $19,200 |
| 21 | PD | 03 | Mid Scav Spirals Distributor | 4 Way | MT | 1 | ea | 1 | $24,000 | 2 | $19,200 |
| 21 | PD | 04 | Cleaner Spirals Distributor | 2 Way | MT | 1 | ea | 1 | $24,000 | 2 | $19,200 |
| 21 | PU | 01 | De-Slime Cyclone Feed Pump | 300GGMM | Warman | 1 | ea | 1 | $67,843 | 2 | $54,274 |
| 21 | PU | 02 | Rougher Spiral Feed Pump | 250GGMM | Warman | 1 | ea | 1 | $61,058 | 2 | $48,846 |
| 21 | PU | 03 | Deslime Cyclone Feed Pump | 250FGMN | Warman | 1 | ea | 1 | $61,058 | 2 | $48,846 |
| 21 | PU | 04 | Tails Scav Sump Pump | 250FGMM | Warman | 1 | ea | 1 | $61,058 | 2 | $48,846 |
| 21 | PU | 05 | Mids Scav Sump Pump | 200FGMM | Warman | 1 | ea | 1 | $41,317 | 2 | $33,054 |
| 21 | PU | 06 | Cleaner Sump Pump | 150DGRM | Warman | 1 | ea | 1 | $28,380 | 2 | $22,704 |
| 21 | PU | 07 | Recleaner Sump Pump | 75CGMM | Warman | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | PU | 08 | Final Cleaner Sump Pump | 50BGMM | Warman | 1 | ea | 1 | $13,120 | 2 | $10,496 |
| 21 | PU | 09A | HMC Sump Pump | 75CGMM | Warman | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | PU | 09B | HMC Sump Pump | 75CGMM | Warman | 1 | ea | 1 | $16,514 | 2 | $13,211 |
| 21 | PU | 10 | Tails Pump | 250FGMM | Warman | 1 | ea | 1 | $61,058 | 2 | $48,846 |
| 21 | PU | 12 | Tails Pump | 250FGMM | Warman | 1 | ea | 1 | $41,317 | 2 | $33,054 |
| 21 | PU | 13 | Tailings Transfer Sump Pump | 250FGMM | Warman | 1 | ea | 1 | $61,058 | 1 | $54,952 |
| 21 | PU | 14 | Tails Scav Sump Pump | 150DGMM | Warman | 1 | ea | 1 | $28,380 | 1 | $25,542 |
| 21 | PU | 15 | Density Control Pump | 150-250 | Warman | 1 | ea | 1 | $28,380 | 3 | $14,190 |
| 21 | PU | 16 | Fluidisation Pump | 125-250 | KSB | 1 | ea | 1 | $28,380 | 2 | $22,704 |
| 21 | PU | 17 | Floor Sump Pump | 80QV (assumed) | Warman | 1 | ea | 1 | $16,470 | 1 | $14,823 |
| 21 | PU | 20 | PCP Water Supply Pump | KSB100 (assumed) | KSB | 1 | ea | 1 | $28,380 | 1 | $25,542 |
| 21 | SA | 01 | Trommel Undersize Sampler | | | 1 | ea | 1 | $12,600 | 5 | $630 |
| 21 | SA | xx | Final Tailings Sampler | | | 1 | ea | 1 | $12,600 | 5 | $630 |
| 21 | SA | 02 | Rougher Spirals Feed Sampler | | | 1 | ea | 1 | $12,600 | 5 | $630 |
| 21 | SA | 03 | HMC Sampler | | | 1 | ea | 1 | $12,600 | 5 | $630 |
| 21 | SA | 05 | Tails Dewatering Cyclone Sampler | | | 1 | ea | 1 | $12,600 | 5 | $630 |
| 21 | SP | 01 | Rougher Spirals | HC1 96ST 4x(6x4) | | 1 | ea | 1 | $500,000 | 4 | $150,000 |
| 21 | SP | 02 | Tails Scav Spirals | HC1 120ST 3x(10x4) | | 1 | ea | 1 | $630,000 | 3 | $315,000 |
| 21 | SP | 03 | Mids Scav Spirals | MG4.4 96ST 4x(8x3) | | 1 | ea | 1 | $420,000 | 3 | $210,000 |
| 21 | SP | 04 | Cleaner Spirals | HG6.3 72ST 2x(12x3) | | 1 | ea | 1 | $260,000 | 3 | $130,000 |
| 21 | SP | 05 | Recleaner Spirals | HG10 24ST 1x(8x3) | | 1 | ea | 1 | $106,000 | 3 | $53,000 |

## TABLE 4 - CONDITION BASED COST VALUATION

| AREA | EQUIPMENT DESIGNATION | EQUIPMENT NUMBER | DESCRIPTION/DUTY | EQUIPMENT SPECIFICATION | NOMINATED SUPPLIER FOR REPLACEMENT PRICING | NUMBER OF ITEMS | UNIT | QTY | TOTAL ADJUSTED VALUE | CONDITION RATING | CONDITION CONSIDERED VALUE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | SP | 06 | Final Cleaner Spirals | HG10 18ST 1x(6x3) | | 1 | ea | 1 | $80,000 | 3 | $40,000 |
| 21 | TR | 01 | PCP Trommel | 2.5m dia 4mm Screen | | 1 | ea | 1 | $190,000 | 2 | $152,000 |
| 21F | SK | 01 | Skid Mounted Crib Room and Toilet Facility | inc Water Tank, Treatment Tanks and Diesel Gen | | 1 | ea | 1 | $25,000 | 1 | $22,500 |
