

# QUARTERLY EXPLORATION AND MINING ACTIVITIES REPORT



## October to December 2023 (Q2 FY24)

25 January 2024

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 December 2023.

## Q2 KEY POINTS

### Strong operational performance delivered

- FY24 volume and cost guidance remains unchanged for all operations.<sup>1</sup>
- Safety performance was 0.18 Lost Time Injuries. Total Reportable Injury Frequency Rate was 1.90.

### Mining Services

- Production volumes were 72Mt during the quarter, up 9% quarter on quarter (qoq).

### Iron Ore

- Iron ore shipments increased 23% qoq to 4.8M wet metric tonne (wmt).
- Average quarterly realised price was US\$119 per dry metric tonne (dmt), representing a 93% realisation of the Platts 62% IODEX.

### Onslow Iron project

- Onslow Iron is progressing at pace and expected to be delivered well within budget.
- Project remains on target for first ore-on-ship in June 2024.
- Successful completion of first transhipper sea trials, with the first two transhippers scheduled to arrive in April 2024.

### Lithium

- Wodgina, Mt Marion and Bald Hill are profitable at current prices.
- Costs at Wodgina and Mt Marion are forecast to decrease this year as stripping completes.
- Mt Marion spodumene concentrate production increased 30% qoq and shipments rose 34% qoq to a total of 86k dmt.
- Wodgina achieved attributable quarterly spodumene concentrate production of 55k dmt, with improved plant recoveries. Spodumene concentrate shipments increased significantly to 65k dmt.
- Wodgina lithium battery chemical production was 6.8kt and sales were up 52% qoq to 6.5kt.
- Completed the restructuring of MARBL joint venture.<sup>2</sup> Received net proceeds of US\$383 million during the quarter from Albemarle Corporation (**Albemarle**) for MinRes' share of Kemerton lithium hydroxide processing plant and completion adjustments at Wodgina and Kemerton and adjustments back to the effective date of 1 April 2022.
- Finalised the acquisition of Bald Hill, assuming project control on 1 November 2023. Over this period, the mine produced 26k dmt of spodumene concentrate, with 20k dmt shipped.

### Energy

- Lockyer-5 gas drilling commenced and will be developed as one of 10 production wells. A Final Investment Decision on the gas processing facility is expected this quarter.
- Energy division commenced assembly of a new drill rig, which is expected to be operational from mid-2024.

### Corporate

- Completed a five-year US\$1.1 Billion Senior Unsecured Notes Offering at 9.250%.<sup>3</sup>
- 1H24 net debt is expected to be between \$3.472 billion and \$3.612 billion.
- Expect to introduce a partner to own a 49% interest in the Onslow Iron dedicated haul road this half to coincide with first ore on ship.

All 1H24 financial information presented is unaudited and subject to change in the final audited financial statements.

<sup>1</sup> FY24 Wodgina guidance will increase on a pro-rata basis as ownership has increased to 50% effective 18 October 2023

<sup>2</sup> ASX Announcement 18 October 2023

<sup>3</sup> ASX Announcement 4 October 2023

## IRON ORE

	Units	Q2 FY24	QoQ Var	PcP Var
<b>Yilgarn Hub</b> (100% attributable basis, unless otherwise indicated)				
Mined	k wmt	1,572	(25%)	(20%)
Produced	k wmt	2,032	6%	(8%)
Shipped	k wmt	2,065	22%	7%
<b>Pilbara Hub</b> (100% attributable basis, unless otherwise indicated)				
Mined	k wmt	2,276	(24%)	(19%)
Produced	k wmt	2,419	(16%)	(27%)
Shipped	k wmt	2,748	23%	24%

Ore mined in the Yilgarn Hub decreased 25% qoq, primarily due to extensive pre-stripping activities. Production remained in line qoq and shipments were strong, up 22% qoq, following improved haulage operations. FOB costs in the first half were A\$109/wmt, marginally higher than the FY24 guidance of A\$97-\$107/wmt.

