

31 March 2023

## Donald Rare Earth and Mineral Sands Project – Phase 1 Project Ore Reserves

---

### HIGHLIGHTS

- **A new Ore Reserve has been estimated for Mining Licence MIN5532, the site of the Phase 1 development of the Donald Rare Earth and Mineral Sands Project. The estimate incorporates the results from recent exploration drilling and Phase 1 mining studies**
  - **The Ore Reserve is an integral part of the Phase 1 project feasibility study which will be released early in Q2 2023**
  - **The Ore Reserve of 309Mt @ 4.4% total heavy minerals (HM) includes a Proved Reserve of 263Mt @ 4.4% HM**
  - **Compared to the previous Ore Reserve for MIN5532:**
    - **heavy mineral content increased by 32% to 13.6Mt with contained zircon increasing by 15% to 2.2Mt**
    - **The contained rare earth minerals monazite and xenotime increased by 71% to 334,500 tonnes (t) reflecting a 25% increase in the monazite content and the addition of 89,700t of xenotime**
  - **Monazite contains the valuable light rare earth elements neodymium and praseodymium and xenotime contains the valuable heavy rare earth elements of dysprosium and terbium**
- 

Astron Corporation Limited (Astron, ASX: ATR) is pleased to announce a new Ore Reserve for Mining Licence MIN5532, which is the site of Phase 1 of the Donald Rare Earth and Mineral Sands Project (Donald or the Donald Project).

The Ore Reserve is a subset of the MIN5532 Mineral Resource which was announced on 1 December 2022. The MIN5532 Mineral Resource represents only 17% of the total Donald Project Resource.

The Donald Project is an advanced, globally significant critical minerals project located 300km north-west of Melbourne in the Wimmera Region of Victoria (see Figure 1).

It comprises the Donald deposit (MIN5532 & RL2002) and the Jackson deposit (RL2003) and has the benefit of a favourably assessed Victorian Environmental Effects Statement (EES), a concluded Federal Environmental Protection and Biodiversity Conservation (EPBC) Licence and a granted Mining Licence (MIN5532).

Given its size as the world's largest zircon project, and one of the largest rare earth projects outside of China by in-situ resource it is proposed that Donald will be developed in a number of phases. Phase 1 is planned to centre on the granted mining licence area of MIN5532.

The Ore Reserve for MIN5532 is 309Mt @ 4.4% heavy mineral (HM) containing 13.6Mt HM. It comprises a Proved Ore Reserve of 263Mt @ 4.4% HM and a Probable Ore Reserve of 46Mt @ 4.1% HM (refer Table 1 and Appendix A). Within the Mining Licence area, there are contained monazite reserves of 245kt and contained xenotime reserves of 90kt.

Based on the proposed Phase 1 annual mine production, the MIN5532 has sufficient Ore Reserves to sustain operations for over 43 years, making it a long-life source of critical minerals.

The Ore Reserve was prepared by AMC Consultants Pty Ltd (AMC), an experienced and prominent mining engineering consultancy with appropriate mineral sands experience and industry knowledge. The Ore Reserve has been classified as Proven, based on Measured Mineral Resources, and Probable, based on Indicated Mineral Resources, taking into account tactical mine scheduling, updated mining design and economic analysis. The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.

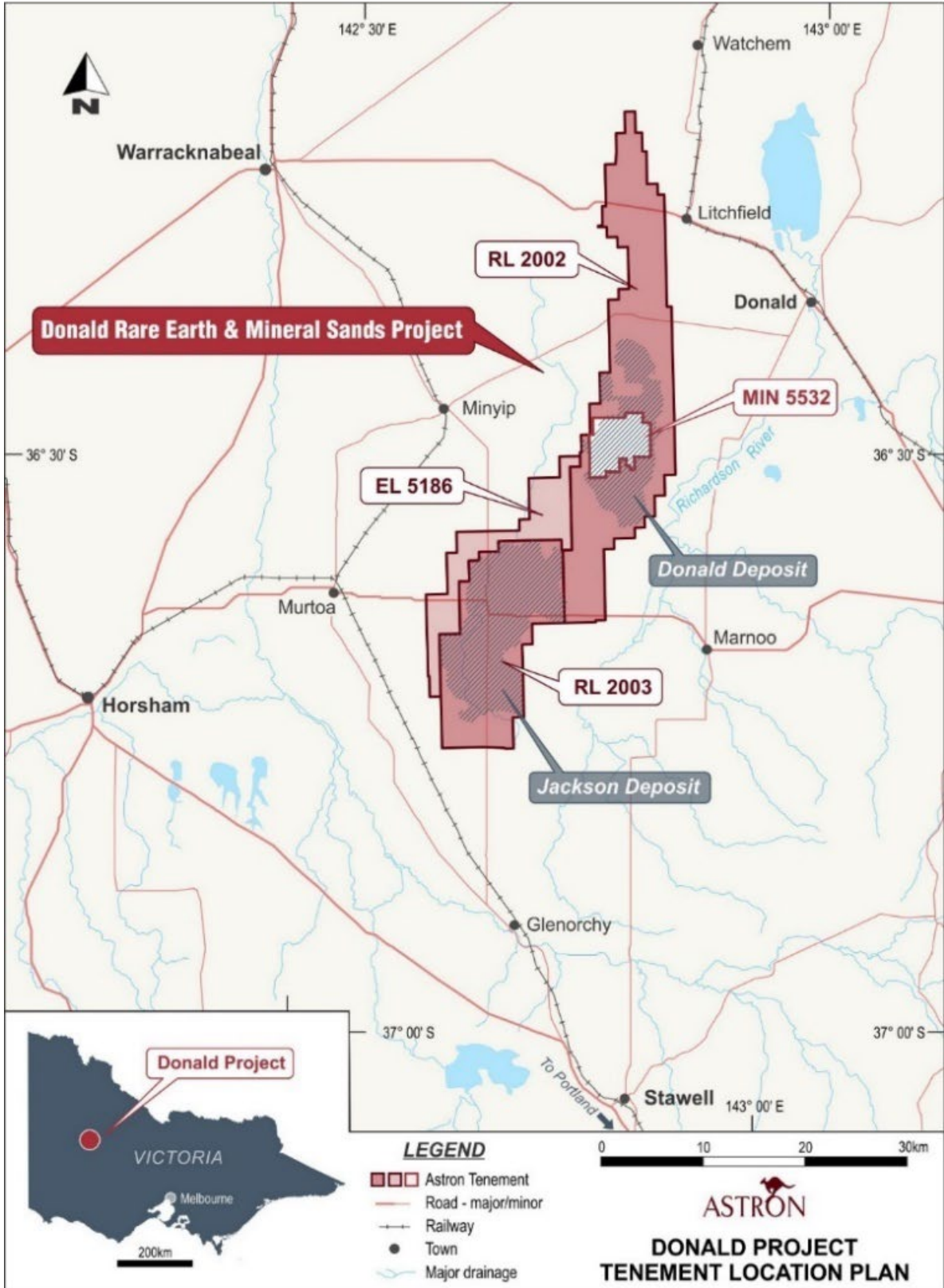


Figure 1: Location of the Donald Project and Mining Licence MIN5532

**Table 1: Donald Deposit MIN5532 – 2023 Ore Reserve**

Classification	Tonnes (Mt)	Total HM %	Slimes %	Oversize %	% of total HM					
					Zircon	Rutile	Ilmenite	Leucoxene	Monazite	Xenotime
Proved	263	4.4	15.4	9.8	16.7	5.5	21.6	25.9	1.8	0.67
Probable	46	4.1	19.7	11.1	15.3	5.5	21.3	20.1	1.8	0.64
<b>Total</b>	<b>309</b>	<b>4.4</b>	<b>16.1</b>	<b>10.0</b>	<b>16.5</b>	<b>5.5</b>	<b>21.6</b>	<b>25.1</b>	<b>1.8</b>	<b>0.66</b>

**Notes:**

1. The ore tonnes have been rounded to the nearest 1Mt and grades have been rounded to two significant figures.
2. The Ore Reserve is based on Indicated and Measured Mineral Resources contained within mine designs above an economic cut-off.
3. A break-even cut-off has been applied defining any material with product values greater than processing cost as Ore.
4. Mining recovery and dilution have been applied to the figures above.
5. The area is wholly within the mining licence (MIN5532).
6. The rutile grades are a combination of rutile and anatase minerals.

**Comparison with Previous Ore Reserve Estimate**

A comparison of the current Ore Reserve estimate for MIN5532 with that of 2021 is shown in Table 2. The key features include:

- Total Ore Reserves increased by 59% to 309Mt
- Total contained heavy mineral increased by 32% to 13.6Mt, including increased valuable heavy mineral contents of:
  - zircon – increased by 15% to 2.2Mt
  - monazite – increased by 25% to 245kt
  - xenotime (which was not previously estimated) – 90kt

**Table 2: Comparison of 2021 and 2023 Ore Reserves within MIN5532**

2023 Ore Reserve within MIN5532										
Classification	Tonnes (Mt)	Total HM %	Slimes %	Oversize %	% of total HM					
					Zircon	Rutile	Ilmenite	Leucoxene	Monazite	Xenotime
Proved	263	4.4	15.4	9.8	16.7	5.5	21.6	25.9	1.8	0.67
Probable	46	4.1	19.7	11.1	15.3	5.5	21.3	20.1	1.8	0.64
<b>Total</b>	<b>309</b>	<b>4.4</b>	<b>16.1</b>	<b>10.0</b>	<b>16.5</b>	<b>5.5</b>	<b>21.6</b>	<b>25.1</b>	<b>1.8</b>	<b>0.66</b>
2021 Ore Reserve within MIN5532										
Classification	Tonnes (Mt)	Total HM %	Slimes %	Oversize %	% of total HM					
					Zircon	Rutile	Ilmenite	Leucoxene	Monazite	Xenotime
Proved	170	5.3	14.2	11.9	18.8	7.1	31.4	22.1	1.9	-
Probable	24	4.9	13.4	12.5	20.2	6.7	33.2	21.3	2.0	-
<b>Total</b>	<b>194</b>	<b>5.3</b>	<b>14.1</b>	<b>12.0</b>	<b>19.0</b>	<b>7.0</b>	<b>31.6</b>	<b>22.0</b>	<b>1.9</b>	<b>-</b>

## Donald Rare Earths & Mineral Sands Project

The Donald Project is a tier-1 rare earth and mineral sands project located in regional Victoria approximately 300 kilometres north-west of Melbourne. Given its resource size, the Donald Project has the potential to become a globally significant, long-life source of rare earth elements (including high value neodymium, praseodymium, dysprosium and terbium), as well as zircon and titanium minerals.

