



Orion Minerals

ASX/JSE RELEASE: 30 October 2023

Notice of Annual General Meeting 2023

Orion Minerals Limited (**ASX/JSE: ORN**) (**Orion** or the **Company**) advises that the following documents will be distributed to shareholders today, in relation to the Annual General Meeting to be held on Tuesday 28 November 2023, at 3:00pm (Perth time):

- Shareholder letter;
- Notice of Annual General Meeting (including the Explanatory Memorandum) (if requested);
- Proxy Form; and
- 2023 Annual Report (if requested).

The shareholder letter, Notice of Annual General Meeting and 2023 Annual Report are available on the Company's website at www.orionminerals.com.au.

For and on behalf of the Board.

Martin Bouwmeester
Company Secretary

ENQUIRIES

Investors

Errol Smart – Managing Director & CEO

Denis Waddell – Chairman

T: +61 (0) 3 8080 7170

E: info@orionminerals.com.au

Media

Nicholas Read

Read Corporate, Australia

T: +61 (0) 419 929 046

E: nicholas@readcorporate.com.au

JSE Sponsor

Monique Martinez

Merchantec Capital

T: +27 (0) 11 325 6363

E: monique.martinez@merchantec.com



Address: Level 21, 55 Collins Street, Melbourne, VIC, Australia 3000
ABN: 76 098 939 274 Telephone: +61 (0)3 8080 7170
www.orionminerals.com.au

30 October 2023

Dear Shareholder,

Notice is given that the Annual General Meeting of Orion Minerals Ltd (Orion) will be held as follows:

Date: Tuesday, 28 November 2023
Time: 3:00pm (Australian Western Standard Time)
Venue: In person at: Clayton Utz
Level 27, QV. 1 Building
250 St Georges Terrace
Perth, Western Australia

Shareholders may also join the Meeting (and ask questions) via an online platform (refer below).

In accordance with Part 1.2AA of the Corporations Act 2001 (Cth), Orion will only dispatch hard copies of the Notice of Meeting by post to Shareholders who have specifically requested a hard copy.

The full Notice of the Annual General Meeting (**Meeting**), which sets out the Agenda, including resolutions being put to the Meeting, important voting information and an Explanatory Memorandum is available online, and can be viewed and downloaded online at www.orionminerals.com.au/investors/asx-jse-announcements/. Alternatively, the Notice of Meeting will also be available on Orion's ASX market announcements page (ASX: ORN).

Attendance in person

The Meeting will be held in person at Clayton Utz in Perth, Western Australia, as referred to above.

Attendance via online platform

Shareholders may join the Meeting (and ask questions) via an online platform, the details of which are available at www.orionminerals.com.au, however, no real-time voting rights will apply for those Shareholders joining the Meeting via the online platform. If you wish to vote, you must complete and return a directed Appointment of Proxy form in accordance with its instructions.

Proxy lodgements

Shareholders who choose to lodge a proxy should follow the instructions on their personalised Proxy Form, which must be received by Orion's share registry, as outlined on the Proxy Form and in the Notice of Meeting. Shareholders are strongly encouraged to complete and submit their Proxy Form by using one of the methods set out in the Notice of Meeting.

Please refer to the full Notice of Meeting for further important information.

Yours sincerely,

A handwritten signature in black ink, appearing to read "MB", is written over a circular stamp.

Martin Bouwmeester
Company Secretary



Orion Minerals

NOTICE OF ANNUAL GENERAL MEETING

to be held on

Tuesday, 28 November 2023 at 3:00 p.m. (AWST) at

**Clayton Utz, Level 27, QV. 1 Building, 250 St Georges Terrace, Perth, Western
Australia**

and

EXPLANATORY MEMORANDUM

This Notice of Meeting should be read in its entirety. If Shareholders are in doubt as to how they should vote, they should seek advice from their professional advisers prior to voting.

An Independent Expert's Report in respect of Resolution 5 is included in this Notice of Meeting. The Independent Expert's Report has been prepared by RSM Corporate Australia Pty Ltd (Independent Expert). The Independent Expert has determined that the proposal outlined in Resolution 5 is not fair but reasonable to the non-associated Shareholders. A copy of the Independent Expert's Report is contained in Appendix A of this Notice of Meeting. It is recommended that all Shareholders read the Independent Expert's Report in full.

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KEY DATES

Record date to determine Shareholders who are entitled to receive the Notice of Meeting	4:00 p.m. (AWST)	Friday, 20 October 2023
Posting of Notice of Meeting and announcement on SENS		Monday, 30 October 2023
Last day to trade for Shareholders on South African Share register in order to be entitled to vote at the Meeting	3:00 p.m. (AWST)	Monday, 20 November 2023
Voting record date (JSE Share register)	5:00 p.m. (SA Time)	Thursday, 23 November 2023
Voting record date (ASX Share register)	4:00 p.m. (AWST)	Friday, 24 November 2023
Deadline for lodgement of proxy forms for Meeting (JSE Share register)	3:00 p.m. (AWST)	Thursday, 23 November 2023
Deadline for lodgement of proxy forms for Meeting (ASX Share register)	3:00 p.m. (AWST)	Sunday, 26 November 2023
Annual General Meeting	3:00 p.m. (AWST) / 9:00 a.m. (SA Time)	Tuesday, 28 November 2023

TIME AND PLACE OF MEETING AND HOW TO VOTE**Venue**

The Annual General Meeting of Orion Minerals Ltd (ACN 098 939 274) will be held at **3:00 p.m. (AWST) (9:00 a.m. SA Time) on Tuesday, 28 November 2023 at:**

Clayton Utz
Level 27, QV. 1 Building
250 St Georges Terrace
Perth, Western Australia

Your Vote is Important

The business of the Annual General Meeting affects your shareholding and your vote is important.

In line with easing COVID-19 restrictions, the Board is pleased to welcome Shareholders back to the Meeting in person. Shareholders may also participate in the Meeting via teleconference or webcast, rather than attending in person. If you do not attend the Meeting in person, you must vote by way of Proxy in accordance with its instructions.

Details on how Shareholders may vote are set out below.

Attendance via online platform

Shareholders may join the Meeting (and ask questions) via an online platform, the details of which are available at www.orionminerals.com.au, however, no real-time voting rights will apply for those Shareholders joining the Meeting via the online platform.

If you wish to vote, you must complete and return a **directed** Appointment of Proxy form in accordance with its instructions. **ASX Proxy forms must be submitted to the Company's share registry by 3:00 p.m. (AWST), on Sunday 26 November 2023 online or by post and JSE proxy forms must be submitted to the Company's share registry by 3:00 p.m. (AWST), on Thursday 23 November 2023 by email or post** (see "Voting by Proxy and Corporate Representatives" below). Shareholders can lodge a proxy by following the instructions on their personalised proxy form.

Details on how to access the conference call will be available on the Company's website, www.orionminerals.com.au.

Voting in Person

To vote in person, attend the Annual General Meeting on the date and at the place set out above.

Voting by Proxy and Corporate Representatives

To vote by proxy, your ASX Proxy Form must be received by the Company by no later than **3:00 p.m. (AWST) on Sunday 26 November 2023** and your JSE Proxy Form must be received by the Company by no later than **3:00 p.m. (AWST) on Thursday 23 November 2023**. Proxy Forms can be lodged:

By mail:	Link Market Services Limited Locked Bag A14 Sydney South NSW 1235	JSE Investor Services (Pty) Ltd PO Box 4844 Johannesburg, 2000
By mobile device:	Shareholders may submit their ASX Proxy Form by scanning the QR code provided in the Proxy Form or enter the link www.linkmarketservices.com.au into a mobile device. Log in using the Security Reference Number (SRN) or Holder Identification Number (HIN) and postcode for the shareholding. To scan the code, shareholders will need a QR code reader application which can be downloaded for free on a mobile device.	Not applicable.
By facsimile:	(+61 2) 9287 0309	Not applicable.
By email:	Not applicable.	meetfax@jseinvestorservices.co.za
Online:	Shareholders may submit their ASX proxy instruction online on the Company's Share Registry by visiting www.linkmarketservices.com.au . Login to the Link website using the holding details as shown on the ASX Proxy Form. Select 'Voting' and follow the prompts to Lodge your Proxy. To use the online lodgement facility, shareholders will need their "Holder Identifier" - Securityholder Reference Number (SRN) or Holder Identification Number (HIN).	Not applicable.
By hand:	Link Market Services Limited* Level 12, 680 George Street Sydney NSW 2000	JSE Investor Services (Pty) Ltd** One Exchange Square 2 Gwen Lane, Sandown, Sandton, 2196

* during business hours Monday to Friday (9:00 a.m. - 5:00 p.m. Sydney time), subject to public health orders and restrictions.

** during business hours (Monday to Friday, 9:00 a.m. - 5:00 p.m. SA time), subject to public health orders and restrictions.

A Shareholder entitled to attend and vote at the Annual General Meeting is entitled to appoint a proxy, who need not be a Shareholder of the Company. A proxy may be an individual or a body corporate. If a Shareholder is entitled to cast two or more votes they may appoint two proxies and may specify the percentage of votes each proxy is appointed to exercise. If a Shareholder appoints two proxies and their appointment does not specify the proportion or number of the Shareholder's votes the proxy may exercise, each proxy may exercise one half of the Shareholder's votes. If a Shareholder appoints two proxies, neither may vote on a show of hands.

Shareholders and their proxies should be aware that if proxy holders vote, they must cast all directed proxies as directed, and any directed proxies which are not voted will automatically default to the Chair, who must vote the proxies as directed.

The proxy form must be signed by the Shareholder or the Shareholder's attorney. Proxies given by corporations must be executed in accordance with the Corporations Act.

The proxy form and the power of attorney (if any) under which it is signed (or a certified copy of it) must be received at the Company's Share Registry **at least 48 hours before the commencement of the Annual General Meeting or any adjournment of that Meeting.**

If a representative of a corporate Shareholder or a corporate proxy is to attend the Meeting pursuant to section 250D of the Corporations Act, a certificate of appointment of the representative must be produced prior to the admission to the Meeting. A form of certificate of appointment can be obtained from the Company's registered office.

Voting Entitlements

Pursuant to Regulation 7.11.37 of the Corporations Regulations 2001 (Cth), the Directors have determined that the shareholding of each Shareholder for the purposes of ascertaining the voting entitlements for the Annual General Meeting will be as it appears in the ASX Share register at **4:00 p.m. (AWST) on Friday 24 November 2023** or in the JSE Share register at **5:00 p.m. (SA Time) on Thursday 23 November 2023.**

Notice of Annual General Meeting

Notice is given that the Annual General Meeting of the Shareholders of Orion Minerals Ltd (**Company** or **Orion**) will be held at Clayton Utz, Level 27, QV. 1 Building, 250 St Georges Terrace, Perth, Western Australia on Tuesday, 28 November 2023 commencing at 3:00 p.m. (AWST).

The Explanatory Memorandum to this Notice of Meeting provides additional information on matters to be considered at the Annual General Meeting. The Explanatory Memorandum and the Proxy Form are part of this Notice of Meeting.

Agenda

Financial Statements and Reports – Year Ended 30 June 2023 (no resolution required)

To receive and consider the annual financial report of the Company for the financial year ended 30 June 2023 together with the Directors' report and the auditor's report.

Resolution 1 - Remuneration Report

To consider and, if thought fit, to pass the following resolution as an **ordinary resolution**:

"That, for the purposes of section 250R(2) of the Corporations Act 2001 (Cth) and for all other purposes, the Remuneration Report as contained in the Company's annual financial report for the financial year ended 30 June 2023 be adopted."

Voting Prohibition Statement: A vote on this Resolution 1 must not be, and the Company will disregard any vote that is, cast (in any capacity) by or on behalf of either of the following persons:

- (a) a member of the Key Management Personnel details of whose remuneration are included in the Remuneration Report; or
- (b) a Closely Related Party of such a member.

However, a person (the **voter**) described above may cast a vote on this Resolution 1 as a proxy if the vote is not cast on behalf of a person described above and either:

- (a) the voter is appointed as a proxy by writing that specifies the way the proxy is to vote on this Resolution 1; or
- (b) the voter is the Chair and the appointment of the Chair as proxy:
 - (i) does not specify the way the proxy is to vote on this Resolution 1; and
 - (ii) expressly authorises the Chair to exercise the proxy even if this Resolution 1 is connected directly or indirectly with the remuneration of a member of the Key Management Personnel.

Resolution 2 – Re-election of Mr Philip Kotze

To consider and, if thought fit, to pass the following resolution as an **ordinary resolution**:

"That, for the purpose of clauses 14.3 and 14.4 of the Constitution and for all other purposes, Mr Philip Kotze, a Director who was appointed by the Board on 5 April 2023, retires and being eligible, is re-elected as a Director."

Resolution 3 – Re-election of Mr Godfrey Gomwe

To consider and, if thought fit, to pass the following resolution as an **ordinary resolution**:

"That, for the purpose of clause 14.2 of the Constitution and for all other purposes, Mr Godfrey Gomwe, a Director who retires by rotation, and being eligible, is re-elected as a Director."

Resolution 4 – Approval to Grant Options & Performance Rights under the Orion Minerals Option & Performance Rights Plan

To consider and, if thought fit, to pass the following resolution as an **ordinary resolution**:

"That, for the purposes of ASX Listing Rule 7.2 (Exception 13) and for all other purposes, the grant of options and performance rights to eligible participants under the Orion Minerals Option & Performance Rights Plan as described in the Explanatory Memorandum, is approved as an exception to ASX Listing Rule 7.1."

Voting Exclusion: The Company will disregard any votes cast in favour of this Resolution 4 by or on behalf of a person who may participate in any employee incentive scheme of the Company and any Associate of that person. However, this does not apply to a vote cast in favour of this Resolution 4 by:

- (a) a person as proxy or attorney for a person who is entitled to vote on this Resolution 4, in accordance with the directions given to the proxy or attorney to vote on this Resolution 4 in that way; or
- (b) the Chair of the meeting as proxy or attorney for a person who is entitled to vote on this Resolution 4, in accordance with a direction given to the Chair to vote on this Resolution 4 as the Chair decides; or
- (c) a holder acting solely in a nominee, trustee, custodial or other fiduciary capacity on behalf of a beneficiary provided the following conditions are met:
 - (i) the beneficiary provides written confirmation to the holder that the beneficiary is not excluded from voting, and is not an associate of a person excluded from voting, on this Resolution 4; and
 - (ii) the holder votes on this Resolution 4 in accordance with directions given by the beneficiary to the holder to vote in that way.

Voting Prohibition Statement: A person appointed as a proxy must not vote, on the basis of that appointment, on this Resolution 4 if:

- (a) the proxy is either:
 - (i) a member of the Key Management Personnel; or
 - (ii) a Closely Related Party of such a member; and
- (b) the appointment does not specify the way the proxy is to vote on this Resolution 4.

However, the above prohibition does not apply if:

- (a) the proxy is the Chair; and
- (b) the appointment expressly authorises the Chair to exercise the proxy even if this Resolution 4 is connected directly or indirectly with the remuneration of a member of the Key Management Personnel.

Resolution 5 – Approval to issue of Shares to Clover Alloys upon exercise of Options and increase in relevant interest of Clover Alloys

To consider and, if thought fit, to pass the following resolution as an **ordinary resolution**:

"That, for the purpose of item 7 of section 611 of the Corporations Act and for all other purposes, approval is given for:

- (a) *the issue of up to 1,777,777,776 Shares to Clover Alloys Copper Investments (Pty) Ltd (or its nominee) upon the exercise of attaching options issued under the terms of the Placement announced on 15 March 2023; and*
- (b) *the increase in voting power of Clover Alloys Copper Investments (Pty) Ltd (or its nominee) in the Company following the issue of Shares to up to a maximum of 30.67%,*

on the further terms and conditions set out in the Explanatory Memorandum."

Voting Exclusion Statement: The Company will disregard any votes cast in favour of Resolution 5 by or on behalf of Clover Alloys or its Associates.

Independent Expert's Report: Shareholders should carefully consider the Independent Expert's Report prepared by the Independent Expert for the purposes of the Shareholder approval required under item 7 of section 611 of the Corporations Act. The Independent Expert's Report comments on the fairness and reasonableness of the transaction to the Shareholders in the Company who are not associated with Clover Alloys and has concluded that the proposal the subject of this Resolution 5 is not fair but reasonable.

Resolutions 6(a) and 6(b) – Ratification of prior issue of Shares to Webb Street and approval to issue shares to Webb Street

To consider and, if **thought** fit, to pass the following resolutions as ordinary resolutions:

- (a) *"That, for the purposes of ASX Listing Rule 7.4 and for all other purposes, Shareholders ratify the issue of 29,652,776 Shares at an issue price of ZAR18 cents per Share to Webb Street Capital (Pty) Ltd on 9 August 2023, pursuant to the Advisor Placement and Put Option Agreement between the Company and Webb Street Capital (Pty) Ltd as announced on 9 August 2023, and on the terms and conditions set out in the Explanatory Memorandum."*
- (b) *"That, for the purposes of ASX Listing Rule 7.1 and for all other purposes, approval is given for the Company to issue up to 118,611,109 Shares at an issue price of ZAR20 cents per Share to Webb Street Capital (Pty) Ltd (or its nominee), pursuant to the Advisor Placement and Put Option Agreement between the Company and Webb Street Capital (Pty) Ltd as announced on 9 August 2023, and on the terms and conditions set out in the Explanatory Memorandum."*

Resolutions 6(a) and 6(b) will be voted on as separate ordinary resolutions.

Voting Exclusion: The Company will disregard any votes cast in favour of each of Resolution 6(a) and 6(b) respectively by or on behalf a person who participated in the relevant issue of securities, or is expected to participate in or who will obtain a material benefit as a result of the proposed issue (except a benefit solely by reason of being a holder of Shares in the Company), and any Associate of that person. However, this does not apply to a vote cast in favour of Resolution 6(a) and 6(b) by:

- (a) a person as proxy or attorney for a person who is entitled to vote on the Resolution, in accordance with the directions given to the proxy or attorney to vote on that Resolution in that way; or
- (b) the Chair of the Meeting as proxy or attorney for a person who is entitled to vote on the Resolution, in accordance with a direction given to the Chair to vote on the Resolution as the Chair decides; or
- (c) a holder acting solely in a nominee, trustee, custodial or other fiduciary capacity on behalf of a beneficiary provided the following conditions are met:
 - (i) the beneficiary provides written confirmation to the holder that the beneficiary is not excluded from voting, and is not an associate of a person excluded from voting, on the Resolution; and
 - (ii) the holder votes on the Resolution in accordance with directions given by the beneficiary to the holder to vote in that way.

Resolution 7 – Approval to Issue Shares – OCP Consideration Shares

To consider and, if thought fit, to pass the following resolution as an ordinary resolution:

“That, for the purposes of ASX Listing Rule 7.1 and for all other purposes, approval is given for the Company to issue the OCP Consideration Shares to the OCP Selling Shareholders, on the terms and conditions set out in the Explanatory Memorandum.”

Voting Exclusion: The Company will disregard any votes cast in favour of this Resolution 7 by or on behalf of a person who is expected to participate in, or who will obtain a material benefit as a result of, the proposed issue (except a benefit solely by reason of being a holder of Shares in the Company) and any of their Associates. However, this does not apply to a vote cast in favour of this Resolution 7 by:

- (a) a person as proxy or attorney for a person who is entitled to vote on this Resolution 7, in accordance with the directions given to the proxy or attorney to vote on this Resolution 7 in that way; or
- (b) the Chair of the meeting as proxy or attorney for a person who is entitled to vote on this Resolution 7, in accordance with a direction given to the Chair to vote on this Resolution 7 as the Chair decides; or
- (c) a holder acting solely in a nominee, trustee, custodial or other fiduciary capacity on behalf of a beneficiary provided the following conditions are met:
 - (i) the beneficiary provides written confirmation to the holder that the beneficiary is not excluded from voting, and is not an Associate of a person excluded from voting, on this Resolution 7; andthe holder votes on this Resolution 7 in accordance with directions given by the beneficiary to the holder to vote in that way.

DATED: 26 October 2023

By Order of the Board



Martin Bouwmeester
Company Secretary

Explanatory Memorandum to accompany Notice of Annual General Meeting

This Explanatory Memorandum has been prepared to provide Shareholders with material information to enable them to make an informed decision on the business to be conducted at the Annual General Meeting.

The Directors recommend Shareholders read this Explanatory Memorandum in full before making any decision in relation to the Resolutions.

Financial Statements and Reports

The Corporations Act requires the financial report, directors' report and auditor's report to be laid before the Annual General Meeting. There is no requirement either in the Corporations Act or the Company's Constitution for Shareholders to vote on, approve or adopt these reports. Shareholders will have a reasonable opportunity at the meeting to ask questions about or make comments on these reports and on the management of the Company.

The auditor of the Company is required to attend the Annual General Meeting and will be available to take Shareholders' questions about the conduct of the audit, the preparation and content of the auditor's report, the accounting policies adopted by the Company in relation to the preparation of the financial statements and the independence of the auditor in relation to the conduct of the audit.

Prior to the meeting, Shareholders may also forward written questions to the auditor about the conduct of the audit and the content of the auditor's report. These should be emailed to info@orionminerals.com.au or mailed to the Company Secretary, PO Box 260, Collins Street West, Victoria, 8007 and may be submitted up to 5 Business Days before the Annual General Meeting. The Company is required by law to forward all questions to the auditor and the auditor is required to prepare a list of questions that the auditor considers are relevant to the conduct of the audit and the content of the auditor's report. The auditor may omit questions that are the same in substance to other questions and questions that are not received by the auditor in a timely manner. At the meeting, the Chairman will give the auditor a reasonable opportunity to answer in response to the list of questions. The list of questions, as prepared by the auditor, will be available on the Company's website, www.orionminerals.com.au, prior to the meeting. In addition, copies of the list of questions will be available at the meeting.

In accordance with the Corporations Act, the Company will not be providing Shareholders with a hard copy of the Company's annual financial report unless specifically requested to do so. Shareholders may view the Company's annual financial report on its website at www.orionminerals.com.au.

Resolution 1 - Remuneration Report

The Corporations Act requires that at a listed company's annual general meeting, a resolution that the remuneration report be adopted must be put to the shareholders. However, such a resolution is advisory only and does not bind the Directors or the Company.

The remuneration report sets out the Company's remuneration arrangements for the Directors and senior management of the Company. The remuneration report is part of the Directors' report contained in the annual financial report of the Company for the financial year.

A reasonable opportunity will be provided for Shareholders to ask questions about or make comments on the Remuneration Report at the Annual General Meeting.

Voting consequences

If, at two consecutive annual general meetings, at least 25% of the votes cast on a remuneration report resolution are voted against adoption of the remuneration report, a company is required to put to its shareholders a resolution proposing the calling of another meeting of shareholders to consider the appointment of directors of the company within 90 days of the second annual general meeting (**Spill Resolution**).

If more than 50% of votes cast are in favour of the Spill Resolution, the company must convene a shareholder meeting (**Spill Meeting**) within 90 days of the second annual general meeting.

At the Spill Meeting, all of the directors of the company who were in office when the directors' report (as included in the company's annual financial report for the most recent financial year) was approved, other than the managing director of the company, will cease to hold office immediately before the end of the Spill Meeting but may stand for re-election at the Spill Meeting.

Following the Spill Meeting those persons whose election or re-election as directors of the company is approved will be the directors of the company.

Previous voting results

At the Company's previous Annual General Meeting, the votes cast against the remuneration report considered at that meeting were less than 25%. Accordingly, the Spill Resolution is not relevant for the 2023 Annual General Meeting.

Directors' recommendation and voting intentions

The Board considers that the Company's remuneration policies are structured to provide rewards based on performance and are competitive with those in the markets in which it operates. On that basis, and with each Director acknowledging their personal interest in the resolution, the Board recommends that Shareholders vote in favour of Resolution 1.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 1.

Resolution 2 – Re-election of Mr Philip Kotze**Background**

Clause 14.4 of the Constitution allows the Directors to appoint at any time a person to be a Director to either fill a casual vacancy or as an addition to the existing Directors, but only where the total number of Directors does not at any time exceed the maximum number specified by the Constitution.

Any Director so appointed holds office only until the next annual general meeting of members and is eligible for re-election at that meeting but, will not be taken into account in determining the Directors who are to retire by rotation at that meeting. Mr Philip Kotze, who was appointed on 5 April 2023, retires from office and being eligible seeks re-election in accordance with clause 14.3 and clause 14.4 of the Constitution.

Refer to the Company's full year statutory accounts announced to the ASX on 29 September 2023 for Mr Kotze's biographical details.

Directors' recommendation and voting intentions

The Directors other than Mr Kotze recommend that Shareholders vote in favour of Resolution 2. Each Director intends to vote the Shares they control in favour of Resolution 2. Mr Kotze makes no recommendation.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 2.

Resolution 3 – Re-election of Mr Godfrey Gomwe

Clause 14.2 of the Constitution requires that one third of the Company's Directors (or the number nearest one-third, rounded upwards in case of doubt) must retire at each Annual General Meeting, provided always that no Director (except a Managing Director) shall hold office for a period in excess of 3 years, or until the third Annual General Meeting following his or her appointment, whichever is the longer, without submitting himself or herself for re-election. The Director who has been the longest in office since his or her last election is ordinarily required to retire by rotation. In determining the number of Directors to retire, no account is to be taken of the Managing Director or a Director who only holds office until the next annual general meeting pursuant to clause 14.4 of the Constitution.

Mr Godfrey Gomwe was last re-elected at the Company's 2021 Annual General Meeting and as such, is retiring in accordance with clause 14.2 of the Constitution.

The Company currently has two Directors (excluding the Managing Director and Mr Philip Kotze) and accordingly Mr Godfrey Gomwe (a Director longest in office since last being re-elected), is retiring in accordance with clause 14.2 of the Constitution.

A Director who retires by rotation under clause 14.2 of the Constitution is eligible for re-election. Mr Godfrey Gomwe retires by rotation and offers himself for re-election. He was initially appointed a Director on 16 April 2019, has continuously served as a Director since his appointment and was last re-elected on 25 November 2021. Mr Godfrey Gomwe is considered an independent director.

Refer to the Company's full year statutory accounts announced to the ASX on 29 September 2023 for Mr Godfrey Gomwe's biographical details.

Directors' recommendation and voting intentions

The Directors other than Mr Godfrey Gomwe recommend that Shareholders vote in favour of Resolution 3. Each Director intends to vote the Shares they control in favour of Resolution 3. Mr Gomwe makes no recommendation.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 3.

Resolution 4 – Approval to Grant Options & Performance Rights under the Orion Minerals Option & Performance Rights Plan**Background**

The Board has established the Orion Minerals Option & Performance Rights Plan (**Plan**) to provide an incentive to employees by enabling them to participate in the Company's development and growth. Directors of the Company are not eligible to participate in the Plan. The Board has previously implemented a plan with similar terms as the Plan, which was last approved by Shareholders at the 2020 Annual General Meeting. As of the date of this Meeting, more than three years would have lapsed since Shareholder approval was obtained in 2020. In addition, the terms of the Plan have been subject to certain adjustments to comply with the new employee share scheme regime introduced under the Corporations Act. Accordingly, the Company seeks Shareholder approval to re-adopt the Plan, and the issue of securities under that Plan, for the purposes set out in this Explanatory Memorandum. The terms of the Plan (as amended) are summarised below.

The Plan:

- offers long-term incentives to employees, in the form of options and performance rights over Shares; and

- aims to align rewards for performance with the achievement of the Company's strategic objectives for the financial year 2024 and beyond.

Purpose of Resolution 4

Resolution 4 seeks Shareholder approval for future issues of securities under the Plan for the purposes of ASX Listing Rule 7.2 (Exception 13).

ASX Listing Rule 7.1 requires shareholder approval for an issue of equity securities (which includes options and performance rights) if, over a 12 month period, the number of equity securities issued is more than 15% of the number of ordinary shares on issue at the start of that 12 month period.

ASX Listing Rule 7.2 (Exception 13) provides that an issue of equity securities under an employee incentive scheme does not detract from the available 15% limit under ASX Listing Rule 7.1 if shareholders approved the issue of securities under the employee incentive scheme as an exception to ASX Listing Rule 7.1 no more than three years before the date of issue. Accordingly, approval is sought under ASX Listing Rule 7.2 (Exception 13) for the grant of options and performance rights under the Plan, so that such grants do not detract from the 15% limit.

If Shareholder approval is obtained for the purposes of Listing Rule 7.2 (Exception 13), the Company will be able to issue options and performance rights under the Plan (subject to the maximum number of options and performance rights to be issued under the Plan as set out below) to eligible participants over a period of three years without using the Company's 15% annual placement capacity under Listing Rule 7.1.

If Shareholder approval is not obtained, the Company will be able to proceed with the issue of options and performance rights under the Plan (again, subject to the maximum number of options and performance rights to be issued under the Plan as set out below) to eligible participants, but any issue of options or performance rights will reduce, to that extent, the Company's capacity to issue securities without Shareholder approval under Listing Rule 7.1 for the 12 month period following the issue of the options or performance rights.

Information required for the purpose of Listing Rule 7.2 (Exception 13)

The following information is provided in accordance with Listing Rule 7.2 (Exception 13):

Summary of the Orion Minerals Option & Performance Rights Plan

The following is a summary of the key terms of the Plan:

- Under the Plan, the Board may offer options and performance rights to employees of the Company and its related bodies corporate, or such other persons as the Board determines.
- Options and performance rights offered under the Plan are subject to certain vesting conditions which must be satisfied or waived by the Company before the options or rights will vest.
- On exercise of a vested option or on vesting of a performance right, the Company will deliver a fully paid ordinary share to the Plan participant. Performance rights do not need to be exercised and shall become vested upon written notice by the Company to the participant. Shares can be delivered by either new issue or on-market purchase.
- The exercise price (if any) of the options will be an amount determined by the Board specified at the time an option is granted. No amount is payable upon vesting of a performance right, unless the Board determines otherwise at the time the performance right is granted.
- The Board will have the discretion to determine the terms and conditions of a grant of options or performance rights, including:
 - (a) vesting conditions which must be met before the options can be exercised or the performance rights are vested;
 - (b) restrictions on the disposal of or dealing in a Share delivered upon the exercise of an option or in respect of a vested performance right; and
 - (c) whether the Shares to be delivered upon the exercise of an option or in respect of a vested performance right are to be held by a trustee for the benefit of the participant. As at the date of this approval, the Board has not established a trust for these purposes.
- The maximum term of options and performance rights granted under the Plan will be 7 years, or another period specified by the Board at the time of grant.
- When options or performance rights are granted, the Board may specify the circumstance in which they will expire (whether vested or unvested), including in relation to the cessation of employment.
- Unless the options have been exercised or the performance rights have vested and the Shares delivered before the relevant record date, a Plan participant cannot participate in new issues of securities to holders of Shares, in relation to those options or performance rights.
- If the Company makes a pro rata bonus issue of Shares or other securities to holders of Shares, and options have not been exercised or rights have not vested, then the number of Shares the subject of the options or rights will be increased by the number of securities that the participant would have received if the options had been exercised or the rights had vested before the record date for the bonus issue.

- If the Company makes a pro rata issue of securities (other than a bonus issue) to holders of Shares, and an amount is payable on the exercise of options or in respect of vested performance rights, the exercise price will be changed in accordance with the ASX Listing Rules. If no amount is payable on the exercise of the options or in respect of vested performance rights, the number of options or performance rights held by a participant may be adjusted in such manner as the Board determines, subject to law.
- In the event of a capital reorganisation, the number of Shares the subject of each option or performance right will be adjusted in accordance with the ASX Listing Rules.
- Options and performance rights will be forfeited if the applicable vesting conditions are not satisfied, or if the participant commits any act of fraud, defalcation, gross misconduct or a serious breach of their employment or appointment terms in relation to the Company or a related body corporate.
- If control of the Company changes, the Board has the discretion to resolve to (i) waive any vesting conditions which have not been satisfied, or (ii) provide that all or a specified number of a participant's options may be exercised for a period specified by the Board and, if not exercised within that period, will lapse.
- The Company may appoint a trustee for the purposes of the trustee transferring Shares to participants in accordance with the Plan and the Board may do all things necessary for the establishment, administration, operation and funding of such a trust.
- The Board has certain discretions under the Plan. In particular, the Board may amend the rules of the Plan or waive vesting conditions or disposal restrictions.

A copy of the Rules of the Plan is available on request from the Company's registered office.

Securities issued under the Plan

The previous plan was last approved by Shareholders on 20 November 2020. As at the date of this Notice, a total of 118 million options have been issued under the plan since that approval, as follows:

- On 1 December 2020, the Company issued 7 million options to employees and consultants of the Company; and
- On 12 May 2023, the Company issued 111 million options to employees and consultants of the Company.

Maximum number of securities proposed to be issued under the Plan

The maximum number of equity securities proposed to be issued under the Plan following Shareholder approval is 250 million options to employees and consultants of the Company.

This maximum is not intended to be a prediction of the actual number of options or performance rights to be issued under the Plan but is specified for the purposes of setting a ceiling on the number of options and performance rights approved to be issued under and for the purposes of Listing Rule 7.2 (Exception 13(b)). Once that number is reached, any additional issues of options or performance rights under the Plan would not have the benefit of Exception 13 without a fresh Shareholder approval.

Voting exclusion statement

A voting exclusion statement is included with the Resolution.

Directors' recommendation and voting intentions

The Directors recommend that Shareholders vote in favour of Resolution 4. Each Director intends to vote the Shares they control in favour of Resolution 4.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 4.

Resolution 5 – Approval for the proposed issue of Shares to Clover Alloys upon exercise of Options and increase in voting power of Clover Alloys

Background

On 15 March 2023 the Company announced a \$13 million capital raising to sophisticated and professional investors as part of a broader strategic equity funding package that has resulted in the introduction of Clover Alloys Copper Investments (Pty) Ltd (**Clover Alloys**) as a new cornerstone investor group.

The capital raising was conducted via a two-tranche placement to sophisticated and professional investors, pursuant to Section 708A of the Corporations Act (**Placement**) and comprised the issue of approximately 882 million fully paid ordinary shares (**Shares**) at an issue price of \$0.015 (being ZAR18 cents) per Share and the issue of four free attaching unlisted options for every Share issued (approximately 3.53 billion unlisted options at an exercise price of \$0.017 (being ZAR20 cents) and an expiry date of 30 November 2023) (**Options**). Key terms of the Placement are set out in the Company's ASX announcement dated 15 March 2023.

On 31 March 2023, the Company announced the issue of Placement One Shares to investors, which included the issue of approximately 440 million Shares to the value of approximately \$6.7 million (being ZAR80 million) to Clover Alloys.

The issue of Shares and Options under Placement Two of the Placement and the issue of Options under Placement One of the Placement was subject to receipt of Shareholder approval, which was sought and obtained at the general meeting

held on Friday 19 May 2023.

On 23 May 2023, following receipt of Shareholder approval for the purposes of Listing Rule 7.1, the Company announced the issue of Options pursuant to Placement One of the Placement, which included the issue of approximately 1.7 billion Options to Clover Alloys (**Clover Options**).

As at the date of this Notice, and following the issue of the Placement One Shares, Clover has a current voting power of 8.99%. Following the exercise of the Clover Options, and assuming no other Options are exercised, the voting power of Clover Alloys in the Company will increase to up to 30.67%. As such, the issue of Shares to Clover Alloys (or its nominee) upon exercise of the Clover Options must be approved by Shareholders not associated with Clover Alloys pursuant to item 7 of section 611 of the Corporations Act.

Corporations Act prohibition

Section 606 of the Corporations Act prohibits a person acquiring a relevant interest in issued voting shares in a listed company if, as a result of the acquisition that person's or someone else's voting power in the company increases from 20% or below to more than 20%, or from a starting point that is above 20% and below 90%.

Generally, under section 608 of the Corporations Act, a person has a relevant interest in securities if they:

- (a) are the holder of the securities; or
- (b) have power to exercise, or control the exercise of, a right to vote attached to securities; or
- (c) have power to dispose of, or control the exercise of a power to dispose of, the securities.

It does not matter how remote the relevant interest is or how it arises. If two or more people can jointly exercise one of these powers, each of them is taken to have that power.

The voting power of a person is determined under section 610 of the Corporations Act. It involves calculating the number of voting shares in the company in which the person and the person's Associates have a relevant interest.

A person (**second person**) will be an "Associate" of the other person (**first person**) if:

- (a) the first person is a body corporate and the second person is:
 - (i) a body corporate the first person controls;
 - (ii) a body corporate that controls the first person; or
 - (iii) a body corporate that is controlled by an entity that controls the first person;
- (b) the second person has entered or proposes to enter into a relevant agreement with the first person for the purposes of controlling or influencing the composition of the company's board or the conduct of the company's affairs; and
- (d) the second person is a person with whom the first person is acting, or proposing to act, in concert in relation to the company's affairs.

Exceptions to the section 606 prohibition

There are various exceptions to the prohibition in section 606 of the Corporations Act. Section 611 of the Corporations Act contains a table setting out circumstances in which acquisitions of relevant interests are exempt from the prohibition. Item 7 of the table in section 611 of the Corporations Act provides an exemption where the acquisition is approved by a resolution passed at a general meeting of the company before the acquisition is made. The parties involved in the acquisition and their Associates are not able to cast a vote on the resolution. An independent expert is required to report on the fairness and reasonableness of the transactions being put to shareholders for approval for the purpose of item 7 of section 611 of the Corporations Act.

Shareholder approval sought

Shareholder approval is being sought in accordance with item 7 of section 611 of the Corporations Act because if Clover Alloys exercised all of the Clover Options and no other Options or other convertible securities on issue were exercised this would have the effect of increasing the voting power of Clover Alloys from 8.99% to up to 30.67% as illustrated below.

Pursuant to Listing Rule 7.2 (Exception 8) where an issue of securities is approved pursuant to item 7 of section 611 of the Corporations Act, shareholder approval is not separately required for the purposes of Listing Rule 7.1.

Information required by item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74

The following paragraphs set out information required to be provided to Shareholders under item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74. Shareholders are also referred to the Independent Expert's Report set out in Appendix A to this Notice.

(a) Identity

Upon exercise of the Clover Options, the Shares will be issued to Clover Alloys.

Clover Alloys does not have any associates who hold a relevant interest in shares in Orion.

(b) Shareholding and voting power

As at the date of this Notice, Clover Alloys currently holds 511,208,440 Shares and has a current voting power of 8.99%. Following the exercise of the Clover Options, the voting power of Clover Alloys will increase to up to 30.67% (assuming no other Options or other convertible securities on issue are exercised).

The effect of the exercise of Clover Options on the voting power of Clover Alloys is summarised in the following table, which outlines:

- (i) **As at the date of this Notice** - the shareholding and voting power of Clover Alloys in the Company as at the date of this Notice, but prior to the issue of any Shares pursuant to the exercise of the Clover Options;
- (ii) **Shareholder approval obtained, all Clover Options are exercised and other Options are exercised to varying extents** - the maximum extent of the increase in, and total, shareholding and voting power of Clover Alloys in the Company following the issue of Shares to Clover Alloys on exercise of the Clover Options and assuming either 25%, 50% or 100% of the other Options are exercised; and
- (iii) **Shareholder approval is not obtained, and 100% of other Options are exercised** - the maximum extent of the increase in, and total, shareholding and voting power of Clover Alloys in the Company, assuming that Shareholder approval is not obtained, but 100% of the other Options are exercised.

	Maximum increase (No. of Shares) of Clover Alloys	Total Shares held (or to be held) by Clover Alloys	Total Shares on issue in the Company	Maximum increase (%) of Clover Alloys	% holding / voting power of Clover Alloys
As at the date of this Notice	N/A	511,208,440	5,686,701,348	N/A	8.99%
Shareholder approval obtained, all Clover Options are exercised and:					
(a) 25% of other Options are exercised	1,777,777,776	2,288,986,216	7,898,323,357	19.99%	28.98%
(b) 50% of other Options are exercised	1,777,777,776	2,288,986,216	8,332,167,590	18.48%	27.47%
(c) 100% of other Options are exercised	1,777,777,776	2,288,986,216	9,199,856,056	15.89%	24.88%
Shareholder approval is not obtained, no Clover Options are exercised and 100% of other Options are exercised	N/A	511,208,440	7,422,078,280	N/A	6.89%

(c) **Reasons for the proposed issue of Shares**

Pursuant to the terms of the Placement, Clover Alloys is entitled to exercise some or all of the Clover Options at any time prior to the expiry date (30 November 2023).

(d) **Expected timing of the proposed issue of Shares**

If Shareholder approval is obtained, the Shares will be issued to Clover Alloys on or about 13 December 2023.

(e) **Material terms of the proposed issue of Shares**

As announced on 15 March 2023, the Placement participants were offered four free attaching unquoted options for each Share issued under the Placement, exercisable at \$0.017 (being ZAR20 cents) and expiring on 30 November 2023. The issue of all Options was subject to receipt of Shareholder approval, which was sought and obtained at the general meeting held on Friday 19 May 2023. Upon exercise of the Options, each optionholder is entitled to receive 1 Share in the Company.

(f) **Other relevant agreements**

There is no other relevant agreement between the Company and Clover Alloys that is conditional on (or directly or indirectly depends on) Shareholder approval of the issue of Shares. However, as previously disclosed, Clover Alloys has the right to nominate a Director to the Board of the Company, and has nominated Mr Philip Kotze to the Orion Board as its nominee director.

(g) Future intentions of Clover for the Company

Clover Alloys has informed the Company that its intentions mentioned in this section are based on the facts and information regarding the Company, its business and the general business environment which are known to Clover Alloys as at the date of this Notice, which is limited to publicly available information. Any future decisions regarding these matters will only be made based on all material information and circumstances at the relevant time. Accordingly, the statements set out below are statements of current intention only which, if circumstances change or new information becomes available in the future, could change accordingly.

As announced on 15 March 2023, Clover Alloys was offered a seat on the Board of the Company following completion of the capital raising. Philip Kotze, CEO of Clover Alloys, was appointed as a non-executive Director of the Company on 5 April 2023. There are no other changes to the composition of the Company's Board currently proposed by Clover Alloys or the Company.

Other than as disclosed above or elsewhere in this Explanatory Memorandum, Clover Alloys:

- (i) has no current intention of making any significant changes to the existing business of the Company;
- (ii) has no current intention to inject further capital into the Company other than as contemplated in this Notice and through participation in respect of its rights under the Placement;
- (iii) has no current intention of making changes regarding the future employment of the Company's present employees;
- (iv) does not currently intend for any assets to be transferred between the Company and itself or any person associated with it;
- (v) has no current intention to otherwise redeploy the fixed assets of the Company; and
- (vi) has no current intention to significantly change the Company's existing financial or dividend policies,

if the proposed issue of Shares is approved by Shareholders.

The Company understands that Clover Alloys supports the Board's current strategy for the Company.

(h) Directors' interests in the proposed issue of Shares

The current Directors of the Company are Denis Waddell, Errol Smart, Mark Palmer, Godfrey Gomwe and Philip Kotze.

Denis Waddell, Errol Smart, Mark Palmer and Godfrey Gomwe do not have a material personal interest in the proposed issue of Shares to Clover Alloys, or in the outcome of Resolution 5.

Philip Kotze does not have a material personal interest in the proposed issue of Shares to Clover Alloys or in the outcome of Resolution 5. However, the Company does not consider Philip Kotze to be independent, on the basis that he is a representative of Clover Alloys.

(i) Details of any person who is intended to become a Director if Resolution 5 is passed

No person will be appointed as a Director of the Company if Resolution 5 is passed.

(j) Further background information on Clover Alloys

Clover Alloys is a privately owned South African 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 of significant strategic value to the Company as it advances the development of its Prieska Copper Zinc Mine and Okiep Copper Project in South Africa towards production.

Independent Expert's Report

Accompanying this Notice is an Independent Expert's Report prepared by the Independent Expert. The Independent Expert's Report assesses whether the issue of Shares to Clover Alloys upon exercise of the Clover Options and the increase in the voting power of Clover Alloys to a maximum of 30.67%, pursuant to Resolution 5, is fair and reasonable to the Shareholders not associated with Clover Alloys.

The report concludes that the issue of Shares to Clover Alloys upon exercise of the Clover Options, and the resultant increase in the voting power of Clover Alloys to a maximum of 30.67%, pursuant to Resolution 5, is not fair but reasonable to the Shareholders not associated with Clover Alloys.

