



#### Directors:

Chair  
Tim Wall

Managing Director  
Gavin Loyden

Non-Executive Director  
Daniel Harris

Non-Executive Director  
Tony Pearson

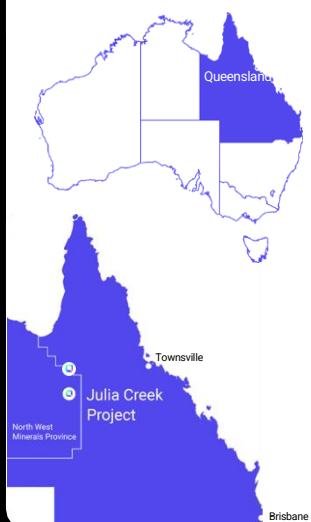
Non-Executive Director  
David Fitch

#### Julia Creek Project:



Vanadium

Oil



#### QEM Limited:

Registered Office:  
Level 8  
216 St Georges Tce  
Perth WA 6000  
Australia  
+61(0) 8 9481 0389

Head Office:  
Level 6  
50 Appel St  
Surfers Paradise Q 4217  
Australia  
+61(0) 7 5646 9553

# ASX Announcement

30 Apr 2024

## Quarterly update for the period ending 31 March 2024

### Highlights:

- **2024 Resource Estimate shows 28% increase in Indicated vanadium Resource to 461Mt and 2,406Mt in the Inferred category JORC (2012).**
- **Maiden 1C resource of 6.3 million barrels (MMbbl's), oil equivalent along with a 32% increase of the 2C oil shale estimate to 94 MMbbl's, and a 3C oil shale Resource estimate of 654 million barrels (MMbbl's).**
- **Improved vanadium beneficiation techniques identified by The University of Queensland Sustainable Minerals Institute (SMI)**
- **QEM completes sale of the Julia Creek Renewables Project (JCRP) to ENEL Green Power Australia (EGPA).**
- **First vanadium produced in Australia from industrial waste.**
- **Ninth consecutive Environmental, Social and Governance (ESG) Report released.**

QEM Limited (ASX: QEM) ("**QEM**" or "**Company**") is pleased to provide an update on its activities for the quarter ending 31 March 2024 for its 100% owned Julia Creek Vanadium and Oil Shale Project (JCP) in Julia Creek, Northwest Queensland.

QEM Managing Director Gavin Loyden said, "The March quarter has been a pleasing one for the QEM team and shareholders alike, from a substantial increase in our JORC resource to the finalisation of the sale of the Julia Creek Renewables Project (JCRP) to ENEL Green Power Australia (EGPA)."

"In addition, we are proud to have continued our collaboration with The University of Queensland which began in 2022. This relationship has benefitted QEM significantly, both with UQ's Sustainable Minerals Institute (SMI) identifying improved beneficiation techniques for the flagship Julia Creek Project (JCP) and the School of Chemical Engineering assisting with a waste-based circular economy project.

The UQ School of Chemical Engineering, on QEM's behalf, has successfully demonstrated the technical feasibility of upcycling industrial waste to high value, high purity vanadium pentoxide, ideal for usage in long duration battery systems. This is an Australian first," said Mr Loyden.



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# ASX Announcement

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## Julia Creek Vanadium and Oil Shale Project

QEM's flagship Julia Creek Project (JCP) is one of the world's single largest vanadium and oil shale deposits. This globally significant **JORC (2012) Mineral Resource of 2,870 Mt @ 0.31% V<sub>2</sub>O<sub>5</sub>** represents a significant opportunity for development. The resource is comprised of **461Mt @ 0.28% V<sub>2</sub>O<sub>5</sub> in the Indicated category** and **2,406Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> in the Inferred category**, with the added benefit of a contingent (SPE-PRMS 2018) in-situ oil resource of **6.3 million barrels (MMbbl's) of Oil equivalent in the 1C category, 94 MMbbl's in the 2C category, and 654 MMbbl's in the 3C category**, contained within the same ore body.

**Fig 1: Julia Creek Project Location**





The Julia Creek Project is located approximately 16 km south-east of Julia Creek township in north-west Queensland, within the Tier 1 mining jurisdiction of the North West Minerals Province, regarded as one of the world's richest mining regions.

Julia Creek is a regional town situated 655 km by road to the west of Townsville and 255 km east of the mining town of Mt Isa and lies close to main infrastructure facilities, including the \$5 billion-dollar Copperstring 2032 powerline development which lies immediately adjacent to the JCP.

The project is intersected by the main infrastructure corridor of the Flinders Highway and the Great Northern Railway line in the northern section of the tenement, which connects Mt. Isa to the international Port Of Townsville.

## **Tenure**

The 100% fully owned project consists of 4 tenements covering 249.6 Km<sup>2</sup>

**Table 1: Julia Creek Project Tenure**

| Tenement  | Concession Type                             | Area (km <sup>2</sup> ) | Status  | Granted    | Expiry     |
|-----------|---------------------------------------------|-------------------------|---------|------------|------------|
| EPM 25662 | Exploration Permit Minerals other than Coal | 134.54                  | Granted | 22/01/2015 | 23/01/2025 |
| EPM 25681 | Exploration Permit Minerals other than Coal | 6.41                    | Granted | 06/03/2015 | 5/03/2025  |
| EPM 26429 | Exploration Permit Minerals other than Coal | 35.24                   | Granted | 16/03/2017 | 15/03/2027 |
| EPM 27057 | Exploration Permit Minerals other than Coal | 73.63                   | Granted | 02/05/2019 | 1/05/2024  |

## **Julia Creek Mineral Resource Estimate 2024**

In March 2024, the Company announced an upgrade in the Project's Mineral Resource Estimate. The updated 2024 JORC Mineral Resource Estimate encompasses a 28% increase in Indicated vanadium Resource of 461Mt and 2,406Mt in the Inferred category. (Ref: ASX Announcement 5 March 2024- updated)

Additionally, the updated PRMS (2018) resulted in a Maiden 1C resource of 6.3 million barrels in-situ (MMbbl's), oil equivalent along with a 32% increase of the 2C oil shale estimate to 94 MMbbl's, and a 3C oil shale Resource estimate of 654 million barrels (MMbbl's) was reached, (utilising a 90% recovery factor).

The previous resource estimate was declared as of March 30th, 2022 and consisted of 359Mt @ 0.29% V<sub>2</sub>O<sub>5</sub> in the Indicated category and 2,490Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> in the Inferred category. Since that time, an extra sixteen (16) core holes have been drilled, and two extra 2D seismic lines have been acquired on the project, primarily in the shallower parts of the western blocks.

