



## Orion Minerals

ASX/JSE RELEASE: 31 July 2023

# June 2023 Quarterly Activities Report

## HIGHLIGHTS

- ▶ Orion transitioned to the mine development and construction phase at its portfolio of advanced base metals projects in the Northern Cape Province, South Africa after concluding key elements of its overarching strategic funding package:
  - All substantive conditions satisfied post Quarter end, allowing drawdown to commence of project development funding facilities totalling ZAR370 million, being the ZAR250 million (~A\$20 million) Industrial Development Corporation of South Africa Limited convertible loan facility and the Triple Flag A\$10 million early Funding Arrangement, with the remaining conditions to be satisfied ahead of receiving the initial drawdown amounts. Initial drawdown of ~A\$13.8 million was called in July 2023.
  - Both the IDC Convertible Loan and Triple Flag early Funding Arrangement form part of a broader funding strategy that will underpin the near-term development of both the Prieska Copper-Zinc Project and Okiep Copper Project in the Northern Cape Province.
  - Tranche 2 of the A\$13 million share placement completed following receipt of shareholder approval, with privately owned South African mining group Clover Alloys (SA) becoming a cornerstone shareholder in Orion. The placement includes a significant options package and, assuming all placement options are ultimately exercised, the total value of the equity funding package amounts to ~A\$73 million.
  - Clover Alloys has extensive experience in the development of modular processing plants to support open pit and underground mining and tailings retreatment operations, which will be of significant strategic value to Orion as it brings its key base metal projects into production.
- ▶ Orion is completing an updated Feasibility Study on its accelerated development strategy at the Prieska Copper-Zinc Project, with early dewatering and trial mining underway to provide early access to cash flow.
- ▶ An updated Mineral Resource estimate has been completed for the Prieska Copper-Zinc Project, for the +105m Level Crown Pillar Block, with increase in both tonnes and grade to 2.26Mt at 1.7% Cu and 1.6% Zn including an increased Indicated Resource of 1.89Mt at 1.82% Cu and 1.70% Zn. The Prieska Copper-Zinc Project total Mineral Resource, reported and classified in accordance with the JORC Code (2012), increased to 30.98Mt grading 1.2% Cu and 3.6% Zn.
- ▶ A Feasibility Study is also well advanced on Orion's second base metals hub, the Okiep Copper Project, with a tailings storage facility design report due for completion in July 2023.
- ▶ Beneficiation investigations continuing for the delivery of critical metals from Jacomynspan Project.

### **Orion's Managing Director and CEO, Errol Smart, said:**

*"The first half of CY2023 was a genuinely transformational period for Orion. The Company secured the backing of a new highly-credentialed cornerstone equity investor and strategic partner, Clover Alloys. The equity investment funding package worth up to A\$73 million funded by a combination of existing shareholders and Clover Alloys builds on the ~A\$30 million funding package for Prieska Mine secured with the Industrial Development Corporation of South Africa Limited (IDC) and Triple Flag Precious Metals Ltd (Triple Flag), from which the first drawdown of A\$13.8 million was called in late July 2023.*

*"We also continued to build our in-country, site resident team, commenced key workstreams on the ground at Prieska and rapidly progressed mining studies at Okiep.*

*"As a result, our two base metal hubs in the Northern Cape are now moving rapidly towards realisation, which opens the way for South Africa to become a producer of the critical future-facing metals required for the global energy transition.*

*"Orion is transitioning to a mine development and construction phase and finally beginning its transformation from explorer to operating mining company. This is a tremendously exciting and fulfilling time for all of our key stakeholders, and particularly those who have supported the Company for a long period of time.*

*"At the Prieska Copper-Zinc Project, we continue to make progress on our plans to begin early dewatering and trial mining – both of which are critical aspects of our early works programme and central to the updating our Bankable Feasibility Study (BFS). The trial mining and updated BFS is expected to be completed by year-end and operations are planned to transition to pilot scale production and then continue seamlessly into a steady ramp-up with first sales from pilot operations targeted in 2024.*

*"Plans to start mining at our Okiep Copper Project are also moving along with the financial model for the project completed and drafting of the Feasibility Study document continuing during the June Quarter. We are excited to move into a new phase of project development and to becoming a near-term base metals producer, initially with a copper focus at two operating centres. This transition to producer comes at a time when analysts are predicting global demand for the future-facing metals to soar."*

## **Orion Minerals**

### **Company Overview**

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

Orion has secured a breakthrough strategic equity funding package worth up to A\$73 million to underpin the development of both its brownfields assets, the fully permitted Prieska Copper-Zinc Mine and the Okiep Copper Project. This funding package is underpinned by Orion's new major shareholder and strategic partner, the highly regarded privately owned South African mining group Clover Alloys (SA) together with existing long-term shareholders Delphi Group and Tembo Capital.

The equity funding forms part of a larger, multi-pronged funding package that will underpin Orion's previously announced "Early Production Strategy" at Prieska, including the completion of trial mining followed by a feasibility study for early mining and the commencement of dewatering of the existing underground mine. The Prieska Early Development Strategy is underpinned by a ZAR250 million, senior secured, convertible debt funding facility secured with the Industrial Development Corporation of South Africa Limited (**IDC**) and two funding instruments secured from certain subsidiaries of Triple Flag Precious Metals Corp. (TSX/NYSE: TFPM) (collectively TF R&S Canada Ltd. and Triple Flag International Ltd., **Triple**

**Flag**) for an early funding arrangement (**Funding Arrangement**) facility of A\$10 million to fund trial mining and dewatering and a precious metals streaming agreement (**Precious Metal Stream**) of US\$80 million to be available for the development of commercial operations following completion of a revised bankable feasibility study (**BFS**) and demonstration of Orion having secured sufficient development finance. The Prieska Copper-Zinc Mine includes a fully-developed underground mine that was operated for over two decades in the 1970s and 1980s and is underpinned by a globally significant JORC compliant VMS Resource of 30.98Mt at 1.2% Cu and 3.6% Zn.

The Okiep Copper Project (**OCP**) comprises the core of a premier historical copper district that produced >2Mt of copper over a 150-year period ending in 2006, with feasibility studies already well advanced on a foundational phase development.

Orion is also developing the exciting Jacomynspan Ni-Cu-Co\_PGE project, 70km North of the Prieska Mine in the Northern Cape and holds a vast future metals exploration portfolio in the Northern Cape mineral province. Orion also holds base metal exploration assets in Western Australia in a joint venture with diversified international mining group IGO Limited (ASX: IGO).

