



Orion Minerals

ASX/JSE RELEASE: 29 October 2024

September 2024 Quarterly Activities Report

HIGHLIGHTS

- Feasibility Studies for both the Prieska Copper Zinc Mine (PCZM) and Okiep Copper Project (OCP) tracking for completion early in the March 2025 Quarter and December 2024 Quarter, respectively.
- Orion received the Emerging ESG Leader at the AAMEG Awards for the third time, in recognition of its pioneering work in developing a host community service provider in the Northern Cape.
- Upgrade of the Cuprum electrical sub-station completed for the supply of 15MVA to PCZM, with all electrical infrastructure installed. PCZM is now fully connected to the Eskom grid with an electricity supply agreement in place.
- PCZM mine dewatering and forced evaporation mechanical and electrical infrastructure successfully installed, allowing a dewatering rate from the pump station at the 178m Level in excess of 500m³/hour and forced evaporation of 100-140m³/hr.
- Civil construction of the 13ha water storage dam/future TSF at PCZM scheduled for completion in October 2024.
- Further positive results received from confirmatory diamond drilling at the Okiep Copper Project (OCP), to support the Feasibility Study:
 - 24.95m at 4.14% Cu within 59.00m at 3.14% Cu (Flat Mine South, drill hole OFMSD080)
 - 14.80m at 2.58% Cu within 25.00m at 1.92% Cu (Flat Mine South, drill hole OFMSD079); and
 - 36.30m at 1.11% Cu (Flat Mine North, drill hole OFMND243).
- The drilling program at OCP confirmed the interpretations that support the current Mineral Resource models, while also demonstrating the potential for high-grade copper mineralisation.
- Confirmatory drilling completed at Flat Mine (Nababeep), where an Inferred Mineral Resource of 1Mt at 1.4% Cu was reported in March 2021. Assay results include:
 - 20.69m at 1.82% Cu within 45.69m at 1.26% Cu (drill hole OFMD164);
 - 7.80m at 5.08% Cu (drill hole OFMD167); and
 - 21.00m at 1.83% Cu (drill hole OFMD169).
- Water Use Licence granted for the OCP, Flat Mines Area, representing the final permit required to progress the OCP to construction and production. The grant also included approval of the Tailings Storage Facility design and proposed location.
- A\$11.3 million (~ZAR136.3 million) capital raising completed in July 2024, comprising a A\$7.7M Share placement and \$3.6M Share Purchase Plan. Funds will principally be used to progress development at PCZM, accelerate permitting and infrastructure development for early production at the OCP, and progress ongoing exploration drilling at OCP.

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 September 2024 Quarter, Orion continued to progress 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 which is due early in the March 2025 Quarter.

The PCZM is a substantial brownfields development asset, underpinned by a 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, the upgrade of the Cuprum electrical sub-station was completed for the supply of 15MVA to PCZM, with all electrical infrastructure installed. PCZM is now fully connected to the Eskom grid, with an electricity supply agreement in place. Construction of the 13ha water storage dam and future tailings storage facility (**TSF**) continued, with construction expected to be completed in the December 2024 Quarter.

Infrastructure for the mine dewatering was installed, with tests showing that a pumping rate from the 178m Level in excess of 500m³/hour can be achieved.

At the Okiep Copper Project (**OCP**), final assay results were reported from an 11-hole confirmation diamond drilling program at the Flat Mines Area, including 14.80m at 2.58% Cu within 25.00m at 1.92% Cu (drill hole OFMSD079) at Flat Mine South. Drilling was also completed at Flat Mine Nababeep (**FMNab**), with assay results of 20.69m at 1.82% Cu within 45.69m at 1.26% Cu (drill hole OFMD164) received (refer ASX/JSE release 3 September 2024). OCP is a highly strategic asset, located within a prolific copper-producing district that historically produced over two million tonnes of contained metal.

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

In September 2024, Orion won the Emerging ESG Leader Award at the 2024 AAMEG Africa Awards, recognising Orion's work in successfully developing a host community service provider, Quebar Electrical and Civil Construction (**Quebar**). This was the third time that Orion has received this prestigious award, reflecting the Company's pioneering approach to community participation across its projects, particularly its Community Participation Framework.

During the Quarter, Orion completed a capital raising of A\$11.3 million (~ZAR136.3 million), comprising a ~A\$7.7 million (~ZAR92.3 million) ordinary fully paid share (**Share**) placement of approximately 513 million Shares and a strongly supported Share Purchase Plan, which raised A\$3.6 million (~ZAR44 million). Funds from the placement and Share Purchase Plan will be principally used to progress development at 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 2025 financial year to date (**YTD**) 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	FY2025 YTD
Exploration	17,691	17,691
Surface	18,482	18,482
Underground	8,301	8,301
Contractors	67,570	67,570
Total	112,043	112,043

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

At the end of the Quarter, the team celebrated 1,976 days without a Lost-Time Injury (**LTI**).

Community and Stakeholder Engagement

Aligning with local communities

The Marydale Stakeholder Imbizo, held in August 2024, served as an additional platform for engagement and updates for PCZM host community members. Orion Minerals was represented at this event, organised by community-based Nonprofit Organisations (NPOs), including the Marydale Youth Service Centre, along with various governmental departments such as the South African Social Security Agency (SASSA), the Department of Health, the Department of Home Affairs, the South African Police Service (SAPS), the Department of Social Development, as well as private organisations such as the Mulilo Prieska Community Trust and Copperton Wind Farm.