Furthermore, it is possible that additional by-products such as base metals (Copper (Cu), Molybdenum (Mo), Nickel (Ni), Zinc (Zn), Aluminum (Al) which may be produced as High Purity Alumina (HPA) and cement product inputs, could be produced as by-products from the waste stream of vanadium processing, which may have a further positive impact on revenue.



**Table 2: Julia Creek Resource Estimate as of 9th February 2024**

| Total          |            |              |                       |                        |             |
|----------------|------------|--------------|-----------------------|------------------------|-------------|
| Resource Class | Strat.Unit | Mass (Mt)    | Average Thickness (m) | Insitu Density (gm/cc) | V2O5 (wt%)  |
| Indicated      | CQLA       | 167          | 3.17                  | 2.40                   | 0.24        |
|                | CQLB       | 128          | 2.58                  | 2.28                   | 0.30        |
|                | OSU        | 81           | 1.92                  | 1.95                   | 0.31        |
|                | OSL        | 84           | 2.02                  | 1.93                   | 0.32        |
|                |            | <b>461</b>   |                       | <b>2.20</b>            | <b>0.28</b> |
| Inferred       | CQLA       | 697          | 2.46                  | 2.42                   | 0.23        |
|                | CQLB       | 826          | 3.13                  | 2.23                   | 0.39        |
|                | OSU        | 432          | 1.84                  | 1.97                   | 0.31        |
|                | OSL        | 451          | 1.95                  | 1.95                   | 0.29        |
|                |            | <b>2,406</b> |                       | <b>2.18</b>            | <b>0.31</b> |
| <b>Total</b>   |            | <b>2,870</b> |                       | <b>2.19</b>            | <b>0.31</b> |

Note:

1. The estimate uses a minimum cut-off of 0.2% V<sub>2</sub>O<sub>5</sub> for the oil shale units and a minimum cut-off of 0.15% V<sub>2</sub>O<sub>5</sub> for the Coquina units.
2. The total resource tonnage reported is rounded to reflect the relative uncertainty in the estimate categories and component horizons may not sum correctly.
3. Copper (Cu), Molybdenum (Mo), Nickel (Ni), Zinc (Zn), and Aluminum (Al) are not listed due to categorisation as secondary potential by-products.

**Table 3: Summary of Oil Shale Resources as at 9 February 2024**

| Total              |            |             |                       |                    |                     |                |                       |                    |
|--------------------|------------|-------------|-----------------------|--------------------|---------------------|----------------|-----------------------|--------------------|
| Resource Class     | Strat Unit | Mass (Mt)   | Average Thickness (m) | Total Moisture wt% | Oil Yield (L/tonne) | Oil Yield LTOM | MMBbls (in-situ PIIP) | MMBbls Recoverable |
| 3C Contingent      | CQLB       | 903         | 2.5                   | 6.8                | 53.1                | 55.0           | 254                   | 228                |
|                    | OSU        | 621         | 1.8                   | 6.8                | 75.9                | 79.0           | 248                   | 223                |
|                    | OSL        | 609         | 1.9                   | 6.8                | 70.7                | 76.7           | 224                   | 202                |
| <b>Total / Ave</b> |            | <b>2134</b> |                       | <b>6.8</b>         | <b>66.6</b>         | <b>70.2</b>    | <b>726</b>            | <b>654</b>         |
| 2C Contingent      | CQLB       | 107         | 2.1                   | 2.8                | 50.9                | 52.3           | 33                    | 29                 |
|                    | OSU        | 76          | 1.9                   | 13.3               | 78.7                | 81.4           | 36                    | 32                 |
|                    | OSL        | 81          | 2.0                   | 11.8               | 74.8                | 76.7           | 36                    | 33                 |
| <b>Total / Ave</b> |            | <b>264</b>  |                       | <b>9.3</b>         | <b>68.1</b>         | <b>70.1</b>    | <b>105</b>            | <b>94</b>          |
| 1C Contingent      | CQLB       | 7           | 1.9                   | 2.8                | 49.0                | 49.6           | 1.9                   | 1.8                |
|                    | OSU        | 5           | 1.9                   | 13.3               | 77.2                | 78.7           | 2.5                   | 2.2                |
|                    | OSL        | 6           | 2.1                   | 11.8               | 74.6                | 76.2           | 2.6                   | 2.3                |
| <b>Total / Ave</b> |            | <b>18</b>   |                       | <b>9.3</b>         | <b>66.9</b>         | <b>68.1</b>    | <b>7.0</b>            | <b>6.3</b>         |