Orion's business development strategy in the Northern Cape is centred around production of high Environmental, Social and Governance (**ESG**) credentialed critical metals, with ESG certification of critical metal products from exploration through to end user offtake.



already well advanced on a foundational phase development.

## Operations Report

### Health and Safety, Community Engagement and Environmental Management

#### Health and Safety

No injuries were recorded during the June Quarter and the hours worked for the Quarter and the 2023 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	FY2023 Total
Exploration	572	8,947
Surface	6,055	9,108
Underground	11,316	41,208
Contractors	8,121	34,608
<b>Total</b>	<b>26,064</b>	<b>93,871</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 1,416 days without a Lost Time Injury (**LTI**) and 244 accident-free days.

## Community and Stakeholder Engagement

### Orion continues productive engagements to update on progress

Orion continues to have productive engagements with its host communities to update them on the recent progress in securing funding and fast-tracking the development plans for its projects.

### Siyathemba

During May 2023, Orion held meaningful engagements with the Orion Siyathemba Stakeholder Engagement Forum and with local District and Siyathemba officials in which the Company provided an update regarding the recent funding announcements and the dewatering and early mining plans for the Prieska Copper-Zinc Mine (**PCZM**).

### Nama Khoi

In Namaqualand, Orion has continued to engage with all stakeholders as well as visit the Ward Councillors and communities in surrounding towns to update them on the Okiep Copper Project (**OCP**) and the progress made with the execution of the Social and Labour Plan. The Orion and Nama Khoi Stakeholder Engagement Forum continues to hold quarterly meetings to engage directly with the community.

During the Quarter, Orion established a dedicated project team, including the Nababeep Ward Councillor and other community representatives, for the implementation of the Social and Labour Plan (**SLP**) for OCP. The project team will develop a comprehensive plan for the completion of the projects and streamline the execution process to ensure that all aspects of the projects are adequately addressed. The plan will include the strategies and timelines required to execute the projects in order to meet the needs of the community and in line with all regulatory obligations.

### Zenisha's Play and Learning Centre raises funds in Australia

In May, Orion facilitated the sponsorship, in collaboration with the Australian Trade Commission (Austrade) and Qantas, of a trip to Perth, Australia for Zelna Barends, the founder of Zenisha's Play and Learning Centre (**ZPLC**). The trip helped to raise funds for the centre and awareness for children with special needs.

ZPLC is a non-profit organisation that was founded in January 2017 in Siyathemba (PCZM's host community) to support children with Down Syndrome, foetal alcohol syndrome and those with other intellectual or physical disabilities by educating them through play.

During the trip, Zelna Barends met with several stakeholders and established good contacts. She also had the opportunity to share knowledge and common experiences with various organisations and NGO's in Australia including Autism WA, Downs WA, and Development Disabilities WA.

## Environmental Management

Orion strives to deliver the highest level of environmental compliance, with a commitment to managing and monitoring the environmental impacts of its activities throughout the mining lifecycle.

There were no environmental incidents recorded during the June 2023 Quarter.

## Prieska Mine Development and Exploration

### Human Resources

Our human resource strategy is to have a site resident management focus. Mr Andre Bergh is an Engineer with 30 years' experience in operations management and execution of feasibility studies for mining operations with similar characteristics as PCZM. Andre has been appointed as site resident General Manager and will build a strong focussed team to support early production. Mining is planned to initially be undertaken by experienced South African mining contractors, who will have an obligation to maximise host community employment and skills transfer.

Orion has also engaged with experienced engineering companies with interest in Build Own Operate Transfer of the metallurgical concentrator plant to explore potential for maximising access to critical skills and experience to support the build-up of operations.

### **Long Lead Time Workstreams**

Work during the Quarter has focussed on long lead time workstreams and orders for plant and equipment that must be delivered in order to commence trial mining and dewatering.

Key long lead time workstreams being dealt with are:

- Installation of ring back ladderways in the Marais Shaft second escapeway to surface and permitting an emergency winder installed in the Humphries Shaft;
- Underground refuge chambers installing at workplaces ahead of mechanised trial mining; 15 MVA Eskom electrical grid connection;
- Detailed design and scheduling of work for trial mining of selected +105 blocks;
- Water treatment facilities for treatment and discharge of water pumped from underground;
- Installation of 178m rising main water pipe in large diameter drill hole; and
- Construction of bypass road to reach Alkantpan Weapons Testing.

### **Dewatering**

Small-scale dewatering of the Hutchings Shaft continued during the Quarter, with pilot-scale Reverse Osmosis and “Rotowinner” plants in operation to enable collection of real performance data. Detailed design and evaluation of the agricultural nutrient production process by *Free Radical Process Design* is also in progress.

The pilot-scale work was completed in the Quarter and proposals from the Technology Supplier for the supply of the full-scale Rotowinner water treatment works are imminent.

In addition, Orion has identified other technology suppliers who provide treatment solutions that have demonstrated ability to produce high quality fertilizer from the minerals recovered from the saline mine water using ion exchange technology. These technology providers present a compelling case for consideration, with potential revenue from sales of this fertilizer potentially covering dewatering water treatment costs and allowing substantial capital cost recovery.

The pumping layout for of pumping and piping from underground has been significantly improved, removing more than 1600m of piping and one set of multi stage pump by using a large diameter percussion drill hole, to install a rising main from 178m pump station to surface without undertaking shaft work. Drilling of the required rising main drill hole and a second services holes is currently in progress and is planned to be completed before the end of July 2023.

Submersible pumps for installation in the shaft and multi-stage pumps for installation on the 178 level station of the Main Hutchings shaft were ordered and received by OEM agents and are currently being electrically fitted prior to dispatch to site.

The early dewatering program is on track to complete installation of dewatering pumping at a rate of 120 m<sup>3</sup>/hr initially and then building up to 500 m<sup>3</sup>/hr in Q2 2024, to coincide with the anticipated Eskom power connection and availability of a dedicated sub-station to support the water treatment plant installation.

### **Power Reticulation**

The longer-lead delivery items will be delivered to site early in the September Quarter. Medium voltage switchgear and transformers for extension of power to the underground pump station were ordered, with delivery expected in July.



**Figure 1: Drilling in progress for installation of rising main pump column from the 178 level.**

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The 15 MVA electricity supply point from Eskom is being expedited, and the final phase in the Eskom application process has been reached.

Approval from Eskom is difficult to predict accurately, but it is reasonable to expect that approval for construction of a dedicated sub-station will be received early in the September Quarter.