During the Imbizo, stakeholders from these organisations updated community members on the services they provide, allowing an opportunity for questions, discussions and feedback. The Marydale Youth Service Centre and other community-based NPOs further committed to strengthening relationships with private stakeholders to collectively empower community members by facilitating access to bursaries, skills development opportunities and other resources.

Consulting with the community on the new PCZM Social and Labour Plan (SLP)

Consultation meetings were held with local communities on the development of the new Social and Labour Plan (**SLP**) for PCZM for the period 2025-2029. The SLP outlines the commitments Orion will make to benefit its workforce and nearby communities and includes specific goals related to skills development and local economic development (**LED**).

Public meetings were held in July 2024 in each of the host community towns, with an open invitation to all community members. Orion also continued consultations on the new SLP LED projects with the Siyathemba Local Municipality and the Orion Siyathemba Stakeholder Engagement Forum (OSSEF).

The SLP will be submitted to the Department of Minerals and Petroleum for approval during Q4 CY2024.

PCZM prioritises local community health

PCZM donated new seating facilities to the mother and child ward at the Ethembeni Primary Health Clinic in Prieska. This contribution will significantly enhance patient comfort and provide much-needed indoor seating for patients. Previously, many patients had to wait outside, exposed to rain, cold and high temperatures. The new seating allows them to remain sheltered, creating a more welcoming and supportive environment for those accessing healthcare services. This donation underlines PCZM's commitment to community well-being.

Siyathemba Golf Day

Orion hosted a very successful golf day in September 2024 to raise funds to support deserving causes within the host communities of Prieska, Marydale, Vanwyksvlei and Niekerkshoop. The event, which was held at the Prieska Siyathemba Golf Club, drew 42 sponsors and 96 players on the day. Community leaders, the Siyathemba Municipality and the mayor also attended the golf day.

ESG Award Received

During the Quarter, Orion received its fourth environmental, social, and governance (**ESG**) award, winning the Emerging ESG Leader Award at the 2024 Australia-Africa Minerals & Energy Group (**AAMEG**) Awards.

The Emerging ESG Leader Award recognises Orion's work in successfully developing a host community service provider, Quebar Electrical and Civil Construction (Quebar). This is the third time Orion has won this prestigious award.

Through mentorship and expert guidance from Orion, a local Prieska Copper Zinc Mine (PCZM) community electrical contractor, Quebar, was able to increase the scope and complexity of its work and transitioned to become a core service provider in the fields of electrical and civil construction at the operation, in both the surface infrastructure and underground mining environments.

The award was announced at the Africa Down Under Conference held in Perth, Western Australia. Orion was previously awarded AAMEG's inaugural Emerging ESG Leader Award in 2020 and in 2023 was again recognised for its pioneering approach to community participation across its projects, particularly its Community Participation Framework. Orion was also recognised at the Mining Indaba Awards in 2022 for its enhanced labour standards.

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 September 2024 Quarter, the focus was on the completion of mine dewatering infrastructure, the construction of a 13ha water storage dam on the TSF footprint, the 15MVA tie-in to the Eskom Cuprum substation, and early works main shaft (Hutchings) sub-bank preparation for future shaft refurbishment.

Significant progress was made across all of these areas, including:

- The installation of mechanical and electrical infrastructure to dewater the mine from the 263m Level at a rate in excess of 500m³/hr;
- The installation of all surface electrical infrastructure from the Cuprum Substation to the underground workings and the TSF area (4km away) was completed;
- Completion of the 15MVA Cuprum Substation upgrade and Eskom grid connection tie-in and commissioning;
- The 13ha water storage dam civil construction was 80% completed; and
- The TSF 80m x 50m overflow sump was constructed, HDPE lined and fitted with 100m³/hr evaporators.



Photo 1: Dewatering Pipe and Overhead 11kV to TSF.

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.

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 (which 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 operations. The near-surface Resources mining method will be drift & fill, producing approximately 15kt/month to a froth-flotation plant.

The current optimising study has focused on the aspirational objective of achieving early production from as early as the 12th month from funding.

Orion plans to use underground mining (combination of drift & fill and long-hole stoping) with conventional froth-flotation concentration to produce differentiated copper and zinc concentrates from the Deeps mining. The updated BFS is expected to be completed during Q1 CY2025, with Independent Expert review for debt providers also completed in Q1 CY2025.

Dewatering & Evaporation

The underground water depth is currently at approximately 265m below surface. All mechanical and electrical infrastructure has now been installed to commence dewatering at a rate in excess of 500m³/hr from the 265m water level. Even with low volume pumping during the commissioning phase the water level has been reduced by 1.9m, demonstrating the expected very low water ingress volume into the mine.



Photo 2: Construction of the 50m x 80m Overflow Sump.

Dewatering consists of two 220kW submersible pumps installed below water level, a surge capacity receiving dam on the 178m Level, and two 250kW multi-stage pumps in sequence delivering water through a lined borehole to the surface storage dams.

From the 8,100m³ intermediate storage dams underground, water is pumped to the evaporators at the 13ha overflow sump.



Photo 3: Overflow Sump & Phase1 Evaporation Dam.

The overflow sump is constructed next to the 13ha water storage dam and connected to the water storage dam via trenches. The three evaporators are installed on the north-western bank of the overflow sump to evaporate at a minimum rate of 100m³/hr. Evaporation rates of up to 140m³/hr are currently being achieved and the mine water level has dropped by 1.9m, thus confirming the low rate of water influx into the mine.