Initially discovered by CRA around 1985, the deposits which underpin the current Donald Project were acquired by Astron Corporation Limited in 2004. In 2016, Astron announced a comprehensive Mineral Resource update encompassing the entire Project area, including Retention Licence areas of RL2002 and RL2003. This work confirmed Donald's position as one of the world's largest undeveloped zircon resources and one of the world's most significant rare earth resources.

During 2022, further drilling and geological delineation were undertaken. The purpose of this work was to quantify the finer 20 to 38µm fraction of the valuable heavy mineral (VHM) component of the deposit and to provide a more detailed analysis of the rare earth minerals (including xenotime) in the portion of the resource contained within MIN5532.

Due to the size of the resource, it is planned that the Donald Project will be developed in a phased manner with consideration to market supply demand characteristics and to maximise capital efficacy. The initial development (Phase 1) is planned for MIN5532 and will involve the production of two concentrate products: a heavy mineral concentrate (HMC) containing zircon and titania minerals and a rare earth element concentrate (REEC) containing the monazite and xenotime minerals.

Astron is well advanced in the completion of a Feasibility Study for the Phase 1 development. The Feasibility Study is expected to be completed in Q2 2023.

## Summary of Ore Reserve Statement and Reporting Criteria

In accordance with ASX Listing Rule Chapter 5.9.1, information material to the reporting of the Donald Ore Reserve estimate update is summarised below. More detail is included in the JORC 2012 Table 1 in Appendix B.

## Material Assumptions and Outcomes of the Ore Reserve Declaration

Phase 1 of The Donald Project is planned for MIN5532, based on a mining rate of 7.5Mtpa and onsite processing into two saleable products: a heavy mineral concentrate (HMC) and a rare earth element concentrate (REEC). The production rates have been estimated to average 285ktpa of HMC and 9ktpa of REEC over the first 5 years of operation of the Phase 1 mine and 250ktpa and 8ktpa respectively over the life of the Phase 1 mine.

The Mineral Resource estimate for MIN5532 of 525Mt @ 4.0% total heavy mineral (THM) is classified as 394Mt Measured, 110Mt Indicated and 20Mt Inferred and provides the geological basis for Phase 1 of the Project. Only Measured (394Mt) and Indicated Mineral Resources (110Mt) within MIN5532 were considered for the Ore Reserve estimate.

Mineral Resources were converted to Ore Reserves based on studies completed as part of the Feasibility Study including detailed block designs and tactical mine scheduling. It recognised the level of confidence in the Mineral Resource estimate and reflected modifying factors such as first principle mining costs and capital costs.

Product prices, grades, recoveries and costs which are incorporated in the Feasibility Study were used to identify economically mineable blocks to be included in the Ore Reserve estimate. The basis of the estimate and related assumptions have been established to a ±10% level accuracy as appropriate for a Feasibility Study:

- Product pricing assumptions for mineral sands products are based on consensus forecast prices provided by TZ Mineral International Pty Ltd (TZMI), in a commissioned mineral sands marketing report (March 2023) and have been adjusted for quality characteristics of Donald

Project products. Downstream processing costs are taken into account in the pricing assumptions applied to the production of HMC.

- Product pricing assumptions for rare earth products are based on forecast prices provided by Adamas Intelligence (February 2023) and take into account the costs of processing REEC products into final products.
- Product specifications and recovery assumptions are based on metallurgical test work results derived from the Company's lab-scale and pilot-scale test work involving test-pit material and on-mine path sonic drill bulk samples.
- Mining cost assumptions have been determined from first principles for the tactical mine schedule and include physical overburden and ore characteristics as well as throughput levels and rehandling requirements. They are based on contract mining using a fleet of excavators, loaders and haul trucks, with operating cost estimates also reflecting factors such as operating hours, productivity levels, mine path physical characteristics and haulage distances.
- Processing cost assumptions were determined from first principles using process flow sheets, with estimated operating costs for each stage of processing based on engineering design, metallurgical test work and expected equipment usage.
- Transport and logistics costs assumptions were sourced from independent consultants based on expected container freight costs from Australia to international markets, inclusive of port handling and ship loading costs for shipment from both Adelaide and Melbourne.
- Other operating costs such as administration, labour, environmental management and general expenses have been developed from first principles based on expected organisational structure and manning levels, operating schedules and rostering requirements, materials requirements, other equipment, communications, IT, consultants and recruitment costs.

Astron has undertaken financial modelling with sensitivity analyses of project economic outcomes to reflect changes in commodity prices, production volumes, operating and capital cost, as well as macroeconomic factors including inflation and foreign exchange rates. The material assumptions used in financial modelling are outlined below in Table 3:

**Table 3: Material economic assumptions used in the Ore Reserve estimate**

Criteria	Assumption (real 2022 terms)
Physical production parameters	First production – H2 2025 Mine life – 43 years Average strip ratio – 1.9:1 Mining equipment – truck and shovel Mining rate – 7.5Mtpa ore
Project timing	Execute Capex – Q2 2024 to H1 2025 First production – H2 2025 Final production - 2068
Ramp-up assumptions	Month 1 – 68%, month 2 onwards 100%
Operating costs	LOM average costs: <ul style="list-style-type: none"> <li>• Direct mining – \$6.50 per bcm of combined ore, overburden and topsoil</li> <li>• Processing – \$2.39 per tonne of ore mined</li> <li>• Other operating costs - \$3.73 per tonne of ore processed</li> <li>• Rehabilitation costs - \$0.12 per tonne of ore mined</li> <li>• Selling costs - \$2.26 per tonne of ore mined</li> </ul>
Escalation	All modelling has been performed on a real basis based assumed product pricing and quoted operating costs
FX Rate	US\$0.70 : A\$1.00
Discount rate	8% real post tax (11% nominal)

Note: the assumptions included above are subject to final completion of the Feasibility Study in early Q2 2023.



The estimated Ore Reserves underpinning the production targets detailed above have been prepared by a Competent Person in accordance with the requirements in Appendix 5A (JORC).

### Criteria used for the Classification of Ore Reserves

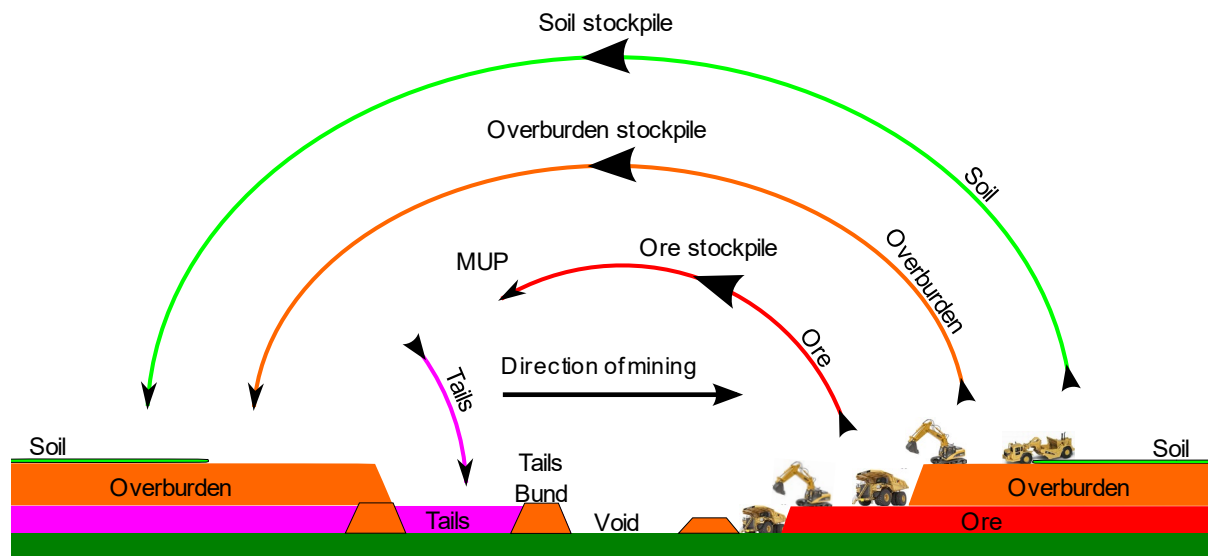
The Ore Reserve is the part of the Mineral Resource that is able to be economically mined using the selected mining methods.

Mineral Resources included within MIN5532 classified as Measured were categorised as Proved Ore Reserves after adjustment for all mining, metallurgical, social, environmental, statutory and economic aspects of the Donald Project.

Mineral Resources included within MIN5532 classified as Indicated were categorised as Probable Ore Reserves after adjustment for all mining, metallurgical, social, environmental, statutory and economic aspects of the Donald Project.

The mineralised orebody is continuous higher-grade strata without pockets of lower grade and therefore no additional dilution of the Mineral Resource model was included.

