

# QUARTERLY EXPLORATION AND MINING ACTIVITIES REPORT

## January to March 2022 (Q3 FY22)



22 April 2022

Mineral Resources Limited (ASX: MIN) ("MinRes" or the "Company") is pleased to present its Quarterly Exploration and Mining Activities Report for the period to 31 March 2022.

### Q3 KEY POINTS

- Safety performance for the quarter remained strong with no Lost Time Injuries. The Lost Time Injury Frequency Rate maintained at 0.10 and Total Reportable Injury Frequency Rate at 2.56, a slight increase quarter on quarter (qoq).
- MinRes' COVID-19 management approach was strengthened to continue to keep our people safe and operations open. This included upgraded testing and contact tracing protocols across all locations, submitting a "high case load" critical worker list to the WA Government and introducing paid pandemic leave for impacted employees.
- Mining Services production volumes of 63.4Mt were 16% higher than the prior corresponding period (pcp). The Mining Services business remains on target to meet FY22 production guidance of 275-290Mt.
- Iron ore shipments totalled 4.7M wet metric tonnes (wmt) during the quarter, up 22% on pcp, driven by growth at the Utah Point Hub. The iron ore business remains on track to meet FY22 guidance for export shipments (18.5-19.5M wmt) and costs (CFR ex-royalties) of A\$96-104/wmt for the Yilgarn Hub and A\$80-88/wmt for the Utah Point Hub.
- The average realised iron ore price for the quarter was US\$101.31 per dry metric tonne (dmt), 60% higher qoq, and representing a realisation against Platts 62% IODEX of 72%.
- The State Government announced an iron ore capacity allocation to the MinRes-Hancock Joint Venture for the potential development of a new iron ore export facility at Stanley Point berth 3 (SP3). Subject to necessary approvals, the MinRes-Hancock Joint Venture will jointly develop SP3 and share Roy Hill's rail and port infrastructure. Refer to the ASX Announcement on 1 February 2022.
- Significant engineering and detailed design work progressed at the Ashburton Iron Ore Project. Construction of the first transhipper commenced. Two additional tugs for the transshipping operation were contracted, with delivery in the next quarter.
- The Mt Marion Lithium Project produced 104k dmt and shipped 94k dmt of spodumene concentrate during the quarter. Mt Marion remains on target to meet FY22 guidance of 450-475kt and costs of A\$570-615/dmt (CFR ex-royalties). Mt Marion's average realised spodumene concentrate price for the quarter was US\$1,952/dmt, 69% higher qoq.
- MinRes took possession of its 51% share of the Mt Marion spodumene concentrate offtake in February 2022, which will be converted into lithium hydroxide in China under a tolling agreement. Refer to the ASX Announcement on 9 February 2022.
- The Company signed a non-binding letter agreement with Albemarle Corporation (Albemarle) to explore a potential expansion of the MARBL Lithium Joint Venture (MARBL JV). Refer to the ASX Announcement on 9 February 2022.
- Wodgina shipped 22k dmt of spodumene concentrate from existing stockpiles during the quarter at an achieved price of US\$2,200/dmt.
- First new spodumene concentrate from Wodgina Train 1 is expected in May 2022. The MARBL JV has agreed to accelerate the resumption of production from Train 2, with first spodumene concentrate expected in July 2022.
- Third-party spodumene concentrate feed was introduced into the Kemerton Lithium Hydroxide Plant, which MinRes owns 40/60 with Albemarle. First product from Train 1 is expected by May 2022. Train 2 is targeted for mechanical completion in Q2 of FY23, with product expected in that quarter.
- Well testing of the Lockyer Deep-1 conventional gas exploration well in the onshore Perth Basin was completed. Excellent conventional reservoir quality and well deliverability were encountered. Refer to the ASX Announcement on 28 March 2022.