Please refer to the Independent Expert's Report at Appendix A for further details and in particular the advantages and disadvantages of the issue of Shares to Clover Alloys, the subject of Resolution 5. This assessment is designed to assist all Shareholders in reaching their voting decision. It is recommended that all Shareholders read the Independent Expert's Report in full.

Directors' recommendation and voting intentions

The Directors other than Mr Philip Kotze recommend that Shareholders vote in favour of Resolution 5. Each Director intends to vote the Shares they control in favour of Resolution 5. Mr Kotze makes no recommendation.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 5.

Resolutions 6(a) and 6(b) - Issue of Shares to Webb Street**Background**

The Company engaged Webb Street Capital (Pty) Ltd (**Webb Street**) to provide professional services to the Company in South Africa over recent years, including in relation to the Placement (**Services**). As consideration for the Services, the Company agreed to pay Webb Street a fee of 5% of the proceeds raised from South African investors introduced by Webb Street to the Placement (including upon exercise of Options issued under the Placement) (**Success Fee**), in accordance with the terms of an engagement letter (**Services Engagement Letter**). To date, Webb Street has issued an invoice for ZAR5,337,500, representing 5% of amounts received by the Company from the issue of Shares to South African investors introduced by Webb Street under Tranche 1 and Tranche 2 of the Placement, and 5% of amounts received by the Company upon the exercise of Options by South African investors introduced by Webb Street under the Placement (**Incurred Success Fee**). Further fees of up to ZAR23,722,222 may be payable by the Company to Webb Street, in the event that any further Options issued to South African investors introduced by Webb Street under the Placement are exercised.

Pursuant to a separate Advisor Placement and Put Option Agreement, Webb Street has agreed to provide further support to the Company by:

- (a) agreeing to subscribe for 29,652,776 Shares at an issue price of ZAR18 cents per Share, representing a subscription amount of ZAR5,337,500 (**Advisor Placement**); and
- (b) granting a put option to the Company to allow (but not require) the Company to require Webb Street to subscribe for up to 118,611,109 Shares in the Company at an issue price of ZAR20 cents per Share up to a maximum subscription amount of the lower of:
 - i. ZAR23,722,222; or
 - ii. the value of the Success Fee payable by the Company to the Advisor pursuant to clause 6.3(a)(ii) of the Services Engagement Letter (**Put Option**).

The Company and Webb Street agreed that the obligation for Webb Street to pay the subscription amount in respect of Shares issued pursuant to the Advisor Placement and Put Option Agreement could be set off against amounts payable by the Company under the Services Engagement Letter, including the Incurred Success Fee.

On 9 August 2023, the Company announced it had issued 29,652,776 Advisor Placement Shares to Webb Street pursuant to the Advisor Placement and Put Option Agreement, with the subscription price payable by Webb Street for the Advisor Placement Shares (being ZAR5,337,500) set off against the Incurred Success Fee payable by the Company under the Services Engagement Letter.

As at the date of this Notice, the Company may elect to require Webb Street to subscribe for up to an additional 118,611,109 Shares under the Advisor Placement and Put Option Agreement (**Put Option Shares**).

Resolution 6(a) - Ratification of Prior Issue of Shares to Webb Street**Background**

Resolution 6(a) seeks Shareholder ratification pursuant to ASX Listing Rule 7.4 for the issue of Advisor Placement Shares to Webb Street.

Broadly speaking, and subject to a number of exceptions, ASX Listing Rule 7.1 limits the amount of equity securities that a listed company can issue without the approval of its shareholders over any 12 month period to 15% of the fully paid ordinary securities it had on issue at the start of that period.

The issue of Advisor Placement Shares does not fit within any of these exceptions and, as it has not yet been approved by the Company's Shareholders, it effectively utilises part of the 15% limit in ASX Listing Rule 7.1, reducing the Company's capacity to issue further equity securities without Shareholder approval under ASX Listing Rule 7.1 for the 12 month period following the Issue Date.

ASX Listing Rule 7.4 allows the shareholders of a listed company to approve an issue of equity securities after it has been made or agreed to be made (provided that the previous issue did not breach ASX Listing Rule 7.1). If they do, the issue is taken to have been approved under ASX Listing Rule 7.1 and so does not reduce the company's capacity to issue further equity securities without shareholder approval under that ASX Listing Rule.

The Company wishes to retain as much flexibility as possible to issue additional equity securities into the future without having to obtain Shareholder approval for such issues under ASX Listing Rule 7.1. To this end, Resolution 6(a) seeks Shareholder approval for the issue of Advisor Placement Shares under and for the purposes of ASX Listing Rule 7.4.

If Resolution 6(a) is passed, the Advisor Placement Shares will be excluded in calculating the Company's 15% limit in ASX Listing Rule 7.1, effectively increasing the number of equity securities it can issue without Shareholder approval over the 12 month period following the Issue Date. If Resolution 6(a) is not passed, the Advisor Placement Shares will be included in calculating the Company's 15% limit in ASX Listing Rule 7.1, effectively decreasing the number of equity securities it can issue without Shareholder approval over the 12 month period following the relevant Issue Date.

Technical information required by ASX Listing Rule 7.5

Pursuant to and in accordance with ASX Listing Rule 7.5, the following information is provided in relation to the Advisor Placement Shares:

- (a) the Shares were issued to Webb Street. Webb Street is not a related party, or Associate of any related parties, of the Company;
- (b) the Shares were issued on 9 August 2023;
- (c) the Shares issued were all fully paid ordinary shares in the capital of the Company issued on the same terms and conditions as the Company's existing Shares;
- (d) as noted above, the subscription price payable by Webb Street for the Shares was set-off against amounts owing by the Company to Webb Street for the Incurred Success Fee. The Shares were issued at a deemed issue price of ZAR18 cents per Share;
- (e) as noted above, the subscription price payable by Webb Street for the Shares was set-off against amounts owing by the Company to Webb Street for the Incurred Success Fee under the Services Engagement Letter;
- (f) the Shares were issued pursuant to the Advisor Placement and Put Option Agreement, the material terms of which are summarised as follows:
 - i. Webb Street agreed to subscribe for 29,652,776 Shares at an issue price of ZAR18 cents per Share and to grant to the Company a put option to allow (but not require) the Company to require Webb Street to subscribe for up to 118,611,109 Shares at an issue price of ZAR20 cents per Share. The subscription price may be set-off against amounts owing by the Company to Webb Street pursuant to the Services Engagement Agreement.
 - ii. The maximum subscription amount is determined by the lower of ZAR23,722,222 or the value of the Success Fee payable by the Company pursuant to the Services Engagement Letter (**Put Option Amount**). The Company may issue multiple Put Option Notices, subject to the aggregate price payable not exceeding the Put Option Amount.
 - iii. If the issue of Shares requires approval from the Financial Surveillance Department of the South African Reserve Bank (**SARB**), the Company is required to take reasonable steps to promptly obtain such approval. If SARB approval and/or Shareholder approval is required for the issue of Shares and it is not obtained by 31 March 2024, Webb Street is not required to subscribe for the Shares and the Put Option will terminate.
 - iv. In addition, in respect of any Put Option Shares, if the Company is unable or does not elect to agree to issue such Shares pursuant to Listing Rule 7.1 at the time of exercise of the Put Option, the Company must as soon as reasonably practicable convene a meeting of the Company's Shareholders to seek any necessary Shareholder or regulatory approval required for the issue of Put Option Shares to Webb Street.
 - v. If the Company is unable to provide a cleansing notice in accordance with section 708A(5)(e) of the Corporations Act, Webb Street is not obliged to subscribe for the relevant Shares, however, Webb Street may subscribe for the Shares, in which case the Company is not obliged to issue a cleansing notice, but Webb Street may not sell the Shares other than to certain exempt investors to whom disclosure is not required to be made.
 - vi. The agreement terminates on 30 April 2024, unless extended by the parties. The Company may terminate the agreement immediately if the Company terminates the Service Engagement Letter.
 - vii. Other material terms of the Advisor Placement and Put Option Agreement are summarised above in the "Background" section.
- (g) a voting exclusion statement is included with the Resolution.

Directors' recommendation and voting intentions

The Directors recommend that Shareholders vote in favour of Resolution 6(a). Each Director intends to vote the Shares they control in favour of Resolution 6(a).

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 6(a).

Resolution 6(b) - Approval to Issue Shares to Webb Street

Resolution 6(b) seeks Shareholder approval under and for the purposes of ASX Listing Rule 7.1 for the issue of up to 118,611,109 Put Option Shares to Webb Street (or its nominee) pursuant to the terms of the Advisor Placement and Put Option Agreement, if the Put Option is exercised by the Company. As at the date of this Notice, the Put Option has not been exercised in respect of, and there is currently no agreement to issue, the Put Option Shares.

A summary of ASX Listing Rule 7.1 is set out in the Background to Resolutions 7(a) above. The proposed issue of the Put Option Shares does not fall within any of the exceptions to ASX Listing Rule 7.1 and the Company does not have sufficient placement capacity remaining under that ASX Listing Rule to accommodate the proposed issue. It therefore requires the approval of Shareholders under ASX Listing Rule 7.1.

The effect of Resolution 6(b) will be to allow the Company to issue the Put Option Shares to Webb Street during the period of 3 months after the Meeting (or a longer period, if allowed by ASX), without using the Company's 15% annual placement capacity.

Technical information required by ASX Listing Rule 7.3

Pursuant to and in accordance with ASX Listing Rule 7.3, the following information is provided in relation to the proposed issue of Put Option Shares:

- (a) the Shares will be issued to Webb Street (or its nominee). Webb Street is not a related party, or Associate of any related parties, of the Company;
- (b) the maximum number of Shares to be issued is 118,611,109;
- (c) the Shares will be fully paid ordinary shares in the capital of the Company issued on the same terms and conditions as the Company's existing Shares;
- (d) the Shares are intended to be issued on or around 13 December 2023, but will be issued no later than 3 months after the date of the Meeting (or such later date to the extent permitted by any ASX waiver or modification of the ASX Listing Rules);
- (e) as noted above, the subscription price payable by Webb Street for the Shares may be set-off against amounts owing by the Company to Webb Street for any remaining Success Fee that becomes payable to Webb Street. If the set-off is applied, the Shares will be issued at a deemed issue price of ZAR20 cents per Share;
- (f) if the right of set-off is not applied to the price payable for such Shares, the funds raised will be applied principally to progress the development of the Company's Prieska Copper-Zinc Mine and otherwise for general working capital purposes. If the right of set-off is applied, no amounts will be raised by the Company;
- (g) the Shares will be issued pursuant to the Advisor Placement and Put Option Agreement, the material terms of which are summarised above in the Technical Information required for Resolution 6(a); and
- (h) a voting exclusion statement is included with the Resolution.

Directors' recommendation and voting intentions

The Directors recommend that Shareholders vote in favour of Resolution 6(b). Each Director intends to vote the Shares they control in favour of Resolution 6(b).

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 6(b).

Resolution 7 – Approval to Issue Shares – OCP Consideration Shares**Background**

As set out in the announcements by the Company on 2 February 2021 and 2 August 2021, the Company exercised a restructured option to directly acquire the mineral rights and other assets (**OCP Sale Assets**) held by Southern African Tantalum Mining (Pty) Ltd (**SAFTA**), Nababeep Copper Company (Pty) Ltd (**NCC**) and Bulletrap Copper Co (Pty) Ltd (**BCC**) (collectively the **Target Entities**), rather than acquire the shares in the Target Entities themselves (**OCP Transaction**).

It is intended that the OCP Sale Assets will be acquired by two newly formed Orion subsidiary companies, namely New Okiep Exploration Company (Pty) Ltd (initially 100% Orion-owned) and the New Okiep Mining Company (Pty) Ltd (initially 56.3% owned by Orion and 43.7% owned by Industrial Development Corporation (**IDC**)). Both of these entities will, to the extent required, introduce empowerment partners in compliance with the Mining Charter 2018.

Transaction Agreements

In order to record the terms and conditions pursuant to which Orion would acquire the OCP Sale Assets, on or about 31 July 2021, Orion entered into:

- a separate Asset Acquisition Agreement with, amongst others, each of the Target Entities and their respective shareholders (collectively, the **OCP Shareholders**); and
- a Transaction Cooperation Agreement with the Target Entities and the OCP Shareholders,

(collectively, the **Transaction Agreements**).

In terms of the Transaction Agreements:

- the aggregate purchase consideration payable by the Company (or its subsidiaries) to the Target Entities (and which thereafter will be immediately distributed to the OCP Shareholders) for the OCP Sale Assets is ZAR76.5 million (approximately \$7.1 million) (**OCP Purchase Consideration**);
- the OCP Purchase Consideration is to be settled as to ZAR18.4 million in cash and ZAR58.1 million in Shares (**OCP Share Consideration**);
- the issue price of the Shares in settlement of the OCP Share Consideration will be equal to the 30-day VWAP of the Shares traded on the ASX and the JSE in the period ending on the date that is the earlier of:
 - the closing date of the applicable part of the relevant OCP Transaction (or, in the case of OCP Purchase Consideration being satisfied as a Pre-Payment settled in Shares, the date immediately prior to the date of issue of the OCP Consideration Pre-Payment Shares); and
 - 30 days after the date on which the last specified mineral right is granted in respect of the Target Entity that is the subject of that transaction,

(Issue Price);

- the Company will pre-pay a portion of the OCP Purchase Consideration (**Pre-Payment**) to the Target Entities (and which thereafter will be immediately distributed to the OCP Selling Shareholders) with effect from the date that is 90 days after the date on which the last mineral right is granted in respect of the Target Entity that is the subject of that transaction until the closing date of the OCP Transaction concerned. The Pre-Payment amount is currently ZAR350,000 in respect of the SAFTA transaction and ZAR250,000 in respect of each of the NCC transaction and the BCC transaction and payable in cash, however, the Company may elect (at its discretion) to pre-pay a higher amount. Should the Company elect (at its discretion) to increase the amount of the Pre-Payment, such increased Pre-Payment may be satisfied in cash or by way of an issue of Shares (**OCP Consideration Pre-Payment Shares**), calculated at the Issue Price. The aggregate value of the Pre-Payments is currently deducted from the OCP Share Consideration, in accordance with the formula set out below; and
- in addition to the OCP Purchase Consideration, the OCP Selling Shareholders will be entitled to a conditional deferred payment (**Agterskot**). The Agterskot will be calculated on the basis of the number of tonnes of Mineral Resources published by Orion in relation to the Mineral Projects in compliance with the JORC Code, estimated with reference to the relevant cut-off grade, less the tonnes of the baseline JORC Code Mineral Resource.

For additional information on the salient details of the Transaction Agreements, refer to Orion's ASX / JSE announcement, released on 2 August 2021.

In accordance with the Transaction Agreements, and subject to Shareholder approval, the Company intends to issue the OCP Share Consideration to the Target Entities (and which thereafter will be immediately distributed to the OCP Selling Shareholders, in proportion to their shareholding in each of the Target Entities) at the Issue Price and otherwise in accordance with the description provided above. Although the Shareholders previously provided their approval for the issue of the OCP Consideration Shares (as defined below) at the General Meeting held on 19 May 2023, as it has been more than 3 months since the date of that meeting, approval from the Shareholders is being re-sought.

OCP Consideration Shares

The number of Shares to be issued to the Target Entities (and which thereafter will be immediately distributed to the OCP Selling Shareholders) in settlement of the OCP Share Consideration (including any Pre-Payment to be satisfied by way of issue of OCP Consideration Pre-Payment Shares) under the Transaction Agreements (together, **OCP Consideration Shares**) will be determined with reference to the following formula:

$$\frac{\text{OCP Share Consideration – Pre-Payments (settled in cash)}}{\text{Issue Price}}$$

The following table shows the number of OCP Consideration Shares to be issued to the OCP Selling Shareholders, assuming a Consideration Share Issue Price of \$0.017 and the current exchange rate of 1 ZAR = AUD0.083:

Purchase Price (ZAR)	Number of Consideration Shares to be issued	% Shareholding in the Company ¹
ZAR51.8 million	253 million	4.26%

If any OCP Consideration Pre-Payment Shares are issued by way of Pre-Payment, the number of OCP Consideration Shares to be issued on closing of the relevant OCP Transaction will be reduced, and shall be calculated as follows:

$$\frac{\text{OCP Share Consideration – Pre-Payments (settled in cash) - value of Pre-Payment (settled by way of issue of OCP Consideration Pre-Payment Shares)}}{\text{Issue Price}}$$

Approval sought

As noted above, the Company is proposing to issue the OCP Consideration Shares to the Target Entities (and which thereafter will be immediately distributed to the OCP Selling Shareholders).

A summary of ASX Listing Rule 7.1 is set out in the Background to Resolution 4 on page 10 above.

Resolution 7 seeks the required Shareholder approval under and for the purposes of ASX Listing Rule 7.1 for the issue of the OCP Consideration Shares.

If Resolution 7 is passed, the Company will be able to proceed with the issue of the OCP Consideration Shares and discharge its obligations under the Transaction Agreements. In addition, the OCP Consideration Shares will be excluded from the calculation of the number of equity securities that the Company can issue without Shareholder approval under ASX Listing Rule 7.1.

If Resolution 7 is not passed, the Company will still be able to proceed with the proposed issue of the OCP Consideration Shares, however, the OCP Consideration Shares will be included in the calculation of the number of equity securities that the Company can issue without Shareholder approval under ASX Listing Rule 7.1, effectively decreasing the number of equity securities it can issue without Shareholder approval over the 12-month period following the date of issue of the OCP Consideration Shares.

¹ This calculation is based on the Company's Shares on issue as at the date of this Notice.

Technical information required by ASX Listing Rule 7.3

Pursuant to and in accordance with ASX Listing Rule 7.3, the following information is provided in relation to the OCP Consideration Shares (including any OCP Consideration Pre-Payment Shares) to be issued to the OCP Selling Shareholders:

- (a) the OCP Consideration Shares will be issued to the Target Entities (and which thereafter will be immediately distributed to the OCP Selling Shareholders). None of the OCP Selling Shareholders is a related party or an Associate of a related party of the Company;
- (b) the maximum number of OCP Consideration Shares the Company will issue will be calculated in accordance with the formula noted above;
- (c) the issue of the OCP Consideration Shares (excluding any OCP Consideration Pre-Payment Shares) is subject to completion of the OCP Transaction, which is subject to the satisfaction of a number of suspensive conditions (including South African regulatory approvals). As such, the proposed date of issue is not currently known, but the OCP Consideration Shares will be issued no later than 3 months after the date of the Meeting (or such later date to the extent permitted by any ASX waiver or modification of the ASX Listing Rules). Further, as noted above, the Company may elect (at its discretion) to satisfy any increased Pre-Payment in cash or via the issue of OCP Consideration Pre-Payment Shares. The Pre-Payment, settled in cash or by issuing such OCP Consideration Pre-Payment Shares, may not be subject to completion of the OCP Transaction. As at the date of this Notice, the Company has not elected to increase the Pre-Payment, whether in cash or by way of issue of OCP Consideration Pre-Payment Shares. As such, the proposed date of issue is not currently known, but any OCP Consideration Pre-Payment Shares will be issued no later than 3 months after the date of the Meeting (or such later date to the extent permitted by any ASX waiver or modification of the ASX Listing Rules);
- (d) the deemed issue price per OCP Consideration Share will be an amount equal to the 30-day VWAP of the Shares traded on the ASX and JSE in the period ending on the date that is the earlier of:
 - (i) the closing date of the applicable part of the relevant OCP Transaction; and
 - (ii) 30 days after the date on which the last specified mineral right is granted in respect of the Target Entity that is the subject of that transaction;
- (e) the OCP Consideration Shares to be issued will be fully paid ordinary shares in the capital of the Company issued on the same terms and conditions as the Company's existing Shares;
- (f) the OCP Consideration Shares will be issued under the Transaction Agreements in satisfaction of the obligation of the Company to settle the OCP Share Consideration in partial payment for the acquisition of the OCP Sale Assets from the Target Entities. As such, no funds will be raised from the issue of the OCP Consideration Shares;
- (g) the Company will not receive any funds from the issue as the OCP Consideration Shares will be issued as part of the consideration payable for the OCP Sale Assets under the terms of the Transaction Agreements, as summarised in the Background to this Resolution above; and
- (h) a voting exclusion statement is included with the Resolution.

Directors' recommendation and voting intentions

The Directors recommend that Shareholders vote in favour of Resolution 7. Each Director intends to vote the Shares they control in favour of Resolution 7.

Voting intention

The Chairman of the Annual General Meeting intends to vote all available undirected proxies in favour of Resolution 7.

Glossary

\$ means Australian dollars.

Annual General Meeting or **Meeting** means the meeting convened by the Notice.

Associate has the meaning given in the ASX Listing Rules.

ASX means ASX Limited (ACN 008 624 691) or the financial market operated by ASX Limited, as the context requires.

ASX Listing Rules means the Listing Rules of ASX.

AUD means Australian dollar.

AWST means Australian Western Standard Time.

Board means the current board of directors of the Company.

Business Day means Monday to Friday inclusive, except New Year's Day, Good Friday, Easter Monday, Christmas Day, Boxing Day, and any other day that ASX declares is not a business day.

Chair or Chairman means the chairperson of the Meeting.

Closely Related Party of a member of the Key Management Personnel means:

- (a) a spouse or child of the member;
- (b) a child of the member's spouse;
- (c) a dependent of the member or the member's spouse;
- (d) anyone else who is one of the member's family and may be expected to influence the member, or be influenced by the member, in the member's dealing with the entity;
- (e) a company the member controls; or
- (f) a person prescribed by the *Corporations Regulations 2001* (Cth).

Company or **Orion** means Orion Minerals Ltd (ACN 098 939 274).

Constitution means the Company's constitution, as amended from time to time.

Corporations Act means the *Corporations Act 2001* (Cth).

Directors means the current directors of the Company.

Explanatory Memorandum means the explanatory memorandum accompanying the Notice.

Independent Expert means RSM Corporate Australia Pty Ltd.

Independent Expert's Report means the independent expert's report prepared by the Independent Expert set out in Appendix A to this Notice.

JSE means the Johannesburg Stock Exchange.

Key Management Personnel means those people who have authority and responsibility for planning, directing and controlling the activities of the Company or the Company's group, whether directly or indirectly. Members of the Key Management Personnel include Directors (both executive and non-executive) and certain senior executives.

Notice or **Notice of Meeting** means this notice of meeting including the Explanatory Memorandum and the Proxy Form.

Proxy Form means the proxy form accompanying the Notice.

Remuneration Report means the remuneration report set out in the Director's report section of the Company's annual financial report for the year ended 30 June 2023.

Resolutions means the resolutions set out in the Notice, or any one of them, as the context requires.

SA Time means South African time.

SENS means the JSE news service.

Share means a fully paid ordinary share in the capital of the Company.

Shareholder means a member of the Company from time to time.

Share Registry means Link Market Services Limited or JSE Investor Services (Pty) Ltd (as applicable).

ZAR means South African Rand.

Appendix A - Independent Expert's Report



ORION MINERALS LTD

Financial Services Guide and Independent Expert's Report

25 October 2023

FINANCIAL SERVICES GUIDE

25 October 2023

RSM Corporate Australia Pty Ltd ABN 82 050 508 024 (“**RSM**” or “**we**” or “**us**” or “**ours**” as appropriate) has been engaged to issue general financial product advice in the form of a report to be provided to you.

In the above circumstances we are required to issue to you, as a retail client, a Financial Services Guide (“**FSG**”). This FSG is designed to help retail clients make a decision as to their use of the general financial product advice and to ensure that we comply with our obligations as financial services licensees.

This FSG includes information about:

- who we are and how we can be contacted;
- the financial services that we will be providing you under our Australian Financial Services Licence (“**AFSL**”), Licence No 255847;
- remuneration that we and/or our staff and any associates receive in connection with the financial services that we will be providing to you;
- any relevant associations or relationships we have; and
- our complaints handling procedures and how you may access them.

Financial services we will provide

For the purposes of our report and this FSG, the financial service we will be providing to you is the provision of general financial product advice in relation to securities.

We provide financial product advice by virtue of an engagement to issue a report in connection with a financial product of another person. Our report will include a description of the circumstances of our engagement and identify the person who has engaged us. You will not have engaged us directly but will be provided with a copy of the report as a retail client because of your connection to the matters in respect of which we have been engaged to report.

Any report we produce is provided on our own behalf as a financial services licensee authorised to provide the financial product advice contained in the report.

General financial product advice

In our report we provide general financial product advice, not personal financial product advice, because it has been prepared without taking into account your personal objectives, financial situation or needs.

You should consider the appropriateness of this general advice having regard to your own objectives, financial situation and needs before you act on the advice. Where the advice relates to the acquisition or possible acquisition of a financial product, you should also obtain a product disclosure statement relating to the product and consider that statement before making any decision about whether to acquire the product.

Benefits that we may receive

We charge various fees for providing different financial services. However, in respect of the financial service being provided to you by us, fees will be agreed, and paid by, the person who engages us to provide the report and such fees will be agreed on either a fixed fee or time cost basis. You will not pay to us any fees for our services; Orion Minerals Ltd (“**Orion**” or “**the Company**”) will pay our fees. These fees are disclosed in the Report.

Except for the fees referred to above, neither RSM Corporate Australia Pty Ltd, nor any of its directors, employees or related entities, receive any pecuniary benefit or other benefit, directly or indirectly, for or in connection with the provision of the report.

Remuneration or other benefits received by our employees

All our employees receive a salary.

Referrals

We do not pay commissions or provide any other benefits to any person for referring customers to us in connection with the reports that we are licensed to provide.

Associations and relationships

RSM Corporate Australia Pty Ltd is beneficially owned by the partners of RSM Australia, a large national firm of chartered accountants and business advisors. Our directors are partners of RSM Australia Partners.

From time to time, RSM Corporate Australia Pty Ltd, RSM Australia Partners, RSM Australia and/or RSM Australia related entities may provide professional services, including audit, tax and financial advisory services, to financial product issuers in the ordinary course of its business.

Complaints resolution

Internal complaints resolution process

As the holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints should be directed to The Complaints Officer, RSM Corporate Australia Pty Ltd, PO Box R1253, Perth, WA, 6844.

If we receive a written complaint, we will record the complaint, acknowledge receipt of the complaint within 15 days and investigate the issues raised. As soon as practical, and not more than 45 days after receiving the written complaint, we will advise the complainant in writing of our determination. If a complaint is received in advance of a shareholder meeting or other key date where shareholders or investors may be making decisions which are influenced by our report, we will make all reasonable efforts to respond to complaints prior to that date.

Referral to external dispute resolution scheme

A complainant not satisfied with the outcome of the above process, or our determination, has the right to refer the matter to the Australian Financial Complaints Authority (“**AFCA**”). AFCA is an independent dispute resolution scheme that has been established to provide free advice and assistance to consumers to help in resolving complaints relating to the financial services industry.

Further details about AFCA are available at the AFCA website www.afca.org.au. You may contact AFCA directly by email, telephone or in writing at the address set out below.

Australian Financial Complaints Authority
GPO Box 3
Melbourne VIC 3001
Toll Free: 1800 931 678
Email: info@afca.org.au

Time limits may apply to make a complaint to AFCA, so you should act promptly or consult the AFCA website to determine if or when the time limit relevant to your circumstances expires.

Contact details

You may contact us using the details set out at the top of our letterhead on page 4 of this report.

INDEPENDENT EXPERT'S REPORT

25 October 2023

The Directors
Orion Minerals Ltd
Level 21, 55 Collins St,
Melbourne VIC 3000

Dear Directors,

Introduction

On 15 March 2023, Orion Minerals Ltd (“**Orion**” or “**the Company**”) announced a \$13m capital raising to sophisticated and professional investors as part of a strategic equity funding package. The capital raising was conducted via a two-tranche placement (“**Placement**”) and comprised the issue of approximately 882m fully paid ordinary Shares at an issue price of \$0.015 (ZAR18 cents) per Share and the issue of four free attaching unlisted options for every Share issued (approximately 3.53 billion unlisted options at an exercise price of \$0.017 (ZAR20 cents) and an expiry date of 30 November 2023) (“**Options**”).

Clover Alloys Copper Investments (Pty) Ltd (“**Clover Alloys**”) was a cornerstone investor in the Placement. On 31 March 2023, the Company announced the issue of the Placement One Shares to investors, which included the issue of approximately 440m Shares to Clover Alloys raising approximately \$6.7m (ZAR80m).

The issue of Shares and Options under Placement Two of the Placement and the issue of Options under Placement One of the Placement was subject to receipt of Shareholder approval, which was sought and obtained at a general meeting of Orion shareholders held on 19 May 2023.

On 23 May 2023, following receipt of Shareholder approval for the purposes of Listing Rule 7.1, the Company announced the issue of Options pursuant to Placement One of the Placement, which included the issue of approximately 1.78b Options to Clover Alloys (“**Clover Options**”).

Following the issue of Placement One Shares and as of the date of this Report, Clover Alloys has a current ownership interest in the Company of 8.99% of the total Shares on issue. Following the exercise of the Clover Options, and assuming no other options in the Company are exercised, the voting power of Clover Alloys would increase up to 30.67%. As such, the issue of the proportion of the Shares to Clover Alloys (or its nominee) upon exercise of the Clover Options that would take Clover Alloys ownership interests to above 19.99% of the total Shares on issue, must be approved by Orion shareholders not associated with Clover Alloys or its associates (“**Non-Associated Shareholders**” or “**Shareholders**”) by a resolution passed at a general meeting of the Company before the exercise of the Clover Options, pursuant to item 7 of section 611 of the Corporations Act.

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RSM Corporate Australia Pty Ltd is beneficially owned by the Directors of RSM Australia Pty Ltd. RSM Australia Pty Ltd is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any jurisdiction.

RSM Corporate Australia Pty Ltd ABN 82 050 508 024 Australian Financial Services Licence No. 255847

Purpose of the report

As set out in Resolution 5 of the Notice of Annual General Meeting and Explanatory Memorandum (“**Notice**”) to be provided to Orion shareholders for an Annual General Meeting of the Company to be held on or around 28 November 2023, Orion is seeking approval from Non-Associated Shareholders under item 7 of section 611 of the Corporations Act for:

- (a) the issue of up to 1,777,777,776 Shares to Clover Alloys (or its nominee) upon the exercise of attaching options issued under the terms of the Placement; and
- (b) the increase in voting power of Clover Alloys in the Company following the issue of Shares up to a maximum of 30.67%.

The Directors of the Company have requested RSM Corporate Australia Pty Ltd (“**RSM**”), being independent and qualified for the purpose, express an opinion as to whether Resolution 5 as set out in the Notice (“**Proposed Transaction**”) is fair and reasonable to Non-Associated Shareholders.

Accordingly, we have prepared this Independent Expert’s Report (the “**Report**” or “**IER**”) to accompany the Notice for the purposes of stating, in our opinion, whether or not the Proposed Transaction is fair and reasonable to Non-Associated Shareholders.

The ultimate decision whether to approve the Proposed Transaction should be based on each Shareholder’s assessment of their circumstances, including their risk profile, liquidity preference, tax position and expectations as to value and future market conditions. If in doubt as to the action they should take regarding the Proposed Transaction, or the matters dealt with in this Report, Shareholders should seek independent professional advice.

Summary of opinion

In our opinion, for the reasons set out in sections 6 and 7 of this Report, and for the purposes of item 7 of section 611 of the Corporations Act, the Proposed Transaction is **not fair but reasonable** to Non-Associated Shareholders.

We have formed this opinion for the reasons set out below.

Approach

In assessing whether the Proposed Transaction is fair and reasonable to Non-Associated Shareholders, we have considered Australian Securities and Investment Commission (“**ASIC**”) Regulatory Guide 111 – Content of expert reports (“**RG 111**”), which provides specific guidance as to how an expert is to appraise transactions.

RG 111 provides ASIC’s views on how an expert can help security holders make informed decisions about transactions. Specifically, it gives guidance to experts on how to evaluate whether or not a proposed transaction is fair and reasonable.

Where an issue of shares by a company otherwise prohibited under section 606 of the Corporations Act is approved under item 7 of section 611, and the effect on the company shareholding is comparable to a takeover bid, such as the Proposed Transaction, RG 111 states that the transaction should be analysed as if it was a takeover bid.

Therefore, consistent with the guidance set out in RG 111, we have considered whether the Proposed Transaction is “fair” to Non-Associated Shareholders by assessing and comparing:

- the Fair Value of a Share in Orion on a controlling basis prior to the Proposed Transaction; with
- the Fair Value of a Share in Orion immediately on a non-controlling basis immediately post completion of the Proposed Transaction.

Our assessment of the Fair Value of a Share in Orion has been prepared on the following basis:

“the value that should be agreed in a hypothetical transaction between a knowledgeable, willing but not anxious buyer and a knowledgeable, willing but not anxious seller, acting at arm’s length”.

We have also considered whether the Proposed Transaction is “reasonable” to Non-Associated Shareholders by undertaking an analysis of the other factors relating to the Proposed Transaction which are likely to be relevant to the Non-Associated Shareholders in their decision of whether or not to approve the Proposed Transaction.

Further information on the approach we have employed in assessing whether the Proposed Transaction is fair and reasonable to Shareholders is set out in Sections 6 and 7 of this Report.

Fairness opinion

In assessing the fairness of the Proposed Transaction, we have valued a Share in Orion prior to and immediately after the Proposed Transaction as set out in the table below.

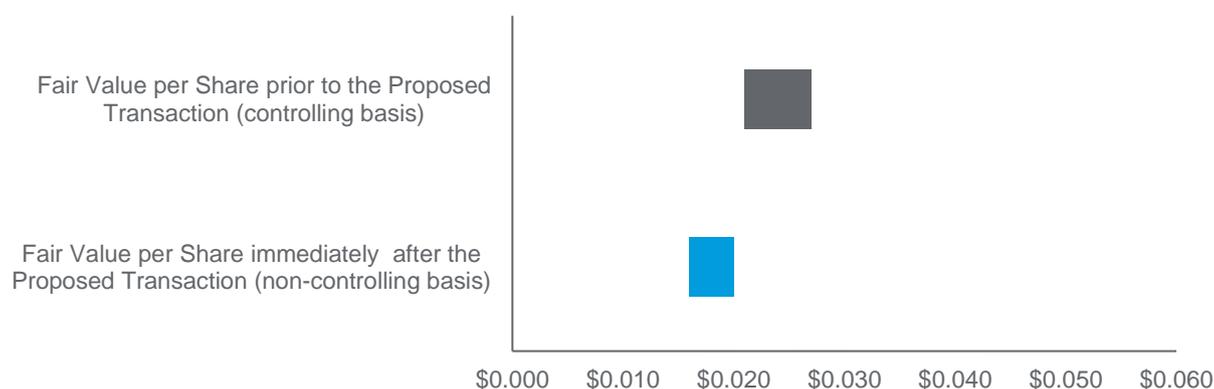
Table 1 Assessed Fair Value of an Orion Share prior to and immediately after the Proposed Transaction

	Ref	Low	High	Preferred
Fair Value per Share prior to the Proposed Transaction (controlling basis)	Table 19	\$0.021	\$0.027	\$0.023
Fair Value per Share immediately after the Proposed Transaction (non-controlling basis)	Table 27	\$0.016	\$0.020	\$0.018

Source: RSM analysis

The above comparison is depicted graphically below.

Figure 1 Assessed Fair Value of an Orion Share prior to and immediately after the Proposed Transaction



In our opinion, as the Fair Value of an Orion Share (on a non-controlling basis) immediately after the Proposed Transaction, is less than the Fair Value of an Orion Share (on a controlling basis) prior to the Proposed Transaction, we consider the Proposed Transaction is **not fair** to Non-Associated Shareholders.

As set out in Section 5, we have assessed the Fair Value of an Orion Share post the Proposed Transaction to be in the range of \$0.016 to \$0.020. Shareholders should be aware that our assessment of the value per Orion Share post approval of the Proposed Transaction does not necessarily reflect the price at which Orion Shares will trade if the Proposed Transaction is approved. The price at which Orion Shares will ultimately trade depends on a range of factors including the liquidity of the Company’s shares, macroeconomic conditions, the underlying performance of the Orion business and its exploration and development projects and the supply and demand for Orion Shares.

Reasonableness opinion

RG 111 establishes that an offer is reasonable if it is fair. It might also be reasonable if, despite not being fair, there are sufficient reasons for security holders to accept the offer in the absence of any higher bid before the offer closes.

As such, we have also considered the following factors in relation to the reasonableness aspects of the Proposed Transaction:

- the future prospects of the Company if the Proposed Transaction does not proceed;
- other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding;
- alternative proposals to the Proposed Transaction; and
- the future intentions of Clover Alloys for the Company as disclosed in the Notice.

Given the Clover Options were issued as part of the Placement announced on 15 March 2023 and the Company has since made a number of announcements in relation to further developments in its various projects, we are not able to undertake any meaningful analysis of any market reaction to the Proposed Transaction through an analysis of trading of Orion's Shares.

Future prospects of Orion if the Proposed Transaction does not proceed

If the Proposed Transaction is not approved, the Company will not be able to issue all the Shares that Clover Alloys would be entitled to if all the Clover Options were exercised.

If all the Clover Options were exercised and a further 1.78b Shares issued, the Company would receive \$30.2m in additional funding. If the Proposed Transaction is not approved, Clover Alloys would be able to exercise Clover Options to the extent that Clover Alloys' ownership interest in the Company did not exceed 19.99% of the total Shares on issue. Assuming no other new Shares in the Company were issued, Clover Alloys would be able to exercise approximately 782m Options, which would result in Orion receiving circa \$13.3m in funding.

For the year ended 30 June 2023 ("FY23"), Orion disclosed a net loss of \$17.1m and negative operating cash flows of \$10.0m. Whilst the Company signed agreements in early 2023 for a ZAR250m (A\$21m) convertible note facility with the Industrial Development Corporation of South Africa Limited ("IDC") ("**IDC Convertible Loan**") and US\$87m in funding arrangements with Triple Flag Precious Metals Corp ("**Triple Flag Funding Arrangement**") to fund early mining works and key pre-development activities at the Company's flagship Prieska Copper-Zinc Mine ("**Prieska Project**"), located in the Northern Cape region of South Africa, note 2 of the Company's audited financial statements for FY23 stated that current forecasts indicate that cash on hand at 30 June 2023 of \$7.6m will not be sufficient to fund planned exploration and operational activities during the next 12 months and to maintain the Company's tenements in good standing.

The audited financial statements for FY23 included an emphasis of matter in the independent auditor's report issued by BDO dated 29 September 2023 that stated that a material uncertainty existed that may cast significant doubt on the Company's ability to continue as a going concern. Whilst the auditor's opinion was not modified in respect of this matter, note 2 of the audited financial statements stated that the Company's ability to continue as a going concern was dependent on, amongst other things, the use of the full equity funding of circa \$73m under the Placement (assuming all options issued are exercised) and the continuing ability of Orion to raise capital.

If the Proposed Transaction is not approved, it is likely that the Company will need to undertake a further capital raising at an earlier date than if the Proposed Transaction is approved and all of the Clover Options are exercised.

Advantages and disadvantages of approving the Proposed Transaction

The key advantages of the Proposed Transaction are outlined in the table below:

Table 2 Advantages of the Proposed Transaction

Advantage	Details
Additional capital to be raised	<p>The approval of the Proposed Transaction could provide up to an additional \$30.2m in funding (assuming all Clover Options are exercised) and would enable the Company to continue to fund and maintain momentum 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 Prieska Copper-Zinc Mine Early Production Scenario. The Early Production Scenario comprises the investigation of the potential to bring forward the start of production at the Prieska Project, bringing forward revenue generation and potentially reducing the upfront external peak funding requirements by phasing the mine build while retaining the option to scale up to the full-scale bankable feasibility study (“BFS”) project as sufficient funding becomes available.</p> <p>The funding would also allow the progress of the Company’s other projects, maintain prospecting rights, and for general working capital purposes in the short to medium term.</p> <p>We note that if the Proposed Transaction is not approved, Clover Alloys would be able to exercise Clover Options to the extent that Clover Alloys ownership interest in the Company did not exceed 19.99% of the total Shares on issue. Assuming no other new Shares in the Company were issued, Clover Alloys would be able to exercise approximately 782m Options, which would result in Orion receiving circa \$13.3m in funding.</p> <p>If Orion was required to raise capital in the short to medium term to replace the circa \$16.9m of funds foregone, if the Proposed Transaction is not approved, there is no guarantee that the Company could raise funds at a price that is above the exercise price of the Clover Options of \$0.017. We have analysed the discounts at which ASX listed entities operating in the metals and mining sector have issued equity over the last 12 months and note that, on average, these discounts were typically in the range of 15% to 20%.</p>
Board experience and operational expertise and alignment of interests	<p>The Directors of Orion consider that Clover Alloys has 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.</p> <p>Whilst the election of Clover Alloys CEO Philip Kotze to the board of Orion formed part of the issue of Shares to Clover Alloys under Placement One, the approval of the Proposed Transaction will result in Clover Alloys holding a more significant relevant interest in the Company and provides Clover Alloys with significant incentive to advance the development and production strategy of the Company regarding the development of the Prieska Project, as well as the Company’s other mining assets in South Africa.</p>

The key disadvantages of the Proposed Transaction are:

Table 3 Disadvantages of the Proposed Transaction

Disadvantage	Details
The Proposed Transaction is not fair	As set out above, as the Fair Value of an Orion Share (on a non-controlling basis) immediately after the Proposed Transaction, is less than the Fair Value of an Orion Share (on a controlling basis) prior to the Proposed Transaction, the Proposed Transaction is not fair.
Clover Alloys will hold a significant interest in the Company	Clover Alloys will hold a 30.67% interest in the Company immediately after the completion of the Proposed Transaction (assuming all Clover Options are exercised and on an undiluted basis). Accordingly, we consider that Clover Alloys will have significant influence on the strategic direction of the Company including the ability to block takeover offers and proposed special resolutions of the Company.

Disadvantage	Details
Dilution of Shareholders' interest	<p>Non-Associated Shareholders' interests will be diluted from 91.01% to 69.33% immediately following the approval of the Proposed Transaction (assuming no other Share issues or other options exercised).</p> <p>The dilution of existing Shareholders' interests reduces the ability of existing shareholders to influence the strategic direction of the Company, including acceptance or rejection of takeover or merger proposals.</p>

Alternative proposals to the Proposed Transaction

We are not aware of any alternative proposals which may provide a greater benefit to Non-Associated Shareholders at this time.

Future intentions of Clover Alloys for the Company

As set out in further detail in the Notice, Clover Alloys has informed Orion that, based on publicly available information available to Clover Alloys at the date of the Notice and other than as disclosed in the Notice, if the Proposed Transaction is approved, Clover Alloys:

- has no current intention of making any significant changes to the existing business of the Company;
- has no current intention to inject further capital into the Company other than as contemplated in the Notice and through participation in respect of its rights under the Placement;
- has no current intention of making changes regarding the future employment of the Company's present employees;
- does not currently intend for any assets to be transferred between the Company and itself or any person associated with it;
- has no current intention to otherwise redeploy the fixed assets of the Company; and
- has no current intention to significantly change the Company's existing financial or dividend policies,

The Board of Orion also understands that Clover Alloys supports the Board's current strategy for the Company.

Conclusion on Reasonableness

In our opinion, and in the absence of any other relevant information and/or a superior offer, for the purposes of section 6'11, item 7 of the Corporations Act, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of Orion.

An individual Shareholder's decision in relation to the Proposed Transaction may be influenced by their individual circumstances. If in doubt, Shareholders should consult an independent advisor.

General

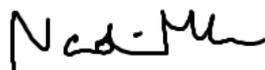
This Report represents general financial product advice only and has been prepared without taking into consideration the individual circumstances of the Non-Associated Shareholders. The ultimate decision whether to accept the Proposed Transaction should be based on Non-Associated Shareholders' assessment of their circumstances, including their risk profile, liquidity preference, tax position and expectations as to value and future market conditions. Shareholders should read and have regard to the contents of the Notice which has been prepared by the Directors and Management of Orion. Non-Associated Shareholders who are in doubt as to the action they should take with regard to the Proposed Transaction and/or the matters dealt with in this Report, should seek independent professional advice. This summary should be considered in conjunction with the detail contained in the following sections of this Report.

