



ASX/JSE RELEASE: 28 October 2022

September 2022 Quarterly Activities Report

HIGHLIGHTS

- ▶ Funding terms agreed with South Africa's Industrial Development Corporation (IDC), and recorded in a non-binding term sheet, in terms of which the IDC will advance ZAR250 million (~A\$22 million) as a senior secured, convertible debt facility to fund early works at the Prieska Copper-Zinc Project.
- ▶ The proceeds of the facility will be applied to mine dewatering and trial mining operations in order to complete the previously announced Early Production Plan for Prieska to Bankable Feasibility accuracy.
- ▶ The IDC funding package also satisfies a key condition to the previously announced A\$10 million Triple Flag Early Funding Arrangement, unlocking additional funding to support pre-development activities.
- ▶ Innovative Electrosoftner/Rotowinner™ electrochemical water treatment and mineral extraction field trials commenced at Prieska.
- ▶ The IDC agreed to become a strategic partner in the New Okiep Mining Company by funding ZAR34.6 million (A\$3.0 million) share of the pre-development costs and facilitating meaningful economic participation by Historically Disadvantaged South Africans, marking a key development milestone for the Okiep Copper Project.
- ▶ Mining Right granted for the Flat Mines Area at the Okiep Copper Project, paving the way for the commencement of confirmation drilling and metallurgical sampling required to complete an advanced stage Feasibility Study.
- ▶ A\$6 million capital raising and A\$1.35 million Share Purchase Plan (SPP) completed to fund the advancement of the Early Production Plan at Orion's South African base metal projects. The SPP attracted strong support from shareholders, particularly those in South Africa.

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

"Despite a challenging macro-economic backdrop, Orion has taken some important steps towards its goal of establishing two world-class future-facing metals production hubs in South Africa's Northern Cape. The key highlight has been the strategic funding arrangements we have secured with South Africa's Industrial Development Corporation, both at our flagship Prieska Project and at our Okiep Copper Project in the Northern Cape.

"Securing a strategic partnership with a quality partner such as the IDC represents a major vote of confidence in Orion, the quality of our assets and the team we are building to take these projects to production. It also helps secure our funding position over the next two years.

"The Prieska funding arrangement will allow us to finally get critical path pre-development work underway – including the all-important mine dewatering project and a trial mining program on the +105-crown pillar, to support the Bankable Feasibility Study on the Early Production Plan. Together with the previously announced Triple Flag Funding Agreement, this represents a huge breakthrough for the Prieska Project, and is welcome news for all our stakeholders. I would like to take this opportunity to thank the IDC for their support, which is pivotal to our efforts to unlock both of our high-quality base metal hubs."

"Orion is focused on the supply of future-facing metals to help the global transition to a lower carbon future and we are striving to deliver ESG-certified metals that can be tracked via blockchain from exploration to sale. It is this overarching vision that drives our activities and informs our decision-making.

"We are very pleased that, despite turbulent conditions in global markets, we have been able to attract investment and support, both from existing shareholders and from new investors and strategic partners who have underpinned our fund-raising efforts this Quarter.

"It is these investors who share our view that this is the right time to build new copper mines to meet the surging demand requirement over the next decade and beyond as the world transitions to a low-carbon future.

"As Orion moves ahead with its development and production plans, we have also begun the all-important process of building our mining and operations team, with the addition of some high-quality individuals that will drive our Company into the future.

"I am very pleased to see the huge progress that is being made across the business as we kick off important pre-development activities. The Company is very quickly maturing from explorer-developer to operating mining company and I'm excited to see what we can deliver in the months ahead."

Commodity Markets

Base metals edged higher in the September Quarter as a number of positive trends re-emerged after the challenging period experienced in the June Quarter which was dominated by inflationary pressures and concerns over rising interest rates and the strengthening US Dollar.

Base metals' bellwether, copper, was volatile with LME copper official prices ranging from US\$7,000 per tonne to US\$8,315 per tonne during the Quarter which was well below its all-time high of US\$10,700 per tonne reached in March 2022. Copper started the Quarter at US\$7,975 and closed at US\$7,646 per tonne. Zinc prices reached a three-month peak of US\$3,877 per tonne in mid-August amid supply concerns and nickel started and ended the Quarter at around US\$22,000 per tonne after failing to break through US\$25,000 per tonne which it tested in the latter part of September 2022.

The longer-term outlook for base metals prices remains strong. Fitch Ratings noted that the higher metal intensity of a green economy will result in a significant demand for energy transition metals like copper and nickel. This has been echoed by the International Energy Agency, which estimates that a transition to net-zero emissions by 2050 would require six times more metal inputs than today.

LME COPPER PRICES JULY 2022 – SEPTEMBER 2022



Source: London Metal Exchange

LME ZINC PRICES JULY 2022 – SEPTEMBER 2022



Source: London Metal Exchange

LME NICKEL PRICES JULY 2022 – SEPTEMBER 2022



Source: London Metal Exchange

Operations Report

Health and Safety, Environmental Management and Community Engagement

Health and Safety

No injuries were recorded during the Quarter. The hours worked for the Quarter and financial year to date are shown 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	8,039	8,039
Mine Re-Entry	12,666	12,666
Contractors	11,154	11,154
Total	31,859	31,859

The Lost-Time Injury Frequency Rate (**LTIFR**) per 200,000 hours worked is **0** for the Quarter. The Company continues to manage the risks from the COVID-19 pandemic in the workplace in line with government and industry guidelines. During the Quarter, no COVID-19 cases or hospitalisations were reported.

Community and Stakeholder Engagement

Prieska Project - Task Team update: Focused workstreams

The Prieska Copper-Zinc Mine (**PCZM**) Task Team continued to engage during the Quarter and prepare the roadmap of how Orion Minerals and host community businesses and other stakeholders will collaborate to promote the increased participation of local businesses and the creation of more employment opportunities in the Siyathemba Local Municipality and Vanwyksvlei areas.

It was agreed that the PCZM Task Team will be split into two focused work groups: one that will concentrate on promoting local procurement and the other on promoting the employment of residents. These work groups are assessing the capacity of host community businesses and available skill-sets and comparing these to the future needs of the mine, both during its construction and operational phases.

They will then develop methods and interventions to bridge the gap between what will be required by the mine and what the host communities have to offer. Orion remains committed to achieving the aspirational targets for host community participation.