An interim arrangement to increase the currently available electrical supply to 1 MVA is in progress, with completion to coincide with the completion of the Medium Voltage (11kV) extension of power to the underground workings, so that the early mining works can continue.

### **Mineral Resources**

An Independent Mineral Resource update has been carried out for the +105m Level Crown Pillar Block by Z Star Mineral Resource Consultants. The Mineral Resource estimate used all 2022 drilling data and an updated geological interpretation (Table 2 and Figure 2).

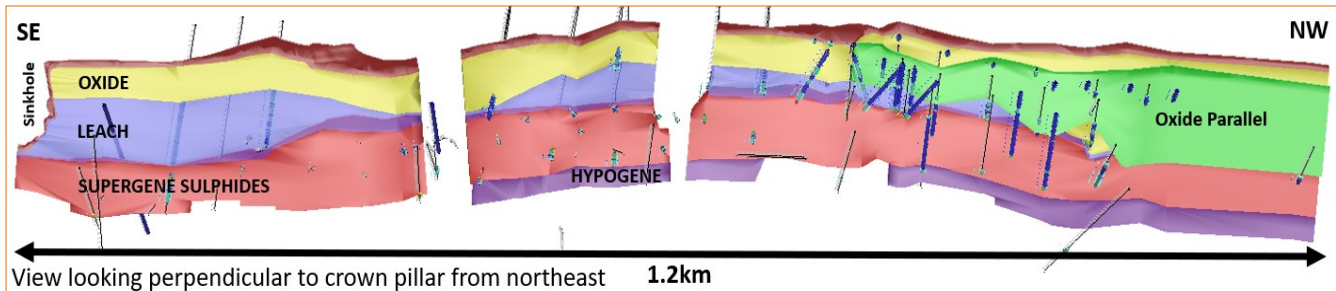
The update resulted in a significant increase in the Mineral Resource to 2.3Mt at 1.7% Cu and 1.6% Zn including an Indicated Resource of 1.9Mt at 1.82% Cu and 1.70% Zn (refer ASX/JSE release 25 July 2023). This includes a significant increase in the Oxide resource based on new more robust interpretations. The contained Cu and Zn Mineral Resource of the +105 block have increased the contained copper and zinc by 11,000 and 300 tonnes respectively from the January 2019 Mineral Resource estimate (refer ASX/JSE release 15 January 2019).

The Prieska total Mineral Resource, reported and classified in accordance with the JORC Code (2012), is now 31Mt grading 1.2% Cu and 3.6% Zn.

**Table 2: Global Indicated and Inferred Mineral Resource Statement for the +105m Level Resource Block of the Prieska Project.<sup>1</sup>**

Classification	Mineralised Zone	Tonnes	Cu (tonnes)	Cu (%)	Zn (tonnes)	Zn (%)
Indicated	HW Oxide	200,000	1,000	0.48	2,000	0.90
	Oxide	490,000	4,000	0.81	4,000	0.73
	Supergene Sulphide	1,100,000	28,000	2.58	22,000	2.06
	Hypogene	120,000	1,000	1.23	4,000	3.78
	<b>Total</b>	<b>1,900,000</b>	<b>34,000</b>	<b>1.82</b>	<b>32,000</b>	<b>1.70</b>
Inferred	HW Oxide	30,000	100	0.4	300	1.0
	Oxide	300,000	3,000	1.0	2,000	0.8
	Supergene Sulphide	60,000	1,000	1.4	300	0.6
	Hypogene	20,000	100	0.8	100	0.4
	<b>Total</b>	<b>400,000</b>	<b>4,000</b>	<b>1.0</b>	<b>3,000</b>	<b>0.8</b>
<b>+105m Level Mineral Resource Total</b>		<b>2,300,000</b>	<b>38,000</b>	<b>1.7</b>	<b>35,000</b>	<b>1.6</b>

**Note:** +105m Level Mineral Resource bottom cut-off = 0.3% Cu.  
Tonnes are rounded to second significant figure, which may result in rounding errors.



**Figure 2: View showing the +105m Level Mineral Resource with the Supergene Sulphide Zone in red, the Hypogene Sulphide Zone in purple, the main Oxide Zone in yellow and the HW Oxide Zone in green. The area between the main Oxide and Supergene Sulphide zones is a leached (clay) zone (blue) with insignificant Cu and Zn values and is excluded from the Mineral Resource. Brown represents the interpreted overburden.**

Since the previous +105m Level Mineral Resource (refer ASX/JSE release 15 January 2019) fourteen holes comprising 918m were successfully drilled to intersect supergene sulphide mineralisation (refer ASX/JSE release 11 July 2022). A further five holes were drilled and abandoned due to poor ground conditions and unacceptable core loss.

Given the changes in the interpretation of mineralised domains, a direct comparison of updated and previous (2019) resource figures is difficult. The increase in overall tonnes can be largely attributed to the extension of the interpreted crown pillar mineralised zone towards the southeast to where it intersects the sidewall of a sinkhole. The more comprehensive interpretation of the mineralised zone in the hanging wall to the main crown pillar mineralisation also contributes significantly to this increase in tonnage (and to

<sup>1</sup> Mineral Resource reported in ASX release of 18 December 2018: "Landmark Resource Upgrade Sets Strong Foundation" available to the public on [www.orionminerals.com.au/investors/market-news](http://www.orionminerals.com.au/investors/market-news). Competent Person Orion's exploration: Mr. Errol Smart. Competent Person: Orion's Mineral Resource: Mr. Sean Duggan. Orion confirms it is not aware of any new information or data that materially affects the information included above. For the Mineral Resources, the company confirms that all material assumptions and technical parameters underpinning the estimates in the ASX release of 18 December 2018 continue to apply and have not materially changed. Orion confirms that the form and context in which the Competent Person's findings are presented here have not materially changed.

that of the oxide tonnage). The changes of the interpretation of the bottom of the oxide zone (particularly in the northwest) has a significant positive impact on the oxide tonnage.