## PRODUCTION AND COMMODITY SHIPMENTS

	Q3 FY22		Q2 FY22		Q3 FY21	
	PRODUCED	SHIPPED	PRODUCED	SHIPPED	PRODUCED	SHIPPED
<b>IRON ORE ('000 wet metric tonnes)</b>						
Yilgarn Hub	2,022	2,129	2,571	2,050	2,698	2,494
Utah Point Hub	2,871	2,537	2,963	2,851	1,684	1,323
<b>TOTAL IRON ORE</b>	<b>4,893</b>	<b>4,666</b>	<b>5,534</b>	<b>4,901</b>	<b>4,382</b>	<b>3,817</b>
<b>SPODUMENE ('000 dry metric tonnes)</b>						
Mt Marion <sup>1</sup>	104	94	98	136	109	128
Wodgina <sup>1</sup>	-	22	-	-	-	-
<b>TOTAL SPODUMENE</b>	<b>104</b>	<b>116</b>	<b>98</b>	<b>136</b>	<b>109</b>	<b>128</b>

<sup>1</sup> Volumes presented on a 100% basis.

## IRON ORE

### Yilgarn Hub

'000 wet metric tonnes	Q3 FY22	Q2 FY22	QoQ Var %	Q3 FY21	PcP Var %
Mined	1,848	1,781	4%	2,485	(26%)
Produced	2,022	2,571	(21%)	2,698	(25%)
Shipped	2,129	2,050	4%	2,494	(15%)

Ore mined was in line with the previous quarter. Lower ore was produced following drawdowns on inventory built in the previous quarter.

Shipping was in line with the previous quarter. Full year shipments are on track to achieve FY22 guidance of 8.0-8.5M wmt at costs of A\$96-104/wmt (CFR ex royalties).

### Utah Point Hub

'000 wet metric tonnes	Q3 FY22	Q2 FY22	QoQ Var %	Q3 FY21	PcP Var %
Mined	2,660	2,869	(7%)	1,580	68%
Produced	2,871	2,963	(3%)	1,864	54%
Shipped	2,537	2,850	(11%)	1,326	91%

The volume of ore mined and ore produced was in line with the previous quarter.

Shipped tonnes decreased because of temporary berthing congestions, with shipments falling into the next quarter. Full year shipments are on track to achieve FY22 guidance of 10.5-11.0M wmt at costs of A\$80-88/wmt (CFR ex royalties).

## LITHIUM

### Mt Marion

SPODUMENE CONCENTRATE					
'000 dry metric tonnes	Q3 FY22	Q2 FY22	QoQ Var %	Q3 FY21	PcP Var %
Mined	402	601	(33%)	603	(33%)
Produced	104	98	6%	109	(5%)
Shipped	94	136	(31%)	128	(27%)
High-grade product contribution	17%	58%		68%	

Volumes presented as 100% for the Mt Marion Project. MinRes ownership in the project is 50%

In response to significant strengthening of global demand for lithium accompanied by record pricing MinRes has agreed with its partner, Jiangxi Ganfeng Lithium Co. Ltd (Ganfeng), to optimise recovery of lithium units from production at Mt Marion and to upgrade the Mt Marion processing facilities. The decision to upgrade the plant reflects an expectation that the lithium market outlook will remain extremely strong for the foreseeable future. Changes to the plant have resulted in annual spodumene concentrate capacity increasing immediately from 450k dmt to a forecast 600k dmt of mixed grade product by reducing the volume of product going to tails. A second stage of expansion will increase installed annual plant capacity to 900k dmt of mixed grade product by the end of calendar 2022. This represents approximately 600k dmt of 6% spodumene equivalent in equal proportions of high-grade and low-grade product. Refer to the ASX Announcement on 5 April 2022.

Ore mined was down from the previous quarter and pcP as mining continued through transitional ore located in the higher levels of the new stage of the pit, leading to greater waste movement. The processing plant's utilisation was 90% while the throughput rate was 294 tph. This resulted in beneficiated feed tonnes of 556k dmt compared to 574k dmt in the previous quarter. Spodumene concentrate production was lower than plan with limited production of high-grade product because of the mining of transitional material. The proportion of high-grade product will increase over the next quarter.

Mt Marion's average realised spodumene concentrate price for the quarter was US\$1,952/dmt, 69% higher qoq. FY22 production (450-475 ktpa) and cost guidance (A\$570-615/dmt CFR ex-royalties) are maintained.

