

# QUARTERLY EXPLORATION AND MINING ACTIVITIES REPORT

## July to September 2023 (Q1 FY24)



25 October 2023

Mineral Resources Limited (ASX:MIN) (MinRes or the Company) is pleased to present its Quarterly Exploration and Mining Activities Report for the period to 30 September 2023.

## Q1 KEY POINTS

- Safety performance for the quarter was 0.20 Lost Time Injuries. Total Reportable Injury Frequency Rate was 1.96.
- FY24 volume guidance remains unchanged for all operations.<sup>1</sup>
- Mining Services production volumes were 66Mt during the quarter, up 14% qoq.
- Quarterly iron ore production increased 8% qoq to 4.8M wet metric tonne (wmt). Shipments of 3.9M wmt were impacted by temporary haulage and port constraints. The average quarterly realised iron ore price was US\$99 per dry metric tonne (dmt), representing an 87% realisation of the Platts 62% IODEX.
- All major approvals have now been received for the Onslow Iron Project. The first ore-on-ship delivery is expected in June 2024. Drill and blast operations commenced at the Ken's Bore mine site, clearing and earthworks started on the private haul road and construction at the port is well progressed.
- Mt Marion ore mined increased 31% qoq as stripping of new areas continued to open multiple mining fronts to access fresh ore. Spodumene concentrate production increased 7%, while shipments rose 5% totalling 64k dmt (attributable).
- Wodgina ore mined increased 45% qoq following Stage 1 pit advancement which allowed access to fresh ore, while pre-stripping of Stage 2 and 3 has progressed well.
- Wodgina achieved record quarterly spodumene concentrate production of 45k dmt (attributable), up 10% qoq. Shipments of 25k dmt (attributable) were impacted over the quarter due to unplanned port maintenance and congestion, with an additional shipment now scheduled in October.
- Wodgina lithium battery chemical production was 4.8kt and sales were 4.3kt in the quarter. The average realised lithium battery chemical revenue in the quarter was US\$34,036/t (excluding VAT).
- Production testing of the North Erregulla Deep-1 (NED-1) gas discovery produced outstanding results, with a peak instantaneous flow rate of 99 million standard cubic feet per day (mmscf/d) and a CO<sub>2</sub> concentration of only 3%.
- On 30 August 2023, MinRes entered into an Implementation Agreement with the Deed Administrators of Alita Resources Limited (**Alita**) which provided for Alita to be placed into liquidation and for Alita to enter a share sale agreement with MinRes for the disposal of its assets which include its interest in the Bald Hill lithium mine. Alita was subsequently placed into liquidation and on 27 September 2023, MinRes and the liquidator entered into the share sale agreement. Completion of the transaction is expected to occur during November 2023.
- MinRes provided an updated Mineral Resources and Ore Reserves statement for its Mt Marion and Wodgina lithium deposits and an inaugural Mineral Resources and Ore Reserves Statement for its Ken's Bore iron ore deposit.<sup>2</sup>
- Post the quarter, MinRes successfully completed a 5-year US\$1.1 Billion Senior Unsecured Notes Offering at 9.250%.<sup>3</sup>
- Subsequent to the quarter, MinRes announced it closed on the restructuring of its MARBL joint venture with Albemarle Corporation (NYSE: ALB) (**Albemarle**) effective 18 October 2023. Albemarle will pay MinRes an estimated US\$380-400 million for the net consideration for MinRes' share of the Kemerton Lithium Hydroxide Processing Plant and completion adjustments at Wodgina and Kemerton. Full payment is expected to be received by December 2023.<sup>4</sup>

<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 22 September 2023

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

<sup>4</sup> ASX Announcement 18 October 2023

## IRON ORE

|   | Units | Q1 FY24 | QoQ Var | PcP Var |
|---|-------|---------|---------|---------|
| <b>Yilgarn Hub</b><br>(100% attributable basis, unless otherwise indicated)                             |       |         |         |         |
| Mined   | k wmt | 2,100   | 3%      | 9%      |
| Produced  | k wmt | 1,923   | (3%)    | (2%)    |
| Shipped   | k wmt | 1,694   | (13%)   | 2%      |
| <b>Pilbara Hub (previously Utah Point Hub)</b><br>(100% attributable basis, unless otherwise indicated) |       |         |         |         |
| Mined   | k wmt | 3,001   | 29%     | 16%     |
| Produced  | k wmt | 2,889   | 16%     | (1%)    |
| Shipped   | k wmt | 2,233   | (4%)    | (23%)   |

During the quarter, mining and production in the Yilgarn were in line with the mine plan, however shipments of 1.7M wmt were impacted by haulage availability. Haulage volumes are expected to increase in forthcoming quarters as additional road trains are brought online.