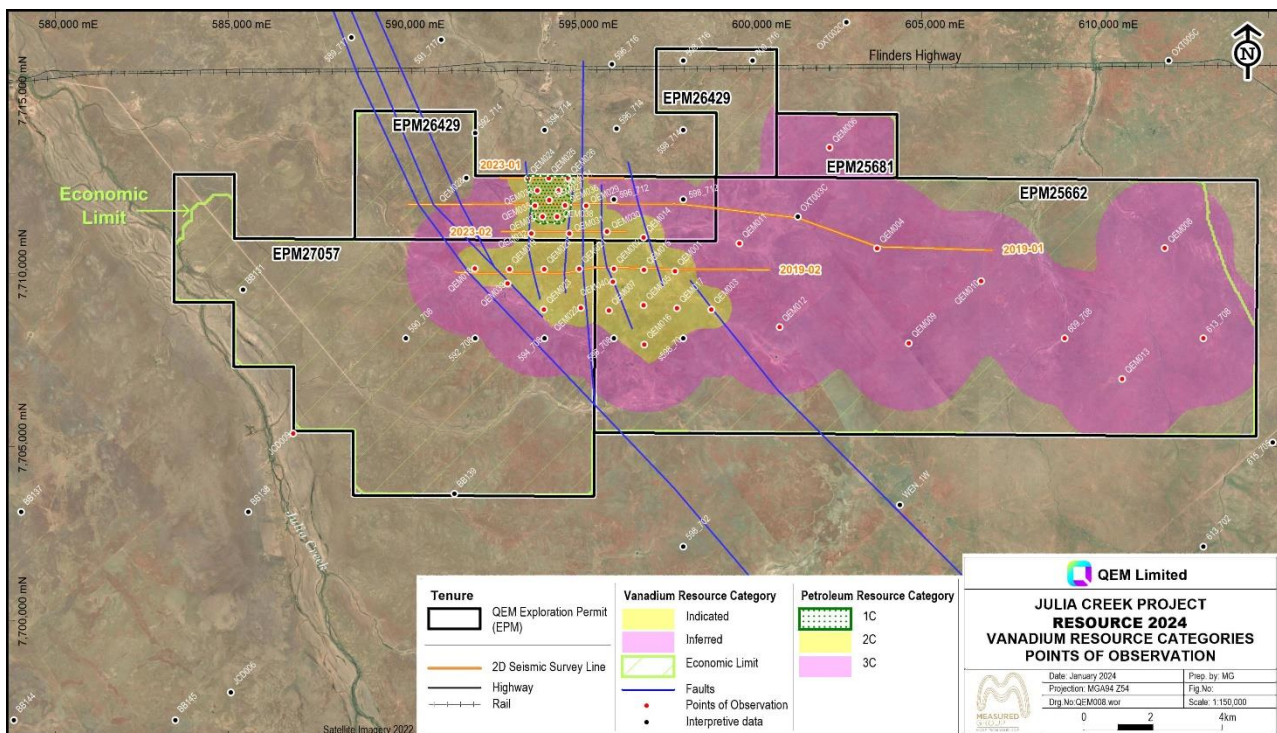




Note:

1. The total resource tonnage reported is rounded to reflect the relative uncertainty in the estimate and component horizons may not sum correctly.
2. The 3C petroleum resource reported includes the 1C and 2C volumes, ie. They are cumulative not incremental as per the PRMS 2018 guidelines.
3. An economic cut-off of 40 L/tonne was applied prior to the calculation; it must be noted that the CQU and the CQLA did not meet the criteria of >40 L/tonne for inclusion in the volumetric calculation.
4. The 1C, 2C and 3C volumes reported here are unrisks.

**Figure 2: Resource Categories, points of observation and interpretive data for the Julia Creek Vanadium Project**



## Mine Development

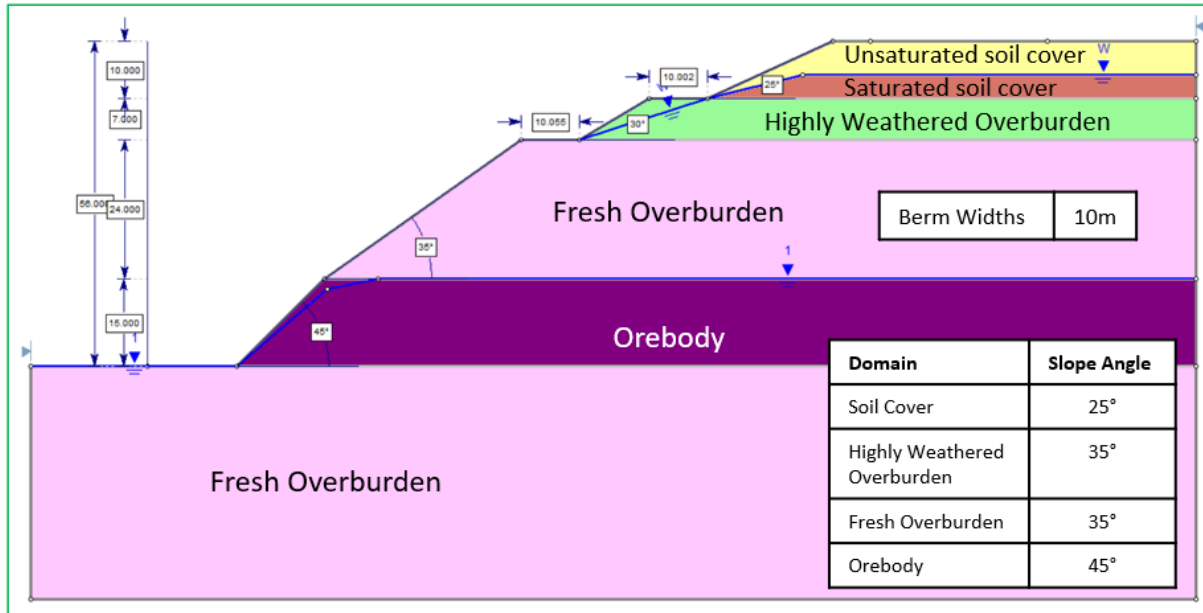
### Scoping Study Progress

In the March quarter, further advancements were made toward the completion of the JCP project scoping study which is due for completion Q2 2024.

During the reporting period, Cartledge Mining and Geotechnics completed the Julia Creek Vanadium and Oil Shale Project – Geotechnical Study report that will be the basis for recommended mine pit slope geometries.

Cartledge concluded that “Overall, the geotechnical conditions at Julia Creek appear favourable, and standard operational controls, in conjunction with appropriate slope design, should be adequate to manage any latent geotechnical risk.”

**Figure 3: Recommended pit geometries for the Julia Creek Project (not for construction)**



The following areas of focus are recommended for further investigation in subsequent studies:

- Improve confidence in the location and dip of identified faults. Furthermore, they should be targeted with geotechnical boreholes to understand their geomechanical properties further.
- Implementation of a groundwater monitoring program to determine standing water levels and understand if there is any seasonal variation in water levels and potential impacts of dewatering due to mining.
- Additional rock mass testing should be undertaken to improve the confidence of the geomechanical database further, commensurate with the level of study.

## Waste Characterisation

RGS Consultants Pty Ltd (RGS) was commissioned by QEM Limited in 2023 to complete a soil quality, geochemical, and physical characterisation assessment of mine waste materials for the Julia Creek vanadium and oil shale project.

The RGS Phase 1 scope of work was to geochemically and physically characterise samples collected in the Q3 2023 drilling program. Test pit sampling for further soil characterisation (on large bulk samples) and process waste characterisation are likely to be required for the Progressive Rehabilitation and Closure Plan (PRCP) to meet Queensland regulatory requirements for the QEM vanadium and oil shale project.

Throughout the reporting quarter, RGS continued the Geochemical and Physical Sampling and Analysis Plan. In March 2024, an interim technical document was supplied which reports on the initial geochemical assessment of 99 core samples and 20 chip samples of soil and overburden mine waste material received by RGS. Batch 1 (overburden) was received in August 2023 and Batch 2 (orebody) was received in November 2023.

An updated interim report is expected to be available with the updated results in O2 2024.