| **AREA 21** | **PRE-CONCENTRATOR PLANT- ADDITIONAL/LOOSE EQUIPMENT** | | | | | | | | | | |
| XX | BC | XX | Trommel O/Size CV 1 of 3 | 450 Wide x approx 8m | | 1 | ea | 1 | $19,860 | 4 | $5,958 |
| XX | BC | XX | Trommel O/Size CV 2 of 3 | 450 Wide x approx 8m | | 1 | ea | 1 | $19,860 | 4 | $5,958 |
| XX | BC | XX | Trommel O/Size CV 3 of 3 | 450 Wide x approx 6m | | 1 | ea | 1 | $13,500 | 4 | $4,050 |
| XX | TR | XX | CONS Trommel | 1.2 x 3 m (assumed) | | 1 | ea | 1 | $46,000 | 4 | $13,800 |
| XX | PU | XX | CONS Trommel Undersize Pump | Titan 75 | Warman | 1 | ea | 1 | $16,514 | 3 | $8,257 |
| XX | PU | XX | CONS Trommel Oversize Pump | Titan 75 | Warman | 1 | ea | 1 | $16,514 | 3 | $8,257 |
| XX | PU | XX | CONS Trommel Spray Bar Pump | CR5 | | 1 | ea | 1 | $1,400 | 3 | $700 |
| XX | AC | XX | Air Compressor 1 | WS0400 | Atlas Copco | 1 | ea | 1 | $12,000 | 3 | $6,000 |
| XX | AC | XX | Air Compressor 2 | CSI 11 | Atlas Copco | 1 | ea | 1 | $12,000 | 3 | $6,000 |
| XX | PU | XX | Vertical Sump Pump | 40QV | M&Q | 1 | ea | 1 | $12,750 | 2 | $10,200 |
| | | | | | | | | | | | **$2,172,810** |
| **AREA 51** | **PROCESS WATER CIRCUIT** | | | | | | | | | | |
| 51 | PU | 01A | Thickener Underflow Pump | 150/125 KSB | Warman | 1 | ea | 1 | $43,055 | 3 | $21,528 |
| 51 | PU | 01B | Thickener Underflow Pump | 150/125 KSB | Warman | 1 | ea | 1 | $43,055 | 3 | $21,528 |
| 51 | PU | 02 | Clarified Water to Floc Plants | 150/125 KSB | Warman | 1 | ea | 1 | $43,055 | 3 | $21,528 |
| 51 | PU | 06 | From Thickener Overflow | 8/6AH | Warman | 1 | ea | 1 | $32,906 | 3 | $16,453 |
| 51 | PU | 06A | Bowhill Water Pump | LCC 100 | KSB GIW | 1 | ea | 1 | $37,567 | 3 | $18,784 |
| 51 | PU | 06B | Bowhill Water Pump | LCC 100 | KSB GIW | 1 | ea | 1 | $37,567 | 3 | $18,784 |
| 51 | PU | 08 | Pump from Thickener Feed Pipe | TKL100DSFM | KSB GIW | 1 | ea | 1 | $28,380 | 3 | $14,190 |
| 51 | PU | 11A | Field Process Water Supply | 150RCWBH | Warman | 1 | ea | 1 | $124,548 | 2 | $99,638 |
| 51 | TH | 01 | Thickener | 40m SUPA FLO | | 1 | ea | 1 | $1,205,000 | 5 | $60,250 |
| 51 | FP | 01 | Floc Plant | | | 1 | ea | 1 | $95,485 | 3 | $47,743 |
| 51 | FP | 02 | Floc Plant | | | 1 | ea | 1 | $95,485 | 3 | $47,743 |
| 51 | TK | 02 | Floc Water Addition Tank | 15000L (assumed) | | 1 | ea | 1 | $2,000 | 1 | $1,800 |
| 51 | PU | 11B | Field Process Water Supply | 150RCWBH | Warman | 1 | ea | 1 | $124,548 | 2 | $99,638 |
| | | | | | | | | | | | **$489,605** |
| **AREA 61&62** | **REAGENT STORAGE AND DOSING AREA** | | | | | | | | | | |
| 61 | XX | XX | Reagent Storage and Dosing Areas | Inoperable in current design | | 1 | ea | 1 | $383,978 | 5 | $19,199 |
| | | | | | | | | | | | **$19,199** |
| **ANCILLARY ITEMS** | | | | | | | | | | | |
| | **HEAVY EQUIPMENT** | | | | | | | | | | |
| XX | HV | 31 | Telehandler | 2005 Manitou Telehandler | Manitou | 1 | ea | 1 | $65,648 | 2 | $52,518 |
| XX | HV | 34 | Forklift | Hyster H2.50DX Forklift | Hyster | 1 | ea | 1 | $13,428 | 2 | $10,742 |
| XX | HV | 35 | Forklift | Hyster H2.50DX Forklift | Hyster | 1 | ea | 1 | $13,428 | 2 | $10,742 |
| XX | HV | 36 | Articulated Crane | Franna AT16 Crane SB18EQ | Hyster | 1 | ea | 1 | $192,855 | 2 | $154,284 |
| | **HDPE PIPING** | | | | | | | | | | |
| XX | XX | 11 | HDPE Field Piping | Pipe Purchased 2011 | Kingston Bridge | 1 | ea | 1 | $208,877 | 2 | $167,101 |
| | **BOREFIELD** | | | | | | | | | | |
| XX | PU | XX | Bores | 30m-50m Downhole Bore Pumps | | 1 | ea | 7 | $350,000 | 1 | $315,000 |
| | **FIELD HARDWARE** | | | | | | | | | | |