Yours faithfully,

RSM CORPORATE AUSTRALIA PTY LTD



Andrew Clifford
Director



Nadine Marke
Director

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1. Summary of the Proposed Transaction

1.1 Overview

On 15 March 2023, the Company announced the terms of the Placement, comprising the issue of approximately 882m fully paid ordinary Shares at an issue price of \$0.015 (ZAR18 cents) per Share and the issue of four free attaching unlisted options for every Share issued (approximately 3.53 billion unlisted options at an exercise price of \$0.017 (ZAR20 cents) and an expiry date of 30 November 2023) (“Options”).

On 31 March 2023, the Company announced the issue of the Placement One Shares to investors, comprising the issue of 593,499,999 Shares at an issue price of \$0.015 per Share to raise \$8.90m following the receipt of funds from investors for commitments pursuant to Placement One. Placement One included the issue of 444.4m Shares to Clover Alloys raising approximately \$6.7m (ZAR80m).

The issue of Shares and Options under Placement Two of the Placement and the issue of Options under Placement One of the Placement was subject to receipt of Shareholder approval, which was sought and obtained at a general meeting of Orion shareholders held on 19 May 2023.

On 23 May 2023, following receipt of Shareholder approval for the purposes of Listing Rule 7.1, the Company announced the issue of Options pursuant to Placement One of the Placement, which included the issue of approximately 1.78b Options to Clover Alloys (Clover Options).

Following the issue of Placement One Shares and as of the date of this Report, Clover Alloys has a current ownership interest in the Company of 8.99% of the total Shares on issue. Following the exercise of the Clover Options, and assuming no other options in the Company are exercised, the voting power of Clover Alloys would increase to up to 30.67% of the total Shares on issue.

The issue of up to 1,777,777,776 Shares to Clover Alloys (or its nominee) upon the exercise of the Clover Options is subject to Non-Associated Shareholder approval under Resolution 5 (Proposed Transaction).

If all the Options issued under the Placement were exercised, the total value of the equity funding under the Placement would amount to approximately \$73m.

1.2 Impact of the Proposed Transaction on Orion's Capital Structure

The table below summarises the capital structure of the Company prior to and immediately following the Proposed Transaction.

Table 4 Capital structure of Orion prior to and immediately following the Proposed Transaction

	Number of Shares	%	Number of Options	%
Orion capital structure at the date of this Report				
Number of ordinary Shares and options held by Clover Alloys	511,208,440	8.99%	1,777,777,776	47.10%
Number of ordinary Shares and unlisted options held by Non-Associated Shareholders	5,175,492,908	91.01%	1,996,376,932	52.90%
Total	5,686,701,348	100.00%	3,774,154,708	100.00%
Orion capital structure immediately after the Proposed Transaction (undiluted)				
Number of ordinary Shares and options held by Clover Alloys	2,288,986,216	30.67%	-	0.00%
Number of ordinary Shares and unlisted options held by Non-Associated Shareholders	5,175,492,908	69.33%	1,996,376,932	100.00%
Total	7,464,479,124	100.00%	1,996,376,932	100.00%
Orion capital structure immediately after the Proposed Transaction (fully diluted)				
Number of ordinary Shares and options held by Clover Alloys	2,288,986,216	24.19%	-	-
Number of ordinary Shares and unlisted options held by Non-Associated Shareholders	7,171,869,840	75.81%	-	-
Total	9,460,856,056	100.00%	-	-

Source: Notice and RSM analysis

Completion of the Proposed Transaction will result in the dilution of Non-Associated Shareholders' interests from 91.01% to 69.33%, and Clover Alloys increasing its interest from 8.99% to 30.67% if all Clover Options are exercised and no other options held by Non-Associated Shareholders are exercised.

In addition to the Clover Options, the Company has approximately 2.0b unlisted options on issue (of which 1.73b relate to the Options issued under the Placement and also expire on 30 November 2023).

In the event that, in addition to the Proposed Transaction, all unlisted options on issue at the date of this Report were exercised, Clover Alloys' interest following the Proposed Transaction would reduce to 24.19%.

2. Scope of the Report

2.1 Corporations Act

Section 606(1) of the Corporations Act provides that, subject to limited specified exemptions, a person must not acquire a "relevant interest" in issued voting shares in a public company, if as a result of the acquisition, any person's voting power in the company would increase from 20% or below to more than 20%, or, from a starting point that is above 20% and below 90%. In broad terms, a person has a "relevant interest" if that person holds shares or has the power to control the right to vote or dispose of shares. A person's voting power in a company is the number of voting shares in which the person (and its associates) holds, compared with the total number of voting shares in the company.

Completion of the Proposed Transaction will result in Clover Alloys holding a relevant interest in the Company of 30.67%. Therefore, Clover Alloys will be in breach of section 606(1) of the Corporations Act in the absence of an applicable exemption.

Section 611, item 7 of the Corporations Act provides an exemption to the rule set out above as it allows a party (and its affiliates) to acquire a relevant interest in shares that would otherwise be prohibited under section 606(1) if the proposed acquisition is approved in advance by a resolution passed at a general meeting of the Company and:

1. no votes are cast in favour of the resolution by:
 - (i) the person proposing to make the acquisition and their associates; or
 - (ii) the persons from whom the acquisition is to be made and their associates; and
2. there was full disclosure of all information that was known to the persons proposed to make the acquisition or their associates or known to the Company that was material to a decision on how to vote on the resolution.

Section 611 states that shareholders must be given all information that is material to the decision on how to vote at the meeting. RG 111 advises the commissioning of an IER and provides guidance on the content.

2.2 Basis of evaluation

In determining whether the Proposed Transaction is "fair and reasonable", we have given regard to the views expressed by ASIC in RG 111.

RG 111 provides ASIC's views on how an expert can help security holders make informed decisions about transactions. Specifically, it gives guidance to experts on how to evaluate whether or not a proposed transaction is fair and reasonable.

RG 111 states that the expert report should focus on:

- the issues facing the security holders for whom the report is being prepared; and
- the substance of the transaction rather than the legal mechanism used to achieve it.

Where an issue of shares by a company otherwise prohibited under section 606 is approved under item 7 of section 611 and the effect on the company's shareholding is comparable to a takeover bid, RG 111 states that the transaction should be analysed as if it was a takeover bid.

RG 111 applies the "fair and reasonable" test as two distinct criteria in the circumstance of a takeover bid, stating:

- a takeover offer is considered "fair" if the value of the offer price or consideration is equal to or greater than the value of the securities that are the subject of the offer; and

- a takeover offer is considered "reasonable" if it is fair or, where the offer is "not fair", it may still be "reasonable" if the expert believes that there are sufficient reasons for security holders to accept the offer.

Therefore, consistent with the guidance set out in RG 111, in we have considered whether the Proposed Transaction is "fair" to Non-Associated Shareholders by assessing and comparing:

- the Fair Value of an ordinary Share in Orion on a controlling basis prior to the Proposed Transaction; with
- the Fair Value of an ordinary Share in Orion immediately after the Proposed Transaction on a non-controlling basis.

Our assessment of the Fair Value of a Share in Orion has been prepared on the following basis:

"the value that should be agreed in a hypothetical transaction between a knowledgeable, willing but not anxious buyer and a knowledgeable, willing but not anxious seller, acting at arm's length".

In accordance with RG 111, we have considered whether the Proposed Transaction is "reasonable" to Non-Associated Shareholders by undertaking an analysis of the other factors relating to the Proposed Transaction which are likely to be relevant to Shareholders, in their decision as to whether or not to accept the Proposed Transaction.

In particular, we have considered the advantages and disadvantages of the Proposed Transaction in the event that the Proposed Transaction proceeds or does not proceed including:

- the future prospects of the Company if the Proposed Transaction does not proceed; and
- any other commercial advantages and disadvantages to Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

Our assessment of the Proposed Transaction is based on economic, market and other conditions prevailing at the date of this Report.

3. Profile of Orion Minerals Ltd

3.1 Background

Overview

Orion Minerals Ltd (ASX/JSE:ORN) is listed on the ASX (and headquartered and domiciled in Australia), with a secondary listing on the JSE. The principal activities of the Company and its controlled entities (“**the Orion Group**” or “**Group**”) is the exploration, evaluation and development of base metal, gold and platinum-group element (“**PGE**”) projects in South Africa (Areachap Belt and Okiep Copper Complex, Northern Cape). The Company also holds interests in the Fraser Range Nickel-Copper and Gold Project in Western Australia and the Walhalla Project in Victoria, Australia.

The Company’s flagship project is the Prieska Copper Zinc project (“**Prieska Project**”) located in the Northern Cape province of South Africa. The Prieska Project is currently transitioning to the mine development and construction phase following the Company entering into various key funding packages comprised of both debt and equity financing in December 2022 and during the 2023 calendar year to date.

The Company’s recent capital and debt funding activities comprised the following:

- the \$13m Placement announced in March 2023 which led to Clover Alloys becoming a new cornerstone investor. As set out in section 1 of the Report, the Placement included the issue of circa 3.5b Options; if all Placement Options were ultimately exercised, total funds raised under the Placement would amount to circa \$73m;
- in February 2023, Orion and the Industrial Development Corporation of South Africa Limited (“**IDC**”) signed definitive agreements for a ZAR250m (c. A\$21m) 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 ZAR250m to Agama Exploration & Mining (Pty) Ltd (“**Agama**”), a wholly owned subsidiary of Orion, which will be on-lent to Prieska Copper Zinc Mine (Pty) Ltd (“**PCZM**”), in turn a 70% subsidiary company of Agama;
- in December 2022, Orion announced that the Company had signed definite agreements with Triple Flag Precious Metals Corp. (TSX/NYSE: TPFM) (“**Triple Flag**”) for a US\$87m (circa A\$128m) secured funding package for PCZM, comprising a precious metals stream (“**Precious Metal Stream**”) and additional early funding arrangement (“**Triple Flag Funding Arrangement**”). The Precious Metal Stream comprises US\$80m of funding to be drawn down in tranches, alongside other bank and/or third party funding during mine development. The Precious Metal Stream 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 has also agreed to provide an additional US\$7m Funding Arrangement to complete the feasibility study for early mining works and commence mine dewatering at the Prieska Project; and
- as of the date of this Report, the Company has announced that Orion has fulfilled all conditions precedent to enable the Company to submit initial drawdown notices to both the IDC and Triple Flag for an initial drawdown totalling ZAR167m (circa A\$13.8m), with these funds received in July and August 2023.

Legal structure

Orion is incorporated and domiciled in Australia. The Company has the following subsidiaries.

Table 5 Orion company structure

	Country of incorporation	Parent ownership interest (%)	Non-controlling interest (%)
Parent entity:			
Orion Minerals Ltd	Australia	N/a	N/a
Subsidiaries of parent entity:			
Goldstar Resources (WA) Pty Ltd	Australia	100.00	N/a
Kamax Resources Limited	Australia	100.00	N/a
Areachap Holdings No 1 Pty Ltd	Australia	100.00	N/a
Areachap Holdings No 2 Pty Ltd	Australia	100.00	N/a
Areachap Holdings No 3 Pty Ltd	Australia	100.00	N/a
RSA Services (Pty) Ltd	Australia	100.00	N/a
Orion Group Services International Ltd	Seychelles	100.00	N/a
Areachap Investments 1 B.V.	Netherlands	100.00	N/a
Areachap Investments 2 B.V.	Netherlands	100.00	N/a
Areachap Investments 3 B.V.	Netherlands	100.00	N/a
Areachap Investments 6 B.V.	Netherlands	100.00	N/a
Agama Exploration & Mining (Pty) Ltd (Agama)	South Africa	100.00	N/a
Area Metals Holdings No 1 (Pty) Ltd	South Africa	100.00	N/a
Area Metals Holdings No 2 (Pty) Ltd	South Africa	100.00	N/a
Area Metals Holdings No 3 (Pty) Ltd (AMH3)	South Africa	100.00	N/a
Area Metals Holdings No 4 (Pty) Ltd	South Africa	100.00	N/a
Area Metals Holdings No 5 (Pty) Ltd	South Africa	100.00	N/a
Area Metals Holdings No 6 (Pty) Ltd	South Africa	100.00	N/a
New Okiep Exploration Company (Pty) Ltd (NOEC)	South Africa	100.00	N/a
New Okiep Mining Company (Pty) Ltd (NOM)	South Africa	56.25	43.75
Orion Exploration No 1 (Pty) Ltd	South Africa	100.00	N/a
Orion Exploration No 3 (Pty) Ltd	South Africa	100.00	N/a
Orion Exploration No 4 (Pty) Ltd	South Africa	100.00	N/a
Orion Exploration No 5 (Pty) Ltd	South Africa	100.00	N/a
Orion Services South Africa (Pty) Ltd	South Africa	100.00	N/a
PCZM Holdco (Pty) Ltd	South Africa	100.00	N/a
Prieska Copper Zinc Mine (Pty) Ltd (PCZM)	South Africa	70.00	30.00
Rich Rewards Trading 437 (Pty) Ltd	South Africa	100.00	N/a
Vardocube (Pty) Ltd (Vardocube)	South Africa	70.00	30.00
Bartotrax (Pty) Ltd	South Africa	100.00	N/a
Aquila Sky Trading 890 (Pty) Ltd	South Africa	68.00	32.00
Masiqhame Trading 855 (Pty) Ltd	South Africa	50.00	50.00
Associates:			
Namaqua Nickel Mining (Pty) Ltd	South Africa	25.00	N/a
Disawell (Pty) Ltd	South Africa	25.00	N/a

Source: Orion FY23 Annual Report

Mining Projects

A summary of the Group's mining projects is set out in the table below.

Table 6 Mining Projects summary

Project	Interest held
South Africa	
Prieska Copper-Zinc Mine Project (Prieska Project)	70%-100% in the tenures comprising the Prieska Project
Okiep copper project (" Okiep Project " or " OCP ")	56.25%-100% interest in tenures comprising the Okiep Project
Jacomynspan nickel-copper-cobalt-PGE project ("Jacomynspan Project")	50% interest in the Jacomynspan Project
Areachap Project	50%-100% interest in the tenures comprising the Areachap Project
Australia	
Fraser Range nickel-copper project (" Fraser Range Project ")	10-35% interest in tenures comprising the Fraser Range project in Western Australia
Walhalla gold and polymetallic project (" Walhalla ") Project	100% interest in the Walhalla Project in Victoria

Source: SRK Consulting ISR

The table below sets out a summary of the mining rights/tenements held by the Company as at the date of this Report.

Table 7 Mining rights/tenement summary

Project	Right/tenement	Status	Ownership interest	Grant date	Expiry date	Holder ¹
South Africa						
Prieska Copper Zinc Mine	NC30/5/1/2/2/10138MR	Granted	ORN 70.00%	04-Dec-19	03-Dec-43	PCZM
Prieska Copper Zinc Mine	NC30/5/1/2/2/10146MR	Granted	ORN 70.00%	14-Aug-20	13-Aug-32	VAR
PCZM Near Mine	NC30/5/1/1/2/11840PR NC30/5/1/1/2/13752PR ^R	Granted	ORN 70.00%	29-Aug-18	28-Aug-23	PCZM
PCZM Near Mine	NC30/5/1/1/2/11850PR NC30/5/1/1/2/13528PR ^R	Granted	ORN 100.00%	09-Mar-18	08-Mar-23	BAR
PCZM Near Mine	NC30/5/1/1/2/12257PR	Granted ²	ORN 100.00%	15-Dec-22	Awaiting execution	OE5
PCZM Near Mine	NC30/5/1/1/2/12258PR	Granted ²	ORN 100.00%	27-Oct-22	Awaiting execution	OE5
PCZM Near Mine	NC30/5/1/1/2/12287PR	Granted ²	ORN 100.00%	02-Dec-22	Awaiting execution	OE5
PCZM Near Mine	NC30/5/1/1/2/12405PR	Granted ²	ORN 100.00%	10-Nov-22	Awaiting execution	OE5
Namaqua-Disawell	NC30/5/1/1/2/10032MR	Granted	ORN 25.00%	19-Sep-16	18-Sep-46	NAM
Namaqua-Disawell	NC30/5/1/1/2/10938PR NC30/5/1/1/2/13397PR ^R	Granted	ORN 25.00%	02-Oct-14	08-Nov-22	DIS
Namaqua-Disawell	NC30/5/1/1/2/11010PR NC30/5/1/1/2/13398PR ^R	Granted	ORN 25.00%	02-Oct-14	08-Nov-22	DIS
Namaqua-Disawell	NC30/5/1/1/2/12216PR	Granted	ORN 25.00%	14-Jan-21	13-Jan-26	NAM
Bokspuits North	NC30/5/1/1/2/12197PR	Granted	ORN 70.00%	14-Jan-21	13-Jan-26	OE1
Masiqhame	NC30/5/1/1/2/12292PR	Granted	ORN 50.00%	24-Mar-22	23-Mar-25	MAS
Flat Mines Mine	NC30/5/1/1/2/10150MR	Granted	ORN 56.25%	28-Jul-22	27-Jul-37	SAFTA
Flat Mines Mine	NC30/5/1/1/2/12850PR	Granted	ORN 56.25%	27-Jun-23	Awaiting execution	SAFTA

Project	Right/tenement	Status	Ownership interest	Grant date	Expiry date	Holder ¹
Okiep Copper Project	NC30/5/1/1/2/11125PR NC30/5/1/1/2/13395PR ^R	Granted	ORN 100.00%	09-Nov-17	08-Nov-22	NOEC (ceded from NCC)
Okiep Copper Project	NC30/5/1/1/2/12357PR	Granted	ORN 100.00%	14-Jan-21	13-Jan-26	NOEC (ceded from NCC)
Okiep Copper Project	NC30/5/1/1/2/12852PR	Granted	ORN 100.00%	22-Aug-23	Awaiting execution	OE6
Okiep Copper Project	NC30/5/1/1/2/12854PR	Granted	ORN 100.00%	22-Aug-23	Awaiting execution	OE6
Okiep Copper Project	NC30/5/1/1/2/12897PR	Granted ²	ORN 100.00%	15-Dec-22	Awaiting execution	OE6
Marydale	NC30/5/1/1/2/12721PR	Application	-	-	-	-
Marydale	NC30/5/1/1/2/12196PR	Application	-	-	-	-
Flat Mines Mine	NC30/5/1/1/2/12755PR	Application	-	-	-	-
Flat Mines Mine	NC30/5/1/1/2/12848PR	Application	-	-	-	-
Okiep Pipeline	NC30/5/1/1/2/13010PR	Application	-	-	-	-
Western Australia						
Fraser Range	E28/2367	Granted	KMX 30.00%	07-May-15	06-May-25	IGO
Fraser Range	E28/2596	Granted	KMX 30.00%	06-Sep-19	05-Sep-26	IGO
Fraser Range	E39/1653	Granted	KMX 35.00%	20-Apr-12	19-Apr-24	IGO & GRPL
Fraser Range	E39/1654	Granted	ORN 10.00%	23-Apr-12	22-Apr-24	IGO & NBX
Fraser Range	E69/2707	Granted	ORN 10.00%	19-Jun-15	18-Jun-25	IGO & PON
Victoria						
Walhalla	EL5042	Granted	ORN 100.00%	20-Feb-23	19-Feb-28	ORN
Walhalla	EL6069	Granted	ORN 100.00%	20-Feb-23	19-Feb-28	ORN

Source: Audited financial statements and Management

¹ Holder abbreviations - ORN (Orion Minerals Ltd); GRPL (Geological Resources Pty Ltd); IGO Limited ("IGO"); KMX (Kamax Resources Ltd); NBX (NBX Pty Ltd); PON (Ponton Minerals Pty Ltd); NAM (Namaqua Nickel Mining (Pty) Ltd); DIS (Disawell (Pty) Ltd); MAS (Masiqhambe 855 (Pty) Ltd); NOEC (New Okiep Exploration Company (Pty) Ltd); PCZM (Prieska Copper Zinc Mine (Pty) Ltd); VAR (Vardocube (Pty) Ltd); BAR (Bartotrax (Pty) Ltd); OE1 (Orion Exploration No. 1 (Pty) Ltd); OE5 (Orion Exploration Company No. 5 (Pty) Ltd); OE6 (Orion Exploration Company No. 6 (Pty) Ltd); SAFTA (Southern African Tantalum Mining (Pty) Ltd); NCC (Nababeep Copper Company (Pty) Ltd); BCC (Bulletrap Copper Co (Pty) Ltd).

² Grant rectification(s) in progress

^R Prospecting Right renewal application accepted; the right remains active

Overview of the Prieska Project

The Prieska Project is a brownfield project located 50km southwest of the town of Prieska in the Northern Cape Province of South Africa, approximately 270 km southwest of Kimberley. The project area encompasses the historical Prieska Copper Mine. The Prieska Copper Mine was operated by Anglo-Transvaal Consolidated Investment Company Limited ("**Anglovaal**", now part of African Rainbow Minerals Limited) as an underground copper and zinc mine. Orion is planning to establish a new mining operation targeting the extraction of the remaining copper-zinc mineralisation.

Orion holds two mining rights through two subsidiaries, PCZM and Vardocube (Pty) Ltd ("**Vardocube**"). Orion holds a 70% interest in PCZM. The remaining interest in PCZM is held by Prieska Resources (Pty) Ltd ("**Prieska Resources**") (20%), the Orion Siyathemba Employee Trust (indirect 5%) and the Orion Siyathemba Community Trust (indirect 5%). Vardocube is a 100% subsidiary of PCZM. Prieska Resources is owned by three Black Economic Empowerment ("**BEE**") companies.

Orion also holds five prospecting rights licences (or has submitted such applications or renewal applications) neighbouring the Prieska Project through its wholly owned subsidiary companies, Bartotrax (Pty) Ltd and Orion Exploration No. 5 (Pty) Ltd, as well as one prospecting right licence through PCZM.

The table below sets out the Orion Mineral Resource Statement for the Prieska Project deposit.

Table 8 Prieska Project mineral resource estimate

Classification	Source	Mt	Zn%	Cu%	Zn (kt)	Cu (kt)
Indicated	Deep Sulphide underground	18.5	3.60	1.18	667	218
	Crown Pillar open pit	1.9	1.71	1.83	32	34
Total Indicated		20.4	3.43	1.24	699	252
Inferred	Deep Sulphide underground	10.2	4.35	1.21	416	117
	Crown Pillar open pit	0.4	0.76	1.03	3	4
Total Inferred		10.6	3.96	1.14	419	121
Total Resource		31.0	3.61	1.20	1,118	373

Source: Management and ISR

Overview of the Okiep Project

The Okiep Project is located in the Northern Cape Province of South Africa, approximately 20km northwest of the town of Springbok. The Project is a brownfield project consisting of the Flat Mines Project (two open pits Flat Mines Nababeep and the Jan Coetzee deposit) and three underground mines; Flat Mines North, Flat Mines South and Flat Mines East, as well as other mining and prospecting rights held by Nababeep Copper Company (Pty) Ltd (“**NCC**”) and Bulletrap Copper Co (Pty) Ltd (“**BCC**”).

On 30 July 2021, the Company exercised a restructured option to directly acquire the mineral and prospecting rights and other assets held by Southern African Tantalum Mining (Pty) Ltd (“**SAFTA**”), NCC and BCC (“**OCP Sale Assets**”), rather than acquire the shares in SAFTA, NCC and BCC.

Accordingly, Orion also holds prospecting rights through SAFTA, NCC, BCC and Orion Exploration No. 6 (Pty) Ltd (“**OE6**”). Orion acquired a 56.25% interest in the assets held by SAFTA (IDC holds the remaining 43.75%) and a 100% interest in both NCC and BCC. However, some of the prospecting rights have been ceded to New Okiep Mining Company (Pty) Ltd (“**NOM**”), a 56.25% subsidiary (IDC holds the remaining 43.75% as part of funding arrangements entered into with IDC for the development of the Flat Mines Project in November 2022).

The table below sets out the mineral resource estimate utilised by SRK Consulting in the valuation of the Okiep Project as set out in the ISR.

Table 9 Okiep Project mineral resource estimate

Classification	Flat Mine	Volume (m ³)	Specific Gravity (SG) (t/m ³)	Tonnes (t)	Cu (%)	Cu (tonnes)
Indicated	North	491,900	2.81	1,382,300	1.33	18,300
	East	1,179,200	2.88	3,401,900	1.37	46,730
	South	906,600	2.86	2,592,200	1.35	34,900
		2,577,700	2.86	7,376,400	1.35	99,930
Inferred	North	84,900	2.82	239,600	1.46	3,500
	East	337,300	2.85	961,000	0.95	9,100
	South	288,400	2.85	822,100	1.63	13,400
		710,600	2.85	2,022,700	1.29	26,000
Total		3,288,300	2.86	9,399,100	1.34	125,930

Source: SRK Consulting ISR

Overview of the Jacomynspan Project

The Jacomynspan Project is located in the Northern Cape Province, about 70 km east-northeast of the town of Kenhardt. Orion holds a 50% interest in the Jacomynspan Project through its indirect 100% subsidiary, Area Metals Holdings No3 (Pty) Ltd (“**AMH3**”)’s interests in Disawell (Pty) Ltd and Namaqua Nickel Mining (Pty) Ltd (“**Namaqua Disawell Companies**”), which hold partly overlapping granted prospecting rights and a mining right.

During the year ended 30 June 2019, AMH3 reached the next stage earn-in right, which will see its shareholding increase by a further 25% interest making its total interest 50% (subject to, inter alia, certain regulatory approvals). Orion is the manager and operator of the joint venture.

On 13 July 2020, the Company announced that it had entered into an agreement whereby Orion (or its nominated subsidiary) will acquire the remaining minority interests in the Jacomynspan Project, through the acquisition of the remaining issued shares held by the minority shareholders of the Namaqua Disawell Companies. On 31 August 2020, the parties entered into a comprehensive formal written agreement incorporating the principal terms and conditions set out in the initial agreement (“**Sale Agreement**”).

During FY23, the Group continued to advance exploration programs on the Jacomynspan Project, expending an additional \$0.39m (excluding effect of foreign exchange rate movement on balance). This expenditure, under the terms of a consolidated shareholders’ agreement concluded in September 2017 between, amongst others, the Company, AMH3 and the Namaqua Disawell Companies, is held in a shareholder loan account.

Although the Sale Agreement has lapsed, the shareholders continue to discuss the future operational plans of the Jacomynspan Project, as they await the statutory approval for Orion to be issued the shares to achieve a 50% shareholding in the Namaqua-Disawell companies following satisfaction of the obligations of the original earn-in agreement. Namaqua-Disawell has submitted its applications to the Department of Mineral Resources and Energy for regulatory approval to issue the additional shares to Orion, resulting in a change of control of the companies’ holding rights.

The Jacomynspan Ni-Cu-Co-PGE deposit was discovered in 1971 during a regional airborne aeromagnetic and magnetic survey. Surface exposure of the orebody is limited; consequently, exploration has been by various geophysical methods (used to delineate potential drilling target areas), which was then followed up with diamond drilling.

The table below sets out the Jacomynspan Project Mineral Resource Statement reported at a 0.2% Ni cut-off grade.

Table 10 Jacomynspan Project mineral resource estimate

Classification	Domain	Mt	Grade (%)			Metal content (tonnes)		
			Ni	Cu	Co	Ni	Cu	Co
Indicated	Harzburgite	2.1	0.51	0.26	0.03	10,597	5,494	576
Indicated	Tremolite Schist	30.9	0.24	0.17	0.02	75,453	52,586	5,740
Total Indicated		33.0	0.26	0.18	0.02	86,050	58,080	6,316
Inferred	Harzburgite	6.4	0.53	0.31	0.02	33,800	19,957	1,488
Inferred	Tremolite Schist	25.9	0.23	0.17	0.02	60,475	43,419	4,613
Total Inferred		32.3	0.29	0.19	0.02	94,275	63,376	6,101
Total		65.3	0.28	0.19	0.02	180,325	121,456	12,417

Source: Management and ISR

Areachap Project

Orion has three other exploration projects in South Africa, comprising the Masiqhame, Marydale and Namaqua-Disawell projects (collectively, the Areachap Project). Orion holds mineral rights to 175,738 ha in the Areachap Belt, with the potential to discover further volcanogenic massive sulphide (“VMS”) and intrusive Ni-Cu-PGE mineralisation. These rights, contiguous to the Jacomynspan Project, are located to the northwest of the Prieska Project.

Orion holds prospecting rights or accepted prospecting right applications to the Areachap Project through its subsidiaries Orion Exploration No. 1 (Pty) Ltd and Masiqhame 855 (Pty) Ltd.

Fraser Range Project

The Fraser Range Project comprises five exploration tenements held in a Joint Venture (JV) with IGO Limited (“IGO”) and two other parties that include Kamax Resources Ltd and Independent Newsearch Pty Ltd. The project is located approximately 350 km northeast of Kalgoorlie in Western Australia.

The Fraser Range Project comprises Orion’s interests in the following five Exploration Licences:

- E28/2367 (30%);
- E28/2596 (30%);
- E36/1653 (35%);
- E39/1654 (10%); and
- E69/2707 (10%).

No mineral resources have been reported for the Fraser Range Project.

Walhalla Project

The Walhalla Project is situated approximately 225 km east of Melbourne by road in the eastern Victorian region of Gippsland. It comprises two exploration tenements (EL5042 and EL6069) that surround the historical township of Walhalla. No Mineral Resources or Exploration Targets have been reported for the Wahalla Project.

3.2 Directors and management

The directors and key management of Orion are summarised in the table below.

Table 11 Orion's Directors and Management

Name	Title	Experience
Denis Waddell (appointed on 27 February 2009)	Chairman	Denis is a Chartered Accountant with extensive experience in the management of exploration and mining companies. Denis founded Tanami Gold NL in 1994 and was involved with the Company as Managing Director and then Chairman and Non-Executive Director until 2012. Prior to founding Tanami Gold NL, Mr Waddell was the Finance Director of the Metana Minerals NL group.
Errol Smart (appointed on 26 November 2012)	Managing Director and Chief Executive Officer	Errol is a geologist, registered for JORC purposes, and has 30 years of industry experience across all aspects of exploration, mine development and operations with experience in precious and base metals. He has held positions in Anglogold, Cluff Mining, Metallon Gold, Clarity Minerals, LionGold Corporation and African Stellar Holdings. Errol's senior executive roles have been on several boards of companies listed on both the TSX, ASX and JSE and currently serves as Chairman of the Junior Mining Leadership Forum of the Minerals Council South Africa and is a Director on the Board of the Mineral Council South Africa.
Godfrey Gomwe (appointed on 16 April 2019)	Non-executive Director	Godfrey is the former chief executive officer of Anglo American plc's Thermal Coal business, where his responsibilities included oversight over the company's Manganese interests in the joint venture with BHP. Until August 2012, Godfrey was an executive director of Anglo American South Africa, prior to which he held the positions of finance director and chief operating officer. He was also chairman and chief executive of Anglo American Zimbabwe Limited and served on a number Anglo American executive committees and operating boards, including Kumba Iron Ore, Anglo American Platinum, Highveld Steel & Vanadium and Mondi South Africa.
Mark Palmer (appointed on 31 January 2018)	Non-executive Director	Mark has 13 years of experience working with entities in Australia, including eight years with Dominion Mining. He previously worked with NM Rothschild & Sons Ltd for the London mining project as part of the where he was responsible for assessing mining projects globally. He later moved to the investment banking team at UBS, where his focus was global mergers and acquisitions, and equity and debt financing. He also ran the EMEA mining team at UBS, later joining Tembo Capital in 2015 as investment director.
Philip Kotze (appointed 5 April 2023)	Non-executive Director	Philip started his career in 1981 with Anglovaal Mining Corporation. During his career, he worked for a number of companies including Anglogold Ashanti, Kalgold, Harmony Gold Mining Co Ltd, Deloitte and Anooraq Resources Corporation, and has over 40 years of operational experience.

Reference: Audited financial statements for FY23

3.3 Financial information

The information in the following section provides a summary of the financial performance of Orion for the financial years ended 30 June 2020 ("FY20"), 30 June 2021 ("FY21"), 30 June 2022 ("FY22") and 30 June 2023 ("FY23") (collectively, "Historical Period"), extracted from the audited financial statements of the Company.

3.4 Financial performance

The table below sets out a summary of the financial performance of Orion for FY20, FY21, FY22 and FY23.

Table 12 Historical financial performance

Orion Minerals Ltd				
Consolidated Statement of Profit or Loss and Other Comprehensive Income (\$'000)	FY20 Audited	FY21 Audited	FY22 Audited	FY23 Audited
Other income	70	46	58	75
Exploration and evaluation costs expensed	(2,169)	(3,883)	(10,907)	(4,131)
Employee expenses	(1,230)	(1,989)	(1,352)	(1,653)
Other operational expenses	(4,651)	(3,568)	(2,986)	(4,783)
Results from operating activities	(7,980)	(9,394)	(15,187)	(10,492)
Non-operating income / (expense)	(11,258)	5,122	(3,086)	(9,523)
Finance income	1,893	2,468	3,036	3,320
Finance expense	(1,293)	(839)	(288)	(430)
Loss before income tax	(18,638)	(2,643)	(15,525)	(17,126)
Income tax expense	(13)	-	-	-
Loss from continuing operations attributable to equity holders of the Group	(18,651)	(2,643)	(15,525)	(17,126)
Items that may be reclassified subsequently to profit or loss				
Foreign currency reserve	433	(393)	246	1,895
Total other comprehensive income for the year	433	(393)	246	1,895
Total comprehensive loss for the year	(18,218)	(3,036)	(15,279)	(15,231)
Loss for the year attributed to:				
Non-controlling interest	(1,096)	(885)	(1,238)	(1,795)
Owners of Orion Minerals Ltd	(17,555)	(1,758)	(14,287)	(15,331)
	(18,651)	(2,643)	(15,525)	(17,126)
Total comprehensive loss for the year is attributable to:				
Non-controlling interest	(1,096)	(885)	(1,238)	(1,795)
Owners of Orion Minerals Ltd	(17,122)	(2,151)	(14,041)	(13,436)
	(18,218)	(3,036)	(15,279)	(15,231)

Source: Audited financial statements

Due to the exploration and development nature of Orion's operations, income over the Historical Period comprised income from services rendered to associate companies and costs recovered from associate companies.

Operating expenses primarily comprised expensed exploration and evaluation costs and employee expenses, as well as other operational expenses.

A summary of other operating expenses incurred over the Historical Period is set out in the table below, with other operating expenses primarily comprised of contractor, consultants and advisory costs, as well as directors' remuneration, and investor and public relation costs.

Table 13 Other operating expenses

Orion Minerals Ltd	FY20	FY21	FY22	FY23
Other operating expenses (\$'000)	Audited	Audited	Audited	Audited
Contractor, consultants and advisory	3,013	2,463	1,589	3,248
Investor and public relations	559	240	364	381
Communications and information technology	125	107	117	106
Depreciation	176	95	145	172
Due diligence expenditure	-	-	28	25
Loss on disposal of plant and equipment	41	2	-	(1)
Occupancy	80	59	64	42
Travel and accommodation	60	76	170	235
Directors' fees and employment costs	429	411	398	342
Other corporate and administrative	168	115	111	140
Impairment of equipment	-	-	-	105
Gain on lease modification	-	-	-	(12)
Total	4,651	3,568	2,986	4,783

Source: Audited financial statements

The table below sets out a summary of non-operating income / (expenses) over the Historical Period, primarily comprising fluctuations in net foreign exchange (gain)/loss and share based payments expenses.

Table 14 Non-operating income / (expense)

Orion Minerals Ltd	FY20	FY21	FY22	FY23
Non-operating income / (expense) (\$'000)	Audited	Audited	Audited	Audited
Net foreign exchange (gain)/loss	9,957	(5,917)	2,766	9,371
Government grants	-	(61)	-	-
Profit on sale of portion of subsidiary	(11)	-	-	-
Liquidation of subsidiary	-	(240)	-	-
Share based payments	1,312	1,096	417	152
Dividend income	-	-	(86)	-
Non-operating other income	-	-	(11)	-
Total	11,258	(5,122)	3,086	9,523

Source: Audited financial statements

Orion disclosed losses from continuing operations of \$17.1 and total comprehensive losses of \$15.2m for FY23, relatively consistent with that disclosed for FY22.

3.5 Financial position

The table below sets out a summary of the financial position of Orion as at 30 June 2021, 30 June 2022 and 30 June 2023.

Table 15 Orion historical financial position

Orion Minerals Ltd Consolidated Financial Position (\$'000)	30-Jun-21 Audited	30-Jun-22 Audited	30-Jun-23 Audited
Current assets			
Cash and cash equivalents	20,553	4,288	7,564
Trade and other receivables	368	394	294
Rehabilitation bonds	349	348	331
Prepayments	84	428	762
Total current assets	21,354	5,458	8,951
Non-current assets			
Trade and other receivables	93	93	90
Rehabilitation bonds	2,359	2,684	2,831
Right of use asset	2,018	1,897	1,221
Loans to related parties	4,227	4,743	4,699
Investment in preference shares	22,648	24,602	24,973
Plant and equipment	103	386	557
Deferred exploration, evaluation and development	45,158	49,773	49,043
Total non-current assets	76,606	84,178	83,414
Total assets	97,960	89,636	92,365
Current liabilities			
Trade and other payables	963	2,522	2,221
Provisions	177	189	124
Loans	1,888	1,959	-
Leases	-	1	4
Total current liabilities	3,028	4,671	2,349
Non-current liabilities			
Provisions	1,823	1,953	1,893
Loans	-	-	1,981
Leases	2,106	2,115	1,516
Total non-current liabilities	3,929	4,068	5,390
Total liabilities	6,957	8,739	7,739
Net assets	91,003	80,897	84,626
Equity			
Issued capital	184,999	189,755	207,625
Accumulated losses	(113,924)	(127,481)	(139,944)
Share based payments reserve	3,919	3,606	2,837
Foreign currency translation reserve	(270)	(24)	1,871
Other reserve	19,956	19,956	20,482
Non-controlling interests	(3,677)	(4,915)	(8,245)
Total equity	91,003	80,897	84,626

Source: Audited financial statements

At 30 June 2023, Orion disclosed net assets of \$84.6m attributable to equity holders of the Group (2022: \$80.9m). The movements in net asset positions are primarily attributable to losses incurred in each financial year, offset by the issue of share capital, and movements in share based payment expenses recognised.

We note the following in respect of total assets at 30 June 2023:

- Total assets of \$92.4m primarily comprised capitalised deferred exploration, evaluation and development expenditure (\$49.0m) relating to the Company's exploration and development activities, investment in preference shares (\$25.0m), cash and cash equivalents of \$7.6m, loans to related parties (\$4.7m), rehabilitation bonds totalling \$3.2m (current and non-current portions), and right of use assets of \$1.2m.
- Of the total related party loans receivable of \$4.7m at 30 June 2023, \$1.2m related to a principal amount due from Prieska Resources, and \$3.5m due from JV partners, being the Namaqua Disawell Companies.
- The Black Economic Empowerment ("BEE") restructure implemented in September 2019 involved the acquisition by Prieska Resources of a 20% interest in Orion's 70% subsidiary PCZM (the remaining 10% is held by two other South African entities), for a purchase consideration of circa \$14.45m (ZAR142.78m). To fund the acquisition, the Company has provided vendor financing comprised of two components being the loan to Prieska Resources (as set out above) and preference shares.
- The investment in preference shares of \$25.0m relates to the second component of vendor financing relating to the 20% acquisition of PCZM by Prieska Resources. The preference shares issued by Prieska Resources to the Company through the issue of shares to Orion's wholly owned subsidiary, Agama Exploration & Mining (Pty) Ltd (Agama, in turn the direct parent entity of PCZM), have the following key terms:
 - the preference shares rank in priority to the rights of all other shares of Prieska Resources with respect to the distribution of Prieska Resource's assets, in an amount up to the redemption amount in the event of the liquidation, dissolution or winding up of Prieska Resources, whether voluntary or involuntary, or any other distribution of Prieska Resources, whether for the purpose of winding up its affairs or otherwise:
 - the preference shares are redeemable by Prieska Resources at any time after the expiry of a period of 3 years and 1 day after the date of issue of the preference shares (being 11 September 2019 and 28 January 2020), and prior to the 8th anniversary of their date of issue at an internal rate of return of 12%; and
 - any preference shares held by the Company (through its subsidiary Agama) after the 8th anniversary of their date of issue will be automatically converted pro rata into ordinary shares in Prieska Resources, up to 49% of the shares in Prieska Resources or, subject to compliance with South African laws, an equivalent number of shares in PCZM.
- Rehabilitation bonds totalling \$3.2m at 30 June 2023 comprise cash placed on deposit to secure bank guarantees in respect of obligations entered into for environmental performance bonds issued in favour of the relevant government body for projects located in South Africa and Victoria (Australia). The Group also has environmental obligations for various projects in South Africa, including the Prieska Project. The Group has engaged the services of Centriq Insurance Company Ltd ("**Centriq**"), a company established to meet the financial provisioning requirements of Mining Rights in South Africa. Funds held by Centriq relate to premiums paid to Centriq and represent collateral held by Centriq against guarantees that have been issued. Funds held by Centriq on behalf of the Group are refundable to the Group when the guarantees expire. The bond can be applied by the government body for rehabilitation works should the Group fail to meet regulatory standards for environmental rehabilitation.
- Right of use assets at 30 June 2023 of \$1.2m relate to land and buildings (with corresponding lease liabilities totalling \$1.5m as referenced below). The decrease at 30 June 2023 compared to \$1.9m at 30 June 2022 was due to the Company no longer leasing an ammunition bunker for the Prieska Project.

We note the following in respect of total liabilities of \$7.7m disclosed at 30 June 2023:

- Total liabilities comprised trade and other payables (\$2.2m), total provisions of \$2.0m (current and non-current), non-current loans payable of \$2.0m, and total lease liabilities of \$1.5m.
- Current provisions of \$124k related to employee provisions for annual leave. Non-current provisions comprised employee benefits for long service leave of \$21k and rehabilitation provision of \$1.9m.

- In South Africa, long term environmental obligations are based on the Group's environmental plans, in compliance with current environmental and regulatory requirements. Full provision is made based on the net present value of the estimated cost of restoring the environmental disturbance that has occurred up to the reporting date. The estimated cost of rehabilitation is reviewed annually and adjusted as appropriate for changes in legislation. The rehabilitation provision for the Group's South African projects is offset by guarantees held by Centriq.
- In Australia, the state government regulations in Victoria require rehabilitation of drill sites including any other sites where the Group has caused surface and ground disturbance. The estimated cost of rehabilitation is reviewed annually and adjusted as appropriate for changes in legislation. The rehabilitation provision for the Group's Victorian project is partially offset by a guarantee held on deposit.
- At 30 June 2023, the Company disclosed a non-current loan of \$1.98m due to the IDC. In November 2022, Orion and the IDC entered into definitive agreements in terms of which the IDC acquired 43.75% of the issued ordinary shares in New Okiep Mining Company Proprietary Limited ("**NOM**") and triggered pre-development funding arrangements for the Flat Mines SAFTA area ("**Flat Mines Project**").
- Under the terms of the NOM memorandum of incorporation, the IDC funding of pre-development costs in the aggregate amount of ZAR34.58m will be advanced to NOM as a shareholder loan on the same terms as the pre-development funding amount of ZAR44.46m that Orion had already advanced to NOM, including that the loan is unsecured, interest free until such time as the Flat Mines Project commences commercial production and will be repaid when NOM is in a financial position to make repayment.
- In November 2022, the IDC advanced ZAR21.91m (\$1.90m) of its pre-development funding commitment, with a further ZAR12.7m (\$1.04m) advanced in March 2023. The loan has been accounted for in accordance with IFRS 9, the discounted loan value with initial recognition was ZAR23.41m (\$1.99m) and ZAR24.60m (\$2.09m) as at 30 June 2023. The loan is discounted at a Prime lending rate in South Africa with interest on the loan of ZAR1.18m (\$0.1m) recognised during FY23.
- At 30 June 2022, the Company disclosed a current loan payable of \$1.96m due to Anglo American sefa Mining Fund ("**AASMF**"). This loan was first advanced to the Company in August 2017. In May 2023, the Company repaid the loan due AASMF fully in cash. AASMF released the security associated with the loan, being 29.17% of the shares held in PCZM by Agama, that were pledged as security to AASMF for the performance by PCZM of its obligations in terms of the loan.

3.6 Capital Structure

As at the date of this report, Orion had 5.7b ordinary shares on issue. The top 20 shareholders as at 6 October 2023 are set out below.

