

## HIGHLIGHTS

- Keysbrook Project achieves positive operating cashflow of \$7.5 million in September Quarter
- Total September Quarter production increased 24% to 13,378 tonnes (all products)
- Quarterly product sales of 10,061 tonnes and sales revenue of \$6.8 million
- Further strong operational improvement at Keysbrook
- Commissioning of WCP spirals upgrade targeted for November
- Land access and approvals programme progressed
- Continued strengthening of market conditions
- Rod Baxter succeeds Mal Randall as Chairman

During the September quarter 2016, MZI's primary focus remained on ramping-up production at the Company's flagship Keysbrook Project to achieve targeted recovery and production rates.

Production and sales data for the September quarter are detailed in Table 1 on page 3 of this report.

### Comment

MZI Managing Director Trevor Matthews said: *"MZI has made a positive start to the new financial year, achieving during the September quarter the important milestone of positive operational cashflow at Keysbrook as production continued to ramp-up and market fundamentals for mineral sands products continued to improve.*

*"At the operational level, we achieved significantly improved plant performance ahead of the \$2.3 million upgrade of spirals and screening equipment in the Keysbrook Wet Concentrator Plant, which commenced in late September. The upgrades are now targeted for completion and commissioning in November upon receipt of approvals which are now anticipated around the end of October. These upgrades are expected to boost heavy mineral concentrate production to design levels.*

*"On the corporate front, the appointment of Rod Baxter as Chairman also represented an important milestone as MZI prepares to embark on its next stage of growth. It is anticipated that this will include expansion of the Keysbrook Project to maximise its potential 15-year Reserve life. Mr Baxter, with more than 25 years' experience in the global resources and engineering sectors, follows in the footsteps of Mal Randall, who successfully guided the Company's transition from junior explorer to major producer through the development of the Keysbrook Mineral Sands Project.*

*“Significantly, our strong start to the year comes amid continued strengthening of the market fundamentals for titanium dioxide feedstocks, particularly for higher value products such as leucoxene, which bodes well for MZI’s prospects beyond 2016.”*

## **CORPORATE**

MZI finished the September 2016 quarter with \$5.1 million in cash and undrawn debt and guarantee facilities of \$6.9 million.

In August<sup>1</sup>, MZI announced the appointment of Mr Rod Baxter as Chairman of MZI, succeeding long serving Director Mr Mal Randall in the role. Mr Randall, a Non-Executive Director of the Company since 2006 and Chairman for much of that period, stepped down from the role of Chairman as part of the Company’s board succession planning in preparation for MZI’s next major stage of growth, following the successful construction and commissioning of the Keysbrook Mineral Sands Project.

Mr Randall will remain a Non-Executive Director until the Company’s Annual General Meeting, to be held in Perth on 22 November 2016, at which point he will retire from the Board. In accordance with the Company’s succession plan and to ensure that the Company has access to his experience, Mr Randall will be retained as a consultant to the Company for a further 12 months as the Company looks to build on the successful establishment of Keysbrook as a globally significant low cost producer of premium mineral sands products.

Mr Randall’s term as Chairman has seen the Company grow from a junior explorer to the world’s biggest primary producer of leucoxene, a premium quality titanium dioxide feedstock, through the successful permitting, financing, development and commissioning of the Keysbrook project.

In September<sup>2</sup>, the Company released its financial results for the 2015-16 financial year, reporting a net loss after tax of \$24.4 million, reflecting the transition from construction to the commissioning and ramp-up of the Keysbrook Project during the year.

Total issued capital at 30 September 2016 was 207,635,701 ordinary shares with a further 8,125,000 unlisted options with varying exercise prices and maturity dates.

## **OPERATIONS**

### **Production and Costs**

The primary focus of activity during the September quarter was the continuing ramp-up of production at the Keysbrook Project. Production and sales statistics are detailed in Table 1 below.