### Mining method selected and other mining assumptions



**Figure 2: Schematic cross-section of mining method**

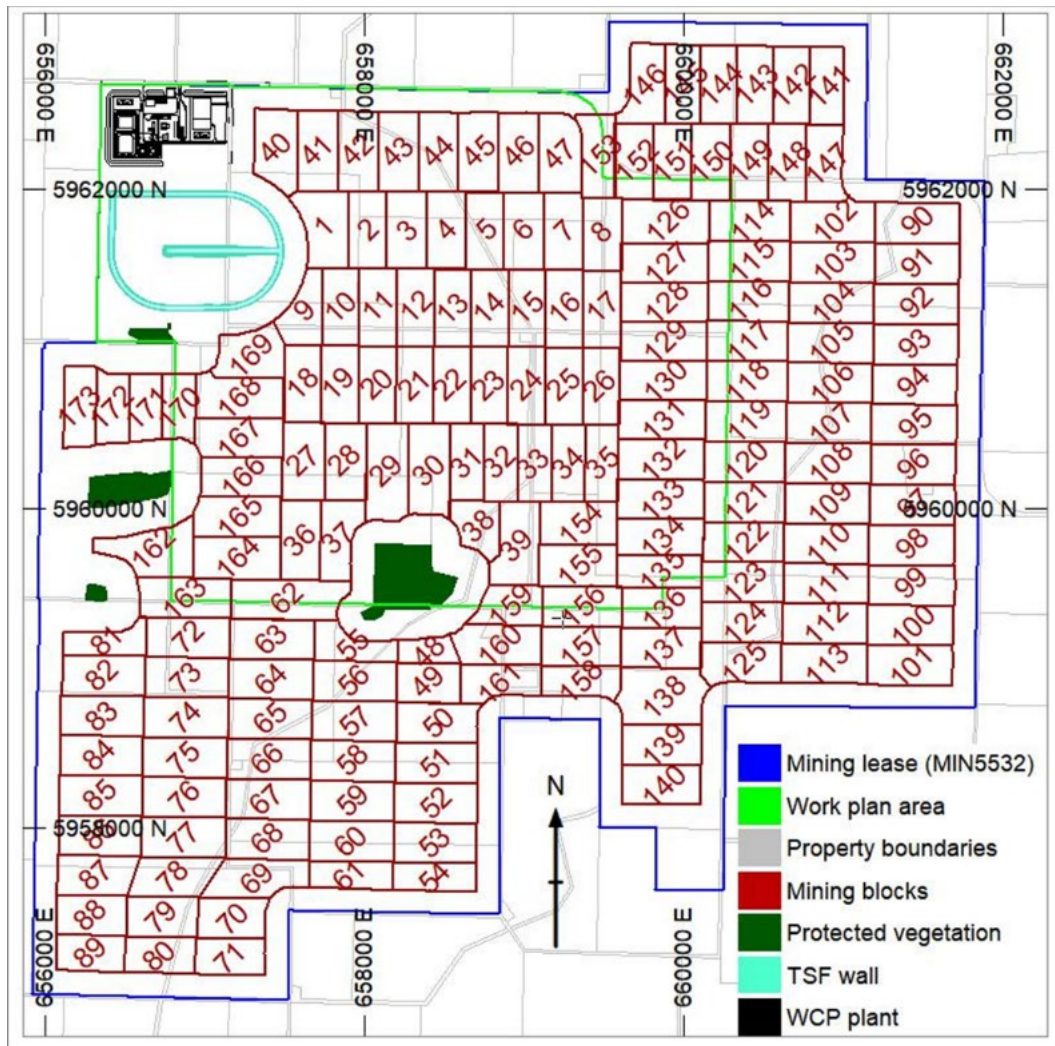
The Donald Project is a WIM-style deposit consisting of a solitary or composite broad, lobate sheet-like body of considerable aerial extent, highly sorted and associated with fine-grained quartz micaceous sand. These deposits are thought to represent accumulations formed below the active wave base in a near shore environment, possibly representing the submarine equivalent of the strand style deposits. The WIM style deposits are typically much larger in tonnage and lower in grade than strand line deposits. WIM-style deposits are known to be free-digging with fine grain characteristics the latter of which has been factored into the processing methodology selected for the Project.

As shown in Figure 2, the Donald Project will utilise an open pit dry mining operation where ore and waste will be mined using excavators and trucks. Run of Mine (ROM) ore will be stockpiled at the Mining Unit Plant (MUP) and fed via front end loader into the MUP where it will be scrubbed, screened, slurried and pumped to the Wet Concentrator Plant (WCP). The MUP is designed to be relocated as it moves along the designated mining path.

Rehandle of ore into the MUP and related earthmoving activities (including clearing and grubbing, removal of topsoil, subsoil, overburden and ore, and construction of access ramps and tails embankments) will be undertaken by a mining contractor.

AMC completed detailed block designs (refer Figure 3), including insitu bunds, constructed bunds, backfilled tails cells and backfilled overburden dumps. This enabled the development of a tactical mine

schedule, inclusive of rehandling and destination scheduling, and with consideration of equipment requirements, such as loading units and haulage. AMC also carried out a Lerchs-Grossman pit optimisation to a feasibility study level of accuracy.



**Figure 3: Mining schedule block sequence**

**Processing method and other processing assumptions, including recovery factors applied and allowances for deleterious elements**

The Donald Project will utilise modern on-site process beneficiation and mineral separation techniques using proven mineral sands processing technology to produce a heavy mineral concentrate (HMC) and a rare earth element concentrate (REEC).

Processing infrastructure for the Donald Project is based on a fit-for-purpose design in accordance with Australian standards and includes the MUP, the WCP and the concentrate upgrade plant (CUP).

Product recoveries used in the estimation of the Ore Reserve were obtained from metallurgical testwork undertaken by Mineral Technologies using an 8.5 tonne bulk sample, sourced from the 2022 Sonic drilling program, which was split into three sections reflecting the planned Phase 1 mine path for mine-year 1, mine-years 2-5, and mine-years 6 and beyond. Each sample was screened and processed through MG-12 spirals to produce a combined rare earth and heavy mineral concentrate. This combined mineral concentrate sample was subsequently processed, in accordance with the process flowsheet, through froth flotation to produce a heavy mineral concentrate (HMC) sample containing zircon and titanium minerals, and a REEC sample, containing xenotime and monazite.

This test work confirmed the Donald Project processing approach. Recoveries of the rare earth minerals (using CeO<sub>2</sub> as a tracer) through the WCP and CUP were 94.5% and 96.5% respectively. Improved recoveries were achieved through better attritioning which will be incorporated into plant designs. Zircon (ZrO<sub>2</sub>) recoveries through the WCP and CUP were 94.3% and 99.0% respectively, with titanium dioxide (TiO<sub>2</sub>) recoveries of 70.7% and 99.2% respectively.

Further benefits of bulk sample testing were:

- Resolving geological data and the block model so that component grades and recoveries can be directly linked with mine schedules to provide greater visibility of anticipated production volumes and grades
- Streamlining the process flowsheet and reduction of capital cost by:
  - Optimised in-pit scrubbing and trommel sizing which is linked to pumping requirements, intermediate screening and front-end spiral efficiency
  - Interstage fine screening ahead of final spiral recleaning
  - Production of rare earth concentrate direct from flotation with elimination of gravity table requirements
- Confirmation of overall flowsheet performance for ore samples representing the first five years of production

The Project's HMC and REEC products are considered to be readily marketable within global markets. Samples derived from the test work were shared with industry participants, for the purposes of off-take assessment, and gained wide acceptance as being suitable for prospective customer downstream processes.

The HMC is targeted for sale to downstream processors internationally. It is considered to be attractive due to its premium zircon characteristics. This is supported by independent testing of the premium zircon, by Foshan Ceramics Institute in China, which confirmed its suitability for use in the ceramics industry. In addition, whiteness testing of ceramic buttons produced with Donald premium zircon has confirmed that it rates favourably with competitor premium zircons. The zircon component of the Donald HMC is expected to contribute more than 80% of total HMC revenue.

The REEC is expected to be very attractive given the significant proportion of the valuable heavy rare earth elements dysprosium and terbium in its assemblage. Amongst other high value uses, the addition of dysprosium and/or terbium increases the temperatures at which permanent magnets can operate and has particular application to motors in electric and hybrid vehicles and wind turbines. Revenue generated by REEC sales is expected to represent approximately 50% of the total revenue of the Project.

All non-processing infrastructure and related operating costs are taken into account in the estimation of the Ore Reserve. This infrastructure includes HMC and REEC product handling and distribution facilities, maintenance workshops, accommodation facilities, on-site roads, some external road upgrades, offices and crib rooms, fuel storage and refuelling area and other infrastructure typical of a mineral sands mining and processing operation.

The Company acquired the rights to 6.975 GL of water in 2012 and will use these rights to supply the project with potable and mine processing water requirements throughout its life. The Project will access its allocation from freshwater storage at Taylors Lake which is sufficient for the Phase 1 requirements. Process water will also be recovered and recirculated throughout the WCP.

Power will be supplied directly from the grid following the provision of a 66kV overhead powerline which is currently being designed by Powercor.

Non-process infrastructure operating costs used in the estimation of the updated Ore Reserve for MIN5532 were based on quotations from suppliers and based on current prices.

### **Basis of the cut-off grade(s) or quality parameters applied**

To improve the cashflow characteristics of the Project, and shorten the project payback period, a mill limited break-even cut-off grade has been calculated. The cut-off grade was inflated, to exclude marginal material from processing. The economic cut-off grade is based on the application of the concentrate value and the processing cost to define processed material (ore). For the first six years of



mining, the economic cut-off grade has been increased by 100%. Thereafter the cut-off grade has been increased by 33%. Materials below the cut-off grade and above the ore are mined as overburden or waste.

### **Mineral Resources (Mineral Resource released 1 December 2022)**

On 1 December 2022, the Company released an updated Mineral Resource estimate for MIN5532. The updated Mineral Resource Estimate was based on drilling and sampling conducted in 2022 which sought to capture the geological domains, xenotime and the 20 to 38µm fraction of HM content based on a 1% total HM cut-off grade.

The primary highlights of the updated Mineral Resource estimate included:

- The Mineral Resource of 525Mt @ 4.0% total HM includes a Measured Resource of 394Mt @ 4.2% HM reported above a 1% total HM cut-off grade
- Contained heavy minerals within MIN5532 increased by 25% to 21Mt with contained zircon increasing by 5% to 3.4Mt
- Contained rare earth minerals within MIN5532 increased by 60% to 511,400t reflecting an 18% increase in the monazite resource and the addition of a 135,500t xenotime resource
- Monazite contains the valuable light rare earth elements neodymium and praseodymium and xenotime contains the valuable heavy rare earth elements of dysprosium and terbium

Further benefits of the 2022 drilling and resource definition program included:

- The Mineral Resource now includes HM in the +20-38 micron finer range which had not previously been defined or estimated. Further, analysis was also expanded to include HM coarser than 90 micron (sub 250 micron) and therefore the resource definition includes ore in the +20-250 micron HM in-size range
- Definition and estimation of a maiden xenotime resource
- Equalisation of the HM and the VHM resource by aligning historical sampling and modelling methodologies for MIN5532
- Modelling the resource by incorporating geological domains by investigating and understanding historical data
- Improved bulk density estimation based on geological domain

The 2022 drill spacing covered the majority of MIN5532 with the exception of an area not able to be accessed at the time. The area of the resource model covered by drilling and sampling performed in 2022 is known as Area 1 and makes up approximately 97% of the MIN5532 resource. The remainder of the resource model area outside of Area 1 uses older historical drilling information and is known as Area 2. The resource model estimation has also been constrained vertically within geological domains.