Mining and production in the Pilbara Hub were down 24% and 16% respectively qoq, with Iron Valley experiencing a wall failure in late November before recommencing production in December. Shipments were strong, up 23% qoq, with improved load rates at the port. FOB costs in the first half were A\$74/wmt, within the A\$67-\$77/wmt guidance.

The average realised iron ore price for the quarter was US\$119 per dmt, 20% higher qoq, representing a 93% realisation of the Platts 62% IODEX, driven by continued robust demand for lower grade products.

## LITHIUM

### Mt Marion

		Q2 FY24	QoQ Var	PcP Var
<b>Mt Marion: Spodumene concentrate</b> (50% attributable basis, unless otherwise indicated)				
Mined (100% basis)	k dmt	1,242	54%	135%
Produced	k dmt	83	30%	38%
Shipped	k dmt	86	34%	48%
Shipped – SC6 equivalent	k dmt	60	52%	59%

Ore mined increased 54% in the quarter as ongoing stripping activities opened multiple mining fronts across the Central and North pits. An underground development contract was awarded to Develop Global Limited to establish an exploration decline over 18 months, which is expected to start in February 2024.

Produced tonnes increased 30% to 83k dmt, driven by higher utilisation of the plant and improved ore recoveries from a higher volume of fresh ore. Plant improvement initiatives continue to be implemented.

Spodumene concentrate shipments rose 34% qoq, reaching a total 86k dmt which was sold at an average quarterly realised spodumene concentrate price of US\$738/dmt on a 4.2% basis (US\$1,060/dmt on an SC6 equivalent basis). Excluding prior period adjustments (-US\$89/dmt impact) and a change to the reference price formula effective for shipments from September (-US\$244/dmt impact), the average quarterly received price would have been US\$1,071/dmt. The change to the reference pricing formula included a shift to a quotation period at the discharge date.

The decision to commence underground development resulted in a change to the open pit mine plan and a lower strip ratio. The pre-strip of the ore body will be completed in January 2024, with the redeployment of 10 trucks, three excavators and 20 pieces of ancillary gear offsite, and a reduction in headcount of around 130 people (all redeployed throughout MinRes). FOB costs in 1H24 were A\$548/dmt on a product basis (A\$844/dmt on a SC6 basis, below guidance of A\$1,150-\$1,250/dmt). Costs are expected to fall to approximately A\$500/dmt on a product basis by July.

## Wodgina

		Q2 FY24	QoQ Var	PcP Var
<b>Wodgina: Spodumene concentrate</b> (50% attributable basis from 18 October 2023, unless otherwise indicated. Previously 40%)				
Mined (100% basis)	k dmt	866	(17%)	(11%)
Produced (100% basis)	k dmt	115	2%	26%
Produced	k dmt	55	22%	51%
Shipped (100% basis)	k dmt	142	129%	49%
Shipped	k dmt	65	162%	71%
Shipped – SC6 equivalent	k dmt	63	167%	66%
<b>Wodgina: Lithium battery chemicals</b> (Attributable basis from 18 October 2023, unless otherwise indicated. Previously 40%)				
Produced	t	6,798	42%	120%
Sold	t	6,474	52%	183%

Ore mined decreased 17% qoq as the focus shifted towards pre-stripping activities for Stage 2 ahead of the commencement of the third processing train in January 2024.

Wodgina achieved attributable quarterly spodumene concentrate production of 55k dmt, with improved plant recoveries. Spodumene concentrate shipments increased significantly in the quarter and totalled 65k dmt.

On 24 November 2023, a fire in the reagent storage tank area was brought under control by the Wodgina Emergency Response Team. Concentrate production was temporarily halted and resumed on 11 December 2023. Mining operations were unaffected.

Lithium battery chemicals produced were 6.8kt. Lithium battery chemical sales were 6.5kt, up 52% qoq, at an average quarterly realised price of US\$18,712/t.

