



## Orion Minerals

ASX/JSE RELEASE: 8 August 2024

# Orion Minerals Granted High-Priority Prospecting Rights for its Okiep Copper Project, South Africa

Area surrounding Flat Mines adds to Orion's growth pipeline and includes existing JORC Resources

- ▶ **Grant of two prospecting rights over the greater Flat Mines Area surrounding the Flat Mines Mining Right marks another major milestone in progressing Orion's Okiep Copper Project.**
- ▶ **The newly granted prospecting rights encircle the Flat Mines Mining Right, where Orion is finalising a BFS that includes the proposed establishment of a central concentrator plant.**
- ▶ **The new prospecting rights contain existing JORC Mineral Resources of 1.5Mt at 1.3% Cu with near-term potential for inclusion into the Flat Mines Life-of-Mine Plan.**
- ▶ **Several deposits with high density drilling by previous owners Goldfields and Newmont await confirmation drilling by Orion before estimating JORC Mineral Resources.**

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

*"We are thrilled to have secured the grant of these prospecting rights following a three-year administrative process. Orion's recent purchase of surface rights over some of the area covering these prospecting rights finally resolved the impasse for surface access and environmental approvals. This now allows Orion to finally access this highly prospective ground, where we have already used high-quality historical Goldfields and Newmont drill data to estimate and declare JORC compliant Mineral Resources.*

*"Several additional deposits on the prospecting rights that were also drilled by the previous owners require minor in-fill drilling before resource estimation can be completed to JORC compliance. These prospects can be considered advanced stage projects that have near-term potential to add feed to our planned Flat Mines Central concentrator.*

*"All of the ore from deposits historically mined in the greater Flat Mines Area was trucked to a central concentrator located just south of where we intend building our new central concentrator.*

*"Our BFS for Flat Mines is nearing completion and includes the planned construction of a new modern concentrator plant and tailings storage facility that will replace the historical facilities. Importantly, the new central plant – together with modern improvements in processing technology such as the application of XRF ore sorting, present a compelling case for both expansion and extension of the life-of-mine plan for Flat Mines and to unlock the potential of some of the known deposits where internal waste dilution was problematic.*

*"These prospecting rights also contain some of our highest priority greenfields exploration targets in the district, where our 2021 SkyTEM™ heliborne electromagnetic survey revealed strong conductors both on the prospecting rights and straddling the boundary with our Flat Mines Mining Right.*

*"We are immediately mobilising ground geophysics crews and deploying drilling rigs to test some of the targets that we have not been able to access until now."*

Orion Minerals Ltd (**ASX/JSE: ORN**) (**Orion** or the **Company**) is pleased to advise that two additional prospecting right (**PR**) applications have been granted for its Okiep Copper Project (**OCP**) in the Northern Cape Province of South Africa. These rights, listed in Table 1 below, encircle the existing Flat Mines Mining Right on which Orion is currently finalising its Bankable Feasibility Study (**BFS**) for Flat Mine North, Flat Mine East and Flat Mine South (Figure 1).

**Table 1: Newly granted prospecting rights for OCP.**

Right Holder	Right Reference Number	Grant Date
Southern African Tantalum Mining (Pty) Ltd (To be ceded to New Okiep Mining Company (Pty) Ltd)	NC30/5/1/1/2/12755PR	21 June 2024
Southern African Tantalum Mining (Pty) Ltd (To be ceded to New Okiep Mining Company (Pty) Ltd)	NC30/5/1/1/2/12848PR	21 June 2024

Several previously identified and drilled deposits are located within the newly granted prospecting rights. In addition, this highly prospective ground contains some of Orion's highest priority greenfields exploration prospects identified from the processing of historical exploration data together with geological, geochemical and SkyTEM™ geophysical data acquired by Orion in 2021.