| XX | XX | XX | Fire Tender Trailer | | | 1 | ea | 1 | $5,194 | 1 | $4,675 |
| XX | XX | XX | Boomgates | | | 1 | ea | 1 | $35,776 | 2 | $28,621 |
| XX | XX | XX | Radio Repeater System | | | 1 | ea | 1 | $27,124 | 2 | $21,699 |
| | BHT0000 | | Generator | 1250KVAgenset Kato/Detroit V16 | | 1 | ea | 1 | $20,888 | 4 | $6,266 |
| | BHT0000 | | Diesel Storage Tank | Blue fuel tank | | 1 | ea | 1 | $2,089 | 3 | $1,044 |
| | BHT0000 | | Field Pump | Sykes 64 field pump on skid | Allight Sykes | 1 | ea | 1 | $5,968 | 3 | $2,984 |
| | **LIGHT VEHICLES** | | | | | | | | | | |
| | LV41 | | Light Vehicle | 2008 Mazda BT50 DX S947 AHC | | 1 | ea | 1 | $19,706 | 3 | $9,853 |
| | EE00001 | | Light Vehicle | Ute Canopy and Canvas Covering | | 1 | ea | 1 | $3,200 | 3 | $1,600 |
| | LV04 | | Light Vehicle | Toyota Prado - XOA-296 | | 1 | ea | 1 | $19,694 | 3 | $9,847 |
| | LV22 | | Light Vehicle | Toyota Hilux 4x4 - XPN-589 | | 1 | ea | 1 | $15,517 | 3 | $7,758 |
| | LV46 | | Light Vehicle | Holden Colorado Single Cab Ute | | 1 | ea | 1 | $19,732 | 2 | $15,786 |
| | LV48 | | Light Vehicle | Toyota Hilux 2011 Xtra Cab | | 1 | ea | 1 | $22,432 | 2 | $17,946 |
| | LV50 | | Light Vehicle | Toyota Hilux DCab 2011 S328BBO | | 1 | ea | 1 | $27,575 | 2 | $22,060 |
| | LV51 | | Light Vehicle | Holden 2010 Colarado S052BCA | | 1 | ea | 1 | $20,500 | 2 | $16,400 |
| | | | | | | | | | | | **$876,927** |
| | | | | | | | | | **CONDITION BASED MECHANICAL GRAND TOTAL** | | **$7,960,738** |

| ion Rating | Devaluation Factor |
|---|---|
| 0 | 1 |
| 1 | 0.9 |
| 2 | 0.8 |
| 3 | 0.5 |
| 4 | 0.3 |
| 5 | 0.05 |
| 6 | 0 |

# Appendix B - Process Comparison Table

| Item Code | Item Description | Summary | IMAGE based on Image feasibility report Jan.2014 & testwork report Apr.2013 | Muray Zircon based on MT Valuation Rpt Nov.2014 & Battery Limit Due Diligence Rpt Jul.2015 | Additional Comment Oct.2015 |
|---|---|---|---|---|---|
| 1.0 | **Slurry Mining Unit (SMU)** | See individual items | Require 450 tph;<br>Module needs to be easily relocated. | Operated at a max of 600 tph.<br>Skid mounted and easily mobilised. Easy to disassemble and relocate (electrical and piping can also be easily disconnected and reconnected) | |
| 1.2 | SMU Scrubber | Absent from MZ plant, will require to purchase new if Image continue to deal with slimes in this way. | Used to provide extended washing of the feed material that contains clay and agglomerates. This will assist in liberating valuable HM. | MZ opened up the trommel aperture to 25 x 34mm to allow a proportion of clay balls to be pumped to the PCP. | Image and MZ have two different concepts towards SMU. Image using scrubber to clean and break up any clay ball which may contain valuable HM particles. Then using trommel to separate +4mm o/s which from testwork doesn't contains much valuable material.<br><br>MZ's SMU trommel has scrubbing function built-in. It is purely for removing large rock at +25mm. Any clay -25mm will be de-agglomerate through the long-run 8km piping system. Then the stream get's another chance of separate at plant trommel.<br><br>If the scrubber is efficient in de-agglomerating, then this would save pumping power. Alternatively, EPMS would recommend to extend the trommel section on the scrubber unit to replace the need of having two units and double handling. The scrubber would be scrubbing at front half and screening out +4mm material at the back half. |