The three evaporators will be relocated to the 13ha water storage dam once civil work is completed, and the dam has been lined. An additional 10 evaporators will be required to achieve the planned future 500m³/hr evaporation rate.



Photo 4: 100m³/hr Evaporators.

Power Reticulation

All the surface and underground electrical reticulation installation has been completed at the mine site and tied-in to the Cuprum Substation 15MVA upgrade. The PCZM is now directly connected to the Eskom grid and is no longer connected to the Alkantpan electrical distribution network.



Photo 5: Cuprum Substation 15MVA tie-in to PCZM electrical reticulation.

The overhead powerline to the 13ha water treatment site, storage dam and future TSF located 4km south of the mine site has been commissioned and is in operation.

The 15MVA tie-in supplies sufficient power for dewatering, forced evaporation and the planned upper-level mining and Supergene Flotation Plant.

Water Storage Dam

Civil construction of the 13ha dewatering brine water storage facility within the footprint of the approved 65ha tailings storage facility (**TSF**) commenced in July 2024. Construction material was determined following a geotechnical drilling program that supported the hardpan calcrete, once drilled and blasted, as ideal embankment construction material.



Photo 6: 13ha Water Storage Dam on 65ha TSF footprint construction start.

The 13ha water storage dam is positioned 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.



Photo 7: 13ha Embankment Construction Material.

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 forced evaporators to concentrate the salts in storage.

The surface hardpan calcrete layer, which is up to 2.5m thick, at the approved 65ha TSF was drilled and blasted before excavation and used as embankment construction material. The calcrete has proven to be extremely well suited for embankment construction material with compaction strength easily achieved with 500mm layers.

By optimising the excavation and civil construction methods and optimising the design for modular expansion (paddocks) to eventually cover the entire 65ha approved site, the upfront capital costs for inclusion in the current BFS was significantly reduced.



Photo 8: 13ha Storage Dam Civil Construction.

Construction and lining of the dam is scheduled for completion early in Q4 CY2024.

Mineral Resource Evaluation

Interpretation and modelling of the PCZM supergene sulphide Resource has been reviewed, taking into consideration new data from trial mining. Geological mapping and channel sample assay results both show a good correlation with the supergene sulphide Resource model. The Competent Person (CP) is of the opinion that the new data has resulted in no material change to the Mineral Resource estimate (refer ASX/JSE release 25 July 2023).

Geology

The +105m Level geological channel sampling focused on the 99m Level north and south ore drives backlog areas. Channel sampled backlog material is pulverised, prepared and assayed via XRF in the mine assay facility. Selected duplicate sample pulps were dispatched to accredited laboratories for ICP analysis and verification of XRF results.

Channel sampling of development ore has provided 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 99m Level supergene sulphide development (23,300t) as well as the 143m Level draw point material (1,500t) has been stockpiled according to metallurgical classification.

Trial Mining

Trial Mining concluded at the end of Q2 CY2024 with the mining contractor, P2 Mining, demobilising during the month of July 2024. P2 Mining redeployed their skilled labour to other contracts and the host community labour was absorbed by PCZM into the Engineering and Mining Sections to assist with dewatering and rehabilitation work.

Learnings from the trial mining will be incorporated into the 2024 updated BFS. After evaluating different options, the most suitable mining method has been fixed at Drift & Fill for the upper-level Supergene Crown Pillar Resource. Geotechnical learnings from Trial Mining determined ground support to be mesh with resin bolts and covered with 75mm of fibrecrete. The Supergene mine schedule has been completed and will supply 15kt/month of run-of-mine (**ROM**) material to the froth-flotation plant.

Early Production Concentrator Plant Design for PCZM Supergene Ore

The supergene sulphide test work has been completed at Maelgwyn Mineral Services Africa (Maelgwyn) and Brisbane Metallurgical Laboratory (BML). Producing marketable copper and zinc concentrates from the upper-level ROM material remains challenging, with the focus shifting to a bulk concentrate that floats well and is repeatable. This has become the concentration method of choice for the upper-level Crown Pillar Supergene ore.

The Supergene mining schedule will be matched with a 15 kt/m ROM feed stand-alone concentrator plant. ENPROTEC, the PCMZ partnered Engineering & Mineral Processing Company, has completed the detailed design and costing of the Supergene concentrator plant. Commercial options are being discussed with ENPROTEC to have the plant fully operational within 12 months after commencing Supergene mining.

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.



Figure 1: 15kt per Month Bulk Flotation Plant.

Additional test work is currently underway at Brisbane Metallurgical Laboratories to generate a concentrate sample for the prospective off-takers to assess.

Human Resources

As PCZM moves through trial mining and towards continuous operations, a complete site-based, skilled operating team has been recruited. Importantly, this has confirmed Orion's ability to recruit an entirely site resident team who can be housed in the local town and transported to and from site 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, removing the need to construct a dedicated mine village with all the associated amenities and services before developing the mine. Additional temporary site accommodation and additional rented accommodation in the surrounding towns can be added at a more measured pace for the construction phase and upscale to full production.

OKIEP COPPER PROJECT (OCP) DEVELOPMENT AND EXPLORATION

Feasibility Study Report

Work on the review and updating of the Feasibility Study for the Flat Mines Project continued throughout the September 2024 Quarter. Critical to the finalisation of the study is the completion of the confirmation drilling program which commenced in February 2024 and was completed at the end of August 2024. The drilling validated earlier exploration drilling by Goldfields and Newmont (the previous owners of the Flat Mines deposits) and provided drill-core for geotechnical studies and metallurgical test work.