Okiep Project - Consultations continue with the Nama Khoi community

Community liaison and consultation has continued in the Nama Khoi District Municipality to inform the community of the Company's progress and intended work plans. The second meeting between Orion and the Nama Khoi Stakeholder Engagement Forum (**SEF**) was held in September 2022, where the terms of reference – which outline the rules that will govern how the Forum functions – were adopted.

The concept of the SEF being constituted from the officially elected community ward councillors only, has been successful in managing the numerous approaches from business forums and other organisations claiming to represent sectors of the Community

The Community Liaison Office in the town of Springbok, one of the key economic hubs in the municipality, reopened in October 2022. Since the granting of the SAFTA Mining Right, there has been a sharp increase in inquiries and interest in Orion Minerals and the community liaison office provides an important channel for communication with host community stakeholders.

Orion keeps the wheels turning in its "Scholar Mobility" project

Orion continues to provide financial support to five locally based mechanics who conduct regular maintenance and inspections on the pre-loved bicycles that were donated to schools across the Prieska, Siyathemba and Vanwyksvlei areas.

The bicycles were donated by Bicycles for Humanity Western Australia (B4H) and were brought to Prieska by Orion.

In collaboration with the principals of the nine schools, Orion is also currently monitoring the impact and benefits that the bicycle project has had for the beneficiary scholars.

Environmental Management

Orion recognises that its environmental performance is a critical component of its success.

The Company strives to deliver the highest level of environmental compliance, with a commitment to monitoring and managing the environmental impacts of its activities during and beyond the life of its operations.

There were no environmental incidents recorded during the September Quarter.

Prieska Mine Development and Exploration

Prieska Copper-Zinc Project Development

A number of key workstreams progressed during the Quarter as part of formulating the Early Production Plan for the Prieska Copper-Zinc Project (**Prieska Project**). The new plan is to bring forward revenue generation and potentially reduce the upfront external peak funding requirements by phasing the mine build while retaining the ability to scale up to a full-scale project as sufficient funding becomes available.

Leveraging off the information gathered, and material assumptions made in Orion's 2020 Bankable Feasibility Study (**BFS-20**), and supplemented by additional information obtained from recent drilling campaigns and planned trial mining exercise, the Early Production Plan will comprise:

- A revised mine sequence to extract the mine's crown pillar (+105 Level Crown Pillar), which currently sits above the accumulated water level, first using underground mining methods. Extraction of the +105 Level Crown Pillar was originally planned to occur at the end of the mine life using open pit mining. Mining the crown pillar upfront offers the potential advantage of earlier concentrate production and allows for dewatering to be undertaken at lower pumping rates and concurrently with early revenue generation from crown pillar mining;
- The potential opportunistic extraction of the mineralised pillars left behind from previous mining and located above the accumulated water level. Production from the remnant pillars could supplement the early mining and defer the need to access the Prieska Deeps Deposit;
- Commencing with dewatering of the underground workings using a modular configuration, with the first modules being commissioned in CY2022, at a third of the full-scale pumping rate proposed in the BFS-20 Plan and ahead of the project being fully-funded to commence full-scale construction; and
- Appending the deeper deposits, below the previously mined area, as a future expansion phase.

Orion is planning to proceed with trial mining as early as December 2022, targeting the +105-level Crown Pillar first and developing into the remnant pillars starting in Q1 CY2023. Whilst preparations for early dewatering are already under way, the whole pumping and water discharge system would be commissioned by March 2023, subject to funding being in place. The Early Production Plan Bankable Feasibility Study could then be ready by mid 2023, paving the way for a Final Investment Decision (FID) and securing project funding.

Operational Readiness

During the Quarter, increased focus was placed on commencing the restructuring and recruitment of personnel as part of augmenting the Company's in-house expertise to include execution and operational capabilities in preparation for the imminent migrating of both the Prieska and Okiep Copper Projects to construction and operational phases.

An Executive Operations role has been created and filled, along with extensive recruitment of key roles for the project operational team at the Prieska Project, including a Mining Manager, Engineering Manager, Engineering Overseer, Safety Officer, Procurement and Logistics Coordinator, as well as Finance and Administration support. Recruitment is being undertaken in line with the Company's uncompromising focus on a strong Environmental, Social and Corporate-governance focus, capacitating for 4IR-enabled workforce and promoting host-community participation in employment and enterprise opportunities.

Work has also progressed to enable the Company to initiate activities constituting the commencement of mining operations during December 2022. This timetable will also be in line with Mining Right grant conditions timing stipulations.

All requisite permits and licences to commence with mining operations are in place, though a number of additional permissions are being sought to further improve the sustainability credentials of the project. Amendments to the Integrated Water Use Licence (**WUL**) was applied for to facilitate the incorporation

of improved water treatment and secondary usage solutions to the current grant conditions. A decision from the Department of Water and Sanitation is imminent. The amendments will allow for the incorporation of solutions like the Rotowinner™ electrowinning process into the water management plan that will result in water for agricultural use, valuable bi-products, and zero waste being generated from mine dewatering and water treatment activities.

The Company has also applied for permission to allow for continuous operations if required, which will provide more operational flexibility and rosters to better accommodate the various lifestyles of employees, whilst running 24/7 operations.

Early Dewatering

Preparations to commence with early dewatering continued with underground dams now constructed, the platform for staging pumps in the vertical shaft is in place, and surface preparations to receive the pumped water are continuing. Commissioning of the full setup is planned for Q1 CY2023, subject to funding availability.

The Early Dewatering setup, referred to as *Project Metsi-ka-Pela* ('Water in-front'), consists of a mine dewatering and water treatment network, with a pumping rate that will build up from 120m³/hr to 500m³/hr over time. Full-scale dewatering in the original feasibility study was planned at 1,500m³/hr. The Early Dewatering setup is to be established in a modular form that allows the system to be scaled up should the need arise, and sufficient funding becomes available.

The Metsi-ka-Pela underground pumping system will consist of:

- An initial working platform at the 178L, with pumps suspended from the 178L shaft station, down the Hutchings Shaft to a depth of 375m below surface;
- A newly constructed dam at the 163L as an underground reservoir; and
- Pipe reticulation up the Marais Shaft to the surface, to transfer water from the 163L dam into a system of storage tanks constructed from existing, re-purposed concrete thickener tanks.

The surface reticulation setup will consist of:

- A reverse osmosis (RO) plant or the Rotowinner™ electrosoftener system of water treatment before being discharged for evaporation or irrigation, dependent on the water qualities achieved from the water treatment;
- A purpose-built effluent storage pad to store RO concentrate (brine);
- Three options of discharging the treated water, these being:
 - the historical TSF evaporation paddocks – for evaporation;
 - the Storm Water Attenuation Dam – for evaporation; and
 - the farm irrigation pivots - for the growing of animal feed such as lucerne.



