



## Orion Minerals

ASX/JSE RELEASE: 22 July 2024

# June 2024 Quarterly Activities Report

### HIGHLIGHTS

- ▶ Feasibility Studies for both the Prieska Copper Zinc Mine (PCZM) and Okiep Copper Project (OCP) on track for completion in the September 2024 Quarter.
- ▶ Trial mining of the Supergene orebody at PCZM successfully completed with significantly improved development rates achieved. Trial mining has provided key inputs into the updated Bankable Feasibility Study for PCZM.
- ▶ Upgrade of the Cuprum electrical sub-station completed for the supply of 15MVA to PCZM, providing sufficient power for dewatering and early mining operations to run simultaneously.
- ▶ Key underground portions of the PCZM mine dewatering mechanical and electrical infrastructure successfully installed in June, with the dewatering rate from the pump station at the 178m Level achieving in excess of the required 500m<sup>3</sup>/hour.
- ▶ All blasting required to construct the lined 13ha water storage dam/future TSF at PCZM completed with installation of key infrastructure to the water storage dam well advanced. This will allow forced evaporation and dewatering of the underground to commence in the September 2024 Quarter.
- ▶ Water Supply & Management Agreement signed with Armscor, allowing PCZM to take over the complete maintenance and operation of the Armscor water pipeline delivering water from the Prieska water works to the mine.
- ▶ Outstanding initial results received from confirmatory diamond drilling, currently underway at the Okiep Copper Project (OCP), executed to support the Feasibility Study:
  - 49.35m at 5.05% Cu including 21.66m at 9.41% Cu (Flat Mine East, drill-hole OFMED153);
  - 9.27m at 3.01% Cu and 15.00m at 4.80% Cu within 78.00m at 1.57% Cu (Flat Mine East, drill-hole OFMED154, located 50m along strike from OFMED153; and
  - 20.50m at 4.99% Cu within 43.00m at 3.41% Cu (Flat Mine South drill-hole OFMSD077).
- ▶ The drilling has confirmed the interpretations that support the current Mineral Resource models while also demonstrating the potential for high-grade copper mineralisation.
- ▶ All conditions satisfied for Orion to progress with the first closing of the acquisition of the Okiep Copper Project.
- ▶ A\$7.7 million (~ZAR92.3 million) capital raising completed in July 2024, with funds raised to be used principally to progress the development of the Prieska Copper Zinc Mine and permitting and acceleration of infrastructure development for early production in respect of the Okiep Copper Project and ongoing exploration drilling at Okiep.
- ▶ Share Purchase Plan offered to provide eligible shareholders with the opportunity to subscribe for new Shares in Orion at the same offer price as the Shares issued under the capital raising.

# EXECUTIVE SUMMARY

## OVERVIEW

Orion Minerals Ltd (ASX/JSE: ORN) is a diversified international base metals company which is developing three complementary base metal production hubs in South Africa's Northern Cape Province, a richly endowed mineral province and well-established mining jurisdiction.

Orion is well advanced in its transition to developer and operating mining company, focused on the production of metals that are critical to the global clean energy transition and which have strong market fundamentals due to declining supply and grade profiles at major mines and a lack of investment in the development of new mines.

The Company is targeting first production from its key development projects in 2026 with the aspirational goal of ramping up copper production to more than 50ktpa by the end of the decade.

## QUARTERLY SUMMARY

During the June 2024 Quarter, Orion continued to fast-track the development of its flagship project, the Prieska Copper Zinc Mine (**PCZM**) in South Africa's Northern Cape Province, paving the way for an updated Bankable Feasibility Study due in the September 2024 Quarter. The PCZM is a substantial brownfields development asset, underpinned by JORC (2012) Mineral Resource of 31Mt grading 1.2% Cu and 3.6% Zn, containing 370kt copper and 1.1Mt zinc including the near-surface high grade +105 Block with 2.3Mt at 1.7% Cu and 1.6% Zn, containing 38,000t of copper and 35,000t of zinc in oxide and sulphide mineralisation (refer ASX/JSE release 25 July 2023).

The +105m Block has been identified as an attractive early mining opportunity focused on the high-grade sulphide mineralisation of 1.3Mt at a grade of 2.4% Cu and 2.1% Zn for 30,000t contained copper and 27,000t of contained zinc (refer ASX/JSE release 25 July 2023) that can be accessed from existing underground development.

During the Quarter, a successful mine establishment and trial mining program was completed at PCZM. The trial mining completed primary ramp and haulage development and accessed ore over a 270m strike of the +105 level block and exposed ore up to 77m level providing key data to underpin the BFS now nearing completion. The Cuprum electrical sub-station for the supply of 15MVA grid power to the mine was commissioned and will provide sufficient power for dewatering and early mining operations.

At the Okiep Copper Project (OCP), exceptional initial assay results were reported from an 11-hole confirmation diamond drilling program at the Flat Mines Area, including an intersection of 49.35m at 5.05% Cu at Flat Mine East which represents the highest-grade drill intercept ever reported at Flat Mines (refer ASX/JSE release 22 April 2023). OCP is a highly strategic asset, located within a prolific copper-producing district that historically produced over two million tonnes of contained metal.

The latest results have added further momentum to Orion's development strategy for OCP and confirm the geology and endowment of the Flat Mines Area. The drill results amplify the potential for the Flat Mines orebodies to replicate the typical nature of Okiep copper intrusive mineralisation, where zones of very high-grade mineralisation are commonly contained within large bodies of moderate grade.

The Bankable Feasibility Study for the OCP to progress to underpin project finance and mine development on Orion's brownfields redevelopment sites, is on track for completion in the September 2024 Quarter, in parallel with ongoing drilling and exploration work.

Subsequent to Quarter-end, Orion completed a capital raising of ~A\$7.7 million (~ZAR92.3 million), by way of Share placement of approximately 513 million Shares, with funds raised to be used principally to progress the development of PCZM, as well as permitting and accelerating infrastructure development for early production and ongoing exploration drilling at OCP.

## HEALTH AND SAFETY, ENVIRONMENTAL, SOCIAL AND GOVERNANCE

### Health and Safety

No injuries were recorded during the Quarter. The hours worked for the Quarter and the 2024 financial year are shown in the table below:

**Table 1: Hours worked at the Group's Areachap and Okiep Copper Projects (South Africa).**

Category of Work	Hours Worked	
	Quarter	FY2024 Total
Exploration	21,456	41,085
Surface	18,394	57,928
Underground	63,067	133,308
Contractors	68,112	132,159
<b>Total</b>	<b>171,029</b>	<b>364,480</b>

The Lost-Time Injury Frequency Rate (**LTIFR**) per 200,000 hours worked is **0.0** for the June Quarter.

At the end of the Quarter, the team celebrated 1,773 days without a Lost-Time Injury (**LTI**).

### Community and Stakeholder Engagement

#### PCZM prioritises local community employment and procurement

PCZM has maintained community representation within its workforce in line with the 50% target. At the end of the Quarter, 103 community members were employed at PCZM, out of a total on-site complement of 206. Local employees from the communities of Prieska, Marydale, and Niekerkshoop continue to fill various roles at the operation.

During the Quarter, 20.6% of PCZM's goods and services and subcontracting opportunities were awarded to local suppliers who were either based in the community, employed community labour, or were based in the Northern Cape. This is higher than the 18.5% achieved in the prior Quarter. Of these contracts, 69% were awarded to businesses that are either based in, or employ labour from, the host communities of Siyathemba and Vanwyksvlei, and 31% to businesses located elsewhere in the Northern Cape. Orion continues to identify competent local enterprises to further increase host community spend.