With the geotechnical report now available to Orion, the mine design and report can proceed to conclusion.

While the BFS currently underway focuses 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 final assay results from confirmation diamond drilling, which concluded during the Quarter, at the OCP's Flat Mines Area. The holes were 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 the OCP in February 2024, with a total of 11 diamond core drill holes drilled at FME, FMS and FMN comprising a total of approximately 5,800m. This total includes a non-directional deflection for each hole drilled to obtain samples for metallurgical test work.

Assay results from OFMND242 and OFMND243 completed at FMN and OFMSD078, OFMSD079 and OFMSD080 (refer ASX/JSE release 23 October 2024) at FMS are summarised in Table 2.

Drill hole OFMND242 intersected 14.00m at 2.70% Cu from 213.00m (Table 2). Historical hole FMN215 intersected 10.20m at 2.31% Cu from 226.60m and 11.70m at 1.89% Cu from 241.80m, approximately 11m away from the OFMND242 intersection. Historical hole FMN217 intersected 22.10m at 1.91% Cu from 234.40m, approximately 14m away from the OFMND242 intersection.

Drill hole OFMND243 intersected 36.30m at 1.11% Cu from 234.00m (Table 2). Historical hole FMN207 intersected 24.40m at 1.45% Cu from 255.30m, approximately 25m away from the OFMND243 intersection.

Drill hole OFMSD079 intersected 7.00m at 2.32% Cu from 501.00m and 14.80m at 2.58% Cu from 571.00m (Table 2). Historical hole FMS047 intersected 17.00m at 1.60% Cu from 514.20m and 16.39m at 2.19% Cu from 568.77m, approximately 16m away from the OFMSD079 intersection.

Drill hole OFMSD080 intersected 26.12m at 3.02% Cu from 535.00m and 24.95m at 4.14% Cu from 567.00m within a broader zone of 59.00m at 3.14% Cu from 533.00m (Table 2). This intersection is located approximately 40m down-dip from OFMSD077, which intersected 43.00m at 3.41% Cu from 527.00m.

Assay results for the 11 Orion confirmation drill holes have been independently reviewed by Z Star Mineral Resource Consultants (**Z***) and, on analysis, Z* concluded that the addition of the Orion confirmation drill holes at FME, FMN and FMS would not result in a material change to the Mineral Resource estimate. Z* also concluded that the Orion drill holes further support the inclusion of the historical Newmont and GFSA drill hole data in the Mineral Resource estimates for FME, FMN and FMS (refer ASX/JSE release 28 August 2023). Almost all other drilling at the various prospects within the OCP was carried out by Newmont and GFSA in a similar time period to the drilling at FME, FMN and FMS.

Ongoing metallurgical test work includes XRF sorting, comminution, flotation optimisation and tailings characterisation. Detailed geotechnical assessment has been undertaken on all drill holes. New geotechnical information will be used for input to mine design.

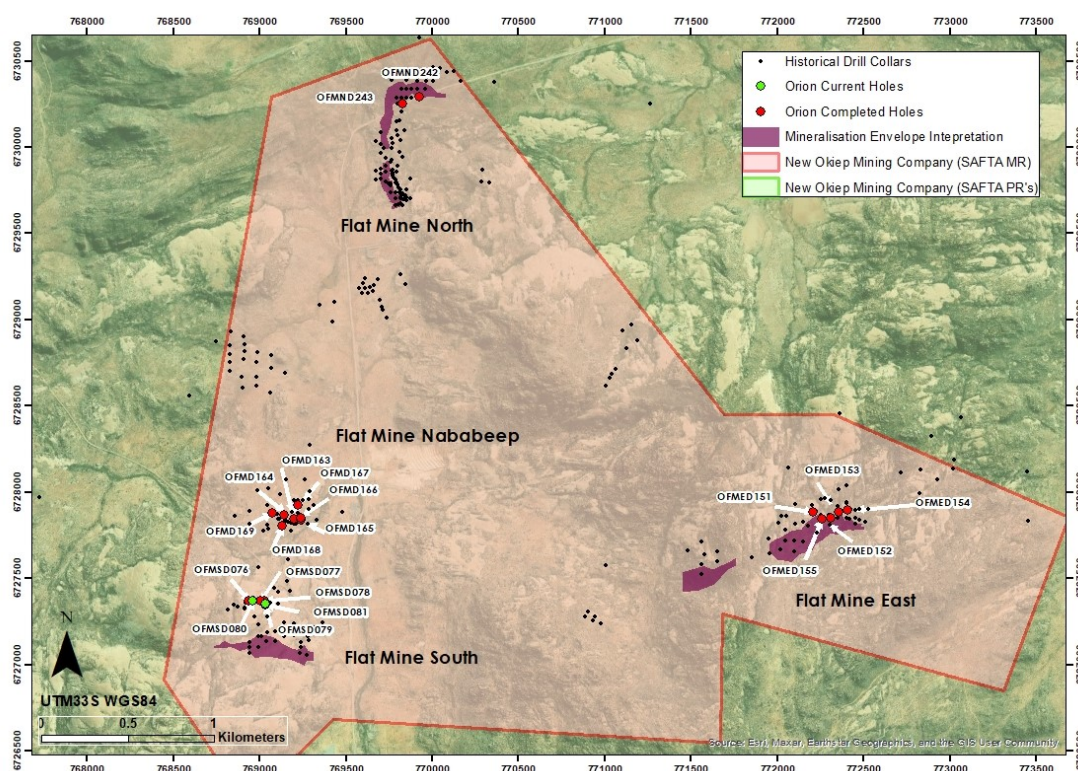


Figure 2: Plan showing historical and Orion drill holes, mineralisation envelope interpretations and extent of the Mining Right.