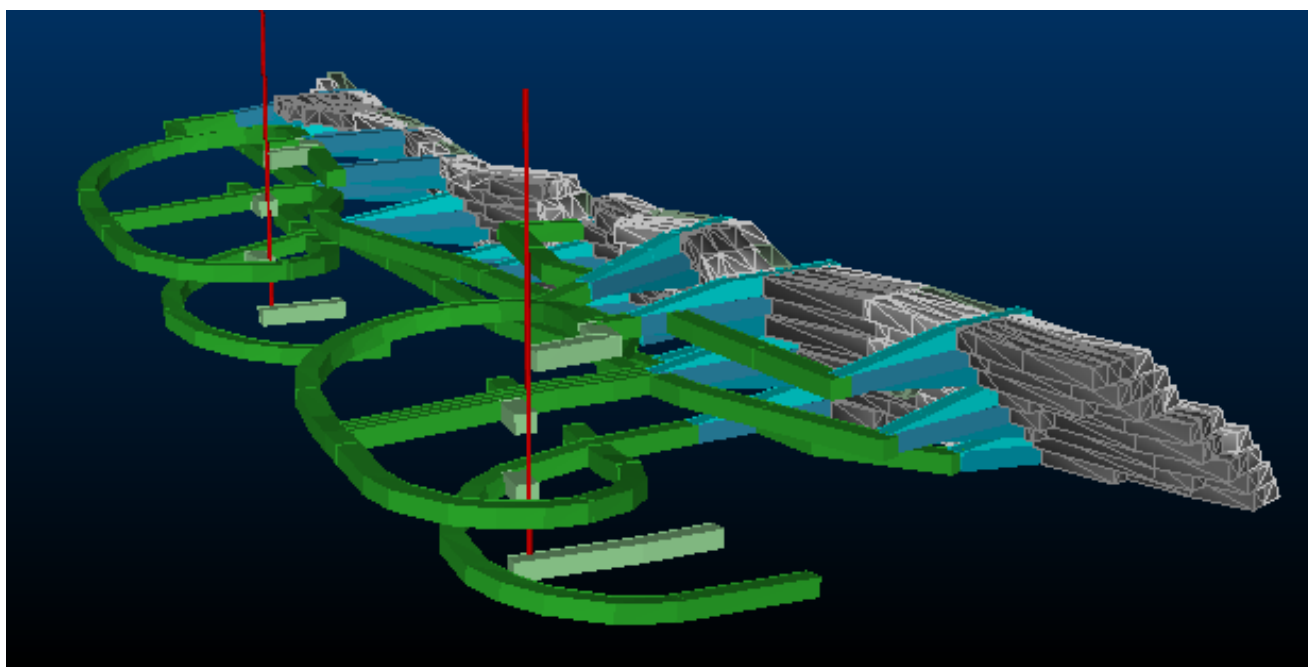
The increase in copper can be largely attributed to higher grades in the southeast of the supergene sulphide zone from the 2022 drilling, the extended interpretation of the crown pillar mineralisation to the southeast and the changes in the interpretation of the bottom of the oxides.

### **Trial Mining**

Planning for the execution of the Trial Mining of the +105 Resource progressed, with the evaluation of alternative mining methods to be considered in the extraction of this resource.

A reputable consulting mining engineering company has been contracted to assist with the mine design and have assisted with selecting of the drift and fill underground mining method that will be tested with trial mining for the +105 Resource. This mining method provides benefits of improved safety and minimising waste dilution of ore extracted to surface.

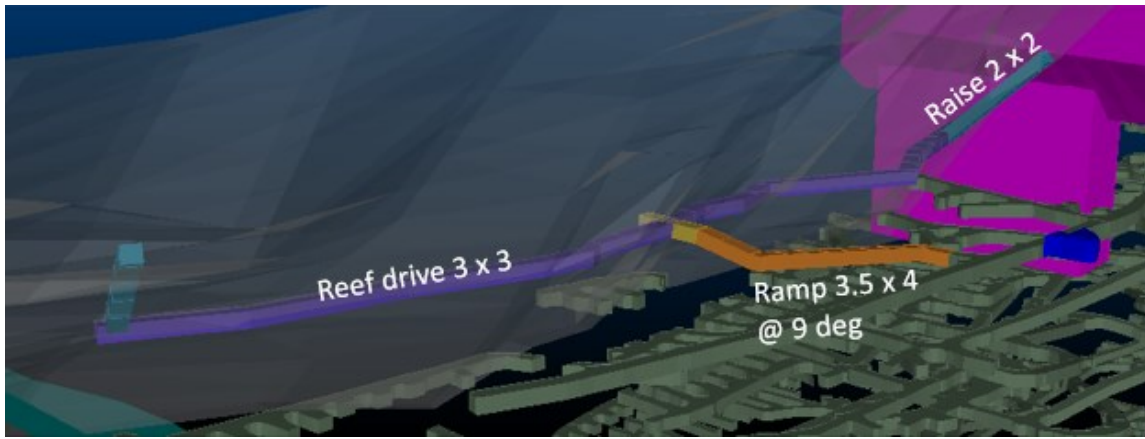
An open pit mining option for the exploitation of the near-surface oxide resource (which cannot be accessed from underground) will be included as part of this planning phase.



**Figure 3: Conceptual layout of the +105 Resource Drift & Fill mining method.**

The Trial Mining program, which is designed to accurately determine and demonstrate the actual rock conditions in the +105 Resource and the performance of the proposed mining method, has been provided to numerous mining contractors to submit bids for the trial mining project. The scope includes the +105 level Trial Mining as well as a draw-point sampling exercise to evaluate the quality of broken ore remaining in old stopes in the upper areas of the underground workings. These contractor mining proposals have been received and are currently being evaluated and final terms negotiated. Appointment of selected contractors is imminent.





**Figure 4: Access ramp, reef drives and raises at the +105 Trial Mining Project.**

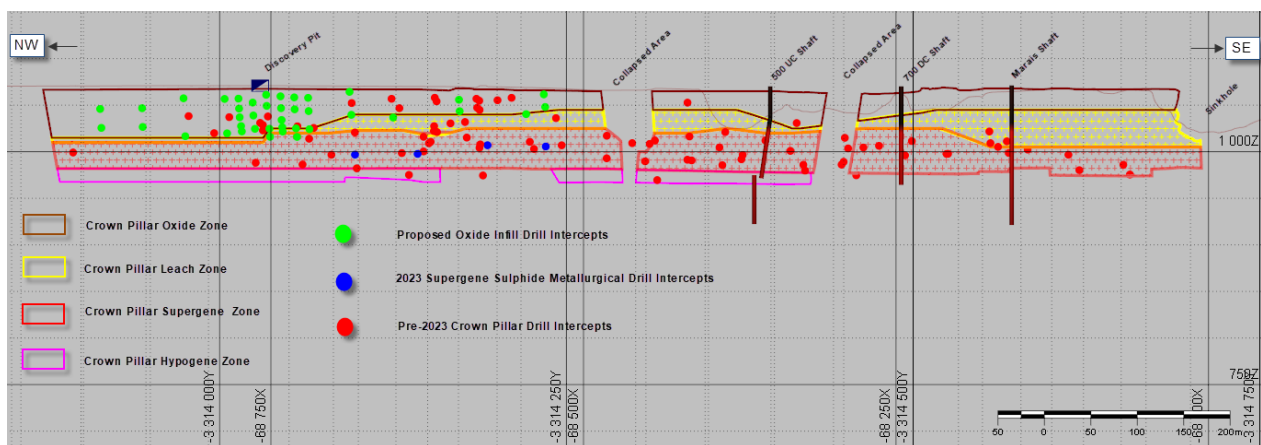
Contractor site establishment is expected to commence in August 2023, when the long lead-time, underground refuge chambers installation is completed.