Table 16 Top 20 shareholders

Shareholder	Number	%
NDOVU CAPITAL X BV	1,081,799,892	19.02%
CLOVER ALLOYS COPPER INVESTMENTS	511,208,440	8.99%
SPARTA AG	334,738,758	5.89%
DELPHI UNTERNEHMENSBERATUNG AKTIENGESELLSCHAFT	263,858,029	4.64%
MIR THOMAS BORMAN (INCLUDING RELEVANT INTERESTS VIA RATEL GROWTH PTY LTD AND BROKER A/C)	193,138,888	3.40%
IGO LIMITED	154,166,666	2.71%
PERSHING LLC	132,060,794	2.32%
GEPF - M AND G INVESTMENTS	123,187,773	2.17%
DEUTSCHE BALATON AKTIENGESELLSCHAFT	111,495,064	1.96%
SILJA INVESTMENT LIMITED	95,804,403	1.68%
MIR DENIS PATRICK WADDELL & MRS FRANCINE LOUISE WADDELL <DP WADDELL S/F A/C> (INCLUDING RELEVANT INTERESTS VIA TARNEY HOLDINGS PTY LTD)	80,943,912	1.42%
PERESEC PRIME BROKERS (PTY) LTD	63,098,840	1.11%
NETWEALTH INVESTMENTS LIMITED <WRAP SERVICES A/C>	59,861,149	1.05%
MIR PETRUS JOHANNES FOURIE	55,546,487	0.98%
MOSIAPOA CAPITAL (PTY) LTD	54,320,235	0.96%
AFRICAN EXPLORATION MINING AND FINA SOC LIMITED	43,522,276	0.77%
BELAIR AUSTRALIA PTY LTD <CAPRI INVESTMENT A/C>	42,000,000	0.74%
ANGLO AMERICAN SEFA MINING	38,783,706	0.68%
ANGLO AMERICAN ZIMELE PTY LTD	38,783,706	0.68%
MIR MARK WILLIAM DANIEL & MRS SUZANNE LOUISE DANIEL <M & S DANIEL SUPER FUND A/C>	33,666,666	0.59%
	3,511,985,684	61.76%
Other shareholders	2,174,715,664	38.24%
Total	5,686,701,348	100.00%

Source: Orion shareholder registers as of 6-Oct-23

As at the date of this Report, Orion also had 3.8b unlisted options on issue. The key terms of these unlisted options are summarised in the table below.

Table 17 Summary of unlisted options on issue

Option type	Number	Exercise price (\$)	Expiry date
ORNAJ - unlisted options	3,513,154,708	\$0.017	30-Nov-23
ORNAB - unlisted options	25,000,000	\$0.040	30-Apr-24
ORNAB - unlisted options	25,000,000	\$0.050	30-Apr-24
ORNAB - unlisted options	25,000,000	\$0.060	30-Apr-24
ORNAB - unlisted options	11,000,000	\$0.030	17-Jun-24
ORNAT - unlisted options	21,333,333	\$0.028	31-Mar-25
ORNAU - unlisted options	21,333,333	\$0.035	31-Mar-25
ORNAV - unlisted options	21,333,334	\$0.040	31-Mar-25
ORNAX - unlisted options	37,000,000	\$0.023	31-Jan-28
ORNAY - unlisted options	37,000,000	\$0.027	31-Jan-28
ORNAZ - unlisted options	37,000,000	\$0.032	31-Jan-28
3,774,154,708			

Source: Options register as at 8-Sep-23

The 3.5b options exercisable at \$0.017 per share option and expiring on 30 November 2023 comprise the Options issued under the Placement with Clover Alloys holding 1,777,777,776 of these Options.

3.7 Share Price Performance

A summary of Orion's share price movement as traded on the ASX from 1 July 2022 to 9 October 2023 is set out in the figure below.

Figure 2 Historical share price performance and volumes traded (ASX)



Over the period 1 July 2022 to 9 October 2023, Orion shares traded at a low of \$0.012 to a high of \$0.022.

The table below sets out a summary of recent announcements made by the Company.

Table 18 Orion selected announcements

Ref	Date	Commentary
1	14-Nov-22	The Company announced that Orion and the IDC had entered into definitive agreements where the IDC acquired 43.75% of the issued ordinary shares in NOM and triggered pre-development funding arrangements for the Flat Mines SAFTA area (Flat Mines Project) (Okiep Project).
2	13-Dec-22	Orion announced that the Company had signed definite agreements with Triple Flag for a US\$87m (circa A\$128m) secured funding package for PCZM, comprising a Precious Metal Stream and additional early Funding Arrangement to advance the development of the Prieska Project (Triple Flag Funding Arrangement).
3	3-Jan-23	The Company announced that substantial shareholder Tembo Capital Mining Fund II LP ("Tembo Capital") had provided a new unsecured convertible loan facility of US\$0.5m (circa A\$0.73m) with the loan facility to be used principally for working capital purposes.
4	8-Feb-23	Orion announced that the Company had signed definitive agreements for the ZAR250m (c. A\$21m) IDC Convertible Loan to fund early mining works and key pre-development activities at the Prieska Project.
5	15-Mar-23	The Company announced the terms of the two-tranche Placement and subsequently announced the appointment of Philip Kotze, the CEO of Clover Alloys as a Non-Executive Director on 6 April 2023.
6	8-May-23	The Company announced that it had satisfied one of the key conditions precedent to draw down on both the IDC Convertible Loan and the Triple Flag Funding Arrangement through the repayment of the AASMF loan facility.
7	17-Jul-23	Orion announced that the Company had fulfilled all conditions precedent to enable the Company to submit initial drawdown notices to both the IDC and Triple Flag for an initial drawdown totalling ZAR167m (circa A\$13.8m).
8	25-Jul-23	The Company announced an updated mineral resource estimate for the near surface +105 Level Crown Pillar Block at the Prieska Project comprising Indicated and Inferred Resources of 2.3Mt grading 1.7% Cu and 1.6% Zn.
9	28-Aug-23	The Company announced an increase in the mineral resource estimates for three deposits that form part of the Okiep Project. The Measured, Indicated and Inferred Mineral Resources have been re-estimated for the Flat Mine North, Flat Mine East and Flat Mine South deposits, totalling 9.3Mt grading 1.3% Cu for 130,000 tonnes of contained copper. Together with estimated mineral resources reported for Flat Mine (Nababeep), Jan Coetzee Mine and Nababeep Kloof Mine, the total mineral resource at the Okiep Project was estimated at 12Mt grading 1.4% Cu for 160,000 tonnes of contained copper.
10	4-Sep-23	The Company announced that it had received notice from the Department of Mineral Resources and Energy for the addition of five new "copper ore" and "tungsten ore" areas to its existing tenement portfolio on the Okiep Project.
11	5-Sep-23	Orion announced that the Company had awarded a 6-month trial mining contract for the Prieska Project to Newrak Mining Group to undertake an early works trial underground mining program at the Prieska Copper-Zinc Mine, with the trial mining targeting the +105 Level Crown Pillar block.
12	5-Oct-23	The Company disclosed the on-market purchase of Shares by Clover Alloys from Non-Executive Chair, Mr Denis Waddell.

Orion also has a secondary listing on the JSE. A summary of Orion’s share price movement as traded on the JSE from 1 July 2022 to 9 October 2023 is set out in the figure below.

Figure 3 Historical share price performance and volumes traded (JSE)



Over the period 1 July 2022 to 9 October 2023, Orion shares traded on the JSE at a low of ZAR0.18 to a high of ZAR0.29.

4. Valuation Approach

4.1 Valuation methodologies

RG 111 proposes that it is generally appropriate for an expert to consider using the following methodologies:

- the discounted cash flow (“**DCF**”) method and the estimated realisable value of any surplus assets;
- the application of earnings multiples to the estimated future maintainable earnings added to the estimated realisable value of any surplus assets;
- the amount which would be available for distribution on an orderly realisation of assets;
- the quoted price for listed securities; and
- any recent genuine offers received.

We consider that the valuation methodologies proposed by RG 111 can be split into three valuation methodology categories, as follows.

Market based methods

Market based methods estimate the fair value by considering the market value of a company’s securities or the market value of comparable companies. Market based methods include;

- the quoted price for listed securities; and
- industry specific methods.

The recent quoted price for listed securities method provides evidence of the fair value of a company’s securities where they are publicly traded in an informed and liquid market.

Industry specific methods usually involve the use of industry rules of thumb to estimate the fair value of a company and its securities. Generally, rules of thumb provide less persuasive evidence of the fair value of a company than other market-based valuation methods because they may not account for company specific risks and factors.

Income based methods

Income based methods estimate value by calculating the present value of a company’s estimated future stream of earnings or cash flows. Income based methods include:

- discounted cash flow;
- capitalisation of future maintainable earnings.

The DCF technique has a strong theoretical basis, valuing a business on the net present value of its future cash flows. It requires an analysis of future cash flows, the capital structure and costs of capital and an assessment of the residual value or the terminal value of the company’s cash flows at the end of the forecast period. This method of valuation is appropriate when valuing companies where future cash flow projections can be made with a reasonable degree of confidence.

The capitalisation of future maintainable earnings is generally considered a short form DCF, where an estimation of the Future Maintainable Earnings (“**FME**”) of the business, rather than a stream of cash flows is capitalised based on an appropriate capitalisation multiple. Multiples are derived from the analysis of transactions involving comparable companies and the trading multiples of comparable listed companies.

Asset based methods

Asset based methodologies estimate the fair value of a company's securities based on the realisable value of its identifiable net assets. Asset based methods include:

- orderly realisation of assets method;
- liquidation of assets method; and
- net assets on a going concern basis.

The value achievable in an orderly realisation of assets is estimated by determining the net realisable value of the assets of a company which would be distributed to security holders after payment of all liabilities, including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner. This technique is particularly appropriate for businesses with relatively high asset values compared to earnings and cash flows.

The liquidation of assets method is similar to the orderly realisation of assets method except the liquidation method assumes that the assets are sold in a shorter time frame. The liquidation of assets method will result in a value that is lower than the orderly realisation of assets method and is appropriate for companies in financial distress or where a company is not valued on a going concern basis.

The net assets on a going concern method estimates the market values of the net assets of a company but unlike the orderly realisation of assets method it does not take into account realisation costs. Asset based methods are appropriate when companies are not profitable, a significant proportion of the company's assets are liquid, or for asset holding companies.

4.2 Valuation of mineral assets held by Orion

SRK Consulting (Australasia) Pty Ltd ("**SRK Consulting**" or "**SRK**") has prepared an independent specialist report ("**ISR**") comprising an independent technical assessment and valuation of the Company's Mineral Resources and exploration potential of the broader mineral tenures (collectively referred to as mineral assets).

For the purpose of this Report, we have relied upon the valuation of Orion's mineral assets provided by SRK Consulting in our assessment of the valuation of Orion. A copy of the ISR is set out in Appendix G.

We note that SRK Consulting has provided an assessment of the Market Value of Orion's mineral assets on a 100% interest basis. Accordingly, in our assessment of the Fair Value of the mineral assets, we have calculated a pro rata value of each Project based on the Company's relevant interest in the Project.

Where the Company has been assessed as having a controlling interest in the Project (having control of the operating strategy and cashflows of the Project), we have not applied discounts to reflect a lack of control.

With the Company's minority interest holdings in the Fraser Range Project, we have applied a further discount for lack of control (minority interest) in our assessment of the Fair Value of the Fraser Range Project.

4.3 Selection of valuation methodologies

Valuation of Orion prior to the Proposed Transaction

In assessing the value of a Share in Orion prior to the Proposed Transaction, we have utilised the net assets on a going concern methodology and relied upon the net book value of assets and liabilities set out in Orion's audited statement of financial position at 30 June 2023, together with the Market Value of the mineral assets assessed by SRK Consulting as set out in Appendix G in our assessment of the Fair Value of Orion's relevant interest in each Project.

Prices at which a company's shares have been traded on the ASX can, in the absence of low liquidity or unusual circumstances, provide an objective measure of the value of the company, excluding a premium for control. We have utilised the quoted market price of listed securities methodology as a secondary methodology in our valuation of Orion.

Valuation of Orion immediately after the Proposed Transaction

We have also selected the net assets on a going concern basis methodology in our assessment of the value of an Orion Share immediately following the completion of the Proposed Transaction. Our assessment of the value of a share in Orion immediately following the Proposed Transaction is also based on the pro forma financial position at 30 June 2023 and adjusted for the terms of the Proposed Transaction.

As the approval of the Proposed Transaction will result in the decrease of Non-Associated Shareholders' interest in Orion from 91.01% to 69.33% (on an undiluted basis), in accordance with RG 111, we have ascribed a discount for lack of control to the value of an Orion Share immediately after the Proposed Transaction.

5. Valuation of Orion Minerals Ltd

As stated in Section 4 of this Report, we have adopted the Net Assets on a Going Concern methodology to assess the Fair Value of an Orion Share prior to the Proposed Transaction. We have also utilised the quoted price of the Company's listed securities as our secondary methodology.

5.1 Net assets on a Going Concern Basis methodology

Our assessment of the Fair Value of Orion's net assets prior to the Proposed Transaction is shown in the table below, based on the audited consolidated statement of financial position of the Company as at 30 June 2023, adjusted to reflect the Fair Value of the Company's interest in its mining assets, as valued by SRK Consulting, as well as the pro forma transactions as set out below.

Table 19 Assessed Value of Orion on a Net Assets Basis (prior to the Proposed Transaction) (controlling basis)

Orion Minerals Ltd Consolidated Financial Position (\$'000)	30-Jun-23 Audited	Note	Adjustments Low	Adjustments High	Assessed Value Prior to the Proposed Transaction Low	Assessed Value Prior to the Proposed Transaction High	Assessed Value Prior to the Proposed Transaction Preferred
Current assets							
Cash and cash equivalents	7,564	2	170	170	7,734	7,734	7,734
Trade and other receivables	294		-	-	294	294	294
Rehabilitation bonds	331		-	-	331	331	331
Prepayments	762		-	-	762	762	762
Total current assets	8,951		170	170	9,121	9,121	9,121
Non-current assets							
Trade and other receivables	90		-	-	90	90	90
Rehabilitation bonds	2,831		-	-	2,831	2,831	2,831
Right of use asset	1,221	4	(1,221)	(1,221)	-	-	-
Loans to related parties	4,699		-	-	4,699	4,699	4,699
Investment in preference shares	24,973		-	-	24,973	24,973	24,973
Plant and equipment	557		-	-	557	557	557
Deferred exploration, evaluation and development / Assessed Fair Value of mineral assets	49,043	1	45,657	80,857	94,700	129,900	108,100
Total non-current assets	83,414		44,436	79,636	127,850	163,050	141,250
Total assets	92,365		44,606	79,806	136,971	172,171	150,371
Current liabilities							
Trade and other payables	2,221		-	-	2,221	2,221	2,221
Provisions	124		-	-	124	124	124
Loans	-		-	-	-	-	-
Leases	4	4	(4)	(4)	-	-	-
Potential dilutionary impact of options	-	3	13,977	13,977	13,977	13,977	13,977
Total current liabilities	2,349		13,973	13,973	16,322	16,322	16,322
Non-current liabilities							
Provisions	1,893		-	-	1,893	1,893	1,893
Loans	1,981		-	-	1,981	1,981	1,981
Leases	1,516	4	(1,516)	(1,516)	-	-	-
Total non-current liabilities	5,390		(1,516)	(1,516)	3,874	3,874	3,874
Total liabilities	7,739		12,457	12,457	20,196	20,196	20,196
Net assets	84,626		32,149	67,349	116,775	151,975	130,175
Number of Shares on issue ('000)	5,647,049	2	39,653	39,653	5,686,701	5,686,701	5,686,701
Assessed Fair Value per Share (controlling basis)	\$0.015				\$0.021	\$0.027	\$0.023

Source: Audited financial statements, ISR and RSM calculations

In order to calculate the Fair Value of Orion's Shares, we have made a number of adjustments to the carrying values of the Company's assets and liabilities included in the statement of financial position. These adjustments are set out below. Other than the adjustments specified below, based on our review, we are not aware of any indicators that the book value of the other assets and liabilities differ materially from their Fair Value.

1. Fair Value of Mineral Assets

Valuation - 100% interest

SRK Consulting has assessed the Market Value of the mineral assets on a 100% basis to be in the range of \$150.8m to \$205.8m, with a preferred value of \$171.6m. We set out in the table below a summary of the assessed Market Value of Orion's mineral assets as extracted from the ISR (refer Appendix G).

Table 20 Summary of assessed Market Value of Mineral Assets (100% basis)

Summary of the Market Value of the Mineral Assets, 100% basis	Low A\$m	High A\$m	Preferred A\$m
Mineral Resource	85.1	113.5	99.3
Exploration Potential	-	-	-
Prieska (100%)	85.1	113.5	99.3
Mineral Resource	8.7	11.5	10.1
Exploration Potential	3.8	7.6	3.8
Okiep (100%)	12.4	19.1	13.9
Mineral Resource	36.8	45.9	41.4
Exploration Potential	8.5	13.3	8.5
Jacomynspan (100%)	45.3	59.2	49.8
Exploration Potential	6.7	11.4	6.7
Areachap (100%)	6.7	11.4	6.7
Total South Africa	149.5	203.2	169.7
Exploration Potential	0.8	1.6	1.2
Fraser Range (100%)	0.8	1.6	1.2
Exploration Potential	0.5	1.0	0.7
Walhalla (100%)	0.5	1.0	0.7
Total Australia	1.3	2.6	1.9
Total mineral assets (100%)	150.8	205.8	171.6

Source: SRK Consulting ISR

In assessing the Market Value of the mineral assets, SRK Consulting has utilised the following methodologies:

- Prieska, Okiep and Jacomynspan Projects – Mineral Resource utilising the Comparable Transactions methodology and utilising actual transactions relating to the relevant projects as well as the Yardstick methodology as cross checks to the Comparable Transactions method adopted.

Whilst Orion has released its BFS-20 in relation to the Prieska Project, SRK has determined, having regard to ASIC regulatory guidelines and the VALMIN code that, for the purpose of this IER, there is sufficient uncertainty in relation to the BFS-20 that use of the BFS-20 to undertake a DCF valuation of the Market Value of Resources within the Prieska Project Life of Mine Model would be inappropriate. The uncertainties primarily relate to:

- uncertainties in relation to changes in costs since 2020 due to worldwide economic events since the production of the BFS-20; and
 - uncertainties due to the proportion of inferred resources scheduled for extraction in the early periods of the Life of Mine Model.
- Okiep, Jacomynspan and Areachap Projects – Exploration Potential utilising the Geoscientific Rating (or modified Kilburn method) and Multiple of Exploration Expenditure methodologies; and
 - Fraser Range and Walhalla Projects – Exploration Potential utilising the Comparable Transactions and Geoscientific Rating methodologies.

Valuation – Orion's relevant interest

The table below sets out our assessment of the Fair Value of the mineral assets, based on our assessment of Orion's relevant interest in each Project.

Table 21 Summary of assessed Fair Value of Orion's relevant interest in the mineral assets

Fair Value of Mineral Assets	Low A\$m	High A\$m	Preferred A\$m
Mineral Resource	59.6	79.5	69.5
Exploration Potential	-	-	-
Assessed Fair Value of Prieska Project (70%100% controlling interest)	59.6	79.5	69.5
Mineral Resource	4.9	6.5	5.7
Exploration Potential	3.7	7.3	3.7
Assessed Fair Value of Okiep Project (56.25%100% controlling interest)	8.6	13.8	9.4
Mineral Resource	18.4	23.0	20.7
Exploration Potential	4.2	6.7	4.2
Assessed Fair Value of Jacomynspan Project (50% controlling interest)	22.6	29.6	24.9
Exploration Potential	3.3	5.7	3.3
Assessed Fair Value of Areachap Project (controlling 50%100% interest)	3.3	5.7	3.3
Total South Africa	94.1	128.6	107.1
Exploration Potential	0.2	0.3	0.2
Assessed Fair Value of Fraser Range Project (non- controlling 10%35% interest)	0.2	0.3	0.2
Exploration Potential	0.5	1.0	0.7
Assessed Fair Value of Walhalla Project (controlling 100% interest)	0.5	1.0	0.7
Total Australia	0.7	1.3	1.0
Assessed total Fair Value of Orion's interest in the mineral assets	94.7	129.9	108.1

Source: ISR and RSM analysis

Further detail on our assessment of the Fair Value of Orion's relevant interest in each of the Projects is set out in Appendix F.

2. Issue of shares subsequent to 30 June 2023

On 8 August 2023, the Company announced the issue of 29,652,778 new ordinary Shares as payment for professional services provided by Webb Street Capital (Pty) Ltd, as well as the issue of 10,000,000 new ordinary Shares following the exercise of options at \$0.017 per option. Accordingly, we have adjusted the balance sheet at 30 June 2023 for these share issues.

3. Dilutionary impact of unlisted options on issue

As set out in section 3.6, the Company has 3.8b unlisted options on issue. We have included the potential dilutionary impact of these options in our assessment of the Fair Value of an Orion Share prior to the Proposed Transaction. Further detail on the assumptions and inputs we have used to value the potential dilutionary impact of the unlisted options is set out in Appendix D.

4. Adjustment for right-of-use assets and lease liabilities

In our assessment of the value of the Company, we have excluded right-of-use assets and the corresponding lease liabilities in our computation of net asset value. We consider that, absent of any impairment of the right-of-use assets, or leases being at non-market rates, a market participant would value the right-of-use assets and corresponding lease liabilities at the same value.

Conclusion

Based on the above and as set out in Table 19, our assessed value of an Orion Share prior to the Proposed Transaction (on a controlling basis) utilising the net assets on a going concern methodology is \$0.021 to \$0.027, with a preferred value of \$0.023.

Premium for control

Obtaining control of an entity usually provides the acquirer with a number of advantages including the following:

- access to potential synergies;
- control over decision making and strategic direction;
- access to underlying cash flows; and
- control over dividend policies.

In the case of publicly traded securities, given the advantages control of an entity provides an acquirer, they are usually expected to pay a premium to the quoted market price to achieve control, which is often referred to as a control premium. Consequently, earnings multiples for listed companies do not reflect the market value of a controlling interest in the company as they are derived from market prices which usually represent the buying and selling of non-controlling portfolio holdings (small parcels of shares).

The value of an Orion Share prior to the Proposed Transaction is the value of a share on a controlling basis. The net assets on a going concern methodology applied represents the value of a controlling shareholding. Accordingly, we consider no further premium is considered necessary to assess the value of Orion prior to the Proposed Transaction.

5.2 Quoted Price of Listed Securities (Secondary methodology)

As a secondary method of valuing an Orion Share prior to the Proposed Transaction, we have also considered the quoted price for listed securities method.

The assessment only reflects trading prior to the announcement of the Proposed Transaction in order to avoid the influence of any movement in price that may occur as a result of the announcement.

RG 111.62 indicates that in order for the quoted market share price methodology to represent a reliable indicator of Fair Value, there needs to be an active and liquid market for the securities. The following characteristics may be considered to be representative of a liquid and active market:

- regular trading in the company's securities;
- approximately 1% of a company's securities traded on a weekly basis;
- the bid/ask spread of a company's shares must not be so great that a single majority trade can significantly affect the market capitalisation of the company; and
- there are no significant but unexplained movements in share price.

To provide further analysis of the quoted market prices for Orion's Shares, we have considered the Volume Weighted Average Price ("VWAP") for the 5, 10, 30, 60, 90, 120, and 180 calendar days prior to 10 October 2023, on both the ASX and JSE, as summarised in the table below.

Table 22 VWAP of Orion shares

Calendar days	Share price Low \$	Share price High \$	No. of days traded	Volume traded	Value traded \$	VWAP \$	Percentage of issued capital %
5 days	\$0.017	\$0.019	3	134,430,140	\$2,396,022	\$0.018	2.36%
10 days	\$0.017	\$0.020	6	142,774,080	\$2,553,675	\$0.018	2.51%
30 days	\$0.017	\$0.021	21	163,409,750	\$2,953,404	\$0.018	2.87%
60 days	\$0.017	\$0.022	42	204,708,460	\$3,786,074	\$0.018	3.60%
90 days	\$0.017	\$0.024	64	248,412,120	\$4,702,343	\$0.019	4.38%
120 days	\$0.017	\$0.024	86	298,005,910	\$5,609,438	\$0.019	5.26%
180 days	\$0.015	\$0.024	128	419,668,000	\$8,113,187	\$0.019	7.47%

Source: Capital IQ and RSM analysis

As set out in the table above, the VWAP of Orion's shares traded between \$0.018 and \$0.019 per share over the 180-day period prior to 10 October 2023.

We note the following:

- during the 180 days leading up to 10 October 2023, 7.47% of the weighted average issued shares outstanding was traded, and in the 60 days leading up to 10 October 2023, 3.60% of the issued outstanding share capital was traded;
- the bid/ask spread is often used to measure efficiency. For the 180-day period, the closing bid/ask spread of Orion averaged 5.0% of the midpoint price. On the basis that, over a comparable period, all stocks trading on the ASX had an effective average bid-ask spread of 0.1892%¹, we consider the bid/ask spread of the Company to be comparatively large;

¹ Equity market data for the quarter ended 31 June 2023 - ASIC

- notwithstanding the low levels of liquidity, Orion complies with the full disclosure regime required by the ASX. As a result, the market is fully informed about the performance of the Company.

Based on the analysis of the recent trading in Orion's shares, we have assessed the value of an Orion Share on a minority interest basis to be in the range of \$0.018 to \$0.019.

The value above is indicative of the value of a marketable parcel of securities assuming a holder does not have control of the Company. In the case of a section 611, item 7 acquisition, RG 111 states that the independent expert should calculate the value of a target's securities as if 100% control were being obtained. Therefore, in our assessment of the Fair Value of an Orion Share, we should include a premium for control.

RSM has conducted a study on 605 takeovers and schemes of arrangements involving companies listed on the ASX over the 15.5 years ended 31 December 2020. In determining the control premium, we compared the offer price to the closing trading price of the target company 20, 5 and 2 trading days pre the date of the announcement of the offer.

The table below sets out a summary of average control premiums of the RSM Control Premium Study.

Table 23 RSM Control Premium Study

	Number of transactions	20 days pre	5 days pre	2 days pre
Average control premium - all industries	605	34.7%	29.2%	27.1%
Average - Metals and Mining	161	36.6%	32.5%	29.8%

Source: RSM Control Premium Study 2021

A discount to reflect a minority interest in an entity is the inverse of a control premium. In valuing an ordinary Orion Share prior to the Proposed Transaction, and having regard to the Company gearing structure, we consider that a premium for control in the range of 25.0% to 30.0% would be reflective of the Company's operations.

The table below sets out our assessment of the value of an Orion Share on a controlling basis using the quoted market price of listed securities methodology.

Table 24 Assessed Fair Value of an Orion Share – Quoted price of listed securities

	Low	High	Preferred
Quoted market price (non-controlling basis)	\$0.018	\$0.019	\$0.0185
Control premium	25.0%	30.0%	27.5%
Value of a Share (controlling basis)	\$0.023	\$0.025	\$0.024

Source: RSM analysis

5.3 Valuation Summary (Prior to the Proposed Transaction)

A summary of our assessed values of an Orion Share prior to the Proposed Transaction is set out in the table below.

Table 25 Valuation Summary (prior to the Proposed Transaction)

	Ref	Low	High	Preferred
Net assets on a going concern - primary method	Table 19	\$0.021	\$0.027	\$0.023
Quoted price of listed securities - secondary method	Table 24	\$0.023	\$0.025	\$0.024

Source: RSM analysis

We have relied upon the net assets on a going concern methodology as our primary valuation methodology, and accordingly, have assessed the Fair Value of an Orion Share on a controlling basis prior to the Proposed Transaction to be in the range of \$0.021 to \$0.027, with a preferred value of \$0.023.

Notwithstanding our conclusion, we consider the valuation derived under the quoted listed price of securities methodology to be reasonably supportive of the valuation derived under our primary methodology.

5.4 Valuation of an Orion Share immediately after the Proposed Transaction

Our assessment of the Fair Value of an Orion Share immediately after the Proposed Transaction (on a controlling basis), is set out in the table below.

Table 26 Assessed Value of Orion on a Net Assets Basis (immediately after the Proposed Transaction) (controlling basis)

Orion Minerals Ltd Consolidated Financial Position (\$'000)	Assessed Value Prior to the Proposed Transaction Low	Assessed Value Prior to the Proposed Transaction High	Assessed Value Prior to the Proposed Transaction Preferred	Adjustments	Assessed Value Immediately post Proposed Transaction Low	Assessed Value Immediately post Proposed Transaction High	Assessed Value Immediately post Proposed Transaction Preferred
Current assets							
Cash and cash equivalents	7,734	7,734	7,734	30,222	37,956	37,956	37,956
Trade and other receivables	294	294	294	-	294	294	294
Rehabilitation bonds	331	331	331	-	331	331	331
Prepayments	762	762	762	-	762	762	762
Total current assets	9,121	9,121	9,121	30,222	39,343	39,343	39,343
Non-current assets							
Trade and other receivables	90	90	90	-	90	90	90
Rehabilitation bonds	2,831	2,831	2,831	-	2,831	2,831	2,831
Loans to related parties	4,699	4,699	4,699	-	4,699	4,699	4,699
Investment in preference shares	24,973	24,973	24,973	-	24,973	24,973	24,973
Plant and equipment	557	557	557	-	557	557	557
Deferred exploration, evaluation and development / Assessed Fair Value of mineral assets	94,700	129,900	108,100	-	94,700	129,900	108,100
Total non-current assets	127,850	163,050	141,250	-	127,850	163,050	141,250
Total assets	136,971	172,171	150,371	30,222	167,193	202,393	180,593
Current liabilities							
Trade and other payables	2,221	2,221	2,221	-	2,221	2,221	2,221
Provisions	124	124	124	-	124	124	124
Loans	-	-	-	-	-	-	-
Leases	-	-	-	-	-	-	-
Potential dilutionary impact of options	13,977	13,977	13,977	(6,933)	7,043	7,043	7,043
Total current liabilities	16,322	16,322	16,322	(6,933)	9,388	9,388	9,388
Non-current liabilities							
Provisions	1,893	1,893	1,893	-	1,893	1,893	1,893
Loans	1,981	1,981	1,981	-	1,981	1,981	1,981
Total non-current liabilities	3,874	3,874	3,874	-	3,874	3,874	3,874
Total liabilities	20,196	20,196	20,196	(6,933)	13,262	13,262	13,262
Net assets	116,775	151,975	130,175	37,156	153,931	189,131	167,331
Number of Shares on issue ('000)	5,686,701	5,686,701	5,686,701	1,777,778	7,464,479	7,464,479	7,464,479
Assessed Fair Value per Share (controlling basis)	\$0.021	\$0.027	\$0.023		\$0.021	\$0.025	\$0.022

Source: Audited financial statements, ISR and RSM calculations

The assessment of the Fair Value of an Orion Share immediately after the Proposed Transaction is also based on the pro forma balance sheet of the Company as at 30 June 2023, adjusted for:

- the issue of 1.78b new Shares to Clover Alloys upon the exercise of the Clover Options to raise \$30.2m; and
- the remaining potential dilutionary impact of the remaining 1.74b unlisted options on issue excluding the assessed dilutionary impact of the Clover Options included in our assessment of the Fair Value of an Orion Share prior to the Proposed Transaction (refer Appendix D).

Based on the above, we have assessed the Fair Value of an Orion Share immediately after the Proposed Transaction (on a controlling basis) to be in the range of \$0.021 to \$0.025.

5.5 Valuation of an Orion Share immediately after the Proposed Transaction (non-controlling basis)

The table below sets out our assessment of the value of an Orion Share on a minority interest basis immediately after the approval of the Proposed Transaction.

Table 27 Assessed Fair Value of Orion on a Net Assets Basis (immediately after the Proposed Transaction) (non-controlling basis)

	Ref	Low	High	Preferred
Value per Share (controlling basis)	Table 26	\$0.021	\$0.025	\$0.022
Discount for minority interest		(23.1%)	(20.0%)	(21.6%)
Value per Share (non-controlling interest)		\$0.016	\$0.020	\$0.018

RSM analysis

As the approval of the Proposed Transaction will result in the decrease of Non-Associated Shareholders' interest from 91.01% to 69.33%, in accordance with RG 111, we have ascribed a discount for lack of control to the value of an Orion Share immediately after the Proposed Transaction.

We have therefore applied a discount of 20.0% to 23.1% (rounded), being the inverse of the control premium utilised in our assessment of the value of an Orion Share on a quoted price of listed securities basis.

Based on the above, our assessed Fair Value of an Orion Share immediately after the Proposed Transaction (on a non-controlling basis), is in the range of \$0.016 to \$0.020, with a preferred value of \$0.018.

6. Is the Proposed Transaction Fair to Non-Associated Shareholders

In assessing whether we consider the Proposed Transaction to be fair to Non-Associated Shareholders, we have valued a Share in Orion prior to and immediately after the Proposed Transaction to determine whether a Non-Associated Shareholder would be better or worse off should the Proposed Transaction be approved. Our assessed values are summarised in the table below.

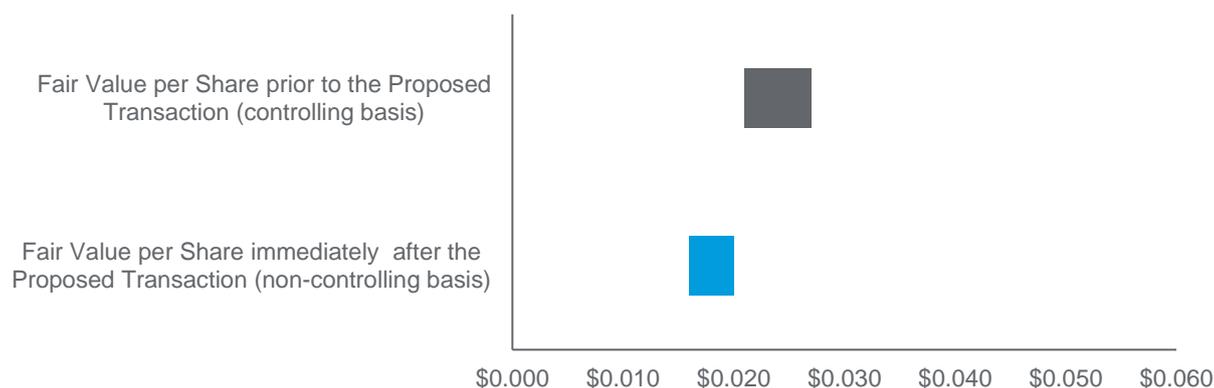
Table 28 Assessed Fair Value of an Orion Share prior to and immediately post the Proposed Transaction

	Ref	Low	High	Preferred
Fair Value per Share prior to the Proposed Transaction (controlling basis)	Table 19	\$0.021	\$0.027	\$0.023
Fair Value per Share immediately after the Proposed Transaction (non-controlling basis)	Table 27	\$0.016	\$0.020	\$0.018

Source: RSM analysis

The above comparison is depicted graphically below.

Figure 4 Assessed Fair Value of an Orion Share prior to and immediately post the Proposed Transaction



In our opinion, as the Fair Value of an Orion Share (on a non-controlling basis) immediately after the Proposed Transaction, is less than the Fair Value of an Orion Share (on a controlling basis) prior to the Proposed Transaction, we consider the Proposed Transaction is **not fair** to Non-Associated Shareholders.

We have assessed the Fair Value of an Orion Share post the Proposed Transaction to be in the range of \$0.016 to \$0.020. Shareholders should be aware that our assessment of the value per Orion share post approval of the Proposed Transaction does not necessarily reflect the price at which Orion Shares will trade if the Proposed Transaction is accepted. The price at which Orion Shares will ultimately trade depends on a range of factors including the liquidity of the Company's shares, macroeconomic conditions, the underlying performance of the Orion business and the supply and demand for Orion shares.

7. Is the Proposed Transaction Reasonable to Non-Associated Shareholders

RG111 establishes that an offer is reasonable if it is fair. If an offer is not fair it may still be reasonable after considering the specific circumstances applicable to the offer.

As such, we have also considered the following factors in relation to the reasonableness aspects of the Proposed Transaction:

- the future prospects of the Company if the Proposed Transaction does not proceed;
- other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding;
- alternative proposals to the Proposed Transaction; and
- the future intentions of Clover Alloys for the Company as disclosed in the Notice.

Given the Clover Options were issued as part of the Placement announced on 15 March 2023 and the Company has since made a number of announcements in relation to further developments in its various projects, we are not able to undertake any meaningful analysis of any market reaction to the Proposed Transaction through an analysis of trading of Orion's Shares.

7.1 Future prospects of Orion if the Proposed Transaction does not proceed

If the Proposed Transaction is not approved, the Company will not be able to issue all the Shares that Clover Alloys would be entitled to if all the Clover Options were exercised.

If all the Clover Options were exercised and a further 1.78b Shares issued, the Company would receive \$30.2m in additional funding. If the Proposed Transaction is not approved, Clover Alloys would be able to exercise Clover Options to the extent that Clover Alloys' interest in the Company did not exceed 19.99% of the total Shares on issue. Assuming no other new Shares in the Company were issued, Clover Alloys would be able to exercise approximately 782m Options, which would result in Orion receiving circa \$13.3m in funding.

For FY23, Orion disclosed a net loss of \$17.1m and negative operating cash flows of \$10.0m. Whilst the Company has signed agreements for the ZAR250m IDC Convertible Loan and US\$87m Triple Flag Funding Arrangement to fund early mining works and key pre-development activities for the Prieska Project, note 2 of the Company's audited financial statements for FY23 stated that current forecasts indicate that cash on hand at 30 June 2023 of \$7.6m will not be sufficient to fund planned exploration and operational activities during the next 12 months and to maintain the Company's tenements in good standing.

The audited financial statements for FY23 included an emphasis of matter in the independent auditor's report issued by BDO dated 29 September 2023 that stated that a material uncertainty existed that may cast significant doubt on the Company's ability to continue as a going concern. Whilst the auditor's opinion was not modified in respect of this matter, note 2 of the audited financial statements stated that the Company's ability to continue as a going concern was dependent on, amongst other things, the use of the full equity funding of circa \$73m under the Placement (assuming all options issued are exercised) and the continuing ability of Orion to raise capital.

If the Proposed Transaction is not approved, it is likely that the Company will need to undertake a further capital raising at an earlier date than if the Proposed Transaction is approved and all of the Clover Options are exercised.

7.2 Advantages and disadvantages

In assessing whether the Non-Associated Shareholders are likely to be better off if the Proposed Transaction proceeds, than if it does not, we have also considered various advantages and disadvantages that are likely to accrue to the Non-Associated Shareholders.

7.3 Advantages of approving the Proposed Transaction

The advantages of approving the Proposed Transaction are:

Table 29 Advantages of the Proposed Transaction

Advantage	Details
Additional capital to be raised	<p>The approval of the Proposed Transaction could provide up to an additional \$30.2m in funding (assuming all Clover Options are exercised) and would enable the Company to continue to fund and maintain momentum 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 Prieska Copper-Zinc Mine Early Production Scenario. The Early Production Scenario comprises the investigation of the potential to bring forward the start of production at the Prieska Project, bringing forward revenue generation and potentially reducing the upfront external peak funding requirements by phasing the mine build while retaining the option to scale up to the full-scale BFS project as sufficient funding becomes available.</p> <p>The funding would also allow the progress of the Company's other projects, maintain prospecting rights, and for general working capital purposes in the short to medium term.</p> <p>We note that if the Proposed Transaction is not approved, Clover Alloys would be able to exercise Clover Options to the extent that Clover Alloys ownership interest in the Company did not exceed 19.99% of the total Shares on issue. Assuming no other new Shares in the Company were issued, Clover Alloys would be able to exercise approximately 861m Options, which would result in Orion receiving circa \$13.3m in funding.</p> <p>If Orion was required to raise capital in the short to medium term to replace the circa \$15.6m of funds foregone, if the Proposed Transaction is not approved, there is no guarantee that the Company could raise funds at a price that is above the exercise price of the Clover Options of \$0.017. We have analysed the discounts at which ASX listed entities operating in the metals and mining sector have issued equity over the last 12 months and note that, on average, these discounts were typically in the range of 15% to 20%.</p>
Board experience and operational expertise and alignment of interests	<p>The Directors of Orion consider that Clover Alloys has 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.</p> <p>Whilst the election of Clover Alloys CEO Philip Kotze to the board of Orion formed part of the issue of Shares to Clover Alloys under Placement One, the approval of the Proposed Transaction will result in Clover Alloys holding a significant relevant interest in the Company and provides Clover Alloys with significant incentive to advance the development and production strategy of the Company regarding the development of the Prieska Project, as well as the Company's other mining assets in South Africa.</p>

7.4 Disadvantages of approving the Proposed Transaction

The disadvantages of approving the Proposed Transaction are:

Table 30 Disadvantages of the Proposed Transaction

Disadvantage	Details
The Proposed Transaction is not fair	As set out above, as the Fair Value of an Orion Share (on a non-controlling basis) immediately after the Proposed Transaction, is less than the Fair Value of an Orion Share (on a controlling basis) prior to the Proposed Transaction, the Proposed Transaction is not fair.
Clover Alloys will hold a significant interest in the Company	Clover Alloys will hold a 30.67% interest in the Company immediately after the completion of the Proposed Transaction (assuming all Clover Options are exercised and on an undiluted basis). Accordingly, we consider that Clover Alloys will have significant influence on the strategic direction of the Company including the ability to block takeover offers and proposed special resolutions of the Company.
Dilution of Shareholders' interest	<p>Non-Associated Shareholders' interests will be diluted from 91.01% to 69.33% immediately following the approval of the Proposed Transaction (assuming no other Share issues or other options exercised).</p> <p>The dilution of existing Shareholders' interests reduces the ability of existing shareholders to influence the strategic direction of the Company, including acceptance or rejection of takeover or merger proposals.</p>

7.5 Alternative proposals

We are not aware of any alternative proposal at the current time which might offer the Non-Associated Shareholders a greater benefit than the Proposed Transaction.

7.6 Future intentions of Clover Alloys for the Company

As set out in further detail in the Notice, Clover Alloys has informed Orion that, based on publicly available information available to Clover Alloys at the date of the Notice and other than as disclosed in the Notice, if the Proposed Transaction is approved, Clover Alloys:

- has no current intention of making any significant changes to the existing business of the Company;
- has no current intention to inject further capital into the Company other than as contemplated in the Notice and through participation in respect of its rights under the Placement;
- has no current intention of making changes regarding the future employment of the Company's present employees;
- does not currently intend for any assets to be transferred between the Company and itself or any person associated with it;
- has no current intention to otherwise redeploy the fixed assets of the Company; and
- has no current intention to significantly change the Company's existing financial or dividend policies,

The Board of Orion also understands that Clover Alloys supports the Board's current strategy for the Company.

7.7 Conclusion on Reasonableness

In our opinion, and in the absence of any other relevant information and/or a superior offer, for the purposes of section 611, item 7 of the Corporations Act, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of Orion.

An individual Shareholder's decision in relation to the Proposed Transaction may be influenced by their individual circumstances. If in doubt, Shareholders should consult an independent advisor.



APPENDICES

A. DECLARATIONS AND DISCLAIMERS

Declarations and Disclosures

RSM Corporate Australia Pty Ltd holds Australian Financial Services Licence 255847 issued by ASIC pursuant to which they are licensed to prepare reports for the purpose of advising clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate reconstructions or share issues.

Qualifications

Our report has been prepared in accordance with professional standard APES 225 “Valuation Services” issued by the Accounting Professional & Ethical Standards Board.

RSM Corporate Australia Pty Ltd is beneficially owned by the partners of RSM Australia Pty Ltd (RSM) a large national firm of chartered accountants and business advisors.

Andrew Clifford and Nadine Marke are directors of RSM Corporate Australia Pty Ltd. Both Andrew Clifford and Nadine Marke have extensive experience in the field of corporate valuations and the provision of independent expert’s reports for transactions involving publicly listed and unlisted companies in Australia.

Reliance on this Report

This report has been prepared solely for the purpose of assisting Shareholders of Orion in considering the Proposed Transaction. We do not assume any responsibility or liability to any party as a result of reliance on this report for any other purpose.

Reliance on Information

Statements and opinions contained in this report are given in good faith. In the preparation of this report, we have relied upon information provided by the Directors and management of Orion Minerals Ltd and we have no reason to believe that this information was inaccurate, misleading or incomplete. RSM Corporate Australia Pty Ltd does not imply, nor should it be construed that it has carried out any form of audit or verification on the information and records supplied to us.

The opinion of RSM Corporate Australia Pty Ltd is based on economic, market and other conditions prevailing at the date of this report. Such conditions can change significantly over relatively short periods of time.