Assay results – FMN & FMS confirmation drilling

Drilling assay results received during the Quarter were reported in the Company's ASX/JSE announcements dated 9 July 2024 and 3 September 2024 (previous Quarter ASX/JSE releases 22 April 2024 and 24 June 2024), including 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 mineralisation envelope interpretations. Results received for FME, FMN and FMS are summarised in Table 2.

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 RADOST™ "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 RADOST™ 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.

Flat Mines Exploration and Assay Results – Nababeep

Drilling of seven confirmatory holes has been completed at Flat Mine Nababeep (**FMNb**), 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 Cape Copper Company in the 1940's with 141Kt reported as being subsequently mined in the 1950's (refer ASX/JSE release 29 March 2021).

Orion drilling results at FMNb confirm shallow mineralisation over significant widths and include the following intercepts:

- Drill hole OFMD164 intersected 20.69m at 1.82% Cu from 8.31m within a broader zone of elevated copper mineralisation of 45.69m at 1.26% Cu;
- Drill hole OFMD165 intersected 22.91m at 0.91% Cu from 3.09m;
- Drill hole OFMD167 intersected 7.80m at 5.08% Cu from 121.20m; and
- Drill hole OFMD169 intersected 21.00m at 1.83% Cu from 16.00m.

Table 2 below is a summary of drill results to date for Flat Mine Area, including FMNb.

Table 2: Summary table of drill results to date for FME, FMS, FMN and FMNab 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 Mine 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
			246.00	264.00	18.00	1.44
Flat Mine 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
	OFMSD077		527.00	570.00	43.00	3.41
		Including	549.50	570.00	20.50	4.99
	OFMSD078		330.00	336.00	6.00	0.93
			388.00	391.00	3.00	0.82
			425.00	428.00	3.00	1.06
			432.00	435.00	3.00	0.84
	OFMSD079		501.00	508.00	7.00	2.32
			515.00	520.00	5.00	1.00
			571.00	585.80	14.80	2.58

Area	Hole ID	Mineralisation				
		Notes	From (m)	To (m)	Interval (m)	% Cu
	OFMSD080		592.00	596.00	4.00	2.45
			533.00	592.00	59.00	3.14
		including	535.00	561.12	26.12	3.02
		including	567.05	592.00	24.95	4.14
Flat Mine North	OFMND242		213.00	227.00	14.00	2.70
	OFMND243		234.00	270.30	36.30	1.11
		including	234.60	257.66	23.06	1.23
Flat Mine Nababbeep	OFMD163		34.00	38.00	4.00	1.40
	OFMD164		42.00	44.00	2.00	1.54
			8.31	29.00	20.69	1.82
			33.00	38.00	5.00	1.37
			46.00	54.00	8.00	1.42
	OFMD165		3.09	26.00	22.91	0.91
		including	3.09	15.00	11.91	1.12
		including	18.00	26.00	8.00	0.88
	OFMD166		12.70	18.70	6.00	1.22
	OFMD167		121.20	129.00	7.80	5.08
	OFMD168		45.93	54.45	8.52	1.06
	OFMD169		16.00	37.00	21.00	1.83
		including	17.00	30.00	13.00	2.33

Geophysical orientation surveys, including magnetics, gravity and electrical methods, were in progress over the Flat Mines deposits at Quarter-end, along with ground geophysical surveys to confirm drill targets. Areas to be covered include historical ground geophysical anomalies and anomalies generated from the 2021 SkyTEM™ survey that have been prioritised on current geological understanding (refer ASX/JSE release 1 September 2021).

Water Use Licence Application (WULA) – Approved

In August 2024, the Department of Water and Sanitation (**DWS**) granted to New Okiep Mining Company (Pty) Ltd an Integrated Water Use Licence (**WUL**) for the Okiep Copper Project. The Integrated Water Use Licence approval is for the Flat Mines Project and was the final permit required. The Flat Mines Project is now fully approved and ready to commence construction and mining.

TSF Design Approved

The design and use of a partially lined TSF, necessary for the storage of flotation tailings from the processing plant after the recovery of copper in a sulphide concentrate, is approved in terms of the WULA.

The available sites for TSF construction are limited by the terrain in the area and required innovative design to meet the stringent environmental requirements of the DWS applicable to long-term waste disposal sites.

The TSF embankment will be constructed using development rock waste and ore-sorter discard rock, hence all tailings and waste rock are planned to be stored in a single location.

A detailed hydrogeological study indicates that, over time, the ground water quality downstream of the facility is expected to improve compared to current water quality values, which have been impaired to some extent by prior mining activities in the area.