FOB costs in 1H24 were A\$845/dmt on a product basis (A\$875/dmt on a SC6 basis, at the bottom of guidance of A\$875-\$950/dmt). FOB costs are expected to decrease to A\$550/dmt on a product basis by September as feed quality improves and the strip ratio declines.

## MARBL JV

During the quarter, MinRes completed the restructuring of the MARBL joint venture with Albemarle effective 18 October 2023. MinRes' share of the Wodgina mine increased from 40% to 50% and Albemarle took full ownership of Kemerton lithium hydroxide processing plant. MinRes received net consideration of US\$383 million during the quarter for its share of Kemerton and completion adjustments at Wodgina and Kemerton effective 1 April 2022.

## Bald Hill

		Q2 FY24	QoQ Var	PcP Var
<b>Bald Hill: Spodumene concentrate</b> (100% attributable basis, unless otherwise indicated)				
Mined	k dmt	175	N/A	N/A
Produced	k dmt	26	N/A	N/A
Shipped	k dmt	20	N/A	N/A
Shipped – SC6 equivalent	k dmt	18	N/A	N/A

MinRes finalised the acquisition of the Bald Hill lithium mine and assumed control on 1 November 2023. Over this period, 26k dmt of spodumene concentrate was produced, with 20k dmt shipped and sold at a provisional price of US\$979/dmt.

Approximately 270 new employees were successfully onboarded. Hire gear was removed and replaced with eight MinRes trucks and two excavators, with a new crushing plant currently being commissioned.

Volume and cost guidance will be provided with the 1H24 result.

## EXPLORATION AND DEVELOPMENT ACTIVITY

### IRON ORE

#### Onslow Iron project

Onslow Iron is progressing well and construction is expected to be delivered well within budget. All equipment orders have been placed and contracts let. The project remains on track to deliver first ore-on-ship in June 2024. Key project updates and developments during the quarter include:

- **Dedicated haul road:** Works are progressing at multiple work fronts along the 150km haul road corridor, including bypass roads, tunnels and underpasses.
- **Ken's Bore mine site:** Drill & Blast and Load & Haul operations are progressing well and material movement is increasing as additional fleet and operators come online.
- **Accommodation:** The Ken's Bore construction camp is at full capacity, with 200 resort rooms delivered and progressively occupied.
- **Airport:** The Ken's Bore airport is now fully operational. An inaugural weekly direct charter flight between Brisbane and the mine was launched in January 2024. MinRes is introducing direct flights between Brisbane and Wodgina, Ken's Bore and Onslow.
- **Road trains:** The procurement of the autonomous road train fleet and associated systems continued. The construction of the truck maintenance facility is well advanced.
- **Port:** The transshipping wharf is completed and the shiploader was installed in December 2023. Construction of the product storage shed and truck unloading facility are both approaching completion in Q3 FY24.
- **Transshippers:** Completed the successful sea trial and delivery of the first transhipper, MinRes Airlie. Sea trial of the second and third transshippers planned for late February 2024. First two transshippers are due to arrive in Australia in early April. Orders placed for transshippers six and seven to enable 50mtpa of iron ore exports.
- **Exploration:** Reverse Circulation (RC) continued across the Channel Iron Deposits (CID's). At Cardo Bore East, 8,030m of RC drilling (182 holes) was completed.
- **RCGC:** Reverse Circulation Grade Control (RCGC) drilling continued across Ken's Bore deposit with 17,606m drilled across 486 holes.



Ken's Bore pit



Ken's Bore crushing plant works



Haul road at Peedamulla



Resort installation progressing

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Stacker works and stockyard earthworks



Port of Ashburton ore storage shed



Transhipping wharf at Port of Ashburton



First three transhippers

## Yilgarn Hub

A Yilgarn-wide exploration program targeting Direct Shipping Ore (DSO) continued, including 8,344m of RC drilling (94 holes) completed across Mt Jackson, Windarling and Deception.