Figure 1: Photos of preparations for dewatering at Prieska Copper-Zinc Mine.

Processing Update

There has been no change to the process plant design from the BFS-20 plan for the hypogene sulphide portions of the Prieska Deposit. Processing routes developed by Mintek in 2018 include hypogene milling, sequential copper (Cu) flotation, zinc (Zn) flotation, and ultra-fine grinding. However, opportunities exist to improve on the processing route for the supergene sulphide portions of the deposit (+105L Crown Pillar). Test work conducted for the BFS-20 plan did not progress to assess the advantages of Locked Cycle flotation for the supergene sulphide ores.

The Locked Cycle flotation testing for hypogene samples achieved copper recoveries in the range of 75%-90% at a final concentrate grade of approximately 20%-26% copper. Zinc recoveries were in the range of 84%-90% at a final concentrate grade of approximately 45%-54% zinc. This is in line with historical recoveries when previous owners of the mine achieved over 86% recovery for both Cu and Zn with Cu concentrate grades above 28% and Zn at 53% (refer to ASX/JSE release 26 May 2020). Test work is now being progressed to assess the supergene recoveries from Locked Cycle testing. Results of this test work will be incorporated into the Early Mining Plan.

Investigations are also progressing to source and commission a low-capacity ore processing plant (with crushing, milling, flotation concentration capacity) as part of the trial mining and processing exercise. A number of second-hand plants have been identified and are being assessed for suitability and availability.

Prieska Project Funding Arrangements

IDC Convertible Loan

On 21 October 2022, Orion announced that it has entered into a non-binding term sheet with the Industrial Development Corporation of South Africa Limited (**IDC**) for a ZAR250 million (~A\$22 million) senior secured loan facility (**Convertible Loan**) to fund early mining works and key pre-development activities at Prieska. The proceeds of the Convertible Loan will support the completion of the Bankable Feasibility Study (**BFS**) on the Early Production Plan, while also allowing the Company to commence dewatering of the existing underground mine.

The BFS for the mining of the crown and remnant pillars down to the 385m level at PCZM (**Early Mining Works BFS**) and the simultaneous commissioning and operating of pumping and water treatment facilities, to allow dewatering of the PCZM mine at a rate ramping up to 500m³ per hour (**Dewatering Project**), are key pre-development workstreams that are already well advanced.

Refer to the Corporate Section for further detail.

Triple Flag Funding Package

In May 2022, Orion announced that it had signed non-binding term sheets with TF R&S Canada Ltd. and Triple Flag International Ltd. (together **Triple Flag**), for a combined US\$87 million secured funding package for PCZM.

In addition to a US\$80 million Precious Metal Stream, Orion and Triple Flag also entered into a term sheet for a A\$10 million early Funding Arrangement, with such funding to be made available to Orion to complete the Early Mining Works BFS and to commence the Dewatering Project (refer ASX/JSE release 9 May 2022 for details of the Triple Flag Precious Metal Stream and Funding Arrangement).

The Funding Arrangement draw-down is conditional on to the completion of due diligence, entering into definitive agreements and Orion securing an additional A\$20 million funding to execute the agreed work focused on the Dewatering Project and the Early Mining Works BFS.

Triple Flag has confirmed to Orion that draw-down of the IDC Convertible Loan will be sufficient for its A\$20 million funding condition to be satisfied. Orion and Triple Flag are advancing the definitive agreements for the Precious Metal Stream and the Funding Arrangement and anticipate these being finalised in Q4 CY2022.

The Convertible Loan, together with the Triple Flag A\$10 million early Funding Arrangement, will enable Orion to complete the Early Mining Works BFS and the commission and operate the Dewatering Project. Orion and the IDC anticipate finalising and executing the definitive agreements for the Convertible Loan in Q4 CY2022, with the IDC funding expected to be available for draw-down during late 2022, subject to fulfilment of conditions precedent standard for such arrangements.

Refer to the Corporate Section for further detail.

Mine Water Treatment Trials – Rotowinner™

Subsequent to Quarter-end, and as the Company advances the PCZM towards production, the Company commenced a series of field trials for the treatment of mine water at PCZM, as preparations to start dewatering of the underground mine and to implement other key elements of its Early Production Plan continued.

The water treatment trials are being undertaken in collaboration with Free Radical Process Design (FRPD), a South Africa-based technology company which has developed an innovative and proprietary process and equipment for the continuous extraction of metals and other valuable minerals from water using electrowinning via a rotating cathode (**Electrosoftner**).

The process has the potential to extract valuable products such as calcium and magnesium, for agri-nutrient use from water pumped out of the underground mine at Prieska. In addition, other products with potential for by-product sales in the chemicals industry will also be extracted by the process.

The Electrosoftner has the potential to extract iron hydroxide, hydrogen, calcium, magnesium and base metals such as nickel, zinc and copper from contaminated mine waters. The ability to harvest the agri-nutrients at the Prieska Project – which is located in a region where renewable energy is abundant and where irrigation agriculture is a core industry – has the potential to offer important host-community development opportunities.

The mine water treatment trials will advance Orion's vision of establishing a 'green' footprint for the Prieska Project, with broad stakeholder benefits as part of its objective to have a world-class ESG framework to support its operations.

The commencement of the field trials follows the success of laboratory scale test work, where water samples from PCZM were analysed and were passed through an Electrosoftner demonstration unit, producing precipitates of iron hydroxide, calcium hydroxide/carbonate and magnesium hydroxide while concentrating sodium hydroxide that can be bled off as a liquid from PCZM mine water.

