

31 March 2021

## 102 MILLION TONNES INAUGURAL DREDGE MINING MINERAL RESOURCES ESTIMATE FOR BIDAMINNA MINERAL SANDS PROJECT

### Highlights:

- > 102 million tonnes at 2.2% total heavy minerals ("HM")
- > High-value mineral assemblage (as % of HM) with:
  - 36% leucoxene (70-95% TiO<sub>2</sub>)
  - 5% zircon (premium grade)
  - 4% rutile (95% TiO<sub>2</sub>) and
  - 48% ilmenite (50-70% TiO<sub>2</sub>)
- > 93% valuable heavy mineral (VHM) assemblage in HM
- > Very low slimes (3.3%) and oversize (2.2%)
- > Low strip ratio
- > Mineralisation below water table and **amenable to lower-cost dredge mining**
- > High TiO<sub>2</sub> recoveries of 92% in wet process and 99% in dry separation

**Image Resources NL (ASX: IMA) ("Image" or "the Company")** is pleased to announce an **inaugural dredge mining Mineral Resources estimate** for the Company's **Bidaminna Minerals Sand Project** located 100 km north of Perth in the **North Perth Basin**.

Optiro Pty Ltd ("**Optiro**") has completed an inaugural dredge mining Mineral Resource estimate for Bidaminna that has been classified and reported in accordance with the guidelines of the **JORC Code** (2012). When compared to the 1992 historic Mineral Resource estimate for Bidaminna as a dry mining prospect, the total tonnes of Mineral Resources have more than doubled from 44.6 million to 102 million tonnes, with substantially increased higher-value leucoxene and rutile content, albeit at lower total HM grade as detailed below.

A summary of the Mineral Resource estimate by Optiro for the Bidaminna deposit as at 12 March 2021, reported at a cut-off grade of 0.5% total HM as a dredge mining prospect, is presented in Table 1. The previously reported historic Mineral Resources estimate as a dry mining prospect, at a cut-off grade of 2.0% total HM is shown in Table 2. Optiro's executive summary is presented in Schedule 1.

The interpreted strandline mineralisation for this Mineral Resources estimate covers a strike length of 9.5 km, with mineralisation open to the north (refer Figure 1). Currently identified mineralisation consists of two strandlines, stacked one on top of the other. The upper strandline ranges in width from 90 to 345 metres and has an average thickness of 11.7 metres. The lower strandline ranges in width from 150 to 650 metres and has an average thickness of 9.1 metres. Depth of mineralisation ranges from as shallow as 12 metres at the top of the upper strandline, to 66 metres at the bottom of the lower strandline. In some areas the two strands converge and in other areas they are separated by low grade or barren inter-burden.

	Million Total Slimos Oversize		% of total heavy mineral						
Classification	tonnes	HM %	%	%	VHM	Zircon	Rutile	Leucoxene	Ilmenite
Measured	-	-	-	-	-	-	-	-	-
Indicated	17	3.2	3.6	1.4	93	5.0	5.1	30	53
Inferred	84	2.0	3.3	2.4	94	5.1	4.2	38	47
Total	102	2.2	3.3	2.2	93	5.1	4.4	36	48

#### Table 1. 2021 Bidaminna Dredge Mining Mineral Resources summary reported above a 0.5% total HM cut-off grade

# Table 2. Historic 1992 Bidaminna Dry Mining Mineral Resources summary<br/>reported above a 2.0% total HM cut-off grade

	Million Total Slimes Oversize		% of total heavy mineral						
Classification	tonnes	HM %	%	%	νнм	Zircon	Rutile	Leucoxene	Ilmenite
Measured	-	-	-	-	-	-	-	-	-
Indicated	-	-	-	-	-	-	-	-	-
Inferred	45	3.0	3.6	-	97	5.5	1.0	7.2	83
Total	45	3.0	3.6	-	97	5.5	1.0	7.2	83

The principal reason for the substantial increase in Mineral Resource tonnes reported in 2021 are:

- The inclusion of additional drilling, compositing and analysis conducted by Image in 2017-2019.
- Incorporation of a **lower cut-off grade applicable to lower cost dredge mining** (0.5% total HM for dredge mining versus 2.0% total HM for dry mining).

# Mineral Recovery Testwork

Initial mineral recovery testwork was conducted by Allied Mineral Laboratories ("AML") on a 100 kg composite sample derived from exploration drill samples representing a blend of the upper and lower mineralised strandlines across two drill lines in the northern half of the deposit as shown on Figure 1.

Mineral recovery test results confirmed that the medium coarseness of the mineralisation ( $D_{50}$  of 100-110 micron), low slimes content (<4%) and absence of particle agglomerations, resulted in high mineral recoveries of 92% of contained TiO<sub>2</sub> and 95% of contained zircon from simple wet separation processing using standard spirals.