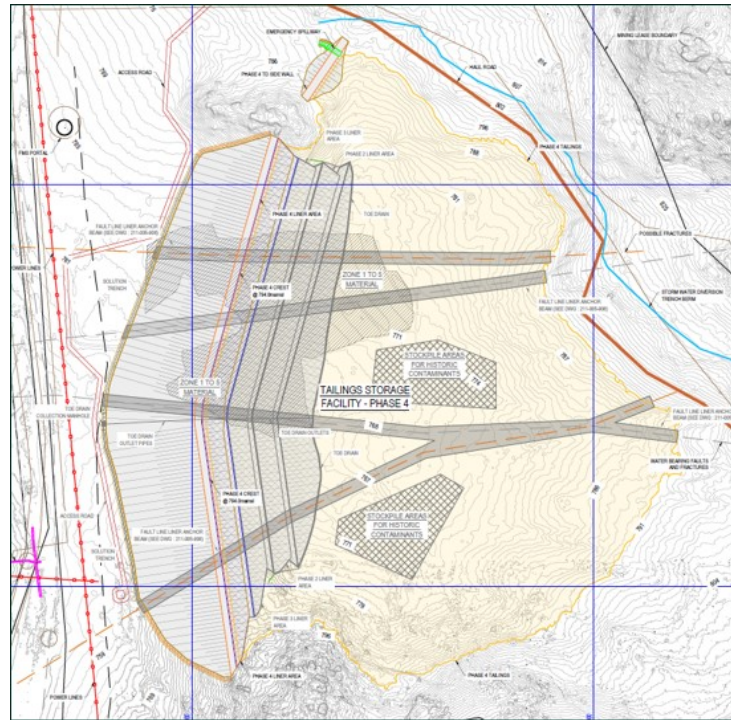


Figure 3: General arrangement of ultimate TSF footprint.

Metallurgical test work

Rados, Maelgwyn South Africa, and Geolabs, all based in Johannesburg, have been contracted to conduct feasibility study test work and flowsheet development for Orion Minerals. The metallurgical test program is based on previous work on Flat Mine samples, but in this round is using larger samples of mineralised rock sourced from the whole-core deflections drilled as part of the recent drilling program at all three Flat Mines deposits.

The metallurgical test work program focused on:

1. SMC Test® comminution test work on composites;
2. Mini bulk XRF sorter test work on drill core;
3. Flotation test work on unsorted core;
4. Flotation test work on sorted core;
5. Bond Ball Mill Index® and Bond Abrasion Index® on sorted products; and
6. Mineralogy

All ore-sorting samples were first subjected to an ore-sorting process followed by comminution and flotation testing of the sorter products. Critical comments on test work results achieved to date are summarised as follows:

- Flat Mines run-of-mine mineralisation is predominantly bornite and chalcopyrite; no secondary copper mineralisation was identified.
- Bornite and chalcopyrite were identified as copper-bearing minerals, leading to a simple, quick, and relatively low-cost flotation process to concentrate the copper.
- Rougher-cleaner flotation at 106 microns indicated that a saleable copper concentrate of over 30% can be achieved with recoveries over 90%. This confirms earlier work.
- Bond Ball Mill Work Index (**BBMWi**) testing indicates a high milling power draw based on a work index range of 18kWh/t and 24kWh/t. Earlier work done by Orion on FMN and FMS samples led to the mill design in the study being based on a BBMWi of 24.7 kWt.
- Bond Abrasion Index testing reported an average index range of 0.20 to 0.42, indicating high equipment liner and grinding media wear.
- The Rados XRF sorter testing on multiple individual drill hole core samples showed that the process effectively sorts high- from low-grade particles. However, discrimination between particles of very

low grade (<0.15% Cu) proved to be less precise than hoped. Ongoing work aims to enhance individual particle sorting, based on sensing of multiple elements by the XRF sensor, for increased ore processing efficiency.

Results have been received for test work on FMN and FME samples, with a long turnaround on sample assays results delaying the conclusion of test work on the FMS samples.

Mine Planning

Intersections from Orion's recent drilling at the Flat Mines Project have confirmed historical information from drilling by Newmont and Goldfields of South Africa (**GFSA**) in the 1980's and 1990's, which underpinned Orion's updated Mineral Resource for the Flat Mines deposits (announced on 28 August 2023) of 9.3Mt at 1.3% Cu¹ (refer ASX/JSE releases on 22 April 2024, 24 June 2024, 9 July 2024 and 3 September 2024) indicating no significant deviation to the existing interpretation.

The Geotechnical Report has resulted in small changes to stope spans and support recommendations which are being incorporated into the revised Mining Plan and schedule, currently underway. The review of the Mine Design and Mining Report is scheduled for completion in Q4 CY2024.

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

Layouts and costs for the surface infrastructure required for the project have been reviewed and updated. Discussions with the Namakhoi Municipality (NKM) for the provision of an 11kV connection for construction power and the refurbishing of the Nababeep Sewage Works are continuing. The refurbishment of the Sewage Works is being managed by engineering consultants for the NKM, with Orion monitoring and contributing to the process on a regular basis.

Regular discussions are held with Eskom regarding an alternative option for long-term grid power for the Flat Mines Project. A revised Proposal from Eskom (Cost Estimate Letter) is expected in Q4 CY2024.

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. Approval was received from the Nama Khoi Local Municipality for the rezoning for mining activities of the relevant area of the Mining Right, in accordance with the Spatial Planning and Land Use Management Act (**SPLUMA**). During the Quarter, the rezoning of the surface area where the plant and mining infrastructure are proposed to be situated was approved.

Access to the land on which the bulk of the surface mining infrastructure will be located has been secured through a purchase agreement with a private owner and lease agreement with the NKM.