| 1.3 | SMU Trommel | Can be reused. It may need to be fitted with new screen panels to suit new requirement. Current screen panel is 25x34mm aperture, Image will require 4mm aperture. However it is unsure the how much the reduced screen opening area would restrict the throughput of 450 tph.<br><br>Alternatively the plant trommel can be re-used here. | **Image requirement is to handle 450 tph, with approximate 5.7% o/s between scrubber and trommel.**<br><br>**In AML testwork it used 2mm trommel, however in Image feasibility report it stated to use 4mm trommel to remove oversize material.** | Operated at 600 tph with upto 15% clay.<br>Clay balls often resulted due to the use of large aperture screen panels, however these are de-agglomerated during multi-stage pumping from SMU to WCP.<br><br>At the front of the trommel, it contains a small scrubbing section using scrolls. So essentially it performs both duties in one unit.<br><br>The residence time of the short scrubber section may not be suitable for the image ore. | |
| 1.4 | SMU slurry pipeline | The diameter of Image slurry pipeline is unknown, EPMS is unable to complete this comparison.<br><br>If the diameter is the same as required, then it can be reused. | Requires 425 tph.<br><br>Initial distance between SMU and deslime module/PCP is 1.3 km.<br><br>SMU schedule will be relocated on a monthly basis. | Operated at 500 tph.<br><br>slurry pipeline, pump, HV and distribution transformers, and water tanks package can support upto 8 km range.<br><br>SMU schedule was to be relocated 1-2 week basis; however it has been fixed at the edge of the pit and fed from a ROM pad using FEL and dozer, excavator arrangement. This has improved operation efficiency, and reduced movement frequency to 3 month basis. | The slurry pipeline for Image was initially 1.3 km.<br>Although the length may not be an issue, the diameter of pipe may not be suitable. It is expected that MZ has larger diameter pipe than Image due to throughput difference. If to use the existing MZ pipe, additional process water may be required to dilute the slurry and prevent solids settling. Alternatively, small diameter pipe can be newly purchased. |
| | | | | | |
| 2.0 | **Deslime Module** | See individual items | Requires 425 tph;<br>Module needs to be easily relocated based on feasibility study requirements. | Operate at 500 tph;<br>Not mobile. Fixed to the rest of PCP | In the Image proposal moving deslime and PCP module closer to SMU will conserve overall pumping power as the rougher rejects are pumped back to the mine void <1.3km |
| 2.1 | Plant trommel | Although not required, may still be useful as a replacement for SMU trommel. | For Image, only one trommel is required inside SMU. The plant trommel is not required as the study flowsheet excluded screening at the PCP. | WCP Trommel O/S currently setup to be dumped straight into a O/S bunker next to the trommel module, and be emptied out using FEL. | The MZ plant trommel (500 tph @ 4mm) is suitable given the throughput and screen aperture with Image (450 tph @ 4 mm). Although it is not required on the Image flowsheet, it maybe a method to deal with the clay washing. |
| 2.2 | Deslime cyclone circuit | Can be reused, if equipment condition allows. MZ unit has sufficient design capacity to achieve Image duty. | Require to be fed at 424.3 tph. Image has select a bank of single stage cyclones. Cyclone U/F feed rougher spiral. O/F feeds slimes thickener. | Operated at 500 tph. Two stage of cyclones. Primary and secondary DC U/F combined as rougher spiral feed. Primary DC O/F feeds to secondary DC through pump hopper set. Secondary O/F feeds thickener together with product cyclone O/F. | The top size of deslime cyclone are the same at 4mm. Although Image requires single stage deslime, MZ's two stage deslime would maybe more desirable due to large slime presence. It is recommend to keep two stage deslime circuit, and Image's future testwork should verify and adapt to it accordingly. |