These figures reflect the ongoing efforts to achieve the aspirational targets set for host community employment and procurement at PCZM including 50% of host community employment, 30% of host community procurement and 40% of subcontracting opportunities. Orion remains committed to meeting these aspirational targets and aims to replicate this model at the Okiep Copper Project in the Nama- Khoi municipal area.

#### Community Training and Development

Orion launched a new training registration process during the Quarter, where members of the community were invited to register their interest in participating in Orion's mine specific training and development opportunities. The registration was made available on the Company website and captures the field of interest, type of development required and current level of education.

The process will evaluate each application to funnel it into the correct pipeline for potential development opportunities. Future training and development programs will be guided by the registrations received together with the existing pool of individuals who have previously participated in the *Introduction to Mining Course* and undergone occupational assessments.

Ten community members from Siyathemba and Vanwyksvlei completed their six-month learnership program at the Murray & Roberts Training Centre in Carletonville during the Quarter. The learnership

opportunity was offered to entry-level mining community members. Orion remains committed to the training, development and upskilling of host community members.



**Photo 1: Mining Qualifications Authority Learnership graduates.**

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### **PCZM initiates stakeholder consultations on new Social and Labour Plan (SLP)**

In accordance with the Mineral and Petroleum Resources Development Act (MPRDA), a mine's Social and Labour Plan (**SLP**) must be renewed every five years. The current cycle SLP for PCZM ends in December 2024 and development of a new SLP for the next five-year cycle has been initiated for submission to the Department of Mineral and Petroleum Resources during the next Quarter.

Consultations with the Siyathemba Local Municipality and the Orion Siyathemba Stakeholder Engagement Forum were held during the Quarter and were followed by a series of public meetings in all of the host community towns during July 2024.

### **Environmental Management**

Making positive contributions to the state of the natural environment, reducing pollution, and ensuring negligible contamination from operational activities are central to Orion's business model and part of the Company's commitment to delivering the highest level of environmental compliance while managing and monitoring the environmental impacts of our activities throughout the exploration and mining lifecycle.

There were no environmental incidents recorded during the Quarter.

## **ORION MINERALS' OPERATIONS**

### **PRIESKA COPPER ZINC MINE (PCZM) DEVELOPMENT AND EXPLORATION**

#### **Critical Focus Items**

During the June 2024 Quarter, the focus was on completion of mine site establishment, execution of trial mining, installation of dewatering infrastructure, offices and workshops, site roadways and power supply at PCZM with significant progress made, including:

- Trial mining of the +105m Level Supergene orebody was completed. Reef drive dimensions remained 4.5m x 4.5m and total development along strike in the northerly and southerly directions were 143.5m and 127.2m respectively;

- The installation of surface and underground electrical infrastructure was completed up to the Cuprum substation. The installation of a 4km 11kVA overhead powerline to the dewatering storage dam, evaporation and water treatment site and TSF is 80% complete;
- The construction and commissioning of the 15MVA Eskom grid connection sub-station expansion was completed in June 2024;
- Installation of the mine dewatering pumps, and piping infrastructure was completed and dewatering pumping rates of nearly 600m<sup>3</sup>/hr were measured in the first week of June 2024;
- Bulk diesel storage of 90 000 litres was installed and commissioned;
- Site offices, workshops, roadways, laboratory, sampling crusher and ablutions suitable for the early mining program were completed and are in use;
- The diversion road to the Alkantpan weapons testing site was constructed and commissioned diverting all non-mine traffic past the mine site; and
- A team of up to 200 people were recruited and locally housed with transport between mine site and the town of Prieska, provided by a local shuttle bus service. This demonstrated important principles of human resource management and local housing with significant capital and operation cost implications.

### **Feasibility Study Report**

Orion completed an Updated Bankable Feasibility Study for the PCZM development in May 2020 (BFS-20), based on a 12-year "Foundation Phase" 2.4Mtpa underground and open pit mining operation, delivering total payable metal production of 226kt of copper and 680kt of zinc in differentiated concentrates. Importantly the BFS20 modelled first production from the 33<sup>rd</sup> month.

The Company is currently finalising an optimised and updated Bankable Feasibility Study for PCZM that considers an accelerated development strategy from high-grade near-surface JORC Resources that have been accessed and prepared for production during the 2024 Trial Mining Program while preparing the deeps ore for extraction at 200ktpm from the fifth year of operation.

The current optimised study has focused on the aspirational objective of the addition of early production from as early as the 12<sup>th</sup> month, which is expected to reduce the peak external funding requirements and improve the project's financial returns.

Orion plans to use underground mining with conventional froth-flotation concentration to produce differentiated copper and zinc concentrates for the export market. The updated BFS is expected to be completed during Q3 CY2024.

### **Dewatering**

The underground water depth is currently at approximately 267m below the surface, with primary dewatering to commence once the 13ha water storage dam construction and lining is complete in Q3 CY2024.

Installation of the dewatering electrical and mechanical infrastructure began in January 2024 on the 178m Level.

The installed underground dewatering electrical and mechanical equipment was commissioned in the first week of June 2024 and the discharge flowrate was measured at 582m<sup>3</sup>/hr. The mine dewatering is scheduled to take 36months at an average rate of 500m<sup>3</sup>/hr.





**Photo 2: Dewatering into Intermediate Surface Dams.**

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### **Power Reticulation**

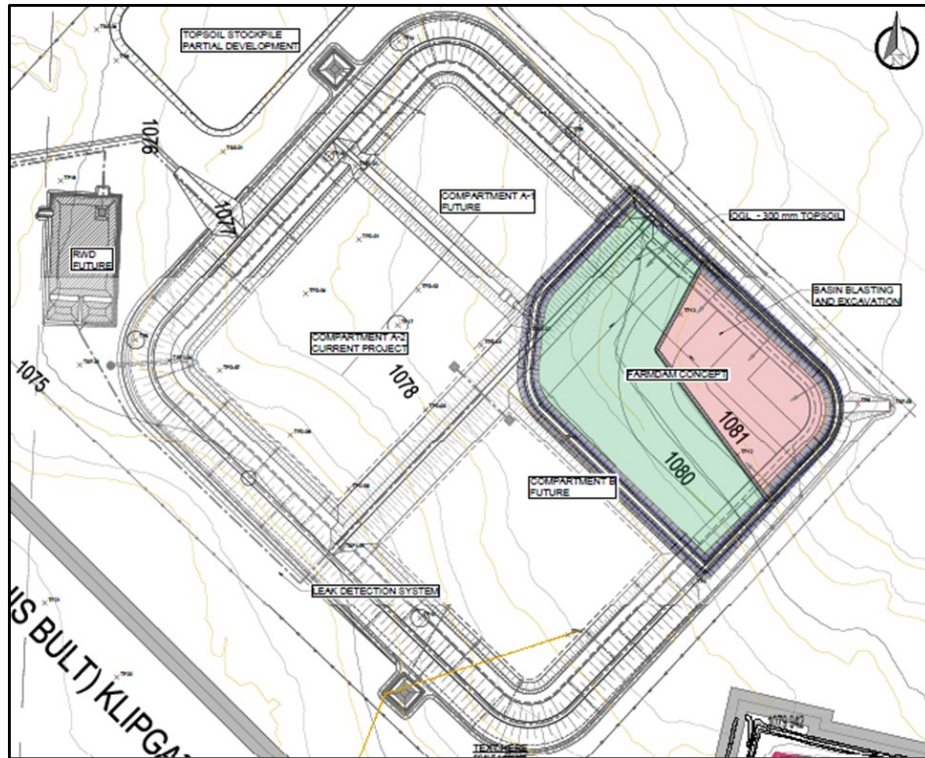
The engineering design of the 15MVA electricity supply point of the Cuprum sub-station upgrade was approved by Eskom in October 2023. The sub-station upgrade work was contracted to an Eskom approved engineering company and commenced in April 2024 with Eskom commissioning and handover taking place in June 2024.