Follow-on dry separation testing to achieve final products also indicated efficient separation and high recoveries of 99% of TiO<sub>2</sub> minerals and recovery of greater than 70% of zircon as premium grade at >66%  $ZrO_2$ +HfO<sub>2</sub>. The TiO<sub>2</sub> minerals were further separated to produce ilmenite (72% of mass at 58% TiO<sub>2</sub>), low-grade leucoxene (20% of mass at 66% TiO<sub>2</sub>) and high-grade leucoxene (7% of mass at 83% TiO<sub>2</sub>).

It is important to point out that testing conducted by AML was the first separation testwork conducted on Bidaminna mineralisation and therefore it is considered initial or 'sighter' testwork. That is, initial test equipment settings were for general mineral sands samples, and therefore without the benefit of any optimisation settings that come from the review of previous test results. AML's conclusions were that results will likely be improved through optimisation testing. It is also important to state that these test results should not be considered representative of the entire area of mineralisation covered by the Mineral Resource estimate, as the initial composite sample collected was likely not representative of the entire area. Future testwork will be conducted on composite samples designed to be representative of areas of mineralisation such as, for example, the first three (3) years of potential future production.



Figure 1: Bidaminna Project Mineral Resource area and drillhole locations

#### Potential Future Development

The Bidaminna project is located on crown land across two exploration tenements. The northern portion of mineralisation (roughly half), which is open to the north, is located on E70/2844 and is 100%-owned by Image. The southern portion of Bidaminna mineralisation is located on E70/3298 and is 90%-owned by Image.

The focus on Bidaminna continues to be as a potential future mine development centre that would operate as a stand-alone production centre, operated in parallel with existing dry mining operations. Dry mining is currently being conducted at Boonanarring, but with planning in place for relocating mining and processing to the Atlas Project area as early as in the December quarter 2022.

Depending on the progress and positivity of Bidaminna feasibility studies, project economics, access approvals, all necessary permitting for construction and mine operations, and project funding, the development timeline could be as little as three years following initial feasibility results.

#### Next Steps

Next steps include incorporating this Mineral Resources estimate with initial scoping study work conducted by Mineral Technologies and later with pre-feasibility study work currently being planned. A third step would be a definitive feasibility study.

Additional drilling, composite sampling and mineral assemblage analysis are required and will serve to support an update of Mineral Resources and improve confidence for definition into Indicated and Measured categories. Further mineral recovery testing and final product quality assessments will be used to support an Ore Reserve estimate and feasibility studies.

#### Dredge Mining Perspective

Dredge mining of mineral sands is generally considered a lower cost mining method and typically operates at a higher economy of scale than dry mining operations. Dry mining typically operates at 500 tonnes per hour (tph) (such as at Boonanarring) to 1,200 tph, or 3.5 to 9 million tonnes of ore per annum. Whereas typical dredge mining operations might range from 1,200 tph to 2,000 tph or 9 to 15 million tonnes of ore per annum. For perspective, a dredge mining operation on the lower end of the scale at 1,200 tph would require an Ore Reserve of 90-100 million tonnes to achieve 10 year mine-life.

#### Image Resources Background Information

Image is Australian's newest mineral sands mining company, operating open-cut mining and ore processing facilities at its 100%-owned, high-grade, zircon-rich Boonanarring Mineral Sands Project located 80km north of Perth, Western Australia, in the infrastructure-rich North Perth Basin. Boonanarring is arguably one of the highest grade, zircon-rich, mineral sands projects in Australia. The project was constructed and commissioned on-time and on-budget in 2018 and production of HMC ramped-up to exceed name-plate capacity in only the second month of operation (January 2019).

Image has now completed two full years of successful operations with performance meeting or beating market guidance ranges in all categories. The Company is focused on maintaining its strong operational and health, safety and environmental performance and has prioritised the identification of new Mineral Resources and Ore Reserves, to extend the cumulative mine life of Ore Reserves, while investigating development of a second operating centre in parallel with current operations.

#### This document is authorised for release to the market by:

Patrick Mutz Managing Director +61 8 9485 2410 info@imageres.com.au www.imageres.com.au

#### Forward looking statements

Certain statements made during or in connection with this communication, including, without limitation, those concerning the economic outlook for the mining industry, expectations regarding prices, exploration or development costs and other operating results, growth prospects and the outlook of Image's operations contain or comprise certain forward-looking statements regarding Image's operations, economic performance and financial condition. Although Image believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct.

Accordingly, results could differ materially from those set out in the forward looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes that could result from future acquisitions of new exploration properties, the risks and hazards inherent in the mining business (including industrial accidents, environmental hazards or geologically related conditions), changes in the regulatory environment and other government actions, risks inherent in the ownership, exploration and operation of or investment in mining properties, fluctuations in prices and exchange rates and business and operations risks management, as well as generally those additional factors set forth in our periodic filings with ASX. Image undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

#### **COMPETENT PERSONS' STATEMENTS**

The information in this report that relates to the estimation of Mineral Resources is based on information compiled by Mrs Christine Standing, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG). Mrs Standing is a full-time employee of Optiro Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mrs Standing consents to the inclusion in this report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Exploration has been approved by George Sakalidis who is the Head of Exploration of Image Resources NL. George Sakalidis is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. George Sakalidis has given his prior written consent to the inclusion in this report of the Mineral Resources and Ore Reserves statement in the form and context in which it appears.