### Description of the Prospecting Rights

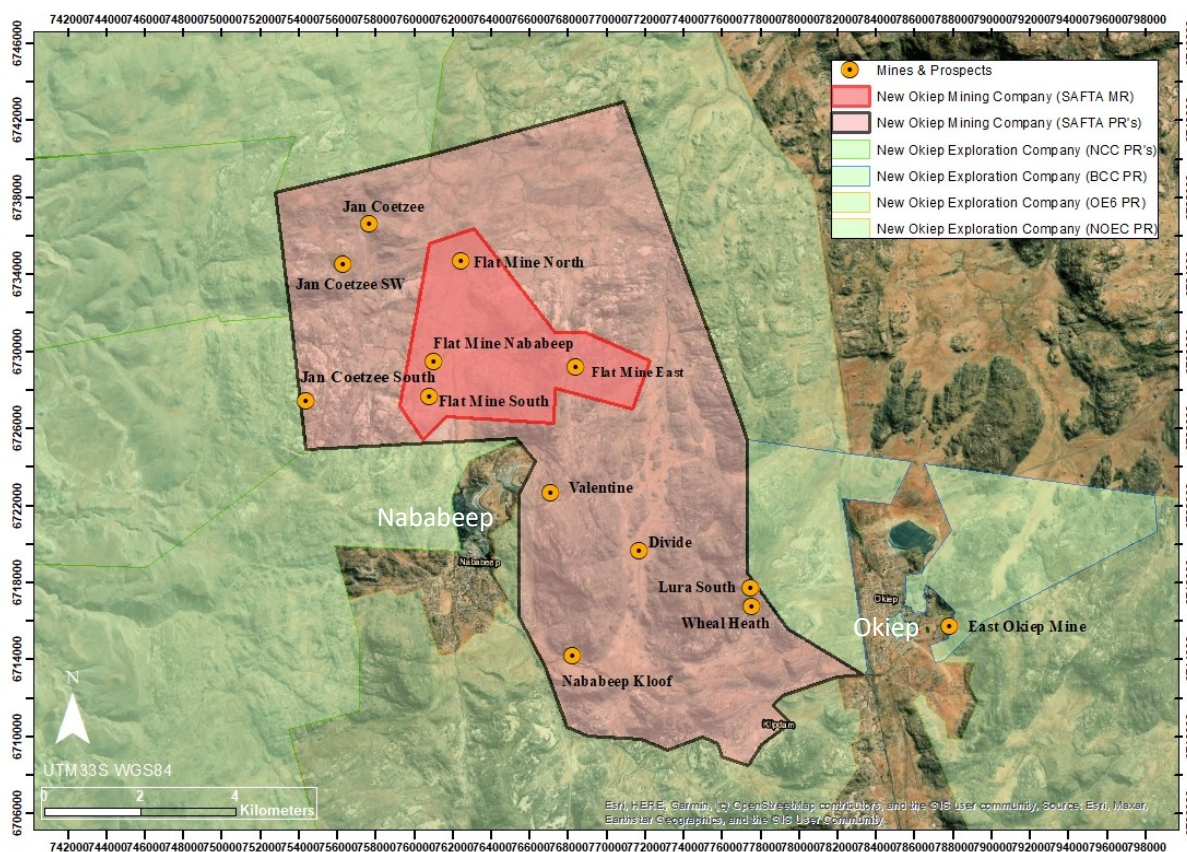
The prospecting rights, referred to as the "SAFTA PR", are for the same geographic area but provide rights to different commodities (Table 2) and surround the Orion Flat Mines Mining Right (Figure 1). The Mining Right that covers Flat Mine East, Flat Mine North and Flat Mine South – where Orion has reported JORC Mineral Resources of 9.4Mt at 1.3% Cu (refer ASX/JSE release 28 August 2023)<sup>1</sup> – is the subject of a Bankable Feasibility Study which is on track for completion in Q4 CY2024.

**Table 2: Prospecting Right Status for NC12755PR and NC12848PR.**

SAFTA PR DMRE Numbers	Year Submitted	Grant	Expiry	Description	Commodities
NC30/5/1/1/2/12755PR	2020	21 June 2024	20 June 2027	7,164 hectares over Farm Nababeeep 134: portion of Portion 3, portion of Portion 10, portion of Portion 13, portion of Portion 14, Portion 15, Portion 16, portion of Portion 21 and Okiep Township Plot 2086 situated within the Administrative District of Namaqualand	Copper Ore Tungsten Ore
NC30/5/1/1/2/12848PR	2021	21 June 2024	20 June 2027		Beryllium Ore, Bismuth, Chrome, Cobalt, Gold Ore, Lead, Molybdenum, Monazite, Nickel, Niobium, Phosphate, Platinum Group Metals, Pyrite, Rare Earths, Rutile, Silver, Sulphur, Sulphur in Pyrite, Tantalum, Tin, Uranium, Vanadium, Zinc Ore, Zirconium

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

The SAFTA PR covers seven historical copper mines and seven additional unmined prospects where previous owners Goldfields and Newmont carried out high density drilling to delineate highly mineralised bodies.