## Mineral Beneficiation

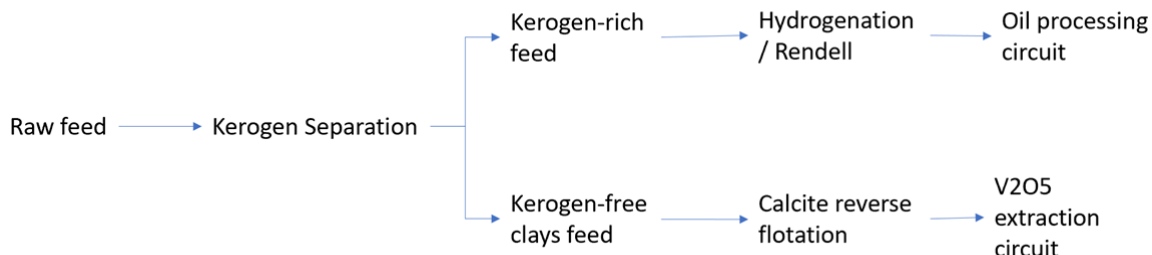
During the reporting quarter, The University of Queensland Sustainable Minerals Institute (SMI) completed a review of applicable froth flotation techniques for the separation of particles for beneficiation of QEM's feed material.

The review presents a comprehensive and critical assessment on the use of froth flotation for the separation and recovery of hydrocarbon in the form of kerogen and the vanadium-bearing clay host, as well as the rejection of calcite gangue. Based on the review, the recommended flow sheet involves two stages: a kerogen separation circuit and a calcite rejection circuit.

The first stage aims to maximise the separation of valuable hydrocarbon product while producing an oil/carbon-free feed for the second stage. The aim is to separate the kerogen and hydrophobic components into a carbon-rich stream, which is then treated via hydrocarbon extraction (HE), while the oil-free tailings are directed to calcite-clay flotation.

For the second stage on calcite separation from the vanadium-bearing clays, targeting the calcite via a collector or depressant would be more effective as this is expected to yield a higher degree of selectivity. The recommended option is to remove calcite via reverse flotation.

**Figure 4 – Beneficiation stream**



The next step in the mineral beneficiation work is to perform mineral characterisation of core samples.

## Environmental

### Water Monitoring – ATC Williams

During the reporting quarter, QEM received the 12-month baseline water monitoring memorandum from ATC Williams. This work package was commissioned by QEM in 2022 and consisted of routine monthly monitoring of the Julia Creek monitoring network for the period between November 2022 and November 2023. The purpose of this work is to provide an assessment of baseline groundwater and surface water conditions to support preparation of an Environmental Impact Statement (EIS). In accordance with the Environmental Protection Act 1994, this EIS is required by QEM to obtain environmental authority to proceed with the Julia Creek Project.



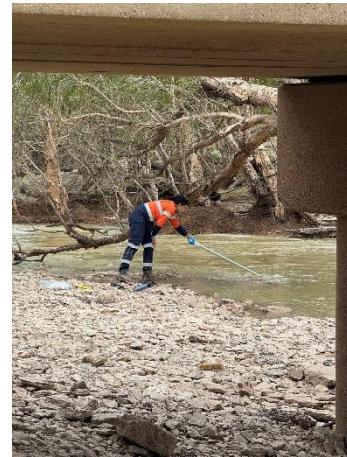
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After the completion of the 12-month baseline campaign, QEM is continuing the water monitoring campaign with ATC Williams on a quarterly basis. The first quarterly event of 2024 was conducted in the reporting period in March 2024.

## **Images: QEM 2024 water monitoring campaign (March)**



## **Julia Creek Renewables Project Sale**

In January 2024, the Company announced the sale of the Julia Creek Renewables Project assets to Enel Green Power Australia (EGPA). (Ref: ASX Announcement 15 January 2024)

Under the Project Sale Agreement (PSA) QEM sold to EGPA, among others, wind and solar monitoring equipment and more than 18 months of data, and intellectual property regarding engineering, environmental, geotechnical, flood plain and other project studies (the Sale Interests).

An initial upfront payment of \$3,000,000 was made to QEM for the Sale Interests, which included among others, the Met Mast, Sodar equipment and corresponding data collected, upon the completion and satisfaction of the Condition Precedent being that that the relevant equipment is fully functional and able to be operated in accordance with good operating practice. On March 26, 2024, the Company announced that the transaction had been completed.

## **Vanadium Extraction from Industrial Waste**

QEM is a proud partner in the Australian Government Department of Education's Trailblazer Universities Program. QEM is the industry leader partnering with The University of Queensland School of Chemical Engineering in the Resources Technology and Critical Minerals program accelerating innovation, commercialisation and research in the resources technology and critical minerals sector.

Under the Trailblazer Program, QEM announced the successful extraction of high purity vanadium pentoxide, covered from industrial waste, during the reporting quarter. The Company partnered with The University of Queensland (UQ) to produce the first high purity vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) with the source material, being spent catalyst used in the production of sulphuric acid at Incitec Pivot Limited's ("IPL" or "Incitec") Mount Isa plant.





