

# Donald Mineral Sands Project

## Ore Reserves and Mineral Resources

The following provides an overview of the 2012 JORC compliant Ore Reserve and Mineral Resources for the Donald Minerals Sands project. The full Ore Reserves and Mineral Resources statement should be consulted, along with the Competent Person's statement.

On the basis of current known 2012 JORC compliant Ore Reserve and Mineral Resource estimates, a 25 year mine plan has been developed, but with the potential for mining to exceed 40 years.

### Ore Reserves

The Ore Reserve Statement is reported in accordance with the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition and ASX Listing Rules (JORC Code (2012)). The Statement includes a revised Ore Reserves estimate of the Donald project that complies with the requirements of the JORC Code (2012).

Table 1 Donald Mineral Sands Ore Reserve for RL 2002

Classification	Tonnes (Mt)	Slimes (%)	Oversize (%)	HM (%)	Ilmenite (%HM)	Leucoxene (%HM)	Rutile (%HM)	Zircon (%HM)	Monazite (%HM)
<b>Total within Donald Deposit (RL2002)</b>									
Proved	310	16.4	9.8	5.4	31.2	20.4	8.2	19.9	1.8
Probable	292	15.6	14.2	4.1	32.4	19.7	7.4	17.3	1.6
<b>Total</b>	<b>602</b>	<b>16.0</b>	<b>11.9</b>	<b>4.8</b>	<b>31.7</b>	<b>20.1</b>	<b>7.9</b>	<b>18.8</b>	<b>1.7</b>

#### Notes

1. The Ore Reserve and Mineral Resource estimates were prepared by AMC Consultants Pty Ltd or further details see Appendix A and B.
  2. HM is within the 38um to 90um size fraction and reported as a percentage of the total heavy mineral grade, slimes is the <38um fraction and the oversize is the >90um fraction.
  3. The ore tonnes have been rounded to the nearest 1 mt and grades have been rounded to the nearest decimal point.
  4. The Ore Reserve is based on indicated and Measured Mineral Resource contained within mine designs above an economic cut-off. The economic cut-off is defined as the value of the products less the cost of processing.
  5. Mining recovery and dilution have been applied to the figures above.
  6. Total tonnes may not equal to the sum of the individual resources due to rounding.
6. The JORC Code 2012 Table 1, Section 4 to support the Ore Reserve Estimate can be found in appendix B in: [Donald Project Ore Reserves Statement Update](#)

The Donald Mineral sands project area (RL 2002 and MIN 5532) includes 602 million tonnes, with an average HM grade of 4.8%. This equates to an insitu 28.9 million tonnes of HM or insitu zircon of 5.4 million tonnes. Based on 2019 estimates for global zircon production, the estimated insitu zircon amount represents ~4.5 years of global production. Relative to other existing or potential mineral sands producers, Astron's current Ore Reserve basis represents a potentially significant new source of production.

# Mineral Resources (HM)



Table 2 Mineral Resource at a 1% Cut-off

Classification	Tonnes (mt)	HM (%)	Slimes (%)	Oversize (%)
<b>Within ML5532</b>				
Measured	372	4.5	14.4	12.8
Indicated	75	4.0	13.8	13.1
Inferred	7	3.5	13.5	10.6
<b>Subtotal</b>	<b>454</b>	<b>4.4</b>	<b>14.2</b>	<b>12.8</b>
<b>With RL2002 Outside of ML5532</b>				
Measured	343	3.9	19.8	8.1
Indicated	833	3.3	16.2	13.5
Inferred	1,595	3.3	15.7	6.0
<b>Subtotal</b>	<b>2,771</b>	<b>3.4</b>	<b>16.4</b>	<b>8.5</b>
<b>Total within Donald Deposit (RL2002)</b>				
Measured	715	4.2	17.0	10.6
Indicated	907	3.4	16.0	13.4
Inferred	1,603	3.4	15.7	6.0
<b>Subtotal</b>	<b>3,225</b>	<b>3.6</b>	<b>16.1</b>	<b>9.1</b>
<b>Total within Jackson Deposit (RL2003)</b>				
Measured	0	0.0	0.0	0.0
Indicated	1,903	2.8	19.0	5.8
Inferred	584	2.9	16.7	3.3
<b>Subtotal</b>	<b>2,497</b>	<b>2.9</b>	<b>18.5</b>	<b>5.2</b>
<b>Total Donald Project</b>				
Measured	715	4.3	18.1	11.1
Indicated	2,811	3.0	17.9	8.2
Inferred	2,187	3.3	16.4	5.5
<b>Total</b>	<b>5,712</b>	<b>3.2</b>	<b>16.9</b>	<b>7.3</b>

*Note*

1. The total tonnes may not equal the sum of the individual resources due to rounding.
2. The cut-off grade is 1% HM.
3. The figures are rounded to the nearest: 10M for tonnes, one decimal for HM, Slimes and Oversize.