Mining volumes increased marginally in the September quarter to a record of 1,037,237 tonnes, compared with 1,017,474 tonnes mined in the preceding quarter, despite disruption related to unplanned maintenance downtime at the Mine Feed Unit (“MFU”). The mined grade for the quarter was 2.53% heavy minerals compared with 2.47% in the previous quarter. Ore processed increased 2% to 957,581 tonnes despite the MFU unplanned maintenance impacts.

<sup>1</sup> Refer ASX release dated 22 August 2016

<sup>2</sup> Refer ASX release dated 29 September 2016

**Table 1: Keysbrook Production and Sales**

Production	Unit	Dec-Qtr-2015	Mar-Qtr-2016	Jun-Qtr-2016	Sep-Qtr-2016	Total FY2016-17
Ore Mined	dt	618,480	886,357	1,017,474	1,037,237	1,037,237
Ore Processed	dt	599,369	847,995	937,957	957,581	957,581
Mined Grade	% HM	2.99	2.58	2.47	2.53	2.53
WCP Availability	%	82.4	83.5	82.9	82.3	82.4
MSP Availability	%	Commissioning	85.7	93.4	90.9	92.2
HMC Production (WCP)	dt	16,008	19,566	22,636	24,218	24,218
HMC Processed (MSP)	dt	9,011	24,055	20,140	21,161	21,161
L70	dt	2,316	6,349	3,475	2,985	2,985
L88	dt	1,795	4,943	3,779	6,748	6,748
Zircon concentrate	dt	1,775	4,888	3,572	3,645	3,645
Total Products	dt	5,586	16,270	10,826	13,378	13,378
<b>Sales</b>						
L70	dt	-	6,825	7,000	-	-
L88	dt	-	-	8,250	6,850	6,850
Zircon concentrate	dt	958	4,572	3,770	3,211	3,211
Total – all products	dt	958	11,397	19,020	10,061	10,061

Since commissioning and processing commenced in late 2015, the operational focus has been on improving heavy mineral recovery both at the Keysbrook Wet Concentrator Plant (WCP) and Doral's Mineral Separation Plant (MSP) and in achieving long-term sustainable throughput rates and plant reliability. As mentioned previously, the MFU has experienced issues with the low profile feeder and barrel screen which the Company continues to manage through a regular maintenance regime. A study into future options to improve the MFU reliability and potential other benefits is currently underway. The Company has a target of 89% WCP availability/utilisation and MFU performance is a key constraint at the current time.

Production of Heavy Mineral Concentrate (HMC) at the WCP totalled 24,218 tonnes in the quarter, compared with 22,636 tonnes in the preceding quarter, an increase of approximately 7%. HMC processed at the Picton MSP also increased by 5% to 21,161 tonnes, compared with 20,140 tonnes in the prior quarter, despite a reduction of 5 MSP processing days in the quarter under the tolling schedule with Doral. Consequently, production of saleable products increased 24% to total 13,378 tonnes in the June quarter, compared with 10,826 tonnes in the June quarter.

As previously reported, optimisation activities are ongoing as part of the operational ramp-up in order to achieve targeted production rates. These activities continue to show an improvement trend with HM recovery at the WCP increasing on average by 12% during the September quarter compared with the preceding period.

The previously announced \$2.3 million upgrade to the Keysbrook WCP, comprising a new WCP screening unit and the addition of 48 large capacity spirals, commenced in late September. The works are now scheduled for completion and commissioning in the first half of November, subject to receipt of final shire and regulatory permits. These upgrades are expected to achieve design recovery and production levels.

Operating expenditure for the September quarter totalled \$8.5 million which includes accruals, compared with \$8.8 million in the prior quarter. With additional maintenance costs related to the MFU maintenance issues and longer haulage distances due to a change in the mine plan and deferral of an MFU move until early 2017 offset by lower MSP processing charges, overall operating cost performance for the quarter is broadly in line with budget despite the above impacts.