| 2.3 | Rougher spirals feed CD tank | The retention time of MZ unit is approximately 10 minutes.<br>As the retention time can satisfy the requirement , then it can be reused. | Requires 350 tph;<br>and 20 min retention time. | Operate at 422 tph;<br>CD tank used to hold rougher spiral feed for density control and maintaining constant feed rate. | The MZ unit will be able to handle Image requirement. |

| Item Code | Item Description | Summary | IMAGE based on Image feasibility report Jan.2014 & testwork report Apr.2013 | Muray Zircon based on MT Valuation Rpt Nov.2014 & Battery Limit Due Diligence Rpt Jul.2015 | Additional Comment Oct.2015 |
|---|---|---|---|---|---|
| 2.4 | Slimes transfer piping system | If the Image de slimes module is mobile and located near the SMU Require additional pipe and l pump power.<br><br>Existing pipe and hopper maybe reused. | Requires 74.3 tph.<br>At beginning, pipe length would not be significant, thus MZ piping would be sufficient. However, as mining face advance, the pipe maybe 1.3 km (Mining face 1.3 km to PCP, and 2.6 km to SCP) | Operated at 77 tph.<br>MZ slime pipe only allows from only one end of WCP to the other end less than 100m. | Although two slimes pipeline would be similar in diameter, but the length would be very different a the deslime module moves away from the PCP. The hoppers can be reused, the pumps would be different.<br><br>EPMS |
| 2.5 | SCP feed piping system | The diameter of pipeline are unknown, EPMS is unable to complete this comparison.<br>The hopper can be reused, is condition allows.<br>Pump may need new replacement. | Requires 80 tph.<br>At beginning, pipe length would not be significant, thus MZ piping would be sufficient. However, as mining face advance, the pipe maybe 1.3 km (Mining face 1.3 km to PCP, and 2.6 km to SCP) | Operated at 116 tph.<br>MZ slime pipe only allows from only one end of WCP to the other end less than 100m. | Without more detail pump/pipe information, the comparison couldn't be made.<br>Diameter of pipeline need to be the same to be reused.<br>SCP feed hopper can be reused as the throughput are similar.<br>Pump will need to be replace, due to distance variation. |
| | | | | | |
| 3.0 | **Primary Concentrator Plant (PCP)** | See individual items | Requires 350 tph;<br>Module needs to be easily relocated based on feasibility study requirements. | Operated at 422 tph;<br>Fixed, not mobile | Due to the change in the rougher spirals selection, the PCP comparison can only be done on existing flow information provided by Image. Please keep in mind, if MT HC1 spirals are used instead of MG6.3 (which previous Image AML testwork based on), all subsequent flow information would be altered. Future testwork will need to be done to reflect this change. |