Table 3 Mineral Resource where VHM Data is Available at a Cut-off of 1% HM

Classification	Tonnes (mt)	Slimes (%)	Oversize (%)	HM (%)	Ilmenite (%HM)	Leucoxene (%HM)	Rutile (%HM)	Zircon (%HM)	Monazite (%HM)
<b>Within ML5532</b>									
Measured	264	14.2	12.2	5.4	31	22	7	19	2
Indicated	49	13.6	12.1	4.9	33	22	7	20	2
Inferred	5	13.5	10.2	4.2	36	20	7	22	3
<b>Total</b>	<b>317</b>	<b>14.1</b>	<b>12.1</b>	<b>5.3</b>	<b>32</b>	<b>22</b>	<b>7</b>	<b>19</b>	<b>2</b>
<b>Within RL2002 Outside of ML5532</b>									
Measured	185	19.1	7.3	5.5	31	19	9	21	2
Indicated	454	15.9	13.2	4.2	33	19	7	17	2
Inferred	647	15.2	5.8	4.9	33	17	9	18	2
<b>Total</b>	<b>1,286</b>	<b>16.0</b>	<b>8.6</b>	<b>4.8</b>	<b>33</b>	<b>18</b>	<b>8</b>	<b>18</b>	<b>2</b>
<b>Total within Donald Deposit (RL2002)</b>									
Measured	448	16.2	10.2	5.4	31	21	8	20	2
Indicated	503	15.7	13.1	4.3	33	20	7	18	2
Inferred	652	15.2	5.8	4.9	33	17	8	18	2
<b>Total</b>	<b>1,604</b>	<b>15.6</b>	<b>9.3</b>	<b>4.9</b>	<b>32</b>	<b>19</b>	<b>8</b>	<b>18</b>	<b>2</b>
<b>Total within Jackson Deposit (RL2003)</b>									
Measured									
Indicated	668	18.1	5.4	4.9	32	17	9	18	2
Inferred	155	15.1	3.1	4.0	32	15	9	21	2
<b>Total</b>	<b>823</b>	<b>17.6</b>	<b>5.0</b>	<b>4.8</b>	<b>32</b>	<b>17</b>	<b>9</b>	<b>19</b>	<b>2</b>
<b>Total Donald Project</b>									
Measured	448	16.2	10.2	5.4	31	21	8	20	2
Indicated	1,171	17.1	8.7	4.6	32	18	8	18	2
Inferred	807	15.2	5.3	4.7	33	17	9	19	2
<b>Total</b>	<b>2,427</b>	<b>16.3</b>	<b>7.0</b>	<b>4.8</b>	<b>32</b>	<b>18</b>	<b>8</b>	<b>19</b>	<b>2</b>

**Note**

1. The total tonnes may not equal the sum of the individual resources due to rounding.
2. The cut-off grade is 1% HM.
3. The figures are rounded to the nearest: 1mt for tonnes, one decimal for HM, Slimes and Oversize and whole numbers for zircon, ilmenite, rutile + anatase, leucoxene and monazite.
4. Zircon, ilmenite, rutile + anatase, leucoxene and monazite percentages are reported as a percentage of the HM.
5. Rutile + anatase, leucoxene and monazite resource has been estimated using fewer samples than the other valuable heavy minerals. The accuracy and confidence in their estimate is therefore lower.
6. For further details including JORC Code, 2012 Edition – Table 1 and cross sectional data, see previous announcements dated 7 April 2016, available at ASX's website at [www.asx.com.au/asxpdf/20160407/pdf/436cjqcg3cf47.pdf](http://www.asx.com.au/asxpdf/20160407/pdf/436cjqcg3cf47.pdf)

## COMPETENT PERSONS STATEMENT

The information in this report that relates to Exploration Results and Mineral Resources for the Donald Project is based on information first reported in previous ASX announcements by the Company, as listed in this announcement. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the original announcements continuing to apply and have not materially changed. The information in this document that relates to the estimation of the Mineral Resources is based on information compiled by Mr Rod Webster, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and Australian Institute of Geoscientists. Mr Webster is a full-time employee of AMC Consultants Pty Ltd and is independent of Astron. Mr Webster 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'. The Company confirms that the form and context in which the Competent Persons' findings are presented have not prematurely modified from the relevant original market announcement.

The information in this document that relates to the estimation of the Ore Reserves is based on information compiled by Mr Pier Federici, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and Australian Institute of Geoscientists. Mr Federici is a full-time employee of AMC Consultants Pty Ltd and is independent of Astron. 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'. The Company confirms that the form and context in which the Competent Persons' findings are presented have not prematurely modified from the relevant original market announcement.