



31 July 2013

Donald Mineral Sands Project - Completion of Definitive Feasibility Study

Astron Corporation Limited (ASX:ATR) ("Astron") is pleased to announce that the Definitive Feasibility Study ("DFS") for the Donald Mineral Sands Project ("the Project") has been completed. The Directors believe that the DFS presents a very positive result. This important milestone provides confidence that the Project will be both technically and economically sound with the potential to become a significant long life global operation.

KEY ELEMENTS OF THE DFS ARE:

- **One of the largest known zircon and titanium resources in the world – 4,040Mt at average Heavy Mineral ("HM") grade of 4.8% with proven and probable reserve of 461Mt.**
- **The Project will be ramped up in phases, with initial production of 475ktpa Heavy Mineral Concentrate ("HMC") production (Stage 1a) ramping up to 950ktpa HMC (Stage 1b) (subject to appropriate approvals).**
- **At full production rate, the Project is expected to be one of the top 5 global zircon suppliers, supplying approximately 8% of the global zircon market and 4% of the global titanium feedstock market, with 59:41 zircon and titanium feedstock revenue split.**
- **Ore from the mine will be processed into a HMC at site in Victoria, Australia. The HMC will then be transported to a processing plant located in Putian, Fujian province China for further processing into final products including primary zircon, secondary zircon, rutile (HiTi90), leucoxene (HiTi70), primary ilmenite, secondary ilmenite, zircon 60, zircon saleable tails, magnetic tailings and non-magnetic tailings.**
This is a change from the original project plan where all processing to end product was to be carried out in Australia. Significant capital cost savings have arisen from this change.
- **Total capital cost estimate of \$518m¹ to achieve full 950ktpa production rate, including \$277m (inclusive of EPCM (engineering, procurement, and construction management) and allowance for a \$29m contingency) for initial HMC production of 475ktpa.**
- **Over the expected 31 year life of the Project, the average annual revenue is forecast to be \$740m and the average operating expense is forecast to be \$223m.**
- **A high level project implementation schedule has been developed by Astron. Engineering and construction for Stage 1a is expected to take 24 months with commissioning and first production targeted for the first quarter of 2016. Construction of Stage 1b will commence on completion of Stage 1a and therefore is expected to be at full production within 21 months of construction commencement. The majority of approvals are in place with a Mining Licence awarded for Stage 1a in 2010.**
- **A definitive start date for the Project is subject to a final investment decision, with work continuing on further detailed design work and securing financing for the Project.**
- **The indicated NPV₁₀ of the Project is \$2,104 million and IRR of 36.5% (based on the first 31 years of mining). The financial model adopts price forecasts from Ruidow in China, the major market for the products of the Project. Sensitivity studies indicate that the price of products has the largest impact on NPV of all the variables. The directors believe that the project economics contained in the DFS are reasonably robust and capable of absorbing significant variations in price, currency and operations that will inevitably arise during the life of the Project.**
- **Astron engaged SRK to carry out an independent assessment of the technical aspects of the Project as well as the capital and operating cost estimates and consequent impacts on the financial model. Their report addresses risk assessments including those surrounding fine grain material, and elevated uranium, thorium and chrome levels in the ore, and supports the project solutions Astron has developed to address these and the above mentioned risk issues.**

¹ Capital cost estimate does not include environmental bond (A\$20m), pre-development expenses (A\$4.3m) and initial working capital (A\$50.6m).

PROJECT BACKGROUND

Astron has a significant history in the mineral sands industry globally, dating from 1988 when it became involved in two zirconium materials projects in China. The bulk of Astron's Chinese mineral sands business was sold in 2008 to Imerys SA of France for approximately A\$200m. Since the 2008 sale, Astron has continued to operate a mineral sands trading operation based in the Chinese city of Shenyang, and a zircon and titanium chemical and metals research and development operation in nearby Yingkou. The Donald Mineral Sands deposit was initially discovered and owned by CRA Limited (now Rio Tinto Limited) and acquired by Astron in 2004 from Zirtanium Pty Ltd.

The Project is located near Minyip in the Murray Basin in Australia, ~300km north-west of Melbourne, and 70km north east of the regional centre of Horsham at which it is planned to construct a Mining Unit Plant ("MUP") and a Wet Concentration Plant ("WCP") to produce HMC. HMC will be shipped and processed via a Concentrate Upgrade Plant ("CUP"), Mineral Separation Plant ("MSP") and zircon products through a Zircon Wash Plant ("ZWP") located in Putain, Fujian province, China. The Project will be ramped up in phases, with initial production of 475ktpa HMC production (Stage 1a) ramping up to 950ktpa HMC (Stage 1b) (subject to appropriate approvals), expected to be within 4 years. Expansion of the Project beyond 950ktpa of HMC is not included in the scope of the current DFS and is subject to additional approvals, however, expected to be the subject of further ongoing investigation.