Mining and production in the Pilbara was strong, up 29% and 16% respectively qoq, driven by the successful transition of mining operations from the central to north east pit at Wonmunna and higher contribution from Iron Valley's central pit. Shipments of 2.2M wmt was in line with prior quarter, though lower than production due to temporary port constraints. Inventories are expected to be drawn down over coming months.

The average realised iron ore price for the quarter was US\$99 per dmt, 9% higher qoq, representing an 87% realisation of the Platts 62% IODEX, with strong demand for lower grade products.

## LITHIUM

### Mt Marion

|   |       | Q1 FY24 | QoQ Var | PcP Var |
|---|-------|---------|---------|---------|
| <b>Mt Marion: Spodumene concentrate</b><br>(50% attributable basis, unless otherwise indicated) |       |         |         |         |
| Mined (100% basis)  | k dmt | 807     | 31%     | 83%     |
| Produced  | k dmt | 64      | 7%      | 18%     |
| Shipped   | k dmt | 64      | 5%      | 16%     |
| Shipped – SC6 equivalent  | k dmt | 39      | 1%      | 18%     |

Ore mined increased 31% in the quarter as stripping of new areas continued to open multiple mining fronts across the central and north pits to access higher quality fresh ore.

Produced tonnes increased by 7% to 64k dmt, with the plant expansion commissioned and continuing to ramp-up. Various improvement initiatives are being tested including ore-sorting and wet high intensity magnetic separation.

Spodumene concentrate shipments continued to increase, rising 5% qoq, totalling 64k dmt.

The average quarterly realised spodumene concentrate price was US\$1,870/dmt, inclusive of grade adjustments and product discounts, down 28% qoq. Shipments were weighted towards the end of the quarter.

## Wodgina

|   |       | Q1 FY24 | QoQ Var | PcP Var |
|---|-------|---------|---------|---------|
| <b>Wodgina: Spodumene concentrate</b><br>(40% attributable basis, unless otherwise indicated)     |       |         |         |         |
| Mined (100% basis)  | k dmt | 1,044   | 45%     | 91%     |
| Produced  | k dmt | 45      | 10%     | 77%     |
| Shipped   | k dmt | 25      | (32%)   | (6%)    |
| Shipped – SC6 equivalent  | k dmt | 24      | (30%)   | (10%)   |
| <b>Wodgina: Lithium battery chemicals</b><br>(40% attributable basis, unless otherwise indicated) |       |         |         |         |
| Produced  | t     | 4,794   | 14%     | 415%    |
| Sold  | t     | 4,273   | 11%     | N/A     |

Ore mined increased 45% qoq as Stage 1 pit advanced allowing access to fresh ore, with minor ore contribution from the development of Stage 2. Pre-stripping of Stage 2 and 3 has advanced well with plans to commence operation of three processing trains from January 2024.

Wodgina achieved record quarterly spodumene concentrate production of 45k dmt, up 10% qoq, with plant recoveries increasing.

SC6 equivalent shipments in the quarter were 24k dmt, down 30% qoq as a result of unplanned port maintenance and subsequent congestion. FY24 shipments are expected to be in line with production, with additional shipments scheduled for Q2 (October).

Lithium battery chemicals produced were 4.8kt in the quarter, an increase of 14% qoq. Lithium battery chemical sales for the quarter were 4.3kt at an average realised price of US\$34,036/t (down 16% qoq).

## MARBL JV

Subsequent to the quarter's end, MinRes announced it closed on the restructuring of its MARBL joint venture with Albemarle effective 18 October 2023. As announced in July, MinRes' share of the Wodgina lithium mine will increase from 40% to 50% and Albemarle will now take full ownership of Kemerton. Albemarle will pay MinRes an estimated US\$380-400 million for the net consideration for MinRes' share of Kemerton and completion adjustments at Wodgina and Kemerton. Full payment is expected to be received by December 2023. With the completion of this transaction, MinRes will now report its 50% ownership interest in Wodgina and market its share of Wodgina spodumene concentrate and lithium battery chemicals.