In addition, we have considered publicly available information which we believe to be reliable. We have not, however, sought to independently verify any of the publicly available information which we have utilised for the purposes of this report.

We assume no responsibility or liability for any loss suffered by any party as a result of our reliance on information supplied to us.

Disclosure of Interest

At the date of this report, none of RSM Corporate Australia Pty Ltd, RSM, Andrew Clifford, Nadine Marke, nor any other member, director, partner or employee of RSM Corporate Australia Pty Ltd and RSM has any interest in the outcome of the Proposed Transaction, except that RSM Corporate Australia Pty Ltd are expected to receive a fee in the range of \$40,000 to \$45,000 based on time occupied at normal professional rates for the preparation of this report. The fees are payable regardless of whether Orion receives Shareholder approval for the Proposed Transaction, or otherwise.

Consents

RSM Corporate Australia Pty Ltd consents to the inclusion of this report in the form and context in which it is included with the Notice of Annual General Meeting and Explanatory Memorandum to be issued to Shareholders. Other than this report, none of RSM Corporate Australia Pty Ltd or RSM Australia Pty Ltd has been involved in the preparation of the Notice of Annual General Meeting and Explanatory Memorandum. Accordingly, we take no responsibility for the content of the Notice of Annual General Meeting and Explanatory Memorandum.

B. SOURCES OF INFORMATION

In preparing this report we have relied upon the following principal sources of information:

- Drafts and final copies of the Notice of Annual General Meeting and Explanatory Memorandum;
- Audited financial statements for Orion Minerals Ltd for the years ended 30 June 2021, 30 June 2022 and 30 June 2023;
- Independent Specialist Report prepared by SRK Consulting;
- Shareholder and options registers for Orion at 6 October 2023;
- ASX announcements;
- IBISWorld;
- S&P Capital IQ;
- Mergermarket; and
- Discussions with Directors and Management of Orion and SRK Consulting.

C. GLOSSARY OF TERMS AND ABBREVIATIONS

Term or Abbreviation	Definition
\$ or A\$	Australian dollars
AASMF	Anglo American sefa Mining Fund
Act or Corporations Act	Corporations Act 2001 (Cth)
AFCA	Australian Financial Complaints Authority
AFSL	Australian Financial Services Licence
Agama	Agama Exploration and Mining (Pty) Ltd
APES	Accounting Professional & Ethical Standards Board
Anglovaal	Anglo-Transvaal Consolidated Investment Company Limited, now part of African Rainbow Minerals Limited
ASIC	Australian Securities and Investments Commission
ASX	Australian Securities Exchange
ASX Listing Rules	The listing rules of ASX as amended from time to time
b	billions
BCC	Bulletrap Copper Co (Pty) Ltd
BFS	Bankable Feasibility Study
Clover Alloys	Clover Alloys Copper Investments (Pty) Ltd
Clover Options	1,777,777,776 Options issued to Clover Alloys under the Placement
Co	Cobalt
Company or Orion	Orion Minerals Ltd
Control Basis	As assessment of the Fair Value of an equity interest, which assumes the holder or holders have control of the entity in which the equity is held
Cu	Copper
Directors	Directors of Orion Minerals Ltd
Disawell	Disawell (Pty) Ltd
Enterprise Value or EV	The market value of a business on a cash free and debt free basis
Equity Value	The owner's interest in a company after the addition of all non-operating or surplus assets and the deduction of all non-operating or excess liabilities from the enterprise value.
Fair Value or Market Value	The amount at which an asset could be exchanged between a knowledgeable and willing but not anxious seller and a knowledgeable and willing but not anxious buyer, both acting at arm's length.
FME	Future Maintainable Earnings
FSG	Financial Services Guide
FY	Financial year ended 30 June 20XX
Group or Orion Group	Orion Minerals Ltd and its controlled subsidiaries
Historical Period	Collectively, FY20, FY21, FY22 and FY23
IDC	Industrial Development Corporation of South Africa Limited
IDC Convertible Loan	ZAR250m (c. A\$21m) senior secured loan facility to fund early mining works and key pre-development activities at the Prieska Project
IGO	IGO Limited

Term or Abbreviation	Definition
Indicated Resource	That part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.
Inferred Resource	That part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to an Ore Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
ISR	Independent Specialist Report comprising a technical assessment and valuation of the mineral assets held by Orion prepared by SRK Consulting and included as Appendix G in this Report
JORC Code	Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves – The JORC Code 2012 edition
JSE	Johannesburg Stock Exchange
JV	Joint Venture
k	Thousands
k/t	Kiloton
m	Millions
Management	The management of Orion Minerals Limited
Measured Resource	That part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve
Mineral Resource	A concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories
Minority or Non-Controlling Interest	A non-controlling ownership interest, generally less than 50.0% of a company's voting shares
Modifying Factors	Considerations used to convert Mineral Resources to Ore Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors
Namaqua	Namaqua Nickel Mining (Pty) Ltd
Namaqua Disawell Companies	Collectively, Namaqua Nickel Mining (Pty) Ltd and Disawell (Pty) Ltd
NCC	Nababeep Copper Company (Pty) Ltd
Ni	Nickel
NOEC	New Okiep Exploration Company (Pty) Ltd
NOM	New Okiep Mining Company (Pty) Ltd

Term or Abbreviation	Definition
Non-Associated Shareholders or Shareholders	Shareholders who are not a party, or associated to a party, of the Proposed Transaction
Notice	The Notice of Annual General Meeting and Explanatory Memorandum to be issued to Orion shareholders for an annual general meeting to be held on or about 28 November 2023 to which this Report is included
Okiep Project or OCP	A brownfield project consisting of the Flat Mines Project (two open pits Flat Mines NababEEP and the Jan Coetzee deposit) and three underground mines; Flat Mines North, Flat Mines South and Flat Mines East, as well as other mining and prospecting rights located in the Northern Cape Province of South Africa
Options	Unlisted options issued under the terms of the two-tranche Placement announced by the Company on 15 March 2023
Ore Reserve	The economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.
PCZM	Prieska Copper Zinc Mine (Pty) Ltd
PGE	Platinum group elements
Prieska Resources	Prieska Resources (Pty) Ltd
Probable Ore Reserve	The economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve
Proved Ore Reserve	The economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors
Placement	A \$13m capital raising to sophisticated and professional investors announced on 15 March 2023 and conducted via a two-tranche placement and comprised the issue of approximately 882m fully paid ordinary Shares at an issue price of \$0.015 (ZAR18 cents) per Share and the issue of four free attaching unlisted options for every Share issued (approximately 3.53 billion unlisted options at an exercise price of \$0.017 (ZAR20 cents) and an expiry date of 30 November 2023)
Prieska Project	Prieska Copper-Zinc Mine, located in the Northern Cape region of South Africa
Proposed Transaction	Resolution 5 as set out in the Notice
RBA	Reserve Bank of Australia
the Report or IER	This Independent Expert's Report prepared by RSM Corporate Australia Pty Ltd
RG 111	ASIC Regulatory Guide 111 Content of expert reports
RG 112	ASIC Regulatory Guide 112 Independence of experts
RoM	Run of Mine
RSM	RSM Corporate Australia Pty Ltd
SAFTA	Southern African Tantalum Mining (Pty) Ltd
S&P Capital IQ or Capital IQ	An entity of Standard and Poor's which is a third-party provider of company and other financial information
Share or Orion Share	Ordinary fully paid share in the capital of Orion Minerals Limited
SRK Consulting	SRK Consulting (Australasia) Pty Ltd
t	tonnes
Triple Flag	Triple Flag Precious Metals Corp.
Triple Flag Funding Arrangement	US\$87m (circa A\$128m) secured funding package for PCZM, comprising a precious metals stream ("Precious Metal Stream") and additional early funding arrangement ("Funding Arrangement").
US\$	US dollars

Term or Abbreviation	Definition
VALMIN Code	Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets 2015 – The VALMIN Code 2015 edition
VWAP	Volume weighted average share price
ZAR	South African Rand
Zn	Zinc

D. ASSESSMENT OF IMPACT ON FAIR VALUE OF THE POTENTIAL DILUTIVE IMPACT OF OPTIONS

Unlisted Options – Prior to the Proposed Transaction

At the date of this Report, Orion has 3,774,154,708 unlisted options on issue. As the options are American Options (may be exercised at any time before the expiration date), we have utilised the binomial options valuation model to enable expected early exercise of the unlisted options to be factored into the valuation.

The binomial model uses either a binomial or a trinomial distribution process to derive value by separating the total maturity period of the option into discrete periods. When progressing from one time period, or node, to another, the underlying common stock price is assumed to have an equal probability of increasing and/or decreasing by upward and downward price movements.

The key inputs and assumptions we have used in the binomial model to value the potential dilutionary impact of the unlisted options are set out in the table below.

Table 31 Key inputs in the valuation of the unlisted options

Inputs	ORNAJ	ORNAB	ORNAB	ORNAB	ORNAB	ORNAT	ORNAU	ORNAV	ORNAX	ORNAY	ORNAZ
Description											
Number of options	3,513,154,708	25,000,000	25,000,000	25,000,000	11,000,000	21,333,333	21,333,333	21,333,334	37,000,000	37,000,000	37,000,000
Valuation date	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23	6-Oct-23
Expiry date	30-Nov-23	30-Apr-24	30-Apr-24	30-Apr-24	17-Jun-24	31-Mar-25	31-Mar-25	31-Mar-25	31-Jan-28	31-Jan-28	31-Jan-28
Exercise price	\$0.017	\$0.040	\$0.050	\$0.060	\$0.030	\$0.028	\$0.035	\$0.040	\$0.023	\$0.027	\$0.032
Initial share price	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020	\$0.020
Maximum option life in years	0.15	0.57	0.57	0.57	0.70	1.48	1.48	1.48	4.32	4.32	4.32
Assessed volatility	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Risk free rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Dividend yield	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Vesting period (years)	0	0	0	0	0	0	0	0	0	0	0
Early exercise factor	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50

Source: Options register and RSM analysis

Valuation date and option life – we have valued the options as at the date of this Report (or as close as practically possible) and accordingly, have calculated remaining option life in years based on the date of this Report to the expiry date under the terms of each of the options on issue.

Exercise price – the options have exercise prices ranging from \$0.017 to \$0.05 per share.

Initial share price – we have adopted a share price of \$0.02, being our assessment of the Fair Value of an Orion Share at the preferred value of our range prior to the Proposed Transaction on a non-controlling basis (applying a similar discount for minority interest as that applied in our assessment of the value of a Share in Orion immediately after the Proposed Transaction on a non-controlling basis), and prior to any assessed dilutionary impact of options.

Volatility – the volatility of the share price is a measure of the uncertainty about the returns provided by Orion shares. Generally, it is possible to predict future volatility of a stock by reference to its historical volatility. A share with a greater volatility has a greater time component of the total value.

Our assumption is predicated on the fact that historical volatility is representative of expected future volatility.

Based on the above, and, having regard to the liquidity and historical volatility of Orion's shares, we have included a volatility of 70% for Orion in our assessment, based on the average daily and weekly share price volatility of Orion for the preceding three years.

Risk free rate – we have determined the risk-free rate of 4.0% based on the published yields of 2-year, 3-year and 5-year Commonwealth bond rates as at 6 October 2023 that cover the period that best match the life of the options as at the respective valuation date as set out above.

Dividend yield – we have utilised a dividend yield of 0% based on current market assessed yields.

Early exercise factor – Expected early exercise is factored into the valuation by our application of the binomial model. The model incorporates an exercise factor, which determines the conditions under which an option holder is expected to exercise their options. It is defined as a multiple of the exercise price (e.g., 2.5 would mean that on average option holders tend to exercise their options when the stock price reaches 2.5 times the exercise price).

This is considered more reliable than trying to guess the average time to exercise. For example, trying to estimate an average time after which option holders exercise is likely to be inaccurate as during periods when the market is high option holders are more likely to exercise early as opposed to times when the market is low. Using an exercise multiple, which is based on a robust theory of stock price behaviour/distribution overcomes these problems.

We have assumed that the exercise factor for these options is 2.5. There have been a number of historical studies that indicate that option holders early exercise options generally at between 2 to 3 times the exercise price, with the higher multiples generally attributable to more senior employees within the company.

Based on the inputs and assumptions above, our assessed value of the potential dilutionary impact of the unlisted options based on our valuation of Orion utilising the net assets on a going concern methodology is set out in the table below.

Table 32 Dilutionary impact of unlisted options

Option type	Number	Exercise price (\$)	Value of one instrument (\$)	Total dilutionary impact (\$)
ORNAJ - unlisted options	3,513,154,708	\$0.017	\$0.0039	\$13,701,303
ORNAB - unlisted options	25,000,000	\$0.040	\$0.0005	\$12,500
ORNAB - unlisted options	25,000,000	\$0.050	\$0.0002	\$5,000
ORNAB - unlisted options	25,000,000	\$0.060	\$0.0001	\$2,500
ORNAB - unlisted options	11,000,000	\$0.030	\$0.0012	\$13,200
ORNAT - unlisted options	21,333,333	\$0.028	\$0.0017	\$36,267
ORNAU - unlisted options	21,333,333	\$0.035	\$0.0009	\$19,200
ORNAV - unlisted options	21,333,334	\$0.040	\$0.0006	\$12,800
ORNAX - unlisted options	37,000,000	\$0.023	\$0.0023	\$85,100
ORNAY - unlisted options	37,000,000	\$0.027	\$0.0015	\$55,500
ORNAZ - unlisted options	37,000,000	\$0.032	\$0.0009	\$33,300
	3,774,154,708			\$13,976,670

Source: Options register

E. INDUSTRY OVERVIEWS

In evaluating the industries in which Orion operates, we have had regard to the following industries:

- Copper Ore Mining in Australia;
- Silver, Lead and Zinc Ore Mining in Australia; and
- Mining Sector in South Africa

Copper Ore Mining in Australia

The following industry information has been extracted from IBISWorld report B0803 “Copper Ore Mining in Australia” (“**the Copper Ore industry**”). Industry firms mine copper ore and carry out beneficiation processes. These basic processes convert the copper ore into copper concentrate, which downstream processors then smelt and refine into copper products and copper cathodes.

Copper mining revenue is expected to increase at an annualised 3.8% over the five years through 2023-24, to an estimated \$9.8 billion. This strong growth is due to higher copper prices, and stronger demand growth from China for copper used in construction, communications and manufacturing. Copper prices have risen as global copper demand has increased, and production has weakened. Highly advanced economies, such as Japan, have also supported demand growth through higher domestic production volumes. Australia is one of the world’s major copper mining countries, behind Chile, Peru, China, Democratic Republic of Congo, and the United States.

Australia’s copper ore production is expected to rise in 2023-24, as the industry’s major players increase their output in response to greater demand growth from China and South Korea, particularly for use in electric vehicles. However, a decline in the world price of copper during the current year is projected to hinder the industry. Overall, industry revenue is estimated to decrease by 5.1% in the current year, on the back of lower prices and a stronger Australian dollar. Exports account for around 90% of industry revenue in a typical year, with China, Japan and South Korea representing the largest export markets.

Industry revenue is forecast to grow at an annualised 0.8% over the five years through 2028-29, to total \$10.2 billion. This sluggish revenue growth reflects modest growth in global copper prices and growth in production volumes. However, a projected appreciation in the value of the Australia dollar against the US dollar is expected to limit pricing growth for domestic operations. The importance of copper ore exports to the industry’s performance is forecast to continue over the next five years, as foreign demand and copper prices remain relatively high.

The key external drivers which can influence the Copper Ore Mining Industry include:

- world price of copper;
- demand from building construction;
- demand from copper tubes and wire manufacturing; and
- demand from copper, silver, lead and zinc smelting and refining.

According to IBISWorld, the Copper Ore Mining Industry has:

- high and increasing levels of globalisation;
- high and steady levels of regulation;
- low and steady levels of competition; and
- high and steady barriers to entry.

The key success factors which can influence the Copper Ore Mining Industry are:

- ensure resource availability;
- leverage downstream ownership links;
- accommodate environmental requirements;
- alter goods and services produced in favour of market conditions; and
- secure economies of scale.

Silver, Lead and Zinc Ore Mining in Australia

The following industry information has been extracted from IBISWorld report B0807 “Silver, Lead and Zinc Ore Mining in Australia” (“**the Silver, Lead and Zinc Industry**”). Industry firms mainly mine silver, lead or zinc ores. Firms also carry out beneficiation, which involves processing ores into ore concentrate.

Revenue for the Silver, Lead and Zinc Ore Mining industry has been highly volatile over the past five years, with a general upward trend. This result has been due to greater export demand, moderate growth in domestic demand, and fluctuations in pricing for lead, silver and zinc. Industry revenue is projected to increase at an annualised 7.2% over the five years through 2021-22, to total \$6.2 billion, with the COVID-19 pandemic minimally affecting the industry. This trend includes an expected rise of 2.9% in the current year, reflecting higher zinc and lead prices, and a fall in silver prices. Much of the industry's zinc output is exported as a concentrate, while a substantial proportion of lead output is refined locally.

Over the past five years, the industry's largest product segment, zinc ore and concentrate, has increased as a share of industry revenue, due to production increases and strong export growth. Australia's zinc ore and concentrate output is anticipated to increase at an annualised 8.0% over the five years through 2021-22, to an estimated 2.9m tonnes. Very strong zinc output growth has coincided with volume falls for mined silver ore. Silver production volumes have decreased as downstream companies using silver in manufacturing processes have increasingly turned to substitute metals. Furthermore, domestic lead output volumes have increased over the period, as foreign demand has grown.

Industry exports have increased over the past five years, despite some market uncertainty in 2020-21 in response to the COVID-19 pandemic. Higher zinc and lead volumes, and pricing growth contributed to strong export increases. Exports have risen as a share of revenue over the past five years, and are estimated to account for 51.6% in the current year. In contrast, competing imports are expected to decline at an annualised 12.8% over the five years through 2021-22, and account for 13.5% of domestic demand.

Industry revenue is projected to decrease over the next five years, due to moderate decreases in volumes, and pricing falls from the peaks of 2020-21 and 2021-22. Industry exports are also anticipated to decline over the period as foreign demand for silver, lead and zinc falls. Industry revenue is forecast to decrease at an annualised 1.9% over the five years through 2026-27, to \$5.6 billion.

The key external drivers which can influence the Silver, Lead and Zinc Industry are:

- demand from copper, silver, lead and zinc smelting and refining;
- world prices of silver, lead and zinc, respectively; and
- demand from metal and mineral wholesaling.

According to IBISWorld, the Silver, Lead and Zinc Industry has:

- high and increasing levels of globalisation;
- heavy and steady levels of regulation;

- low and steady levels of competition; and
- high and steady barriers to entry.

The key success factors which can influence the Silver, Lead and Zinc Industry are:

- availability of resources;
- having contacts within key markets;
- output is sold under contract – incorporate long-term sales contracts;
- downstream ownership links; and
- economies of scale.

Mining Sector in South Africa

The following industry information has been extracted from the Economist Intelligence Unit report “African mining sector looks to the future” dated 22 March 2023.

South Africa – which hosts the continent's largest and most developed mining industry—best illustrates the tumultuous yet ultimately rewarding year experienced by the African mining community in 2022. Total mine output declined by 7% as disruptions took their toll. The woes of transport and energy parastatals—Transnet and Eskom—imposed on mining operations severe rail and port constraints, load-shedding and electricity shortages. In addition, adverse weather conditions, industrial disputes and unsettled global value chains contributed to a difficult operating environment and curtailed capital investment spending. Nevertheless, total mineral sales were reported at R880bn (US\$54bn) in 2022, up by 3% from the previous record high of R856bn in 2021, according to Statistics South Africa. A broader measure of the value of South Africa's mining production, as reported by the Minerals Council South Africa, an industry organisation, was R1.2trn in 2022, up from R1.1trn in 2021. The FTSE/JSE mining index and related market capitalisation experienced a rollercoaster ride but ended the year on a high, while the number of M&A transactions announced involving South African mining companies returned to pre-pandemic levels and posted a record deal value of over US\$9bn in 2022.

Subdued global demand, high energy prices, higher borrowing costs and disruption to global value chains will continue to present major challenges for mining ventures in Africa during 2023 and 2024. However, we expect prices for Africa's major metals and minerals exports to remain high, although there will be great variation between individual export commodities. Some base metals (including lead, tin and zinc) and bulk minerals (including iron ore, bauxite, chromite and coal) could underperform because of a slowdown in OECD markets and troubles facing China's real estate and, by association, construction sectors. Conversely, the outlook appears brighter for gold, platinum group metals (PGMs)—namely iridium, osmium, palladium, platinum, rhodium and ruthenium—battery minerals (including lithium, copper, cobalt, nickel and graphite) and rare earth elements (REEs), which are subject to supply constraints and face increasing demand for use in high-tech consumer, industrial and defence products.

PGMs, copper and cobalt, iron ore, gold and coal are Africa's major mining revenue earners and the relatively positive near-term outlook for most of these mining products bodes well for corporate revenue and fresh rounds of investment in 2023-24. In addition, the search for and production of high-value battery metals and REEs should help to support new investment and acquisitions by mining companies, investors and traders in Africa's mining sector. Already, there is a healthy pipeline of projects seeking to exploit favourable market conditions and Africa's abundant reserves of copper and cobalt, gold and PGMs.

Mining companies are likely to focus on improvements to operating efficiency and implement hedging initiatives to tackle heightened cost pressures, address volatile commodity markets, account for unstable local exchange rates and protect profit margins in 2023-24. Electrification, automation, and digitalisation are ongoing trends that are playing out in the mining sector, as are corporate responses to the challenge posed by global environmental, social and corporate governance (ESG) requirements.

Mining companies will continue to make acquisitions and investments in Africa with an eye on the future. Whatever turbulence the mining sector encounters in the near term caused by geopolitics, trade tensions and inflationary pressures, these factors will do little to erode the medium- to long-term material demands of the global economy, especially the much-needed supply of metals and minerals to facilitate the global energy transition and technology trends.

Africa is well placed to leverage medium to long-term trends given the abundance of untapped deposits of high-value metals and minerals that are essential to the energy transition and the manufacture of high-tech products. Africa will play a crucial role in bridging the gap between the supply and the demand of technology-critical metals and minerals, which will see international mining companies intensify their competition by expanding existing mines, developing new ones and designing more efficient extraction and production facilities. Already, Africa is a leading global producer of bauxite, copper and cobalt, chromium, graphite, manganese, gold, diamonds, tantalum, uranium and PGMs, and has enormous potential as a supplier of REEs.

China holds a dominant position in the global supply of REEs—with an estimated 60% of global production and 85% of processing capacity. REEs are crucial for the manufacture of electronics, renewable energy technology and national defence systems. Demand for REEs for these uses will gain momentum in the decades ahead and require a massive ramp-up in production volumes. Geopolitical tensions between the US (and Western allies) and China will create a window of opportunity for African countries with a large endowment of these key commodities, especially South Africa, to increase exploration budgets, raise capital investment and generate new income streams.

F. ASSESSMENT OF THE FAIR VALUE OF ORION'S INTEREST IN EACH MINING ASSET

As set out in section 4.2, SRK Consulting has provided an assessment of the Market Value of Orion's mineral assets on a 100% interest basis. Accordingly, in our assessment of the Fair Value of the mineral assets, we have calculated a pro rata value of each Project based on the Company's relevant interest in the Project.

Where the Company has been assessed as having a controlling interest in the Project (having control of the operating strategy and cashflows of the Project), we have not applied any discounts to reflect a lack of control.

With the Company's minority interest holdings in the Fraser Range Project, we have applied a discount for lack of control (minority interest) in our assessment of the Fair Value of the Fraser Range Project.

The table below sets out summary of the assessed Market Value of Orion's mineral assets as extracted from the ISR (refer Appendix G).

Table 33 Summary of assessed Market Value of Mineral Assets (100% basis)

Summary of the Market Value of the Mineral Assets, 100% basis	Low A\$m	High A\$m	Preferred A\$m
Mineral Resource	85.1	113.5	99.3
Exploration Potential	-	-	-
Prieska (100%)	85.1	113.5	99.3
Mineral Resource	8.7	11.5	10.1
Exploration Potential	3.8	7.6	3.8
Okiep (100%)	12.4	19.1	13.9
Mineral Resource	36.8	45.9	41.4
Exploration Potential	8.5	13.3	8.5
Jacomynspan (100%)	45.3	59.2	49.8
Exploration Potential	6.7	11.4	6.7
Areachap (100%)	6.7	11.4	6.7
Total South Africa	149.5	203.2	169.7
Exploration Potential	0.8	1.6	1.2
Fraser Range (100%)	0.8	1.6	1.2
Exploration Potential	0.5	1.0	0.7
Walhalla (100%)	0.5	1.0	0.7
Total Australia	1.3	2.6	1.9
Total mineral assets (100%)	150.8	205.8	171.6

Source: SRK Consulting ISR

Fair Value assessment of Orion's relevant interest in the Prieska Project

The table below sets out our assessed Fair Value of Orion's 70% interest in the Prieska Project.

Table 34 Fair Value of Prieska Project (70% interest)

Prieska	Interest %	Comparable transactions			Pro-rata		
		Low \$'m	High \$'m	Preferred \$'m	Low \$'m	High \$'m	Preferred \$'m
Mineral Resource	70.00%	85.1	113.5	99.3	59.6	79.5	69.5
Assessed Fair Value (controlling interest)		85.1	113.5	99.3	59.6	79.5	69.5

Source: ISR and RSM analysis

SRK Consulting has assessed the Market Value of the Prieska Project based on the Project's Mineral Resource Estimate as disclosed by the Company (refer section 3, Table 8) and relate to two mining rights (Licence Codes NC30/5/1/2/2/10138MR and NC30/5/1/2/2/10146MR). Orion holds a 70% interest in these mining rights through PCZM and Vardocube.

The Prieska Project also includes three prospecting rights and three prospecting rights applications (granted but awaiting execution). However, no value has been ascribed to these prospecting rights licences and prospecting rights applications by SRK Consulting and accordingly, SRK has assessed the Market Value of a 100% interest in the Prieska Project as being in the range of \$85.1m to \$113.5m, with a preferred value of \$99.3m. As Orion has a 70% controlling interest in the mining rights at the Prieska Project, we have assessed the Fair Value as a pro rata 70% interest in the range of \$59.6m to \$79.5m, with a preferred value of \$69.5m as set out in the table above.

Fair Value assessment of Orion's relevant interest in the Okiep Project

The tables below set out our assessed Fair Value of the Company's interest in the Okiep Project.

Table 35 Fair Value of Okiep Project (56.25%-100% interest) – Mineral Resource

Okiep	Interest %	Comparable transactions			Pro-rata		
		Low \$'m	High \$'m	Preferred \$'m	Low \$'m	High \$'m	Preferred \$'m
Mineral Resource	56.25%	8.7	11.5	10.1	4.9	6.5	5.7
Assessed Fair Value (controlling interest)		8.7	11.5	10.1	4.9	6.5	5.7

Source: ISR and RSM analysis

Table 36 Fair Value of Okiep Project (56.25%-100% interest) – Exploration Potential

Okiep	Interest %	Multiple of exploration expenditure (MEE)			Geoscientific			Assessed valuation (100%)			Pro-rata			Area (km ²)
		Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	
NC10150MR	56.25%	98	146	98	67	183	125	83	165	83	46	93	46	12.10
NC11125PR	100.00%	1,498	2,230	1,864	1,028	2,797	1,912	1,263	2,514	1,263	1,263	2,514	1,263	184.75
NC12357PR	100.00%	1,383	2,059	1,721	949	2,583	1,766	1,166	2,321	1,166	1,166	2,321	1,166	170.57
NC12850PR	56.25%	206	307	257	142	386	264	174	347	174	98	195	98	25.47
NC12852PR	100.00%	98	146	122	67	183	125	83	165	83	83	165	83	12.10
NC12854PR	100.00%	623	928	776	428	1,164	796	526	1,046	526	526	1,046	526	76.89
NC12897PR	100.00%	593	883	738	407	1,108	758	500	996	500	500	996	500	73.18
Assessed Fair Value (controlling interest)		4,500	6,700	5,600	3,088	8,404	5,746	3,794	7,552	3,794	3,682	7,328	3,682	555.06

Source: ISR and RSM analysis

SRK Consulting has assessed the Market Value of Mineral Resource at the Okiep Project based on the adjusted Mineral Resource Estimate (refer section 3, Table 9). The Market Value attributed to the Mineral Resource relates to mining rights at NC30/5/1/1/2/10150MR and prospecting rights at NC30/5/1/1/2/12850PR. Orion holds a 56.25% interest in this mining rights licence and prospecting rights licence.

The Okiep Project also includes five other prospecting rights licences as set out in Table 36 above (in which Orion holds a 100% interest). As set out above, SRK Consulting has utilised the average of the Multiple of Exploration Expenditure (“MEE”) and Geoscientific Rating methods to value the Exploration Potential of the Okiep Project.

We note the following in relation to the Market Value of the Okiep Project Exploration Potential assessed by SRK Consulting:

- in contrast to the Geoscientific Rating methodology, SRK Consulting did not ascribe a Market Value on a tenure by tenure basis using the MEE methodology but assessed the Market Value of a 100% interest in the Okiep Project Exploration Potential as a whole, in the range of \$4.5m to \$6.7m, with a preferred value of \$5.6m;
- RSM has ascribed the Fair Value to each tenure under the MEE method on a pro rata basis based on the area covered by each mining rights and prospecting rights licenses; and
- SRK Consulting has adopted the low end of the blended valuation range as the preferred range.

As Orion has a controlling interest in the Okiep Project, we have assessed the Fair Value as a pro rata interest (56.25%-100%) in the range of \$8.6m to \$13.8m, with a preferred value of \$9.4m as set out in the tables above.

Fair Value assessment of Orion’s relevant interest in the Jacomynspan Project

The tables below set out our assessed Fair Value of the Company’s interest in the Jacomynspan Project.

Table 37 Fair Value of Jacomynspan Project (50% interest) – Mineral Resource

Jacomynspan	Interest %	Comparable transactions			Pro-rata		
		Low \$'m	High \$'m	Preferred \$'m	Low \$'m	High \$'m	Preferred \$'m
Mineral Resource	50.00%	36.8	46.0	41.4	18.4	23.0	20.7
Assessed Fair Value (controlling interest)		36.8	46.0	41.4	18.4	23.0	20.7

Source: ISR and RSM analysis

Table 38 Fair Value of Jacomynspan Project (50% interest) – Exploration Potential

Jacomynspan	Interest %	Multiple of exploration expenditure (MEE)			Geoscientific			Assessed valuation (100%)			Pro-rata			Area (km ²)
		Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	
NC11010PR	50.00%	12,296	17,412	14,816	655	2,948	1,801	6,475	10,180	6,475	3,238	5,090	3,238	529.99
NC10938PR	50.00%	3,804	5,388	4,584	203	912	557	2,004	3,150	2,004	1,002	1,575	1,002	163.99
Assessed Fair Value (controlling interest)		16,100	22,800	19,400	858	3,860	2,358	8,479	13,330	8,479	4,240	6,665	4,240	693.98

Source: ISR and RSM analysis

SRK Consulting has assessed the Market Value of the Mineral Resource at the Jacomynspan Project based on the Mineral Resource Estimate (refer section 3, Table 10). The Market Value attributed to the Mineral Resource relates to mining rights at NC30/5/1/1/2/10032MR and prospecting rights at NC30/5/1/1/2/12216PR. Orion holds a 50.00% interest in this mining rights licence and prospecting rights licence.

The Jacomynspan Project also includes two other prospecting rights licences as set out in Table 38 above. As set out above, SRK Consulting has utilised the average of the MEE and Geoscientific Rating methods to value the Exploration Potential of the Jacomynspan Project,

Consistent with the assessed Market Value of the Exploration Potential in the Okiep Project, we note:

- in contrast to the Geoscientific Rating methodology, SRK Consulting did not ascribe a Market Value on a tenure by tenure basis using the MEE methodology but assessed the Market Value of a 100% interest in the Jacomynspan Project Exploration Potential as a whole, in the range of \$16.1m to \$22.8m, with a preferred value of \$19.4m;

- RSM has ascribed the Fair Value to each tenure under the MEE method on a pro rata basis based on the area covered by each prospecting rights license; and
- SRK Consulting has adopted the low end of the blended valuation range as the preferred range.

As Orion is the manager and operator of the Jacomynspan Project joint venture, we consider the Company has a controlling interest in the Jacomynspan Project. Accordingly, we have assessed the Fair Value as a pro rata interest (50%) in the range of \$22.6m to \$29.6m, with a preferred value of \$24.9m.

Fair Value assessment of Orion's relevant interest in the Areachap Project

The table below sets out our assessed Fair Value of the Company's interest in the Areachap Project.

Table 39 Fair Value of Areachap Project (50% interest) – Exploration Potential

Areachap	Interest %	Multiple of exploration expenditure (MEE)			Geoscientific			Assessed valuation (100%)			Pro-rata			Area (km ²)
		Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	
NC12292PR	50.00%	11,500	15,500	13,500	1,825	7,300	4,563	6,663	11,400	6,663	3,331	5,700	3,331	984.36
Assessed Fair Value (controlling interest)		11,500	15,500	13,500	1,825	7,300	4,563	6,663	11,400	6,663	3,331	5,700	3,331	984.36

Source: ISR and RSM analysis

The Areachap Project comprises two prospecting rights licences and two pending prospecting rights applications. SRK Consulting has assessed the Market Value of the Areachap Project based on one prospecting rights licence NC30/5/1/1/2/12292PR in which Orion holds a 50% relevant interest.

As set out above, we have assessed the Fair Value as a pro rata interest (50%) in the range of \$3.3m to \$5.7m, with a preferred value of \$3.3m (consistent with SRK Consulting's adoption of the low end of the range as the preferred value).

Fair Value assessment of Orion's relevant interest in the Walhalla Project

The table below sets out our assessed Fair Value of the Company's interest in the Walhalla Project.

Table 40 Fair Value of Walhalla Project (100% interest) – Exploration Potential

Walhalla	Interest %	Comparable transactions			Geoscientific			Assessed valuation (100%)		
		Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000	Low AS'000	High AS'000	Preferred AS'000
EL5042	100.00%	417	625	521	70	264	167	244	445	344
EL6069	100.00%	429	644	537	107	409	258	268	527	398
Assessed Fair Value (controlling interest)		846	1,269	1,058	177	673	425	512	971	742

Source: ISR and RSM analysis

As set out above, the Company holds a 100% interest in two exploration licences comprising the Walhalla Project. SRK Consulting has utilised the average of the Comparable Transactions and Geoscientific Ratings methodologies in the assessment of the Market Value of the Walhalla Project and the Fraser Range Project (refer below).

As the Company holds a 100% interest in the Walhalla Project, we have assessed the Fair Value of the Walhalla Project to be consistent with the Market Value on a 100% basis, being in the range of \$0.5m to \$1.0m, with a preferred value of \$0.7m.

Fair Value assessment of Orion's relevant interest in the Fraser Range Project

The table below sets out the Market Value of the Fraser Range Project as assessed by SRK Consulting, together with the pro forma 10%-35% interest held by Orion.

Table 41 Fraser Range Project (100% interest and pro-rata interest) – Exploration Potential

Fraser Range	Interest %	Comparable transactions			Geoscientific			Assessed valuation (100%)			Pro-rata		
		Low A\$'000	High A\$'000	Preferred A\$'000	Low A\$'000	High A\$'000	Preferred A\$'000	Low A\$'000	High A\$'000	Preferred A\$'000	Low A\$'000	High A\$'000	Preferred A\$'000
E28/2367	30.00%	394	591	493	74	409	241	234	500	367	70	150	110
E28/2596	30.00%	430	645	538	53	446	250	242	546	394	72	164	118
E39/1653	35.00%	232	348	290	13	107	60	123	228	175	43	80	61
E39/1654	10.00%	296	444	369	22	186	104	159	315	237	16	32	24
E69/2707	10.00%	-	-	-	-	-	-	-	-	-	-	-	-
Total		1,352	2,028	1,690	162	1,148	655	757	1,588	1,173	201	425	313

Source: ISR and RSM analysis

No value was ascribed to E69/2707. As the Company holds a minority interest in the Fraser Range Project, we have ascribed a discount for lack of control.

We have applied a discount of 20.0% to 23.1% (rounded), being the inverse of the control premium utilised in our assessment of the value of an Orion Share on a quoted price of listed securities basis as set out in the table below.

Table 42 Fair Value of Orion's relevant interest in the Fraser Range Project – Exploration Potential

Fraser Range Project	Low A\$'000	High A\$'000	Preferred A\$'000
Pro-rata valuation	201	425	313
Discount for minority interest	(23.1%)	(20.0%)	(21.6%)
Assessed Fair Value (non-controlling interest)	155	340	246

Source: ISR and RSM analysis

As set out above, we have assessed the Fair Value of Orion's interest in the Fraser Range Project as being in the range of \$0.2m to \$0.3m, with a preferred value of \$0.2m

Conclusion

The table below sets out the summary of the assessed Fair Value of Orion's interest in the Mineral Assets.

Table 43 Fair Value assessment of the Mineral Assets

Fair Value of Mineral Assets	Low A\$m	High A\$m	Preferred A\$m
Mineral Resource	59.6	79.5	69.5
Exploration Potential	-	-	-
Assessed Fair Value of Prieska Project (70%-100% controlling interest)	59.6	79.5	69.5
Mineral Resource	4.9	6.5	5.7
Exploration Potential	3.7	7.3	3.7
Assessed Fair Value of Okiep Project (56.25%-100% controlling interest)	8.6	13.8	9.4
Mineral Resource	18.4	23.0	20.7
Exploration Potential	4.2	6.7	4.2
Assessed Fair Value of Jacomynspan Project (50% controlling interest)	22.6	29.6	24.9
Exploration Potential	3.3	5.7	3.3
Assessed Fair Value of Areachap Project (controlling 50%-100% interest)	3.3	5.7	3.3
Total South Africa	94.1	128.6	107.1
Exploration Potential	0.2	0.3	0.2
Assessed Fair Value of Fraser Range Project (non- controlling 10%-35% interest)	0.2	0.3	0.2
Exploration Potential	0.5	1.0	0.7
Assessed Fair Value of Walhalla Project (controlling 100% interest)	0.5	1.0	0.7
Total Australia	0.7	1.3	1.0
Assessed total Fair Value of Orion's interest in the mineral assets	94.7	129.9	108.1

Source: ISR and RSM analysis

G. INDEPENDENT SPECIALIST REPORT PREPARED BY SRK CONSULTING

Final

Independent Specialist Report – Mineral Assets of Orion Minerals Limited

Prepared for:
RSM Corporate Australia Pty Limited



SRK Consulting (Australasia) Pty Ltd ■ RSA004 ■ 25 October 2023

Final

Independent Specialist Report – Mineral Assets of Orion Minerals Limited

Prepared for:

RSM Corporate Australia Pty Limited
Level 21, 55 Collins Street
Melbourne VIC 3000
Australia

+61 3 9286 8200



Prepared by:

SRK Consulting (Australasia) Pty Ltd
Level 3, 18–32 Parliament Place
West Perth WA 6005
Australia

+61 8 9288 2000

www.srk.com

ABN: 56 074 271 720



Quality
ISO 9001

Lead Author: Shaun Barry **Initials:** SB

Reviewer: Gerard McCaughan **Initials:** GM

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Acknowledgments

The following consultants have contributed to the preparation of this Report:

Role	Name	Professional designation
Coordinating Author	Shaun Barry	MSc Eng, BSc (Hons), MAusIMM (CP), MRICS
Coordinating Author	Lesley Jeffrey	MSc (Min Eng), BSc, PrSciNat, SACNASP, FGSSA, MFFF
Contributing Author	Mark Wanless	BSc (Hons), PrSciNat, FGSSA, MGASA
Contributing Author	Ivan Doku	GDE (Mining), MSc Eng, BSc Eng, PrSciNat
Contributing Author	Marcin Wertz	BSc(Eng), PrEng, FSAIMM, MMCC
Contributing Author	William Joughin	MSc (Eng), BSc (Eng), GDE (Rock Eng), PrEng, FSAIMM, FSANIRE, AMMSA
Contributing Author	Katie Barns	BEng, MBA, MAusIMM, MIPE(NZ), EwB(NZ)
Contributing Author	Peter Shepherd	BSc (Hons), PrSciNat
Contributing Author	Ismail Mahomed	BSc (Hons), BSc, PrSciNat, MGSSA
Contributing Author	Kenneth Mahuma	N6 (Elec Eng), PrTechni, ECSA, MSAIMM
Contributing Author	Alec Gumbie	MSc (Ind & Admin Sc.), BSc (Hons) Mech Eng, ODN (Tech), PrEng, ECSA, FSAIMM
Contributing Author	Darryll Kilian	MA, BA(Hons), DipEd, BA, MIAIASA
Contributing Author	Vassie Maharaj	BSc, MIAPP, MIAIPSA, MIoDSA
Contributing Author	Marcin Wertz	BSc, PrEng, FSAIMM
Contributing Author	Ali Rudaki	BSc, PrEng, MSAIMM
Contributing Author	Livhuwani Lautze	MSc, BSc (Hons), BSc, PrSciNat, SACNASP, MGSSA, MCFAI
Contributing Author	Andy MacDonald	MSc, BSc (Hons), BSc, MBL, CEng (UK), MIoM3, FSAIMM
Contributing Author	Ian de Klerk	BSc (Hons), MSc (Expl. Geol), GDip Eng (Mining Eng), MAusIMM
Contributing Author	Stephen Johnson	BSc (Hons), MSEG, MAIG
Peer Review	Gerard McCaughan	PhD, BA (Hons) Nat Sci, MAusIMM, MAIG
Peer Review	Jeames McKibben	BSc (Hons), MBA, FAusIMM (CP), MAIG, MRICS, SME
Releasing Authority	Jeames McKibben	BSc (Hons), MBA, FAusIMM (CP), MAIG, MRICS, SME

Disclaimer: The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by Orion Minerals Limited (Orion). The opinions in this Report are provided in response to a specific request from RSM Corporate Australia Pty Limited (RSM) to do so. SRK has exercised all due care in reviewing the supplied information. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this Report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

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Appendices

Appendix A	Comparable market transactions
Appendix B	Geoscientific rating method

Useful definitions

This list contains definitions of symbols, units, abbreviations, and terminology that may be unfamiliar to the reader.