During the Quarter, Orion received notice from the DMRE for the addition of five new "copper ore" and "tungsten ore" areas to its existing tenement portfolio. This has increased the Company's tenement holding west, south and east of the central Southern African Tantalum Mining (Pty) Ltd (**SAFTA**) mining right area (red outlined area, Figure 4) by approximately 30,000 hectares (grey and orange shaded areas).

¹ Mineral Resource reported in accordance with the JORC Code (2012) in ASX release of 28 August 2023: "Orion upgrades Mineral Resources at Okiep Copper Project" available to the public on <http://www.orionminerals.com.au/investors/asx-jseannouncements/>. Competent Person Mineral Resource: Mr Sean Duggan. Orion confirms it is not aware of any new information or data that materially affects the information included above. The Company confirms that all material assumptions and technical parameters underpinning the estimates in the original release continue to apply and have not materially changed. Orion confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.

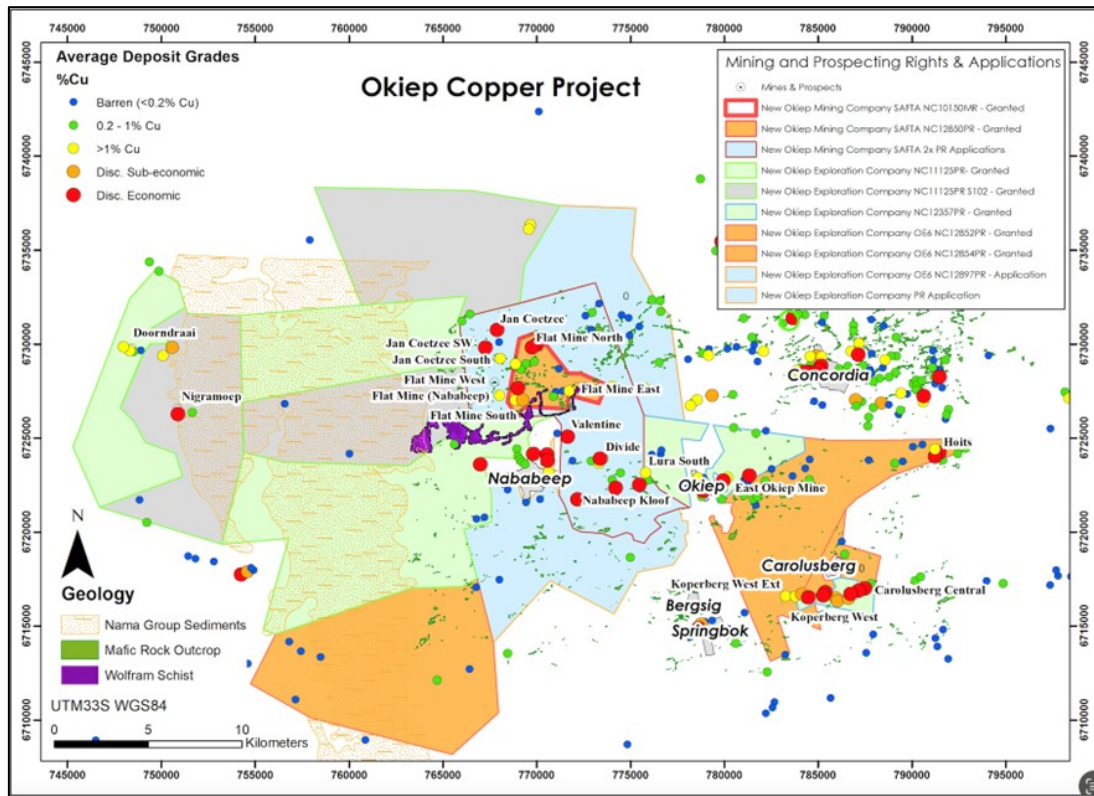


Figure 4: Grey shaded areas show three new \$102 areas, orange areas show three newly granted prospecting rights.

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.