### **Mineral Resources Estimation Methodology**

Snowdon Optiro was commissioned to carry out the 2022 Mineral Resource estimate. Total HM, slimes and oversize block grades were estimated using ordinary kriging (OK). Mineral assemblage components were estimated using an inverse distance cubed technique. Variogram analysis was undertaken to determine the kriging estimation parameters used for OK estimation of total HM, slimes and oversize.

Block dimensions were selected from kriging neighbourhood analysis. Grade estimation was based on parent blocks of 100 mE by 200 mN by 1 mRL. Sub-cells to a minimum dimension of 25 mE by 50 mN by 0.25 mRL were used to represent volume.

Geological interpretation and wireframe surface creation were performed using both Datamine Studio and Surpac software. The Mineral Resource estimation was completed using Datamine Studio software whilst geostatistical data analysis was performed using Snowden Supervisor software.

## **Ore Reserve Estimation Methodology, including mining recovery factors and mining dilution factors**

The methodology in determining the updated Ore Reserve was as follows:

- The deposit has been assessed through pit optimisation, detailed mine design, mine scheduling and economic modelling.
- Individual discrete mining blocks have been digitised around ore and overburden. Pillars of in situ material have been left between adjacent mining strips to prevent tails from entering the working areas. Mining dilution and ore loss are inherent in the process and no additional dilution or ore loss has been applied when converting the mineral resource model for mine planning.
- The extent and depth of the area to be mined were decided by pit optimisation using the Lerchs-Grossman (LG) algorithm with Whittle software. Nested pit shells generated and tested with sensitivities on mining cost, processing cost, metal price, and recoveries formed the basis of the optimal pit shell to maximize value and achieve operational design requirements.
- LG pit optimisations assessed Measured and Indicated classified material only. No Inferred material was included in the LG assessment.
- Geotechnical slope parameters were based on a geotechnical study completed in 2022 by ATC Williams focused on the external and in-pit embankment designs for tails storage facilities. The in-situ embankments and pit slopes also applied these parameters due to in-pit storage of tails.
- Infrastructure requirements included development of tails and slimes storage, topsoil and subsoil stockpiles, overburden stockpiles, haul roads, external tails storage facility, office, fuel bay and storage, salvage yard, and workshop. Key processing infrastructure will be located in the north-western corner of MIN5532 adjacent to the wet concentrator plant.
- The pit will be mined in 500m NS long and 250m EW wide blocks in a strip sequence.
- The mining method will be by truck and excavator.
- Ore will be fed into a MUP where it is screened and slurried and pumped to the WCP on site.
- Sand tails, from the wet concentrator, will be returned to the mine void placed in constructed cells to be covered by previously stockpiled overburden prior to rehabilitation.

## **Material modifying factors, including the status of environmental approvals, tenements and approvals, other governmental factors and infrastructure requirements for selected mining methods and for transportation to market**

The 2023 Ore Reserve estimate incorporates compliance with all approvals currently held and to be obtained by Astron. All environmental approvals have been received from State and Federal Governments, including:

- Environment Effects Statement (EES) – positively assessed – September 2008
- Environmental Protection, Biodiversity and Conservation (EPBC 2005/2372) granted in 2009 and varied in 2018 extending validity to 2042
- Purchase of Water Rights from Grampians Wimmera Mallee Water in 2011
- Radiation Management Licence (No. 300066740)

Secondary approvals, including the Victorian Government Work Plan, will be required in order to commence construction, with these approvals relating to risk management, monitoring and compliance with primary approvals. The Company is committed to obtaining secondary approvals as soon as practicable in order to ensure the Donald Project remains on schedule.

The Donald Project also benefits from a Cultural Heritage Management Plan (CHMP) (OAAV Management Plan No: 11572) approved by the Office of Aboriginal Affairs Victoria in February 2014.

The Project is close to major infrastructure including roads, rail, electricity and water supplies. The existing infrastructure is well developed with some additional upgrade work required. Sealed roads exist on the majority of transport routes with road widening and intersection upgrades required in some areas. The Minyip township bypass route, including a rail level crossing, is a gravel road and will require

sealing. Other infrastructure upgrades including road upgrades have been assessed and designed by engineering firms for execution during the project construction phase.

The Project's location and co-location to existing transport infrastructure provides a number of logistics options for the transportation of saleable products. It is expected that HMC will be loaded into specific half-height 20 foot shipping containers before being trucked and stored at the Dooen rail facility prior to rail transport to the Port of Geelong. The Project's REEC will be loaded into barrels and transported via truck to either the Port of Melbourne or Port Adelaide.

This announcement is authorised for release by the Astron's Board of Directors.

### **Competent Persons Statement**

The information in this report that relates to the MIN5532 Ore Reserve estimate is based on, and fairly reflects, information and supporting documentation compiled by Mr Pier Federici FAusIMM(CP), a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Federici is a full-time employee of AMC Consultants Pty Ltd (AMC) and is independent of Astron Corporation, the owner of the Ore Reserve. Mr Federici has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Federici consents to the inclusion in the 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 the MIN5532 Mineral Resource estimate is based on, and fairly reflects, information and supporting documentation compiled by Mrs Christine Standing, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mrs Standing is a full-time employee of Optiro Pty Ltd (Snowden Optiro) and is independent of Astron Corporation, the owner of the Mineral Resources. Mrs Standing has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined 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 the report of the matters based on her information in the form and context in which it appears.

### **About Astron**

Astron Corporation Limited (ASX: ATR) is an ASX listed company, with over 35 years of experience in mineral sands processing technology and downstream product development, as well as the marketing and sales of zircon and titanium dioxide products. Astron's prime focus is the development of the large, long-life and attractive zircon assemblage Donald Rare Earth and Mineral Sands Project in regional Victoria. The Donald Project has the ability to represent a new major source of global supply in rare earths and mineral sands.

Astron conducts a mineral sands trading operation based in Shenyang, China and owns and operates a zircon and titanium chemicals and metals research and facility in Yingkou, China, which includes a mineral separation facility processing mineral concentrate products into final products. Astron also owns and has the rights to a dunal mineral sands deposit, the Niafarang Mineral Sands Project, in Senegal.

## Appendix A – Donald Rare Earths and Mineral Sands Project - Ore Reserve

Based on the supporting mine planning completed, pit inventories to support an Ore Reserve estimate, in accordance with JORC 2012 are shown in Table A. Ore has been classified as Proven Ore Reserve, based on Measured Mineral Resource and Probable Ore Reserve, based on Indicated Mineral Resource. The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.

**Table A: Donald Rare Earths and Mineral Sands Ore Reserve for MIN5532 at March 2023**

Classification	2023 Ore Reserve within MIN5532									
	Tonnes (Mt)	Total HM %	Slimes %	Oversize %	Zircon	Rutile/Anatase	Ilmenite	% of total HM		
								Leucoxene	Monazite	Xenotime
Proved	263	4.4	15.4	9.8	16.7	5.5	21.6	25.9	1.8	0.67
Probable	46	4.1	19.7	11.1	15.3	5.5	21.3	20.1	1.8	0.64
<b>Total</b>	<b>309</b>	<b>4.4</b>	<b>16.1</b>	<b>10.0</b>	<b>16.5</b>	<b>5.5</b>	<b>21.6</b>	<b>25.1</b>	<b>1.8</b>	<b>0.66</b>

**Notes:**

- The ore tonnes have been rounded to the nearest 1Mt and grades have been rounded to two significant figures.*
- The Ore Reserve is based on Indicated and Measured Mineral Resource contained within mine designs above an economic cut-off.*
- A break-even cut-off has been applied defining any material with product values greater than processing cost as Ore.*

The JORC 2012 Table 1, Section 4 to support the Ore Reserve estimate is included in Appendix B. The Ore Reserve estimates have been compiled in accordance with the guidelines defined in the 2012 JORC Code.