A\$	Australian dollar
AIG	Australian Institute of Geoscientists
asl	above sea level
ASX	Australian Securities Exchange
AusIMM	Australasian Institute of Mining and Metallurgy
BAC	base acquisition cost
BFS	Feasibility Study, also known as the Bankable Feasibility Study
Company	Orion Minerals Limited
DCF	discounted cash flow
DD	diamond drilling
FME	Flat Mines East
FMN	Flat Mines North
FMS	Flat Mines South
GHG	greenhouse gas
GIIP	good international industry practice
HDPE	high density polyethylene
IDC	Industrial Development Corporation of South Africa Ltd
IER	Independent Expert's Report
IESC	Independent Expert Scientific Committee
IFC	international finance corporation
iLEH	Irene Lea Environmental and Hydrogeology
IWUL	Integrated Water Use Licence
IVSC	International Valuation Standards Committee
JC	Jan Coetzee deposit
JORC Code	Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves – The JORC Code 2012 edition
JV	joint venture
kg	kilogram(s)
kt	kilotonne(s)
kt/m	kilotonnes per month
km	kilometres
km ²	square kilometres
LoM	life-of-mine
MEE	Multiples of Exploration Expenditure
m	metre(s)
M	Million
Mt	million tonnes

Mt/a	million tonnes per annum
m ³	cubic metres
NCC	NababEEP Copper Company (Pty) Ltd
NKM	Nama Khoi Municipality
NMS	North Mine Shaft
NSR	Net Smelter Return
OCC	Okiep Copper Company
OES	Orion Exploration No. 5 (Pty) Ltd (OE5)
Opex	Operating expenditure
Orion	Orion Minerals Limited
QA/QC	Quality Assurance and Quality Control
RO	reverse osmosis
RoM	Run-of-Mine
RSM	RSM Corporate Australia Pty Limited
RWD	Return Water Dam
SAFTA	Southern African Tantalum Mining (Pty) Ltd
SG	specific gravity
SKA	Square Kilometre Array
SLOS	sublevel open stoping
SLP	Social and Labour Plan
SMU	standard mining unit
SRK	SRK Consulting (Australasia) Pty Ltd
TML	transportable moisture limit
TMM	trackless mining machinery
TSF	tailings storage facility
t	tonne(s)
t/m ³	tonnes per cubic metre
US\$	United States dollar
UTM	Universal Transverse Mercator coordinate system grid
VALMIN	Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets 2015 – The VALMIN Code 2015 edition
VCR	vertical crater retreat
VMS/VHMS	volcanogenic massive sulfide/volcanic-hosted massive sulfide
WML	waste management licence
WUL	water use licence
ZAR	South African rands

DMRE¹ chemical/mineral symbols for mining/prospecting rights

Ag	Silver	PGM	Platinum group metals
Ba	Barium	Ph	Phosphate
Be	Beryllium	Pm	Promethium
Bi	Bismuth	Pr	Praseodymium
Cd	Cadmium	PR	Prospecting unspecified minerals
Ce	Cerium	Py	Pyrite
Co	Cobalt	Qy	Sand general
Cr	Chrome	Ra	Radium
Dy	Dysprosium	RE	Rare earth minerals
Er	Erbium	RM	Aggregate
Eu	Europium	Ru	Rutile
Fe	Iron	S	Sulfur
Fs	Feldspar	Sc	Scandium
Ga	Gallium	Sm	Samarium
Gd	Gadolinium	Sn	Tin
Ge	Germanium	Spy	S in pyrite
GFS	Feldspar gemstone	Stw	Stone aggregate from waste dump
grav	Gravel	Ta	Tantalum
HM	Heavy minerals	Tb	Terbium
Ho	Holmium	Te	Telurium
In	Indium	Th	Thorium
La	Lanthanum	Ti	Titanium
Li	Lithium	Tm	Thulium
Ls	Limestone	U	Uranium
Mc	Moscovium	W	Tungsten
Mn	Manganese	Xt	Xenotime
Mo	Molybdenum	Y	Yttrium
Mz	Monazite	Yb	Ytterbium
Nd	Neodymium	zir	Zirconium
Ni	Nickel	Zn	Zinc
Pb	Lead		

¹ DMRE: South African Department of Mineral resources and Energy

Executive summary

RSM Corporate Australia Pty Limited (RSM) has been engaged by Orion Minerals Limited (Orion or the Company) to prepare an Independent Expert's Report (IER – RSM Report) for inclusion within a Notice of Meeting to be provided to the shareholders of the Company. The Notice of Meeting is to provide shareholders with the information they require to make an informed decision regarding a proposed transaction. This transaction relates to a proposed issue of shares in the Company to Clover Alloys (SA) Proprietary Ltd (Clover Alloys) (Proposed Transaction).

RSM has subsequently contacted SRK Consulting (Australasia) Pty Ltd (SRK) to assist it by preparing an Independent Specialist Report (Report) incorporating a technical assessment and valuation of Orion's mineral assets and by providing its opinion on matters to which RSM is not the Specialist (SRK Scope).

SRK understands that Orion's mineral assets include the following:

- in northwestern South Africa:
 - a 70–100% interest in the tenures comprising the Prieska copper-zinc project (Prieska Project)
 - a 56.25–100% interest in tenures comprising the Okiep copper project (Okiep Project)
 - a 50% interest in the Jacomynspan nickel-copper-cobalt-PGE project (Jacomynspan Project).
 - a 100% interest in the Areachap project (Areachap Project).
- in Australia:
 - a 10–35% interest in tenures comprising the Fraser Range nickel-copper project (Fraser Range Project) in Western Australia
 - a 100% interest in the Walhalla gold and polymetallic project (Walhalla Project) in Victoria.

Based on RSM's Instruction Letter, SRK's scope comprises:

1. A review of the relevant technical project assumptions relating to the Prieska and Okiep projects and the provision of an assessment on the reasonableness of each of the assumptions used in the Prieska Project life-of-mine base cash flow model (the Prieska Model) including the:
 - a. Mineral Resources and Ore Reserves incorporated into the Prieska Model
 - b. mining physicals (including tonnes of ore mined, quality, waste material and mine life)
 - c. processing physicals (including ore processed and produced)
 - d. production and operating costs (including, but not limited to drilling, blasting, mining, haulage, transport, general administration, distribution and marketing, contingencies and royalties or levies)
 - e. capital expenditure (including but not limited to pre-production costs, project capital costs, sustaining capital expenditure, salvage value, rehabilitation and contingency)
 - f. any other relevant technical assumptions into specified above.

Should SRK determine that an assumption (primarily revenue, cost or timing related) in the provided Prieska Model is unreasonable, it will be reflected in SRK's report with explanation.

SRK is to advise RSM before the completion of its report to assist RSM in making any changes to the Prieska Models.

SRK’s scope specifically excludes any work relating to the marketing, commodity price and exchange rate assumptions, inflation rates and financial analysis (including discount rate) adopted in the Prieska Model.

2. Additionally, SRK will provide an independent opinion on the market valuation of:
 - a. any stated Mineral Resources or Ore Reserves at Orion’s Prieska, Okiep and Jacomynspan projects that are not already included in the Prieska Model (defined as Residual Resources)
 - b. any other mineral assets held by Orion that SRK considers is likely to have a material value.

SRK’s Report has been prepared in accordance with the guidelines outlined in the *Australasian Code for the Public Reporting of Technical Assessment and Valuation of Mineral Assets* (VALMIN Code, 2015), which incorporates the *Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (JORC Code, 2012).

SRK’s recommended valuation ranges and preferred values have been set out below in Australian dollar (A\$) terms and are detailed in Section 10 of this Report (Valuation) as summarised in Table ES.1. The valuation represents the Market Value of Orion’s Mineral Assets as at the Valuation Date, this being the effective issue date of this Report (i.e. 29 September 2023).

Based on its technical assessment and valuation presented in the earlier sections of the Report, Table ES.1 summarises SRK’s Market Value assessment of the defined Mineral Resources and exploration potential at the Company’s South African and Australian Projects in accordance with its mandate.

SRK’s valuation reflects the Market Value of the Mineral Resources and exploration potential of the broader mineral tenures.

Table ES.1: Summary valuation, 100% basis

Project	Value Low (A\$ M)	Value High (A\$ M)	Value Preferred (A\$ M)
Prieska	85.1	113.5	99.3
Okiep	12.4	19.1	13.9
Jacomynspan	45.2	59.3	49.8
Areachap	6.7	11.4	6.7
Total South Africa	149.5	203.2	169.7
Fraser Range	0.8	1.6	1.2
Walhalla	0.5	1.0	0.7
Total Australia	1.3	2.6	1.9
Overall selected	150.8	205.8	171.6

Note: Any discrepancies between values in the tables are due to rounding.

SRK notes that whilst Orion's Prieska and Okiep projects are supported by previously reported advanced techno-economic studies, and hence potentially able to be evaluated using a discounted cashflow (DCF) method, the publicly disclosed information pertaining to these studies is now dated. Since these studies were first publicly reported, Orion has been undertaking ongoing incremental updates and envisages finalising and reporting the results of these updated studies to the market in late 2023 to early 2024. To this end, SRK has reviewed the results of Orion's ongoing technical studies but, on the balance of its review of the available technical data, considers that until the currently proposed life-of-mine plan/schedules and updated cost data are finalised and publicly reported, a discounted cashflow approach is not appropriate for valuation purposes within a publicly disclosed document prepared in accordance to Australian regulatory requirements. To this end, SRK has adopted valuation methods under the market and cost approaches.

In considering the overall value of Orion's mineral assets, SRK has adopted the values implied by actual transaction, comparable transaction, yardstick, geoscientific rating and multiples of exploration expenditure methodologies. In the case of Orion's defined Mineral Resources, SRK has adopted the values implied by the comparable transaction method in preference to all others. In the case of Orion's exploration potential, SRK has assigned equal weighting to the values applied by comparable transaction analysis, geoscientific rating and/or multiples of exploration expenditure methods and adopted the midpoint as its preferred value overall for the assets.

In defining its valuation ranges, SRK notes that there are inherent risks involved when conducting any arm's length valuation exercise. These factors can ultimately result in significant differences in valuations over time. By applying narrower confidence ranges, a greater degree of certainty regarding these assets is being implied than may be the case. Where possible, SRK has endeavoured to narrow its valuation range.

In SRK's opinion, the Market Value of the Mineral Resources and exploration potential associated with Orion's projects resides in the range between A\$151 million and A\$206 million, with a preferred value of A\$172 million, on a 100% basis.

1 Introduction

On 15 March 2023, Orion Minerals Limited (Orion) announced it had entered into a funding agreement, under which it was to implement a two-tranche share placement to sophisticated and professional investors to raise approximately A\$13 million (Placement) as part of a broader funding package. It is envisaged that this transaction will result in the introduction of a new cornerstone investment group to Orion's share registry, namely Clover Alloys (SA).

This funding package envisages the issue of approximately 882 million shares under the Placement, at an issue price of 1.5 cents per share (ZAR18 cents). Clover Alloys has subscribed for 440 million shares at the issue price of 1.5 cents (ZAR18 cents) per share to raise approximately A\$6.7 million (ZAR80 million). The Placement includes a significant options package, with Placement participants offered four free attaching unquoted options for each share issued under the placement, exercisable at 1.7 cents (ZAR20 cents) and expiring 30 November 2023 (Placement Options). The issue of shares under tranche 2 of the Placement, and the issue of all Placement options, was subject to shareholder approval at the General Meeting in May 2023.

The total value of the equity funding package, assuming all placement options are ultimately exercised, is approximately A\$73 million.

RSM Australia Pty Limited (RSM) has been engaged by Orion to prepare an Independent Expert's Report (IER or RSM Report) for inclusion within a Notice of Meeting to be provided to Orion's shareholders. SRK understands that the RSM Report will offer an opinion as to whether the proposed transaction is fair and reasonable to Orion shareholders not associated with the proposed transaction.

Mr Andrew Clifford, Partner/Director – Corporate Finance at RSM, subsequently contacted and ultimately engaged (Engagement), SRK Consulting (Australasia) Pty Ltd (SRK) to assist RSM by providing an Independent Specialist Report (ISR or Report) relating to the Mineral Assets of Orion.

1.1 Scope

The scope of SRK's Engagement comprises the following:

1. a technical assessment of the Prieska copper-zinc project (Prieska Project) in South Africa, focussing on the reasonableness of the technical inputs to the Prieska Project financial model
2. a technical assessment and valuation of the Okiep copper project (Okiep Project) in South Africa
3. a technical assessment and valuation of the Jacomynspan nickel-copper-cobalt-PGE project (Jacomynspan Project) in South Africa
4. a technical assessment and valuation of the tenures comprising the Fraser Range nickel-copper project (Fraser Range Project) in Western Australia
5. a technical assessment and valuation of the Walhalla gold and polymetallic project (Walhalla Project) in Victoria
6. an independent opinion on the Market Value of Orion's relevant interest in the mineral assets not included in the Prieska Project financial model (Prieska Model).

1.2 Site inspection

SRK notes that several of the consultants involved in this assignment have previous experience with Orion's projects. In the case of the Prieska Project, a member of SRK's South African review team completed their PhD on the project while two other members of the same team have previously reviewed the Mineral Resource Estimates for the Prieska Project.

Therefore, SRK considers it has a reasonable understanding of Orion's projects, albeit slightly dated at the present time. In all cases, neither SRK nor its consultants are acting as the designated Competent Persons for the stated Mineral Resources or Ore Reserves at these projects. Given this previous experience, SRK did not consider a site visit would provide material information over and above that evident in the supplied documentation.

1.3 Reporting standard

This Report has been prepared in accordance with the guidelines outlined in the *Australasian Code for the Public Reporting of Technical Assessment and Valuation of Mineral Assets* (VALMIN Code, 2015), which incorporates the *Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (JORC Code, 2012).

A first draft of the report was supplied to RSM and Orion to check for material errors, factual accuracy and omissions before the final report was issued.

For the purposes of this Report, value is defined as 'market value', being the amount of money (or the cash equivalent or some other consideration) for which a Mineral Asset should change hands on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing, wherein the parties each acted knowledgeably, prudently and without compulsion.

SRK's Report does not comment on the 'fairness and reasonableness' of any transaction between Orion and Clover Alloys, or any other parties.

For the purposes of this Report, SRK has classified the Mineral Assets of Orion in accordance with the categories outlined in the VALMIN Code (2015), these being:

- **Early-Stage Exploration Projects** – tenure holdings where mineralisation may or may not have been identified, but where Mineral Resources have not been identified.
- **Advanced Exploration Projects** – tenure holdings where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resources category.
- **Pre-Development Projects** – tenure holdings where Mineral Resources have been identified and their extent estimated (possibly incompletely), but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources have been identified, even if no further work is being undertaken.

- **Development Projects** – tenure holdings for which a decision has been made to proceed with construction or production or both, but which are not yet commissioned or operating at design levels. Economic viability of development Projects will be proven by at least a pre-feasibility study (PFS).
- **Production Projects** – tenure holdings – particularly mines, bore fields and processing plants that have been commissioned and are in production.

As discussed further in this Report, SRK has classified Orion’s Prieska Project as a Development Project, while the Okiep Project as a Pre-development Project for valuation purposes. The Jacomynspan Project is considered by SRK to be best evaluated as an Advanced Exploration Project while the remaining tenures within the Areachap region of South Africa and the Fraser Range and Walhalla regions of Western Australia and Victoria, Australia, respectively are best evaluated as Early-Stage to Advanced Exploration Projects.

SRK has adopted valuation approaches that are typically used for mineral assets at each of these respective stages. Additional details are provided in Sections 3 to 8 of this Report.

1.4 Legal matters

SRK has not been engaged to comment on any legal matters. SRK notes that it is not qualified to make legal representations as to the ownership and legal standing of the mineral tenements that are the subject of this valuation. SRK has not attempted to confirm the legal status of the tenements with respect to joint venture (JV) agreements, local heritage or potential environmental or land access restrictions.

1.5 Valuation date

The Valuation Date adopted is the date of the issue of this Report, namely 29 September 2023.

1.6 Project team

This Report has been prepared by a team of consultants from SRK’s offices in its Australia and South Africa (SRK ZA) consulting practices. Details of the qualifications and experience of the consultants who have carried out the work in this Report, who have extensive experience in the mining industry and are members in good standing of appropriate professional institutions, are set out in Table 1.1.

Table 1.1: Details of the qualifications and experience of the consultants

Specialist	Position/ Company	Responsibility	Length and type of experience	Site inspection	Professional designation
Lesley Jeffrey	Principal Consultant/ SRK ZA	Local Project Manager, overview, tenure, reporting	39 years; geology, modelling, resource estimation	None	MSc, BSc, PrSciNat, FGSSA, FFF
Hennie Theart	Corporate Consultant/ SRK ZA	Exploration	35 years; economic and mining geology, exploration strategy and methodology, mineral valuation	None	PhD, MSc, BSc (Hons), PrSciNat, FGSSA
Ivan Doku	Principal Geologist/ SRK ZA	Geology and Resources	19 years; precious/base/industrial metals/minerals - geology, modelling, resource estimation	None	GDE (Mining), MSc Eng, BSc Eng, PrSciNat
Mark Wanless	Principal Geologist/ SRK ZA	Geology and Resources	25 years; mine geology, QAQC, geological and ore body modelling, Mineral Resource estimation, due diligence auditing	None	BSc (Hons), PrSciNat, SACNASP, FGSSA, MGASA
Marcin Wertz	Principal Mining Engineer/ SRK ZA	Mine engineering (UG)	36 years; mine planning, underground hard rock mine design, study management	None	BSc, PrEng, FSAIMM
Ali Rudaki	Principal Mining Engineer/ SRK ZA	Mine engineering (OP)	30 years; strategic mine planning, optimisation and scheduling, mining projects evaluation and review, feasibility studies, mining operations detail design	None	BSc, PrEng, MSAIMM
William Joughin	Corporate Consultant/ SRK ZA	Rock engineering	30 years; geotechnical investigations; design of mining layouts, backfill, support and monitoring systems, shaft stability	None	MSc (Eng), BSc (Eng), GDE (Rock Eng), PrEng, FSAIMM, FSANIRE, AMMSA
Peter Sheperd	Principal Hydrologist/ SRK ZA	Hydrology	30 years; mine water management, strategic water evaluation, stormwater control	None	BSc (Hons), PrSciNat
Ismail Mahomed	Principal Hydrologist SRK ZA	Geohydrology	24 years; mine dewatering, groundwater modelling	None	BSc (Hons), BSc, PrSciNat, MGSSA
Katie Barns	Associate Principal Consultant/ Mineralis	Processing		None	BEng, MBA, MAusIMM, MIPE(NZ), EwB(NZ)
Kenneth Mahuma	Principal Environment Consultant/ SRK ZA	Electrical Infrastructure	28 years; HV and LV power systems, design of process plants and shafts, equipment specification	None	N6 (ElecEng), PrTechni, ECSA, MSAIMM
Alec Gumbie	SRK ZA Sub contractor	Mechanical Infrastructure	+40 years, including on-mine experience, mine safety research management, hard-rock mine feasibility studies, designing mechanical services and consulting	None	MSc, BSc(Hons), PrEng, ECSA, FSAIMM
Darryll Kilian	Principal Environment Consultant/ SRK ZA	Environment Science	28 years; environmental management, consulting and research	None	MA, BA(Hons), DipEd, BA, MIAIASA
Vassie Maharaj	Principal Consultant/ SRK ZA	Social Science	24 years; social risk management, stakeholder engagement	None	BSc, MIAPP, MIAIPSA, MIDSA
Livhuwani Lautze	Principal Consultant/ SRK ZA	Valuation of South African assets	16 years; geological modelling, mineral resource estimation, financial evaluation and valuation of mining projects and mines	None	MSc, BSc (Hons), BSc, PrSciNat, SACNASP, MGSSA, MCFAI
Stephen Johnson	Senior Consultant/ SRK AU	Geology	12 years of experience in the fields of mineral exploration and ore deposit geology	None	BSc (Hons), MSEG, MAIG
Ian de Klerk	Principal Consultant/ SRK AU	Geology	37 years of experience in the fields of mineral exploration, QAQC, geological modelling, Mineral Resource estimation, due diligence, auditing	None	BSc (Hons), MSc (Expl. Geol), GDip Eng (Mining Eng), MAusIMM
Shaun Barry	Principal Consultant/ SRK AU	Project Manager/valuation of Australian assets	+30 years, including 12 years in consulting on valuation and mine economics.	None	BSc (Hons), MSc Eng, MAusIMM (CP), MRICS
Gerard McCaughan	Principal Consultant/ SRK AU	Peer Review	+20 years, geological modelling, mineral resource estimation, auditing, due diligence, independent technical reviews for project financing.	None	PhD (Geology), BA Nat Sci (Hons), MAusIMM, MAIG
Jeames McKibben	Principal Consultant/ SRK AU	Peer Review	29 years; 19 years in valuation and corporate advisory, 2 years as an analyst and 8 years in exploration and project management roles	None	BSc (Hons), MBA, FAusIMM (CP), MAIG, MRICS, MSME

1.7 Limitations, independence, indemnities and consent

1.7.1 Limitations and reliance

SRK's opinion contained herein is based on information provided to SRK by Orion throughout the course of SRK's investigations as described in this Report, which in turn reflects various technical and economic conditions at the time of writing. Such technical information as provided by Orion was taken in good faith by SRK. SRK has not recalculated the Mineral Resources or Ore Reserves Estimates but has independently assessed the reasonableness of the estimates.

This Report includes technical information, which requires subsequent calculations to derive subtotals, totals, averages and weighted averages. Such calculations may involve a degree of rounding. Where such rounding occurs, SRK does not consider them to be material.

As far as SRK has been able to ascertain, the information provided by Orion was complete and not incorrect, misleading or irrelevant in any material aspect.

1.7.2 Statement of SRK independence

Neither SRK, nor any of the authors of this Report, has any material present or contingent interest in the outcome of this Report, nor any pecuniary or other interest that could be reasonably regarded as capable of affecting their independence or that of SRK. SRK has no beneficial interest in the outcome of this Report capable of affecting its independence.

1.7.3 Indemnities

As recommended by the VALMIN Code (2015), Orion has represented in writing to SRK that full disclosure has been made of all material information and that, to the best of its knowledge and understanding, such information is complete, accurate and true.

In line with the VALMIN Code (2015), Orion has provided SRK with an indemnity letter under which SRK is to be compensated for any liability and/or expenditure resulting from any additional work required that:

- results from SRK's reliance on information provided by Orion, or Orion not providing material
- relates to any consequential extension of workload through queries, questions or public hearings arising from this report.

1.7.4 Consent

SRK understands that this Report may be provided to Orion's shareholders. SRK provides its consent for this Report to be included in the RSM Report on the basis that the technical assessment and valuation expressed in the Executive Summary and in the individual sections of this Report is considered with, and not independently of, the information set out in the complete Report.

1.7.5 Consulting fees

SRK's estimated fee for completing this Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The fees were agreed based on the complexity of the assignment, SRK's knowledge of the assets and availability of data. The fee payable to SRK for this engagement is estimated at approximately ZAR2,900,000. The payment of this professional fee is not contingent upon the outcome of this Report.

1.8 Structure of the report

This report adopts the following structure:

- Part A: Orion's South African mineral interests comprising Sections 3 to 6.
- Part B: Orion's Australian mineral interests comprising Sections 7 and 8.
- Part C: Valuation of Orion's mineral assets comprising Sections 9 to 10.6.

2 Context to the Proposed Transaction

2.1 Introduction

Orion is a diversified metal explorer and developer with its flagship Prieska copper-zinc project located in the Northern Cape of South Africa. The Prieska Project is currently transitioning to the mine development and construction phase following the conclusion of the key elements of an overarching strategic funding package. In March 2023, Orion announced an A\$13 million two-tranche share placement, which led to the introduction of Clover Alloys as a new cornerstone investor.

Clover Alloys is a well-regarded mining group with significant mine development and operational experience, including a track record in the successful development and operation of modular, capital-efficient metal processing plants at its chrome mines in South Africa. Orion considers this expertise will be invaluable as it advances the development of its Prieska and Okiep projects towards production.

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 approximately 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 as announced on 13 December 2022 and the ZAR250 million International Development Corporation (IDC) Convertible Loan as announced on 08 February 2023, provides Orion with a strong financial position from which to execute its accelerated development strategy in the Northern Cape of South Africa.

This strategy envisages the commencement of trial mining and processing of ore, dewatering and the completion of feasibility studies for the Prieska Project's Early Development Scenario as first announced to the market in January 2022 (refer ASX/JSE release dated 20 January 2022). This Development Scenario is expected to bring forward revenue generation and potentially reduce the upfront external peak funding requirements by phasing the mine build while retaining the option to ramp up to the full-scale project (as outlined in the Bankable Feasibility Study (BFS) published by Orion in 2020, refer ASX/JSE release dated 26 May 2020) as sufficient funding becomes available. The BFS for the early mining development of the Prieska Project (early mining works BFS) is well advanced, with targeted completion in late 2023.

The mine dewatering of the Prieska Project (Dewatering Project) is also well advanced, with underground storage dams and pump site construction completed and the shaft platform installed to facilitate pump installation.

Part A: South African Mineral Interests of Orion

3 Prieska Project

3.1 Overview

Orion's Prieska Project area encompasses the historical Prieska Copper Mine (Prieska), which was previously operated by Anglovaal Minerals (part of the Anglovaal group of Companies) as an underground copper and zinc mine until its closure in 1991. Having acquired the project in March 2017 and completed extensive ongoing technical studies on the Project, Orion is now planning to establish a new mining operation targeting the extraction of the remaining copper-zinc mineralisation at the Prieska VMS deposit.

3.1.1 Location, access and climate

The Prieska Project represents a brownfield mining opportunity located 50 km southwest of the town of Prieska in the Northern Cape Province of South Africa (Figure 3.1), approximately 270 km southwest of Kimberley, the provincial capital with geographic coordinates 29° 52' 37" South and 22° 27' 45" East. The Prieska Project is situated near the mining village of Copperton, much of which was demolished when the previous mining operation at the site ceased in 1991 (Section 3.1.4 addresses the previous mining history).

Figure 3.1: Prieska Project location



Source: Orion (2020a)

The infrastructure developed for the previous mining operation remains to this day, providing access to important local and regional infrastructure (Orion, 2020) such as:

- **Towns:** Copperton village where 40 of the original homes remain; general supplies are available in the nearby town of Prieska.
- **Roads:** the sealed R357 provincial road to Prieska, which extends onwards to Kimberley, or via the sealed N10 national road to the larger town of Upington 260 km away; the last few kilometres to the Prieska Project are along a well-constructed gravel road.
- **Rail and Ports:** the rail siding of Grovéput lies to the east of the R357 towards Prieska, providing access to the main Kimberley - De Aar rail line and from there on to the bulk commodity, deep water ports of Saldanha Bay on the west coast and Coega on the east coast (ca. 800 km).

- **Water:** a 65-km pipeline from the Prieska Water Works on the Orange River can provide sufficient pumped water year-round. Negotiations to supply the Prieska Project by the local municipality authority (Siyathemba Local Municipality within the Pixley ka Seme District Municipality) have been successfully concluded for a minimum of 70 ML per month. Negotiations with Alkantpan for use of its pipeline infrastructure are in progress.
- **Power:** national grid power supply (four high-voltage regional lines); there are also operational 175 MW solar power plants in the area and ~240 MW of wind energy has been commissioned (*pers. Comm. M. Meyer 03/10/2023*). Additional solar and wind plants are planned nearby.
- **Air links:** According to Orion (*pers. Comm. M. Birch 03/10/2023*), a new 1.5 km-long airstrip has been constructed close to the Prieska Project; PCM has perpetual right of use. Regional airports at Upington and Kimberley offer daily flights between the major cities of Johannesburg and Cape Town.
- **Communications:** telephone lines, telecommunication towers, radio transmission towers and cellular phone network masts provide a good communications network in the area.
- **Existing mine infrastructure:** the main hoisting shaft (the Hutchings Shaft, shown in Figure 3.2) is concrete lined, 1,024 m deep and 8.8 m in diameter; the concrete headgear also remains intact.

Figure 3.2: Hutchings Shaft at the Prieska Project



Source: Orion (2023a)

The surrounding countryside is extremely flat, as can be seen in Figure 3.2. Geographically, the area forms part of the eastern Bushmanland Plateau that displays consistently low relief, representing a remnant of the Post-African Land Surface. The deposit outcrops in a shallow drainage basin that drains southwest towards the Hartbees River (Orion, 2020).

The summers (November to March) are long and hot, and the winters (May to August) are short and cold. Temperatures peak in December and January (approximately 36°C average) and are lowest between June and August (average of 4°C). Days are generally hot while nights are cold. The climate is arid with a mean average rainfall of approximately 176 mm per annum, falling mainly during summer and early autumn (January to April). February tends to be the wettest month and July the driest; the average monthly rainfall varies between 34 mm and 3 mm. The annual evaporation rate is approximately 2,714 mm per annum. Daylight hours vary between 14 in summer and 10 in winter. The second half of the year tends to be windier than the first half with the prevailing wind direction from the northwest (average wind speed of six knots)².

3.1.2 Tenure and land use

For the purposes of this report, SRK has placed reliance on Edward Nathan Sonnenbergs Inc (ENSAfrica, 2023) for legal verification of tenure pertaining to the mining rights (ENS, 2023). SRK notes that no legal opinion regarding any of the prospecting rights was available. SRK has, however, reviewed the various licence documents provided and assured itself of the correct geographical extent of the licences with respect to the exploration activities conducted by Orion.

Orion holds mining rights (Table 3.1 and Figure 3.3) to the Prieska Project through two subsidiaries, Prieska Copper Zinc Mining (Pty) Ltd (PCZM) and Vardocube (Pty) Ltd (Vardocube). SRK notes that PCZM was previously known as Repli Trading No. 27 (Pty) Ltd (Repli).

Orion also holds prospecting rights (or has submitted such applications or renewal applications) neighbouring the Prieska Project (Table 3.2 and Figure 3.3) including through its subsidiary companies; namely, PCZM, Bartotrax (Pty) Ltd (Bartotrax) and Orion Exploration No. 5 (Pty) Ltd (OE5).

PCZM is owned by Orion (70%), Prieska Resources (Pty) Ltd (Prieska Resources) (20%), the Orion Siyathemba Employee Trust (indirect 5%) and the Orion Siyathemba Community Trust (indirect 5%). Vardocube is a wholly owned PCZM subsidiary while Prieska Resources is owned by Safika Resources (Pty) Ltd (44.72%), Kolobe Nala Investment Company (Pty) Ltd (37.97%) and Black Star Minerals (Pty) Ltd (17.31%), all of which are Black Economic Empowerment companies. The project ownership structure fulfils the requirements of the Broad-based Socio-Economic Empowerment Charter for the South African Mining Industry, 2018 (Mining Charter III).

Together, the two mining rights cover a combined area of 6,765.6124 ha. Commodities covered in the mining and prospecting rights are listed below the tables.

The existing tailings storage facility (TSF) is situated on the farm Slimes Dam No. 154 (Table 3.1) while the remainder of the old mine surface infrastructure, mine shafts, portal access to underground workings and a large proportion of the deposit are all located within Remainder Portion (RE) 25 and RE 26 of farm Vogelstruisbult No. 104; these are all within the boundaries of the Repli mining right.

² Climate data sourced from <https://weatherspark.com/y/87793/Average-Weather-in-Prieska-South-Africa-Year-Round>

Table 3.1: Prieska Project – mining rights³

Licence Code	Project	Portion(s) and Farm(s)	Area (ha)	Holder and Percentage Holding	Grant Date	Start Date	Execution Date	Period (years)	Expiry Date	Extension ¹
NC30/5/1/2/2/10138MR ^a	PCZM	RE Ptn 25 & RE Ptn 26 Vogelstruisbult No. 104; Slimes Dam No. 154	722.5720	Repli Trading No. 27 (Pty) Ltd (100%)	23/08/2019	04/12/2019	11/12/2019	24	03/12/2043	Two 1-year extensions
NC30/5/1/2/2/10146MR ^b	PCZM	RE Ptn 1 Vogelstruisbult No. 104	6,043.0404	Vardocube (Pty) Ltd (100%)	14/08/2020	04/08/2020	20/10/2020	12	03/08/2032	One 1-year extension

Notes:

Ptn = Portion

¹ *pers. Comm:* M Robertson (08/09/2023) – Commencement Date extensions granted until 31/12/2022

Commodities:

Cu, Zn, Au, Ag, Fe, Pb, S, Spy (S in pyrite), Co, Py, Mo, W, Ba, Ls (limestone), St (stone aggregate and gravel), Qy (sand, general)

Cu, Zn, Au, Ag, Fe, Pb, S, Spy (S in pyrite), Co, Py, Mo, W, Ba, Ls (limestone)

³ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

Table 3.2: Neighbouring Prieska Projects – prospecting rights and prospecting right application⁴

Licence Code and Type	Project	Portion(s) and Farm(s)	Area (ha)	Holder and Percentage Holding	Start Date	Execution Date	Period (years)	Expiry Date
NC11850PR ^{1, a} Prospecting Right	Bartotrax Cu-Zn	Ptn RE Smouspan 105 Ptn RE1 Klipgats Pan 117 (Annex Vogelstruis Bult)	4,657.09521	Bartotrax (Pty) Ltd (100%)	09/03/2018	15/05/2018	5	08/03/2023
NC11840PR ^{1, b} Prospecting Right	Doonies Pan Cu-Zn	Ptn 3 Doonies Pan 106	3,256.3368	Repli Trading No. 27 (Pty) Ltd	29/08/2018	07/11/2018	5	28/08/2023
NC12257PR ^{2c} Prospecting Right	OE5 Near Mine	Ptn RE1, 2, 4, 5 & 6 Merriespan 107 Ptns 6, 7 & 8 Hedley Plain A64 Ptns 1 - 4 Graspan 112 Ptn 2 Smouspan 105 Ptn 4 – 6 Doonies Pan 106	30,171	Orion Exploration No. 5 (Pty) Ltd		Not executed yet	5	14/12/2027
NC12258PR ^c Prospecting Right		Ptns 3, RE Ptn 4, 5 Klipgatspan 117 Ptn 4 Kaffirs Kolk 118 Ptn RE Hoekplaas 146 Ptn RE Humansrus 147	14,829				5	26/10/2027
NC12287PR ^{3, d} Prospecting Right		Ptns RE & 5 Gras Pan 112 Ptn 1 Uitspan 115	8,938				5	01/12/2027
NC12405PR ^{3, e} Prospecting Right		Ptns RE & 5 Gras Pan 112 Ptn 1 Uitspan 115	8,938				5	09/11/2027

Notes:

Ptn = Portion

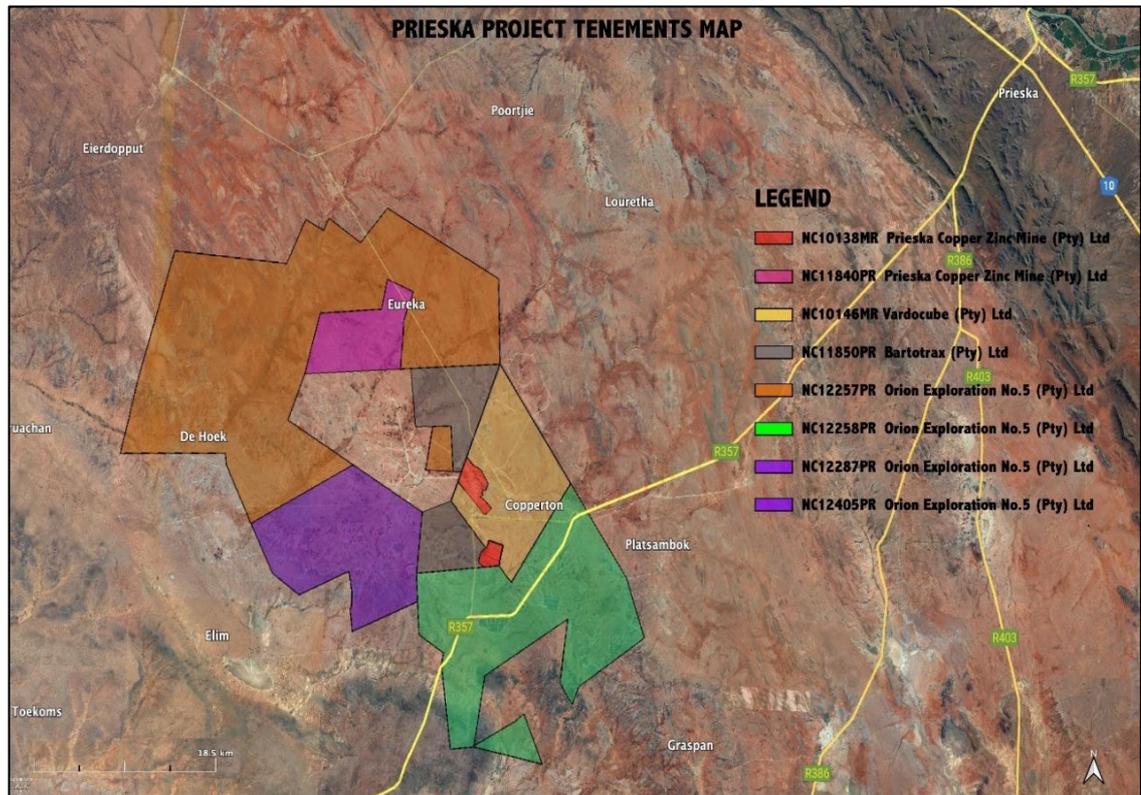
- 1 Prospecting rights expired; renewal accepted (20/06/2023)
- 2 No DMRE documentation supplied; information from Orion or *pers Comm.* M Robertson (08/09/2023)
- 3 NC12405PR overlies NC12287PR - different commodities, see below

Commodities:

- a Cu, Zn, Au, Ag, Co, Ba, Ls (limestone), Mo, Pb, Py, S, Spy, Fe, St, Qy (sand, general), W
- b Cu, Zn, Au, Ag, Co, Ba, Ls (limestone), Mo, Pb, Py, S, Spy (S in pyrite)
- c Cu, Zn, Au, Ag, Co, Ba, Pb, S, Fe, Qy (sand, general), W, Li, Be, Ta, RM (aggregate), Fs (feldspar), GFS (feldspar gemstone), Mc, Pr (praseodymium), PR (prospecting unspecified minerals), Mz, Xt (xenotime), HM, RE, Cd, Sc, Y, Te, La, Nd, Sm, Eu, Ce, Gd, Pm, Tb, Dy, Ho, Er, Tm, Yb, Th, Cr, In, Ge, Ga, Bi, Ti, Mn, Sn, U, Ra, Ni, PGM
- d Ba, Qy, Li, Be, Ta, RM (aggregate), Fs, GFs, Mc, PR (prospecting unspecified minerals), Mz, Xt (xenotime), HM, Cd, Sc, Y, Te, La, Pr (praseodymium), Nd, Sm, Eu, Ce, Gd, Pm, Tb, Dy, Ho, Er, Tm, Yb, Th, Ag, Cr, In, Ge, Ga, Bi, Fe, Ti, Mn, Sn, W, U, Ra, PGMs; (Cu, Zn, Au, Ag, Co, Pb, S, Fe, Ni, RE excluded)
- e Cu, Zn, Au, Ag, Co, Pb, S, Fe, Ni, RE

⁴ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

Figure 3.3: Prieska Project mining and prospecting rights



Source: pers.Comm. M Robertson 12/09/2023

The surface rights to the Prieska Project area have been mainly disposed of to private holders, except for Portion 26 of the farm Vogelstruis Bult 104 and the farm Slimes Dam 154 (both surface rights now belonging to PCZM). In addition, various registered servitudes to access surrounding properties/infrastructure have been retained, including to the Hutchings Shaft on RE25 Vogelstruis Bult 104, which are owned by the Request Trust (a third party). A condition to this ownership specifically states that Prieska Copper Mine Ltd (PCML) is permitted to carry out any necessary works regarding mining on, in or under RE1 and RE25 of Vogelstruis Bult 104.

The town of Copperton (on RE1 Vogelstruis Bult 104) is privately owned.

A portion of the land in the southeast is leased by Mulilo Renewable Energy, for its solar PV operations, and the remaining land is used as grazing for livestock farming.

3.1.3 Agreements and taxes

Agreements

The following is a list of agreements or Memoranda of Understanding (MoU) relevant to the Prieska Project:

- Water treatment: Almar Water Solutions BV of the Netherlands:
 - MoU for treatment of water from old mine workings.
- Land and infrastructure usage: Armscor Corporation of South Africa SOC Ltd (Armscor):
 - MoU regarding the use of the water pipeline and its related infrastructure from the Orange River and the use of Portion 21 of the farm Vogelstruisbult No. 104, including the existing houses and other infrastructure and the option to construct additional facilities as required; Armscor is the registered landowner (held under Title Deed No T65213/2003).
- Alliance underground mining services: Byrne-cut-offshore (Pty) Ltd of Western Australia:
 - MoU for the provision of underground contracting services (mining, underground contractor's support infrastructure, maintenance, supply of machinery and consumables, operational management) and underground mining cost modelling.
- Power: Eskom Holdings SOC Ltd:
 - A pro forma electricity supply agreement for 15 MVA (in the order of 200 GWh per year) and a separate agreement for the self-build of Eskom Distribution Connection Assets (15 MVA) to connect the nearby Cuprum Substation to the Distribution System.
 - A cost estimate for 35 MVA electricity supply was received in 2018 but no contract has been signed.
- Power: Juwi Renewable Energies (Pty) Ltd
 - An MoU has been signed to develop a renewable energy electricity supply project (whether photovoltaic, wind, battery or any combination thereof) to supplement the Eskom power supply.
- Mineral Processing: Minerals Operations Executive (Pty) Ltd (Minopex)
 - A budget proposal for process plant contractor services was received in 2019. The proposal describes a proposed processing facility with a nominal annual throughput of 2.4 Mt/a operating seven days per week.

Many of these agreements have passed their termination dates and SRK has not been provided with evidence of any extensions to these agreements.

Taxes

Applicable taxes are shown in Table 3.3.

Upon production, Prieska will be subject to income tax in South Africa according to standard corporate tax rates. In the budget speech of 23 February 2022, the South African Minister of Finance announced that the company tax rate would be reduced to 27% in the 2023/24 tax year (note that the corporate tax rate used in the BFS (Orion, 2020) was 28%). At the same time, the treatment of Assessed Losses will change where only 80% of the assessed loss can be offset against taxable income in any tax year.

South African legislation determines mineral royalties based on whether refined or unrefined minerals are produced; as the Prieska Project will be producing a concentrate (defined as an ‘unrefined mineral resource’ according to Schedule 2 to the Mineral and Petroleum Resources Royalty Act, 2008), the royalty for unrefined minerals applies. This is calculated by the following formula:

$$\text{Unrefined Minerals: } Y(\%) = 0.5 + \frac{EBIT}{\text{Gross Sales} \times 9.0} \times \frac{100\%}{1}$$

(EBIT = earnings before interest and taxes)

Note that mineral royalties are only applicable once production commences.

The Carbon Tax Act (Act No. 15 of 2019) was gazetted on 23 May 2019. The first phase of the Act started in June 2019 and the second phase will commence in January 2026. The tax rate is proposed to increase annually, based on the Consumer Price Index, plus an additional two percent. Based on the Carbon Tax Act and the proposed operational activities of the Prieska Project, a business should allow for the following financial impacts:

- direct taxation on fuel combustion emission activities (stationary and mobile)
- increased cost of upstream and downstream carbon intensive activities.

Table 3.3: Prieska Project applicable taxes

Description	Amount
Corporate tax rate	27% of profit
Value Added Tax	15% of base price
Mineral royalty (tax deductible)	$Y = 0.5 + [EBIT / (\text{gross sales of un-refined minerals} \times 9)] \times 100$
Carbon Tax	R159 per tonne of CO ₂ e (2023)

3.1.4 Project history

The Prieska deposit was discovered in the 1890s. Surface evaluation followed in 1914 but subsurface exploration only began in 1968 when Anglo-Transvaal Consolidated Investment Company Limited (Anglovaal) drilled 47 exploration holes totalling some 22,000 m of solid core. At that time, the pre-mining Ore Reserves down to 900 m were estimated at 47 Mt in the Prieska orebody (the Annex orebody was never exploited).

Prieska was previously owned and operated by Anglovaal. Operations started in October 1972 and ceased when the uncertain economic and political environment at the time combined with technical challenges relating to the mining of the flattened deposit led Anglovaal to decide to close the mine in December 1991. A closure certificate was received from the Department of Mineral and Energy Affairs in October 1995. Anglovaal is now part of African Rainbow Minerals Limited. Summary historical statistics are shown in Table 3.4. SRK notes that these are historical production estimates and are not in accordance with current JORC Code guidelines. Production peaked in 1978 (3.3 Mt milled) and started to decline in 1987. The concentrates were either smelted in South Africa at O'okiep Copper Company in the Northern Cape Province (now closed) or at the Zincor Refinery in Gauteng Province or exported via Saldanha Bay.