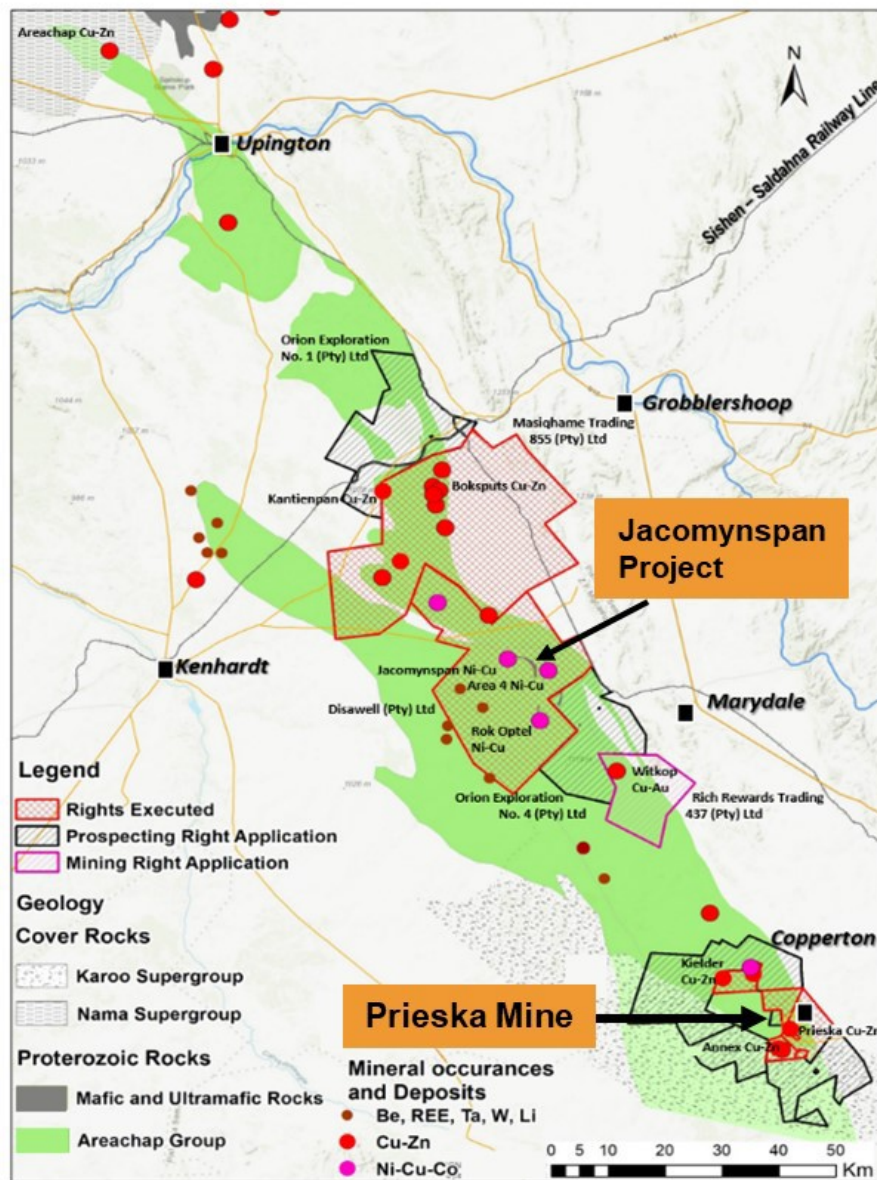


Figure 5: JMP and PCZM location map.

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 unexplored targets.

Chief among these are:

- The Kantienpan zinc-copper VMS project – where a substantial mineralised deposit has been identified through drill-testing with this project to be progressed to pre-feasibility level;
- The Witkop copper-gold project – where a preliminary assessment has been completed and discussions are underway regarding the potential development of the project;
- The Bokspuits copper-zinc VMS project – where additional follow-up exploration is required following geophysical investigation and preliminary drill-testing; and
- Orange River pegmatite swarm – where additional lithium, beryllium and Rare Earth Element (REE) mineralisation potential is being investigated in an area that traverses the Orion tenements.

Exploration activities in the Quarter included additional review, processing and modelling of existing geophysical survey results, and the planning 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 joint venture with ASX-listed IGO Limited, which 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 access permitting, assessment of the area following flooding in the June 2024 Quarter along with a Moving Loop Electromagnetic (MLEM) survey at the Peninsula target area (E39/1653).

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\$13.15 million. Payments made to related parties and their associates during the Quarter was A\$150k for director fees and consulting fees as well as A\$7k (nett) to joint venture partners, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

PCZM Project Funding

On 10 September 2024, the Group received final a draw down amount of A\$0.29 million from Triple Flag under the terms of the Triple Flag Early Funding Agreement (gross revenue return), and on 9 September 2024, an amount of ZAR19 million (~A\$1.56 million) was drawn down from the Industrial Development Corporation of South Africa Limited (IDC) Convertible Loan.

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 Phases

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 settled in May 2024.

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.

Share Placement

On 1 July 2024, the Company announced a A\$7.7 million (~ZAR92.3 million) Share 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\$0.015 (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 with 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 could 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\$0.015 per Share (ZAR18 cents) to raise up to A\$5 million (or ~ZAR60 million).

The SPP opened on 5 July 2024 and closed on 23 July 2024, raising a total of A\$3.6 million (~ZAR44 million). On 30 July 2024, the Company issued 241.99 million Shares to SPP applicants.

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 held on 29 August 2024, the Company issued 1.63 million Shares to Non-Executive Directors Mr Godfrey Gomwe, Ms Patience Mpofo and Mr Anthony Lennox. The Shares were issued at a deemed issue price of A\$0.015 per Share, being the same issue price as the Shares issued under the Placement and the Share Purchase Plan announced on 1 July 2024.

Annual General Meeting

The Annual General Meeting of Shareholders of Orion will be held on 20 November 2024 at the offices of Clayton Utz, Level 27, QV1 Building, 250 St Georges Terrace, Perth, Western Australia.

Tenement Table

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
South Africa				
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
NC30/5/1/1/2/13397PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
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 NC30/5/1/1/2/13395PR	Okiep	100%	---	---
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)
NC30/5/1/1/2/12755PR	Okiep	56.25%	Granted	Industrial Development Corporation of South Africa Limited (IDC)
NC30/5/1/1/2/12848PR	Okiep	56.25%	Granted	Industrial Development Corporation of South Africa Limited (IDC)
NC30/5/1/1/2/12852PR	Okiep	100%	---	---
NC30/5/1/1/2/12854PR	Okiep	100%	---	---
Western Australia				
E28/2367	Fraser Range	---	Surrendered	IGO Limited
E28/2596	Fraser Range	---	Expired	IGO Limited
E39/1653	Fraser Range	35%	---	IGO Limited & Geological Resources Pty Ltd
E39/1654	Fraser Range	10%	---	IGO Limited & NBX Pty Ltd

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
Victoria				
EL6069	Walhalla	100%	---	---
EL5042	Walhalla	100%	---	---

This Quarterly report is authorised by the Board.