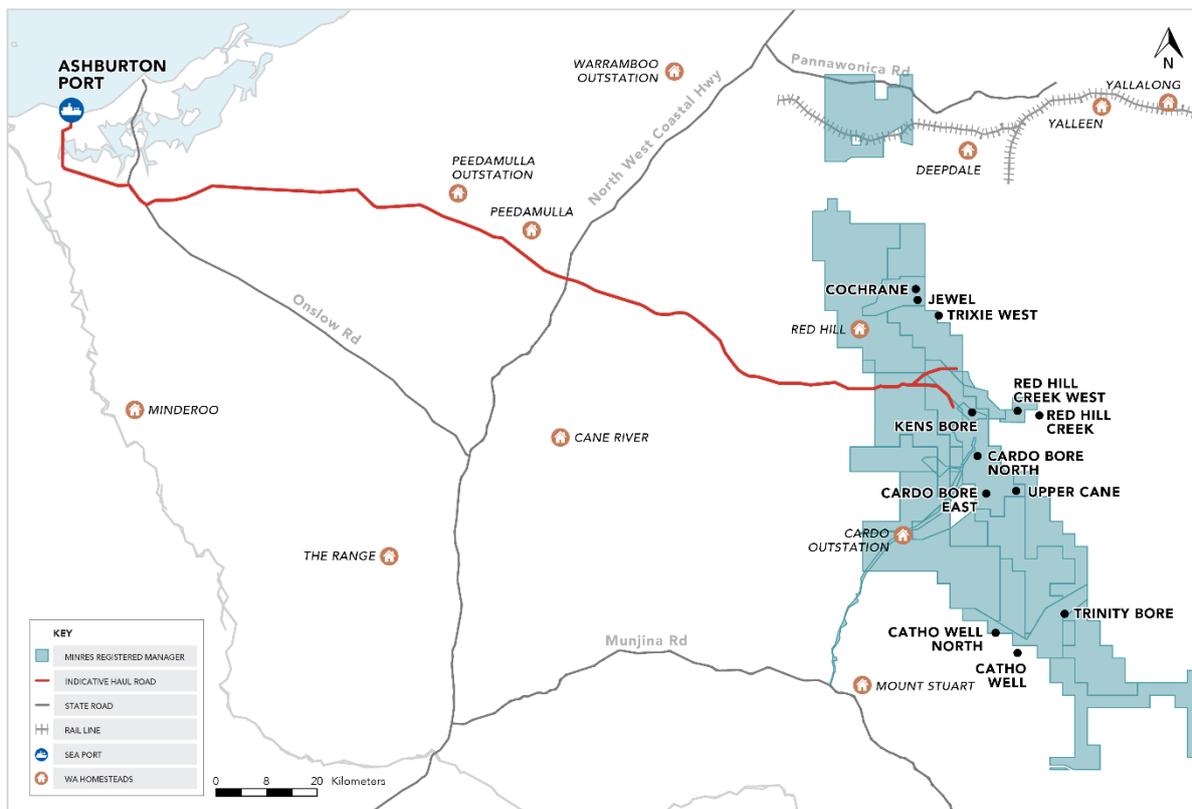
## EXPLORATION AND DEVELOPMENT ACTIVITY

### IRON ORE

#### Onslow Iron Project

Key project updates and developments during the quarter include:

- **Private haul road:** Section 38 major environmental approval was received on 3 July. Clearing and earth works commenced on multiple work fronts along the 150km haul road corridor.
- **Ken's Bore mine site:** Clearing and earth works at Ken's Bore are well advanced. The first blast took place in July and pit development works are being addressed by the load and haul fleet on site.
- **Construction camp:** The Onslow 300-room construction village has been completed and is now fully occupied.
- **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 transhipping jetty is well progressed, with dolphins and conveyor infrastructure installed. Construction of the product storage shed and truck unloading facility were also a key focus area over the last quarter and well advanced.
- **Transhippers:** Fit out of the second transhipper, Coolabah, is progressing well. The keel of the third transhipper, Montebello, has been laid.
- **Mineral Resources** of 394Mt at 56.4% Fe and **Ore Reserves** of 207Mt at 58.1% Fe for Ken's Bore was announced on 22 September. Ken's Bore is one of several deposits owned by the Red Hill Iron Ore Joint Venture.
- **Exploration:** Reverse Circulation (RC) and diamond core drilling continued across the Channel Iron Deposits (CID's) of the Onslow Iron Project. At Cardo Bore East, 13,503m of RC drilling (270 holes) was completed to better understand inherent grade variability and de-risk the mine plan. An additional 1,138m (13 holes) of diamond drilling was completed across Upper Cane and Ken's Bore to assess metallurgical requirements. Diamond drilling was completed in August and will resume in CY25 for further metallurgical analysis.