## Appendix B: JORC Code, 2012 Edition – Table 1

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

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p> <p><i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></p>	<ul style="list-style-type: none"> <li>• Air core drilling was used to take samples at 1 m intervals.</li> <li>• Samples collected prior to 2022 were approximately 7 kg in weight and were riffle split down to 2 kg before analysis. From 2013 to 2016, samples were rotary split.</li> <li>• For the 2022 drilling program, air core samples were split to approximately 1.6 kg (after drying) from a rig mounted rotary splitter.</li> <li>• The heavy mineral (HM) content was determined by the centrifugal heavy liquid separation (HLS) method (TBE 2.96 SG) after removal of slimes and oversize. The in-size range for HM for the 2022 assay work was from 20 µm to 250 µm. Prior to 2022, the in-size range was 38 µm to 90 µm.</li> <li>• Mineralogy content was assessed using grain counting for earlier data and QEMSCAN techniques. Were used to determine the titania minerals. X-ray fluorescence (XRF) was used to determine the ZrO<sub>2</sub>, TiO<sub>2</sub> and CeO<sub>2</sub> for estimating zircon and monazite and laser ablation was used to determine the Y<sub>2</sub>O<sub>3</sub> content and xenotime. QEMSCAN was used to check the mineralogy.</li> </ul>
<b>Drilling techniques</b>	<p><i>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).</i></p>	<ul style="list-style-type: none"> <li>• All drillhole drilled by Donald Mineral Sands Pty Ltd (DMS) were RC Air Core (RCAC) with NQ rods and a nominal drill bit diameter of 82 mm.</li> <li>• During 2022, Sonic drilling was used to drill a program of twin holes (6” hole) for comparison with selected RC air core holes. the assay results were not used in the Mineral Resource estimation.</li> <li>• Comparison of Sonic twin holes to air holes showed acceptable correlation on HM grade, slimes, oversize and sample weight/recovery.</li> <li>• RCAC drilling technique used attempted to maximise recovery and minimise water injection.</li> <li>• Sample was cleared from the rods and cyclone/splitter between each 3 m drill rod.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	<ul style="list-style-type: none"> <li>For holes drilled by DMS, sample recovery was visually checked.</li> <li>Sample intervals with problematic recovery were noted.</li> </ul>
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	<ul style="list-style-type: none"> <li>Zirtanium Ltd (Zirtanium) reported in 2004 that their drilling had a consistent dry sample weight recovery of 7.1 kg <math>\pm</math>0.8 kg.</li> <li>During the 2022 drilling for a set of selected holes samples, the residual sample (the other part of the sample from the drill rig rotary splitter) was collected and weighed to check overall drilling recovery. The average recovered sample weight for samples tested was 6.5 kg (wet) or ~83% of a theoretical maximum recovery weight. For comparison, the Sonic twin holes were estimated to have 95% recovery versus the theoretical hole volume multiplied by density.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>No relationship between recovery and grade has been observed.</li> </ul>
<b>Logging</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>All drillholes were logged for lithology, grain size, colour, stratigraphy, induration and estimated HM content.</li> </ul>
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	<ul style="list-style-type: none"> <li>Logging is mostly qualitative with proportion of lithological types logged. Interpretations of stratigraphic units were also made.</li> <li>Every sample interval also had a small amount collected and stored in chip trays which were subsequently photographed.</li> </ul>
	<i>The total length and percentage of the relevant intersections logged.</i>	<ul style="list-style-type: none"> <li>All RCAC holes were completely logged.</li> </ul>
<b>Subsampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	<ul style="list-style-type: none"> <li>Prior to 2022, samples were dried and had the +4 mm oversize removed before sending to the assay laboratory for sizing and heavy liquid separation (HLS) assay. Samples were split down to 70 g of sample in the laboratory for HLS.</li> <li>During the 2022 work, samples were split off by a rig mounted cyclone splitter resulting in an ~1.6 kg primary sample. These samples were dried and riffle split to 500g for analysis.</li> <li>The 2022 assay work used 100 g of sample for centrifugal heavy liquid separation analysis.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	<ul style="list-style-type: none"> <li>Riffle splits of dried sample were used for subsampling prior to 2013. After 2013, rotary splits were used. Rotary splits were done off the rig splitter (wet) for the 2022 drilling work.</li> </ul>
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	<ul style="list-style-type: none"> <li>The sampling technique was deemed appropriate for mineral sands test work.</li> <li>RCAC is widely accepted for drilling deposits of this type.</li> </ul>
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	<ul style="list-style-type: none"> <li>Field duplicates (1 in 40) and laboratory duplicates (1 in 28) were taken to assess the representivity and consistency of samples being taken.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>Field duplicates at a rate of 1 in 40 samples were taken to assess the repeatability of the rig sample splitting. Field duplicates weight averaged 115% of their corresponding primary sample even after adjusting the splitter aperture.</li> </ul>
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	<ul style="list-style-type: none"> <li>The samples size and split quantity were deemed appropriate for the hole size and sample geology.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<ul style="list-style-type: none"> <li>After the removal of slimes and oversize the (in-size) HM percentage content of the samples was determined by the HLS technique with centrifugal aid in separation.</li> <li>The assay technique used is considered appropriate and conforms to or exceed industry standards. Centrifugal HLS is considered preferable (as opposed to gravity sink alone) where fine grained HM sand quantities are being assayed.</li> <li>Laboratory standards and duplicates were performed both at a rate of 1 in 28 samples.</li> <li>All assay determination and QEMSCAN analysis was performed by Bureau Veritas Minerals Pty Ltd (Bureau Veritas) at their Adelaide facility whilst XRF and laser ablation ICPMS work was performed at their Perth facility.</li> <li>Blanks were not submitted.</li> <li>A second laboratory was not used.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>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.</i></p>	<ul style="list-style-type: none"> <li>Al<sub>2</sub>O<sub>3</sub>, As<sub>2</sub>O<sub>3</sub>, BaO, CaO, CeO<sub>2</sub>, Cr<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, HfO<sub>2</sub>, K<sub>2</sub>O, La<sub>2</sub>O<sub>3</sub>, MgO, MnO, Nb<sub>2</sub>O<sub>5</sub>, Nd<sub>2</sub>O<sub>3</sub>, P<sub>2</sub>O<sub>5</sub>, PbO, SiO<sub>2</sub>, SnO<sub>2</sub>, SO<sub>3</sub>, Th, TiO<sub>2</sub>, U, V<sub>2</sub>O<sub>5</sub>, ZnO, ZrO<sub>2</sub>+HfO<sub>2</sub> have been determined by XRF spectrometry on oven dry (105°C) sample unless otherwise stated.</li> <li>Ag_LA, As_LA, Ba_LA, Be_LA, Bi_LA, Cd_LA, Ce_LA, Co_LA, Cr_LA, Cs_LA, Cu_LA, Dy_LA, Er_LA, Eu_LA, Ga_LA, Gd_LA, Ge_LA, Hf_LA, Ho_LA, In_LA, La_LA, Lu_LA, Mn_LA, Mo_LA, Nb_LA, Nd_LA, Ni_LA, Pb_LA, Pr_LA, Rb_LA, Re_LA, Sb_LA, Sc_LA, Se_LA, Sm_LA, Sn_LA, Sr_LA, Ta_LA, Tb_LA, Te_LA, Th_LA, Ti_LA, Tl_LA, Tm_LA, U_LA, V_LA, W_LA, Y_LA, Yb_LA, Zn_LA, Zr_LA have been determined by laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS).</li> </ul>
	<p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<ul style="list-style-type: none"> <li>Field and laboratory duplicates were both used to assess the assay process work.</li> <li>A company standard was inserted at a rate of 1 in 40 samples and laboratory standards were also inserted at a rate of 1 in 28 samples.</li> <li>Duplicate sample assay variability was deemed acceptable as was the precision of both field and laboratory standards.</li> </ul>
<p><b>Verification of sampling and assaying</b></p>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p>	<ul style="list-style-type: none"> <li>Drilling and analytical data for HM, slimes and oversize content has been reviewed by Snowden Optiro (Mineral Resource consultants).</li> </ul>
	<p><i>The use of twinned holes.</i></p>	<ul style="list-style-type: none"> <li>A selection of twin holes, using Sonic drilling, were used to assess the recovery, geology and HM% of corresponding RCAC program holes. Twin sample intervals were compared for consistency and found to be acceptably comparable.</li> </ul>
	<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<ul style="list-style-type: none"> <li>All geological and analytical data has been imported into a Microsoft Access database.</li> <li>The data for the 2022 drilling and analytical work has been validated against the original logging records.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<i>Discuss any adjustment to assay data.</i>	<ul style="list-style-type: none"> <li>Processing is expected to recover total HM from the +20µm/-250µm fraction. Data used for resource estimation within Area 1 used this size fraction for analysis. Historical data is from the +38µm/-90µm fraction and data calibration equations (which diluted the grade) were used to align this data to the expected recovery fraction</li> </ul>
<b>Location of data points</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>All drillhole collars for the 2022 drilling were surveyed for their final locations by Fergusson Perry Surveyors using a Leica Captivate GS18 unit and CS20 controller.</li> <li>Earlier drillhole locations were marked out with handheld global positioning systems (GPS) units.</li> <li>The surface topography was obtained from LiDar data of the project area. The 2022 drilling collar survey points were combined with this LiDar data to create the top surface of the current block model.</li> </ul>
	<i>Specification of the grid system used.</i>	<ul style="list-style-type: none"> <li>The MGA94 Zone 54 coordinate system was used.</li> </ul>
	<i>Quality and adequacy of topographic control.</i>	<ul style="list-style-type: none"> <li>The quality and accuracy of the topographic model is considered good. Newly surveyed drillhole collar from 2022 closely aligned with the LiDar derived topography surface.</li> </ul>
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	<ul style="list-style-type: none"> <li>The drillhole spacing of historical data for the total model area prior to the 2022 drilling was 100 mE by 400 mN. The 2022 drillholes were spaced on a 250 mE by 350 mN spacing with drill lines designed to infill between the 400 mN, north-south spacing. For the model Area 1 only the 2022 drilling has been used in this resource update. For the model Area 2 no extra drilling has been performed since the previous resource estimate.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>The overall drilling spacing of 250 mE by 350 mN for Area 1 of the model (using the 2022 drilling) is considered sufficient for a Measured resource category considering that the previous resource estimate of this area was also Measured. Geostatistical parameters support the 2022 Mineral Resource category classifications, using only the 2022 drilling information.</li> <li>For Area 2 of the model the drillhole spacing remains the same (100 mE by 400 mN) but as adjustments have been made to account for sample sizing range data differences, an Indicated resource category has been applied.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>Whether sample compositing has been applied.</i>	<ul style="list-style-type: none"> <li>• Sample compositing was only performed for the purposes of mineralogy assay test work (XRF, laser ablation ICPMS and QEMSCAN). Composites for the 2022 drilling were made up from adjacent or nearby drillholes HLS sinks from within the same geological domain where samples showed &gt;1% HM and were not immediately next to a geological domain contact.</li> <li>• Mineralogy composites were made of up sequential samples downhole for all other drilling campaign sampling.</li> <li>• Assays for HM, slimes and oversize were performed on individual 1 m RCAC drilling samples only.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• The orientation of the mineralised horizon is generally flat and horizontal – an undeformed sedimentary deposit. All holes were drilled vertically and as such have no orientation bias.</li> </ul>
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	<ul style="list-style-type: none"> <li>• Samples were securely stored on private property.</li> <li>• Samples were transported to the laboratory by courier with no loss.</li> </ul>
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	<ul style="list-style-type: none"> <li>• Only internal reviews were carried out.</li> <li>• Sample assay quality assurance and quality control (QAQC) – the company standard and field duplicate results have been reviewed.</li> <li>• Laboratory standards and duplicate performance have also been reviewed.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• This report covers the area of mining licence MIN5532 owned by DMS.</li> <li>• The new resource estimation model covers MIN5532.</li> <li>• There are no existing agreements or material issues, partnerships or joint ventures pertinent to this resource.</li> <li>• There are no native title interests, wilderness or national park settings relating to this resource area.</li> <li>• Heritage areas and other environmental settings are described in the Donald project Environmental Effects Statement (EES) which was positively assessed in 2008.</li> <li>• Land use is dominantly broad acre cropping and agriculture.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>• The tenement is in good standing and no known impediments exist.</li> </ul>
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<ul style="list-style-type: none"> <li>• Exploration work done by CRA Exploration in the 1980s and 1990s.</li> <li>• Zirtanium exploration work from 2000 to 2004.</li> </ul>
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	<ul style="list-style-type: none"> <li>• WIM style, fine-grained heavy mineral sand deposit within the Loxton Sand.</li> </ul>
<b>Drillhole information</b>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</i></p> <ul style="list-style-type: none"> <li>• <i>easting and northing of the drillhole collar</i></li> <li>• <i>elevation or RL (elevation above sea level in metres) of the drillhole collar</i></li> <li>• <i>dip and azimuth of the hole</i></li> <li>• <i>downhole length and interception depth</i></li> <li>• <i>hole length.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Diagrams in this announcement show the location of and distribution of drillholes in relation to the Mineral Resource.</li> </ul>
<b>Data aggregation methods</b>	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i>	<ul style="list-style-type: none"> <li>• Not relevant – exploration results are not being reported; a Mineral Resource has been defined.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<i>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').</i>	<ul style="list-style-type: none"> <li>Not relevant – exploration results are not being reported; a Mineral Resource has been defined.</li> </ul>
<b>Diagrams</b>	<i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.</i>	<ul style="list-style-type: none"> <li>A cross section and plan views were included in Astron's ASX announcement of 1 December 2022, "Donald Project Mining Licence Mineral Resource Update"</li> </ul>
<b>Balanced reporting</b>	<i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	<ul style="list-style-type: none"> <li>Not relevant – exploration results are not being reported; a Mineral Resource has been defined.</li> </ul>