| 3.1 | Rougher spirals | The MZ Rougher spirals are HC1 where as the Image testwork recommneded MG6.3 At an optimum feed rate (2.8 tph), the current number of HC1 starts units will not be sufficient at the required efficiency.<br>The associated pump and hopper are adequately sized.<br>The launders in poor condition, need to be replacd. | Requires 350 tph;<br>Initially AML proposed MG6.3 spirals at 2.0 tph per start.<br>Later AML tested HC1 to perform rougher duty at 4.1 tph, however slightly better results are achieved at 2.8 tph per start. For 350 tph, (based on MZ plant 96 starts) the fee drate will be 3.6 tph. Additional HC1 spirals could be obtained from the redundant tails scav spirals. | Operated at 422 tph;<br>MT HC1, 4 banks, 6 spirals per bank, 4 starts per stick (total 96 starts), equivalent to 4.4 tph per start feed rate. | MZ's HC1 Rough spirals do not have sufficient capacity to run at an opimum 2.8tph. Through AML's testwork and Battery Limits review, it is identified that HC1 can be operated to perform rougher duty with some loss of effieiency.<br>If Image willing to lose a bit performance, then the current MZ rougher spirals would be sufficient to perform the required duty.<br>If Image would aim to increase the rougher spiral performance, then additional HC1 units would be required to compensate the drop in feed rate per start.<br>There are extra HC1 spiral readily available from tails scav spiral circuit which will be made redundant in Image's flowsheet. |
| 3.2 | Mids scav spirals | No testwork has been done on the suitability when using MT plant for Image's requirement. Need to more testwork and investigation | Requires at ??? tph;<br>MG6.3 | Operated at 196 tph;<br>MT MG4.4, 4 banks, 12 spirals per bank, 3 starts per stick (total 144 starts), equivalent to 1.36 tph per start feed rate . | Without Image's detailed mass balance, it is difficult to estimate the required throughput for the mid scav circuit.<br>However with the change of substituting HC1 with MG6.3 as rougher, this would have alter the existing mass balance for the streams distribution on cons, mids and tails. Future testing would need to be done. |
| 3.3 | tails scav spirals | No tails scav spirals in the Image flowsheet however, the spirals, pumps and hoppers could be used as a more suitable replacement of the rougher spirals duty for Image's requirement. | Module 21C-3 containing the tails scav spirals may be better utilised as the rougher stage. | Operated at 350 tph<br>MT HC1, 3 banks, 10 spirals per bank, 4 starts per stick (total 120 starts), equivalent to 2.9 tph per start feed rate . | Based on AML's finding, it is not necessary to process the rougher tails material in a tails scav spirals, as the levels of economic minerals in the rougher tailings were low.<br><br>However, the current tails scav would be very suitable to be used as Image's rougher spiral circuit under reduced feed rate scenario. |
| | | | | | |

| Item Code | Item Description | Summary | IMAGE based on Image feasibility report Jan.2014 & testwork report Apr.2013 | Muray Zircon based on MT Valuation Rpt Nov.2014 & Battery Limit Due Diligence Rpt Jul.2015 | Additional Comment Oct.2015 |
|---|---|---|---|---|---|
| 4.0 | Secondary Concentrator Plant (SCP) | See individual items | Requires 80 tph;<br>Slimes thickener feed 74.3 tph<br>Fixed | Operated at 116 tph;<br>Slimes thickener feed 77 tph<br>Fixed | Due to the change carried forth from the rougher spirals selection, the SCP comparison can only be done on existing flow information provided by Image. IF MT HC1 spirals are used instead of MG6.3 (which previous Image AML testwork based on), all subsequent flow information would be altered. Future testwork will need to be done to reflect this change. |