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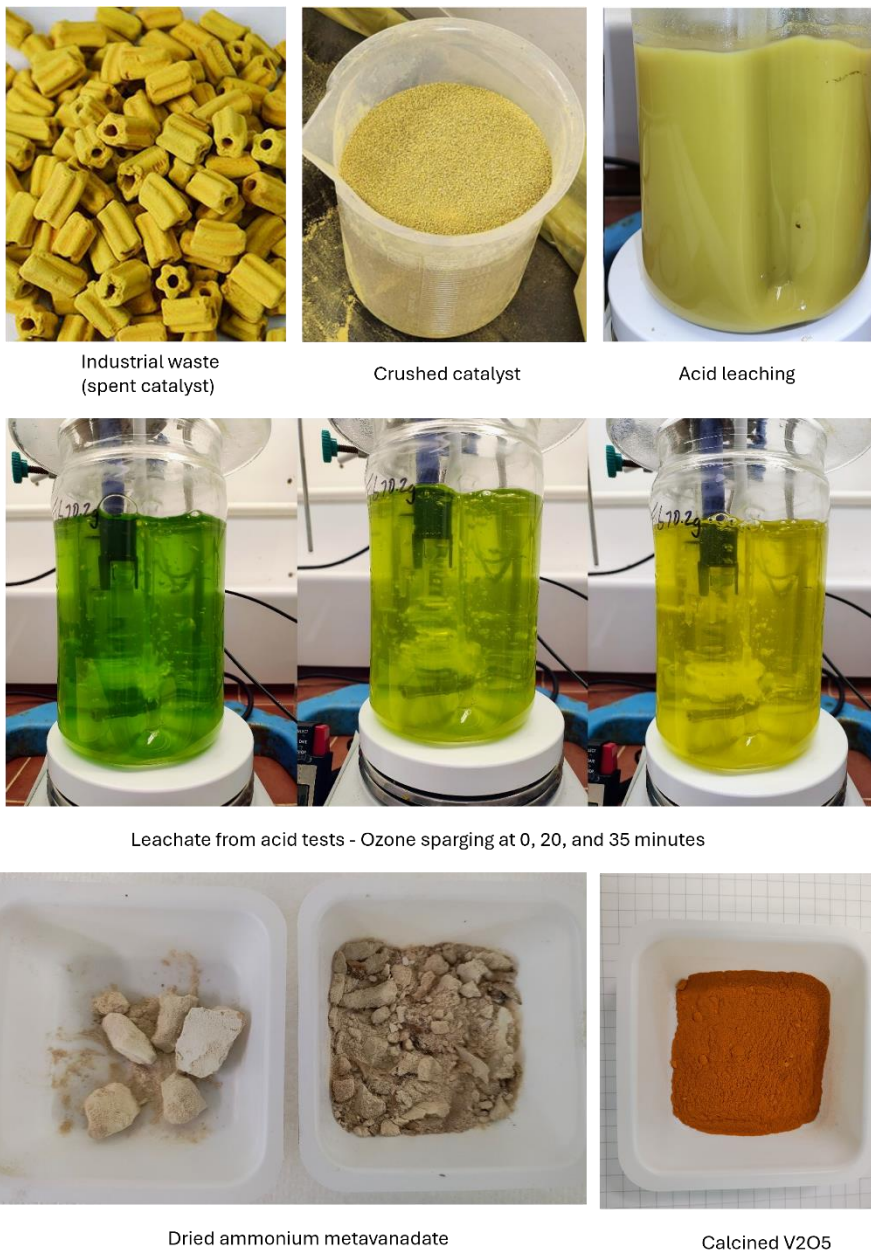
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This project represents a Circular Economy opportunity where industrial waste can be repurposed to a higher use by extracting the critical mineral vanadium as  $V_2O_5$ .  $V_2O_5$  is the essential component of the electrolyte used in vanadium flow batteries (VFB). VFB's are known as Long Duration Energy Storage (LDES) systems that are seen a key to Australia reaching its carbon reduction targets.

The first stage of the collaboration between QEM and UQ involved a small-scale laboratory demonstration of all the processing steps in recycling the spent catalyst into a high purity vanadium oxide product.

**Figure 5: Process flow from industrial waste to High Purity  $V_2O_5$**



UQ completed the process flowsheet after conducting several tests in a small-scale laboratory setting, confirming a technically viable method of recycling spent catalyst to produce high-purity  $V_2O_5$ .



**Image: Post-quarter: high purity (99.93%) vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) extracted from Queensland industrial waste at The University of Queensland. (Ref: ASX announcement 4 April 2024)**



Post-quarter, as announced (Ref. ASX Announcement 4 April 2024), UQ assayed the three produced batches in duplicate by Digestion and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES). Accounting for solids dilution and ICP calibration range, the Limits of Detection (LOD) were set at 100ppm (0.01%). The elements identified above LOD range are shown in Table-1 below while 26 other elements presented below Limit of Detection values (Al, Ar, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, K, Li, Mg, Mo, Na, Ni, P, Pb, S, Sb, Si, Sn, W, Y, Zn, Zr).

**Table 4 - ICP assays of three produced batches (C01 to C03) in duplicate. All values in %; only elements with at least one measurement above LOD are listed here. While vanadium pentoxide was not measured directly with these methods, the inferred value was calculated from measured elemental vanadium.**

|       | As    | Fe   | Mn    | Ti   | V     | V <sub>2</sub> O <sub>5</sub> |
|-------|-------|------|-------|------|-------|-------------------------------|
| C01-1 | 0.01  | 0.01 | <0.02 | 0.05 | 55.90 | 99.93                         |
| C01-2 | 0.01  | 0.01 | <0.02 | 0.06 | 56.03 | 99.93                         |
| C02-1 | 0.02  | 0.02 | 0.02  | 0.06 | 55.57 | 99.88                         |
| C02-2 | 0.02  | 0.02 | 0.02  | 0.06 | 54.76 | 99.88                         |
| C03-1 | <0.01 | 0.01 | 0.06  | 0.03 | 53.40 | 99.90                         |
| C03-2 | <0.01 | 0.01 | 0.06  | 0.03 | 56.50 | 99.90                         |

## Queensland Government continues to strongly support Critical Minerals development.

From 1 September 2023, the Queensland Government is reducing the rent for new and existing exploration permits for minerals (EPMs), such as those held by QEM, to \$0 for 5 years.

This is designed to encourage further exploration for critical minerals, such as vanadium, which are essential for making new products and technologies as the world transitions to a low-carbon future. QEM can now take advantage of these savings and applauds the initiative.



## [Zero rent for exploration permits for minerals | Business Queensland](#)

Vanadium is defined as a Critical Mineral in Australia and is required to support the global energy transition, through the application of Vanadium Redox Flow Batteries (VRB). These batteries are large scale, long duration energy storage systems (BESS) that are quickly becoming the energy storage system of choice for large scale renewable energy projects, due to their unique attributes, including greater safety, long life cycle and recyclability.

On 1 December 2023, The Queensland State Government unveiled the establishment of the Critical Minerals Queensland office (CMQ) the new office is to be a cornerstone of the Queensland Critical Minerals Strategy and will actively contribute to the development, growth, and success of Queensland's critical minerals. It will be a dedicated office created to identify opportunities in the industry and foster discussions with proponents, investors, community members, and researchers and QEM welcomes the initiative.

Queensland Resources Minister, Scott Stewart said, "The Critical Minerals Queensland office will play a key role in delivering the Queensland Critical Minerals Strategy and it's exciting to see the office becoming a reality"

## [Critical mission for Queensland's critical minerals - Ministerial Media Statements](#)

The Queensland Critical Minerals Strategy, released in June 2023 will oversee a \$245 million investment into growing Queensland's Critical Mineral sector, which will advantage QEM's JCP in numerous ways.