All the surface and underground electrical reticulation installation has been completed at the mine site and up to the feed point of the overhead powerline to the 13ha water treatment site, storage dam and future TSF located 4km south of the mine site.

### **Water Storage Dam**

The optimal location of the dewatering brine water storage facility within the footprint of the approved 65ha tailings storage facility (TSF) was determined following a geotechnical drilling program that assessed the hardpan calcrete depth and its suitability, once drilled and blasted, as embankment construction material.

The appointed TSF engineering design consultants completed the design of the 13ha water storage dam positioned it in the eastern corner of the 65ha approved TSF footprint. The design minimises the embankment civil construction earthworks required by following the natural ground contours.



**Figure 1: 13ha Water Storage Dam on 65ha TSF footprint.**

The design also calls for a trench linking this lowest point with the exploratory borrow pit for future inclusion in the final TSF drainage system. The dam will have a single 2mm liner. The design will allow for a seamless transition into use as a TSF minimising additional capital costs. The footprint has been optimised for the planned dewatering rates and will make use of evaporators to concentrate the salts in storage.

A surface hardpan calcrete layer up to 2.5m thick at the approved 65ha TSF site requires drilling and blasting before it can be excavated for use as wall construction material. By optimising the excavation and civil construction methods and optimising the design for modular expansion to eventually cover the entire 65ha approved site the upfront capital costs for inclusion in the current BFS are significantly reduced.



**Photo 3: First Blast at 13ha Brine Water Storage Dam / TSF.**



The blasting of the 13ha water storage dam was completed in June 2024 and construction of the embankment walls has commenced. Construction and lining of the dam is scheduled for completion in Q3 CY2024.

### **Mineral Resource Evaluation**

The review of the interpretation and modelling of the PCZM orebody is ongoing to incorporate the data from trial mining with expected completion by end-July 2024. Sampling results continue to show good correlation with the Supergene resource model.

### **Geology**

The +105m Level geological sampling focused on the 99m Level north and south ore drives and associated exploration raises. Blasted material from each face is trucked to the crusher and sub sampling plant before sample pulverisation and preparation and Assay via XRF in the mine assay facility. Selected duplicate sample pulps have been dispatched to accredited laboratories for ICP analysis and verification of XRF results.

Channel sampling of development provides a second reference for development grade, with samples also analysed in the same manner as samples of blasted ore. On surface, underground material from both the +105m Level supergene sulphide development (23,300t) as well as the 143m Level draw point material (1,500t) is stockpiled according to metallurgical classification.



**Photo 4: +105m Level supergene sulphide stockpiles sampling material on surface.**

### **Trial Mining**

Trial mining of the supergene sulphide zone of the +105m Resource Block successfully concluded at the end of June 2024 and the mining contractor, demobilised from site.

Drilling and blasting of the development cross-cut ramp started in late November 2023 and advanced a total of 82m (4.5m wide x 4.5m high) to reach the supergene sulphide zone on -99m level in late January 2024.

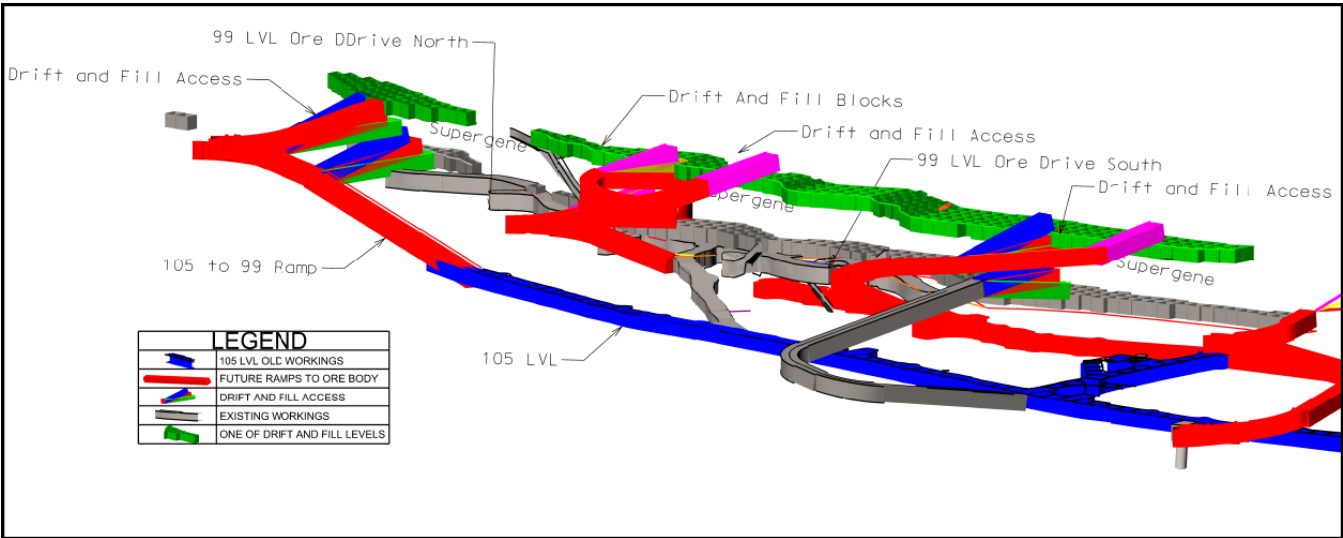


The rock conditions along the 99m level supergene sulphide ore drive have proven to meet the most optimistic expectations with very competent geotechnical conditions demonstrated. The original conservative drive dimensions of 3.0m high and 3.0m wide were increased to 4.5m x 4.5m while keeping the same roof support regimen that was used during the waste development drive.

A total of 369m of development within mineralisation has been developed along the 99m Level and raises off the -99m reaching -77m during trial mining. The mineralised package was tested along 240m of strike with a combination of reef drives, crosscuts short cubbies and raises.

The trial mining included two 2.0m x 2.0m exploration raises to determine the rock conditions in the up-dip area close to the top of the supergene sulphide zone. The north raise confirmed that geotechnical quality of the ore zone decreases vertically and around the -84m elevation ground support requirements will include end anchors, and 120mm shotcrete.

The revised mining plan is being developed to align with the future early mining requirements, with considerations regarding ventilation, mining method, machine access and access to services. Early mining is planned to be 4m x 4m drift and fill for the complete strike of supergene crown pillar to minimise dilution and maximise ore recovery while closely following the orebody. Wide ore sections up to 12m in width will require multiple drift cuts.



**Figure 2: +105m Level Supergene Drift & Fill.**

Initial trial mining development rates were hampered by poor drill rig availability as well as grid power loadshedding by the state utility, Eskom. This situation improved substantially over the last Quarter with 104m and 109m horizontal development achieved for the last two months respectively.



**Photo 5: ITC120 Ore Pass Loading.**



**Photo 6: 99m Level Face Drilling.**

Trial mining has tested the conventional load-haul-dump arrangement as well as an alternative underground mining method using continuous loaders matched with bi-directional trucks loaded at the 120m Level waste and ore passes. The learnings and efficiency improvements will feed into the revised mining BFS for the drift and fill mining machine selection, ore-pass loading and drive sizes.