# Schedule 1

# Bidaminna Heavy Mineral Sands Deposit Mineral Resource Estimate – March 2021

# **EXECUTIVE SUMMARY**

Optiro Pty Ltd (Optiro) has provided assistance to Image Resources NL (Image) with a Mineral Resource estimate for the Bidaminna Heavy Mineral Sands deposit. The Bidaminna deposit is located in the north of the Perth Basin, Western Australia, approximately 120 km north of Perth.

The Bidaminna deposit was drilled by Geopeko in 1990 and an Indicated Mineral Resource of 45 million tonnes with an average grade of 3.0% total heavy minerals (HM) was reported by Geopeko in 1992. This is a historic Mineral Resource estimate and was not reported in accordance with the JORC Code. Image has undertaken drilling at the Bidaminna Project during 2011 to 2019 which included seven lines of drillholes over the main area of the Bidaminna deposit, as defined by the Geopeko drilling.

The Bidaminna mineralisation is hosted by the Guildford and Yoganup Formations. The Guildford Formation is characterised by fluvial and shallow marine sediments and the Yoganup Formation is a buried pro-graded shoreline deposit, with dunes, beach ridge and deltaic facies.

The drill data within the resource area that was used to define the Mineral Resource comprises 234 vertical reverse circulation (aircore) drillholes, for a total of 11,614 m. A total of 4,667 samples, taken over a total of 6,110.5 m, have been assayed and samples were collected by the metre from the cyclone. Total HM, slimes and oversize contents have been determined by screening, weighing and heavy liquid separation. The majority of the holes are on a nominal drill spacing of approximately 40 m across strike on section lines spaced at 400 m along strike.

The mineral assemblage used for the resource estimate data includes information from Geopeko (grain counting data for eleven samples) and from Image (QEMSCAN data from SGS for three samples and Bureau Veritas for seven samples). The mineral assemblage composite samples were collected from 59 drillholes over a total sample length of 647.5 m.

Two strandlines containing heavy mineral concentrations have been identified within the Guildford Formation, at the boundary of shallow marine sediments and terrestrial swale deposits, and within the underlying Yoganup Formation. A nominal cut-off grade of 1% total HM was used to interpret the strandline mineralisation within the Guildford Formation (domain 10) and the Yoganup Formation (domain 20). The interpreted strandline mineralisation within both domains (10 and 20) has a strike length of 9.5 km. Domain 10 ranges in across strike width from 90 m to 345 m and domain 20 ranges in width from 150 m to 650 m. The top of domain 10 has a vertical depth of 12 m to 43 m, a maximum depth of 46 m and an average thickness of 11.7 m. The top of domain 20 has a vertical depth of 36 m to 60 m, a maximum depth of 66 m and an average thickness of 9.1 m. The resource model includes grade estimates for sediments surrounding the mineralised strandlines within the Guildford and Yoganup Formations.

The data and mineralisation interpretations were rotated by 30° clockwise, to align the block model with the strike of the interpreted mineralisation. The resource model was constructed using a parent block size of 10 mE by 50 mN on 1 m benches; the parent blocks were allowed to sub-cell down to 2.5 mE by 12.5 mN by 0.25 mRL to more accurately represent the geometry and volumes of the geological and mineralisation horizons. A soil horizon of 0.25 m was incorporated into the model.

Block grades for total HM were estimated using inverse distance (cubed) and ordinary kriging techniques and slimes and oversize block grades were estimated using ordinary kriging techniques. Topcut grades were applied to the total HM, slimes and oversize data. Block grades were estimated for the mineral assemblage components (ilmenite, rutile, leucoxene and zircon) using inverse distance (cubed) techniques within the strandlines. Block grades for the mineral assemblage components of the lower grade material (domains 200 and 300) that surrounds the mineralised strandlines were assigned to these domains.

Bulk density was determined using a formula supplied by Image. The formula is based upon heavy mineral and slimes percentage concentrations and includes assumptions about void space and mineral densities.

The Mineral Resource has been classified, according to the definitions of the JORC Code (2012), into Indicated and Inferred Mineral Resources. The classification takes into account data quality, data density, geological continuity, grade continuity, confidence in estimation of heavy mineral content and mineral assemblage. Indicated Mineral Resources are defined within the interpreted strandlines and where the majority of the drilling is on a 40 m by 400 m spacing, where recent drilling has been undertaken by Image and where there is mineral assemblage data. Inferred Mineral Resources are defined within areas where data is from historical drilling (1990), where drill sections are up to 700 m apart or where there is limited or no mineral assemblage data. Mineralisation within lower grade material (domains 200 and 300) that surrounds the mineralised strandlines is classified as Inferred.