**Figure 1: Locality Map of the Granted SAFTA PRs showing historical mines and current JORC Mineral Resources.**

The PR also hosts several of Orion's highest priority targets, identified from Orion's 2021 SkyTEM™ airborne survey and supported by historical data including geological mapping, geochemistry and ground geophysics (Figure 2).

The Mineral Resource Estimate reported to date in terms of JORC (2012) for the SAFTA PR area includes 1.5Mt at 1.3% Cu (Table 3) (refer ASX/JSE release 29 March 2021).

## Mineral Resource Estimate

**Table 3: Mineral Resource Estimates at March 2021<sup>2</sup>.**

Mine / Prospect	Classification	Tonnes	Cu %	Cu t
Jan Coetzee Mine	Inferred	1,000,000	1.4	14,000
Nababeep Kloof Mine	Inferred	500,000	1.2	6,000
<b>Grand Total</b>		<b>1,500,000</b>	<b>1.3</b>	<b>20,000</b>

\*\* Mineral Resources are reported at a 0.7% Cu cut-off grade.

Numbers may not add up due to rounding in accordance with the JORC code guidance.

<sup>2</sup> Mineral Resource updated and reported in ASX release of 29 March 2021: "Orion expands Mineral Resources at Okiep Copper Project" available to the public on <http://www.orionminerals.com.au/investors/asx-jseannouncements/>. Competent Person Mineral Resource: Dr Deon Vermaak. Orion confirms it is not aware of any new information or data that materially affects the information included above. The Company confirms that all material assumptions and technical parameters underpinning the estimates in the original release continue to apply and have not materially changed. Orion confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.

## Geology and Interpretation

The Okiep Copper Deposits are Orogenic type copper deposits hosted in mafic to ultra-mafic intrusive bodies in the western part of the Namaqua Complex, South Africa. Mines in the Okiep district historically produced 105.6Mt at 1.71% Cu since the early 1900s<sup>3</sup>.

The Okiep Copper deposits are mostly hosted by easterly-trending mafic/ultramafic dykes, with associated sills and pipe-like bodies. Some 1,700 of these mafic intrusions have been mapped in the district (Figure 2). Structural control on the intrusive bodies follows strongly developed east-west trending "steep structures" or monoclinical folds, that trend onto the SAFTA PRs.

A strong correlation is also recognised between high-grade mineralisation and at least three favourable lithological target horizons, with high-grade blows forming where the intrusives cut these specific lithologies:

- Springbok Quartzite and Schist;
- Mixed Zone or Wolfram Schist; and
- Ratelpoort Quartzite and Schist.

The SAFTA PR extends 13km south to north and straddles all three of these east–west striking lithological target horizons with the Springbok Quartzite and Schist in the south, the Wolfram Schist in the central to northern part of the SAFTA PR and the Ratelpoort Quartzite and Schist in the North. Several of the strongest developed, east west trending intrusive swarms also traverse the prospecting rights.

## Newly Identified Targets

In 2021, Orion flew a SkyTEM™ airborne electromagnetic survey (**EM**) over the Okiep Copper District, representing the first application of modern geophysical survey techniques since exploration activity ceased in the early 1980's. The results of the survey yielded a number of new target areas not tested by previous companies. These anomalies have been prioritised and ranked based on a number of criteria, including proximity to known mineralisation or in close association of known but untested Koperberg Suite intrusive rocks.

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<sup>3</sup> Source: Lombaard A.F., in Annhauser C.R., and Maske S. (eds). The Copper Deposits of the Okiep Copper District, Namaqualand in Mineral Deposits of Southern Africa. 1982 pp 1421 - 1445.