## LITHIUM

### Mt Marion

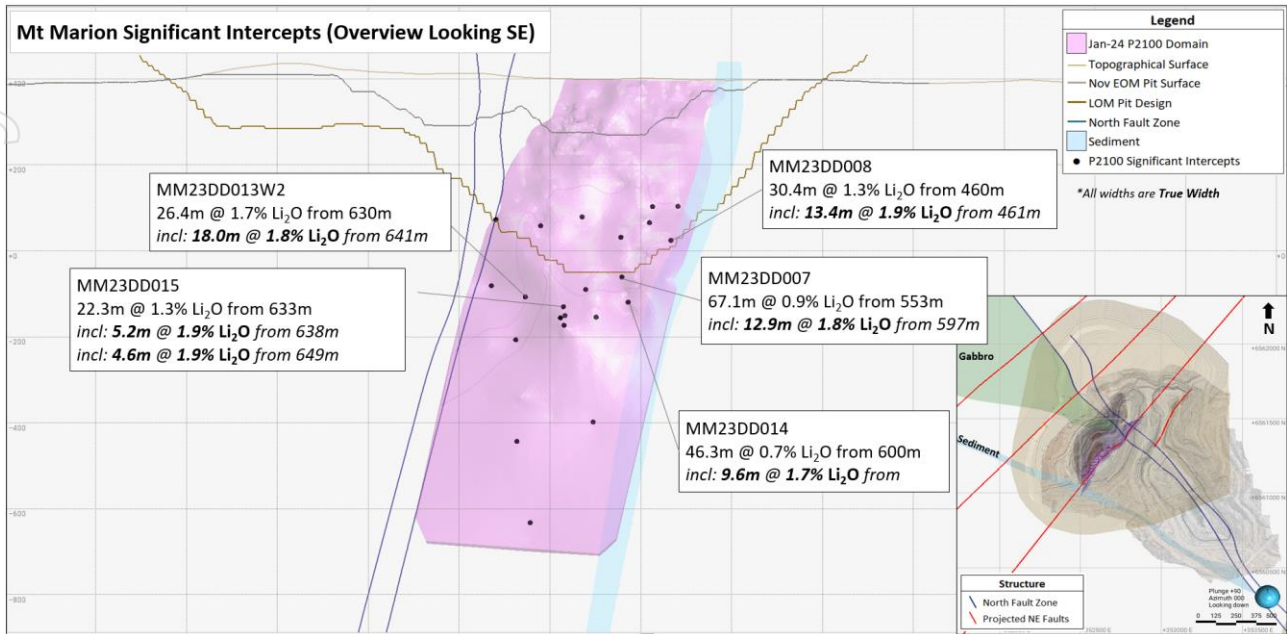
Resource development activities during the quarter focused on the extension and resource classification upgrades of the North and Central pits. North Pit activities also tested the potential for underground mining.

In relation to the Mt Marion underground mining assessment, a total of 3,468m of diamond core was completed. An additional 7,104m of diamond drilling commenced in the quarter in the North Pit.

The underground drilling program has been successful to date, with all holes demonstrating grade continuity of the sub-vertical pegmatite domain at depth (Figure 1). Several assay results have indicated high-grade intercepts at increasing depths. Intercepts (all true widths) include:

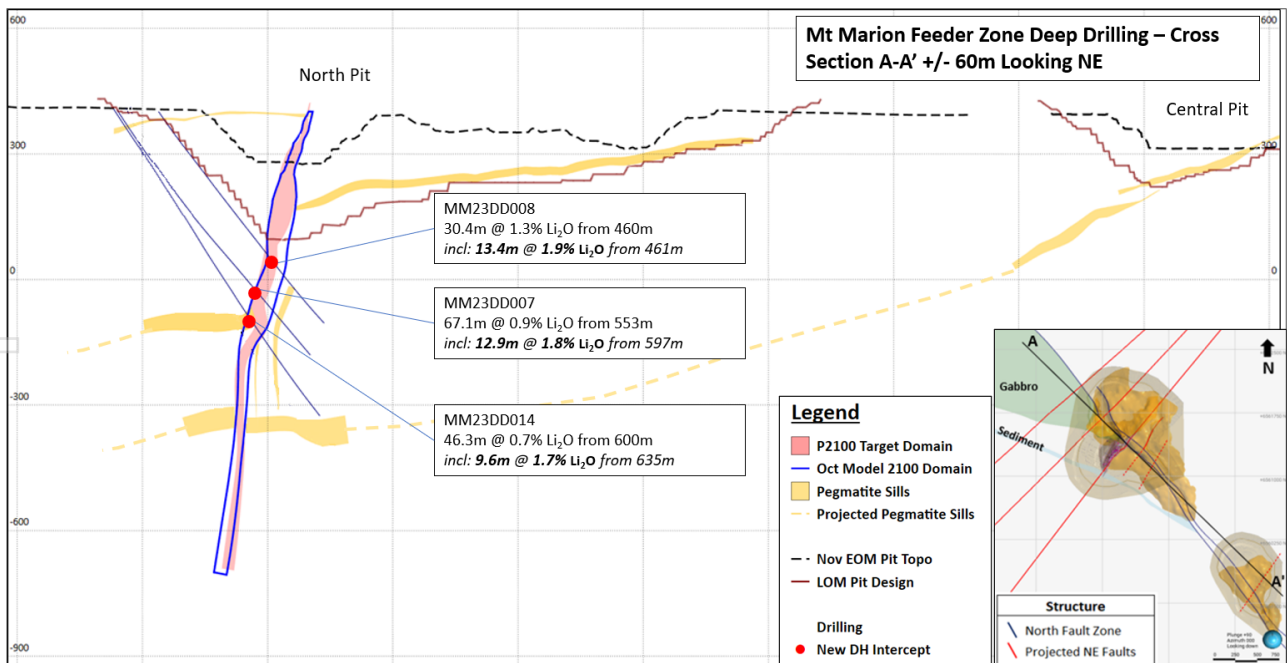
- 26.4m @ 1.7% Li<sub>2</sub>O from 630m, including **18.0m @ 1.8% Li<sub>2</sub>O** from 641m.
- 22.3m @ 1.3% Li<sub>2</sub>O from 633m, including **5.2m @ 1.9% Li<sub>2</sub>O** from 638m and 4.6m @ 1.9% Li<sub>2</sub>O from 649m.
- 30.4m @ 1.3% Li<sub>2</sub>O from 460m, including **13.4m @ 1.9% Li<sub>2</sub>O** from 461m.
- 67.1m @ 0.9% Li<sub>2</sub>O from 553m, including **12.9m @ 1.8% Li<sub>2</sub>O** from 597m.
- 46.3m @ 0.7% Li<sub>2</sub>O from 600m, including **9.6m @ 1.7% Li<sub>2</sub>O** from 635m.

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**Figure 1:** North Pit long section showing focus of exploration for underground potential

A total of 21,886m of RC drilling has been completed, primarily 40x40m infill drilling at the Central and North pits. The drilling shows extensions to the Central Pit domains at depth and North Pit domains along strike (Figure 2). A total of 1098m of RC pre-collar and 708m PQ diamond drilling was completed as part of the geometallurgical drill program. An additional 598m of HQ diamond drilling was completed as part of the Central Pit cutback and the underground box cut geotechnical drill programs.