| 4.1 | cleaner spirals | No testwork has been done on the suitability when using MZ plant for Image's requirement. Need to more testwork and investigation | Requires at 80 tph,<br>HG10 | Operated at 116 tph,<br>MT HG6.3, 2 banks, 12 spirals per bank, 3 starts per stick (total 72 starts), equivalent to 1.6 tph per start feed rate . | With two different type of spirals proposed, this may or maynot be an issue.<br>In terms of throughput (put eq spec aside), MZ cleaner spiral circuit would have 30% spare capacity to handle Image's requirement.<br>If equipment conditions and process condition allows then, these spirals and all associated pumps and hoppers could be reused.<br>Due to the rougher spiral selection, this may or maynot be still suitable. Future testing would need to be done. |
| 4.2 | recleaner spirals | No testwork has been done on the suitability when using MT plant for Image's requirement. Need to more testwork and investigation | Requires at ?? tph,<br>HG10 | Operated at 32 tph,<br>MT HG10, 1 banks, 8 spirals per bank, 3 starts per stick (total 24 starts), equivalent to 1.1 tph per start feed rate . | Without Image's detailed mass balance, it is difficult to estimate the required throughput for the recleaner circuit.<br>However with the same type of spirals has been proposed, so if the throughput is matching and equipment condition allows then, these spirals and all associated pumps and hoppers could be reused.<br>Due to the rougher spiral selection, this may or maynot be still suitable. Future testing would need to be done. |
| 4.3 | final cleaner spirals | No testwork has been done on the suitability when using MZ plant for Image's requirement. Need to more testwork and investigation | - | Operated at 20 tph,<br>MT HG10, 1 banks, 6 spirals per bank, 3 starts per stick (total 18 starts), equivalent to 1.3 tph per start feed rate . | This final cleaner circuit was not included in Image's flowsheet. However, due to the change in rougher spirals selection, this may or may not be included.<br><br>Future testwork will need to be done to reflect this change. |
| 4.4 | Attritioners | Require new | Requires and absent from MZ. Estimated residence time of 15 minutes. 10 g/t of attritioning aid would be added | N/A | Attritioner cells proposed for Image would be able to remove coating on the HM. Cons from recleaner spirals will be pumped to Attritioner cells, where attritioning aids and water will be added. |
| 4.5 | Up-Current Classifier UCC | Require new | Requires and absent from MZ. | N/A | The discharge from attritioner cells would be pumped to UCC. UCC O/F feeds the UCC O/F Scav Spirals. UCC U/F sent to product handling. |
| 4.6 | UCC O/F Scav Spirals | No testwork has been done on the suitability when using MT plant for Image's requirement. Need to more testwork and investigation | HG10, maybe reuse the final cleaner spirals from MZ | N/A, but can reuse final cleaner spirals with some modification. | O/F scav spirals are here to scav the remaining HMC from UCC O/F. Spiral cons join UCC U/F to form the final HMC product. Spiral tails joins rougher tails and middling tails to for the tailing stream which is sent to tails handling / tailings dewatering cyclones. |