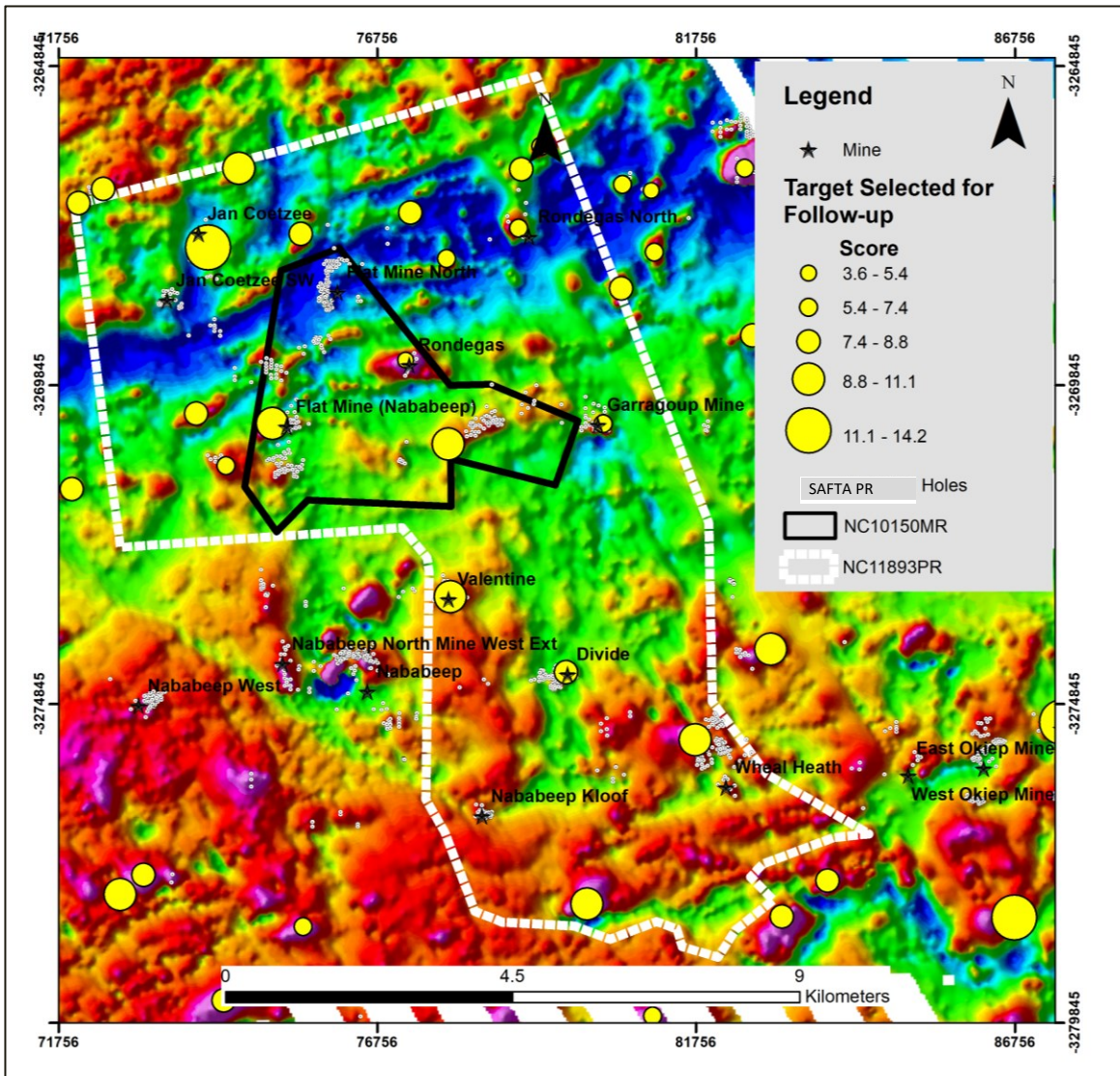


Figure 2: Map showing prioritized targets as selected from aeromagnetic, airborne EM and geological data overlain on a Total Field Magnetic image.

### Past Production

Historical owners Goldfields and Newmont who owned the Okiep Copper Company (**OCC**), reported production of 6.2Mt tonnes at an average grade of 1.64% Cu with 100kt of copper produced from the SAFTA PR (Table 4).

Mine records indicate that drilled copper mineralisation, including high grade mineralisation, extends beyond the mine workings at several of the historical mines<sup>4</sup>.

In addition the structures hosting the known deposits are highly prospective to host previously undetected, mineralised mafic intrusive lenses which are known to pinch and swell and are often found in clusters along trend and within the host structures.