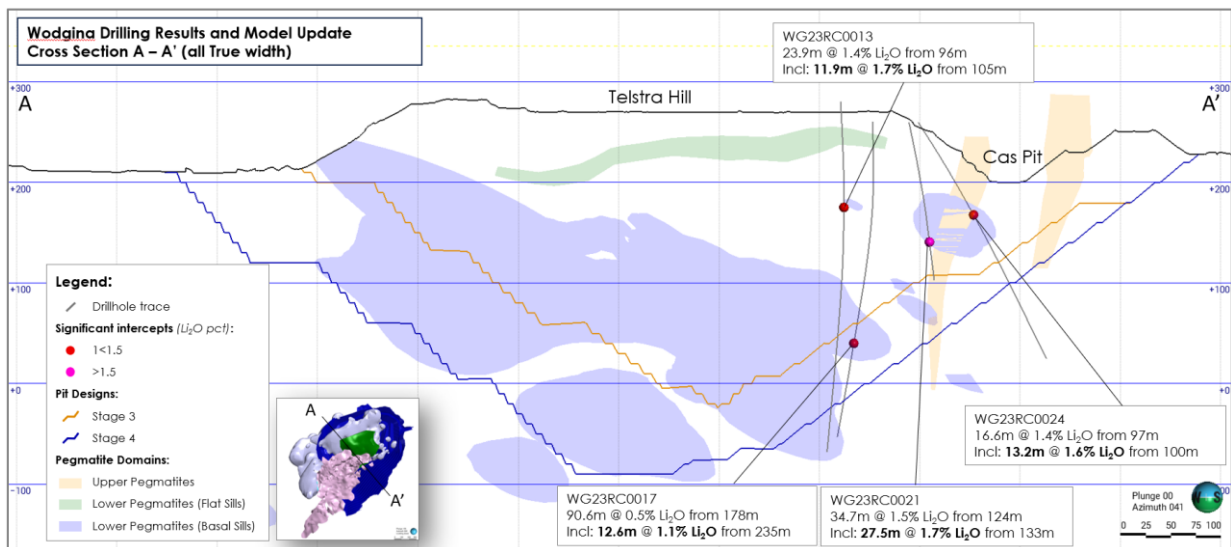
**Figure 2:** North Pit cross section showing focus of exploration for underground potential

## Wodgina

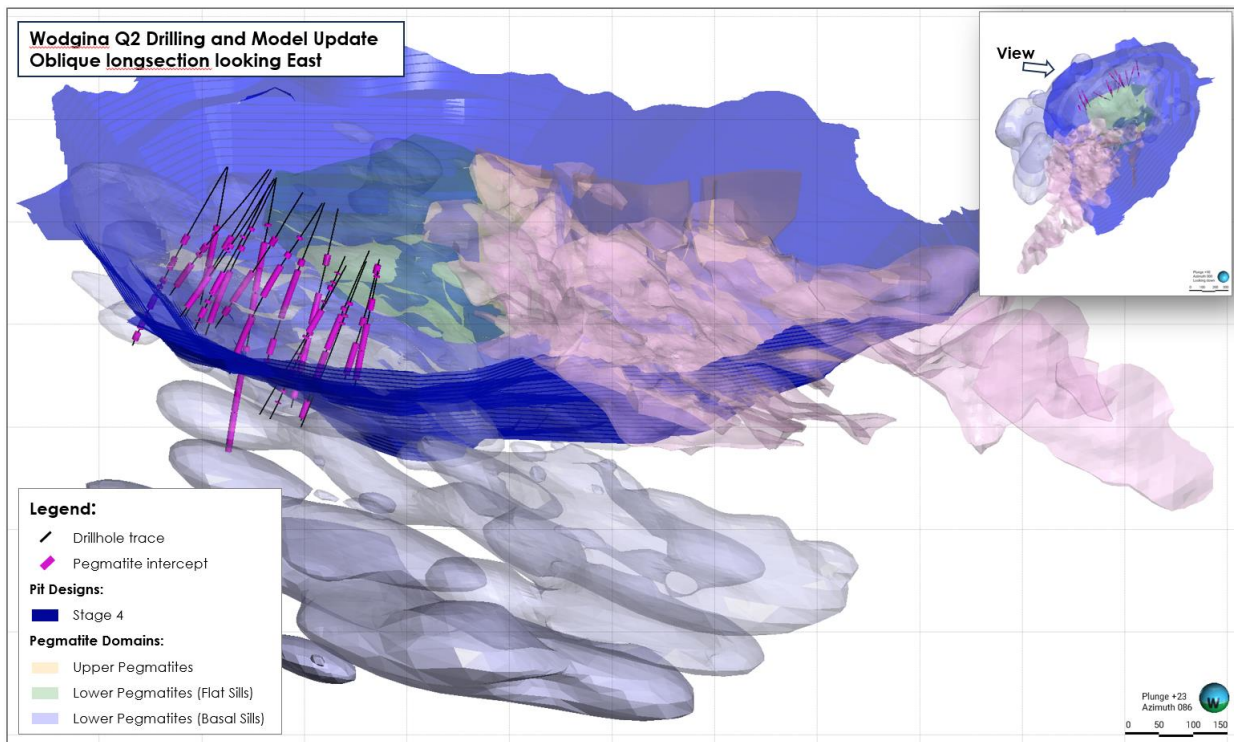
Approximately 535m of core from the prior quarter's drilling campaign was sent for analysis. The ongoing drilling program is testing the strike and up-dip extents of mineralised pegmatites within the Stage 4 pit design, specifically targeting the northeast of the deposit (Figures 3 and 4).