The Mineral Resource estimate for the Bidaminna Mineral Sands deposit has been reported in Table 3 above a 0.5% total HM cut-off grade. Much of the Bidaminna mineralisation is below the water table and, as such, is being considered for bulk mining by a dredge operation and this cut-off grade was selected by Image based on technical and economic assessment and on comparison with similar deposits currently or recently having been mined. Based on this technical and economic assessment, and taking into consideration the thickness, grades and depth of the deposit, it is considered that the entire Mineral Resource defined at the Bidaminna deposit has a reasonable prospect of eventually being mined. The Mineral Resource includes the mineralisation within the interpreted strandlines and within the sediments surrounding the mineralised strandlines.

Mining factors such as dilution and ore loss have not been applied. Results from initial mineral recovery testwork was conducted by Allied Mineral Laboratories on a 100 kg composite sample have confirmed that the medium coarseness of the mineralisation ( $D_{50}$  of 100-110 micron), low slimes content (<4%) and

absence of particle agglomerations, resulted in high mineral recoveries of 92% of contained TiO<sub>2</sub> and 95% of contained zircon from simple wet separation processing using standard spirals.

Classification	Million	Total HM Slimes Oversiz		Oversize		% of to	tal heavy miner	al
Classification	tonnes	%	%	%	Zircon	Rutile	Leucoxene	Ilmenite
Indicated	17	3.2	3.6	1.4	5.0	5.1	30	53
Inferred	84	2.0	3.3	2.4	5.1	4.2	38	47
Total	102	2.2	3.3	2.2	5.1	4.4	36	48

Table 3 Bidaminna Mineral Resource as at March 2021 reported above a cut-off grade of 0.5% total heavy minerals

Notes: 1.

1. Reported above a cut-off grade of 0.5% total heavy minerals (HM).

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

3. Estimates of the mineral assemblage (zircon, ilmenite, rutile and leucoxene) are presented as percentages of the total HM component of the deposit, as determined by QEMSCAN and grain counting methods. Different rules were used for mineral assemblage data sets but are considered to be generally equivalent to: ilmenite: 50 to 70% TiO<sub>2</sub>; leucoxene: 70 to 95% TiO<sub>2</sub>; rutile: >95% TiO<sub>2</sub>.

4. All tonnages and grades have been rounded to reflect the relative uncertainty of the estimate, thus sum of columns may not equal.

In addition, an Exploration Target been defined to the northwest of the Bidaminna Mineral Resource where the drill lines are 2.6 km apart. This was estimated using the same parameters and estimation methodologies as were used for the Mineral Resource. The Exploration Target, reported above a cut-off grade of 0.5% total HM, comprises 25 to 27 million tonnes with an average grade of 1.8 to 2.2% total heavy minerals, estimated to contain 5 to 6% zircon, 6 to 8% rutile, 15 to 20% leucoxene and 60 to 65% ilmenite. The potential quantity and grade of the Exploration Target is conceptual in nature, as there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

# Appendix A JORC Code Table 1 criteria

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling. These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report.	Sampling of the deposit has been by a vertical reverse- circulation air-core method (RCAC). This is a mineral sands industry-standard drilling technique. For resource definition drilling, duplicate samples were taken at the cone splitter on the rig for QAQC analysis and to assess the repeatability of the samples.
Drilling techniques	Drill type (eg core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc).	All Image RCAC drillholes are drilled vertically using an NQ-sized (76 mm diameter) drill bit. Geopeko RCAC drillholes were vertical and were drilled using either an AQ-sized drill bit or NQ sized drill bit. Water injection is used to convert the sample to a slurry so it can be incrementally sampled by a rotary splitter.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	At the drill site, Image's geologist estimates sample recovery qualitatively (as good, moderate or poor) for each 1 m down hole sampling interval. Specifically, the supervising geologist visually estimates the volume recovered to sample and reject bags based on prior experience as to what constitutes good recovery.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Image's supervising geologist logs the sample reject material at the rig and pans a small sub-sample of the reject, to visually estimate the proportions of sands, heavy mineral (HM) sands, 'slimes' (clays), and oversize (rock chips) in each sample, in a semi- quantitative manner. The geologist also logs colour, grain size, an estimate of induration (a hardness estimate) and sample 'washability' (ease of separation of slimes from sands by manual attrition). To preclude data entry and transcription errors, the logging data is captured into a digital data logger at the rig, which contains pre-set logging codes. No photographs of samples are taken. HMC concentrates are retained. The digital logs are downloaded daily and emailed to Image's head office for data security and compilation into the main database server. Samples visually estimated by the geologist to contain more than 0.5% HM (by weight) are despatched for analysis along with the 1 m intervals above and below