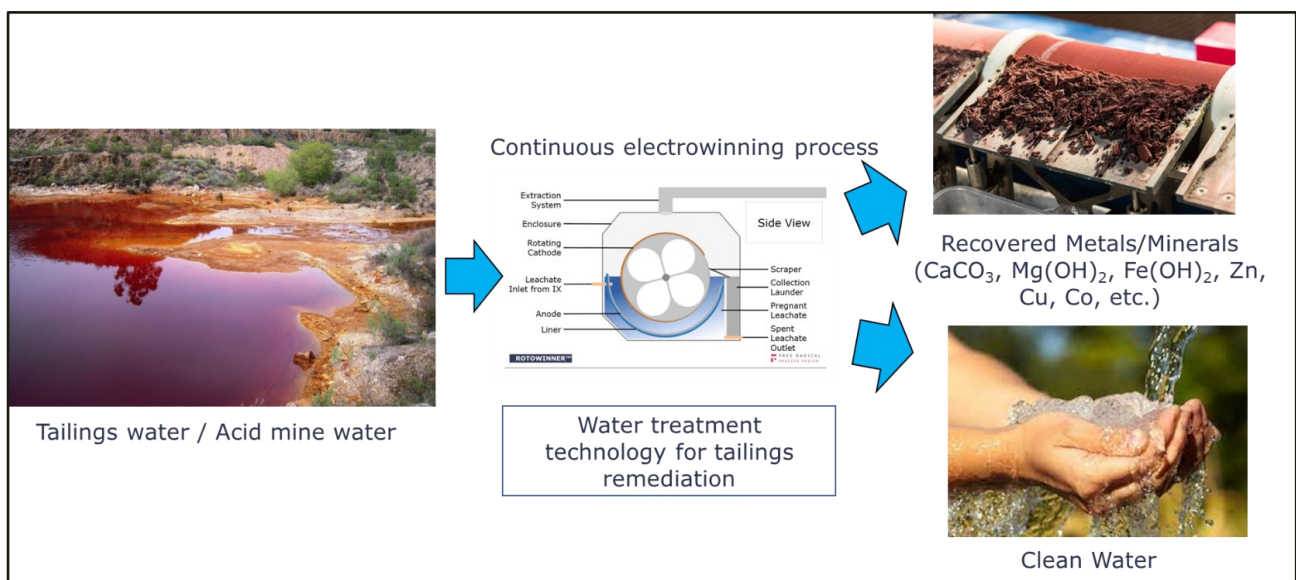


Figure 2: Tailings remediation application of the Rotowinner™ process.

Additional sources of income and community support

While trial mining is underway, Orion also plans to investigate other sources of additional income with some of these activities creating associated business opportunities for host communities to generate income now and beyond the life of the mine.

Some potential income from products produced:

- Hydrogen, FeO, Ca/Mg & Ammonia (Green Fertilizer);
- Salvaging scrap from underground and surface;
- Running Alkantpan Lodge (accommodation);
- Growing lucerne using pumped water;

- Growing vegetables using pumped water;
- Fish farming (tilapia) using pumped water;
- Running stock feedlots;
- Production and sale of rock aggregate;
- Sell excess power from windfarm & solar; and
- Fuel station in Copperton for locals & farmers.

Prieska Copper-Zinc Project Exploration

105 Level Resource In-fill Drilling

Resource in-fill drilling of the +105 level crown pillar resource, required to support the Early Mining Scenario, commenced in the March 2022 Quarter and was completed in July 2022. The drilling program was aimed at providing enough data to upgrade the Inferred Mineral Resource portion of the +105 Level Crown Pillar supergene sulphide Resource to Indicated classification (refer ASX/JSE release 20 January 2022).

Results have confirmed the presence of enriched copper mineralisation in the previously drilled supergene sulphide mineralisation which is currently classified as an Inferred Resource due to the wider-spaced drilling intersections (refer ASX/JSE release 11 July 2022).

The orebody model interpretation has been updated and the Resource will be re-estimated and re-classified where appropriate with an anticipated updated JORC Resource in the December 2022 Quarter.

The updated Mineral Resource estimate will be used for optimisation of the mining plan and updated Reserve estimation. Originally planned for mining by open pit after completion of the Deeps underground mining, the +105 crown pillar Resource is now being evaluated for early mining from underground, concurrent with the dewatering of the Deeps.

Okiep Copper Project Development and Exploration

Environmental Management

Water Use Licence Application (WULA)

The metallurgical test work program was completed in the Quarter, with the necessary flotation tailings, ore sorting discard material and development waste samples available for further analysis.

Radiological Risk Classification of flotation tailings and development waste rock is now in progress and results are expected in the December 2022 Quarter. The waste classification of the flotation tailings, development waste rock and ore sorting discard material have been received, and recommendations by the Environmental consultants are being drafted.

The additional percussion drilling downstream of the proposed tailings storage facility (**TSF**) embankment wall requested by the hydrologist has been completed, with the aquifer testing Contractor expected on site in the December 2022 Quarter. Further soil samples of the evaporation paddies from prior mining operations have also been submitted for analysis to support the motivation for an unlined tailings facility, in terms of the "risk-based approach" mentioned in earlier reports.

Tailings Storage Facility

The preliminary design of the TSF embankment wall constructed of waste rock from development and ore sorting discard material has been completed. Geotechnical analysis of these materials is still underway to confirm the compaction requirements during construction.

The testing of groundwater below the proposed TSF has shown that elevated sulphate levels exist in the groundwater below the evaporation paddies placed in this area by prior mining operations understood

to be from around the 1950s. Early results from additional percussion drilling indicate that the extent of the sulphate plume is limited, which supports our motivation for an unlined facility.

A small, lined storage facility is being investigated for the removal and storage of the paddy material to prevent any further sulphate contamination of the groundwater from these, which will be seen as a positive impact of the proposed TSF by the Water Affairs Authority.

Mine Planning

Optimisation of the mine layouts and scheduling has resulted in a significant reduction in waste development requirements. Mining fleet selection has been completed and final development layouts have been approved, allowing ventilation modelling for determination of main fan duties and exhaust ventilation airway dimensions to get underway. Stope designs and sequencing have been submitted for rock engineering evaluation and approval.

Decline development drilling, blasting and equipping have been defined and costed. Discussions are in progress with explosives suppliers for the design of blasting systems applicable to the planned Vertical Crater Retreat mining method envisioned.

Infrastructure

A 10 MVA Electricity supply point cost-estimate-letter from Eskom was received during the Quarter. The letter outlines the cost of the next phase of Eskom Studies, the "Budget Quote" as well as the cost of the connection and guarantees required by Eskom should the Eskom Option be selected. Although the long-term cost of Eskom power to the project would be lower than from the Nama Khoi Municipality, the time required for Eskom to process applications and approve "self-build" projects is a high risk to the commencement of the Project, particularly for construction.

In parallel, discussions with the Nama-Khoi Municipal (**NKM**) leadership have been encouraging. A steering committee including Orion and NKM Technical staff has been constituted and consultants appointed to evaluate the upgrading requirements and design a supply solution. Eskom has been invited to participate in the committee, which should benefit all parties.

Metallurgical Processing Plant

The metallurgical test work program, including milling and flotation of diamond core samples, has been completed. Samples from Flat Mine North and Flat Mines South ore bodies were pre-sorted in a full-scale sorter to simulate the upgraded material which will report to milling and flotation once production is underway.