- ✓ Establishing critical mineral zones, initially at Julia Creek/Richmond and around Mount Isa, with \$75 million to support investment and renewed focus in advancing critical minerals projects.
- ✓ Establish Critical Minerals Queensland, a one-stop office to oversee the development of the sector and help drive and attract international investment.
- ✓ Invest \$5 million to target mining waste and tailings for critical minerals, and \$8 million towards scientific research including circular economy initiatives.
- ✓ Provide \$1 million to foster research and ESG excellence.
- ✓ Deliver the \$100 million Critical Minerals and Battery Technology Fund to support new investments in projects.
- ✓ Deliver the \$75m Queensland Resources Common-user Facility in Townsville, due for completion in 2025.

## [Queensland Resources Common User Facility - Queensland Treasury](#)

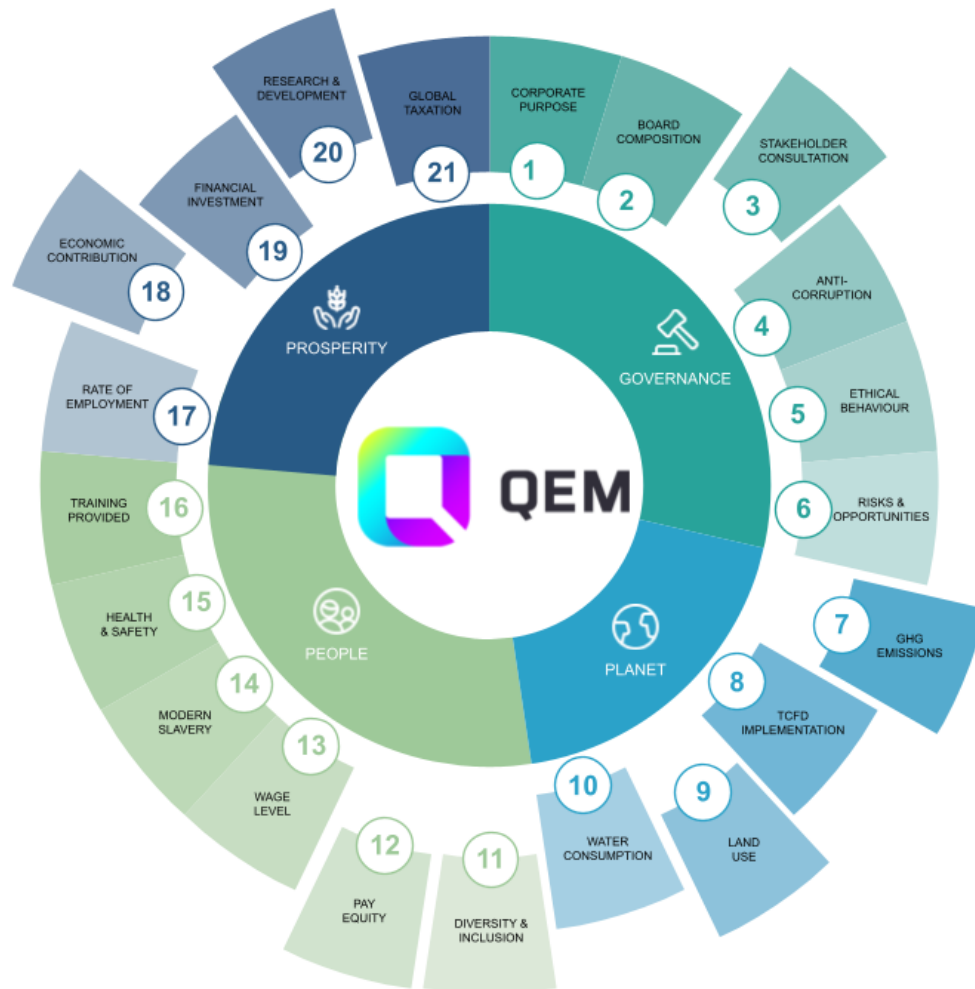
### **ESG and Community Relations**

This quarter marks the ninth consecutive quarter that QEM is monitoring and disclosing the Company's ESG progress and initiatives via Socialsuite's ESG Go platform.

QEM's ESG reporting is based on the 21-core metrics set by the World Economic Forum (WEF), as part of WEF's standardised and globally recognised Stakeholder Capitalism Metrics ESG framework. ESG highlights for this quarter follow, including the graphic summary overpage of the Company's ESG current focus. These core areas will be continually updated with the input of stakeholder feedback.



Figure 6: QEM's ESG matrix



## Governance - Material Issues impacting Stakeholders

QEM is committed to openly consulting with - and communicating our progress to - internal and external stakeholders, including potential investors. We understand the importance of maintaining transparency in the way the Company operates so our stakeholders and investors understand our goals and the progress we are making throughout the Company and may be actively involved throughout the process.

- Q1 FY23/24: To identify the most relevant sustainability/ESG issues for QEM, the Company undertook the first steps to conduct a Materiality Assessment, weighing the impacts of ESG issues and their importance to QEM, as well as to our key stakeholders (double materiality).
- Q2 FY23/24: Identification, mapping and grouping of our stakeholders was completed.
- Q3 FY23/24: QEM issued a Materiality Assessment Survey to key stakeholders.
- Analysis of material issues captured and feedback of material issues to stakeholders is expected to occur in Q4 FY23/24.





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## Planet – Water Consumption

Since October 2022, QEM has worked with ATC Williams to conduct the monthly groundwater and surface water quality monitoring program. As of Q3 FY23/24, the water monitoring program is continuing on a quarterly basis.

## Prosperity – Economic Contribution and Community Investment & Relations

QEM seeks to support the greater communities in which we operate, with a particular focus on youth and women's development, education, and sport, particularly in the Julia Creek community, with on-going support for local clubs and sporting teams. The Company proudly sponsored the WISER (Women In Sustainable Energy & Resources) International Women's Day event in Brisbane on 7 March 2024.

**Images: WISER (Women In Sustainable Energy & Resources) International Women's Day event in Brisbane; Left: Indigenous artist Leah Cummins and QEM Communications & Sustainability Director Joanne Bergamin**



## Prosperity – R & D

In February 2024, QEM announced the successful results of a vanadium-bearing catalyst recycling study being carried out on the Company's behalf by The University of Queensland Hydrometallurgy Research Laboratories, part of the School of Chemical Engineering (UQ). QEM supplied UQ with the spent catalyst to be used in the project which it collected from Incitec Pivot Limited's Mount Isa Sulphuric Acid Plant and from Sun Metals Corporation Pty Ltd's Townsville Zinc Refinery.