Section 1 Sampling Techniques and Data

		the mineralised interval. Over 99% of the drilling has been logged. The level and detail of logging is of sufficient quality to support Mineral Resource estimates.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	Samples were selected for analysis following visual estimation of the total HM content. Almost 60% of samples were analysed for total HM, slimes and oversize and almost 57% of the samples sent for analysis have been taken over intervals of 1 m. The sample from the internal RC rods is directed to a cyclone and then through a 'rotating-chute' custom- built splitting device. This device allows different fraction splits from the cyclone sample stream to be directed to either 25 cm by 35 cm calico bags (as the laboratory despatch samples) or to large plastic polyweave bags for the sample rejects. The rotary splitter directs ≈10 increments from the stream to the laboratory despatch samples, for a specified sampling interval. Sample tickets with the interval's unique sample ID are placed in each bag. For resource definition drilling, two splits are collected from the rotary splitter into a pre-numbered calico bag (1/8 mass) and pre-numbered polyweave bag (7/8 mass) for each 1 m down hole interval. A selection of the replicate samples are later collected and analysed to quantify field sampling precision, or as samples contributing to potential future mineral assemblage composites. Geopeko reports that samples drilled using NQ sized bits were split at the rig using a circular splitter and that the AQ samples did not require splitting. Image considers the nature, quality and size of the sub-samples collected are consistent with best industry practices of mineral sands explorers in the Perth Basin region
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	Image and Geopeko used industry standard approaches to estimating the contents of total HM, slimes and oversize involving screening to remove oversize, washing slimes from samples and then extracting the heavy minerals from the residual sands using heavy media. Image engaged Western GeoLabs for sample preparation and analysis. Geopeko used Western Geochem Laboratories, now Western GeoLabs. Image inserted standards for drilling undertaken during 2015 to 2020. Both Geopeko and Image collected duplicate samples including field-duplicates of the primary sample, laboratory duplicates at the laboratory sub-sampling stage (post de-sliming) and laboratory re-submission duplicates to the original or alternative laboratories used by Geopeko and/or Image. Analysis of QAQC data for the drilling programmes indicates that it is of moderate to high quality and

		supports Mineral Resource estimation.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Image collected primary data on hard copy logs and also used a data logger. Data from laboratories was provided in digital form and compiled in Microsoft Access databases and spreadsheets. No twinned holes have been drilled. Global comparison of the total HM and slimes data obtained by Image and Geopeko has provided confidence in the Geopeko data. All of the Image composite samples were analysed by QEMSCAN and XRF, which was used to verify the QEMSCAN mineral counts. Historical mineral assemblage data was determined by grain counting. This data has been calibrated with the QEMSCAN data.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	Drillhole collars at Bidaminna have been surveyed using hand-held GPS and RTK DGPS methods, with the latter method deemed most accurate. The collar coordinates and survey ground controls have been tied to the Landgate GOLA database by a registered surveyor. The topographic model for Bidaminna is based on Government topographic DEM. All collars for the Mineral Resource estimate have been adjusted to this topographic model. Data for Bidaminna has been surveyed in MGA Zone 50 GDA94. The Mineral Resource has been estimated in a local grid system based on a two-point transformation.
Data spacing and distribution	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	The nominal drill spacing is approximately 40 m across strike on section lines spaced at 400 m along strike. Samples for HM assemblage determination were composited on intervals according to a combination of grade and geology appropriate to reflect resource estimation domains. A total of 21 mineral assemblage composites (from 647.5 m) from within the mineralised domains were used in the Mineral Resource estimate. The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation procedure and classification applied.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	All drillholes are vertical and intersect sub-horizontal strata. This is appropriate for the orientation of the mineralisation and will not have introduced a bias.
Sample security	The measures taken to ensure sample security.	All samples are collected from site by Image's staff as soon as practicable once drilling is completed and then delivered to Image's locked storage sheds. Image's staff deliver samples to the laboratory and collect heavy mineral floats from the laboratory, which

		are also stored in Image's locked storage. Image considers there is negligible risk of deliberate or accidental contamination of samples. Occasional sample mix-ups are corrected using Images checking and quality control procedures.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	The results and logging have been reviewed internally by Image's senior exploration personnel including checking of masses despatched and delivered, checking standard results, and verification logging of significant intercepts. In 2019 audits were conducted at Western GeoLabs by Image contractors.

# Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The Bidaminna deposit is within Exploration Licences E70/2844 and E70/3298. Image has a 100% interest in each of these licences.
Exploration	Acknowledgment and appraisal of exploration	The Bidaminna deposit was discovered by
done by other	by other parties.	International Nickel Australia Ltd in 1976 and Geopeko
parties		drilled it to resource status in 1990.
Geology	Deposit type, geological setting and style of mineralisation.	Bidaminna is hosted in the Perth Basin, in the Yoganup Formation on the eastern margin of the Swan Coastal Plain. The Yoganup Formation is a buried pro-graded shoreline deposit, with dunes, beach ridge and deltaic facies. This formation lies unconformably over the Lower Cretaceous Leederville Formation and is overlain by the Pleistocene Guildford Formation and Bassendean Sand. The Yoganup Formation consists of unconsolidated poorly sorted sands and gravels, with local interstitial clay and heavy minerals that occur sporadically along the Gingin Scarp, which is interpreted to be an ancient shoreline that was stable during a period of marine regression. The overlying Guildford Formation consists of silty and slightly sandy clay and commonly contains lenses of fine- to coarse-grained, very poorly sorted, conglomeratic and (in places) shelly sand at its base. Two mineralised strandlines have been interpreted using a nominal cut-off grade of 1% total HM. Lower grade mineralisation is present within the sediments of the lower horizon of the Guildford Formation and within the Yoganup Formation.
Drillhole	A summary of all information material to the	Not relevant – Mineral Resource defined. Exploration
information	understanding of the exploration results	results are not being reported for the Mineral
	including a tabulation of the following	Resource area.
	information for all Material drillholes:	

	1	
	easting and northing of the drillhole collar	
	elevation or RL (Reduced Level – elevation	
	above sea level in metres) of the drillhole collar	
	dip and azimuth of the hole	
	down hole length and interception depth	
	hole length.	
Data	In reporting Exploration Results, weighting	Not relevant – Mineral Resource defined. Exploration
aggregation	averaging techniques, maximum and/or	results are not being reported for the Mineral
methods	minimum grade truncations (eg cutting of high	Resource area.
	grades) and cut-off grades are usually Material	There are no metal equivalent values assumptions
	and should be stated.	applied in the Mineral Resource reporting.
	Where aggregate intercepts incorporate short	
	lengths of high grade results and longer lengths	
	of low arade results, the procedure used for such	
	agaregation should be stated and some typical	
	examples of such agaregations should be shown	
	in detail.	
	The assumptions used for any reporting of	
	metal equivalent values should be clearly	
	stated.	
Relationship	These relationships are particularly important	The geometry of the Bidaminna mineralisation is
between	in the reporting of Exploration Results	effectively horizontal and the vertical drillholes used to
mineralisation	If the geometry of the mineralisation with	define the Mineral Resource give the approximate true
widths and	respect to the drillhole angle is known its	thicknesses of mineralisation
intercent	nature should be reported	
lengths	natare snould be reported.	
Diagrams	Appropriate maps and sections and tabulations	Refer to plan in appouncement
Diagrams	of intercents should be included for any	
	significant discovery being reported	
Balanced	Where comprehensive reporting of all	Not relevant – Mineral Resource defined Exploration
reporting	Exploration Results is not practicable	results are not being reported for the Mineral
reporting	representative reporting of both low and high	Resource area
	arades and/or widths should be practiced to	
	avoid misleading reporting of Exploration	
	Results	
Other	Other exploration data, if meaninaful and	Bulk density is reported under "Bulk Density"
substantive	material should be reported including (but not	buik density is reported under buik bensity .
exploration	limited to): aeological observations:	
data	aeophysical survey results: aeochemical survey	
	results: hulk samples – size and method of	
	treatment: metalluraical test results: hulk	
	density aroundwater geotechnical and rock	
	characteristics: notential deleterious or	
	contaminatina substances	
Further work	The nature and scale of planned further work	An infill drilling programme is planned to upgrade the
. artice work	(eq tests for lateral extensions or denth	Inferred Mineral Resources to an Indicated or
	extensions or large-scale sten-out drilling)	Measured classification
	Diagrams clearly highlighting the greas of	Additional composite sampling and mineral
	nossible extensions including the main	assemblage analysis and further mineral recovery
	apploaical interpretations and future drilling	testing and final product quality testing will be used to
1		
	areas provided this information is not	support a feasibility study