Milling and flotation optimisation tests indicated Copper recoveries of over 90% at concentrate grades over 30% Cu are achievable. Milling Work-index-analysis on multiple samples produced Bond work indices varying between 14 and 24 kWh/t. A design Bond Work Index of 24 has been adopted and an optimum milled discharge particle size distribution of 80% minus 106 microns has been established. The necessary, but relatively small alterations to the Process flow diagrams and Mill input power, have been made in response to the test results.

Three dimensional plant layout drawings have been completed which formed the basis for requests for quotations being submitted to selected OEM's and engineering construction companies. Costs have been received which has led to a review of portions of the Plant design in the interest of optimising the design to reduce capital costs where possible.

Pre-development funding

In September 2022, Orion announced that the Industrial Development Corporation of South Africa (**IDC**) would become a strategic partner in the development of OCP with the two parties anticipating the finalisation of definitive agreements regarding the IDC share acquisition and pre-development funding arrangements before the end of 2022 (refer ASX/JSE release 7 September 2022).

The strategic partnership will see the IDC take an initial 43.7% of the New Okiep Mining Company, which holds the OCP assets, by funding ZAR34.6 million of OCP's pre-development costs. Orion has already advanced ZAR44.5 million in funding to New Okiep Mining Company.

The IDC will thereafter facilitate the attainment of Mining Charter BEE compliance, with the sale of a 22.22% stake to a corporate entity consisting of 100% Historically Disadvantaged Individuals led by Mr Lulamile Xate, as the largest shareholder.

Orion's aspiration, with project partners the IDC and BEE partners, is the early re-establishment of mining operations on the brownfields SAFTA site while conducting the required work and engineering studies to support the long-term aspiration of achieving production from the OCP at a similar scale to past owners Newmont and later Goldfields under the Okiep Copper Company.

Refer to the Corporate section for further detail.

New Okiep Mining Company Permitting

Mining Right granted for Flat Mines area

The Mining Right over the Flat Mines Project area was granted to Southern African Tantalum Mining (**SAFTA**) by the Department of Mineral Resources and Energy during the Quarter (refer ASX/JSE release 29 August 2022) (Figure 3). Orion is in the process of acquiring all of SAFTA's mineral rights following exercise of option in July 2021 to acquire certain assets in the selling companies. The Mining Right is valid for an initial 15 years and can be renewed for a further period of up to 30 years.

The Mining Right will now need to be executed, which is an administrative process expected to be completed within the December 2022 Quarter. The grant of the SAFTA Mining Right represents a major step towards the development of the OCP and clears the way for final engineering studies, Mineral Resource upgrade, drilling and bulk sampling for metallurgical optimisation.

Feasibility studies upgrading the 2021 scoping feasibility study (refer ASX/JSE release 2 August 2021) for the OCP are well advanced, with targeted completion in early 2023.

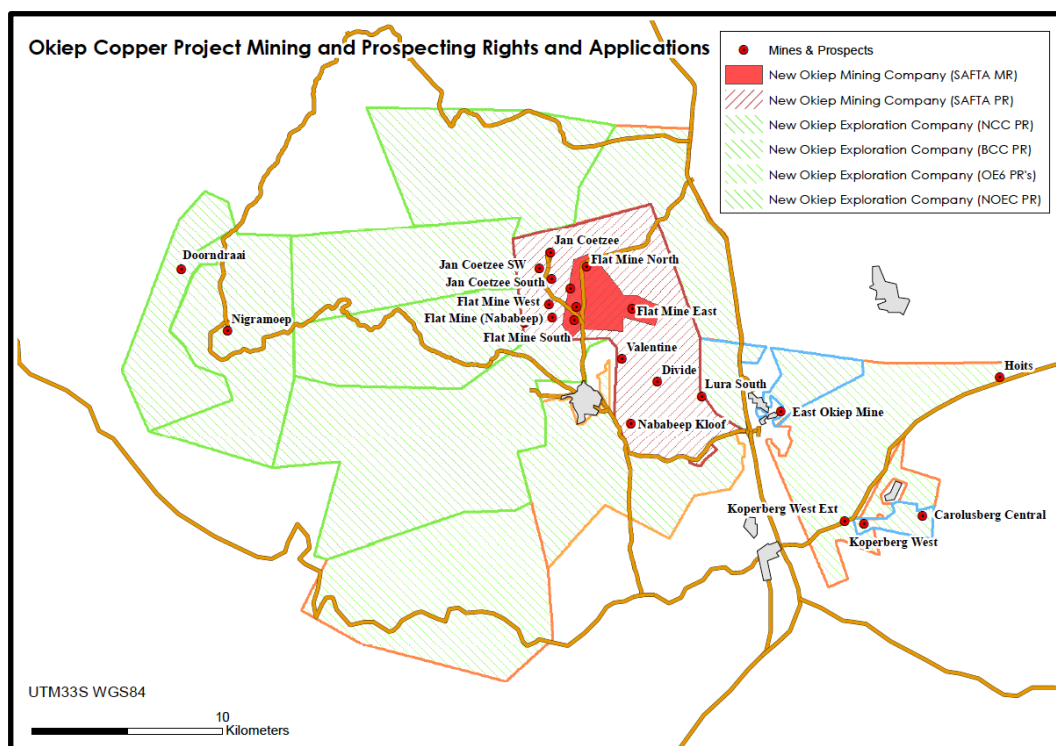


Figure 3: Location of the OCP mineral rights and NOM - SAFTA Mining and Prospecting Rights.

The status of other permitting pertinent to the NOMC operations are as follows:

- 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 progress.

Okiep Copper Project Exploration

Exploration activities continued with ongoing target generation over the Okiep Copper Project (**OCP**) area using SKYTEM™ magnetic and EM data together with geological and structural interpretive work.

Digital compilation of historical drilling information over various old mines and prospects has continued, together with the remodelling of the mineralisation with the aim of re-estimation the resources. The current focus of this work has been on the SAFTA Mining Right and Prospecting Right areas with the aim of inclusion of additional prospects as JORC resources in the December 2022 Quarter.

Areachap Near-Mine Exploration

Areachap is an under-explored belt with multiple Cu-Zn and Ni-Cu-Co-PGE-Au intrusive targets within Orion's mineral rights. Chief among these are:

- The Prieska Cu-Zn near the mine, open pit and underground targets with high-grade intersections;
- The Jacomynspan Mining Right with potential for sulphide Ni-Cu-PGE-Au open pit & shallow underground mining;
- Several high-grade Cu-Au targets with historical and recent drill intersections; and
- Several Li, Be, REE occurrences & old diggings to be investigated.

