FOR THE PERIOD ENDING 31 DECEMBER 2017



# **HIGHLIGHTS**

- Substantial progress on implementing 5.25Mtpa Operating Plan.
- Steady quarterly production of 26,570t HMC for 17,275t saleable products from Keysbrook Operations.
- Sales volumes increased 33% to 17,015t compared with prior quarter, and quarterly sales proceeds received of \$15.4M.
- December half saleable production increased 35% to 39,251t and sales volumes increased 47% to 29,750t, compared with prior corresponding half.
- Final phase of financial restructuring program underway.
- RCF Additional Working Capital Facility increased by US\$5M post quarter end.
- Continued positive conditions and outlook for mineral sands market.

## Overview

During the December quarter, MZI's primary focus was on progressively undertaking planned operational upgrades at the Company's Keysbrook Operations. These upgrades and improvements are designed to increase saleable production, improve margins and reduce unit costs, the benefits of which are expected to become evident in the second half of FY2018.

A number of significant improvements associated with the 5.25Mtpa Operating Plan were completed or commenced during the quarter. Whilst every effort was made to minimise the impact of these activities on day to day operations, there were periods of disruption that were necessary to implement the various changes at both Keysbrook and Picton. These activities are discussed in greater detail in the Operations Section of this report. Notwithstanding these disruptions, Heavy Mineral Concentrate (HMC) production was in line with the prior quarter at 26,570t. Saleable production from Picton amounted to 17,275t compared with a record 21,976t in the preceding quarter.

The ongoing trend of process improvements continued with better production and sales volumes being evident in the December half compared with the prior corresponding six-month period. December half HMC output rose 9% to 53,239t while saleable production increased 35% to 39,251t. Sales volumes increased by 47% to 29,750t compared with the prior corresponding half.

Operating costs were hampered by interruptions related to the operational upgrade and modification program, with C1 unit cash costs increasing to an average of \$629/dmt in the quarter (from \$500/dmt in the prior quarter), and averaging \$557/dmt for the half. Total (all-in) cash costs averaged \$943/dmt in the quarter and \$838/dmt for the half. Both C1 and total cash costs are forecast to decline over the remainder of the financial year once the 5.25Mtpa Operating Plan is fully implemented.

The Operating Plan is the result of a detailed technical review undertaken in support of the Company's planned financial restructuring, which is tracking for completion early in the June quarter 2018.

FOR THE PERIOD ENDING 31 DECEMBER 2017



As part of the plan MZI requires additional working capital liquidity over the next quarter in order to manage the step up in operational activity as well as the consequent increase in inventory levels within the production and sales chain. In accordance with this requirement and subsequent to quarter end, further funding has been provided via a US\$5M increase to the Company's existing Additional Working Capital Facility (AWCF) with major shareholder Resource Capital Fund VI LP ("RCF"). Details of this arrangement are set out in MZI's ASX release dated 29 January 2018. An ASX waiver was secured by the Company to facilitate the provision of the additional funding which also provides (at RCF's absolute discretion) for an extension to the 1 April 2018 repayment date should such an extension be necessary in order to dovetail with the Company's Financial Restructuring Programme.

General market conditions for mineral sands products also continued to strengthen in the quarter, complementing the anticipated improvements from the enhanced Operating Plan.

## **CORPORATE**

MZI finished the quarter with \$5.02M in cash and undrawn guarantee facilities of \$0.15M.

Total issued capital at 31 December 2017 was 230,552,731 ordinary shares with a further 3,800,000 unlisted options with varying exercise prices and maturity dates. Subsequent to the end of the period in January 2018, 7,412,843 shares were issued to RCF in lieu of interest payments, increasing RCF's shareholding in MZI to approximately 50.23%.

In early December 2017, shareholder Rich Mark Development (Group) Pty Ltd (Rich Mark) advised it had increased its shareholding in MZI to approximately 8.6% from 7.4%. After the end of the quarter, Rich Mark announced a further increase in their holding to 8.93%. Shortly thereafter Rich Mark, together with 4.2% shareholder Accent Resources NL, reported their association (inclusive of Mr Jie You, a director of both Rich Mark and Accent who personally holds 0.06% of MZI) resulting in an overall associated interest of 13.19%.