### **Trial Mine Learnings**

Trial mining was executed to gather information for incorporation into the 2024 revised BFS and proved the following:

- Geotechnical condition of the supergene sulphide section of the crown pillar;
- Crown pillar mining method;
- Competency of site-based mining team;
- Workforce transport and accommodation;
- Single drill development rates in excess of 100m per month;
- Mining operations consumable supply chain and logistics;
- Mining services like air, water and power;
- ITC120 loader improved cycle times;
- Operational systems and management; and
- Regulatory compliance during mining operations.

### **Metallurgical Process Re-evaluation and Early Concentrator Plant Design**

#### **PCZM Supergene Ore Test Work**

The supergene sulphide test work is being completed at Maelgwyn Mineral Services Africa (Maelgwyn) and Brisbane Metallurgical Laboratory (BML). The primary aim is to develop a robust flowsheet for producing saleable copper and zinc concentrates from supergene sulphide resources at PCZM.

The test work tested challenges in supergene sulphide material for separating copper minerals from sphalerite into separate copper and zinc concentrates. The existence of secondary copper minerals in the supergene sulphide, adds complexity to the process.

Enquiries with potential off takers have confirmed the ability to market a bulk Cu-Zn sulphide concentrate, with potential savings in plant capital and OPEX costs offsetting lower payabilities for the mixed metal concentrate.

Discussions with potential concentrate off-take parties continue in parallel to plant optimisation to produce an optimum value product.

### **Human Resources**

As PCZM moves through trial mining and towards continuous operations, a complete site-based, skilled operating team has recruited. Importantly, this confirmed the ability to recruit an entirely site resident team who can be housed in the local town and transported to site and home again using local transport providers.

This demonstration for a team of nearly 200 people has important implications for capital and operating cost considerations in the BFS, with the removal of need to first construct a dedicated mine village with all amenities and services before developing the mine.

## **OKIEP COPPER PROJECT (OCP) DEVELOPMENT AND EXPLORATION**

### **Progress with the acquisition of the Okiep Copper Project and mine permitting**

Orion progressed with the acquisition agreements for the Okiep Copper Project to allow closing in several stages as and when the outstanding conditions precedent are met (refer ASX/JSE releases 17 April 2024 and 6 May 2024). The acquisition totals an aggregate purchase consideration of approximately ZAR59.60 million (~A\$4.88 million) payable by Orion, comprising a combination of cash and Orion Shares, with the first phase settlement being ZAR10.86 million (~A\$0.89 million) cash and ZAR35.10 million (~A\$2.88 million) in Orion Shares.

The initial consideration includes the important SAFTA Mining Right which was transferred to the ownership of New Okiep Mining Company (Pty) Ltd (NOM) in December 2023. Orion can proceed to the completion of the acquisition of a controlling interest in OCP.

The Industrial Development Corporation of South Africa Ltd (IDC) approved ZAR43.75 million (~A\$3.6 million) of additional funding to fund its proportional share of ongoing BFS studies including drilling, geotechnical test work and metallurgical evaluation.

The Company is awaiting the approval of the water use licence before the project is fully permitted and mine development can commence.

The Feasibility Study is on track for completion in the September 2024 Quarter.

### **Feasibility Study Report**

Work on the review and updating of the Feasibility Study for the Flat Mines Project continued throughout the June 2024 Quarter. Critical to the finalisation of the study is the completion of the confirmation drilling program which commenced in February 2024. This drilling program is designed to validate earlier exploration drilling by Goldfields and Newmont who were the previous owners of the Flat Mines Deposits, as well as providing drill-core for geotechnical studies and metallurgical test work on larger sample masses from all the Flat Mines Deposits than were previously available.

While the I BFS currently underway focusses on immediately available JORC-compliant Mineral Resources from Flat Mines North (**FMN**), Flat Mines East (**FME**) and Flat Mines South (**FMS**), the aspirational target is to restore the Okiep properties to their historical production levels of 20,000 - 50,000 tonnes of copper production per annum. The potential for achieving this aspiration is underscored by ongoing drilling results.



## Flat Mines Confirmatory Drilling Program

During the Quarter, Orion reported outstanding high-grade assay results from confirmation diamond drilling at the OCP's Flat Mines Area. The holes have been specifically designed to best cover the areas that contribute most significantly to confirming the overall estimated Indicated Mineral Resource. The initial diamond drilling program commenced in the Flat Mines area of OCP in February 2024, comprising five holes at FME, four holes at FMS and two holes at FMN. All holes include a deflection (or wedge) drilled through the mineralisation to provide additional material for confirmatory metallurgical test work.

Results from diamond drilling at FME during this Quarter included 49.35m at 5.05% Cu including 21.66m at 9.41% Cu in OFMED153 and 9.27m at 3.01% Cu and 15.00m at 4.80% Cu within 78.00m at 1.57% Cu in OFMED154 (refer ASX/JSE releases 22 April and 24 June 2024).

Diamond drill hole OFMSD077, completed at FMS, intersected 20.50m at 4.99% Cu within 43.00m at 3.41% Cu with mineralisation open down-dip (refer ASX/JSE release 9 July 2024).

A second confirmation diamond drilling program commenced during June 2024, with six holes planned at Flat Mines Nababeep (**FMNab**) to test shallow mineralisation that may be accessed by FMS primary access (Figure 3).

The geological and mineralisation envelope interpretations will be reviewed and adjusted where necessary once the drilling program has been completed, and an addendum to the Mineral Resource estimate will be included describing the new information, however material changes to the Mineral Resource are not expected. New geotechnical information will be used for input to mine design.

Planned confirmatory metallurgical test work includes comminution, flotation optimisation, locked cycle tests, tailings characterisation and XRF sorting.