Jacomynspan Project and Metal Refining

The Jacomynspan Nickel-Copper-PGE Project (South Africa) (**Jacomynspan Project**) has the potential to be a significant metals producer and Orion's third strategic future metals project alongside the PCZM and OCP.

Jacomynspan hosts a 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. The Project has a granted Mining Right over a proven Ni-Cu-Co-PGE+Au Intrusive Complex.

Orion sees compelling potential for a 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 intrusive.

This work is being progressed in parallel with a metallurgical test work program to produce battery precursor products and other critical metal micro-powders from Jacomynspan ore.

Orion signed an exclusivity agreement with Stratega Metals to undertake amenability test work on a 250kg sample of Ni-Cu-Co-PGE-Au concentrates from the Jacomynspan Project in the previous quarter (refer ASX/JSE release 9 May 2022).

The amenability test work commenced during the Quarter, with positive visual observations during laboratory tests indicated strong reaction kinetics and good mass recoveries to separated metal and sulphur powders. Definitive results and detailed report are imminent with assay results expected to confirm expectations of recoveries >95% of each metal to refined metal powder form.

Australian Projects

Fraser Range – Nickel-Copper Projects (Western Australia)

The Fraser Range Project in Western Australia extends over a total strike distance of some 430km. The Project area is highly prospective for high-value magmatic nickel-copper-cobalt sulphide discoveries.

Orion maintains a sizeable tenement package in the Fraser Range Province of Western Australia in a joint venture with IGO Limited (ASX: IGO). Under the terms of the joint venture, IGO is responsible for all exploration of the tenements and provides regular updates to Orion on activities and results.

Importantly, Orion maintains exposure to the ongoing exploration and development of the Fraser Range Project without the additional financial commitment, given that Orion is free-carried through to the first pre-feasibility study on any of the tenements.

In the previous financial year, IGO developed several key targets at the Fraser Range Project, with work including diamond and reverse circulation drilling (RC drilling) at more than 25 key targets.

IGO has budgeted \$75 million to pursue its brownfields and greenfield projects with Fraser Range among them (refer IGO presentation 30 August 2022).

During the Quarter, IGO completed 2km of rehabilitation works across E28/2367 and E28/2378, while clearing and preparing track access for upcoming aircore program at Artemis (E28/267).

In the December Quarter 2022, IGO plans to undertake the following work (Figure 4):

- Drilling the Pike North diamond hole on E28/2367 (Kanandah Station):
 - The Pike North diamond drill program is designed to test a 5000S 800m x 400m discrete conductor identified by MLEM in 2019. The conductor sits in a magnetic low, with aircore drilling in the area defining a broad geochemically anomalous zone, with the results indicating potential VMS and magmatic Ni sulphide anomalism. This target is offset and adjacent to the Boonderoo Shear Zone;
- Geological logging & DHEM;
- MLEM survey of CE, Pennor North and Porpoise target areas; and
- 18 AC holes to be drilled at Artemis target on E28/2367 (Kanandah Station).

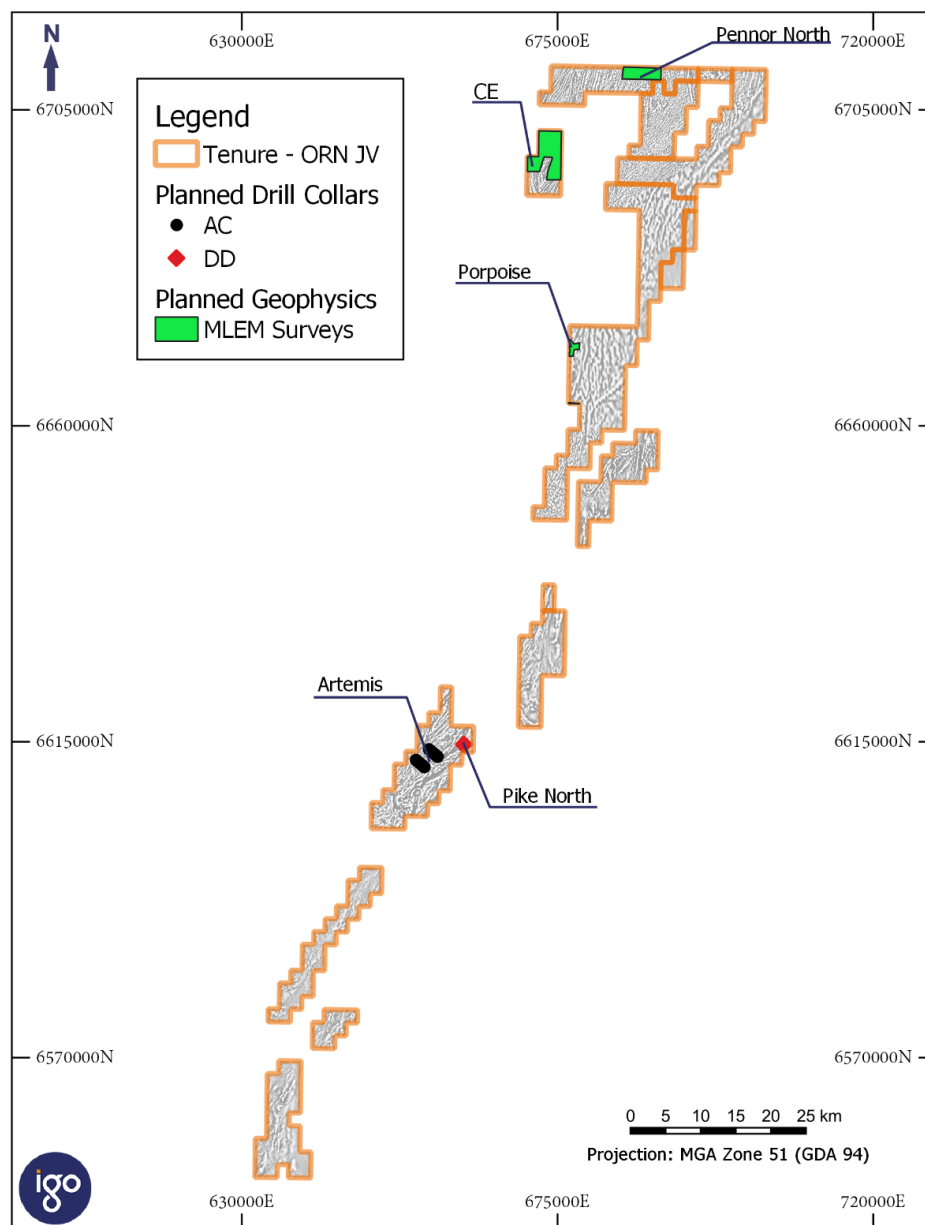


Figure 4: Future work to be completed on Orion JV tenure in Q2 FY23.