| 4.7 | Slimes Thickener | Due to the poor condition of existing tailings thickener at MZ, Image will need to purchase new fit-for-purpose thickener with different design.<br>New floc package would be supplied by selected vendor. | 27m diameter Outotec high rate slimes thickener with supaflo feed well design has been proposed. Thickener U/F is at approx. 31.6% | The 40 m in-ground tailings thickener was designed to treat 1850 m3 of slurry with ~4.0% solids. This in theory is more than enough to service the requirement for Image plant. Thickener O/F is recycled as process water, thickener U/F is send to tails handling. However, it has been highlighted by Battery limits, the suitability is unknown and will require further testing to confirm the THK U/F from 40m on Image application would still be suitable for pumping. | Due to the poor condition and the design of the current thickener (shell, rack and feed well) on site. It is not recommend to reuse the existing MZ one. In light of this result, EPMS recommend to redesign the tailings thickener using the actual mass and water balance numbers from Image flowsheet.<br>The floc plant is normally a vendor supplier item, it is of little use to relocate the existing one. The most likely case would be the selected Image floc vendor would supply their own floc package. |

| Item Code | Item Description | Summary | IMAGE based on Image feasibility report Jan.2014 & testwork report Apr.2013 | Muray Zircon based on MT Valuation Rpt Nov.2014 & Battery Limit Due Diligence Rpt Jul.2015 | Additional Comment Oct.2015 |
|---|---|---|---|---|---|
| 5.0 | Tailings Handling | See individual items | PCP coarse tailings @ 270 tph,<br>SCP coarse tailings @ 49.5 tph,<br>Slimes tailings @ 74.3 tph | WCP coarse tailings @ 406 tph,<br>Slimes tailings @ 77 tph | |
| 5.1 | Coarse tailings | Require to purchase new dewatering cyclone stacker, the existing dewatering cyclones at MZ may be reuse, if condition allows. | similar to MZ, coarse tailings from PCP and SCP are dewatered using dewatering cyclones. Key difference is that the cyclones are installed on a stacker, at the mining void. Its O/F straight to process water pond instead of thickener. | Final plant coarse tailings are dewatered using dewatering cyclones inside module 21E of the PCP. Cyclone O/F sends to thickener. Cyclone U/F together with Thickener U/F are combined and pumped to ing void at a single point discharge. No additional cyclone stacker. | The dewatering cyclones from MZ treat a combined coarse tails of 406 tph. Image has a combined coarse tails of 320 tph. If MZ dewatering cyclones are used, then there will be 20% spare capacity. |
| 5.2 | Coarse tailing pipe | The details of tailing piping is insufficient for Image plant, EPMS is unable to complete this comparison. | - | - | Initial estimate would be need to redesign a new pumping system to over the 20% drop in through put which would mean smaller pipe diameter, smaller pumps.<br>One question would be whether Image would combine SCP with PCP tails at PCP to form a+F38 single stream. |
| 5.3 | Tails Handling - slimes tailings | Require to construct new paste cell, and new slimes thickener U/F pumping system | Slimes tailings (thickener U/F) is pumped at 31.6% solids to conventional solar paste cell to dry. Surplus water from the cells will be decanted via manually operated weir boxes and recirculated to the<br>process water pond. | Slimes tailings (thickener U/F) is joined with Dewatering cyclone to be filled in ing void. | Slimes solar paste cells are new addition to Image plant. There was no separate slimes thickener U/F pumping system in MZ plant, this will need to be newly designed and newly purchased. |
| | | | | | |
| 6.0 | Product Handling | | - | final plant HMC product are dewatered using dewatering cyclones. Cyclone O/F sends back to Cleaner spiral feed sump as process water addition. Cyclone U/F is deposited onto HMC stockpile. | |


Australia • Canada • Indonesia • Russia
Singapore • South Africa • United Kingdom

**csaglobal.com**