A total of 5,125m of RC drilling was completed in the quarter and resulted in 11,708 samples being sent for analysis. Intercepts (all true widths) include:

- 23.9m @ 1.4% Li<sub>2</sub>O from 96m, including **11.9m @ 1.7% Li<sub>2</sub>O** from 105m.
- 16.6m @ 1.4% Li<sub>2</sub>O from 97m, including **13.2m @ 1.6% Li<sub>2</sub>O** from 100m.
- 34.7m @ 1.5% Li<sub>2</sub>O from 124m, including **27.5m @ 1.7% Li<sub>2</sub>O** from 133m.
- 90.6m @ 0.5% Li<sub>2</sub>O from 178m, including **12.6m @ 1.1% Li<sub>2</sub>O** from 235m.



**Figure 3:** Cross section showing focus of resource development drilling from Telstra Hill



**Figure 4:** Oblique view of Wodgina drilling in 2023

## ENERGY

### Perth Basin

The energy division commenced assembly of the new drill rig, the MinRes Explorer, during the quarter. When fully commissioned with the new MinRes crew deployed in the field from mid-2024, the rig will allow fast-track development of exploration and production wells across the onshore Perth and Carnarvon basins. MinRes Explorer is a fully containerised, low-operating cost onshore unit capable of drilling to 5,000m vertical depth using an automated drill floor.

The latest Perth Basin seismic survey gas exploration campaigns commenced in December 2023 with the 100 line kilometre 2D seismic survey near Jurien Bay and will be followed by the 300 square kilometre 3D seismic survey at Dandaragan and Moora between January and March 2024.

The drilling operation at Lockyer-5 gas well has commenced and will be completed by mid-February 2024. Lockyer-5 is located approximately 1.8km northwest of the North Erregulla Deep-1 discovery and is being developed as a production well.

A Final Investment Decision on the gas processing facility is expected in the current quarter, while engineering is progressing according to plan and long-lead equipment procurement has commenced. Key environmental approvals for the processing facility will be submitted in February 2024, with the project subject to State Government agreement on LNG export.

## CONFERENCE CALL

A quarterly results conference call will be held on **25 January 2024** at **8:00am AWST**.

To register use this link: <https://web.lumiconnect.com/374819869> and enter meeting ID 374-819-869.

### ENDS

*This announcement dated 25 January 2024 has been authorised for release to the ASX by Mark Wilson, Chief Financial Officer and Company Secretary of Mineral Resources Limited.*

### Further Information

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#### About Mineral Resources

Mineral Resources Limited (ASX: MIN) (MinRes) is a leading diversified resources company, with extensive operations in lithium, iron ore, energy and mining services across Western Australia. With a focus on people and innovation, MinRes has become one of the ASX's best-performing companies since listing in 2006. For more information, visit [www.mineralresources.com.au](http://www.mineralresources.com.au).