<sup>4</sup> Source: Okiep Copper Company (Pty) Ltd company records and periodic reports.

**Table 4: Historical Production on the SAFTA PR<sup>4</sup>.**

Mine	Production Dates	Tonnes Mined	Copper Grade (%)	Copper Produced (tonnes)
Divide	Pre- 1981	235,277	0.85	2,001
Jan Coetzee	1964-1973	1,894,053	1.06	20,046
Jan Coetzee Southwest	1972-1977	800,500	1.22	9,730
Nababeep Kloof	1965-1972	194,612	1.39	2,696
Valentine	1960-1975	2,867,424	2.28	65,507
Wheal Heath	1970-1972	207,629	0.85	1,771
Wheal Heath West	1964	24,571	3.18	782
<b>Total Production</b>		<b>6,224,066</b>	<b>1.64</b>	<b>102,531</b>

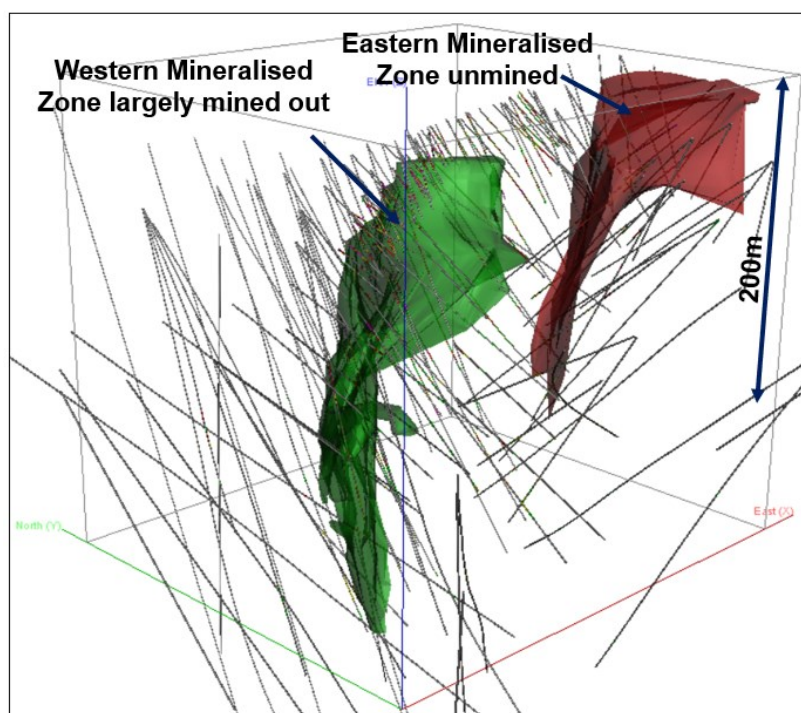
**Brief description of Historical Mines**

Jan Coetzee

Copper mineralisation occurs in three different stratigraphic horizons where basic rocks intrude the Ratelpoort Quartzite. The main mineralised zone is developed discontinuously over 400m strike with mining carried out to 200m depth.

Due to excessive internal dilution of ore by quartzite remnants, achieved production grades were lower than anticipated. Orion sees the opportunity to employ modern ore sorting technology to eliminate the excessive dilution experienced by OCC and improve the economic prospects of this deposit.

A satellite body located 120m south-east of the mined Main Mineralised Zone hosts shallow copper mineralisation that was drill tested by 30 holes. Orion has reported an Inferred Mineral Resource of 1Mt at 1.4% Cu (refer ASX/JSE release 29 March 2021) for this body.