**Metallurgical Process Re-evaluation and early mining concentrator plant design.**

Orion has contracted Mr Bryan Broekman, the previous Chief Metallurgist for Anglovaal Group and who was directly responsible for most of the metallurgical process plant optimisations that were ultimately successful in allowing Prieska Copper Mines to treat mixed oxide, supergene sulphide and hypogene sulphide ores from 1988 until mine closure in 1991.

Mr Broekman has undertaken a critical review of the extensive test work conducted by Orion during the past 6 years and has made very important recommendations in order to test a refined process flow that promises to deliver improved recoveries and produce higher quality concentrates specifically from the ore sources available in the upper levels of the mine, above the current water level. The recommendations are supported by published research and his personal experience of the former Prieska Concentrator Plant. This knowledge is proving extremely valuable when considering our own test work results and are providing an important basis for re-evaluation of plant design to process ore during early mining.

Following the recommendations, two laboratories have been secured to do pilot plant tests on 1.5 tonnes of fresh metallurgical samples drilled from the +105 Ore Blocks. This test work is currently underway. Shallow in-fill Reverse Circulation holes are also scheduled to increase the amount of drilling data in the oxide resource above the +105 supergene sulphide Resource and to provide ore for oxide leach test work purposes. This will facilitate the evaluation of the oxide open pit oxide mining concept.



**Figure 5: Long section reflecting supergene met holes and oxide drill holes.**

## Bypass Road Construction

A bypass road is currently being constructed in collaboration with Alkantpan Weapons Testing facility, to re-route third party vehicle traffic to avoid the mine site. This will reduce traffic congestion and avoid drivers without mine site clearance to operate vehicles within the mining area. The new 1.2km roadway will cut out ~2km of existing site traverse over the active PCZM site. The roadway is being constructed by Alkantpan, to a quality required to carry heavy military vehicle transport and will bypass Orion's security control area.

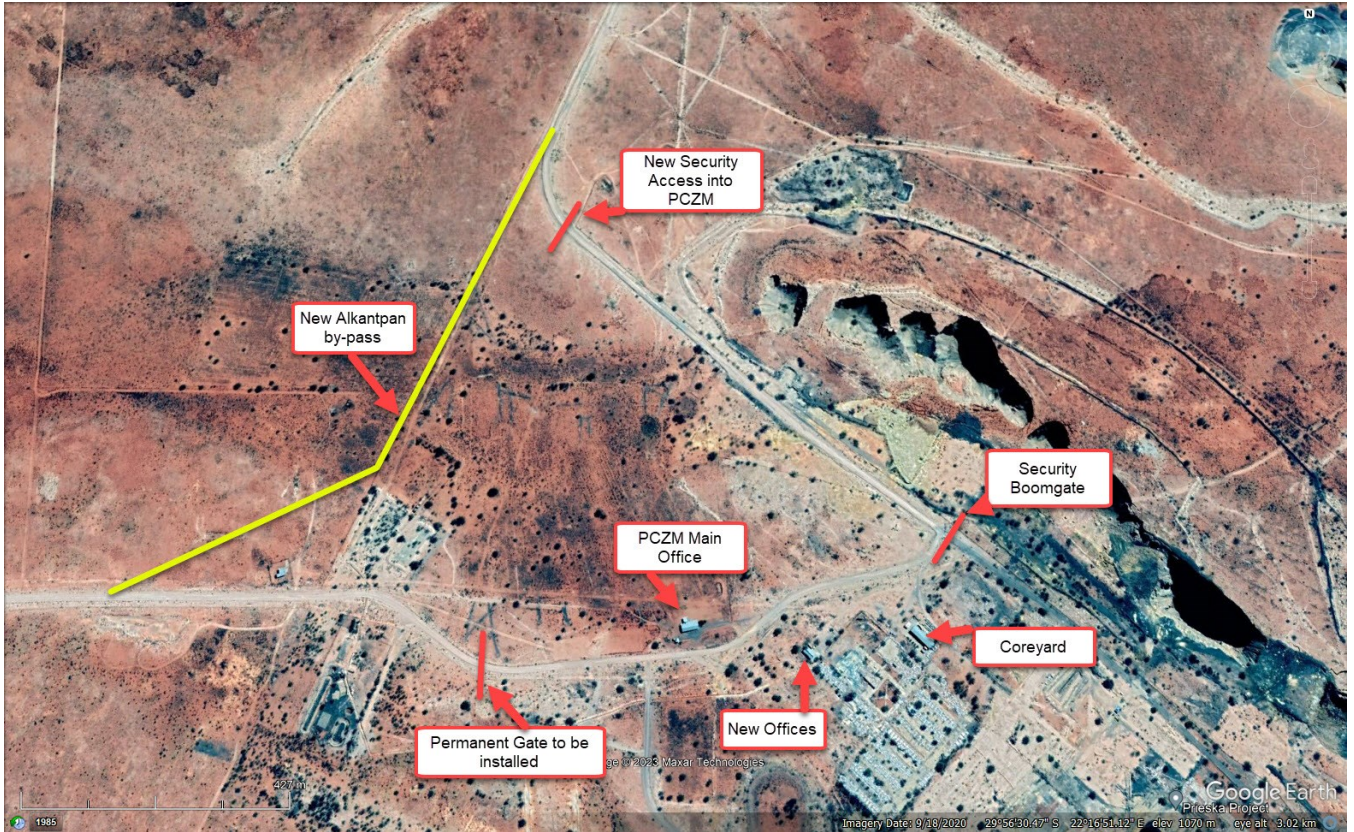


Figure 6: Existing road and new Alkantpan road under construction.