## **Financial Restructuring**

As previously stated, the Company is currently undertaking a financial restructuring initiative, being overseen by MZI's corporate financial advisers Northcott Capital in collaboration with RCF and the Company's Senior Debt provider RMB Australia Holdings Limited ("RMB").

Financial restructuring is being pursued in order to deliver a more robust, transparent, simple and costeffective financial and capital structure for the Company to better realise the long-term value opportunity presented by the Keysbrook Project and the continued strengthening of the global mineral sands market.

This initiative progressed significantly during the quarter, including completion of the Technical Expert's Review, and confidentiality agreements signed by a number of potential participants. Completion is now targeted for early in the June guarter of 2018.

## Other

The Company held its 2017 Annual General Meeting in Perth on 21 November 2017. All resolutions were passed on a show of hands.

In late December 2017, the Company announced the retirement of Non-Executive Director Dr Steven Ward from the Board of MZI Resources. Dr Ward served as a Director of MZI since March 2015, and also served as Interim Managing Director and Chief Executive Officer at the Board's request, during the Company's leadership transition process from November 2016 through June 2017. During this period, Dr Ward led a substantial operational optimisation and continuous improvement program at Keysbrook, culminating in the Operating Plan currently being implemented.

FOR THE PERIOD ENDING 31 DECEMBER 2017



# **OPERATIONS**

Continuous and sustainable operational improvements have been achieved at Keysbrook since the commissioning of the upgraded MFU2 in early 2017. Operational focus is now on implementing the various modifications and improvements associated with the 5.25Mtpa Operating Plan.

Production and sales statistics for the December Quarter are detailed in Table 1.

**Table 1: Keysbrook Production and Sales** 

Production	Unit	Dec-Qtr 2016	Mar-Qtr 2017	Jun-Qtr 2017	Sep-Qtr 2017	Dec-Qtr 2017	YTD FY2017-18
Ore Mined	dt	966,406	922,100	1,040,685	970,458	871,042	1,841,500
Ore Processed	dt	895,435	824,877	942,762	851,311	731,954	1,583,265
Mined Grade	% HM	2.73	2.85	2.61	3.20	3.37	3.28
WCP Runtime	%	74.5	75.5	83.0	87.7	89.6	88.6
MSP Runtime	%	95.5	92.8	89.7	93.6	95.3	94.5
HMC Production (WCP)	dt	24,744	21,984	22,172	26,669	26,570	53,239
HMC Processed (MSP)	dt	22,932	29,266	16,405	29,119	22,274	51,394
L70	dt	3,640	6,094	4,233	8,988	7,461	16,449
L88	dt	8,194	10,150	4,709	7,295	5,221	12,516
Zircon Concentrate	dt	3,802	4,606	3,449	5,693	4,593	10,286
Total Products	dt	15,636	20,850	12,391	21,976	17,275	39,251
Sales							
L70	dt	-	6,626	10,500	-	9,406	9,406
L88	dt	6,243	7,500	8,945	7,000	4,126	11,126
Zircon Concentrate	dt	3,923	4,759	3,916	5,735	3,483	9,218
Total	dt	10,166	18,885	23,361	12,735	17,015	29,750

## 5.25Mtpa Keysbrook Operating Plan Implementation

As noted in the Overview section, a primary focus during the quarter was on upgrade and modification activities associated with implementation of the higher throughput 5.25Mtpa Keysbrook Operating Plan announced in the prior quarter. The Plan is designed to increase saleable production, increase margin performance and reduce overall unit costs.

Activity associated with implementation of the Plan stepped up significantly in the quarter, with preparations for a number of the planned operational changes commencing at both Keysbrook and Picton.

At Keysbrook, a key focus of the Plan is to resolve bottlenecks associated with reduced water recovery and slimes pumping capacity, slimes and tailings disposal, and improve screening of organic material.

Work commenced on two key initiatives to address these issues during the period. In order to overcome problems associated with organic material restricting throughput at the Wet Concentrator Plant (WCP), a trommel has been installed to screen the slurry material before it enters the WCP.