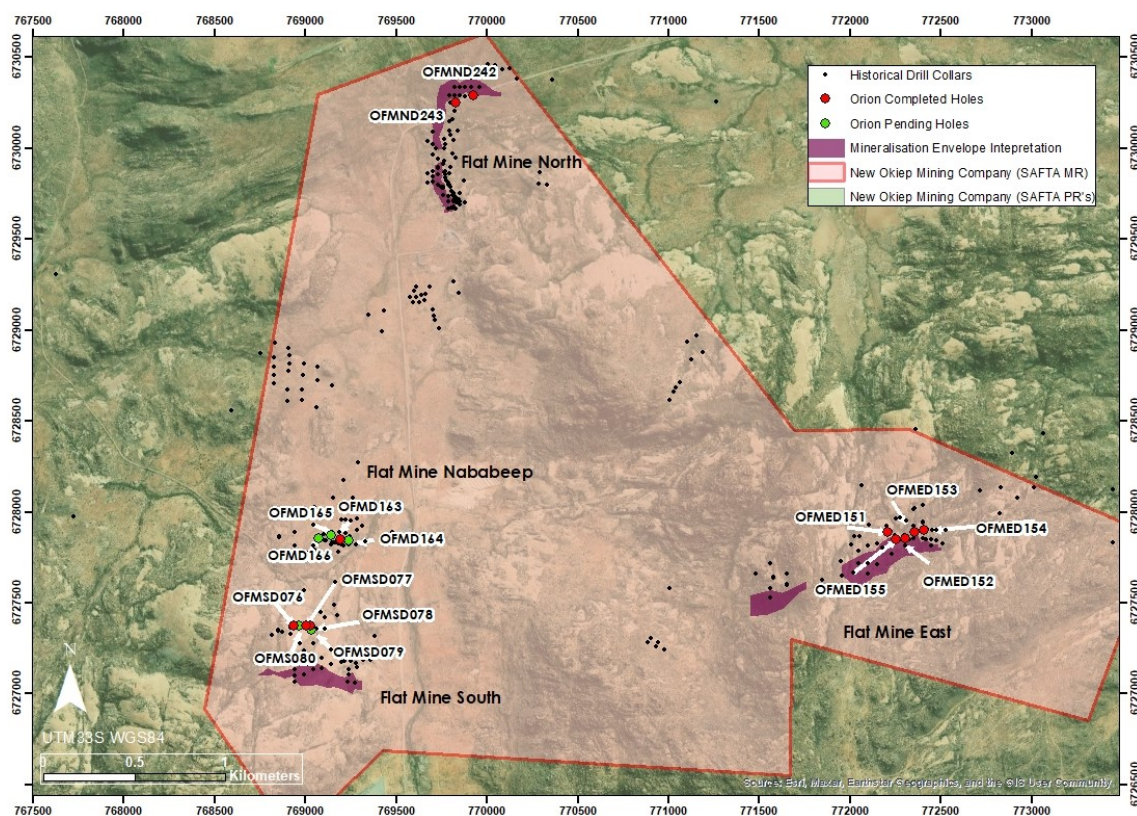
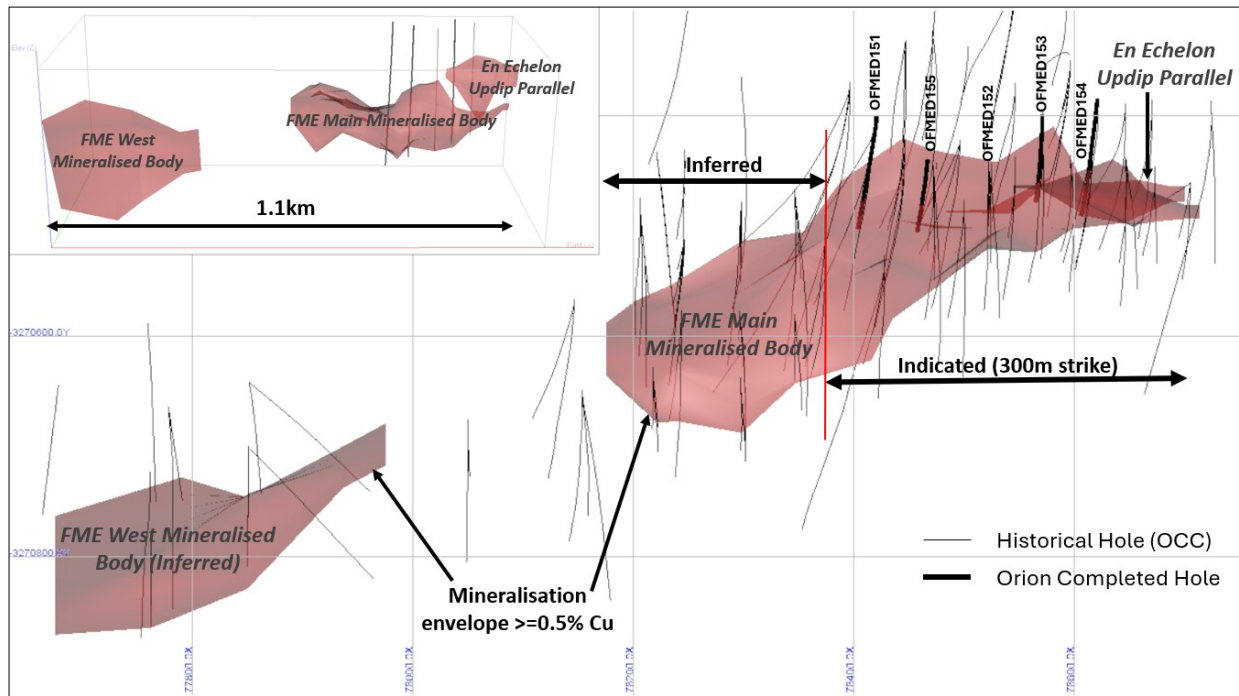


Figure 3: Plan showing historical and Orion drill holes, mineralisation envelope interpretations and extent of the Mining Right.



**Figure 4: Plan view of FME, with sectional view inset, showing historical and Orion drill holes and mineralisation envelope interpretations.**

## Assay results

Drilling assay results received during the Quarter were reported in the Company's ASX/JSE announcements dated 22 April, 24 June and 9 July 2024, which included a number of exceptional intersections in terms of copper grades and widths. The intersections recorded confirm the validity of the historical drilling results and the geological and mineralised envelope intersections. Results received for FME and FMS are summarised in Table 2 below, with further results from drilling at FMN, FMS and FMNab pending.

**Table 2: Summary table of drill results to date for FME and FMS prospects (a minimum cut-off of 0.7% Cu with maximum 3m internal waste allowed). Intersections and inclusions with grades mostly above 1% Cu are tabulated. The data was not capped. Note: widths are drill widths.**

Area	Hole ID	Mineralisation				
		Notes	From (m)	To (m)	Interval (m)	% Cu
Flat Mines East	OFMED151		260.00	285.22	25.22	0.97
		Including	275.00	285.22	10.22	1.35
	OFMED152		194.00	202.00	8.00	1.59
			215.00	238.00	23.00	1.45
	OFMED153		231.00	280.35	49.35	5.05
		Including	231.00	250.00	19.00	2.14
		Including	253.84	256.25	2.41	1.82
		Including	258.69	280.35	21.66	9.41
		Including	258.69	266.78	8.09	8.18
		Including	269.77	280.35	10.58	12.99
	OFMED154		185.00	194.27	9.27	3.01
			248.00	263.00	15.00	4.80
	OFMED155		214.00	235.00	21.00	1.12

Area	Hole ID	Mineralisation				
		Notes	From (m)	To (m)	Interval (m)	% Cu
			246.00	264.00	18.00	1.44
Flat Mines South	OFMSD076		430.00	439.00	9.00	0.70
			446.00	448.00	2.00	1.19
			454.00	460.00	6.00	0.90
			<b>527.00</b>	<b>570.00</b>	<b>43.00</b>	<b>3.41</b>
	OFMSD077					
		Including	549.50	570.00	20.50	4.99

Significant widths of waste granitic material are included within the reported intersection widths, providing opportunities for upgrading of material through modern XRF ore sorting techniques to reject internal waste before milling. As part of the ore sorting test work, a RADOS "XRF core tray analyser" was brought to site to scan all available drill core, and the XRF scanning measurements were compared to assays returned for the core.

The RADOS™ scans show a very promising ability for the scanner to accurately recognise waste xenoliths within high-or low-grade mineralised intrusives. This is anticipated to facilitate the ability to sort and reject the waste that would be included in bulk mining methods, allowing for optimum ore extraction at reduced cost. Sorting of blasted and crushed ore to produce a pre-concentrate, before milling and flotation will have significant benefits in the reduction of capital and operating costs of the milling and concentrator plants.

Additional benefits in the form of reduced energy, water, reagent consumptions and reduced tailings storage requirements all combine to minimise the environmental impact of copper production.

Geotechnical logging on oriented core has been completed for all holes. Samples from the deflections have been submitted to engineering laboratories for test work, which will include point load strength tests and triaxial compressive strength tests. This data will be used for 3-D modelling to inform the stoping layouts and mine design parameters from a rock strength perspective.