An Environmental Effects Statement ("EES") for Stage 1a of the Project was successfully completed in 2009 for the initial mining area, with a Mining Licence awarded in 2010.

MINERAL RESERVE

In June 2012 a JORC-compliant Ore Reserve was estimated by AMC, based on an earlier Mineral Resource, and is set out in Table 1 below.

Classification	Tonnes (M)	HM (%)	Slimes (%)	Zircon (%)	Rutile (%)	Ilmenite (%)	Leucoxene (%)
Within MIN5532							
Proved	141	5.9	15.4	19.4	7.0	32.9	20.3
Probable	48	5.7	14.0	19.9	7.1	33.3	21.7
Total within MIN5532	189	5.8	15.1	19.5	7.0	33.0	20.6
Within EL4433 outside of MIN5532							
Proved	9	4.2	15.4	14.8	9.3	35.2	20.3
Probable	263	5.9	16.7	18.8	7.9	34.0	17.7
Total Within EL4433 outside of MIN5532	272	5.9	16.7	18.7	8.0	34.0	17.8
Total within EL4433							
Proved	150	5.8	15.4	19.2	7.1	33.0	20.3
Probable	311	5.9	16.3	19.0	7.8	33.9	18.3
Total within EL4433	461	5.9	16.0	19.1	7.5	33.6	18.9

Table 1: Ore Reserve (Source: AMC)²

The Ore Reserve is expected to be sufficient to sustain a mine life of 31 years, with an average strip ratio of 2.7, based on the full mining rate.

MINING, PROCESSING AND PRODUCTION

Mining of the first stage of the Project is based on a single pit configuration, commencing at the centre of the ore body and comprising a single face and mined using trucks and excavators by a contract miner, with the expectation that the contract miner will switch to an owner operator from year 6. This stage is expected to produce 475ktpa of HMC from an average ore throughput of 7.5Mtpa.

Construction of Stage 1b will commence on completion of Stage 1a and is expected to be at full production within 21 months of construction commencement. Stage 1b consists of an additional mining face that will begin operating in the southern section of the ore body advancing north.

² Rutile shown is rutile + anatase.

Ore mined will be hauled to a semi-mobile MUP, located ex-pit, to screen out oversize material, with the resultant slurry to be pumped to a WCP for processing into HMC. The HMC will then be transported by road to the Port of Portland and shipped to a processing plant located at Putian, Fujian province, China and processed into magnetic and non-magnetic concentrate streams by a CUP, which will then be processed into ten final products by a MSP. Products will be sold in China – titanium-based products will be sent to distribution centres across the country and zircon products will be sent to a ZWP to reduce the level of impurities prior to sale. The total products are expected to be primary zircon (106ktpa), secondary zircon (14ktpa), rutile (HiTi90) (89ktpa), leucosene (HiTi70) (35ktpa), primary ilmenite (178ktpa), secondary ilmenite (39ktpa), zircon 60 (4ktpa), zircon saleable tails (10ktpa), magnetic tailings (160ktpa) and non-magnetic tailings (74ktpa).

CAPITAL COST ESTIMATE

Capital costs for the Project are estimated to an overall accuracy of +/- 15% and are denominated in real 2013 Australian Dollars.

Cost Component (A\$m)	Stage 1a 475 ktpa HMC	Stage 1a and 1b 950 ktpa HMC
Infrastructure	45	60
Site Infrastructure	35	69
MUP / WCP	73	147
CUP / MSP / ZWP	62	123
EPCM	28	47
Administration	5	10
Contingency	29	58
Other	2	5
Total	277	518

Table 2: Capital Cost Summary

A A\$20 million bond is anticipated for site rehabilitation in accordance with the Mineral Resources Sustainable Development Act. It is expected this will be covered by a bank guarantee and it is not included in the capital expenditure. This needs to be in place with the Department of Primary Industries prior to commencement of site work. The capital cost estimate also does not include allowance for pre-development expenses (A\$4.3m) and initial working capital (A\$50.6m).

The mining strategy includes contract mining for Stage 1a and is expected to shift to owner operator mining for Stage 1b. The estimate for expenditure on owner operator mining equipment of A\$201 million will be required when the operation shifts from contract mining to owner operator mining. This expenditure will be phased in from year four of the Project upon expected commencement of Stage 1b, and is not included in the capital cost estimates in table 2.

OPERATING COSTS

Operating costs are estimated to an accuracy of +/-15%, are denominated in Australian Dollars, and are shown in real 2013 terms.

OPEX (A\$m)	Average Life of Mine p.a.	%
Mining	55.2	25
MUP / WCP	36.9	17
CUP / MSP	14.2	6
Zircon Wash	15.5	7
Transport	70.1	31
Other	30.7	14
Total	222.7	100

Table 3: Operating Costs Summary

FINANCIAL EVALUATION AND ASSUMPTIONS

Discounted cash flow analysis has been undertaken on the Project. Key financial evaluation assumptions and results are extracted below.