FOR THE PERIOD ENDING 31 DECEMBER 2017





**Trommel Installation at Keysbrook** 

Commissioning work on this unit has recently been completed within a planned two-day shut-down that also covered tie in activity with both the WCP and MFU. These additional changes included replacing the lower deck screens at the MFU with larger-aperture screens (to increase throughput and reduce downtime from blockages) and pipework changes at the WCP.

The second major initiative commenced in December with the staged installation of a Co-disposal tailings circuit. Co-disposal is intended to significantly improve the efficiency of waste disposal from the WCP, by means of a combined slimes and tailings circuit. This system provides the added benefit of improving the quality of recycled water for further utilisation in processing activities.

Whilst Co-disposal results during the trial period have been in line with expectations, initial start-up difficulties prevented continuous operation of the new circuit until mid-January. Slimes and tailings pumping capacity have also been upgraded.

At the Picton MSP, the first phase of debottlenecking work associated with the Operating Plan included initial pipework modifications and reconfiguration of the CoronaStats as well as changes to remove ultrafines from the circuit. Revised material handling practices were also initiated in order to reduce moisture levels. More significant modifications are scheduled in the current quarter, with a major shutdown planned to complete a dryer upgrade, and further changes to pipework and magnetic separation equipment. These changes, together with those completed and planned at Keysbrook in the March quarter, are anticipated to deliver a significant uplift in throughput, recovery and production.

FOR THE PERIOD ENDING 31 DECEMBER 2017



#### **Production**

Mining volumes at Keysbrook were restricted in the December Quarter at 871,042t, approximately 10% below prior quarter volumes, to match limitations resulting from disruptions caused by the Operating Plan and the constraints associated with high clay content and slimes pumping capacity. Both these last two factors will be largely nullified once the new trommel is fully operational and the larger screen is installed at the MFU.

Mining volumes and MFU throughput are scheduled to increase to planned levels in the March Quarter as the recently installed Co-disposal equipment and improved pumping capacity are fully commissioned. The reduced throughput was offset to a degree by improved mined grade in the quarter, which averaged 3.37% Heavy Minerals, compared with 3.2% HM in the previous quarter.

Against the background of constantly changing operating conditions and downtime associated with the implementation of the Operating Plan, the Keysbrook WCP continued to demonstrate improvement in the quarter, achieving average availability and HM recovery of 89.6% and 75.5% respectively. Despite the reduced mining volumes, production of Heavy Mineral Concentrate remained steady at 26,570t, similar to the prior quarter, with an average grade of approximately 83% HM. L88 recoveries at the WCP also improved in the quarter to average 67.7%, compared with 63.8% in the prior quarter.

MSP performance at Picton reflected 38 allocated operating days in the December quarter compared with 52 days in the prior reporting period. Variable recoveries and bottlenecks identified with each production run will be progressively addressed by upgrade works for the 5.25Mpta Operating Plan, scheduled for early March. Given the assigned operating days for MZI, HMC processed was 23% lower at 22,274t, compared with the prior quarter. Final saleable production totalled 17,275t, approximately 21% lower than the record level achieved in the September quarter. Production comprised 7,461t of L70, 5,221t of L88 and 4,593t of Zircon concentrate. As previously noted, optimisation and modification activities are continuing at the MSP as part of the 5.25Mtpa Operating Plan with substantial works scheduled during the current March quarter. These works are also expected to impact available run time in the current quarter.

The reduced throughput and higher downtime resulted in C1 unit cash operating costs of \$629/dmt, compared with \$500/dmt in the prior quarter, and \$557/dmt for the December half. Total ("all-in") unit cash costs averaged \$943/dmt in the quarter, compared with \$728/dmt in the prior quarter, and \$838/dmt for the half.

## Sales

MZI recorded higher quarterly product sales of 17,015t, compared with 12,735t in the September quarter in which no L70 shipments were scheduled. December quarter sales comprised 9,406t of L70, 4,126t of L88 and 3,483t of Zircon concentrate.

Sales revenue booked for the quarter totalled \$9.8M, while sales proceeds received by the end of December totalled \$15.4M (prior quarter sales revenue \$9.4M, cash receipts \$6.5M), resulting in a blended average realised price (all products) achieved in the quarter of \$574/dmt, and \$643/dmt for the half. The lower average price reflected the higher volume of L70 sold in the quarter. No L70 was sold in the prior quarter. Quarterly sales proceeds included A\$2.9M in prepayments received just before the end of the year for half of Keysbrook's zircon shipments scheduled for delivery in the March quarter.