Photos: New Alkantpan road under construction.

## Okiep Copper Project Development and Exploration

### Feasibility Study Report

The drafting of the Feasibility Study Report continued during the Quarter. The detailed TSF engineering design report and costing for construction is due for completion in July 2023, which is required before the Feasibility Study report can be concluded.

### Environmental Management

#### Water Use Licence Application (WULA)

Following the completion of Phase I (the Public participation process) of the Water Use Licence Application (WULA) Process, a site visit by DWS officials was conducted in April to conclude phase II. The list of the technical documents that must be submitted with the WULA was received, with confirmation that all aspects required have been covered in the studies.

The completion of the Tailings Storage Facility design report remains the only outstanding item to be completed before the WULA can be submitted.

### Tailings Storage Facility (TSF)

As previously reported, the TSF is planned to be located in an area impacted by prior mining operations. Comprehensive geotechnical and geohydrological work has been completed on the TSF basin. The TSF will be partially lined in the lower portion where it overlies soils and old tailings and where those are located over mapped bedrock fracture zones. The TSF will have an unlined area where it lies on exposed granite outcrop.

Additional test work has been undertaken to investigate the option of neutralising the legacy paddy material and the suitability of fine tailings for use in the inverted liner design was completed during the Quarter.

The small volume of historic contaminated evaporation paddy material will now be relocated to lie within the new TSF basin but specifically on impervious unfractured granite bedrock areas.

### Okiep Project Development

#### Metallurgical Processing Plant

The conceptual design and costing of the Processing Plant to feasibility level accuracy was completed in the December 2022 Quarter. No further work in this area was undertaken during the Quarter and the metallurgical portion of the Feasibility Study Design report has been finalised.

#### Mineral Resources

Following a detailed internal review of the SAFTA (2018) geological models and mineral resource estimates for Flat Mine North, Flat Mine East and Flat Mine South it was considered necessary to upgrade the geological interpretation and models, and to update the mineral resource estimate. Initially, following the completion of a revised geological interpretation, an internal mineral resource estimate was completed for use in provisional mine planning activities.

An Independent update of the Flat Mine North, Flat Mine East and Flat Mine South Mineral Resources has been completed by Z Star Mineral Resource Consultants (**Z Star**). Following internal review of the Z Star results this Quarter, the updated Mineral Resource will be included the Mineral Resources Section of the Feasibility Study Report.

An updated Mineral Resource Statement will be released, together with the results of the Feasibility Study Report. The Feasibility Study Report is in final review and is expected to be completed in August 2023.

## Mine Planning

Revised mining layouts and production schedules were completed during the Quarter. The Mining Report is in the process of being updated to incorporate the revised production schedules. An updated Mineral Reserve Statement will be released as part of the Feasibility Study Report.

## Infrastructure

As reported previously, the plans for the provision of power and water to the Flat Mines Operations have been finalised and incorporated in the Feasibility Study Report. Layouts and cost estimates for all the required offices, stores, change-houses and other infrastructure for the mining operations have also been concluded.

Rehabilitation of the Nababeep Waste-Water-works by the local Municipality is due to commence in the coming September Quarter. Management will be monitoring progress to ensure that the effluent water quality of the refurbished plant will meet the standards required for process water in future.

Communications with the NKM Municipality Executive Team continue to be regular and cordial. The Infrastructure Steering Committee, set up to manage the provision of power and water to the Project via the Municipal Infrastructure, continues to meet on a quarterly basis.

## Land Access

As reported previously, access to the land on which the bulk of the surface mining infrastructure will be located has been secured through a lease agreement with the local Municipality. The Rezoning Application for Mining Use is in progress, subject to the completion of the Engineering Services Report, which is being handled by a local Engineering Consultancy.

During the Quarter, Japie van Zyl Attorneys, on behalf of Mora 12lease (Pty) Ltd, one of the landowners over which portions of the SAFTA mining right are located, lodged an appeal in terms of Section 43 of the National Environmental Management Act (NEMA) with the Department of Forestry, Fisheries and the Environment (**DFFE**) against the decision by the Department of Mineral Resources and Energy (**DMRE**) to grant an environmental authorisation (EA) to SAFTA. This EA was granted to SAFTA in April 2021 as part of the mining right application process and the required public participation process was followed at the time. Following an urgent application on behalf of SAFTA to the DFFE the Minister rejected the appeal on the grounds that it was lodged significantly (1 year and 10 months) outside of the prescribed 20 day timeframe for such an appeal.

During the Quarter, Japie van Zyl Attorneys, on behalf of Mora 12lease (Pty) Ltd, also lodged an appeal with the DMRE in terms of Section 96 of the Mineral and Petroleum Resources Development Act (**MPRDA**) against the granting of the SAFTA mining right. It is the view of Company management that the appeal grounds are spurious and unfounded and, as with the EA appeal, has been lodged significantly outside the legislated timeframes. A detailed responding affidavit has been submitted to the DMRE within the prescribed timeframe. It should be noted that the appeal does not suspend the mining right. The Company is considering All options available to ensure that access to land is secured in terms of the provision of the MPRDA.

## New Okiep Mining Company Permitting

No changes in the status of the Mining and Prospecting Rights occurred during the Quarter:

- The SAFTA Mining Right over the Flat Mines Mining Area was granted in July 22. The execution of the Mining Right was completed and registered in December 2022;
- Land access negotiations with the landowners in the Mining Right and adjacent Prospecting Right Areas are continuing; and
- SAFTA Prospecting Right Applications over the areas contiguous to the MRA area are still in process and no further news of these has been received.

## OCP Section 11 cessions

During the Quarter, the Section 11 applications ceding the NababEEP Copper Company and Bulletrap Copper Company prospecting rights to New Okiep Exploration Company were granted by the DMRE.

**Table 3: New Okiep Mining Company predevelopment timeline**

Period	Q1'23	Q2'23	Q3'23	Q4'23
Activities	Mar'23	June'23	Sept'23	Dec'23
Mineral Resource Estimation				
Mine Design and Scheduling				
Tailings Storage Design				
Environment and Water Use Licencing				
Health and Safety Management Systems				
Mineral Processing Design				
Infrastructure Planning				
Financial Evaluation				
Independent Peer Reviews				
Peer Reviewed Feasibility Study				
Funding Activities				
Final Investment Decision				

## Jacomynspan Project

The Jacomynspan Project, which offers the potential for class one, sulphide nickel-copper-cobalt-PGE-gold open pit and shallow underground mining project. The Namaqua Nickel Mining Right, which was granted by the DMRE in September 2016, was notarially executed with the DMRE in December 2022. The right has been lodged for registration with the Mineral and Petroleum Titles Registration Office.