**Figure 1:** Red Hill Iron Ore Joint Venture tenements



Ken's Bore crushing plant pad concrete works



Stockyard earthworks progressing



Haul road east of the North West Coastal Highway



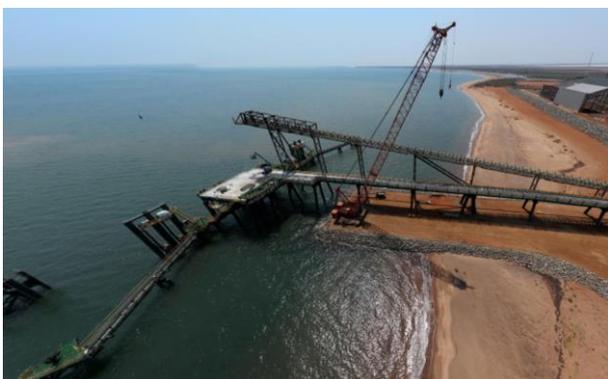
Road train truck maintenance facility



Unloading shed feeder installation



Port ore storage shed steel erection



Wharf installation at Port of Ashburton

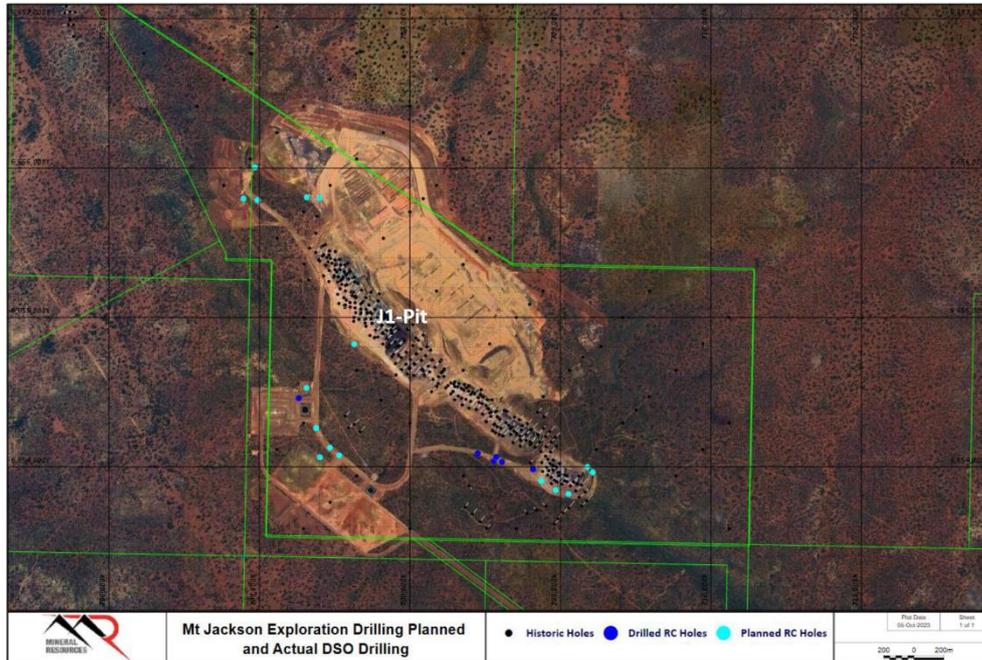


Third transhipper in the drydock

## Yilgarn Hub

A Yilgarn-wide exploration program targeting Direct Shipping Ore (DSO) continued.

- Includes 6,754m of RC drilling (81 holes) completed across South Koolyanobbing, targeting open mineralisation along strike and down dip from K to F pits, which shows potential gains based on geologically logged data.
- The RC program transitioned to DSO targets at J1 Pit at Mt Jackson, with 1,128m of a planned 3,000m completed (Figure 2). Assay results are pending.



**Figure 2:** RC drilling across Mt Jackson – J1 Pit

RC drilling commenced at Mt Richardson targeting magnetite potential below an Inferred DSO Resource of greenstone-hosted banded iron formation (BIF).

- 6,754m of RC drilling (28 holes) was completed across the deposit. Early results show potential for magnetite, as well as additional DSO intersections close to surface.
- RC drilling is planned for completion in October with a reduced scope of work.

# 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 includes testing the potential for underground mining.

In relation to the Mt Marion underground mining assessment, a total of 4,815m of diamond core and 344m of RC pre-collar drilling was completed. The program has been successful to date, with all holes returning assay results which demonstrate grade continuity of the sub-vertical pegmatite domain at depth, including 1km below the current Life of Mine design (Figures 3 and 4). Intercepts (all true widths) include:

- 59m @ 1.1% Li<sub>2</sub>O from 416m, including **34m @ 1.5% Li<sub>2</sub>O** from 416m
- 49m @ 1.4% Li<sub>2</sub>O from 393m, including **34m @ 1.7% Li<sub>2</sub>O** from 393m
- 57m @ 1.2% Li<sub>2</sub>O from 423m, including **32m @ 1.8% Li<sub>2</sub>O** from 423m

An additional 695m of diamond drilling commenced in the quarter in the North Pit. This drilling will increase the confidence between the 180m-200m inferred portion below the North Pit's Life of Mine. The program consists of four phases (Figure 5), initially drilling phases 1 and 2 and equating to 9,775m.