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.	The drillhole database is managed by Image. Maintenance of the database includes internal data validation protocols by Image. For the Mineral Resource estimate the drillhole data was extracted directly from the Access drillhole database maintained by Image. Data was further verified and validated by Optiro using mining software (Datamine) validation protocols, and visually in plan and section views.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Mrs Christine Standing (CP for the Mineral Resource estimate) has not visited the Bidaminna deposit. She has visited other mineral sands deposits in the North Perth Basin including Image's Boonanarring deposit during December 2016.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and aeology.	Two stratigraphic (Guildford and Yoganup Formations) units within the deposit area were defined using a combination of total HM, slimes and oversize data and drillhole lithological logs. These units were used in combination with grade criteria (nominal grade cut-off of 1% total HM) to define two mineralised strandlines within the Guildford and Yoganup Formations. There is good confidence in the geological interpretation of the mineralised strandlines.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>Two mineralised strandlines have been interpreted.</li> <li>These both have a strike length of 9.5 km.</li> <li>The upper strandline mineralisation, towards the base of the Guildford Formation, ranges in across strike width from 90 m to 345 m. The top of the upper strandline mineralisation has a vertical depth of 12 m to 43 m, a maximum depth of 46 m and an average thickness of 11.7 m.</li> <li>The lower strandline mineralisation, that is within the Yoganup Formation, ranges in width from 150 m to 650 m. The top of the lower strandline mineralisation has a vertical depth of 36 m to 60 m, a maximum depth of 66 m and an average thickness of 9.1 m.</li> <li>A sandy clay layer at the top of the Guildford Formation was interpreted using geological logging and slimes contents. The lower grade material that surrounds the strandline mineralisation is constrained to below this surface. The interpreted lower grade mineralisation extends from 3 m to 66 m (to the base of the lower mineralised strandline).</li> </ul>
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include	Data analysis and estimation was undertaken by Optiro using Snowden Supervisor and Datamine software. Optiro assessed the robustness of the mineralised strandline domains by critically examining the geological interpretation and by using a variety of measures, including statistical and geostatistical

Section 3	Estimation of	and Repe	orting of	Mineral .	Resources
occuron o	Domination (	and hop	on oning of	- inter our a	1000011000

a description of some stars - ft	analysis. The demoise are constituted as that U
a aescription of computer software and	analysis. The domains are considered geologically
parameters usea.	robust in the context of the resource classification
The availability of check estimates, previous	applied to the estimate.
estimates and/or mine production records and	Drillhole sample data was flagged from the three-
whether the Mineral Resource estimate takes	dimensional interpretation of the mineralised
appropriate account of such data.	horizons.
The assumptions made regarding recovery of	Samples are from intervals of 1 m and 1.5 m, 2 m and
by-products.	3 m. As the majority of samples (68%) within the
Estimation of deleterious elements or other	mineralised strandlines are from intervals of 1 m the
non-arade variables of economic significance	data was composited to 1 m downhole intervals for
(e.a. sulphur for acid mine drainage	resource estimation.
characterisation)	The nominal drill spacing is approximately 40 m across
In the case of block model internalation, the	strike on section lines snaced at 400 m along strike
hlock size in relation to the average sample	with some irregular infill drilling at 20 m to 40 m along
spacing and the sourch amployed	strike and on soctions spaced at 20 m to 600 m
spucing und the search employed.	Strike and on sections spaced at 20 m to 000 m.
Any assumptions bening modelling of selective	Block dimensions of 10 m by 50 m by 1 m were
mining units.	selected from kriging heighbourhood analysis and
Any assumptions about correlation between	reflect the variability of the deposit. Sub-cells to a
variables.	minimum dimension of 2.5 mE by 12.5 mN by 0.25
Description of how the geological	mRL were used to represent volume.
interpretation was used to control the resource	Extrapolation of up to 50 m along strike and
estimates.	approximately half the drill spacing across strike was
Discussion of basis for using or not using grade	used for the interpretation.
cutting or capping.	Total HM grade was estimated using ordinary kriging
The process of validation, the checking process	(OK) and inverse distance cubed (ID <sup>3</sup> ) into parent
used, the comparison of model data to drillhole	blocks of 10 mE by 50 mN by 1 mRL. Slimes and
data, and use of reconciliation data if available.	oversize quantities were estimated using OK into the
	parent blocks.
	Total HM, slimes and oversize were estimated into the
	mineralised strandlines and the surrounding lower
	grade material. Hard boundaries were applied
	between the mineralized strandlines and surrounding
	lower grade sediments. Where assay data was not
	available in the lower grade sediments, visual HM
	estimates were used to constrain the grade
	estimation
	Zircon leucovene rutile and ilmonito porcontagos
	within the HM fraction were estimated using inverse
	distance subod into the parent blacks within the
	minoralized strandlines. Minoral according
	nimeraliseu suranuines. Wineral assemblage
	components were assigned to the lower grade
	material surrounding the mineralised strandlines.
	The majority of the total HM and slimes, total HM and
	oversize, and slimes and oversize data is uncorrelated.
	Correlation coefficients of the mineral assemblage
	data indicate a strong negative relationship between
	ilmenite and leucoxene and a poor negative
	correlation between leucoxene and rutile. The other
	mineral assemblage components are not correlated.
	All variables were estimated separately and
	independently.
	Grade capping was applied to total HM %, slimes %
	and oversize %. The top cut levels were determined
	using a combination of top cut analysis tools. including
	grade histograms, log probability plots and the
	coefficient of variation