This project aims to provide a circular economy solution to this industrial waste stream by extracting the critical mineral vanadium as  $V_2O_5$  and putting it back into the economy as a high value product.  $V_2O_5$  is the essential component of the electrolyte used in vanadium flow batteries (VFB), critical to achieving Australia's carbon reduction targets. Currently the spent catalyst removed from sulphuric acid plants ends up in waste facilities.



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**Image: Post-quarter: Stakeholders at The University of Queensland (UQ) discussing QEM and UQ's Trailblazer Project. Image shows the stages of extraction and the high purity (99.93%) vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) extracted from Queensland industrial waste at UQ.**



## People – Training Provided

The Company is committed to developing its employees and equipping them with knowledge and skills relevant to the energy transition.

Two QEM employees attended Leadership Development courses for Managers and Senior Managers during the reporting quarter Q3 FY23/24.

## Related Party Payments

Pursuant to item 6 in the Company's Appendix 5B – Quarterly Cashflow Report for the Quarter ended 31 March 2024, the Company made payments of \$155,000 to related parties for director service fees in line with their appointment and service agreements with the Company.

Post quarter, QEM announced it had terminated the \$2m unsecured loan facility it had with shareholder/director Mr David Fitch, after repaying in full the amounts borrowed in principal and interest of \$759,000 (ASX Announcement 9 April 2024).

## Other ASX requirements

ASX Listing Rule 5.3.1: Exploration and Evaluation Expenditure during the Quarter was \$450k.

Full details of activities during the Quarter are set out above.

ASX Listing Rule 5.3.2, there were no mining production and development activities during the Quarter.



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ASX Listing Rule 5.3.3: Refer to Table 1 for QEM Tenement tenure.

**ENDS**

*This announcement was authorised for release on the ASX by the Board of QEM Limited.*

**For further information, please contact:**

Gavin Loyden  
**Managing Director**  
P: +61 7 5646 9553  
E: [gavin@qldem.com.au](mailto:gavin@qldem.com.au)

Joanne Bergamin  
**Communications Director**  
P: +61 7 5646 9553  
E: [jbergamin@qldem.com.au](mailto:jbergamin@qldem.com.au)

## ABOUT QEM

QEM Limited (ASX: QEM) is a publicly listed company which is focused on the exploration and development of its flagship Julia Creek Project, covering 250km<sup>2</sup> in the Julia Creek area of North Western Queensland.

The Julia Creek vanadium and oil shale project is a unique world class resource with the potential to utilise and deliver innovative and sustainable energy solutions, through the production of energy fuels and vanadium pentoxide. QEM strives to become a leading producer of liquid fuels and in response to a global vanadium deficit, also aims to become a global supplier of high-quality vanadium pentoxide, to both the nascent energy storage sector and the Australian steel industry.

This globally significant JORC (2012) Mineral Resource of 2,870 Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> is one of the single largest ASX listed vanadium resources and represents a significant opportunity for development. The resource is comprised of 461Mt @ 0.28% V<sub>2</sub>O<sub>5</sub> in the Indicated category and 2,406Mt @ 0.31% V<sub>2</sub>O<sub>5</sub> in the Inferred category, with the added benefit of a contingent (SPE-PRMS 2018) in-situ oil resource of 6.3 MMbbls of Oil equivalent in the 1C category, 94MMbbls in the 2C category, and 654MMbbls in the 3C category, contained within the same ore body.

The tenements form part of the vast Toolebuc Formation, which is recognised as one of the largest deposits of vanadium and oil shale in the world and located less than 6km east of the township of Julia Creek. In close proximity to all major infrastructure and services, the project is intersected by the main infrastructure corridor of the Flinders Highway and Great Northern Railway, connecting Mt Isa to Townsville.

*\*The information in this announcement that relates to the mineral resource and contingent resource estimates for the Company's Julia Creek Project was first reported by the Company in its IPO prospectus dated 20 August 2018 and supplementary prospectus dated 12 September 2018 (together, the "Prospectus") and the subsequent resource upgrade announcements ("Resource Upgrade") dated 14 October 2019, 7 April 2022 and 5 March 2024. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Prospectus and Resource Upgrade, and in the case of estimates of Mineral Resources and Contingent Resources, that all material assumptions and technical parameters underpinning the estimates in the Prospectus and Resource Upgrade continue to apply and have not materially changed.*

## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

QEM Limited

ABN

13 167 966 770

Quarter ended ("current quarter")

31 March 2024

| Consolidated statement of cash flows |                                                       | Current quarter<br>\$A'000 | Year to date (9<br>months)<br>\$A'000 |
|--------------------------------------|-------------------------------------------------------|----------------------------|---------------------------------------|
| <b>1.</b>                            | <b>Cash flows from operating activities</b>           |                            |                                       |
| 1.1                                  | Receipts from customers                               |                            |                                       |
| 1.2                                  | Payments for                                          |                            |                                       |
|                                      | (a) exploration & evaluation                          | (450)                      | (2,100)                               |
|                                      | (b) development                                       |                            |                                       |
|                                      | (c) production                                        |                            |                                       |
|                                      | (d) staff costs                                       |                            |                                       |
|                                      | (e) administration and corporate costs                | (404)                      | (1,179)                               |
| 1.3                                  | Dividends received (see note 3)                       |                            |                                       |
| 1.4                                  | Interest received                                     | -                          | 9                                     |
| 1.5                                  | Interest and other costs of finance paid              |                            |                                       |
| 1.6                                  | Income taxes paid                                     |                            |                                       |
| 1.7                                  | Government grants and tax incentives                  | -                          | -                                     |
| 1.8                                  | Payments for Green Hydrogen Project                   |                            |                                       |
| <b>1.9</b>                           | <b>Net cash from / (used in) operating activities</b> | <b>(854)</b>               | <b>(3,270)</b>                        |

|           |                                             |     |      |
|-----------|---------------------------------------------|-----|------|
| <b>2.</b> | <b>Cash flows from investing activities</b> |     |      |
| 2.1       | Payments to acquire or for:                 |     |      |
|           | (a) entities                                |     |      |
|           | (b) tenements                               |     |      |
|           | (c) property, plant and equipment           | (2) | (35) |
|           | (d) exploration & evaluation                |     |      |
|           | (e) investments                             |     |      |
|           | (f) other non-current assets                |     |      |