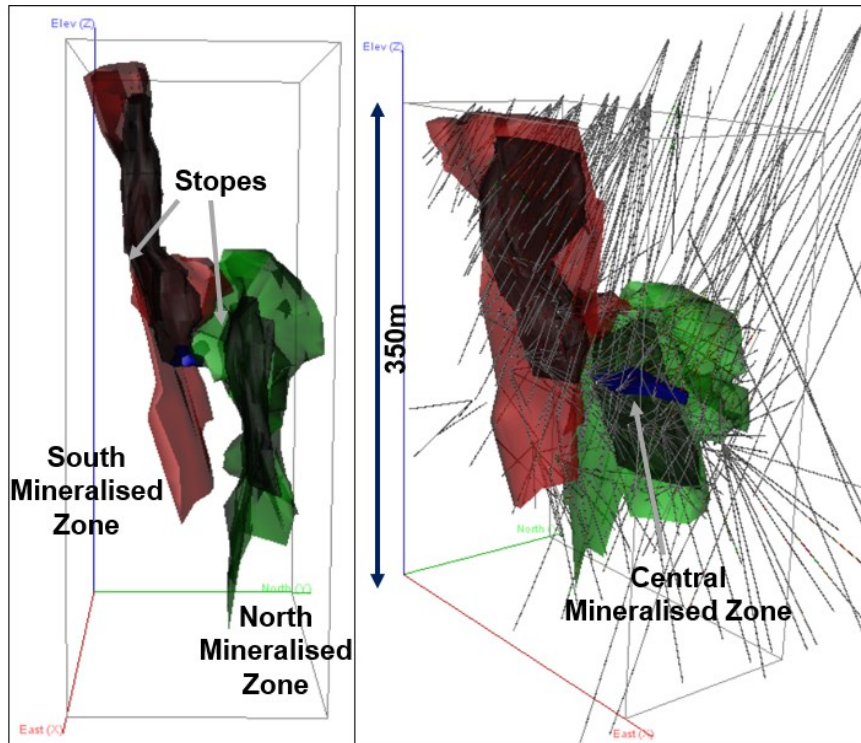


**Figure 3: Jan Coetzee Mine mineralised zones and historical drilling.**

Jan Coetzee Southwest

Three mineralised intrusives are present and were mined down to 250m depth. The thickness of the mineralised body ranges from 10m to 20m. The western margin to the deposit was mapped as terminating in a fault zone.

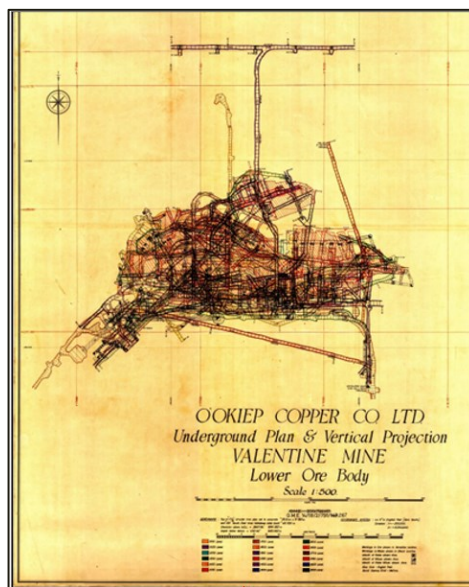
Drilling to the west of the fault intersected high-grade copper mineralisation at shallow depths that narrows rapidly down-dip. Drill testing is warranted to test for additional wide lenses of mineralisation both down dip and along strike.



**Figure 4: Jan Coetzee Southwest mineralised zones, historical drilling and historical stopes.**

Valentine

In July 1999, OCC noted that unmined high-grade mineralisation continued below the 1,950 feet (594m) Level. The mine is flooded and is connected to an underground drive to the NababEEP Mine on the 546m Level.

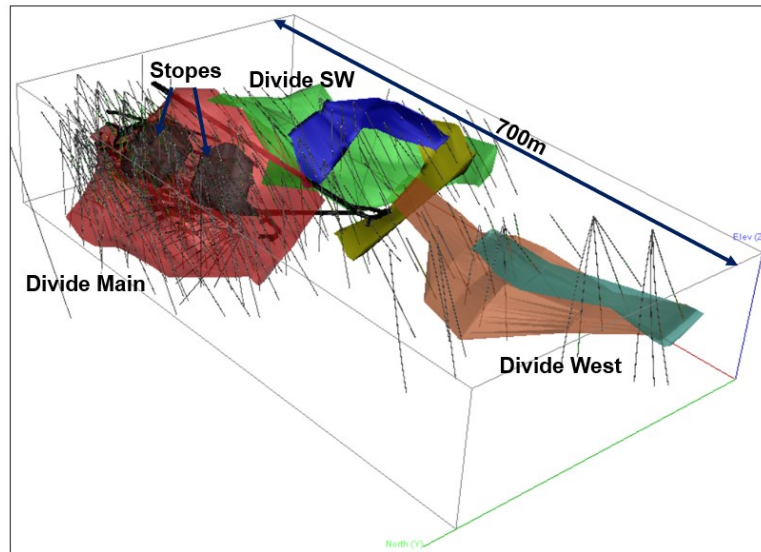


**Figure 5: Valentine Mine.**



## Divide

Mine development was completed to 140m below the shaft collar and stoping to a depth of 95m. The deposit was mined over a strike length of 160m and reaches a maximum thickness of some 100m in the eastern part of the mine.