<b>Other substantive exploration data</b>	<i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	<ul style="list-style-type: none"> <li>Where relevant, this information has been included or referred to elsewhere in this Table.</li> </ul>
<b>Further work</b>	<i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	<ul style="list-style-type: none"> <li>Grade control drilling before mining where deemed necessary.</li> <li>Extensional drilling to be conducted around the boundaries of the resource model and to cover areas where drilling was restricted in 2022 due to time and access constraints.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>Drillhole data was extracted directly from Astron's drillhole Microsoft Access database, which includes internal data validation protocols.</li> <li>Data was further validated by Snowden Optiro upon receipt, and prior to use in the estimation.</li> </ul>
	<i>Data validation procedures used.</i>	<ul style="list-style-type: none"> <li>Validation of the data was confirmed using mining software (Datamine) validation protocols, and visually in plan and section views.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Site visits</b>	<i>Comment on any site visits undertaken by the Competent Persons and the outcome of those visits.</i>	<ul style="list-style-type: none"> <li>Mrs Christine Standing (Snowden Optiro, acting as Competent Person) has not visited the site. She has visited similar WIM-style deposits in the Murray Basin.</li> </ul>
<b>Geological interpretation</b>	<i>Confidence in (or conversely, the uncertainty of the geological interpretation of the mineral deposit.</i>	<ul style="list-style-type: none"> <li>There is good confidence in the geological interpretation of the overlying Shepparton Formation and the LP1 and LP2 units within the Loxton Sand. Confidence in the basal contact of the LP3 unit and the Geera Clay is relatively good, but additional verification of the historical data is required.</li> </ul>
	<i>Nature of the data used and of any assumptions made.</i>	<ul style="list-style-type: none"> <li>Both assay and geological data were used for the interpretation.</li> <li>The mineralised horizon is defined by a nominal cut-off grade of 1% total HM.</li> </ul>
	<i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i>	<ul style="list-style-type: none"> <li>No alternative interpretations were considered.</li> <li>Any alternative interpretations are unlikely to significantly affect the Mineral Resource estimate.</li> </ul>
	<i>The use of geology in guiding and controlling Mineral Resource estimation.</i>	<ul style="list-style-type: none"> <li>The geological units were defined using geological logging, slimes and oversize contents, and sediment colour.</li> </ul>
	<i>The factors affecting continuity both of grade and geology.</i>	<ul style="list-style-type: none"> <li>The mineralisation is contained within the Loxton Sand. Offshore-hosted HM sand deposits are formed in a near-shore environment, are fine grained and can extend laterally over several kilometres.</li> <li>The confidence in the grade and geological continuity is reflected by the assigned resource classification.</li> </ul>
<b>Dimensions</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>HM are concentrated within the full extent of MIN5532 and extends over an area of area of 10 km north-south by 6 km east-west.</li> <li>The overlying Shepparton Formation ranges in thickness from 3 m to 15 m with an average thickness of 8.7 m.</li> <li>The mineralised horizon ranges in thickness from 3 to 20 m and has an average thickness of 9.8 m.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Estimation and modelling techniques</b>	<p><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></p>	<ul style="list-style-type: none"> <li>• Data analysis and estimation was undertaken using Snowden Supervisor and Datamine software.</li> <li>• Total HM, slimes and oversize block grades were estimated using ordinary kriging (OK). Mineral assemblage components were estimated using an inverse distance cubed technique. Snowden Optiro considers these methods to be an appropriate estimation technique for this type of mineralisation.</li> <li>• Drilling is generally on a 250 m by 350 m spacing within MIN5532 and ranges from 250 m to 500 m east-west and from 250 m to 500 m north-south within the southern area of the deposit.</li> <li>• A maximum extrapolation distance of 250 m was applied north-south and east-west</li> <li>• All data has been collected from downhole intervals of 1 m.</li> <li>• Variogram analysis was undertaken to determine the kriging estimation parameters used for OK estimation of total HM, slimes and oversize.</li> <li>• Total HM has a maximum continuity range of 1,000 m to 3,460 m along strike (005° to 015°), 470 m to 1,800 m across strike and 2.4 m to 5 m vertical. Maximum continuity ranges interpreted for the slimes are 2,150 m to 3,090 m along strike, 1,135 m to 1,600 m across strike and 3 m to 5 m vertical and are 1,410 m to 4,400 m along strike, 875 m to 2,270 m across strike and 2.8 m to 7.8 m vertical for oversize. Kriging neighbourhood analysis was performed to determine the block size, sample numbers and discretisation levels.</li> <li>• Variogram analysis was undertaken to determine the search parameters used for ID estimation of the mineral assemblage data.</li> <li>• Along strike (015°) ranges of 580 m to 1,010 m and across-strike ranges (285°) of 480 m to 900 m were interpreted, with leucogene having the shorter ranges and monazite having the longest ranges. The zircon variograms (selected as being the most robust) of 940 m along strike by 880 m across strike were used for the horizontal search ellipse dimensions and a vertical search of 3.5 m was selected, which is about half the average sampled interval used for the composite samples.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p>	<ul style="list-style-type: none"> <li>All geological logging data (including historical drillholes), slimes content and oversize content were used to define the geological units.</li> <li>Hard boundary conditions were applied for all geological units and a combination of soft and hard boundaries were applied for the mineralisation domains.</li> <li>The mineralised horizon was defined using a nominal cut-off grade of 1% total HM (selected from statistical analysis).</li> <li>The mineralised domain is considered geologically robust in the context of the resource classification applied to the estimate.</li> </ul>
	<p><i>Discussion of basis for using or not using grade cutting or capping.</i></p>	<ul style="list-style-type: none"> <li>The distributions of the total HM, slimes and oversize data within each geological unit and within the mineralised horizon are positively skewed; however, the total HM, slimes and oversize all have low coefficients of variation (less than 0.95). High-grade outliers are not present and so top-cut grades (cap grades) were not applied.</li> </ul>
	<p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p>	<ul style="list-style-type: none"> <li>Mineral Resources for MIN5532 were prepared by AMC Consultants Pty Ltd (AMC) in 2016.</li> <li>There is a 16% increase in tonnes due to differences in the interpretation and inclusion of mineralisation within the LP3 unit. The total HM grade has decreased by 9% (from 4.4% to 4.0%) due to dilution caused by the change in grain size fraction used for HM determination. The contained HM tonnes has increased by 5%.</li> <li>The 2016 Mineral Resource with assemblage data was reported separately. Compared to this, the 2022 Mineral Resource tonnage has increased by 66%, due to differences in the interpretation and inclusion of mineralisation within the LP3 unit. The total HM grade has decreased by 25% and the mineral assemblage components have decreased by 0.4% to 17% due to dilution caused by the change in grain size fraction used for HM determination.</li> </ul>
	<p><i>The assumptions made regarding recovery of by-products.</i></p>	<ul style="list-style-type: none"> <li>Processing is expected to recover total HM from the +20µm/-250µm fraction. Data used for resource estimation within Area 1 used this size fraction for analysis. Historical data is from the +38µm/-90µm fraction and data calibration equations (which diluted the grade) were used to align this data to the expected recovery fraction</li> </ul>
	<p><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></p>	<ul style="list-style-type: none"> <li>Deleterious elements were not considered for the Mineral Resource estimate.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i>	<ul style="list-style-type: none"> <li>• Grade estimation was into parent blocks of 100 mE by 200 mN by 1 mRL.</li> <li>• Block dimensions were selected from kriging neighbourhood analysis and reflect the variability of the deposit as defined by the current drill spacing.</li> <li>• Sub-cells to a minimum dimension of 25 mE by 50 mN by 0.25 mRL were used to represent volume.</li> </ul>
	<i>Any assumptions behind modelling of selective mining units.</i>	<ul style="list-style-type: none"> <li>• Selective mining units were not modelled.</li> </ul>
	<i>Any assumptions about correlation between variables.</i>	<ul style="list-style-type: none"> <li>• The majority of the total HM and slimes, total HM and oversize, and slimes and oversize data is uncorrelated.</li> <li>• Correlation coefficients of the 2022 mineral assemblage data indicate: <ul style="list-style-type: none"> <li>– a strong positive relationship between: <ul style="list-style-type: none"> <li>i. zircon and monazite;</li> <li>ii. zircon and xenotime; and</li> <li>iii. monazite and xenotime</li> </ul> </li> <li>– a moderate positive relationship between: <ul style="list-style-type: none"> <li>i. rutile and the other mineral assemblage components; and</li> <li>ii. xenotime and the other mineral assemblage components</li> </ul> </li> <li>– a poor positive correlation between: <ul style="list-style-type: none"> <li>i. leucoxene and ilmenite, zircon and monazite; and</li> <li>ii. ilmenite and monazite.</li> </ul> </li> </ul> </li> </ul>
	<i>The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.</i>	<ul style="list-style-type: none"> <li>• The total HM, slimes, oversize and mineral assemblage estimated block model grades were visually validated against the input drillhole data and comparisons were carried out against the de-clustered drillhole data and by northing, easting and elevation slices.</li> <li>• No production has taken place and thus no reconciliation data is available.</li> </ul>
<b>Moisture</b>	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	<ul style="list-style-type: none"> <li>• Tonnages have been estimated on a dry basis.</li> <li>• Average moisture contents of 14% to 33% were recorded from density test work.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Cut-off parameters</b>	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	<ul style="list-style-type: none"> <li>• The Mineral Resource is reported above a cut-off grade of 1.0% total HM. This cut-off grade was selected by Astron and Snowden Optiro following comparison with mineral sands deposits currently being or recently having been mined in Australia.</li> <li>• It is expected that the entire Donald Mineral Resource has reasonable prospects for eventual economic extraction using open pit mining.</li> <li>• A mining study is currently being undertaken for technical and economic assessment of open pit extraction of the heavy mineral sands at the Donald deposit.</li> </ul>
<b>Mining factors or assumptions</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• Open pit mining methods will be used, similar to those commonly and currently in use in HM mining operations both in Australia and globally.</li> <li>• Mining factors such as dilution and ore loss have not been applied.</li> <li>• It is considered that there are no mining factors which are likely to affect the assumption that the deposit has reasonable prospects for eventual economic extraction.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• Metallurgical test work has determined recoveries for the final products based upon TiO<sub>2</sub>%, ZrO<sub>2</sub>+HfO<sub>2</sub>%, CeO<sub>2</sub>% and Y<sub>2</sub>O<sub>3</sub>%.</li> <li>• Metallurgical test work programs conducted by Astron/DMS through Mineral Technologies Pty Ltd have demonstrated commercial recovery of fine-grained HM sand products from the Donald deposit through conventional gravity separation processes. This test work includes recovery of mineral products down to a particle size of 20 µm. Test work has also demonstrated the ability to recover rare earth minerals via a monazite flotation process.</li> </ul>
<b>Environmental factors or assumptions</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• There are no known significant environmental impediments to the project's viability from the currently available information.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Bulk density</b>	<p><i>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.</i></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<ul style="list-style-type: none"> <li>• Bulk density test work was undertaken by ATC Williams Pty Ltd (ATC Williams) during 2022. Moisture content and bulk density were measured for 14 samples from the Sonic drilling program.</li> <li>• The average dry bulk density values determined by ATC Williams were assigned to the Shepparton Formation (1.45 t/m<sup>3</sup>) and to the LP1, LP2 and LP3 units of the Loxton Sand (1.81 t/m<sup>3</sup>, 1.74 t/m<sup>3</sup> and 1.57 t/m<sup>3</sup> respectively).</li> </ul>
<b>Classification</b>	<p><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></p> <p><i>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></p>	<ul style="list-style-type: none"> <li>• The Mineral Resource has been classified as Measured, Indicated and Inferred taking into account data quality, data density, geological continuity, grade continuity and confidence in the estimation of heavy mineral content and mineral assemblage.</li> <li>• Measured and Indicated Mineral Resources have been defined within the area covered by the 2022 drilling (on a nominal spacing of 250 m by 350 m) and where the mineral assemblage has been determined by QEMSCAN, XRF and laser ablation ICPMS analysis. Measured Mineral Resources are within the LP1 (Domains 210 and 211) and LP2 units (Domains 220 and 221). The eastern area of Domain 210 and the LP3 unit (Domains 230 and 231), within the area of 2022 drilling are classified as Indicated.</li> <li>• Within Area 2, the drilling data used for the resource estimate is on a generally on a spacing of 250 m to 500 m east west and 250 m to 500 m north-south. The historical nature of the data, and changes in the grain size and data calibration have reduced confidence in the data used for resource estimation. Mineral Resources within Area 2 are classified as Indicated and Inferred. Data analysis concentrated on the LP2 unit and the LP2 unit is classified as Indicated where mineral assemblage data was obtained from the 2004 drilling. Mineral Resources are classified as Inferred within all of the LP1 and LP3 units and where there is a lack of mineral assemblage data within LP2.</li> </ul>
	<p><i>Whether the result appropriately reflects the Competent Person's view of the deposit</i></p>	<ul style="list-style-type: none"> <li>• The assigned classification of Measured, Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate.</li> </ul>
<b>Audits or reviews</b>	<p><i>The results of any audits or reviews of Mineral Resource estimates.</i></p>	<ul style="list-style-type: none"> <li>• The Mineral Resource has been reviewed internally as part of normal validation processes by Snowden Optiro.</li> <li>• No external audit or review of the current Mineral Resource has been conducted.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Discussion of relative accuracy/ confidence</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>The assigned classification of Measured, Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>The confidence levels reflect potential production tonnages on an annual basis, assuming open pit mining.</li> </ul>
	<i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i>	<ul style="list-style-type: none"> <li>No production has occurred from the deposit.</li> </ul>

## Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
<p><b>Mineral Resource estimate for conversion to Ore Reserves</b></p>	<ul style="list-style-type: none"> <li>• <i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li>• <i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Mineral Resource estimate (MRE) for the Donald Mineral Sands deposit, which formed the basis of this Ore Reserve estimate, was compiled by Optiro Pty Ltd geologists utilising relevant data. Drilling and sampling conducted in 2022 sought to redefine the Mineral Resource within Mining Licence (MIN5532) capturing the geological domains, Xenotime and the 20 to 38µm fraction of heavy mineral (HM) content based on a 1% total HM cut-off grade. The 2022 drilling spacing covers the majority of MIN5532 except for an area which was not able to be accessed at the time. The area of the resource model covered by drilling and sampling performed in 2022 is known as Area 1 and makes up approximately 97% of the MIN5532 resource. The remainder of the resource model area outside of Area 1 uses older historical drilling information and is known as Area 2. The resource model estimation has also been constrained vertically within geological domains, primarily the interpreted layers of the Loxton Sand (LP1, LP2 and LP3), but also by grade within these domains. The MRE has been classified according to the guidelines of the JORC Code (2012) into Measured, Indicated and Inferred Mineral Resources, considering data quality, data density, geological continuity, grade continuity and confidence in the estimation of heavy mineral content and mineral assemblage. The nominal drill spacing for the 2022 drilling is approximately 250 mE by 350 mN. In general, the historical drillhole spacing ranges from 125 mE by 400 mN to 250 mE by 500 mN. Only a new MRE within MIN5532 is reported as the 2022 drilling and sampling data does not extend outside of the mining licence.</li> <li>• The deposit is classified as a WIM style deposit. WIM deposits consist of fine-grained economic minerals of zircon, titanium, and various rare earths.</li> <li>• The regional aquifer intersects the lower few metres of the orebody.</li> <li>• The deposit sits over Geera clay. Geera clay is carbonaceous silts and minor carbonates, massive pyritic clays with minor sand and silt layers, with sparse marine fossils.</li> <li>• The Mineral Resources are reported inclusive of the Ore Reserve.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Site visits</b>	<ul style="list-style-type: none"> <li>• <i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li>• <i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Competent Person, Mr Pier Federici FAusIMM(CP), conducted a site visit in July 2013. The site visit provided: <ul style="list-style-type: none"> <li>– Familiarization with the site including current mining conditions, proposed pit limits, waste dump locations, site drainage and geotechnical considerations, identification of vegetation to be preserved.</li> <li>– Observation of samples being prepared for analysis.</li> <li>– General landforms.</li> <li>– Access to the deposit.</li> </ul> </li> <li>• The competent person is of the opinion that no material changes have occurred in the region since the last site visit.</li> </ul>
<b>Study status</b>	<ul style="list-style-type: none"> <li>• <i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li>• <i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Ore Reserves are supported by the recent completion of updated mine planning work undertaken by AMC Consultants Pty Ltd completed as part of the recent definitive feasibility study with a level of accuracy <math>\pm 10\%</math>.</li> <li>• The mine plan is considered technically and economically achievable involving the application of conventional mining technology.</li> <li>• Modifying Factors (mining, processing, infrastructure, environmental, legal, social, and commercial) have been considered during the Ore Reserve estimation process.</li> <li>• Economic modelling was completed as part of the definitive feasibility study and identified that the project is economically viable and robust under current assumptions.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>• <i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• To improve the cashflow, and reduce the project payback, a mill limited break-even cut-off has been calculated. The mill limited break-even cut-off was then inflated, to exclude marginal material from processing. This economic cut-off is based on the value of the concentrate and the cost of processing, applied to define processed material (ore). For the first six years of mining, the economic cut-off has been increased by 100%, There after the cut-off has been increased by 33% of the calculated value. Material below the cut-off and above the ore is mined as overburden. Material below the cut-off and below the ore is left in situ.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b>Mining factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>• <i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li>• <i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li>• <i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></li> <li>• <i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li>• <i>The mining dilution factors used.</i></li> <li>• <i>The mining recovery factors used.</i></li> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li>• <i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The deposit has been assessed through pit optimisation, detailed mine design, mine scheduling and economic modelling.</li> <li>• Individual discrete mining blocks have been digitised around ore and overburden. Pillars of in situ material have been left between adjacent mining strips to prevent tails from entering the working areas. Mining dilution and ore loss are inherent in the process and no additional dilution or ore loss has applied when converting the mineral resource model for mine planning.</li> <li>• The mine extents and depth were decided by pit optimisation using the Lerchs-Grossman (LG) algorithm with Whittle software. Nested pit shells generated and tested with sensitivities on mining cost, processing cost, metal price, recoveries formed the basis of the optimal pit shell to maximize value and achieve operational design requirements.</li> <li>• LG pit optimisations assessed Measured and Indicated classified material only. No Inferred material was included in the LG assessment.</li> <li>• Geotechnical slope parameters were based on a geotechnical study completed in 2022 by ATC Williams focused on the external and in-pit embankment designs for tails storage facilities. The in-situ embankments and pit slopes also applied these parameters due to in-pit storage of tails.</li> <li>• Infrastructure requirements included development of tails and slimes storage, topsoil and subsoil stockpiles, over burden stockpiles, haul roads, external tails storage facility, office, fuel bay and storage, salvage yard, and workshop. Key infrastructure will be located in the north-western corner of MIN5532 adjacent to the wet concentrator plant.</li> <li>• The pit will be mined in blocks of general dimension of 500 m wide and 250 m long. These will be mined in a strip sequence.</li> <li>• The mining method will be a truck and excavator for the overburden and ore, while scrapers will be used for soil stripping and rehandling.</li> <li>• Ore will be fed into a mining unit plant (MUP) where it is screened and slurried and pumped to the wet concentrator plant (WCP) on site.</li> <li>• Sand tails, from the WCP, will be returned to the mine void placed in constructed cells after which overburden will be placed above prior to rehabilitation.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li>• <i>Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li>• <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li>• <i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</i></li> </ul>	<ul style="list-style-type: none"> <li>• Two concentrates are generated at site.               <ul style="list-style-type: none"> <li>– A heavy mineral concentrate (HMC) which is predominantly ZrO<sub>2</sub>+HfO<sub>2</sub>, and TiO<sub>2</sub> minerals.</li> <li>– A rare earth mineral concentrate (REMC) which is predominantly CeO<sub>2</sub> and Y<sub>2</sub>O<sub>3</sub></li> </ul> </li> <li>• The associated recoveries and costs to generate concentrates, were applied in the mine planning work.</li> <li>• The process will involve gravity and magnet separation to generate the concentrates for export.</li> <li>• The metallurgical assumptions are based on metallurgical test work undertaken by Mineral Technologies in 2022 developing the recoveries, flowsheet and concentrate upgrade validation base on site bulk samples.</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• <i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>• An Environmental Effects Study (EES) was completed for the Donald Mineral Sands Project in 2008 and was suitable to proceed towards a Work Plan. The recent feasibility study has been based on the EES with the Work Plan to soon follow.</li> <li>• The plan is to return disturbed areas to similar topography preserving water surface flow directions. Sand tails will be buried below ground level and capped with overburden.</li> <li>• Licenses will be sort for in pit tailings disposal and any associated discharge.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b>Infrastructure</b></p>	<p><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></p>	<ul style="list-style-type: none"> <li>• Power and water will be accessible from existing grid infrastructure in the local area.</li> <li>• Additional infrastructure required for open pit mining has been designed and costed and includes:               <ul style="list-style-type: none"> <li>– Mining Unit Plant (MUP)</li> <li>– Wet concentrator plant (WCP)</li> <li>– HMC and REMC product handling facilities including weigh bridge</li> <li>– Reagents receipt and distribution</li> <li>– Maintenance workshops</li> <li>– Internal Roads and External Road Upgrades</li> <li>– Offices and crib rooms</li> <li>– Fuel storage and refuelling area</li> <li>– 66kV Overhead Power from Horsham</li> <li>– GWM Water reticulation upgrades to transfer fresh water from storage in Taylors Lake to mine site</li> <li>– Fresh water, process water and sediment control Dams</li> <li>– Wash Bay</li> <li>– Stores</li> <li>– Tyre Repair Facility</li> <li>– Vehicle Parking Facilities</li> <li>– Salvage Yard</li> <li>– Pit dewatering</li> <li>– Land purchase</li> <li>– Accommodation facility in nearby town</li> </ul> </li> </ul>