A total of 22,642m of RC drilling has been completed, primarily 40x40m infill drilling at the Central and North pits. A total of 715m of RC pre-collar and 473m PQ diamond drilling was completed as part of the geometallurgical drill program designed to support the plant optimisation at Mt Marion. An additional 948m of HQ diamond drilling was completed as part of the Central Pit cutback geotechnical drill program.

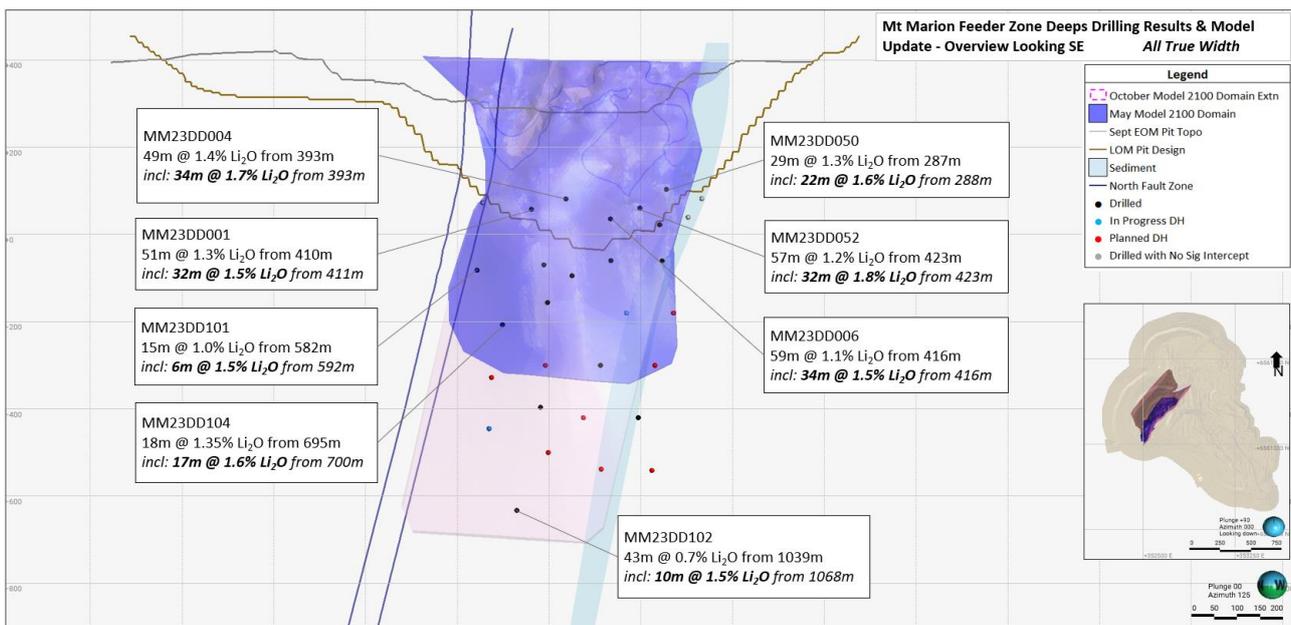
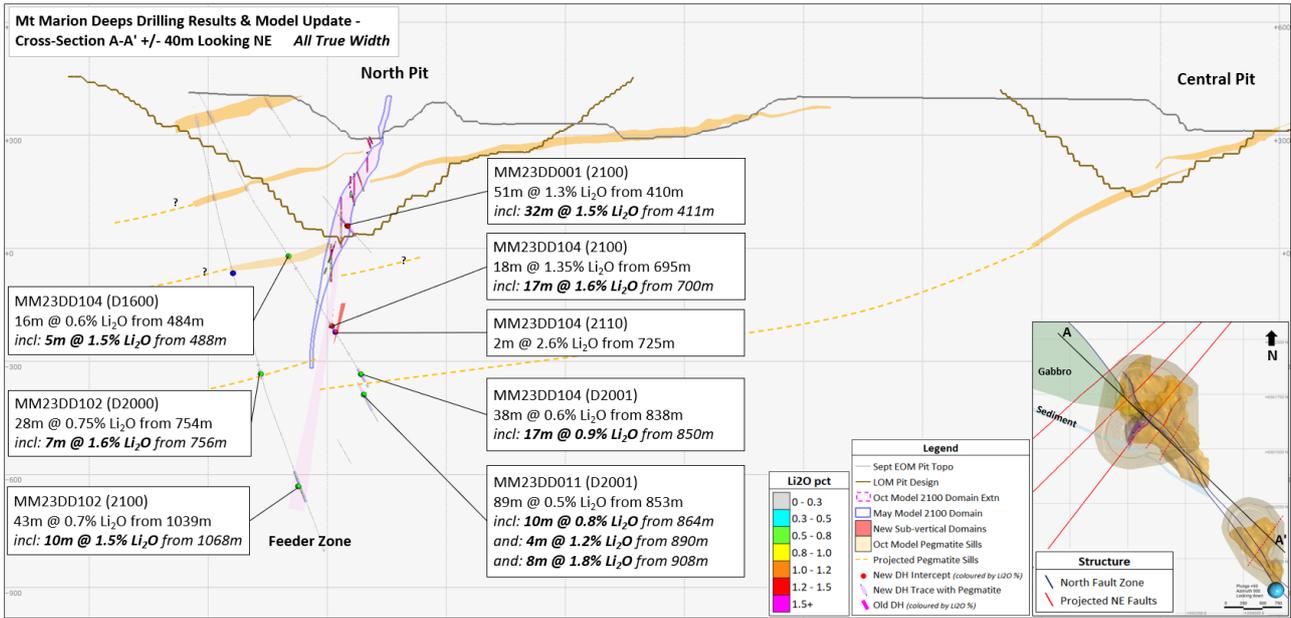
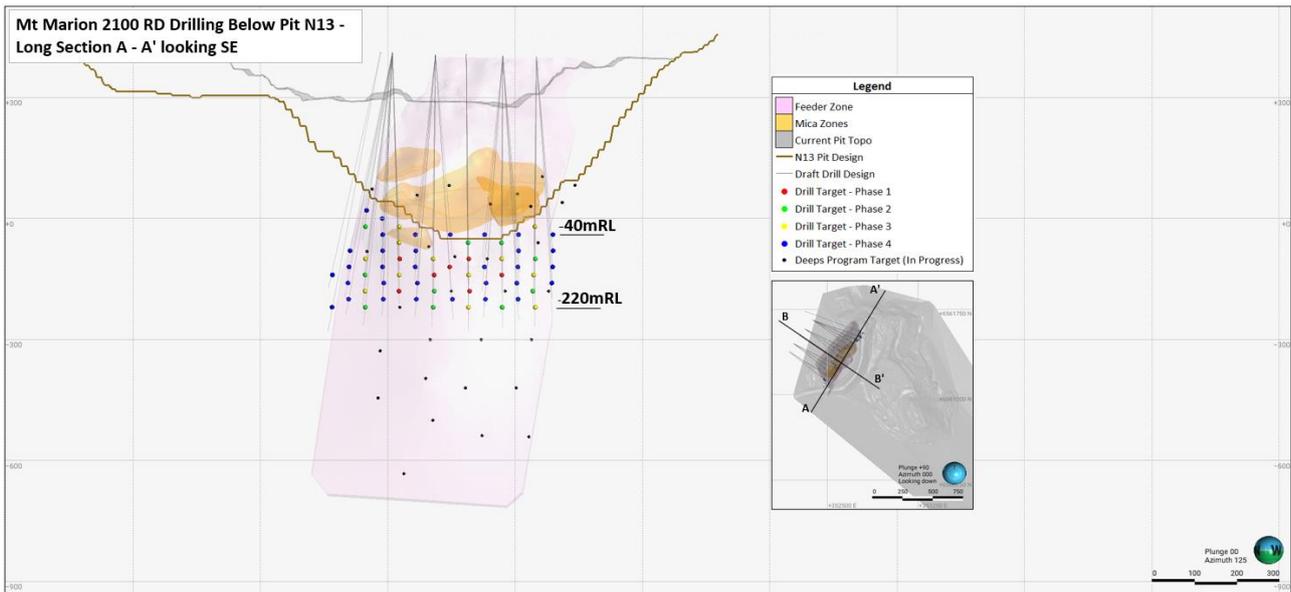


Figure 3: North Pit long section showing focus of exploration for underground potential