MinRes took possession and control of its 51% share of the Mt Marion spodumene concentrate offtake from 1 February 2022, which will be toll-converted into lithium hydroxide by Ganfeng in China for a term of seven months, with an option to extend. MinRes anticipates first lithium hydroxide sales in May 2022. Refer to the ASX Announcement on 9 February 2022.

### Wodgina

SPODUMENE CONCENTRATE					
'000 dry metric tonnes	Q3 FY22	Q2 FY22	QoQ Var %	Q3 FY21	PcP Var %
Mined	-	-	-	-	-
Produced	-	-	-	-	-
Shipped	22	-	100%	-	100%

Volumes presented as 100% for the Wodgina Lithium Project. MinRes ownership in the project is 40%

Approximately 45k dmt of spodumene concentrate was stockpiled prior to Wodgina being placed on care and maintenance in 2019. In response to the market conditions, the MARBL JV sold 22k dmt during the quarter at US\$2,200/dmt.

The restart of spodumene concentrate production from Train 1 is well progressed, with first spodumene concentrate expected in May 2022. Given strong market demand, the MARBL JV has agreed to accelerate the resumption of production from Train 2, with first spodumene concentrate from this train expected in July 2022. The MARBL JV has also agreed to review the state of the global lithium market towards the end of this calendar year to assess timing for the start-up of Train 3 and the possible construction of Train 4. Each train has a nameplate capacity of 250k dmt of 6% product. Refer to the ASX Announcement dated 5 April 2022.

MinRes continues to work with Albemarle to finalise binding agreements to execute the expansion of the MARBL JV. Refer to the ASX Announcement on 9 February 2022.

## EXPLORATION AND DEVELOPMENT ACTIVITY

### IRON ORE

#### Yilgarn Hub

Progress was made on studies into a viable development of a magnetite project in the Yilgarn. Results from the preliminary drilling program at Koolyanobbing received during the quarter were promising. Commencement of Phase 1 (30,000m) of the fast-tracked drilling program is targeted for Q4 FY22, with the aim of understanding the first-pass footprint by Q1 FY23.

#### Ashburton Hub

MinRes commenced development activities at the Ken's Bore Deposit with the installation of a camp to support drilling and construction. In total, 34 reverse circulation (RC) holes for 2,177m and 14 diamond core holes for 828.3m were drilled during the quarter.

Significant engineering and detailed design work continued to progress the Ashburton Project. Work commenced on the first transshipping barge to be built at a major COSCO shipyard in China, with construction of the second expected to commence in the next quarter. MinRes' contract has an option for an additional two transshippers to be delivered in line with the projected Ashburton production ramp-up. MinRes contracted two additional tugs for the transshipping operation during the current quarter, to be delivered in Q1 FY23.

MinRes advanced trials of its world-first, autonomous road trains project. During the quarter the Company achieved a successful demonstration run of a triple-trailer, automated road train platoon with each road train hauling 300t. The demonstration has been underway at the Yilgarn Hub to prepare for incorporation into Ashburton's development.

The terms of the Ashburton development remain subject to final negotiations and final investment decisions by the other joint venture partners, which are expected in June 2022. The project economics are compelling through all economic cycles. MinRes remains ready to commence construction as soon as final Government and regulatory approvals and joint venture sign-offs are obtained.

#### Pilbara Hub

The State Government announced an increase in iron ore export capacity at the Port of Port Hedland and a new capacity allocation at Stanley Point berth 3 (SP3) which, subject to outstanding approvals, would be allocated to the joint venture between MinRes and Hancock Prospecting Pty Ltd to progress the development of a new iron ore export facility at South West Creek. If the project proceeds and SP3 is developed, MinRes aims to ship at least 20Mt of iron ore per annum. Refer to the ASX announcement on 1 February 2022.

A drilling program designed to collect a bulk sample for pilot plant test material using a Bauer drill rig was completed at the Marillana deposit. In total, 18 holes for 695m were drilled, collecting 622t of ore for pilot plant feed. The test work design has been completed and proposals for the Marillana plant have been received. The next step is to award the plant contract and commence work.