Walhalla – Gold and Polymetals Project (Victoria)

No field or exploration work was carried out on the Walhalla Project during the Quarter. During the Quarter, the Company continued to progress its licence applications over prospective areas of Walhalla.

Corporate

Cash and Finance

Cash on hand at the end of the Quarter was \$3.55 million. Payments made to related parties and their associates during the Quarter was \$99k and relates to Director fees and consulting fees, as listed in Section 6 of the Company's Quarterly Cash Flow Report (Appendix 5B).

In order to preserve the Company's cash reserves, the Company's Non-Executive Directors have agreed, subject to Shareholder approval to be sought at the Annual General Meeting to be held on 24 November 2022, to receive their Director fees in ordinary fully paid shares (**Shares**), in lieu of cash. The deemed issue price at which the Shares will be issued (subject to Shareholder approval) will be 2.0 cents, being the same price as the Shares issued under the capital raising and SPP announced on 22 June 2022 (refer below).

Prieska Project Funding

Industrial Development Corporation of South Africa Convertible Loan

On 21 October 2022, Orion announced that it has entered into a pivotal non-binding term sheet with the Industrial Development Corporation of South Africa Limited (**IDC**) for a ZAR250 million (~A\$22 million) senior secured loan facility (**Convertible Loan**) to fund early mining works and key pre-development activities at the Prieska Project. Orion, Agama Exploration and Mining Proprietary Limited (a wholly-owned subsidiary of Orion) (**Agama**) and PCZM (a majority-owned subsidiary of Orion) have reached agreement with the IDC on the key terms of the Convertible Loan, which have been recorded in a non-binding term sheet (**Term Sheet**), with IDC Executive Committee approval.

Under this Term Sheet, the IDC will provide the ZAR250 million (A\$22 million) Convertible Loan to Agama, or its wholly-owned subsidiary, which will be on-lent to PCZM on similar terms to fund the completion of the Bankable Feasibility Study (**BFS**) on 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. The Early Mining Works BFS and the Dewatering Project are key pre-development workstreams that are already well advanced. The Dewatering Project is a critical long-lead item for the development of the Prieska Project, given that total dewatering of the mine to facilitate access to the main sulphide VMS orebody will take approximately three years.

A summary of the material terms of the Term Sheet are provided in Appendix 1 of the 21 October 2022 ASX/JSE release.

Triple Flag Funding Arrangements

In May 2022, Orion took a pivotal step towards the development of its flagship Prieska Project in South Africa's Northern Cape Province after signing non-binding term sheets with TF R&S Canada Ltd. and Triple Flag International Ltd. (together **Triple Flag**), for a US\$87 million secured funding package. Non-binding term sheets have been signed with Triple Flag and are now being advanced under exclusivity to definitive agreements, with the funding package planned to underpin the Early Production Scenario for the Prieska Project announced in January 2022 (refer ASX/JSE release 20 January 2022).

The contemplated funding package comprises two components, being a precious metal stream (**Precious Metal Stream**) and additional early funding (**Funding Arrangement**).

The Precious Metal Stream comprises US\$80 million of funding to be drawn down in tranches, alongside other bank and/or third-party funding during mine development. Orion will also receive payments of 10% of the value of delivered payable precious metal paid at spot LME pricing at the time of delivery.

The proposed stream rates for gold and silver to be delivered under the stream agreement are 84% of "Payable Gold" until 94.3k ounces of gold are delivered under the stream agreement, and 84% of "Payable Silver" until 5,710k ounces of silver are delivered, with each stream rate reducing to 50% after the respective milestones.

Orion and Triple Flag have also entered into a term sheet for an additional \$10 million Funding Arrangement, with such funding to be made available to Orion to complete the current early mining Feasibility Study (refer ASX/JSE release 20 January 2022) and to commence dewatering of the mine.

In addition to the completion of due diligence and entering into definitive agreements, the Funding Arrangement draw-down is also conditional on Orion securing an additional A\$20 million funding to execute the agreed work focused on the Dewatering Project and the Early Mining Works BFS. Triple Flag has confirmed to Orion that draw-down of the IDC Convertible Loan will be sufficient for its A\$20 million funding condition to be satisfied. Orion and Triple Flag are advancing the definitive agreements for the Precious Metal Stream and the Funding Arrangement and anticipate these being finalised in Q4 CY2022. A summary of the material terms of the Precious Metal Stream and Funding Arrangement are provided in Appendix 1 and 2 of the 9 May 2022 ASX/JSE release.

Next Steps

The IDC Convertible Loan, together with the Triple flag A\$10 million early Funding Arrangement, will enable Orion to complete the Early Mining Works BFS and commission and operate the Dewatering Project.

Orion and the IDC anticipate finalising and executing the definitive agreements for the Convertible Loan in Q4 CY2022, with the IDC funding expected to be available for draw-down during late 2022, subject to fulfilment of conditions precedent standard for such arrangements.

The Early Mining Works BFS for the Prieska Project are well advanced, with targeted completion mid 2023. The Dewatering Project is also well advanced, with underground storage dams and pump site construction completed and the shaft platform installed to facilitate pump installation.

Refer to the Prieska Mine Development and Exploration (Prieska Project Funding Arrangements) section for further detail.

Okiep Copper Project Funding

IDC share acquisition and pre-development funding

On 7 September 2022, Orion announced that it has entered into non-binding term sheets with the IDC and Lulamile Xate regarding the key principles of the funding and Historically Disadvantaged South African (**HDSA**) ownership participation arrangements for New Okiep Mining Company (**NOM**).

Orion and the IDC anticipate finalising and executing the definitive agreements for the IDC share acquisition and pre-development funding arrangements in Q4 CY2022, with the IDC funding to flow in the same Quarter, subject to fulfilment of conditions precedent standard for such arrangements.

Orion, the IDC and Lulamile anticipate finalising and executing the definitive agreements for the HDSA ownership arrangements also in Q4 CY2022, with the implementation of the HDSA ownership arrangements being conditional on the transfer of the assets from SAFTA to NOM, per the terms and conditions of the SAFTA Asset Acquisition Agreement (refer ASX/JSE releases 2 February 2021 and 2 August 2021).