**Figure 4:** North Pit cross section showing focus of exploration for underground potential

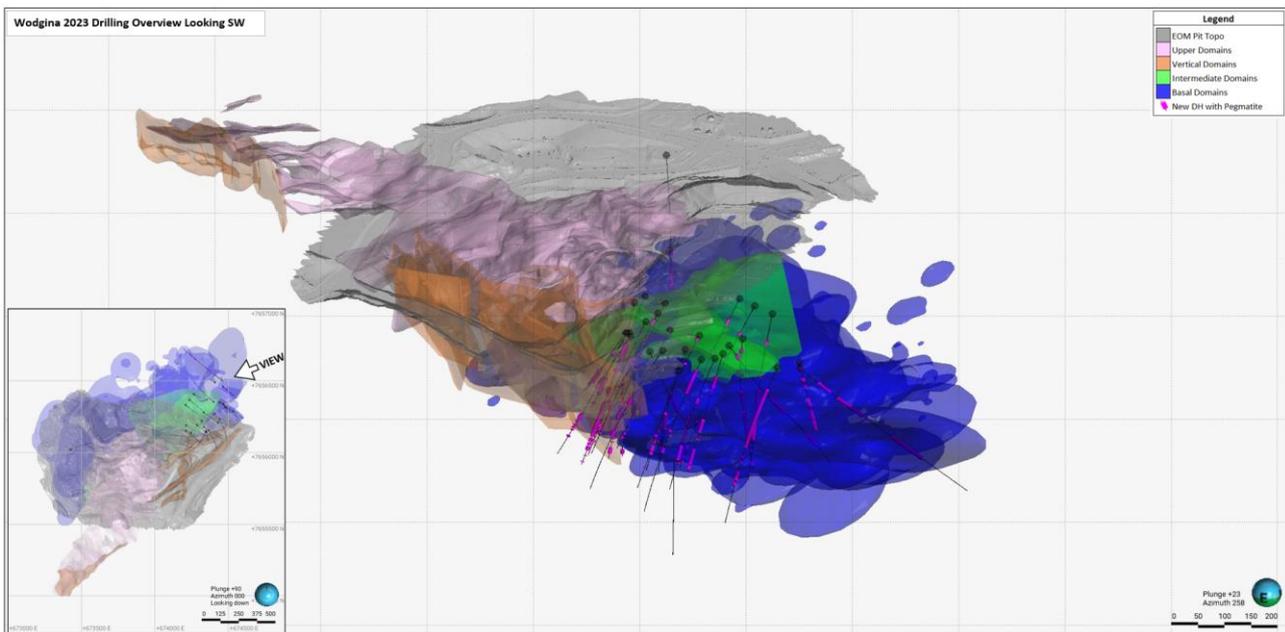


**Figure 5:** North Pit cross section showing drilling targeting the main 2100 domain 180m-200m vertical depth

## Wodgina

Approximately 535m of core from the prior quarter’s drilling campaign was sent for analysis, with results pending.

A total of 5,630m of RC drilling was completed during the quarter and resulted in 9,180 samples being sent for analysis, with results pending. The ongoing drilling program is testing the down dip extents of mineralized pegmatites, with the program currently in progress at a vertical distance of circa 580m from surface.



**Figure 6:** Oblique view of Wodgina drilling in 2023

## ENERGY

### Perth Basin

Drilling at Lockyer-3, located 2.7km northwest of the Lockyer Deep-1 natural gas discovery, reached a total 4,590m measured depth relative to the rotary table (MDRT) on 31 July. The primary objective Kingia Sandstone was successfully intersected at approximately 4,470m MDRT. Petrophysical analysis indicated 13m of gas pay, with an average porosity of 12%. Lockyer-3 has been cased and suspended with final completion scheduled for 2024.

The NED-1 production well test produced a peak instantaneous flow rate of 99 MMscf/d. The maximum flow rate was constrained due to the duration of the testing and equipment size, indicating higher flow rate potential. Preliminary analysis of gas and condensate samples indicate gas composition consistent to Lockyer Deep-1, with a CO<sub>2</sub> concentration of 3%. Gas samples from NED-1 are being analysed by Core Laboratories for further independent verification and full compositional analysis. The NED-1 well was suspended for future operations on 22 September.

MinRes finalised the acquisition of a drill rig (LOC405) during the quarter. This will allow fast track development of exploration and production wells across the Perth Basin, Carnarvon Basin and Dandaragan/Red Gully tenements. The LOC405 drill rig is a fully containerised, low-operating cost onshore unit, capable of drilling to 5,000 metre vertical depth using an automated drill floor.

## CONFERENCE CALL

A quarterly results conference call will be held on **25 October 2023** at **8:00am AWST**.

To register use this link: <https://web.lumiconnect.com/357505208> and enter meeting ID 375-505-208.