	1
	Variogram analysis was undertaken to determine the kriging estimation parameters used for OK estimation of HM, slimes and oversize and the search dimensions used for ID estimation of HM and mineral assemblage components. HM mineralisation continuity was interpreted from variogram analyses. Maximum continuity ranges of 320 m along strike, 28 m across strike and 9.8 m vertical were interpreted for the upper layer of mineralisation and 320 m along strike, 56 m across strike and 5.9 m vertical for the main strandline. Maximum search ranges of 500 m along strike, 50 m across strike and 10 m vertical were interpreted for zircon. These ranges were applied for grades estimation of all of the mineral assemblage components. Kriging neighbourhood analysis was performed in order to determine the block size, sample numbers and discretisation levels. Three estimation passes were used for HM; the first search was based upon the variogram ranges; the second search was double the initial search with reduced sample numbers required for estimation and the third search was expanded to almost complete grade estimation within each of the mineralised domains. Approximately 87% of the total HM block grades were estimated in the first search pass, 12% within the second search pass and the remaining 1% estimated in the third search pass. The total HM, slimes and oversize estimated block model grades were visually validated against the input drillhole data and comparisons were carried out against the declustered drillhole data and by northing, easting and elevation slices. The estimated block model grades for zircon, ilmenite, leucoxene and rutile were visually validated against the input drillhole data and comparisons were carried out against the drillhole data and by northing and easting slices. No production has occurred from the deposit. The Bidaminna deposit was drilled by Geopeko in 1990 and an Indicated Mineral Resource of 44.65 million tonnes with an average grade of 3.02% total HM was reported above a 1% total HM cut-off grade o
	reported above a 1% total HM cut-off grade by Geopeko in 1992. This estimate was constrained by the mineralised strandlines. Comparison of the total 2021 Mineral Resource, within the mineralised strandlines and above a cut-off grade of 1% total HM, with the 1992 Mineral Resource indicates an overall increase of 29% for the tonnage and an increase of 6%
	for the total HM grade. This is in-line with the additional drilling undertaken by Image and extension of the resource area.

Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method	Tonnages are estimated on a dry basis.
	of determination of the moisture content.	
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	The Mineral Resource estimate for the Bidaminna deposit has been reported above a 0.5% total HM cut- off. This cut-off grade was selected by Image based on technical and economic assessment and consideration of a dredge mining operation.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous	Much of the Bidaminna mineralisation is below the water table and, as such, is being considered for bulk mining by a dredge operation. Mining factors such as dilution and ore loss have not been applied.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.	Initial mineral recovery testwork was conducted by Allied Mineral Laboratories on a 100 kg composite sample derived from exploration drill samples representing a blend of the upper and lower mineralised strandlines across two drill lines in the northern half of the deposit. Mineral recovery test results confirmed that the medium coarseness of the mineralisation (D <sub>50</sub> of 100- 110 micron), low slimes content (<4%) and absence of particle agglomerations, resulted in high mineral recoveries of 92% of contained TiO <sub>2</sub> and 95% of contained zircon from simple wet separation processing using standard spirals. Follow-on dry separation testing to achieve final products also indicated efficient separation and high recoveries of 99% of TiO <sub>2</sub> minerals and recovery of greater than 70% of zircon as premium grade at >66% ZrO <sub>2</sub> +HfO <sub>2</sub> . The TiO <sub>2</sub> minerals were further separated to produce ilmenite (72% of mass at 58% TiO <sub>2</sub> ), low- grade leucoxene (20% of mass at 66% TiO <sub>2</sub> ) and high- grade leucoxene (7% of mass at 83% TiO <sub>2</sub> ).
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation.	There are no known significant environmental impediments to the project's viability from the currently available information.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.	A combination of lithology and grades (total HM and slimes) were used to determine the density values for the resource model. Bulk density formulae were developed by Image during 2019 for the Boonanarring deposit (also in the Perth Basin) using bulk density measurements from a geotechnical drilling programme and in-pit density measurements. The formulae were verified and adjusted where required using data obtained at Boonanarring during 2020. These formulae have been

	Discuss assumptions for bulk density estimates	applied at Bidaminna for density estimation.
	used in the evaluation process of the different materials	
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	The estimate has been classified according to the guidelines of the JORC Code (2012), into Indicated and Inferred Resources taking into account data quality, data density, geological continuity, grade continuity and confidence in estimation of heavy mineral content and mineral assemblage. In plan, polygons were used to define zones of different classification within each of the mineralised domains. Indicated Resources are defined within the mineralised strandlines where the majority of the drilling is on a 40 m by 400 m spacing, where recent drilling has been undertaken by Image and where there is mineral assemblage data. Inferred Resources are defined within areas where data is from historical drilling (1990), where drill sections are up to 700 m apart or where there is limited or no mineral assemblage data. The lower grade material that surrounds the strandlines is classified as Inferred.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource has been reviewed internally as part of normal validation processes by Optiro. No external audit or review of the current Mineral Resource has been conducted.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should he compared	The assigned classification of Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate. The confidence levels reflect production volumes on an annual basis. No production has occurred from the deposit.
	with production data, where available.	