The IDC funding of pre-development costs in the amount of ZAR34.58 million will be advanced to NOM on the same terms as the pre-development funding amount of ZAR44.46 million already advanced by Orion to NOM.

Capital Raising

Placement

On 22 June 2022, the Company announced a capital raising to raise up to \$20 million at 2.0 cents per Share, to underpin the next phase of development of its portfolio of advanced base metal assets in South Africa's Northern Cape Province.

Given the significant volatility experienced in global financial markets since the time the capital raising was announced in June 2022, the raising is being undertaken in three tranches with first commitments received for the first two tranches (~\$6 million). The three tranches of the placement are summarised below:

- Tranche 1: in June 2022 and July 2022, the Company issued a total of 156 million Shares at an issue price of 2.0 cents (being ZAR22 cents) to raise \$3.1 million (together with one free attaching unlisted option for each two Shares issued, with an exercise price of 2.5 cents (being ZAR27.5 cents) and an expiry date of 30 June 2023 (**Options**)), using the Company's 15% placement capacity under ASX Listing Rule 7.1;
- Tranche 2: the Company raised \$2.9 million through the issue of 145 million Shares at an issue price of 2.0 cents (being ZAR22 cents) per Share (together with one free attaching Option for each two

Shares issued on the terms set out above), including \$2 million from Orion non-executive Director Tom Borman and \$0.2 million from Orion's Chairman Denis Waddell; and

- Tranche 3: the Company may issue up to an additional 699 million Shares at an issue price of 2.0 cents (being ZAR22 cents) per Share to raise up to \$14 million (shareholder approval received at a general meeting held on 18 August 2022). There are no Options attaching to any Shares that comprise Placement Three.

Share Purchase Plan

In addition to the capital raising announced on 22 June 2022, Orion also announced a share purchase plan (**SPP**) providing shareholders an opportunity to increase their shareholding in the Company at the same offer price as the Shares issued under the capital raising (refer above).

Under the SPP, Eligible Shareholders could subscribe for new Shares in parcels starting from \$2,000 (or ZAR20,000), up to a maximum of \$30,000 (approximately ZAR330,000), at an issue price of 2.0 cents (ZAR22 cents) per Share, without incurring brokerage or transaction costs. The SPP opened on 28 June 2022 and closed on 12 August 2022 and on 22 August 2022, the Company issued 67.3 million Shares under the SPP at an issue price of 2.0 cents per Share (ZAR22 cents), raising \$1.35 million.

The SPP attracted strong support from shareholders, particularly those in South Africa, which was a pleasing result given the volatility experienced in global financial markets and commodity prices during the SPP offer period.

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. The key terms of the Loan Facility are:

- Loan amount: ZAR14.25 million (~\$1.27 million);
- Interest rate: Prime lending rate in South Africa; and
- Security: 29.17% of the shares held in PCZM by Agama (a wholly owned subsidiary of Orion), have been pledged as security to AASMF for the performance by PCZM of its obligations in terms of the Loan Facility.

As at 30 September 2022, the balance of the Loan Facility was ZAR22.42 million (~\$1.91 million) (including capitalised interest). PCZM and AASMF are continuing negotiations to agree and settle a repayment plan in relation to the Loan Facility.

Jacomynspan Project

In September 2017, Orion entered into a binding earn-in agreement to acquire the earn-in rights over the Jacomynspan Project (South Africa) from two companies, Namaqua Nickel Mining (Pty) Ltd and Disawell (Pty) Ltd (**Namaqua Disawell Companies**), which hold partly overlapping prospecting rights and mining right applications.

In July 2020, the Company entered into an agreement whereby Orion (or its nominated subsidiary) will acquire the remaining minority interests in the Jacomynspan Project held by the Namaqua Disawell Companies and in August 2020, the parties entered into a comprehensive formal written agreement incorporating the principal terms and conditions set out in the initial agreement (**Agreement**). The Agreement is subject to the satisfaction or waiver of specified suspensive conditions. While certain suspensive conditions have been fulfilled, the Agreement remains subject to the satisfaction or waiver of certain remaining suspensive conditions of the Agreement, including that, on or before 27 February 2022, all regulatory approvals as may be required for the purposes of implementing the transaction have been received.

The Company and the other current shareholders in the Jacomynspan Project reached agreement to extend the date by which the Agreement must become unconditional from 27 February 2022 to 30 September 2022. The extension provided additional time for the parties to discuss a potential expanded and revised transaction whereby additional prospective Southern African nickel projects will be combined with the Jacomynspan Project.

Following Quarter end, negotiations are continuing with term sheets currently being drafted.

General Meeting

A General Meeting of shareholders of the Company was held on 18 August 2022, with all resolutions put to shareholders passed by a poll.

Annual General Meeting

The Annual General Meeting of shareholders of the Company will be held at the offices of Clayton Utz, Level 27, QV1 Building, 250 St Georges Terrace, Perth, Western Australia on Thursday 24 November 2022, commencing at 3:00 p.m. (Perth time).

Tenement Table

Tenement	Project	Ownership Interest	Change in Quarter	Joint Venture Partner
South Africa				
NC30/5/1/1/2/11850PR	Bartotrax	100%	---	---
NC30/5/1/2/2/10138MR	Prieska Copper-Zinc Mine	70%	---	---
NC30/5/1/2/2/10146MR	Prieska Copper-Zinc Mine	70%	---	---
NC30/5/1/1/2/11840PR	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	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/11010PR	Namaqua-Disawell	25%	---	Disawell (Pty) Ltd
NC30/5/1/1/2/12292PR	Masiqhame	50%	---	Masiqhame 855 (Pty) Ltd
NC30/5/1/1/2/12197PR	Okiep – Bokspuits North	70%	---	---
NC30/5/1/1/2/11125PR	Okiep	100%	---	---
NC30/5/1/1/2/12357PR	Okiep	100%	---	---
NC30/5/1/2/2/10150MR	Okiep	100%	Granted	---
Western Australia				
E28/2367	Fraser Range	30%	---	IGO Limited
E28/2378	Fraser Range	30%	---	IGO Limited
E28/2462	Fraser Range	30%	---	IGO Limited
E28/2596	Fraser Range	30%	---	IGO Limited
E39/1653	Fraser Range	35%	---	IGO Limited & Geological Resources Pty Ltd
E39/1654	Fraser Range	10%	---	IGO Limited & NBX Pty Ltd

This Quarterly Report is authorised by the Board.