Work during this quarter has focussed on planning for a trial mining exercise to generate sufficient scale representative bulk sample in order to test innovative metallurgical refining/battery pre-cursor production on pilot scale. Many projects globally are receiving renewed attention with downstream metallurgical testing of innovative refining/processing with potential to improve metallurgical recoveries and revenue generation from sulphide ores of this kind. These technologies present significant upside potential for deposits of this kind.

Orion, who hold a 50% interest and manage the project, are engaging with its project partners who collectively hold 50% interest in the project in order to agree a forward program and budget to maximise the project value.

Orion has appointed Mr Theunis McDulling as General Manager for the project. Theunis is a highly experienced Engineer with 20 years feasibility study and operations management experience.

## Stratega Metals Vapour Refining Project

From previous work, the initial laboratory amenability test work undertaken on a sample of Jacomynspan concentrate has provided promising results. These results have been subjected to thorough evaluation by a panel of international consultants.

A follow up set of tests will now be conducted using two different laboratory facilities. The first set of tests, involves selective chlorination and extraction, will be carried out at a tailor made facility, specifically for JMP concentrate, in Gauteng, South Africa. The second set of tests, focussing on carbonylation, will take place at a new high tech carbonylation laboratory located in Toronto, Canada.

The objective of these follow-up tests is to assess the metal vapour process capability, to manage and control desired thermodynamic and kinetic parameters for selective chlorination and extraction, metal gas transfer, distillation, and carbonylation. The desired outcome is the refining and thus production of

value added products such as pure elemental sulfur, separated metal products and compounds and metal carbonyl powders.

The data obtained from scientifically and empirically generated process parameters will provide detailed inputs for the design criteria, engineering design, and construction of a laboratory-scale pilot plant, required for the next phase of the project. Thereafter, this information will serve as the foundation for design criteria in the following phase, full-scale demonstration plant.

Stratega Metals (Pty) Ltd (**Stratega**) have also progressed discussions with electronic vehicle (**EV**) manufacturers who are potential end users of the metal vapour powder products to be produced. One large European EV manufacturer has accepted Stratega onto its accredited supplier listing and has expressed interest in funding a vertically integrated mine and refinery facility to produce its metal product requirements.

### Areachap Exploration

Areachap is an under-explored belt with multiple copper-zinc and nickel-copper-cobalt-PGE-gold intrusive targets within Orion's tenements.

Chief among these are:

- The near-mine open pit and underground targets at Prieska with high-grade copper-zinc intersections;
- Several high-grade copper-gold targets with historical and recent drill-hole intersections; and
- Lithium, beryllium and Rare Earth Element (REE) opportunities, which are currently being investigated.

No exploration work took place during the Quarter. Notification of the grant by the DMRE of the fourth and final prospecting right applications by Orion Minerals No.5 in the 'near-mine' areas adjacent to the PCZM project was received during the Quarter.

### 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. ASX-listed IGO Limited is the dominant landholder in the Fraser Range and owns the Nova Operation, which is mining and processing the Nova-Bollinger Ni-Cu-Co 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 June Quarter, IGO completed a high temperature SQUID (HTS) moving-loop electromagnetic (**MLEM**) survey at the Artemis target on tenement E28/2367 located within Kanandah Station. The survey was undertaken to follow up encouraging litho-geochemistry intercepts identified in the 2022 AC drill programme and in-fill a gap in previous MLEM coverage.

Desktop review of the tenements was also undertaken, with E28/2378 and E28/2462 voluntarily surrendered during the Quarter. A rehabilitation work programme was prepared and is expected to be undertaken in the September Quarter within tenements E63/237 and E69/2707.

#### 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 reporting period.

## Corporate

### Cash and Finance

Cash on hand at the end of the Quarter was A\$7.56 million. Payments made to related parties and their associates during the Quarter was A\$207k for director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

Post Quarter end, in July 2023, Orion called for ~A\$13.8 million in cash from the initial drawdown of the IDC Convertible Loan Facility and the Triple Flag early Funding Arrangement (refer below).

### Project Funding

On 17 July 2023, Orion announced that it had taken another important step in advancing the funding strategy for the Prieska Project after satisfying numerous substantive conditions required to commence drawdown on project development funding facilities totalling ~ZAR370 million (~A\$30 million), being the IDC ZAR250 million Convertible Loan and the Triple Flag A\$10 million Funding Arrangement, with the remaining conditions to be satisfied ahead of receiving the initial drawdown amounts.

Drawdown of the IDC Convertible Loan will be in tranches and will be pro rata matched by the drawdown requests that Orion will make under the Triple Flag Funding Arrangement.

Orion's flagship Prieska Project is transitioning to the mine development and construction phase following the conclusion of the key elements of an overarching strategic funding package.

This funding package allows Orion to progress the development of the Prieska Project, including the commencement of trial mining and processing of ore, mine dewatering and the completion of feasibility studies for the PCZM Early Production Scenario.

The PCZM Early Production Scenario, which was first announced in January 2022 (refer ASX/JSE release 20 January 2022), brings forward revenue generation and potentially reduces the upfront external peak funding requirements by phasing the mine build while retaining the option to scale-up to the full-scale project (as outlined in the Bankable Feasibility Study published in 2020, refer ASX/JSE release 26 May 2020) as sufficient funding becomes available. The Early Mining Works BFS for the Prieska Project is well advanced, with targeted completion in late 2023.

#### IDC - Convertible Loan

In February 2023, Orion and the Industrial Development Corporation of South Africa Limited (**IDC**) signed definitive agreements for a ZAR250 million (~A\$20 million) senior secured loan facility (**IDC Convertible Loan**) to fund early mining works and key pre-development activities at the Prieska Project. Under the terms of the IDC Convertible Loan, the IDC will provide the ZAR250 million to Agama, or its wholly-owned subsidiary, which will be on-lent to PCZM on similar terms to fund the completion of the Feasibility Study for the previously-articulated Early Production Plan at Prieska (refer ASX/JSE release 20 January 2022), while also allowing the Company to commence dewatering of the existing underground mine – a critical path activity required for the broader long-term development of the project.

A summary of the material terms of the IDC Convertible Loan definitive agreement is provided in Appendix 1 of the 8 February 2023 ASX/JSE release.