**Figure 6: Divide Mine and adjacent prospects with historical drilling and historical stopes.**

## Wheal Heath

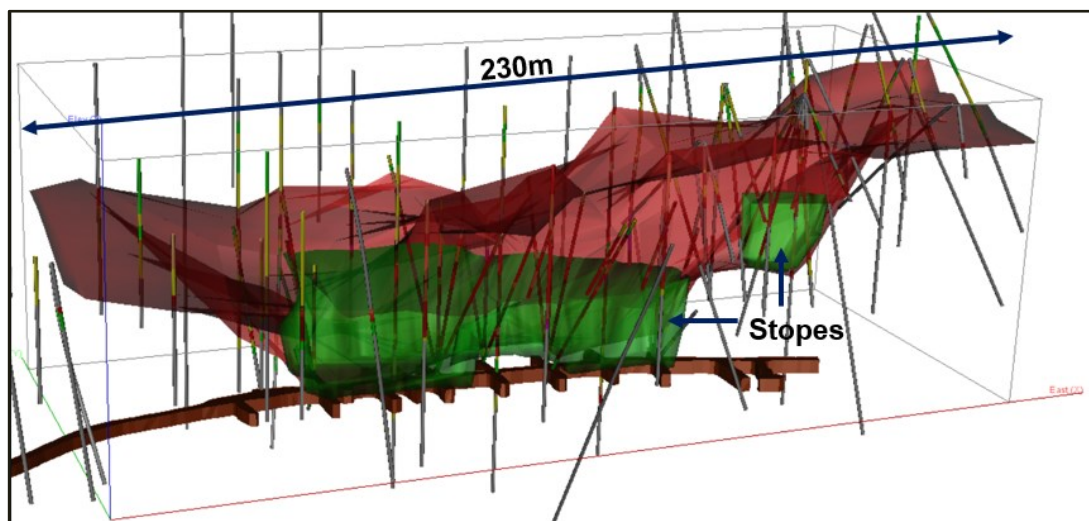
Mining took place over a strike length of 170m to a depth of 120m. The mineralised body reaches thicknesses of up to 45m where it intersects lithological contacts.

## Wheal Heath West

Unfortunately, limited information is available for this small mine, that was mined to a depth of only 43m below surface.

## Nababeep Kloof Mine

Mineralisation occurs in a shallow north-dipping diorite sill. The mineralised body is 100m long in an east-west direction, 90m wide and 21m thick. The body intruded on the contact between Springbok granulite and Nababeep Gneiss. Mineralised material above the old stopes is estimated by Orion to contain an Inferred Mineral Resource of 0.5Mt at 1.2% Cu (refer ASX/JSE release 29 March 2021).



**Figure 7: Nababeep Kloof mine with historical drilling.**



## The Way Forward

The new prospecting rights which surround the Flat Mines Mining Right are predominantly covered by Orion surface ownership or access agreements, which will expedite exploration with the objective of expanding and extending the Flat Mines life-of-mine plan, which is based on only three of the ten known drilled deposits.

Any mineralisation identified within the new prospecting rights is expected to have low barriers for economic development given the close proximity to the proposed Flat Mines and central concentrator plant and an existing road network linking the deposits to the plant site.

Orion is immediately mobilising to undertake detailed ground geophysics and diamond drilling on the new SAFTA PRs. Based on geology, aeromagnetic and SkyTEM™ data, 15 targets are currently selected and rated from 3 to 15 for follow-up (Figure 2).

Orion's strategy is to re-evaluate the known and previously mined deposits for residual mineral resources, to assess and delineate mineralisation for unmined prospects, and to evaluate new and untested mineralisation on the SAFTA PRs. Planning for confirmation drilling programs at the Jan Coetzee, Divide and Nababeep Kloof Mines is in progress.

For and on behalf of the Board.



Errol Smart

**Managing Director and CEO**

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