Table 3.4: Summary historical statistics

Description	Copper	Zinc
Run-of-Mine material processed	46 Mt	
Mill feed grade	1.11%	2.62%
Metal produced	0.43 Mt	1.01 Mt
Average recovery	84.9%	84.3%
Grade	1.7%	3.87%
Pyrite concentrate produced	1.76 Mt	
Lead concentrate produced	8.4 kt	

Source: Orion (2020a); Wilson and Anhaeusser (1998)

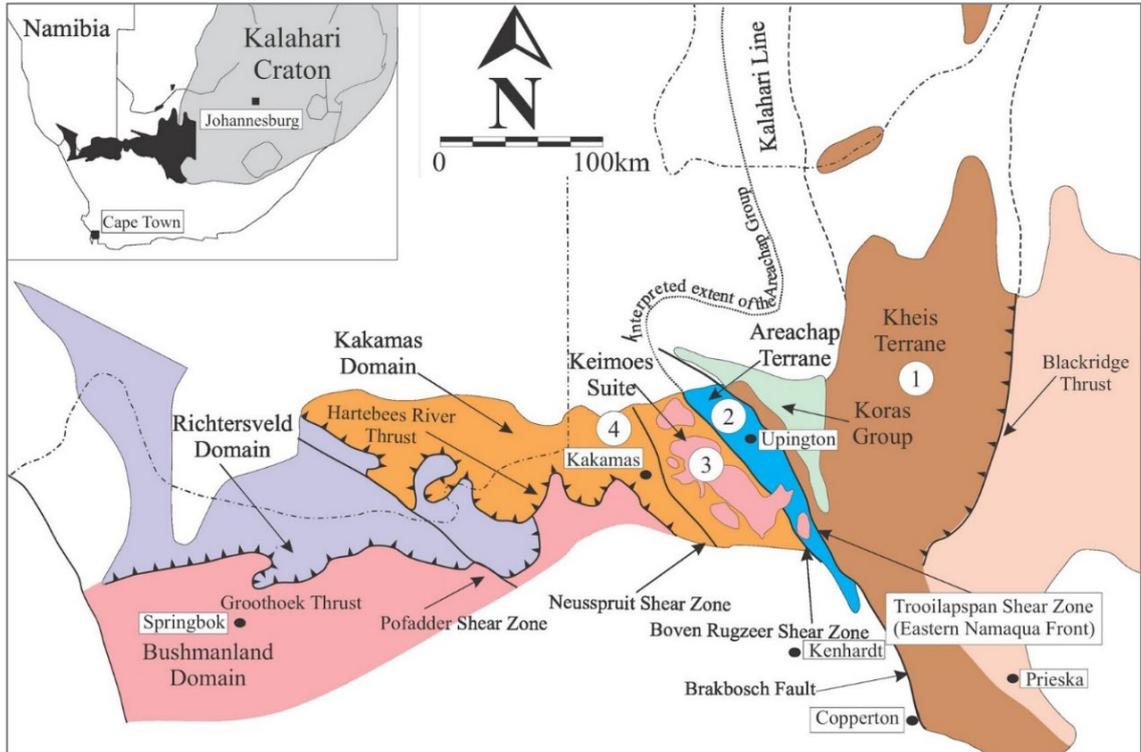
3.2 Geology and Mineral Resources

3.2.1 Regional setting and local mineralisation

Regional setting

The Prieska deposit is situated in the southernmost exposure of the north-northwest trending Areachap Terrain, which forms part of the intensely deformed, high-grade metamorphic Mid-Proterozoic Namaqua-Natal Metamorphic Province. It is a strata-bound, stratiform volcanogenic massive sulfide (VMS) deposit hosted by the three-kilometre thick Copperton Formation of the Areachap Group. The Areachap Group is a prominent volcanosedimentary succession of between 30–50 km in width, comprising varying proportions of amphibolite, hornblende gneiss, biotite gneiss, quartzofeldspathic gneiss, calc-silicate and pelitic schists exposed intermittently for 280 km on the easternmost margin of the Namaqua Province, and is interpreted to represent a Proterozoic volcanic island arc resulting from the subduction of oceanic crust underneath the Kaapvaal Craton (Figure 3.4).

Figure 3.4: Simplified geology of the Namaqua Province



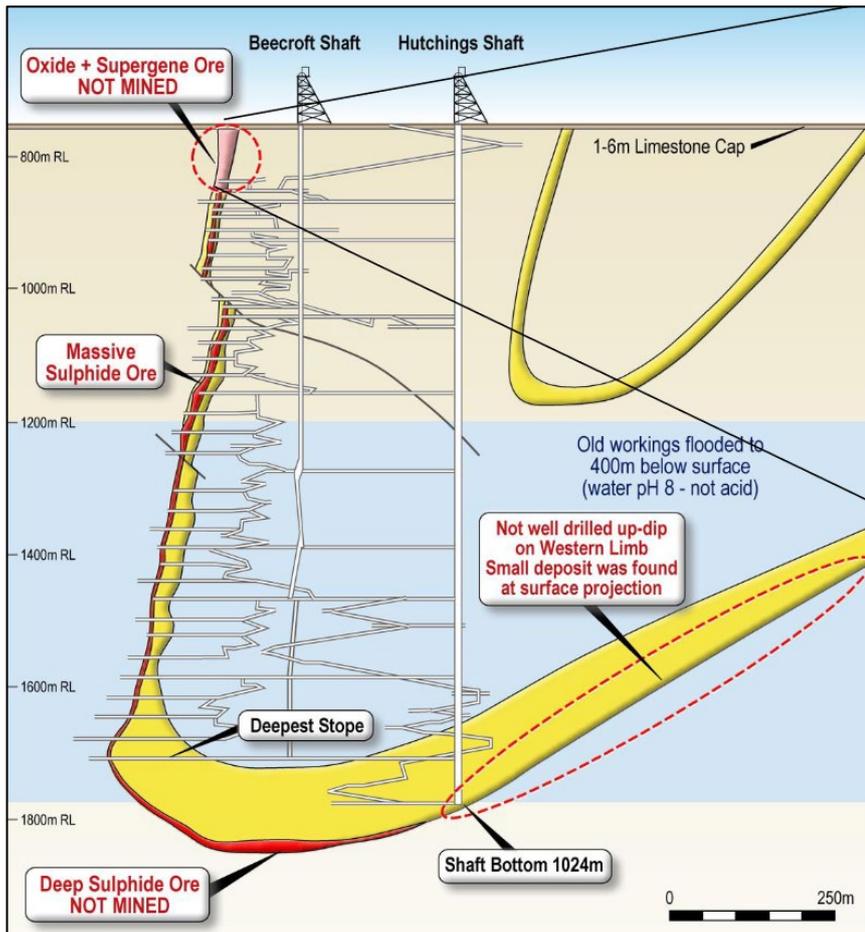
Source: Van Niekerk (2022)

The Areachap Group also hosts several other smaller VMS and Intrusive Nickel Sulfide deposits such as the Areachap, Jacomynspan, Bokputs, Van Wykspan, Kantienpan, Kielder and Annex Vogelstruisbult deposits.

Local geology and mineralisation

The Prieska deposit has a 2.8 m strike length at an orientation of 135° true north outcropping intermittently as a well-developed gossan. Mineralisation is preserved in a synformal structure with the stratigraphy overturned in the lower limbs of the synform. In the upper limb of the structure the deposit dips at between 40° and 80° to the northeast. The width of the mineralisation ranges between 2 m to over 35 m in places, averaging 7 to 9 m, to a depth of 1,228 m below surface (Figure 3.5).

Figure 3.5: Schematic vertical cross section through the Prieska deposit



Source: Orion (2017)

The mineralisation is hosted in the Prieska Copper Mines Member and is stratigraphically underlain by the Smouspan Gneiss Member and overlain by the Vogelstruisbult Gneiss Member. In the Prieska Copper Mines Member two major rock types are distinguished by their mineralogy and silica content – the gedrite fels, consisting of gedrite, anthophyllite, cummingtonite-grunerite, phlogopite and variable amounts of dravite and secondly, a quartz-perthite-sillimanite gneiss (Theart, 1989).

The sulfide minerals of the Prieska Copper Mines Member consist of (in decreasing abundance) pyrite, sphalerite, chalcopyrite, pyrrotite and minor galena. No consistent vertical zonation of these minerals has been identified but laterally the central core of the deposit is relatively enriched in copper while the margins tend to show higher zinc grades.

3.2.2 Mineral Resource estimation

The deposit modelling and estimation has been split into two parts, the deep sulfide area and the oxide and supergene remnants of the crown pillar (Figure 3.5). Both models were created by Z Star Mineral Resource Consultants on behalf of Orion. Both estimates were generated by Mr Cuan Lohrentz and Mr Sean Duggan of Z Star.

Mr Duggan (Pri. Sci. Nat.) is registered with the South African Council for Natural Scientific Professionals (Registration No. 400035/01), a Recognised Overseas Professional Organisation (ROPO) for JORC Code reporting purposes. Mr Duggan is a director and Principal Mineral Resource Analyst employed by Z Star Mineral Resource Consultants (Pty) Ltd, Cape Town, South Africa.

Mr Lohrentz (Pri. Sci. Nat.) is registered with the South African Council for Natural Scientific Professionals (Registration No. 40224/12), a Recognised Overseas Professional Organisation (ROPO) for JORC Code reporting purposes. Mr Lohrentz is a Senior Mineral Resource Analyst employed by Z Star Mineral Resource Consultants (Pty) Ltd, Cape Town, South Africa.

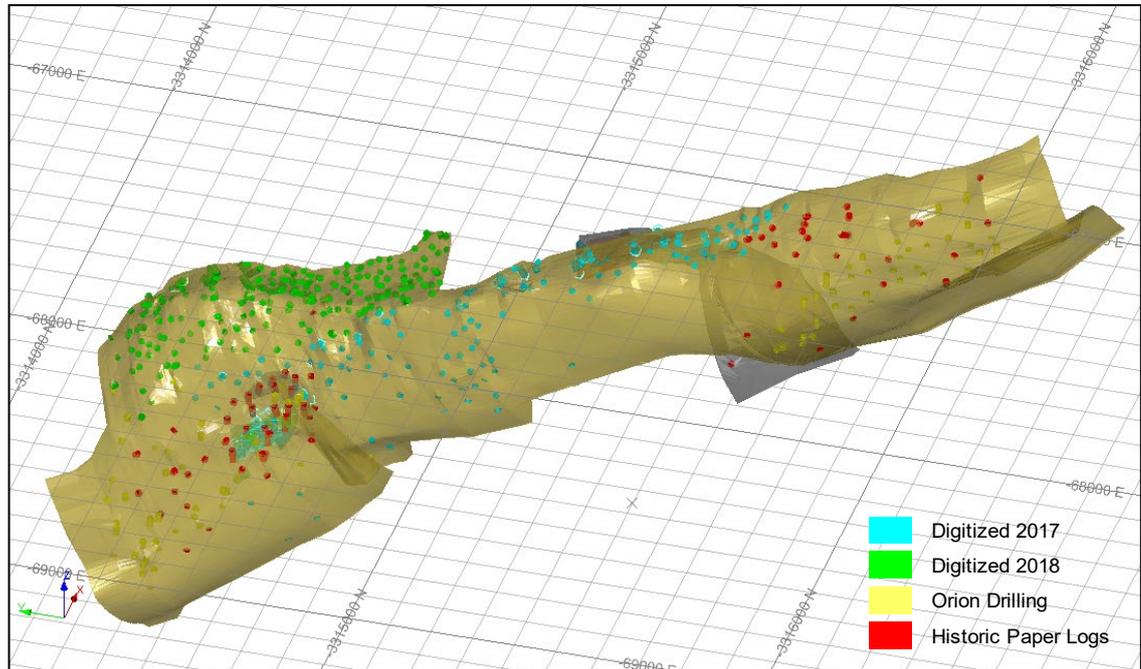
The estimates have been reviewed by Mr Mark Wanless, Pr. Sci. Nat, a Principal Consultant with SRK. Messers Lohrentz, Duggan, and Wanless are all suitably experienced with the style of mineralisation to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code).

3.2.3 Data collection

The database that informs the Prieska Mineral Resource Estimates is a combination of exploration data collected by Orion and historical data collected during the original exploration program and during the mine's operation by Anglovaal. As with any historical data, verification and validation can present a challenge, and it is possible that there are incomplete records of the data, or data that do not comply with modern industry standard practice. Anglovaal was, however, a major mining house in South Africa, with significant resources and experience in exploration and mining, and it is reasonable to assume that appropriate care and diligence was taken in the historical data collection according to prevailing standards at the time.

Most of the database (80%) is historical, captured or digitised from hard copy reports, plans and sections. The remaining 20% is Orion drilling in the northern and southern portions of the declared Mineral Resource (Figure 3.6).

Figure 3.6: Isometric view looking east-northeast, depicting the distribution of data sources in the exploration database



Source: SRK analysis (2023)

Orion undertook a detailed process for the capture and validation of the historical data. The historical data has been validated through comparison with new data, twin drilling, and checking against paper copies but remains of lower confidence than the Orion-generated data for which there is an audit trail, detailed records of standards and procedures, and results from an analytical Quality Assurance and Quality Control (QA/QC) program.

The analytical QA/QC data show acceptable accuracy and precision of the Au, Cu and Zn assays, evidenced by the Certified Reference Material (CRM) results assessed. Lower precision and possible bias are seen for the Pb and Ag assays, which are only available for the Orion dataset (~20% of the data). The estimates derived for these metals is therefore of lower confidence than the primary metals.

The Orion QA/QC includes CRMs, blanks and pulp duplicates with the primary laboratory ALS Chemex (ALS), and 44 umpire laboratory assays SGS Performance Laboratories (SGS).

For the crown pillar dataset, Z Star highlights some challenges encountered with the data, specifically poor sample recovery in some intersections (particularly in the oxidised zones), accurately measuring density using the water immersion method, particularly in the oxidised and friable material, and brecciation of the material in some areas, which is interpreted to be due to caving of the material into the mined-out stopes below.

3.2.4 Modelling and estimation

The modelling and estimation were undertaken using a range of industry standard software, including Geovia Surpac, Datamine Studio RM, Isatis, and Isatis.neo. The wireframes that constrain the mineralisation are generated using conventional explicit sectional modelling. Both the deep sulfide and crown pillar estimates were generated based on an approximate copper equivalent (CuEq) or zinc equivalent (ZnEq) grade: for the crown pillar this threshold grade is 0.3% CuEq, for the deep sulfide the threshold grade is between 3% and 4% ZnEq. No strict rules were applied in the creation of the wireframes, and hence some subjectivity at the waste/ore contact exists. However, the interpretation is reasonable overall and appropriately constrains the mineralised unit.

The only modelled structures are the Mine Fault, which is known from when the mine was operating, and has an approximate 60 m displacement, and a duplex structure identified in the northern portion of the orebody adjacent to the Mine Fault, where the orebody sequence is observed to be repeated. It is apparent from inspecting the scanned mine plans with the orebody mapping on plans and section that there is smaller-scale thrusting affecting the orebody, which is fairly widespread. These are observed to typically be subparallel to the orebody and may contribute to the pinching and swelling observed in the underground mapping. Contrasts in the ductility between the orebody and the surrounding gneisses may also contribute to this feature through boudinaging.

The statistical assessment, compositing and capping approach applied by Z Star are considered to be appropriate, consistent with industry norms and adequately documented in its reports. For both areas, the primary estimation method was Ordinary Kriging (OK). For the folded deep sulfide area, the search neighbourhood was locally rotated (dynamic anisotropy) to match the orientation of the orebody, while in the crown pillar a more consistent dip did not require this.

For the crown pillar area, the relative paucity of data on the periphery of the strike extents of the orebody resulted in Z Star using a moving average of the kriged estimates to extrapolate the estimates.

For the deep sulfide area, Z Star's own validations and SRK's independent validations both indicate an acceptable reproduction of the composite data in the estimates, honouring the trends in the data, and with an acceptable level of smoothing, which is consistent with the classification as Indicated and Inferred Mineral Resources.

For the crown pillar area, the kriged estimates similarly show good reproduction of the composite grades locally. The moving average estimates are not supported by any composite grades, and in SRK's opinion there is a risk that these estimates may be overstated.

For the deep sulfide area, classification of the Mineral Resources is based on a combination of factors:

- the estimation pass (a two-pass strategy was employed by Z Star)
- estimation quality as indicated by the Slope of Regression and Kriging Efficiency
- proximity of the blocks to the mined-out areas (as there is uncertainty in the exact depletion)
- drill hole intersection spacing
- structural complexity of the orebody.

Although there is some subjectivity to the parameters, and SRK considers some of the thresholds selected by Z Star to be optimistic (e.g. using a 0.4 slope of regression threshold for discrimination between Indicated and Inferred Mineral Resources – SRK considers a 0.5 threshold to be more defensible), the overall result is considered appropriate and reasonably reflects the data density and confidence in the geological interpretation and grade estimates. No Measured Mineral Resources were defined, and SRK considers this appropriate, in particular considering the short-range variations in orebody thickness observed in the underground mapping but which cannot be modelled using the ~50 m-spaced drilling that is typically informing the Indicated Mineral Resources.

In the crown pillar area, the classification criteria are not as well defined, and for the sulfide and supergene domains, are limited to the first pass kriged estimate, which is limited to the semi-variogram range, while the oxide domain includes the first-pass kriged estimate and some of the second and third-pass moving average estimates. In its discussion on classification, Z Star correctly highlights the risks associated with the sample recovery, density measurements and relatively limited number of density measurements, and uncertainties in the extents of the caved zones (which are physically excluded from the Mineral Resource Estimates). SRK is of the opinion that the extents of the Indicated Mineral Resources should be reduced for valuation purposes, taking account of the above risk factors, and the low confidence in the moving average grade estimates.

Table 3.5: Orion Mineral Resource Statement for the Prieska deposit

Classification	Source	Mt	Zn%	Cu%	Zn (kt)	Cu (kt)
Indicated	Deep Sulfide UG	18.5	3.60	1.18	667	218
	Crown Pillar OP	1.9	1.71	1.83	32	34
Total Indicated		20.4	3.43	1.24	699	252
Inferred	Deep Sulfide UG	10.2	4.35	1.21	416	117
	Crown Pillar OP	0.4	0.76	1.03	3	4
Total Inferred		10.6	3.96	1.14	419	121
Total Resource		31.0	3.61	1.20	1118	373

Source: ASX 18 December 2018, ASX 25 July 2023

Notes:

- ¹ UG = underground; OP = open pit.
- ² The Mineral Resources are as reported by Orion without modification by SRK.
- ³ Mineral Resources are not Mineral Reserves and there is no guarantee that all or part of the Mineral Resource will be converted to a Mineral Reserve.
- ⁴ Deep Sulfide Underground Mineral Resources are reported without applying a cut-off. The model was generated using a modelling ZnEq cut-off of between 3 and 4 % (ZnEq = Zn% + 2Cu%). Deep Sulfide Mineral Resources are reported inclusive of any Mineral Reserves that may be derived from them, and with an Effective Date of February 2019 (no changes to the estimates have occurred since the Effective Date; however, the techno-economic parameters have not been updated since this time).
- ⁵ Crown Pillar Open Pit Mineral Resources are reported above a 0.3% Cu% cut-off. Crown Pillar Mineral Resources are reported Inclusive of any Mineral Reserves that may be derived from them, and with an Effective Date of April 2023.

3.2.5 Risks and opportunities

The combination of low angle thrusts, boudinage features and undulation of the orebody evident in the mine plans and sections is likely to pose a risk of greater-than-planned mining dilution and losses in the deep sulfide underground mining areas.

In the crown pillar area, the uncertainties relating to the poor core recoveries, density measurements and caved areas are not adequately catered for, and there are risks that the model:

- overestimates the density of the friable material due to porosity, and shows possible bias in selection of more competent sections of core to take density measurements
- overestimates the grades of the peripheral portions of the orebody along strike, extrapolated beyond the drill holes
- does not account for the uncertainty in the caved areas, and the above uncertainties, in the confidence classification.

In SRK's opinion, the Z Star Mineral Resource Estimates do not adequately address the JORC Code requirement to assess the Reasonable Prospects of Eventual Economic Extraction (RPEEE), and this is dependent on the feasibility study results to demonstrate that the cut-off values applied in the modelling are appropriate. As indicated in the following sections, the most recent techno-economic modelling was completed several years ago, and these should be updated to confirm that the material can be economically extracted within a reasonable timeframe. Orion has advised SRK that a revised feasibility study is currently underway and is due for completion in late 2023.

3.2.6 Prospectivity

At the Prieska deposit, the defined mineralisation has not been closed off along strike or down dip. The nature of VMS mineralisation does not indicate a strong likelihood of along strike extensions, as the current information indicates a thinning of mineralisation and decreasing grades, consistent with distance from the source of the mineralising fluid. The shallow dipping limb of the synform has been partially drilled from surface and underground, and the mineralised unit has been intersected in all holes. While there are indications of thinning and decreasing grades in some areas, there is potential for extending the Mineral Resource towards the southwest.

Within Orion's wider mineral rights holdings in the Areachap Terrain there are several known zinc - copper and intrusive nickel sulfide deposits in the Areachap Group such as the Areachap, Jacomynspan, Bokputs, Van Wykspan, Kantienpan, Kielder and Annex Vogelstruisbult deposits (refer Sections 5 and 6).

Bailie (2010) reports that these other VMS deposits are smaller brine pool-type deposits, lacking the footwall alteration zone and cap rocks observed at Prieska. However, these represent known targets that could be developed to economically exploitable deposits with further work. In addition, the geological setting is prospective for additional strata-bound, stratiform VMS deposits, as the large VMS deposits globally are not typically found in isolation and are associated with other similar mineralisation.

3.3 Hydrology and hydrogeology

The management of water as per the water licence application (ABS Africa, 2019) is based on the implementation of the following. The Water Use License was granted in 2020:

- zero offsite discharge of effluent
- water conservation and demand management
- prevention of pollution to land, surface and groundwater resources through the implementation of the mitigation hierarchy
- implementation of a comprehensive groundwater monitoring program.

SRK considers these principles to be sound.

3.3.1 Climate and hydrology

Climatic conditions are characterised by warm to hot summers, high evaporation and dry cold winters, a mean annual rainfall of 198 mm and a large degree of variability in the monthly rainfall. Potential evaporation is extremely high (over 2,700 mm).

The site is characterised by drainage lines that mainly channel stormwater. Little surface water is retained due to the arid climate and granular soils of the area. The series of watercourses are regarded as mere drainage conduits that transport stormwater across the landscape during rainfall events. (ABS Africa, 2021).

3.3.2 Potable and process water

The water use licence (ABS Africa, 2021) describes the water as follows:

Bulk water supply is pumped from the Orange River at the Prieska Water Works 60 km to the project site via a 450 mm diameter steel pipeline. The water is first pumped from Prieska for 40 km to a set of five reservoir tanks which have a combined storage capacity of 10.9 million litres. From these tanks, water then flows under gravity for the last 20 km to the project site and to the Copperton town tanks.

The planned water consumption for the Project and Copperton is 5.5 million litres per day. Alkantpan and other users have an estimated usage of 0.58 million litres per day giving a total water demand of 6.2 million litres per day. To supply this volume of water, several upgrades and replacements will be carried out at both the Prieska Water Works and on the pipeline. The major items include the installation of two new 300 kW pump sets (one as a stand-by unit), the replacement of electrical transformers and switch gear and the replacement of several valves along the pipeline.

3.3.3 Water balance

A water balance has been prepared for the site and indicated high evaporation potential from the site and indicates the water requirements that will be sourced from the water supply to the site.

The most significant issue regarding water management is the large volume of water required to be removed from the underground mine workings and the absence of a feasible alternative to the evaporation of this water. (ABS Africa (2021).

3.3.4 Stormwater

The proposed stormwater diversion berms divert clean water around the mining area and dirty water within the mining area will be managed as dirty water and directed via drains, trenches and other similar structures to the Pollution Control Dam, from where the water will be reused.

All proposed mining infrastructure has been located outside the flood line.

3.3.5 Groundwater

A groundwater specialist study was undertaken by Irene Lea Environmental and Hydrogeology cc (iLEH) in 2018.

From a geohydrological perspective, three aquifers are present. The upper 15 m of the geological succession comprises unconsolidated sand, calcrete and clay, which is expected to be dry except after a rainfall event. The unconsolidated sediments are underlain by a fractured gneiss aquifer, which is estimated to be approximately 100 m thick. Groundwater is associated with fractures and faults with the transmissivity of the gneiss varying between 0.2 and 32 m²/d indicating the heterogeneous nature of the fractured aquifer. The matrix of this aquifer is expected to have a low transmissivity, probably around 0.2 m²/d or lower. The average depth to groundwater in this aquifer is 18 m, but it is dewatered locally around the historical Prieska underground workings. This aquifer is regionally important, as it is used for private groundwater abstraction for agricultural activities. A lower fractured rock aquifer is present at depths greater than 100 m. There is currently no information available to characterise this aquifer.

The groundwater quality has been determined from previous studies to be saline with elevated total dissolved solids, chloride and in some instances sulfate concentrations on a regional scale. Private boreholes indicate contamination with nitrates that are most probably associated with agricultural activities. Elevated selenium and uranium levels are typical for the region but may result in chronic health risks if ingested over prolonged periods of time. Groundwater quality in the mining area is characterised by high sulfate and manganese concentrations. Sulfate concentrations in this area exceed 2,500 mg/l in two of the monitoring boreholes. The most significant impact on groundwater quality at the Prieska operations is associated with the historical TSF.

iLEH (2018) developed a conceptual hydrogeological model that formed the basis of the numerical model for the Prieska Project. The following information is relevant:

- The available dataset suggests that groundwater levels will most probably not recover to surface in the long term and decant from the mining area is therefore not expected.
- The impact of the historical TSF will most probably result in the most significant long-term impacts. The fault presently underneath the facility is expected to act as a preferential flow path to groundwater. The sulfate plume may migrate up to 1 km along the fault from the facility during the simulation period.

- If the new TSF is lined and the liner remains intact, no groundwater contamination is anticipated.
- It is estimated that groundwater levels would take up to 100 years to fully recover. During this time, groundwater levels will be reversed towards the mine, thus preventing significant contamination of the aquifers around the underground workings.

One of the issues that was raised during public consultation was proposed dewatering and the impact this may have on groundwater resources.

3.3.6 Summary of issues

The most significant issue with regards to water management is the large volume of water required to be removed from the underground mine workings and the alternatives to manage the water are being addressed in the updated BFS. .

A further issue is the impact of the dewatering on the groundwater resources and the impact of pollution (primarily from the historical TSF) on the groundwater system.

3.4 Rock engineering

3.4.1 Underground

SRK's review of the underground rock engineering aspects is based on Section 6 (Underground Mining Operations) of the 2020 Prieska Copper-Zinc Project Bankable Feasibility Study report (Orion, 2020), additional assessments in the "Update to the 5 Year Plan", rock engineering inspection reports in the shallow underground workings and information provided by Marius Stander.

The rock mass characteristics used in the design are based on geotechnical logging of eight exploration holes at depth, five of which were oriented. These holes are not evenly spread across the orebody. Inspections of the underground workings above the current water level have been used to qualitatively support the data. Very good rock mass conditions were consistently observed underground (Marius Stander, pers comm, 2023) and the geotechnical logging data also suggests that rock mass conditions of the hangingwall, orebody and footwall are good. However, weak zones, often close to the orebody, such as the phlogopite and thrust structures have been geologically mapped, and influenced stope stability in the old mining areas (Rudi Kersten, pers comm 2021 and Dr. Hennie Theart, pers comm 2023).

A longhole retreat stoping method was used historically, and sill and rib pillars were used for stope stability. Very large stope spans were mined (30 to 90 m vertically and 150 m to 400 m along strike). The historical planning records show a dilution range of 30–40%, there is evidence of stope failures and there are sinkholes on surface. The OMHS (2017a and 2017b) site visit reports show displacement of 1.2 m along a geological structure or structures that are parallel to the orebody in the 1200 decline near 120 m Level and 178 m Level. There is also damage to the tunnels between the geological structures and the stopes. This suggests that mass movement towards the mined-out stopes must have occurred. This is breakback, which is more typically associated with sub-level caving operations but does occur where open stopes have failed over a large area. It can therefore be expected that parts of the longhole stopes have failed and that this may have compromised

development infrastructure in close proximity to the stopes. The ongoing rock engineering inspections as the mine is dewatered will provide insight into the extent of the breakback.

Middindi Consulting (Pty) Ltd (Middindi) was commissioned in 2018 to carry out a geotechnical rock mass assessment and provide support patterns for development and stope design recommendations. These analyses were reviewed and updated for the “Update to the 5 Year Plan”.

In Orion’s 2020 BFS and updated 5-year plan, it is envisaged that the longhole stopes will be backfilled, which significantly reduces the risk and extent of stope failures. The stope dimensions development support requirements were determined using rock mass classification (good quality rock) and empirical methods. SRK considers the stope dimensions and support requirements are reasonable for good quality rock. Empirical estimates (Marius Stander, pers comm, 2023) of stope overbreak and sloughing, based on the rock mass characteristics indicate potential dilution of 5% to 15%. These estimates are reasonable but weak geological structures may have an effect on dilution and this should be assessed in more detail, when there is underground access.

Geological weaknesses in the immediate hangingwall of the drift and fill may also influence the support requirements. Also, if the drifts are not properly tight-filled, the effective span may be much greater than the 4 m considered in the design.

Sill pillars between the old stopes and planned stopes are considered in the rock engineering analysis. The empirical scaled crown pillar span by Carter (2014) was used to estimate the sill pillar thickness. A design factor of safety of 1.0 was selected, which implies a 20% to 50% probability of failure. The stopes are non-entry, so there is no safety risk, but there is a risk of waste material entering the stope. If water remains in the stopes above, then a more conservative design will be necessary. The pillars have also been checked for compressive failure using elastic modelling and an empirical pillar stability approach.

Backfill strength requirements have been determined using the analytical method suggested by Mitchel (1983) and the strength requirements appear reasonable for a free-standing backfill face. In the update to the five year plan, undercutting of backfill has been analysed, using the method suggested by Mitchell (1991). It should be noted that the design is based on increased cement content over the full height of the stope (20 m), which effectively eliminates the flexural failure mechanism, and the strength is simply designed to prevent caving of backfill. It is therefore essential to pour backfill continuously and avoid the formation of cold joints, or flexural failure may still occur.

Three-dimensional elastic modelling was used to assess potential stress concentrations on the stope accesses and were found to be acceptable. The same model was used to assess the shaft stability, which shows that elastic strains and stress levels in the shaft are reasonable.

In SRK’s opinion, the potential risk of breakback, which has been observed in the upper levels, is damage to development infrastructure and ultimately damage to the shafts. The available reports indicate that the breakback is not currently a threat to shafts, because the observed breakback is far away. However, declines such as the 1,200 decline may be affected, because they are closer to the former stope areas. This may impact the timing of eventual rehabilitation. Ongoing mapping and monitoring of the breakback will be important in the future. Dumping waste into the old stopes, as planned, will also mitigate the risk, but some areas may not be accessible.

Orion is investigating the mining of large pillars in previously mined areas at shallower depth to provide early returns. These pillars are not included in the reported Mineral Resource, but early geotechnical investigations indicate that it may be possible from a geotechnical perspective to mine some of the pillars, providing that the breakback and subsidence risks are managed (Marius Stander, pers comm, 2023).

3.4.2 Open pit

The open pit mining geotechnical review was based on the "*Prieska BFS 200ktpm 5 June 2020.pdf*" report, which included a brief summary of the slope design, and the slope design spreadsheet "*20180214 MDI2017-0064 Prieska Pit Slope Design Summary.xlsx*", which included the results of the kinematic analysis that was undertaken. No direct review of the core or ground conditions was completed nor was a site visit undertaken for this review.

Based on the rock mass ratings reported in the BFS, the recommended slope design parameters are within reason for rock mass stability. Structurally controlled failures were assessed with a kinematic analysis based on an aggressive acceptance criterion of 25% probability of failures, indicating that there will be failures in the pit that will require a well-staffed and equipped geotechnical team to manage. These failures may result in an impact on production rates.

There is no evidence that regional or large-scale geology or structures was considered in the analysis and geotechnical domains are based only on weathering. It should also be noted that, in Figure 4.10 of the BFS report, the represented geological model indicates flattening in the supergene zone and it is not clear if this was considered in the analysis. The limit equilibrium stability analysis presented in the report is typically used for soil slope design and is not appropriate for rock. It is therefore recommended that detailed review of the design be undertaken by an experienced third-party open pit rock engineer, to ensure that the design justification is sound and meets corporate governance and risk management requirements.

During the pit optimisation, no sensitivity analyses were undertaken on the slope angles to determine the impact any change in the slope design would have on the open pits.

Considering the mining near sink holes and voids, the report gives detail on filling the underground voids. Surface mining through the sinkholes is not clearly defined, but rather general recommendations are given. There is mention that waste rock will be used to fill sinkholes but it is not explicitly stated that this will be in advance of mining in order to mitigate the risk. The best plan of action would be to backfill the sinkholes and mine through the backfill material but this option is not evident in the report.

The overall slope angles are appropriate for the reported rock mass ratings, although it is not clear whether the site-scale litho-structural model has been considered in the design, which could require flattening of the slope/s. Aggressive design acceptance criteria for bench and stack angles means that active geotechnical risk management will be required, and production rate may be affected. Further detail on mining adjacent to the sinkholes is missing.

3.5 Mining and Ore Reserves

3.5.1 Underground mining

Introduction

SRK's review of the underground mining aspects is largely based on Section 6 (Underground Mining Operations) of the 2020 Prieska Copper-Zinc Project Bankable Feasibility Study report (Orion, 2020) and the review focuses on mining method selection, design, access methodology, mining schedule and costs. Orion has advised SRK that it expects to complete an updated Feasibility Study in late 2023.

The work conducted in the 2020 BFS has been incrementally updated since its release, mainly focusing on the first five years of the LoM plan. These updates were conducted to assess the commercial viability of the first five years of the BFS operating plan. SRK understands from Orion that the update (the "5-year plan") has been publicly disclosed. Mining is planned to focus in an area known as "The Deeps", which is situated below the historical workings, abandoned in the early 1990s. While there appear to be Mineral Resources left in situ in the historical workings, the philosophy has been to mine below these and defer their extraction to a later date.

Access

Primary access to the underground workings is via the existing Hutchings Shaft, which will be refurbished, and from which spiral declines will be developed to the working areas. A second shaft, the Beecroft Shaft, will act as a second outlet and provide additional intake ventilation.

Secondary access development comprises footwall waste development, with level breakaways and ore development. The 2020 BFS report included an allowance for the additional tonnage in respect of cubbies and loading/remuck bays.

Detailed drawings of the layouts show elements of the footwall development and infrastructure. These, and the dimensions of the various excavations, are standard practice for this type of operation.

Mining methods

The proposed mining area has been divided into four zones, based on geometry and dip, which will be mined by a combination of longitudinal and transverse longhole open stoping with fill (LLHOSF and TLHOSF, respectively) and drift and fill (D&F). These are shown in Figure 3.7. SRK considers these methods to be practical and appropriate.

In the 5-year plan, a top-down sub-level open stoping method has been introduced mainly to reduce excessive waste development and to facilitate a quicker production build-up.

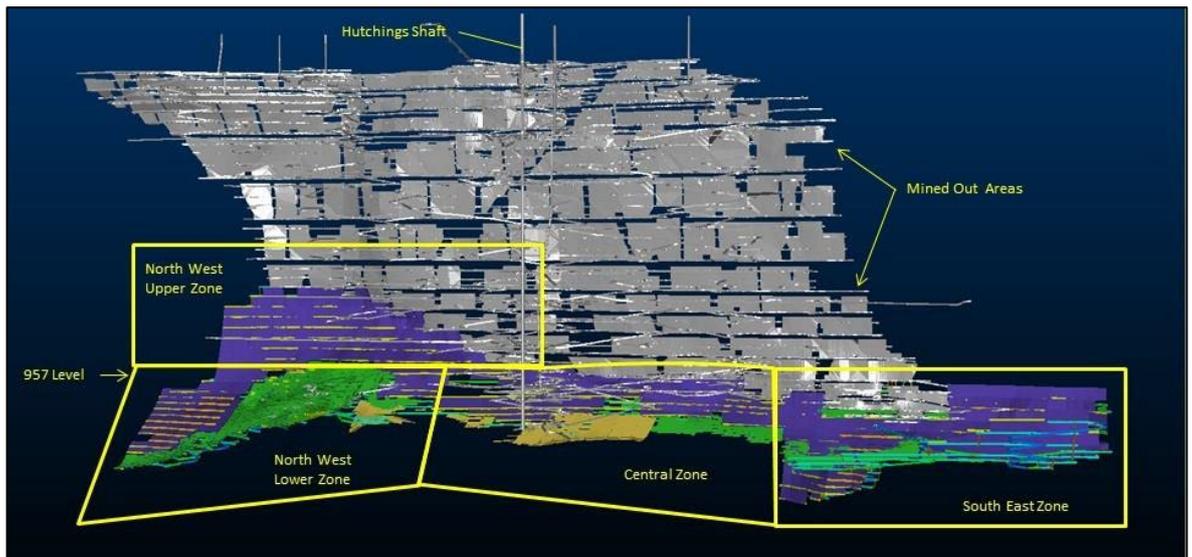
A selection matrix in the report shows the split between the abovementioned mining methods and the orebody conditions for which they have been selected. SRK found these to be appropriate.

To provide an adequate balance or trade-off between the amount of waste development and flexibility, 200 m-long stoping blocks have been proposed for the LHOSF areas, each comprising five adjacent stopes on a level. The block will span three levels, thus comprising 15 stopes. Slot raises are planned at the end of each stoping block.

Figure 6.25 in the BFS report shows the level interval to be adopted is 30 m. SRK considers this layout and the mining sequence described to be appropriate, although a 30 m level interval would result in some blastholes being over 25 m long, which may result in excessive hole deviation.

In the 5-year plan, stopes in flatter-dipping areas have been designed with a 20 m vertical lift, and a 15 m lift in areas with dips from 35° to 55°. Although SRK considers this prudent, as it will limit the hole lengths to some extent, SRK considers that the holes will still be relatively long and recommends that dilution be adjusted in these areas to allow for potentially larger hole deviations.

Figure 3.7: Proposed mining zones at Prieska



Source: Orion (2020a)

Break-even grade

The mine planning inventory was determined by using a break-even grade as the mining cut-off grade on a ZnEq basis, a methodology with which SRK agrees. Separate calculations were carried out for the three planned mining methods and appear to be reasonable at the time of the study. These calculations include operating costs, as well as SIB capital and government royalties, and accounts for plant recovery. Zn was used as it is the principal revenue generator, so all Cu grades in the geological block model were converted into Zn-equivalent grades using the ratios of the zinc and copper metal prices, plant recoveries and the zinc and copper Net Smelter Returns (NSRs).

It should be noted that many of the economic parameters used as inputs to the break-even grade calculation in 2020 have changed significantly. In particular, SRK notes the ZAR:US\$ exchange rate has increased from 14:1 to 19:1, thus increasing cost inputs such as imported spares costs, (e.g. mobile equipment spares), and fuel and oil; local electricity costs have also increased by almost 50% over the same period; labour costs in South Africa have also increased by close to 10% pa over the last three years.

SRK considers that the break-even grade calculation is out of date, and needs to be recalculated to reflect the prevailing economic conditions in South Africa. SRK understands that Orion plans to update these calculations as part of the updated feasibility study due for completion in late 2023.

The same cut-off grade calculation was applied to both the Inferred and Indicated Resource areas. Separate break-even grades were calculated for different areas in the deposit where different mining methods (with differing costs) are planned. In addition to this, a break-even grade sensitivity analysis was carried out.

The drilling, blasting, and filling sequences described for each of the three mining methods were based on well-established methodologies for these configurations.

SRK notes that the same break-even grade estimates used for the 2020 BFS were also used to guide the subsequent mine planning process for the 5-year plan, but that these estimates were updated following the completion of the 5-year plan and associated revised costing.

Access development

The dimensions planned for the development of access to the underground workings are standard and fit for purpose. Cubbies and remuck bays have not been included in the design but an allowance has been made for them in the provided costings. It is not clear how these have been considered in the schedule.

Development layouts to access the mining blocks (footwall drives, crosscuts, ventilation raises, etc.) are laid out in standard fashion.

Mine design and schedule

Datamine™ Studio 5D Planner and its Mineable Shape Optimiser (MSO) software were used to generate the stopes. The methodology is widely used in the South African mining industry, and SRK agrees with the process as described in the 2020 BFS report.

The Datamine Enhanced Production Scheduler (EPS) software package was used to schedule the mine design. This package is one of the industry standards and is used for development and production (stopping) operations.

The shift cycle was first determined, and this was used as the first input to the scheduling process. The shift cycle used is practical and realistic. Two 10-hour blasting shifts on continuous, or full calendar, operations have been assumed, with mining being carried out 365 days per year.

The advance rate per development crew per month has been planned at 275 m per month in the 2020 BFS. The maximum advance per month for a multiple-end scenario was reduced to 220 m per month in the 5-year plan. SRK recommends a rate of less than 200 m per month as being more realistic.

Planned monthly advance rates per end are 80 m for waste development, which is reasonable, and 100 m for the decline and ore drive, which SRK considers to be on the upper limit of what can be achieved in this type of scenario.

SRK notes that the advance rate for a single end has been limited to 80 m per month for all development ends.

The stope slot raises are each planned to be developed in 10 days, which is optimistic for what appears to be a 25 m-long slot raise. Production is planned at 30 kt/m for a LLHOSF stope and 23.2 kt/m for TLHOSF stopes.

Overall, mining progresses through a vertical range of approximately 450 m in 12 years, which results in an average deepening rate of between 35 and 40 m per year, which SRK considers to be reasonable.

Modifying factors

A 7.5% overbreak has been applied to development ends, which is reasonable.

Stoping dilution in the 2020 BFS is stated as 0.3% and 2.2% for LLHOSF stopes and TLHOSF stopes respectively, based on a 25 cm skin that has been added to the stope shapes to account for overbreak in the hanging and footwalls. Following a benchmarking exercise by Orion, which compared these dilution rates against mines with similar mining methods and orebodies (taking into account overbreak in the hanging and footwalls and backfill dilution), the dilution was increased in the 5-year plan to an average dilution of 10–15% . All dilution is applied at zero grade. SRK considers this to be prudent. It should be noted, however, that this is an average dilution that will vary according to stope width.

Orion has, in fact allowed for over 2.2 Mt of “dilution skin” in the underground Ore Reserve, which amounts to a dilution of 18.65%, as shown in Table 3.6 in Section 3.5.2. While SRK considers this to be reasonable, it is not clear how this has been calculated, as it is well in excess of the diluting effect of the 25 cm skin mentioned above on stope widths of up to 15 m.

It should be noted that some long holes are planned to be over 26 m long. This could present challenges with hole accuracy, with irregular spacing at the toes of the holes, which could introduce additional dilution. A further point to note is the effect that the combination of low angle thrusts, boudinage features and undulation of the orebody, as discussed in Sections 0 and 3.2.5, will have on planned mining dilution and losses.

Additional blast designs for steeply dipping areas have been included in the 5-year plan that were not contained in the 2020 BFS report. SRK understands that Orion intends to further address this by refining the drilling and blasting designs for the various stope profiles and has had sight of a blast design report compiled by an independent explosives application consultant. (Jon Hudson, pers comm,2023).

Mining recovery is set at 80 to 95% in the areas where sublevel open stoping (SLOS) is planned, which SRK considers reasonable, and 100% for the D&F areas, which SRK considers optimistic.

In the 5-year plan, Orion has estimated that the mining recovery percentage will be 85% for bottom-up LHOS and 90% for top-down LHOS due to improved extraction. Orion has now also allowed for a 95% recovery for the D&F areas.

Equipment

Standard mechanised mobile equipment is proposed for the mining operation, i.e. longhole rigs, load haul dumpers (LHDs), articulated dump trucks (ADTs), mobile rock breakers, etc. Loco haulage with three trains (20 t electric loco with 15 t hoppers) is planned on the 957-Level.

The underground fleet is presented in the 2020 BFS report; the complement has been based on a mechanical availability of 65%.

Production geology and grade control drilling

The reasons and methodology for grade control drilling is well described in the available documentation.

Underground diamond drilling has been planned to focus on delineating the mineralisation and determining the grade for mine design and production planning. A close-spaced drilling program at 15 m spaced drill sections is proposed in the LHOSF mining areas. Drilling of fan holes will be done from cubbies in the footwall drives on 15 m-spaced sections along, and perpendicular to, the strike of the mineralisation. In the D&F mining areas, the drill sections will be increased to 30 m section spacing as the D&F stopes will be under direct geological control.

SRK agrees with the spacing selected and considers it appropriate considering the ranges of continuity observed in the semi-variogram models.

Manpower

The total mine complement is 840 people, of which 293 will be for underground mining, which SRK considers to be reasonable.

Shift rosters have been prepared in accordance with legislation and consider travel from Prieska, approximately 60 km from the mine site.

Mining production will be organised into two 10-hour shifts per day, seven days per week, to cater for re-entry between blasting times.

Detailed shift rosters that appear reasonable have been provided.

Operating costs

Operating costs were built up from first principles by a consultancy using Candy software.

The estimated average rate per metre for all development types is stated to be ZAR326.88 per metre, which SRK considers to be a misprint, as it is too low by an order of magnitude.

The supplied financial model, “20200601 ORN PCZM Fin Model BC6 V8 - Post ASX.xls” has development rates for the different development types that range from ZAR15,000 to over ZAR20,000 per metre, which SRK considers reasonable.

SRK considers the underground mining opex of ZAR405/RoM tonne as stated in Orion (2020a), to be too low. This would equate to US\$30/t at an exchange rate of ZAR14 per US\$. SRK expects the mining operating cost for a similar underground operation accessed by a vertical shaft and using paste-fill to be higher, possibly between US\$50/t and US\$60/t.