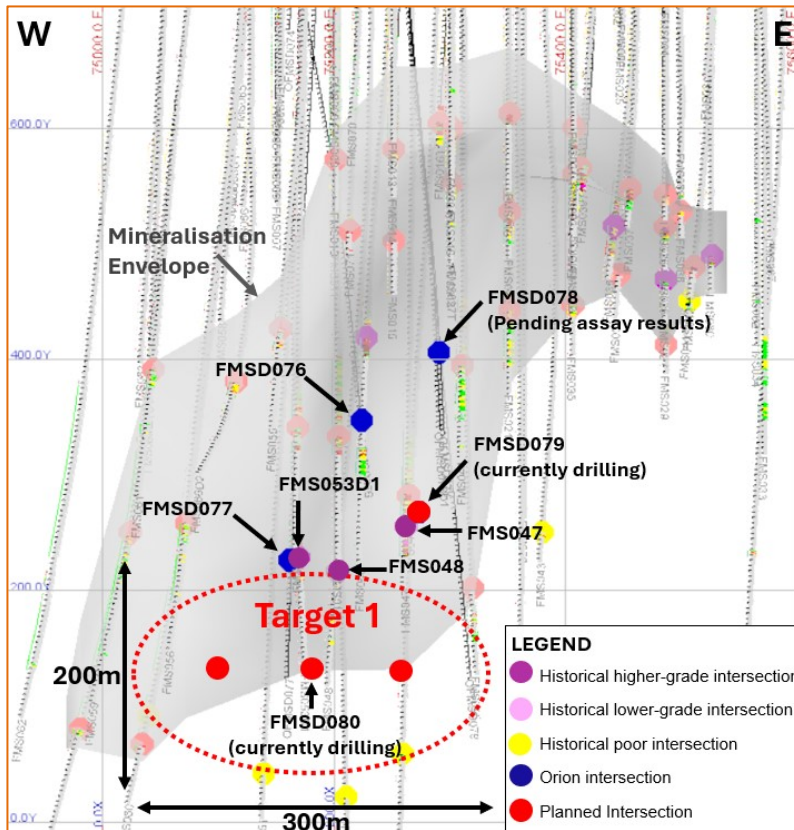
### Flat Mines Exploration and Resource Upgrade Drilling Program

With the completion of the major portion of the planned 6,300m drill program, two of the five drill rigs have been demobilised, with three rigs retained on site to test exploration targets and confirm additional resources. At FMS, historical Goldfields holes and Orion drill hole OFMSD077 indicate high grade mineralisation open downdip for up to 200m within an untested area of strike length of 300m (Figure 5). Historical intersections open downdip (Figure 5) include the following:

- 38.98m (25m TW) at 2.16% Cu including 24.45m (16m TW) at 3.06% Cu in FMS053D1;
- 18.74m (10m TW) at 4.29% Cu including 15.74m (8m TW) at 4.86% Cu in FMS048; and
- 70.96m (34m TW) at 1.21% Cu including 10.24m (5m TW) at 2.81% Cu in FMS047.

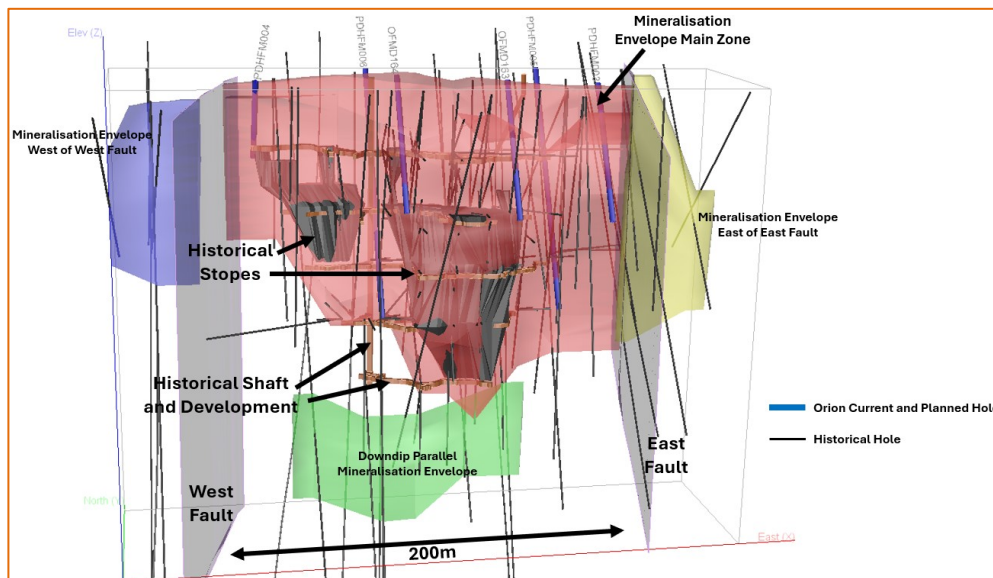
Hole, OFMSD080, is currently in progress targeting this area, with further holes planned pending interpretation and assay results.





**Figure 5: Long Section of FMS downdip drilling target.**

Confirmatory drilling is underway at Flat Mine (Nababeep) where an Inferred Mineral Resource of 1Mt at 1.4% Cu was previously reported (refer ASX/JSE release 29 March 2021). Original drilling over the main zone of mineralisation was carried out by the Cape Copper Company in the 1940's with 141Kt at 2.72% Cu being subsequently mined in two stopes in the 1950's. Six holes totalling approximately 530m are initially planned to test and confirm the mineralisation (Figure 6).



**Figure 6: 3D view of FM (Nababeep) mineralisation envelopes, historical mine workings, historical drilling and planned drilling.**

## **Water Use Licence Application**

The Water Use Licence (WUL) required for the Project was submitted to the Department of Water and Sanitation (DWS) in September 2023. Regular follow-up contact is made with the appointed case officer to track the progress of the application. To date, while the WUL has not yet been granted, feedback from the authorities indicates that the application has progressed to final approval.

## **Metallurgical test work**

Following the completion of the on-site XRF scanning of the drill core from all the Flat Mines Deposits, core representative of the ore zones was dispatched to RADOS Works in Gauteng for pilot scale processing. This test work is currently in progress. The objective of this work is to simulate the actual sorting of ore by sorting the core samples representing the entire ore-zones into an ore sorter concentrate and a sorter discard. The results from the work will indicate the realistic outcome achievable from ore sorting in terms of upgrade ratio and copper metal recovery to the concentrate.

Following successful completion of this work, the concentrate produced by the ore sorter will be transferred for further milling and flotation test work to confirm the effectiveness of the entire Process Flow Design. In the interim, whole-ore samples are currently undergoing milling and flotation test work to provide the base case performance with which to compare the efficacy of the ore sorting option.

Following completion of the current test work, the operating cost and capital cost estimate will be updated.

Preliminary results from the metallurgical test work are expected towards the end of July 2024, with final results expected by the end of August 2024 with operating cost and capital cost estimate updated for the BFS.

## **Mine Planning**

Intersections from Orion drilling at FME show a broad correlation with historical Goldfields drilling (refer ASX/JSE releases on 22 April, 24 June and 9 July 2024) indicating no significant deviation to the existing interpretation. The remainder of the drill assay results from the FMN and FMS drilling are required before a final assessment can be made for these prospects. Results from the rock strength tests are required before the existing stope layouts can be confirmed by the Geotechnical Engineer. These results are expected by the end of July 2024.

The mine planning undertaken during the Quarter has included a review of the mining fleet, blasting designs and ventilation simulations to optimise the development layouts and mining costs.

## **Infrastructure**

Work on the surface infrastructure is limited to updating the construction costs of offices, roads, power and water supply. Regular discussions are held with the local Municipality regarding the provision of a power connection for construction, and the off-take of process water from the Municipal Waste Water Works (**WWW**). The mine has offered oversight assistance in the process of refurbishing the WWW by contractors.