Size of Project	<ul style="list-style-type: none"> ■ Mining at a Stage 1a rate of 7.5mtpa, increasing to 15mtpa when Stage 1b is commissioned
Selling Prices	<ul style="list-style-type: none"> ■ Per Ruidow report, in real 2013 terms ■ Forecast selling prices are based on Ruidow prices until 2025; from 2025 no increase in prices³
Production Profile	<ul style="list-style-type: none"> ■ Based on the mine plan for 15Mtpa
Operating Costs and Capital Costs	<ul style="list-style-type: none"> ■ Costs are in real 2013 terms
Tax Rate	<ul style="list-style-type: none"> ■ Royalty 2.75% of revenues ■ Income tax 30%
Exchange Rates	<ul style="list-style-type: none"> ■ The currency adopted for the analysis is Australian dollars: <ul style="list-style-type: none"> — Assumed 1 AUD buys 0.90 USD until 2016 — From 2016 1 AUD buys 0.85 USD in perpetuity ■ For pricing assumptions, assumes 1 USD buys 6.1 RMB
Discount Rate	<ul style="list-style-type: none"> ■ A base discount case rate of 10% real after tax has been applied to the Project cash flows
Average Revenues	<ul style="list-style-type: none"> ■ A\$740m
Average opex	<ul style="list-style-type: none"> ■ A\$223m

A +/-10% sensitivity analysis was undertaken to assess the influence of key variables on NPV.

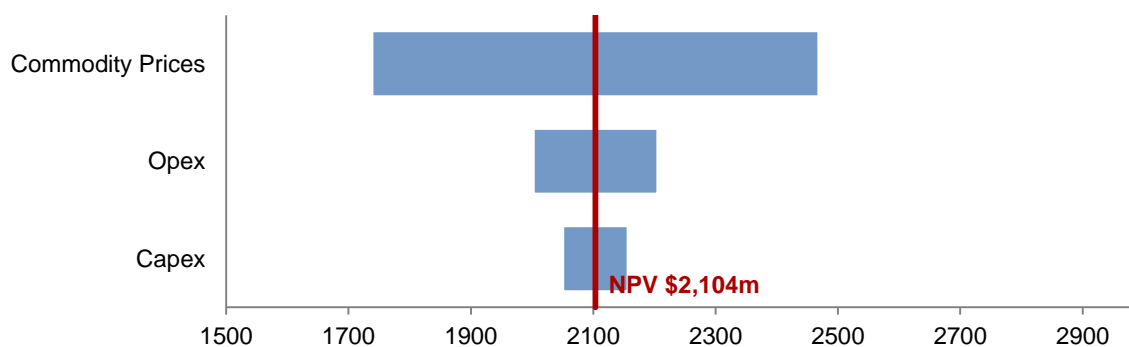


Figure 1: Summary of sensitivity analysis

An increase in the assumed AUD:USD exchange rate from 2016 from 0.85 to 0.90 would reduce the indicated NPV to \$1,901m.

³ Ruidow prices assume real price inflation from 2013 to 2025 and are RMB denominated. In presenting the DFS, Astron has adjusted Ruidow prices for 17% VAT, US\$60/t additional selling cost allowance and converted RMB to US\$ using a constant exchange rate of 6.1 RMB/US\$. Sourced from Reports "Application and prospect of DMS zircon sand in Chinese market" and "Application and outlook of DMS titanium feedstock in Chinese market" prepared by Ruidow Metal Network & Beijing Ruidow Information Technologies Ltd dated June 2013

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COMPETENT PERSONS STATEMENT

The information is extracted from the report entitled Review of Uranium/Thorium Wash Process and Proved Ore Reserve Update created and announced on 18th June 2012 and Donald Mineral Sands Project Resource Update created and announced on 1st December 2011 both are available to view on the Australian Securities Exchange website (<http://www.asx.com.au/asx/research/companyInfo.do?by=asxCode&asxCode=ATR>). The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this announcement relating to Mineral Resources is based on information compiled by Mr Rod Webster. Mr Webster is a full time employee of AMC and a Member of the Australasian Institute of Mining and Metallurgy. Mr Webster has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity he undertook to qualify as a Competent Person as defined in the JORC Code, 2004 Edition.

FORWARD LOOKING STATEMENTS

This announcement contains forecasts and forward looking information. Such forecasts, projections and information are not a guarantee of future performance and involve unknown risks and uncertainties. Actual results and developments will almost certainly differ materially from those expressed or implied. This announcement does not purport to be all inclusive or to contain all information which its recipients may require in order to make an informed assessment of the Company's prospects. You should conduct your own investigation and perform your own analysis in order to satisfy yourself as to the accuracy and completeness of the information, statements and opinions contained in this announcement before making any investment decisions.