### **Sales**

Final product sales for the quarter totalled 10,061 tonnes, comprising 6,825 tonnes of L88 and 3,211 tonnes of zircon concentrate. The reduced shipping volumes relative to the prior quarter reflects the shipping schedules and vessel availability of the Company's leucoxene customer, with no L70 sales scheduled during the quarter.

Sales revenue booked in the quarter totalled \$6.8 million. Cash received from customers in the quarter totalled \$17.3 million, including the \$9.8 million received for the leucoxene shipment that occurred in late June, with funds received in early July.

The Keysbrook Project attained a critical milestone in the period, generating positive operating cashflow of \$7.5 million for the September quarter based on sales revenue and operating costs reported above, but excluding corporate costs, capex and debt servicing. Based on forecast operational performance, and assuming that there is no material adverse change to mineral sands prices, product demand or USD:AUD exchange rates, as per current assumptions, the project is expected to continue to be cashflow positive on an annualised basis going forward as it continues its scheduled leucoxene and zircon shipments under existing long-term offtake contracts.

It should be noted the Company's leucoxene shipments are relatively large when compared with annual production and revenue will vary for each month and quarter, dependent on the timing of shipments. As such, working capital requirements can materially fluctuate through the year.

### **Land Access and Expansion**

The Company continued activities during the quarter to support the potential expansion of the Keysbrook Project (which has current Ore Reserves of 72 Million tonnes) by advancing discussions with several farm property owners for land access or freehold property purchases within the Ore Reserve footprint, as well as engaging with the EPA on the required environmental approvals and with local shire councils and regional development bodies regarding future mine development plans.

In addition the Company is planning to complete a detailed evaluation of options to expand production at Keysbrook utilising a high level options study undertaken in 2015 prior to the commissioning of the Keysbrook Project and before the Company significantly increased its Ore Reserves.

### **Mineral Sands Market**

Mineral sands products such as rutile and leucoxene contain titanium dioxide (TiO<sub>2</sub>), which is primarily used in the manufacture of pigments in paints, plastics, inks and coatings. TiO<sub>2</sub> is also used to produce titanium metal which is most commonly associated with aerospace and other specialist applications. Zircon is a major component in ceramics used to manufacture tiles and bathroom furniture and is also used in specialty

chemicals, precision castings and specialty metals. Consequently, the mineral sands market is closely aligned with global economic growth and urbanisation.

The mineral sands market has shown further signs of improvement during the September quarter, particularly within the chloride pigment feedstock sector.

There is now the anticipation of another strong northern hemispherical painting season which would place considerable upward pressure on high  $\text{TiO}_2$  feedstock prices next year. The outlook for zircon still remains mixed with growth in demand being reported in western economies while in China demand has remained subdued waiting for recovery in the building and construction sector. The Chinese real estate market has surged in recent times but this has been driven more by existing dwellings rather than new construction.

Sentiment is still positive that the mineral sands market cycle has moved through the bottom as the reduction in feedstock supply starts to affect inventory and demand. Prices have stabilised with some feedstocks such as sulphate ilmenite now showing a strong recovery. All major pigment producers continue to announce price increases further signalling the bottom of the price cycle.

Despite distraction with the Presidential elections, the US economy has remained relatively strong which augurs well for pigment consumption in 2017, especially if it is another strong painting season. The demand for chloride pigment has resulted in reducing inventory levels and has put upward price pressure on high- $\text{TiO}_2$  feedstock such as rutile and leucosene. Chloride pigment producers will respond to the additional demand by either restarting idled capacity or by using higher grade feedstock to increase yield, both of which will be good for existing feedstock producers.

Flat growth in the building and construction sector has been driving negative sentiment in the Chinese zircon and  $\text{TiO}_2$  coatings sector despite the government continuing to provide fresh stimulus which is expected to help rebuild confidence. The Chinese government is trying to move towards a services -based economy but lack of consumer confidence is hampering progress. The zircon price remained firm during the September quarter with zircon producers continuing to limit production to ensure the market is not oversupplied. Accordingly, the zircon price is expected to remain relatively stable throughout the remainder of 2016 with modest upside possible in 2017.