## **Land Access and Permitting**

The Mining Right (MR) over the Flat Mines area was executed in December 2022, Land access to the Flat Mines operational area is currently secure. The SPLUMA land rezoning application remains in process, and indications from the Local Municipal Manager are that this process is nearing completion.

## **JACOMYNSPAN Ni-Cu-Co-PGE PROJECT (JMP)**

The JMP Nickel-Copper-PGE Project is Orion's third strategic future metals project alongside PCZM and OCP with potential to be a significant metals producer.

Orion sees compelling potential for large-scale, near-surface bulk mining operation at Jacomynspan, with drilling confirming the presence of shallow sulphide nickel-copper-cobalt-PGE mineralisation within the ultramafic structure, commencing at a depth of around 85m vertically below the surface.

Planning continued for a trial mining exercise to generate a sufficient scale representative bulk sample of Jacomynspan ore to evaluate innovative metallurgical refining/battery pre-cursor production on a pilot scale.

JMP has a JORC-defined Mineral Resource of 65Mt at 0.28% Ni, 0.19% Cu, 0.02% Co, 0.2g/t 2PGE +Au using a cut-off of 0.2% Ni (refer ASX/JSE release 8 March 2018). The current Mineral Resource extends over less than 1km of strike of a series of outcropping intrusives where wide-spaced scout drilling by Anglovaal, Newmont, African Nickel (ANL) and Orion have revealed a combined 7km strike of identical mineralised outcropping or shallow sub-cropping ultramafic intrusive bodies.

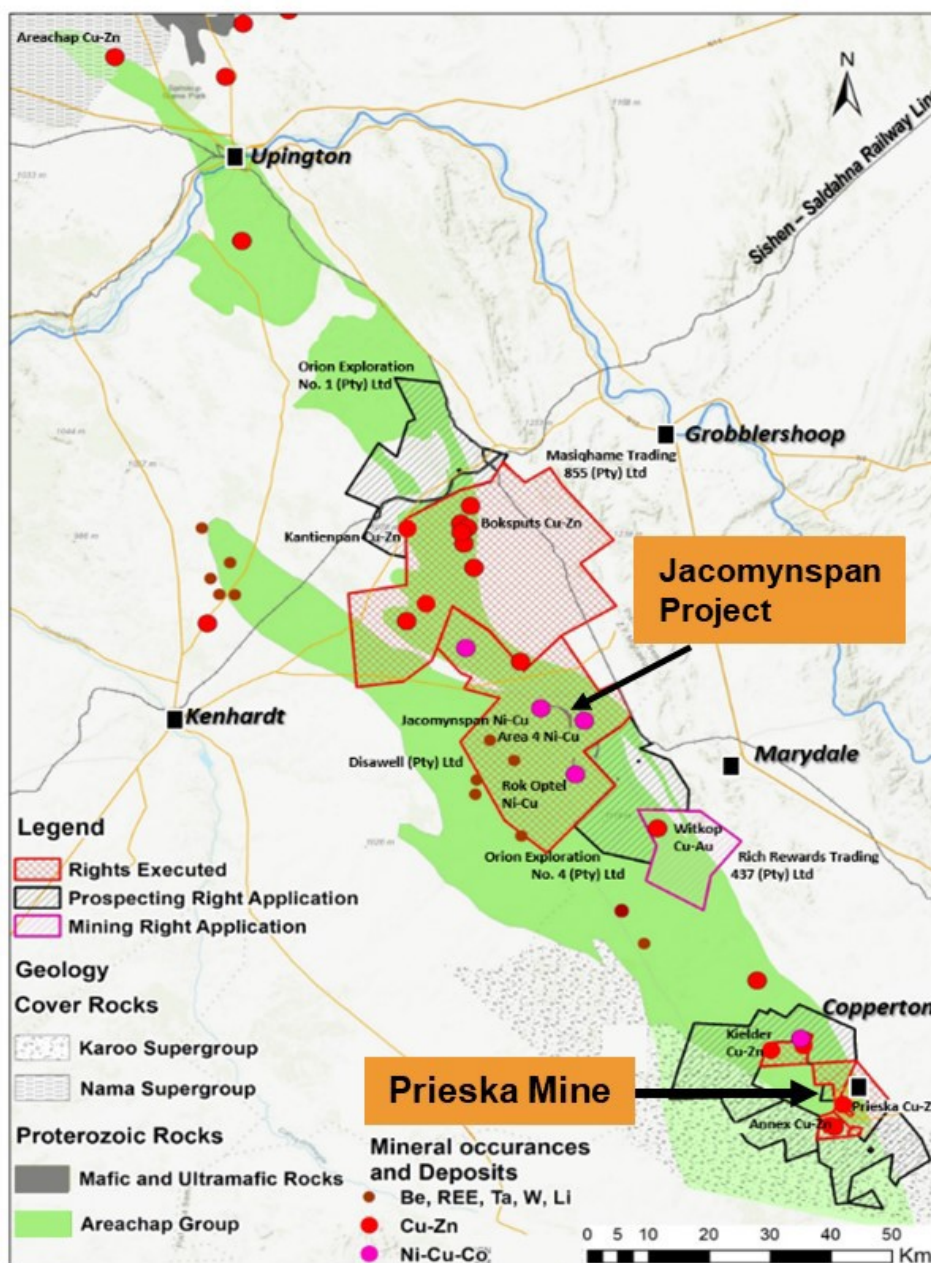


Figure 7: JMP and PCZM location map.



## Metals Vapour Refining Project

Orion continues to evaluate the potential for application of Chloro and Carbonyl metal vapour refining to produce premium value chemical and electronic quality metal products.

Several technology development groups have been identified to work alongside the team involved in the project to date with the objective of accelerating the development pathway.

## Areachap Exploration

The Areachap Project is located in an under-explored belt of the same name, covering an area exceeding 175,000ha with multiple copper-zinc and nickel-copper-cobalt-PGE-gold intrusive targets within Orion's tenements. Multiple VMS-style copper-zinc and nickel-copper-cobalt-PGE-gold in ultramafic intrusive targets are known within the tenements, including numerous unevaluated targets. Chief among these are:

- The Kantienpan zinc-copper VMS project - Identified a substantial mineralised deposit through drill-testing and will progress this project to pre-feasibility level;
- The Witkop copper-gold project - Completed a preliminary assessment and is in discussions to develop the Project;
- The Bokspuits copper-zinc VMS project- Additional follow-up exploration needed following geophysical investigation and preliminary drill-testing; and
- Orange River pegmatite swarm - Additional lithium, beryllium and Rare Earth Element (REE) mineralisation potential is being investigated in this area, which traverses the Orion tenements.

Exploration activities in the Quarter included geological mapping and sampling on two of the licences, processing of existing geophysical survey results and design of detailed follow-up geophysical survey programs.

## Australian Projects

### Fraser Range – Nickel-Copper Projects (Western Australia)

The Fraser Range Project is a belt-scale project, highly prospective for high-value magmatic nickel-copper-cobalt sulphide discoveries. The project is a venture with ASX-listed IGO Limited, who is the dominant landholder in the Fraser Range and owns the Nova Operation, which is mining and processing the Nova-Bollinger nickel-copper-cobalt sulphide deposit discovered in 2015.

Orion maintains a sizeable tenement package in the Fraser Range under a joint venture with IGO. In terms of the joint venture, IGO is responsible for the exploration of all the tenements while Orion is free carried by IGO through to the first Pre-Feasibility Study. This allows Orion to maintain exposure to ongoing exploration and development of the project, without any ongoing financial commitment.

During the Quarter, IGO did not undertake any field work activity on the joint venture ground. Work planned for next Quarter includes rehabilitation of tracks and assessment of the area following flooding in the June Quarter.