### **ENDS**

*This announcement dated 25 October 2023 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    | Q1 FY24 | Q4 FY23 | Q1 FY23 |
|--|----------|---------|---------|---------|
| <b>Safety</b>  |          |         |         |         |
| TRIFR  |          | 1.96    | 2.21    | 2.43    |
| LTIFR  |          | 0.20    | 0.15    | 0.00    |
| <b>Mining Services</b>   |          |         |         |         |
| Contract Tonnes  | M wmt    | 66      | 58      | 69      |
| <b>Yilgarn Hub<br/>(100% attributable basis, unless otherwise indicated)</b>                             |          |         |         |         |
| Iron ore mined   | k wmt    | 2,100   | 2,043   | 1,929   |
| Iron ore produced  | k wmt    | 1,923   | 1,973   | 1,972   |
| Iron ore sales   | k wmt    | 1,694   | 1,938   | 1,657   |
| Lump weighting   | %        | 31%     | 30%     | 0%      |
| Fe grade   | %        | 58.3%   | 58.0%   | 56.5%   |
| Realisation  | %        | 90%     | 84%     | 69%     |
| Revenue  | US\$/dmt | 102.3   | 93.6    | 71.0    |
| Moisture   | %        | 6.2%    | 5.6%    | 6.4%    |
| Revenue  | \$/wmt   | 147.2   | 131.1   | 97.5    |
| <b>Pilbara Hub (previously Utah Point Hub)<br/>(100% attributable basis, unless otherwise indicated)</b> |          |         |         |         |
| Iron ore mined   | k wmt    | 3,001   | 2,327   | 2,582   |
| Iron ore produced  | k wmt    | 2,889   | 2,496   | 2,907   |
| Iron ore sales   | k wmt    | 2,233   | 2,327   | 2,885   |
| Lump weighting   | %        | 20%     | 15%     | 23%     |
| Fe grade   | %        | 58.2%   | 57.9%   | 58.2%   |
| Realisation  | %        | 85%     | 80%     | 71%     |
| Revenue  | US\$/dmt | 97.1    | 89.1    | 73.9    |
| Moisture   | %        | 13.5%   | 13.3%   | 12.8%   |
| Revenue  | \$/wmt   | 128.2   | 114.8   | 92.7    |
| <b>Total Iron Ore</b>  |          |         |         |         |
| Iron ore sales   | k wmt    | 3,927   | 4,264   | 4,542   |
| Lump weighting   | %        | 25%     | 21%     | 15%     |
| Fe grade   | %        | 58.2%   | 58.0%   | 57.6%   |
| Realisation  | %        | 87%     | 82%     | 70%     |
| Revenue  | US\$/dmt | 99.4    | 91.3    | 72.8    |
| Moisture   | %        | 10.4%   | 9.8%    | 10.5%   |
| Revenue  | \$/wmt   | 136.4   | 122.2   | 94.1    |

|   | Units    | Q1 FY24 | Q4 FY23 | Q1 FY23 |
|---|----------|---------|---------|---------|
| <b>Mt Marion: Spodumene concentrate</b><br>(50% attributable basis, unless otherwise indicated)   |          |         |         |         |
| Spodumene ore mined (100% basis)  | k dmt    | 807     | 615     | 441     |
| Spodumene concentrate produced  | k dmt    | 64      | 60      | 54      |
| Spodumene concentrate shipped   | k dmt    | 64      | 61      | 56      |
| Weighted average grade shipped  | %        | 3.7%    | 3.7%    | 3.6%    |
| Spodumene concentrate shipped – SC6 equivalent  | k dmt    | 39      | 39      | 33      |
| High grade product contribution   | %        | 25.8%   | 18.7%   | 24.9%   |
| Revenue   | US\$/dmt | 1,870   | 2,589   | 3,772   |
| <b>Wodgina: Spodumene concentrate</b><br>(40% attributable basis, unless otherwise indicated)     |          |         |         |         |
| Spodumene ore mined (100% basis)  | k dmt    | 1,044   | 722     | 546     |
| Spodumene concentrate produced  | k dmt    | 45      | 41      | 26      |
| Spodumene concentrate shipped   | k dmt    | 25      | 37      | 26      |
| Weighted average grade shipped  | %        | 5.8%    | 5.5%    | 6.1%    |
| Spodumene concentrate shipped – SC6 equivalent  | k dmt    | 24      | 34      | 26      |
| <b>Wodgina: Lithium battery chemicals</b><br>(40% attributable basis, unless otherwise indicated) |          |         |         |         |
| Conversion rate for production  | x        | 8.3     | 7.8     | 7.4     |
| Lithium battery chemicals produced  | t        | 4,794   | 4,224   | 931     |
| Lithium battery chemicals sold  | t        | 4,273   | 3,492   | -       |
| Lithium battery chemicals revenue (excluding VAT)   | US\$/t   | 34,036  | 40,484  | -       |