The timing of sales proceeds in the quarter resulted in positive operating cashflow for Keysbrook Operations of approximately \$4.2M in the quarter, compared with negative operating cashflow of approximately \$5.2M in the prior quarter.

Looking forward a similar pattern of shipments and sales revenue is expected in the March Quarter. Thereafter, the modifications and improvements forming the core of the 5.25Mtpa Operating Plan, will start to manifest with a commensurate and progressive increase in production, sales and revenue flow in the second half of the 2017-18 Financial Year.

FOR THE PERIOD ENDING 31 DECEMBER 2017



#### Mineral Sands Market

The outlook for 2018 remains positive underpinned by strong demand for pigment and declining inventory levels. This situation is likely to continue on the back of another strong painting season anticipated in the northern hemisphere. Strong economic growth around the world, and the continued environmental enforcement actions in China remain the major contributing factors towards expected supply tightness. Energy restrictions in China over the winter period have also affected both titanium and zircon value chains, with producers forced to curtail production, in turn limiting inventory build during what is traditionally the low season.

The major Western chloride pigment producers have also maintained strong pricing in response to the demand for their product. These chloride pigment producers are now operating at high utilisation rates and are using higher grade feedstock to increase yield, which has been positive for existing feedstock producers. This development is set to further increase the demand for high grade chloride feedstock such as rutile and leucoxene as evidenced by major producer lluka Resources announcing the go ahead of the Cataby project being underpinned by new synthetic rutile offtake agreements.

MZI continues to position L88 leucoxene as a valuable feedstock in the welding rod sector. Trials have continued with a major welding rod producer, potentially paving the way for commercial deliveries later in 2018 from increased L88 leucoxene production.

Zircon prices have also pushed higher due to continued supply constraints which is likely to become a significant feature of the market. There is a strong level of enquiry as users seek to secure future supply due to traditional supplies tapering off. Iluka has maintained its zircon reference price at US\$1,230/t but other producers are now reporting even higher prices so a future price surge is a strong possibility. A looming zircon shortage is anticipated by the market in 2018 due to a predicted fall in supply from existing operations to below 1 million tonnes by 2021.

Several potential new operations and expansions have been announced but are not expected to impact supply in the short term due to the lead time to production. Accordingly, the outlook for the mineral sands market remains positive in the medium term.

## Health, Safety and Environment

There were Zero Lost Time Injuries during the reporting period. The rolling 12-month Total Recordable Injury Frequency Rate (per 1 million hours worked) improved to 20.6 (September Quarter 24.1). 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.

Adaptive noise management continues to inform operations planning, with close management of the noise profile of operations maintained on a daily basis. The Company continued to engage with regulatory authorities to progress the review of the appropriateness of noise regulation and management for the Keysbrook operation, with further feedback anticipated in the current March quarter. An extensive programme of environmental monitoring was progressed across the Keysbrook site.

## Community

Community engagement activities for the quarter included supporting several local community events such as Mandurah Jobs Forum, Pinjarra Garden Day, and Murray Eventing equestrian event. The Keysbrook Community Consultative Group (CCG) met in November to provide community based feedback for the Keysbrook operations and recommendations on sponsorship submissions.

FOR THE PERIOD ENDING 31 DECEMBER 2017



## **Geology and Regional Exploration**

Activities in the quarter primarily focused on supporting mine planning at the Keysbrook Project.

As previously reported, in October 2017 the Company released an updated Keysbrook Mineral Resource of 146.8 Mt grading 2.0% Total Heavy Minerals (THM), and an updated Ore Reserve of 58.0Mt grading 2.3% THM as at 30 June 2017. The revised estimates included a reduction of 7.5Mt from depletion, dilution and sterilisation by mining since operations commenced, and 6.6Mt from other technical adjustments identified during the review process.

The updated Mineral Resource and Ore Reserve Statement substantiates increasing confidence in the Keysbrook Deposit, with 86% of the total Mineral Resource now classified as Measured (from 71% previously) and 92% of the total Ore Reserve now classified as Proved (from 75% previously). The Mineral Resource remains open to the north, west, and south west within areas that will be progressively tested by further drilling over the life of the operation.