## LITHIUM

### Mt Marion

MinRes continued with a resource extension and exploration drilling program at Mt Marion. In total, 129 RC holes for 17,782m and six diamond core holes for 875m were drilled during the quarter. The RC component of this program aims to increase the Mineral Resource confidence constrained to the North and Central pits and the future South deposit. In addition, the RC component is expected to convert about 15Mt of Inferred Resource to Indicated Resource to support the mine plan in optimising the pit design for maximum ore recovery.

The diamond drilling component of this program, also successfully completed, will inform the geotechnical investigations to support mine design to the base of the final pit depth as well as metallurgical test work to improve yield through the processing plant.

### Wodgina

A drilling program to support the mine restart continued, with a total of 10 diamond core holes for 2,297m drilled during the quarter. Diamond core will also be used for geometallurgical test work and to help identify the mineral domains that will assist ore characterisation to optimise crushing and grinding parameters.

### Kemerton

Spodumene concentrate feed from the third-party Greenbushes Lithium Mine was introduced into the Kemerton Lithium Hydroxide Plant, which is part of the MARBL JV and owned 40/60 with Albemarle. First product from this train is expected by May 2022. Train 2 is targeted for mechanical completion in Q2 FY23, with product expected in that quarter.

### Buldanina

MinRes has a binding term sheet with Pantoro Limited (ASX: PNR; Pantoro) and its joint venture partner Tulla Resources Limited (ASX: TUL) to explore for and develop lithium deposits in a joint venture across the Norseman Gold Project tenure, in Western Australia's Goldfields region.

MinRes commenced an exploration drilling program at Buldanina during the quarter. A total of 59 RC holes for 6,026m have been drilled to date.

## ENERGY

### Gas

During the quarter, the well testing program for the Lockyer Deep-1 conventional gas well, located on Exploration Permit EP368 in the onshore northern Perth Basin, was completed. Refer to the ASX Announcement dated 28 March 2022. Highlights from the well test program include:

- An instantaneous maximum gas flow rate of 117 per million standard cubic feet of gas per day;
- Excellent conventional reservoir quality and well deliverability encountered in the Kingia Sandstone;
- Gas characterised by low impurities of CO<sub>2</sub> (less than 4%) and H<sub>2</sub>S (less than 3 ppm); and
- Condensate was also recovered to surface with a preliminary condensate gas ratio of 5-6 barrels per million standard cubic feet of gas (CGR 5.5).

The Ringneck 2D seismic survey on exploration permits EP368 and EP426 was completed in March 2022. The survey is designed to enhance the sub-surface data set around the Lockyer Deep-1 well to provide drilling locations for future wells.

The Charger 2D seismic survey commenced late in the quarter and remains underway on permits EP454, EP430 and EP507. These permits are located in the central Perth Basin to the south of Lockyer Deep-1.

Processing of data on the Romanesque 3D survey is nearing completion, with the survey designed to identify additional drilling targets close to MinRes' 10TJ/day Red Gully Gas Processing Facility located near Gingin, which is currently in care and maintenance.

## Renewable Energy

Installation of a 2.1MW solar array and battery at the Wonmunna iron ore mine site in the Pilbara continues to progress, with the solar panels now successfully installed. Installation of the battery system is expected to be completed later this calendar year. The combined solar-battery system will provide approximately 30% of the site's installed power requirements and reduce carbon emissions on site by 1,800t of CO<sub>2</sub> per annum.

## ENDS

*This announcement dated 22 April 2022 has been authorised for release to the ASX by Mark Wilson, Company Secretary of Mineral Resources Limited.*

## Further Information

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### About Mineral Resources

Mineral Resources Limited (ASX: MIN) is a Perth-based leading mining services provider, with a particular focus on the iron ore and lithium sectors in Western Australia. Using technical know-how and an innovative approach to deliver exceptional outcomes, Mineral Resources has become one of the ASX's best-performing contractors since listing in 2006.

To learn more, please visit [www.mrl.com.au](http://www.mrl.com.au).

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