### Walhalla – Gold and Polymetals Project (Victoria)

While the Walhalla-Woods Point District is best known for gold mining, high-grade copper-nickel and PGE mineralisation also occurs within the belt. Both the gold and copper-nickel-PGE mineralisation within this district are hosted within dykes from the Woods Point Dyke Swarm, a series of ultramafic to felsic dykes occurring over a 75km long north-south belt.

No field or exploration work was carried out on the Walhalla Project during the Quarter.

## Corporate

### Cash and Finance

Cash on hand at the end of the Quarter was A\$8.27 million. Payments made to related parties and their associates during the Quarter was A\$161,000 for director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

### PCZM Project Funding

Drawdown of the IDC Convertible Loan is in tranches and is pro rata matched by the drawdown requests that Orion makes under the Triple Flag Funding Arrangement. In May 2024, Orion received ~A\$8.61 million in cash from the third drawdown of the IDC Convertible Loan Facility and the Triple Flag early Funding Arrangement. At the end of the Quarter ~A\$1.60 million remains available for drawdown from the funding facilities.

A summary of the material terms of the IDC Convertible Loan definitive agreement was provided in Appendix 1 of the Company's 8 February 2023 ASX/JSE release and a summary of the material terms of the Triple Flag definitive agreements was provided in Appendix 1 of the 13 December 2022 ASX/JSE release.

### Okiep Copper Project – Settlement of Phase One Shares

With all conditions satisfied, the Company proceeded with the first closing of the acquisition of the Okiep Copper Project (refer ASX/JSE releases 17 April 2024 and 6 May 2024). The first phase of the settlement in acquiring a controlling interest in the Okiep Copper Project was the payment of consideration totalling ZAR46 million (~A\$3.8 million), being ZAR11 million payable in cash and ZAR35 million settled by way of Orion issuing fully paid ordinary shares (**Shares**).

On 7 May 2024, the Company issued the selling shareholders 206.57 million Shares in Orion at an issue price of A\$1.4 cents per Share (ZAR17.6 cents).

The Company anticipates completion of phases two and three of the closing agreement, which are each subject to the granting of the relevant Mineral Rights and, if applicable, approval from the Minister of the Department of Mineral Resources and Energy (or his lawful delegate) in terms of the South African Mineral and Petroleum Resources Development Act, 2002 for the transfer of the relevant Mineral Rights from each Target Entity to the relevant Purchaser (S11 Approval), in the coming months.

### Capital Raising

On 1 July 2024, the Company announced a A\$7.7 million (~ZAR92.3 million) capital raising, conducted via a placement to sophisticated and professional investors, pursuant to Section 708A of the Corporations Act 2001 (**Placement**). The Placement, which was completed on 18 July 2024, comprised the issue of approximately 513 million Shares at an issue price of A\$1.5 cents (being ZAR18 cents) per Share.

### Share Purchase Plan

In addition to the Placement announced on 1 July 2024, Orion also announced a Share Purchase Plan (**SPP**), providing shareholders an opportunity to increase their shareholding in the Company at the same offer price as the Shares issued under the Placement.

Under the SPP, Eligible Shareholders can subscribe for new Shares in parcels starting from A\$165 (or ZAR2,000) up to a maximum of A\$30,000 (or ZAR365,000) at an issue price of A\$1.5 cents per Share (ZAR18 cents) to raise up to A\$5 million (or ~ZAR60 million).

The SPP opened on 5 July 2024 and closes on 23 July 2024.

The funds raised from the Placement and SPP will be used principally to progress the development of the PCZM and permitting and acceleration of infrastructure development for early production in respect of the OCP and ongoing exploration drilling at Okiep.

## Shares in Lieu of Non-Executive Director Fees

To preserve the Company's cash reserves, certain Company Non-Executive Directors have elected, subject to shareholder approval, to receive a proportion of their accrued Director fees in Shares in lieu of cash.

Each Director may at any time and at their election, alter the proportion of Director fees to be received in Director Fees Shares and such election shall apply from the date that the Company receives the election in writing from the Director. The Director Fees Shares shall be issued in arrears in respect of accrued Director fees, subject to shareholder approval at the relevant general meeting.

During the Quarter, following receipt of shareholder approval at the General Meeting, the Company issued 2.78 million Shares to Non-Executive Directors, Mr Godfrey Gomwe, Ms Patience Mpofu and Mr Anthony Lennox. The Shares were issued at a deemed issue price of A\$1.4 cents per Share, being the 10-trading day volume weighted average price of the Shares traded on the ASX and JSE before 27 December 2023, being two days prior to the date of announcement to the ASX that referred to the Non-Executive directors electing to receive Director Fee Shares instead of cash (refer ASX/JSE release 29 December 2023).

## General Meeting

A general meeting of shareholders of Orion was held at the offices of Clayton Utz, Level 27, QV1 Building, 250 St Georges Terrace, Perth, Western Australia on Thursday 23 May 2024 (**General Meeting**) and all resolutions presented were passed by poll.

## Tenement Table

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
<b>South Africa</b>				
NC30/5/1/1/2/11850PR NC30/5/1/1/2/13528PR	Bartotrax	100%	---	---
NC30/5/1/2/2/10138MR	Prieska Copper Zinc Mine	70%	---	---
NC30/5/1/2/2/10146MR	Prieska Copper Zinc Mine	70%	---	---
NC30/5/1/1/2/12257PR	Prieska Near Mine-OE5	100%	---	---
NC30/5/1/1/2/12258PR	Prieska Near Mine-OE5	100%	---	---
NC30/5/1/1/2/12287PR	Prieska Near Mine-OE5	100%	---	---
NC30/5/1/1/2/12405PR	Prieska Near Mine-OE5	100%	---	---
NC30/5/1/1/2/11840PR NC30/5/1/1/2/13752PR	Doonies Pan	70%	---	---
NC30/5/1/2/2/10032MR	Namaqua-Disawell	25%	---	Namaqua Nickel Mining (Pty) Ltd
NC30/5/1/1/2/12216PR	Namaqua-Disawell	25%	---	Namaqua Nickel Mining (Pty) Ltd
NC30/5/1/1/2/10938PR NC30/5/1/1/2/13397PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/11010PR NC30/5/1/1/2/13398PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/12292PR	Masiqhame	50%	---	Masiqhame 855 (Pty) Ltd
NC30/5/1/1/2/12197PR	Bokspots North	70%	---	---
NC30/5/1/1/2/11125PR	Okiep	100%	---	---



Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
NC30/5/1/1/2/13395PR				
NC30/5/1/1/2/12357PR	Okiep	100%	---	---
NC30/5/1/1/2/12897PR	Okiep	100%	---	---
NC30/5/1/2/2/10150MR	Okiep	56.25%	---	Industrial Development Corporation of South Africa Limited (IDC)
NC30/5/1/1/2/12850PR	Okiep	56.25%	---	Industrial Development Corporation of South Africa Limited (IDC)
NC30/5/1/1/2/12852PR	Okiep	100%	---	---
NC30/5/1/1/2/12854PR	Okiep	100%	---	---
<b>Western Australia</b>				
E28/2367	Fraser Range	30%	---	IGO Limited
E28/2596	Fraser Range	30%	---	IGO Limited
E39/1653	Fraser Range	35%	---	IGO Limited & Geological Resources Pty Ltd
E39/1654	Fraser Range	10%	---	IGO Limited & NBX Pty Ltd
<b>Victoria</b>				
EL6069	Walhalla	100%	---	---
EL5042	Walhalla	100%	---	---

This Quarterly report is authorised by the Board.