| <b>Consolidated statement of cash flows</b> |                                                       | <b>Current quarter<br/>\$A'000</b> | <b>Year to date (9<br/>months)<br/>\$A'000</b> |
|---------------------------------------------|-------------------------------------------------------|------------------------------------|------------------------------------------------|
| 2.2                                         | Proceeds from the disposal of:                        |                                    |                                                |
|                                             | (a) entities                                          |                                    |                                                |
|                                             | (b) tenements                                         |                                    |                                                |
|                                             | (c) property, plant and equipment                     | 3,000                              | 3,000                                          |
|                                             | (d) investments                                       |                                    |                                                |
|                                             | (e) other non-current assets                          |                                    |                                                |
| 2.3                                         | Cash flows from loans to other entities               |                                    |                                                |
| 2.4                                         | Dividends received (see note 3)                       |                                    |                                                |
| 2.5                                         | Other (provide details if material)                   |                                    |                                                |
| <b>2.6</b>                                  | <b>Net cash from / (used in) investing activities</b> | <b>2,998</b>                       | <b>2,965</b>                                   |

|             |                                                                                         |            |              |
|-------------|-----------------------------------------------------------------------------------------|------------|--------------|
| <b>3.</b>   | <b>Cash flows from financing activities</b>                                             |            |              |
| 3.1         | Proceeds from issues of equity securities (excluding convertible debt securities)       | -          | 765          |
| 3.2         | Proceeds from issue of convertible debt securities                                      |            |              |
| 3.3         | Proceeds from exercise of options                                                       |            |              |
| 3.4         | Transaction costs related to issues of equity securities or convertible debt securities | -          | (5)          |
| 3.5         | Proceeds from borrowings                                                                | 750        | 750          |
| 3.6         | Repayment of borrowings                                                                 |            |              |
| 3.7         | Transaction costs related to loans and borrowings                                       |            |              |
| 3.8         | Dividends paid                                                                          |            |              |
| 3.9         | Other – share application funds (not issued)                                            |            |              |
| <b>3.10</b> | <b>Net cash from / (used in) financing activities</b>                                   | <b>750</b> | <b>1,510</b> |

|           |                                                                              |       |         |
|-----------|------------------------------------------------------------------------------|-------|---------|
| <b>4.</b> | <b>Net increase / (decrease) in cash and cash equivalents for the period</b> |       |         |
| 4.1       | Cash and cash equivalents at beginning of period                             | 281   | 1,970   |
| 4.2       | Net cash from / (used in) operating activities (item 1.9 above)              | (854) | (3,270) |
| 4.3       | Net cash from / (used in) investing activities (item 2.6 above)              | 2,998 | 2,965   |
| 4.4       | Net cash from / (used in) financing activities (item 3.10 above)             | 750   | 1,510   |



## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

| Consolidated statement of cash flows |                                                   | Current quarter<br>\$A'000 | Year to date (9<br>months)<br>\$A'000 |
|--------------------------------------|---------------------------------------------------|----------------------------|---------------------------------------|
| 4.5                                  | Effect of movement in exchange rates on cash held | -                          | -                                     |
| 4.6                                  | Cash and cash equivalents at end of period        | 3,175                      | 3,175                                 |

| 5.  | Reconciliation of cash and cash equivalents<br>at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts | Current quarter<br>\$A'000 | Previous quarter<br>\$A'000 |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|
| 5.1 | Bank balances                                                                                                                                                        | 3,175                      | 281                         |
| 5.2 | Call deposits                                                                                                                                                        | -                          | -                           |
| 5.3 | Bank overdrafts                                                                                                                                                      | -                          | -                           |
| 5.4 | Other (provide details)                                                                                                                                              | -                          | -                           |
| 5.5 | Cash and cash equivalents at end of quarter (should equal item 4.6 above)                                                                                            | 3,175                      | 281                         |

| 6.                                                                                                                                                              | Payments to related parties of the entity and their associates                          | Current quarter<br>\$A'000 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------|
| 6.1                                                                                                                                                             | Aggregate amount of payments to related parties and their associates included in item 1 | 155                        |
| 6.2                                                                                                                                                             | Aggregate amount of payments to related parties and their associates included in item 2 |                            |
| <i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i> |                                                                                         |                            |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                         |                                                |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------|
| <b>7.</b> | <b>Financing facilities</b><br><i>Note: the term "facility" includes all forms of financing arrangements available to the entity.</i><br><i>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>                                                                                                                                                                                                                                                                                                                                                                                        | <b>Total facility amount at quarter end<br/>\$A'000</b> | <b>Amount drawn at quarter end<br/>\$A'000</b> |
| 7.1       | Loan facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2,000                                                   | 750                                            |
| 7.2       | Credit standby arrangements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                |
| 7.3       | Other (please specify)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                |
| 7.4       | <b>Total financing facilities</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2,000                                                   | 750                                            |
| 7.5       | <b>Unused financing facilities available at quarter end</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         | 1,250                                          |
| 7.6       | <p>Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.</p> <p>The Company had at quarter end, an unsecured loan facility with David Fitch (per ASX announcement 25 September 2023). A total of \$750k was drawn at quarter end, with total principal and interest of \$759k repaid subsequent to quarter end and the facility terminated.</p> |                                                         |                                                |

|           |                                                                                                                                                                                                                                     |                |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>8.</b> | <b>Estimated cash available for future operating activities</b>                                                                                                                                                                     | <b>\$A'000</b> |
| 8.1       | Net cash from / (used in) operating activities (item 1.9)                                                                                                                                                                           | (854)          |
| 8.2       | (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))                                                                                                                                            | -              |
| 8.3       | Total relevant outgoings (item 8.1 + item 8.2)                                                                                                                                                                                      | (854)          |
| 8.4       | Cash and cash equivalents at quarter end (item 4.6)                                                                                                                                                                                 | 3,175          |
| 8.5       | Unused finance facilities available at quarter end (item 7.5)                                                                                                                                                                       | 1,250          |
| 8.6       | Total available funding (item 8.4 + item 8.5)                                                                                                                                                                                       | 4,425          |
| 8.7       | <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>                                                                                                                                                       | 5.18           |
|           | <i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i> |                |
| 8.8       | If item 8.7 is less than 2 quarters, please provide answers to the following questions:                                                                                                                                             |                |
|           | 8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?                                                                                   |                |
|           | Answer: N/A                                                                                                                                                                                                                         |                |
|           | 8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?              |                |
|           | Answer: N/A                                                                                                                                                                                                                         |                |
|           | 8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?                                                                                                   |                |
|           | Answer: N/A                                                                                                                                                                                                                         |                |
|           | <i>Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.</i>                                                                                                                |                |

## **Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: **30 April 2024**

Authorised by: **By the Board**

(Name of body or officer authorising release – see note 4)

## **Notes**

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.