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## OPERATING PERFORMANCE SUMMARY

	Units	Q2 FY24	Q1 FY24	Q2 FY23
<b>Safety</b>				
TRIFR		1.90	1.96	2.72
LTIFR		0.18	0.20	0.00
<b>Mining Services</b>				
Contract Tonnes	M wmt	72	66	70
<b>Yilgarn Hub (100% attributable basis, unless otherwise indicated)</b>				
Iron ore mined	k wmt	1,572	2,100	1,955
Iron ore produced	k wmt	2,032	1,923	2,210
Iron ore sales	k wmt	2,065	1,694	1,931
Lump weighting	%	27%	31%	14%
Fe grade	%	58.3%	58.3%	58.1%
Realisation	%	95%	90%	98%
Revenue	US\$/dmt	122.8	102.3	96.7
Moisture	%	5.8%	6.2%	5.4%
Revenue	\$/wmt	177.2	147.2	137.9
<b>Pilbara Hub (100% attributable basis, unless otherwise indicated)</b>				
Iron ore mined	k wmt	2,276	3,001	2,812
Iron ore produced	k wmt	2,419	2,889	3,305
Iron ore sales	k wmt	2,748	2,233	2,212
Lump weighting	%	16%	20%	31%
Fe grade	%	58.4%	58.2%	58.1%
Realisation	%	91%	85%	99%
Revenue	US\$/dmt	116.4	97.1	98.1
Moisture	%	12.0%	13.5%	11.8%
Revenue	\$/wmt	155.8	128.2	125.5
<b>Total Iron Ore</b>				
Iron ore sales	k wmt	4,813	3,927	4,144
Lump weighting	%	21%	25%	23%
Fe grade	%	58.4%	58.2%	58.1%
Realisation	%	93%	87%	98%
Revenue	US\$/dmt	119.2	99.4	97.4
Moisture	%	9.3%	10.4%	8.8%
Revenue	\$/wmt	164.9	136.4	131.3

	Units	Q2 FY24	Q1 FY24	Q2 FY23
<b>Mt Marion: Spodumene concentrate</b> (50% attributable basis, unless otherwise indicated)				
Spodumene ore mined (100% basis)	k dmt	1,242	807	529
Spodumene concentrate produced	k dmt	83	64	61
Spodumene concentrate shipped	k dmt	86	64	59
Weighted average grade shipped	%	4.2%	3.7%	3.9%
Spodumene concentrate shipped – SC6 equivalent	k dmt	60	39	38
High grade product contribution	%	40.0%	25.8%	32.7%
Revenue	US\$/dmt	738	1,870	4,159
<b>Wodgina: Spodumene concentrate</b> (50% attributable basis from 18 October 2023, unless otherwise indicated. Previously 40%)				
Spodumene ore mined (100% basis)	k dmt	866	1,044	973
Spodumene concentrate produced (100% basis)	k dmt	115	113	92
Spodumene concentrate produced	k dmt	55	45	37
Spodumene concentrate shipped (100% basis)	k dmt	142	62	95
Spodumene concentrate shipped	k dmt	65	25	38
Weighted average grade shipped	%	5.8%	5.8%	6.0%
Spodumene concentrate shipped – SC6 equivalent	k dmt	63	24	38
<b>Wodgina: Lithium battery chemicals</b> (Attributable basis from 18 October 2023, unless otherwise indicated. Previously 40%)				
Conversion rate for production	x	7.3	8.3	7.4
Lithium battery chemicals produced	t	6,798	4,794	3,096
Lithium battery chemicals sold	t	6,474	4,273	2,290
Lithium battery chemicals revenue (excluding VAT)	US\$/t	18,712	34,036	51,209
<b>Bald Hill: Spodumene concentrate</b> (100% attributable basis, unless otherwise indicated)				
Spodumene ore mined	k dmt	175	N/A	N/A
Spodumene concentrate produced	k dmt	26	N/A	N/A
Spodumene concentrate shipped	k dmt	20	N/A	N/A
Weighted average grade shipped	%	5.6%	N/A	N/A
Spodumene concentrate shipped – SC6 equivalent	k dmt	18	N/A	N/A
Revenue	US\$/dmt	979	N/A	N/A