Criteria	JORC Code explanation	Commentary
<p><b>Costs</b></p>	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li>• <i>The methodology used to estimate operating costs.</i></li> <li>• <i>Allowances made for the content of deleterious elements.</i></li> <li>• <i>The source of exchange rates used in the study.</i></li> <li>• <i>Derivation of transportation charges.</i></li> <li>• <i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li>• <i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Operating and capital costs have been based on: <ul style="list-style-type: none"> <li>– Sales and logistics costs</li> <li>– Processing costs based on first principal cost estimates.</li> <li>– First principal mining cost estimates based on mine schedule physicals.</li> <li>– First principal estimates based on infrastructure design</li> <li>– External TSF and in-pits tailings prepared by ATC Williams</li> <li>– Marketing studies - TZMI for HMC and Adamas Intelligence for REMC</li> <li>– Relevant government royalties for concentrate products</li> <li>– Processing costs prepared by Mineral Technologies.</li> <li>– Power generation costs prepared by Powercor.</li> <li>– GWM Water reticulation costs prepared by W3Plus</li> <li>– Road upgrades prepared by Driscoll Engineering.</li> <li>– Accommodation facilities prepared by BM Projects.</li> <li>– Dewatering infrastructure by Projectworx</li> </ul> </li> </ul>
<p><b>Revenue factors</b></p>	<ul style="list-style-type: none"> <li>• <i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li>• <i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The value of the concentrate and the cost of processing was applied to define economic material.</li> <li>• Commodity prices and exchange rate forecast were advised by Donald Mineral Sands Pty Ltd (DMS) and are based on consensus forecast prices – TZMI July 2022 (and updated in March 2023) and Adamas Intelligence in February 2023.</li> <li>• Product specifications are based on metallurgical test work including processing of bulk sample material.</li> <li>• Treatment charges are linked to forecast commodity prices and align with five-year historical rates.</li> <li>• Off-site marketing and freight costs are based on DMS forecast linked to industry indices.</li> <li>• Key value driver inputs into the financial model included: <ul style="list-style-type: none"> <li>– Heavy mineral concentrate and rare earth mineral concentrate forecast pricing</li> <li>– Exchange rate from AU\$ to US\$ used 0.7:1.</li> <li>– Discount rate of 8%.</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b>Market assessment</b></p>	<ul style="list-style-type: none"> <li>• <i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li>• <i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li>• <i>Price and volume forecasts and the basis for these forecasts.</i></li> </ul> <p><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></p>	<ul style="list-style-type: none"> <li>• The current short-term reduction in zircon demand is expected to return to the long-term demand in 2023. The macro trend in zircon demand is driven by urbanisation.</li> <li>• Maturation of existing supply sources will lead to a reduction in zircon supply.</li> <li>• The long life of this project (&gt;40 years) provides opportunity to move through the rise and fall of global supply and demand.</li> <li>• The titanium feedstock market is large and it is expected that the Donald Rare Earth and Mineral Sands Project will fill a small section of the existing supply shortage in the marketplace.</li> <li>• The DMS Ti product has a major advantage in its grade (High in Ti% over 60% overall). It is anticipated that the benefits for the high Ti content will be significant for the downstream producers as the high Ti content enables high Ti grade in the final products, as well as a decrease in the by-product, pig-iron of the slag process.</li> <li>• With 95% of the Rare Earth market situated in China, a macro-trend in the rare earth space is that western governments have started to heavily invest in the Rare Earth sector.</li> <li>• Under the Australian Governments \$2B critical minerals facility, the Australian federal government is investing over \$1.25B in Eneabba rare earth refinery announced in April 2022 which is currently in design / construction by Iluka in Western Australia</li> <li>• Rare Earths, as a Total Rare Earth Oxide (TREO), were priced by Adamas Intelligence in February 2023. Following a 7.1% pandemic-induced drop in global TREO consumption in 2020, Adamas Intelligence data indicates that global consumption jumped 13.2% higher in 2021, bolstered by the materialisation of some pent-up consumer and industrial demand from the year prior.</li> <li>• By volume, permanent magnets and catalysts were collectively responsible for over 65% of global TREO consumption in 2021. However, by value, permanent magnets alone were responsible for 95% of the total value of global TREO consumption in 2022. Demand for and prices of neodymium, praseodymium, dysprosium and terbium (all of which are contained in the DMS TREO) are expected to continue to rise strongly in the years ahead.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b>Economic</b></p>	<ul style="list-style-type: none"> <li><i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</i></li> </ul> <p><i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></p>	<ul style="list-style-type: none"> <li>Discounted cash flow modelling and sensitivity analysis has been completed to evaluate the economic performance of the Ore Reserve.</li> <li>The Ore Reserve returns a positive NPV (pre-tax) under the assumptions detailed herein.</li> <li>Sensitivity analysis of the project identified changes to mining costs and product prices produced the largest difference in the project NPV.</li> <li>All reasonable sensitivity variations to inputs resulted in a positive NPV.</li> </ul>
<p><b>Social</b></p>	<p><i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></p>	<ul style="list-style-type: none"> <li>Cultural &amp; Heritage Management Plan (CHMP) for a large portion of MIN5532 was approved in 2014.</li> <li>DMS is engaged with stakeholder groups through regular Community Reference Group meetings and has established a Transport Working Group that had its inaugural meeting in January 2023.</li> <li>A Memorandum of Understanding was executed with the Yarriambiack Shire Council in November 2022 with key areas for collaboration between the two parties being Optimising Economic and Social Outcomes – to work cooperatively and in good faith to facilitate as many positive outcomes from the Donald Rare Earth and Mineral Sands Project as possible whilst also working jointly to minimise and mitigate any potential negative economic employment and social outcomes associated with the project and building relationships to support the Donald Rare Earth and Mineral Sands Project by working cooperatively and in good faith to develop an advocacy and relationship management program which will aid the timely delivery of the project and wider community benefits.</li> <li>There are no social barriers to operate.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Other</b>	<ul style="list-style-type: none"> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<ul style="list-style-type: none"> <li>Mining Licence (MIN5532) expires August 2030</li> <li>Retention Licence (RL2002) expires October 2029</li> <li>Export Licence was renewed in October 2020.</li> <li>Radiation Licence has been granted.</li> <li>A draft Work Plan has been submitted to the relevant Victorian Government Department and a final draft will be submitted when all details of the final stages of the project development are completed.</li> <li>Where practical native vegetation is avoided. There is a vegetation offset management plan for other areas.</li> <li>Sufficient water has been secured for the project.</li> <li>The area occasionally floods. Diversion bunds will be constructed around the mine workings to control surface flood water.</li> <li>The natural phreatic water level is above the base of the pit. Because of low permeability, ground water will be managed by a series of spear bore pumps installed either side of the mining blocks. In pit pumps and sumps will also be used as required.</li> <li>Some risk is considered related to the trafficability of haul trucks in the pit based on the material properties and moisture content.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul style="list-style-type: none"> <li>Material has been classified as Proven and Probable Ore Reserve, based on Measured and Indicated Mineral Resources.</li> <li>The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.</li> </ul>
<b>Audits or reviews</b>	The results of any audits or reviews of Ore Reserve estimates.	<ul style="list-style-type: none"> <li>The supporting mine planning work has not been externally audited.</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><b><i>Discussion of relative accuracy/ confidence</i></b></p>	<ul style="list-style-type: none"> <li>• <i>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</i></li> <li>• <i>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.</i></li> <li>• <i>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</i></li> <li>• <i>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Ore Reserve estimate is based on the recent undertaking of a definitive feasibility study for the project, with a level of accuracy <math>\pm 10\%</math>. Costs are based on estimated first principle operating costs and capital costs. This has provided a high level of confidence in the economic basis of the Ore Reserve and assessment of the project value.</li> <li>• In the opinion of the Competent Person, cost assumptions and modifying factors applied in the process of estimating Ore Reserves are reasonable.</li> <li>• Mineral price and exchange rate assumptions were set out by DMS and are subject to market forces and therefore present an area of uncertainty.</li> <li>• In the opinion of the Competent Person, there are reasonable prospects to anticipate that all relevant legal, environmental, and social approvals to operate are currently granted or will be granted within the project timeframe.</li> <li>• Sensitivity testing of the project identified changes to product prices produced the largest difference in the project NPV. Regardless, the project produces a positive NPV over a range of product prices and operating costs.</li> </ul>