Preparations were also completed for a major grade control drilling program comprising 600 holes across areas scheduled for mining during 2018. The drilling program commenced early in the New Year and was completed in late January.

For further details, please contact:

**Martin Purvis** 

Managing Director & CEO +61 8 9328 9800



Subscribe for our mailing list at <u>www.mzi.com.au</u>

FOR THE PERIOD ENDING 31 DECEMBER 2017



#### About MZI

MZI Resources Ltd (ASX: MZI) is a mineral sands company based in Perth, Western Australia, focused on the high value minerals of zircon, rutile and leucoxene. Its flagship operating asset is the Keysbrook Mineral Sands Project, located 70km south of Perth. At the Keysbrook mine, mineral sands are mined and processed to produce heavy mineral concentrate (HMC) which is processed into final products under a toll treating arrangement with Doral Mineral Sands Pty Ltd at the Picton Mineral Separation Plant (MSP) near Bunbury. The Keysbrook mine hosts a world-class zircon / leucoxene ore body with total Ore Reserves equivalent to over 15 years of mine life and total Mineral Resources equivalent to over 30 years of production. Production commenced in late 2015, making the Keysbrook Project Australia's first – and the world's largest - primary producer of high value leucoxene.

#### Disclaimer

This release has been prepared by the Management of MZI Resources Ltd ("the Company). The information provided in this release is based on publicly available information, internally developed data and is based on the assumptions and limitations mentioned herein and is an expression of present opinion only. No warranties or representations can be made as to the origin, validity, accuracy, completeness, currency or reliability of the information. The Company disclaims and excludes all liability (to the extent permitted by the law), for losses, claims, damages, costs and expenses of whatever nature arising in any way out of or in connection with the information, its accuracy, completeness or by reason of reliance of any person on it. Where the Company expresses or implies an expectation or a belief as to the success of future exploration and the economic viability of future projects, such an expectation or belief is based on management's current predictions, assumptions and projections. However, such forecasts are subject to risks, uncertainties or other factors which could cause actual results to differ materially from future results expressed, projected or implied by such forecasts. Such risks include, but are not limited to, exploration success, commodity price volatility, changes to the current mineral resource estimates, changes to assumptions for capital and operating costs as well as political and operational risks and government regulation outcomes. For more detail of risks and other factors, refer to the Company's other Australian Securities Exchange announcements and filings. The Company does not have any obligation to advise any person if it becomes aware of any inaccuracy in, or omission from any forecast or to update such forecast.

#### **Forward Looking Statements**

Announcements made by MZI Resources Ltd ("the Company") may from time to time contain forward looking statements concerning the operations and projects owned by the Company, including statements concerning mining reserves and resources which may involve estimates based on specific assumptions. Forward looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward looking statements are based on Management's beliefs, opinions and estimates as of the dates the forward looking statements are made and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or reflect other future developments.

#### Competent Person's Statement - Mineral Resources

The information in this report which relates to Mineral Resources is based upon information compiled by Mrs Susan Havlin (in relation to the Keysbrook Project) who is a Member of the Australasian Institute of Mining and Metallurgy and Mr John Baxter (in relation to the Railway Deposit) who is a Member of the Australasian Institute of Geoscientists. Mrs Havlin is an employee of Optiro Pty Ltd and Mr Baxter is a Consulting Geologist, both have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mrs Havlin and Mr Baxter consent to the inclusion in the report of a summary based upon their information in the form and context in which it appears.

## Competent Person's Statement - Ore Reserves

The information in this report which relates to Mineral Reserves is based upon information compiled by Mr Andrew Law who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Law is an employee of Optiro Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Law consents to the inclusion in the report of a summary based upon their information in the form and context in which it appears.

# QUARTERLY ACTIVITIES REPORT FOR THE PERIOD ENDING 31 DECEMBER 2017



## **SCHEDULE OF TENEMENTS AS AT 31 DECEMBER 2017**

Tenement	Location	Status	Registered Holder	Interest at 31/12/2017
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%
E70/5054	Pinjarra, WA	Application	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%
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%

<sup>\*</sup>Indicates tenement/application relinquished

<sup>\*\*</sup>Indicates tenement/application withdrawn