The Company is heavily weighted to the  $\text{TiO}_2$  market with 70% to 75% of annual revenue from leucosene sales.

### **Health, Safety and Environment**

There were no Lost Time Injuries during the reporting period, making it the sixth consecutive LTI-free quarter. The Company wide rolling 12-month Total Recordable Injury Frequency Rate (per 1 million hours worked) was 23.4 at the close of the period. Proactive reporting of potential hazards by employees continued during the period, providing a strong platform for the reduction of the risk of harm, damage or loss.

During the quarter the Company became aware of issues with its noise monitoring equipment at Keysbrook. These issues have resulted in communication with the regulatory authorities in relation to potential exceedances of noise limits under noise regulations. The Company takes its obligations in all environmental matters seriously and has immediately taken action to correctly calibrate the monitoring equipment and has taken other action to reduce noise from operations and look at further improvements in noise management. Discussions with the regulatory authorities are continuing.

## **Community**

Community partnership commitments for this reporting period included the supply and installation of a water tank and stand for the Keysbrook Volunteer Bushfire Brigade. This item of equipment is integral to the Brigade's emergency response capability. Currently, the Brigade is required to travel and refill from a standpipe during bushfire season which inhibited the Brigade's emergency response time during critical periods. It is anticipated the new tank and stand will be installed in readiness for this bushfire season.

Community engagement activities continued for the quarter which included the distribution of the Keysbrook Community Newsletter. Two key events are scheduled for the forthcoming period being an annual community briefing planned for 26 October at the North Dandalup Hall and an invitation for the community to attend a Mine Open Day on Saturday 12 November.

## **Geology and Regional Exploration**

Activities for the quarter were mostly associated with the compilation and preparation of the data from the drilling program completed in the previous quarter.

All heavy mineral analyses were received and compiled ready for QA/QC and geological interpretation. Compilation of composites for mineral assemblage and sizing analysis was commenced, with the first batch of mineral assemblage analyses being received.

Other activities were limited during the quarter due to the focus on activities associated with the drilling program and preparation for the geological interpretation and resource estimation, but included geological support to the Keysbrook operations.

## **Rehabilitation**

The progressive rehabilitation of mined areas at the Keysbrook Operations continued during the period, with successful re-establishment of pasture being achieved on rehabilitated areas. Removal of infrastructure was completed at the Company's Tiwi Islands operations.

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**QUARTERLY ACTIVITIES REPORT**  
FOR THE PERIOD ENDING 30 SEPTEMBER 2016



**SCHEDULE OF TENEMENTS AS AT 30 SEPTEMBER 2016**

Tenement	Location	Status	Registered Holder	Interest at 30/09/16
E70/2407	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/2610	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/2673	Pinjarra, WA	Application	MZI Resources Ltd	100%
E70/4628	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4723	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4725	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4764	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4765	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4766	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4767	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
E70/4768	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
EL23862	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
EL24329	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
EL24851	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
EL25457	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL25458	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL25459	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL25460	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL25461	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL26421	Anson Bay, NT	Application	MZI Resources Ltd	100%
EL29800	Croker Island, NT	Application	MZI Resources Ltd	100%
EL29839	Arnhem Land, NT	Application	MZI Resources Ltd	100%
EL30924	Tiwi Islands, NT	Application	MZI Resources Ltd	100%
ML24510	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
ML24511	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
ML27438	Tiwi Islands, NT	Granted	MZI Resources Ltd	100%
P70/1662	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1663	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1676	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1677	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1678	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1679	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1680	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1682	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1683	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1684	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%
P70/1685	Pinjarra, WA	Granted	Keysbrook Leucoxene Pty Ltd	100%