#### Triple Flag – Precious Metal Stream and Funding Arrangement

In December 2022, Orion announced that it had signed definitive agreements with Triple Flag Precious Metals Corp. (TSX/NYSE: TFPM) (with its subsidiaries, **Triple Flag**) for a US\$87 million (~A\$127 million) secured

funding package for PCZM made up of a precious metals stream (**Precious Metal Stream**) and an additional early funding arrangement (**Funding Arrangement**).

The Precious Metal Stream, which comprises US\$80 million (~A\$117 million) of funding to be drawn down in tranches, alongside other bank and/or third-party funding during mine development, is conditional on the mine development being fully funded, finalisation of an executable mine plan to Triple Flag's satisfaction, South African regulatory approvals, and fulfilment of drawdown conditions standard for such arrangements.

Triple Flag will also provide an additional A\$10 million (~US\$7 million) Funding Arrangement, to complete the Early Mining Works BFS and Dewatering Project.

Under each of the Precious Metal Stream and the Funding Arrangement, PCZM and other obligors will agree to grant a first ranking security in favour of Triple Flag and the IDC over certain assets and claims related directly and indirectly to the Project, with the security in respect of the Precious Metal Stream to be subordinated to Prieska Project financiers on terms to be agreed in an intercreditor arrangement that is consistent with the principles set out in the Precious Metal Stream agreement.

A summary of the material terms of the Triple Flag definitive agreements is provided in Appendix 1 of the 13 December 2022 ASX/JSE release.

## Capital Raising

In March 2023, Orion announced a A\$13 million two-tranche placement to sophisticated and professional investors, pursuant to Section 708A of the Corporations Act 2001 (Cth) (**Placement**), which led to the introduction of a new cornerstone investor, Clover Alloys (refer to ASX/JSE release 15 March 2023).

Clover Alloys is a highly regarded mining group with significant mine development and operational expertise, including a strong track record in the successful development and operation of modular, capital efficient metal processing plants at its chrome mines in South Africa. This expertise will be invaluable as Orion advances the development of its Prieska Project and Okiep Copper Project towards production. Importantly, Orion has also received support from existing long-term shareholders, the Delphi Group and Tembo Capital, who both participated in the Placement.

The Placement includes a significant options package and, assuming all Placement options are ultimately exercised, the total value of the equity funding package amounts to ~A\$73 million. This equity funding, together with previously announced funding including the US\$87 million (~A\$127 million) Triple Flag Precious Metal Stream and Funding Arrangement and the ZAR250 million IDC Convertible Loan (refer above), puts Orion in a strong position to execute its accelerated development strategy in the Northern Cape.

The Placement occurred in two stages, being:

- Tranche 1: in March 2023, the Company issued 710 million fully paid ordinary shares (**Shares**) at an issue price of 1.5 cents (ZAR18 cents), to raise A\$10.7 million (**Placement One**). The Shares issued under Placement One were issued without shareholder approval, using the Company's 15% placement capacity under ASX Listing Rule 7.1;
- Tranche 2: in May 2023, following receipt of shareholder approval, the Company issued 171 million Shares at an issue price of 1.5 cents (ZAR18 cents) per Share to raise A\$2.6 million, including A\$0.5 million from Orion non-executive Director Tom Borman, A\$0.25 million from Orion's Chairman Denis Waddell, A\$30k from Orion's Managing Director & CEO Errol Smart and A\$0.77 million from Tembo Capital (which were issued in satisfaction of amounts repaid by Orion under the Loan Facility (refer below)); and
- Placement Options: for every Share issued under the Placement, each investor received four free attaching options (3.5 billion options). The options are unlisted, have an exercise price of 1.7 cents (ZAR20 cents) and an expiry date of 30 November 2023.



## Loan Facilities

### Tembo Capital – Convertible Loan Facility

On 3 January 2023, Orion announced that substantial shareholder Tembo Capital Mining Fund II LP (**Tembo Capital**) had continued its strong support of Orion by providing a new unsecured convertible loan facility of US\$0.50 million (~A\$0.73 million) (**Convertible Loan Facility**).

Following receipt of shareholder and regulatory approvals, on 23 May 2023, under the terms of the Convertible Loan Facility, the Company issued 51.5 million Shares at a deemed issue price of A\$0.015 per Share and 205.9 million Options to Tembo Capital (or nominee), the consideration for which was the repayment of the Convertible Loan Facility in full (being principal and capitalised interest totalling A\$0.77 million).

### Anglo American sefa Mining Fund - Loan

In November 2015, PCZM (a 70% owned subsidiary of Orion) and Anglo American sefa Mining Fund (**AASMF**) entered into a ZAR14.25 million loan agreement for the further exploration and development of the Prieska Project (**Loan Facility**). Under the terms of the Loan Facility, on 1 August 2017, AASMF advanced ZAR14.25 million to PCZM.

In May 2023, the Company repaid A\$2 million (ZAR23.9 million) in cash, as repayment of the Loan Facility in full and importantly, AASMF released the security associated with the Loan Facility, being 29.17% of the shares held in PCZM by Agama Exploration & Mining Proprietary Limited (a wholly-owned subsidiary of Orion), that were pledged as security to AASMF for the performance by PCZM of its obligations in terms of the Loan Facility.

## General Meeting

A General Meeting of shareholders of the Company was held at the offices of Clayton Utz, Level 27, QV1 Building, 250 St Georges Terrace, Perth, Western Australia on Friday, 19 May 2023.

All resolutions put to shareholders at the meeting were passed by a 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 <sup>1</sup>	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%	Granted	---
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	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 <sup>1</sup>	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/11010PR NC30/5/1/1/2/13398PR <sup>1</sup>	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/12292PR	Masiqhame	50%	---	Masiqhame 855 (Pty) Ltd
NC30/5/1/1/2/12197PR	Bokspuuts North	70%	---	---
NC30/5/1/1/2/11125PR NC30/5/1/1/2/13395PR <sup>1</sup>	Okiep	100%	---	---
NC30/5/1/1/2/12357PR	Okiep	100%	---	---
NC30/5/1/1/2/12897PR	Okiep	70%	---	---
NC30/5/1/2/2/10150MR	Okiep	56.25%	---	Industrial Development Corporation of South Africa Limited (IDC)
<b>Western Australia</b>				
E28/2367	Fraser Range	30%	---	IGO Limited
E28/2378	Fraser Range	---	Relinquished	IGO Limited
E28/2462	Fraser Range	---	Relinquished	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.