The 5-year plan is based on an updated mining cost of R538/t, which SRK considers also to be low (as it equates to below US\$30/t at current ZAR:US\$ exchange rates).

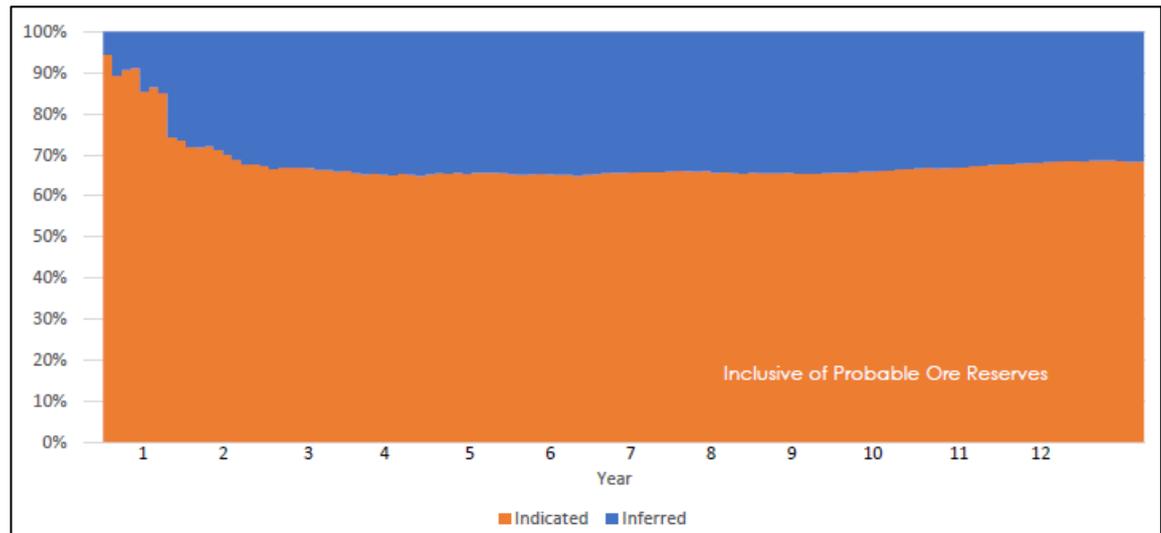
Inferred Resources in the mine plan

The Deep Sulfide Mineral Resource within the mine plan comprises 64% Indicated Resources and 36% Inferred Resources. The LoM plan prioritises Indicated Resource areas in the early years of the mining schedule, with 68% Indicated and 32% Inferred Resources. The first five years of the plan contains 88% Indicated Resources and 22% Inferred Resources (Figure 3.8). While the LoM

schedule is predominantly Indicated, the fact that Inferred Mineral Resources are included upfront in the mine plan introduces geological risk to the project during this early period in respect of both tonnage and metal produced, and hence revenue.

It should be noted that Orion states that the proportion of Inferred Resources in the 5-year plan account for 40% of the tonnes planned, an increase from the 22% over the same period in the 2020 BFS.

Figure 3.8: Prieska LoM plan showing the Indicated-Inferred Mineral Resources split



Source: Orion (2020a)

Orion has stated that the reason for the presence of Inferred Resources in the mine plan is threefold:

1. Exploration was carried out from surface on what is essentially a deep deposit and was focused on the thicker portions of the deposit.
2. The Inferred Resource portion surrounds the Indicated Resource portion and drilling was not aimed at closing off the mineralisation.
3. Existing old underground workings obscured the Inferred Resource areas, hence making them difficult to target using surface drilling.

Orion has advised that it intends to conduct exploration drilling from underground platforms (120 holes, 22.4 km) as soon as possible, once the mine is operational to increase the current Mineral Resource and to upgrade defined Inferred Resources to Indicated status.

SRK notes that it was previously engaged by Orion in 2020, to review the proposed mine plan. At that time, SRK found that, based on the classification criteria used to delineate the Mineral Resource categories, the execution of the planned exploration program would result in an upgrade of the current Inferred Mineral Resources in the Mine Plan into the Indicated Mineral Resource category. It is, however, worth noting that this will be subject to the reliability of the assay results, which will be informed by the QA/QC results.

SRK further noted that the JORC Code is explicit on the exclusion of Inferred Mineral Resources from the Ore Reserve. Irrespective of Orion’s own confidence in the grade estimate of the Inferred Mineral Resources within the Mine Plan, that should not, and cannot, supersede the opinion of the Competent Person, who signed off on the reported Mineral Resources.

SRK considers that best practice is to compile an alternative mine plan that excludes Inferred Mineral Resources. Usually a proportion of a maximum of 5% Inferred Mineral Resources is acceptable in a LoM plan.

SRK notes that Orion has modelled an “Ore Reserves-only” scenario using largely the same line layout and assuming all Inferred material is waste (“20200601 ORN PCZM Fin Model BC6 Reserve Model – Post ASX.xlsm”). This was the model used to state the Ore Reserves Estimate. The results of this Ore Reserve-only scenario have not been publicly disclosed, albeit that SRK has reviewed this model and considered it as part of its valuation deliberations.

3.5.2 Underground Ore Reserves

Orion declared underground Probable Ore Reserves in the 2020 BFS totalling ~14 Mt grading 1.0% Cu and 3.2% Zn, with an effective date of 30 April 2020, see Table 3.6.

Table 3.6: Prieska Deep Sulphide Ore Reserves estimate

Prieska Project Deep Sulphide Ore Reserves Estimate (Effective Date: 30 April 2020)							
Source	Tonnes	Cu (%)	Zn (%)	Cu_Eq (%)	Cu Metal tonnes	Zn Metal tonnes	Cu_Eq Tonnes
Mineral Resource							
Indicated	18,507,000	1.17%	3.60%	2.22%	217,000	667,000	410,430
Inferred	10,219,000	1.14%	4.08%	2.33%	117,000	417,000	237,930
Total Mineral Resources	28,726,000	1.16%	3.77%	2.26%	334,000	1,084,000	648,360
Less Unplanned Resource	-16,749,300	1.12%	3.80%	2.23%	-188,353	-635,861	-372,753
Total Indicated Planned	11,976,700	1.22%	3.74%	2.30%	145,647	448,139	275,607
Total Mineable Resource	11,976,700	1.22%	3.74%	2.30%	145,647	448,139	871,971
Overbreak (Dilution)							
Total Dilution Skin	2,234,740	0.20%	0.41%	0.32%	4,460	9,118	7,104
Total Backfill Dilution	168,044				0	0	0
Total Dilution	2,402,785	0.19%	0.38%	0.30%	4,460	9,118	7,104
Broken in Stopes	14,379,485	1.04%	3.18%	1.97%	150,107	457,257	282,711
Mining losses - left in stopes	-423,027	0.96%	2.65%	1.73%	-4,056	-11,224	-7,310
Measured From Stopes	13,956,458	1.05%	3.20%	1.97%	146,051	446,033	275,401

Source: Prieska - Reserve table + Cu Eq oalo (Apr 2020) V5

Source: Orion (2020a)

Orion states in the 5-year plan report that “an Ore Reserve specific to the 5-year Plan has not yet been developed, nor has the Ore Reserve been updated to reflect the changes to the total mine plan as a result of the 5-year Plan Study”.

In July 2023, Orion updated its Mineral Resource Estimate for Prieska ahead of the onset of trial mining, but no update to the Ore Reserves were reported at that time (Orion ASX announcement dated 23 July 2023).

In its Annual Report dated September 2023, Orion reported the Prieska Deep Sulphide Probable Ore Reserve of 14.0 Mt grading 1.0% Cu and 3.2% Zn, including 146 kt of contained copper metal and 446 kt of contained zinc (as tabulated below), which is consistent with that outlined in the 2020 BFS.

Table 3.7: Prieska Copper Zinc Mine Deep Sulphide Ore Reserves

Prieska Copper Zinc Mine Deep Sulphide Ore Reserves (Effective date: 26 May 2020) ³								
Deposit	Ore Reserve classification	Tonnage (Mt)	Cu		Zn		Cu equivalent ⁴	
			Metal tonnes (Kt)	Grade (%)	Metal tonnes (Kt)	Grade (%)	Metal tonnes (Kt)	Grade (%)
Deep Sulphide	Probable	14.0	146	1.0	446	3.2	248	1.8
Total	Probable	14.0	146	1.0	446	3.2	248	1.8

Source: Orion 2023 Annual Report page 50

Notes: Table is subject to rounding, refer to page 50 of Orion's annual report for further details.

3.5.3 Surface mining (open pit)

Background

SRK's review of the open pit mining aspects is largely based on the Section 8 of Orion (2020a) as well as open pit mining design by VBKOM consultants in 2019, (VBKOM 2019) and updates in 2022, (VBKOM 2022). The open pit evaluation and design has been conducted using the supergene part of the crown pillar Mineral Resource (+105 Level) together with geotechnical data, underground excavation and void modelling, sinkhole location and assumed economic and mining factors.

The Whittle™ pit optimisation software was employed to generate a series of cash-positive pit shells, from which an attractive pit shell (regarding the cashflow and mining life) was selected to guide the mine design and production schedule.

For the open pit, contract mining has been planned, with a conventional truck and shovel operation. The RoM material will move to stockpiles to be rehandled into the processing facility. Topsoil, waste rock, and mineralised oxide material will be stockpiled beside the pit.

The mining LoM for the proposed surface operation is 19 months (VBKOM 2022). For the first six months, waste is mined, followed by the mining of the first supergene material in Month 7, which is stockpiled. Stockpiles will be used extensively to achieve grade control and feed flexibility for the plant. From Month 11 through Month 19, the plant receives RoM material with the maximum feed rate of 100 kt/m (totalling 1,050 kt). The scheduled targeted ore within the pit (VBKOM 2022) is still from the 2020 block model and consists of more than 50% Inferred material. The Mineral Resource block model was updated in 2023 and upgraded the majority of the Inferred materials to the Indicated category; however, this upgraded material has not been integrated into the current mine planning as yet. VBKOM considered using the updated Mineral Resource in the Phase 2 of the mine planning updates.

Approximately 17.3 Mt waste (including oxide and leached materials) must be removed to expose the target ore tonnage (stripping ratio of 17:1 along the chosen mining direction (northwest to southeast) to mitigate the hazards of interacting with sinkholes and old underground mining voids at the early stage of the operation. It should be noted that portions of the planned open pit will be mined above areas where underground mining has taken place in the past, where large sinkholes have since formed over the open stopes. A risk mitigation strategy proposed by Orion in the 2020 BFS report (Orion, 2020) is to backfill the voids in order to stabilise the ground mass below the proposed open pit and prior to the open pit commencing.

In the 2020 BFS, the open pit was planned to be mined over 19 months at the end of the mine life but Orion continues to evaluate the potential of mining the open pit first, in parallel with the 33-month dewatering and underground mining development plan. The study for this option is currently underway and remained to be completed at the time of SRK’s review.

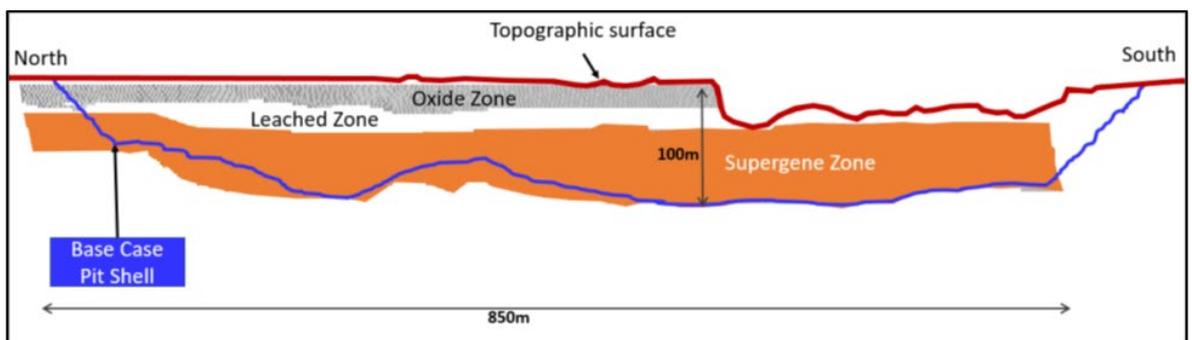
The Mineral Resource block model was updated and publicly reported in July 2023 but these updated resources remained to be incorporated into the LOM plan at the time of SRK’s review, with this updated estimate being used to inform the updated BFS due for completion in late 2023.

Mineral Resource

The supergene zone that was not mined during the previous mining operation (as it formed part of the crown pillar left to protect the underground workings) has been targeted for extraction and treatment under the open pit operation.

The Mineral Resource Estimation for this near-surface material is detailed in Section 3.2 of this report; however, the open pit planning in the 2020 BFS was based on an earlier (2020) Mineral Resource Estimate (now superseded by the April 2023 Mineral Resource Estimate, as ultimately reported to the JSE/ASX in July 2023). The near-surface material or crown pillar material, consists of the oxide zone, leached zone and supergene zones as shown in Figure 3.9.

Figure 3.9: Schematic cross-section showing the near-surface material



Source: Orion (2020a)

The Mineral Resource block model used for the open pit study includes the original block sizes of 2.5 m x 2.5 m x 5.0 m with the smallest interval size (SMU) of 2.5 m x 2.5 m x 2.5 m. Only the supergene zone along with copper and zinc minerals was targeted for the foundation phase of the mine plan. It is expected that some gold and silver will be present in the concentrate products but they have not been credited to the project as by-product value. The +105 Level Mineral Resource content used for open pit planning has been reported as per Table 3.8.

Table 3.8: +105 Level Mineral Resource content

Zones	Class	Tonnes	Zn (%)	Cu (%)
Oxide	Inferred	528,400	0.86	0.55
Leached Zone	Mineralised waste	449,783	0.13	0.11
Supergene	Indicated	645,808	3.07	1.53
	Inferred	706,293	1.86	2.14
Supergene Subtotal		1,352,102	2.44	1.85

Source: Orion (2020)

The Inferred material in the supergene zone accounts for approximately 52% of the overall supergene tonnage at time of open pit plan in 2020 and is located in the south of the zone.

The +105 Level Mineral Resource was updated by Z Star Mineral Resource Consultants (Pty) Ltd in April 2023, after completion of additional drilling on the crown pillar. The results indicate increases in the Indicated Mineral Resource tonnage and the total copper content. However, the total supergene ore tonnage and zinc content is reduced when compared with Table 3.8, which was targeted as the base for open pit plan in 2020. The updated +105 Mineral Resource as at April 2023 for the supergene zone is summarised in Table 3.9.

Table 3.9: Updated +105 Level Mineral Resource supergene content – April 2023

Zones	Class	Tonnes	Zn (%)	Cu (%)
Supergene	Indicated	1,087,400	2.06	2.58
	Inferred	57,700	0.57	1.40
Supergene Subtotal		1,145,100	1.98	2.52

Source: Z Star (2023)

SRK is not aware of any updates to the open pit mine planning based on the updated Mineral Resource Estimate. Therefore, the impacts of the updated resource model to the mine plans, Ore Reserves and production schedule as described below are unknown.

Mining method and strategy

The mine planning and strategy adopted for open pit mining at the Prieska Project consist of the standard procedures including optimisation to determine the optimum pit limit; the most practical pit design to ensure practical mining and realise the Ore Reserves; the mining equipment selection and the operational planning (including grade control and risks mitigation plans); and the production schedule to achieve the planned targets.

The Whittle™ pit optimisation software was employed to generate a series of cash-positive pit shells, from which an attractive pit shell (regarding the cashflow and mining life) was selected to guide the mine design and production schedule. In 2020 BFS (Orion 2020a), three scenarios were initially investigated: one using only Indicated Mineral Resources and a second integrating differing contributions of Inferred Mineral Resources into the evaluations. The third scenario, which included all Indicated and Inferred Mineral Resources, was chosen as the 2020 BFS base case mining plan. The pit shell selection strategy targeted extracting the most metal possible (with revenue factor “RF” of 1.4) and the pit footprint contains 1,145 kt of RoM material at a strip ratio of 15.3:1.

The pit optimisation was reviewed in 2022 (VBKOM 2022) by updating the input parameters and weathering zones but using the same Mineral Resource components.

The open pit mining assumes a contractor-based operation. Orion obtained offers from certain nominated contractors but the opex factored into the model based on an Orion board review is slightly different and lower than the contractors' quotes. The open pit capital requirements should thus be tied to contractor establishment costs and preparations such as backfilling subsurface voids before mining begins. These aspects will be discussed further in the financial assessment section of the report.

SRK reviewed the methodology and procedures employed and concur with the mine planning and strategy adopted for open pit mining at Prieska, except for the comments presented below.

3.5.4 SRK comments

Mineral Resource used for the mine planning

In the 2020 BFS report (Orion, 2020), 1.35 Mt of Inferred and Indicated Mineral Resource were evaluated as ore to develop the prevailing open pit mining plan available as at the Valuation Date. This results in the ore within the pit consisting of more than 50% Inferred material. The Ore Reserves, however, were derived from the Indicated Resources only.

In the updated 2023 resource model, the amount of ore and metal content has been changed. The results indicate increases in the Indicated Mineral Resource tonnage and the total copper content. However, the total supergene ore tonnage and zinc content is reduced. SRK cannot comment on the impact of these changes to the Ore Reserve, mine plans and production schedule, without further and more detailed analysis.

Accuracy of inputs in optimisation practice

Whittle™ 4D Pit Optimisation software was employed to generate the optimum pit shell as the basis for open pit practical design, through cost estimates determined from calls to contract mining firms, geotechnical factors derived from assessments conducted as part of the mining study, the 2020 Resource block model using all Inferred and Indicated supergene ore, the metallurgical recovery curves and in-house metal price assumptions. The pit shell selection strategy targeted extracting the most metal possible and the pit footprint contains 1,145 kt of RoM material at a strip ratio of 15.3:1 t/t. This pit shell has the largest volume of material, with cashflows not less than 95% of the RF1 pit shell.

Pit optimisation – mining cost

The mining cost of ZAR26.1/t used in the optimisation, using the mining contractors rate with the lower bid is considered by SRK to be optimistic. The file "20200422 Prieska Adjudication Open Pit BoQ Rev 0.xlsx" shows the mining contractors' offers, indicating the average operating cost to be between ZAR30 and ZAR45 per tonne mined. It is also important to remember that the pit will interact with sinkholes and some old subsurface voids, necessitating the implementation of a risk mitigation plan, which reduces operating performance when the operation approaches hazardous areas. Adding this to the extra cost of backfilling the voids and probable sinkholes, indicates that the mining cost should be higher than the assumption made within the optimisation or financial

model. SRK did not investigate the impacts of this factor to the pit limit nor the LoM production schedule, but the sensitivity analysis by variation of mining cost indicates that the open pit value is more sensitive to mining cost than ore processing costs.

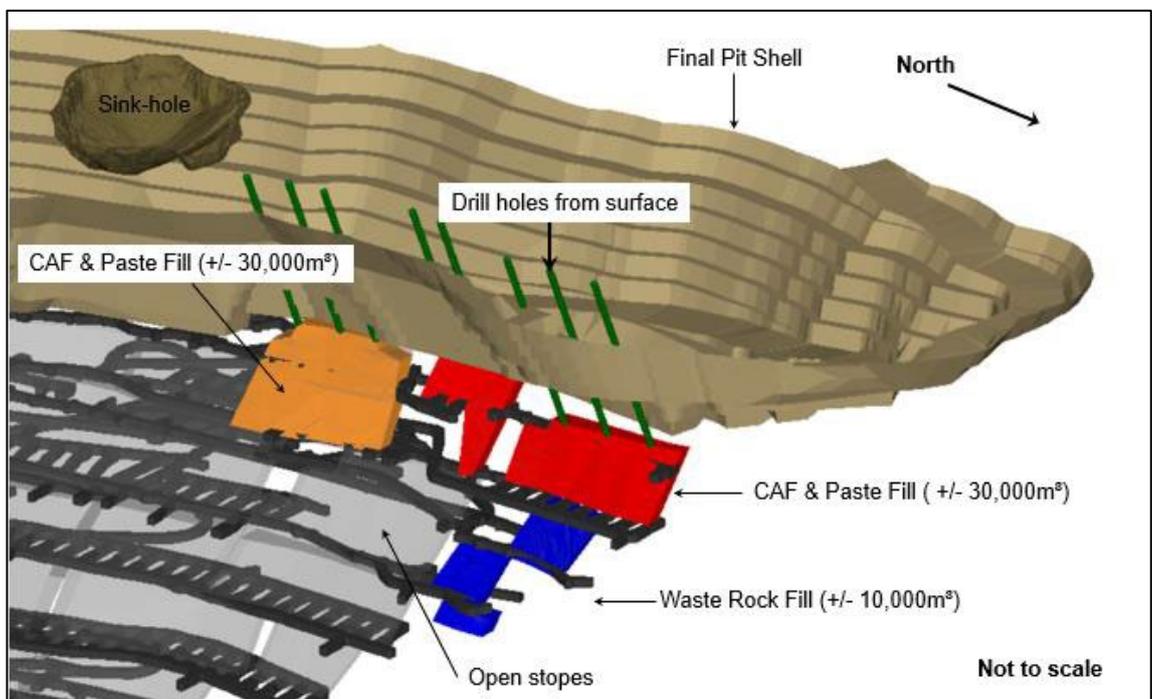
Pit optimisation – cut-off grade

The optimisation did not use the cut-off grade approach, but rather the cashflow methodology to select the best pit shell because the processing recovery curve creates varying processing recoveries depending on the feed's head grade. However, metallurgical testing has revealed that no saleable zinc concentrate can be produced where the zinc grade is less than 2.0%. As a result, the grade control practice anticipates that high-grade zinc (over 2.0% Zn) material will be loaded, stockpiled, and handled separately. SRK notes this zinc metallurgical cut-off grade does not appear to have been applied during the optimisation exercise.

Operating risk

The open pit mining will interact with the underground voids and sinkholes. This may pose certain risks of losing equipment and lives if an unexpected collapse occurs during the operation and will also reduce the planned production rate. The geometric modelling of voids and a risk mitigation strategy have been proposed by Orion in the mine plan. The important aspect is backfilling of voids to stabilise the ground mass below the proposed open pit prior to the start of the open pit to avoid risks associated with the interactions. A design and schedule for filling the six open stopes has been prepared (Figure 3.10).

Figure 3.10: Underground voids to be filled prior open pit mining

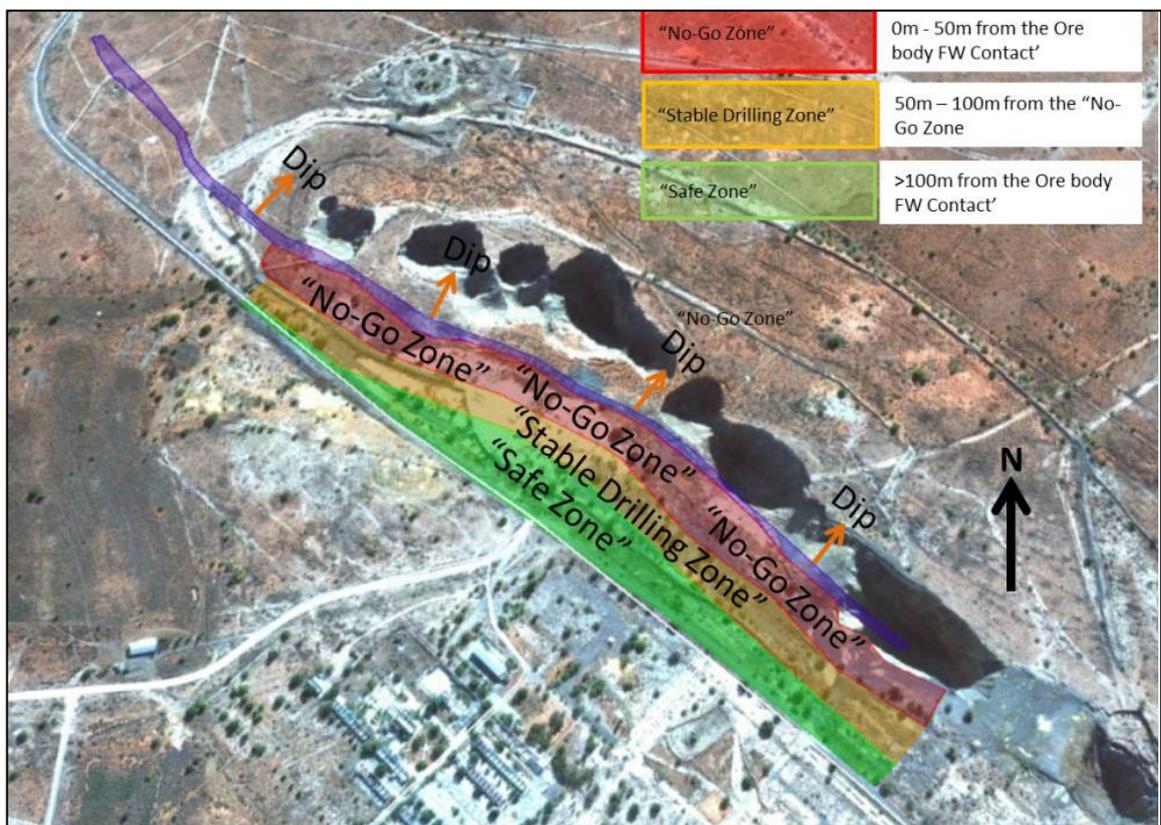


Source: Orion (2020a)

It is estimated that the raise bore drilling and backfilling will take seven months. A curing period of two months is anticipated thereafter totalling nine months before mining can commence. Void filling cost was estimated about ZAR14.9 million plus backfill placement operations at ZAR44.51 per tonne or a total of ZAR6.2 million. The backfilling timetable is unclear from the report but it appears to have been capitalised on Years 11 and 12 of LoM, which would be late according to the mining schedule.

If the backfilling of voids is done on time and adequately, then passing through sinkholes is another difficulty for the operation, with the least impact being a delay in the production schedule. However, risk mitigation for sinkholes has been limited to specific safety-measured recommendations (Figure 3.11).

Figure 3.11: Safety zones demarcation adjacent to sink-holes



Source: Orion (2020a)

SRK recommends considering filling the sinkholes with the mined-out waste. It is also recommended that the extra cost of backfilling be added to the mining operating cost through the optimisation exercise and that the cost sensitivity to the pit limit be verified.

A general recommendation is to conduct a trade-off study to compare the value of the smaller pit (northern part), where it has minimum interaction with the sinkholes and underground voids, to the BFS pit design. This option considers that the mining focuses on the Indicated part of the Mineral Resource (based on the 2020 Mineral Resource Estimation) that leads to the Scenario 1 pit shell through optimisation. The techno-economic parameters then can be input to the decision-making model.

3.5.5 Surface Ore Reserves

The estimated +105 Level Ore Reserves (supergene) for open pit mining, remains unchanged from 26 June 2019 in the BFS report (Orion, 2020) with an amount of 484 kt (0.5 Mt) grading 1.5% Cu and 3.3% Zn (diluted), including 7 kt contained copper metal and 16 kt contained zinc metal.

In its Annual Report dated September 2023, Orion reported the Prieska +105 Probable Ore Reserve of 484 kt grading 1.5% Cu and 3.3% Zn, including 7 kt of contained copper metal and 61 kt of contained zinc (as tabulated below), which is consistent with that outlined in the 2020 BFS.

Table 3.10: Prieska Copper Zinc Mine +105 Level Ore Reserves

Prieska Copper Zinc Mine +105 Level Ore Reserves (Effective date: 26 June 2019) ⁵								
Deposit	Ore Reserve classification	Tonnage (Kt)	Cu		Zn		Cu equivalent ⁴	
			Metal tonnes (Kt)	Grade (%)	Metal tonnes (Kt)	Grade (%)	Metal tonnes (Kt)	Grade (%)
+105 Level	Probable	484	7	1.5	16	3.3	11	2.3
Total	Probable	484	7	1.5	16	3.3	11	2.3

Source: Orion 2023 Annual Report page 50

Notes: Table is subject to rounding, refer to page 50 of Orion's annual report for further details.

3.5.6 Production schedule

The proposed LoM for the surface operation is 22 months at the last stage of the mining (Years 11 and 12 of LoM), with a three-month ramp-up period at the start. For the first eight months, waste is mined, followed by the mining of the first supergene material in Month 9, which is stockpiled. Stockpiles will be used extensively to achieve grade control and feed flexibility for the plant. From Month 9 through Month 22, RoM material will be stockpiled and then supplied to the plant. The plant receives RoM material with the maximum feed rate of 100 kt/m (total 1,112 kt) and an average Zn grade of 2.5% and a Cu grade of 1.9%. About 17.8 Mt waste must be removed to expose the target ore tonnage (stripping ratio of 16.2).

3.5.7 Mining operating and capital costs

The copper and zinc mineralisation in the planned open pit at the Prieska Project occurs in four major mineralisation types as described in Section 3.2, of which only two, the supergene and mixed supergene-sulfide zones, can be economically extracted. The testwork also revealed that zinc grades lower than 2% are not economically recoverable. To maximise benefit, it is critical to define the various mineralised zones throughout mining. This necessitates the implementation of an effective grade control system to maintain the appropriate feed grade to the plant and to stockpile the oxide, clay zone (with enhanced gold mineralisation), and low zinc grade (2% Zn) supergene mineralisation separately. Bench mapping, drilling, logging, sampling, assay, and analytical techniques gather data for use in mining models.

The mining direction has been chosen (northwest to southeast) to mitigate the hazards of interacting with sinkholes and old underground mining voids at the early stage of the operation, as well as to postpone the extraction of Inferred material at the later stages of mining.

Backfilling of voids to stabilise the ground mass below the proposed open pit prior to the start of surface mining, will mitigate the risks associated with these void-mining interactions.

For the open pit, contract mining has been planned, with a conventional truck and shovel operation. No capital was therefore considered for the mining equipment. However, capital is required for the backfilling of voids. The void-filling cost was estimated at about ZAR14.9 million, plus backfill placement operations at ZAR44.51 per tonne – a total of ZAR6.2 million.

3.5.8 Engineering and infrastructure

Mechanical engineering and infrastructure

The mechanical infrastructure and engineering servicing the mine operations envisaged for the Prieska Project and its capacity to support the planned ore production rate of 200 kt/m are discussed in this section.

Background

Existing infrastructure from previous operations at the Prieska site includes vertical shafts, decline shafts, a processing plant and bulk services. These are all not in a usable state because of non-use since closure. The 2020 BFS considered the infrastructure in existence to determine what could be usable, what needed refurbishment or upgrading and what had to be constructed from new, based on the requirements of the envisaged operation.

Surface infrastructure

Surface infrastructure requirements for the Prieska Project include:

- access shafts (four vertical and two decline)
- mine dewatering
- shaft refurbishment ore/waste handling facilities
- RoM stockpile, service water provision and storage, stores yard
- buildings: for example, administration offices, change house, stores, service workshops, proto room and medical stabilisation facility
- explosives storage, including emulsion storage
- security arrangements
- access roads.

Underground infrastructure

- mining track-bound equipment, including face trackless mining machinery (TMMs), utility vehicles and cassette loading and off-loading infrastructure and personnel carrier and supervisory vehicles
- ore handling infrastructure from face (by load-haul-dump (LHD) and articulated dump trucks (ADTs), through sizing grizzlies into ore passes, electric trains, crusher, conveyors, loading flask, skip and hoisting to the RoM stock pile on surface

- dirty water and mud handling infrastructure such as face, haulage and transfer dam pump stations, pumps piping, settling and storage facilities
- service workshops (main and satellite), including maintenance bays with ramps and overhead cranes, crawl beams, compressors, spares store, fuel and lubricant storage and dispensing facilities as well as waste handling facilities
- service and potable water reticulation.

3.5.9 SRK comments

- The 2020 BFS refers to well-established comprehensive design criteria, which provide guidance to ensure acceptable quality designs and specification of infrastructure and equipment.
- Layout and General Arrangement drawings define the infrastructure to a level appropriate for a BFS, with sufficient detail to enable costing of the infrastructure to BFS level of accuracy.
- Ore and waste are handled using well-established technologies that reduce the likelihood of fatal flaws; that is, pick up by LHD and tipped into ore passes that feed trains, which transport to a crusher, and from crusher into storage silos via conveyors. From the silos, ore/waste is hoisted to surface through the main shaft. There is sufficient detail in the description and drawings and illustrations to make it possible for costing to BFS standard.
- Simulation studies have been used to confirm the size and capacity of ore/waste handling equipment.
- From the information provided, mechanical infrastructure envisaged for the Prieska Project conforms to the usual industrial norms.
- Additional work has been completed in the 5-year mining plan submission for the mine relating to dirty water handling, service water reticulation, and workshops (surface and underground):
 - Dirty water pumping arrangements are to be implemented first to dewater the mine and, once dewatering is complete, to continue to send dirty water to one of three potential areas for disposal. These are:
 - an evaporation pond either directly or via a reverse osmosis (RO) plant
 - agricultural irrigation via the RO
 - effluent storage via the evaporation dam.
 - Service water reticulation will once again feed from the Orange River via the existing Prieska waterworks pipeline to site. This system was initially installed for the mine by PCM. While some portions of plant were sold off after the mine closure, current infrastructure requiring upgrades or refurbishment will be dealt with during the foundation phase to support mine construction and operational activities. The current system in its totality has capacity for 15 ML per day and, while the town of Prieska requires 8 ML of that, water balance calculations indicate the mine will require 3.7 ML per day from the remaining 7 ML. Inclusive of Alkantpan, Copperton, local farmers, and solar and wind projects, 4.7ML are to be utilised from the 7 ML spare capacity.

- Two underground workshops will be established to suit the changes to the mine design and schedule submitted as part of the 5-year mining plan, with provision being made for 5, 10, and 20-tonne overhead cranes to assist with underground fleet maintenance inclusive of trackless and tracked fleet. Major engine or frame rebuilds will be carried out off-site by either original equipment manufacturers (OEMs) or a certified machine fabricator. Two surface workshops have been identified as the mine maintenance workshop and the boilermaker workshop.

The following areas need some clarification:

- There is provision for a 150 NB Compressed Air pipe in the vertical shaft, implying compressed air is generated on surface. There is, however, no description to this effect in the report or indication of the existence of a compressor house on the site plan (Figure 12-1 on page 315 of the BFS), or workshop that might house a compressor.
- Ratio of man cage weight versus payload is 1.4:1. Fraser McGill's (2020) suggested optimisation to a 1:1 ratio, which would result in a lighter cage and operational power savings, appears not to have been considered (refer to Fraser McGill – Mine Hoisting Review ver5 of 15 October 2020). The reason for non-consideration should be discussed.

Electrical engineering and infrastructure

The 2020 BFS (Orion 2020a) indicates that the Prieska Project power supply application for a 35 MVA power supply was submitted in 2018 with project being registered by Eskom in October 2019 and the initial electrical designs for the bulk power supply being approved in January 2019. Although early application to secure power supply from Eskom is commended, several contractual agreements remain outstanding, namely the budget quotation, electricity supply agreement and self-build agreement. These outstanding agreements are critical in ensuring that the detailed designs are finalised and long lead items are ordered in time as not to delay the implementation of the project. Once the contracts have been received from Eskom, Orion will engage Power Plant Engineering Technologies (Pty) Ltd (PPE) to complete the final detailed designs and commence ordering long lead items to have bulk power ready for the operational phase. It is recommended that Orion follow up with Eskom to ensure that these agreements are in place on time to avoid delays in the project implementation.

Power supply to the mine will be from Cuprum 132 kV Distribution Substation Feeder No.5. This substation has an installed capacity of 250 MVA, with peak loading of about 45 MVA experienced in 2016 and anticipated future loading requirements of about 81 to 85 MVA. Cuprum Substation has therefore enough spare capacity to supply power requirements for the Prieska Project.

The 2020 BFS also indicates that approval for the 15 MVA construction power was given by Eskom in 2019. The Eskom letter dated 27 September 2023, to Mr Jarrod McAllister of PPE, regarding the 15 MVA temporary power supply based on a self-build agreement, acknowledges that Eskom has on 22 September 2023 received the designs for the 22 kV feeder bay at Cuprum 132/66/22 kV substation and hereby support the designs warranting that the designs comply with the specifications, standards and requirements of the distribution designs. This will eliminate the use of diesel generators as construction power, which can result in high diesel operating costs. However, 6.75 MVA (3 x 2.25 MVA) of diesel power generation has been allowed for in the construction phase to cater for any emergency power requirements during grid power failures. This will be retained and used as permanent emergency power supply over the LoM.

In addition to grid power supply, Orion has engaged JUWI, a renewable power project developer, to look at a renewable energy power supply alternative. SRK has been informed that plans for this renewable energy source are at an advanced stage, with most of the regulatory approvals, environmental permits and servitudes rights for the site development already being secured by JUWI. It is reported that the renewable energy power source will supply about 52% of the total power requirements. The power purchase agreement (PPA) is expected to be over a period of 10 years. Considering Eskom's year-on-year tariff increases, which are in most cases above inflation and grid power supply reliability issues (load shedding/load curtailment), SRK considers the strategy to reduce power costs and total reliability on Eskom power supply prudent. However, it is recommended that the JUWI power costs be thoroughly reviewed to ensure that these will be beneficial for the mine, as in most cases, independent power producers prefer signing PPAs for 20-year terms, to minimise tariff charges and retrieve (and have some commission on) the capital expenditure used in building the power plant.

Although a ring feed has been allowed for to supply power to underground workings and pump stations, there is no mention of how other critical equipment such as ventilation fans will be supplied with power. It must be noted that the emergency generators will be connected to the main incoming substation, thus these will only kick in on detection of grid power supply failure to the main incomer/s, but not to the individual feeders. Thus, should this critical equipment be fed by a radial (single) feed, emergency generators will not kick in should this only feeder fail. It is therefore recommended that power supply to other critical equipment such as vent fans and man winders be reviewed and if not already supplied with a ring/redundant supply, this be allowed for.

3.5.10 SRK recommendations

Generally, the electrical infrastructure is well designed, however the following are recommended:

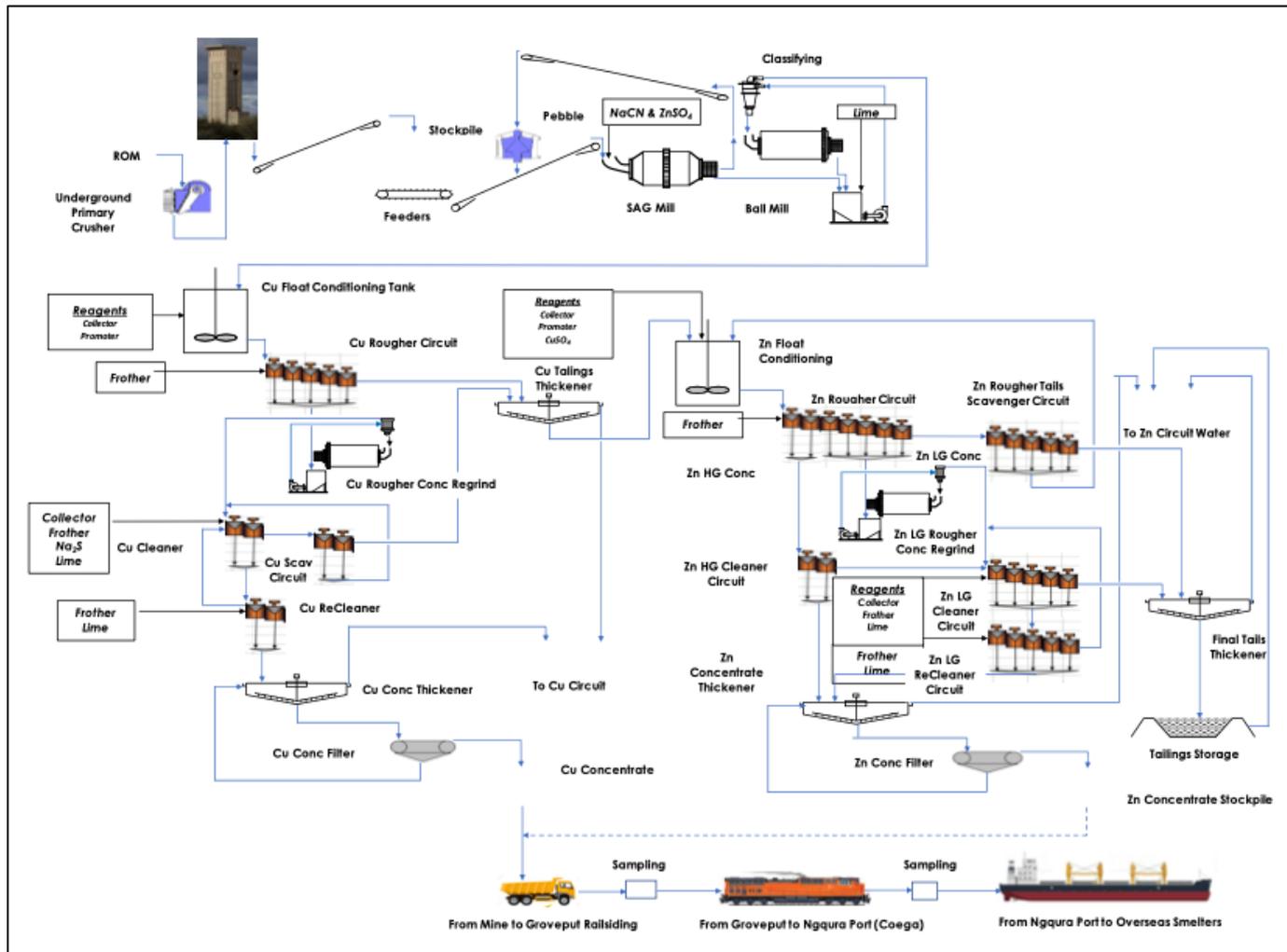
- Prieska should engage with Eskom to ensure that the outstanding contractual agreements for the permanent power supply are signed and in place so as not to delay the project implementation. A letter of acknowledgement and approval of designs for the 15 MVA temporary power supply has been received from Eskom.
- A thorough review of the renewable energy electricity tariffs should be undertaken once a proposal has been received from JUWI, to ensure that the tariffs contribute to cost savings for the mine.
- Power supply to critical equipment such as vent fans and man winder should be reviewed to ensure that redundancy is allowed for.

3.6 Metallurgical testwork and process design

SRK's metallurgical review is based on the Orion's document titled, *Prieska Copper-Zinc Project 2.4Mtpa Foundation Phase, Orion Minerals Ltd, May 2020 Update*.

3.6.1 Process flowsheet

Figure 3.12: Prieska Project process flowsheet



Source: Orion 2020 BFS

The proposed processing plant, as described in the 2020 BFS to treat 2.4 Mt/a, consists of:

- a SABC comminution circuit consisting of an underground crusher with product hoisted to a surface stockpile feeding a SAG-Ball mill circuit
- copper flotation circuit with rougher, scavenger and 2 stages of cleaner flotation
- zinc flotation separated into a high- and low-grade circuits with the high-grade circuit cleaner tails reporting to the low-grade cleaner feed without regrinding.

3.6.2 SRK comments

While the comminution and flotation circuits are typical of other VMS polymetallic flotation circuits, the following anomalies exist:

- The primary stockpile capacity of 24 hr may be insufficient to ensure capacity allows maintenance of (a) the underground jaw crusher without limiting SAG mill throughput and/or (b) the SAG and ball mills without restricting the mine. The use of manual stockpiles may mitigate this risk.
- The maximum SAG mill media loading at 30% appears high and the ball mill loading at only 15–17% appears low to draw full power and should be checked when final mill selection is made.
- The flotation residence time scale up of 2.5 x, while possibly sufficient, may be challenging given the depressant conditions required for selective flotation against pyrite/pyrrhotite and sphalerite, especially if there is an unexpected elevated level of iron sulfide minerals in the plant feed.
- Confirmation is needed that the low-grade zinc circuit can actually produce a saleable concentrate.
- High grade concentrate from the first two cells of the zinc rougher flotation circuit is designed to report to the zinc high grade cleaner circuit, with the high-grade cleaner tails bypassing the regrind circuit directly to the low-grade cleaners. It is likely the high-grade cleaner tails will have poor liberation and should report to the regrind prior to further separation. It is expected that allowance can be made for this in the proposed circuit configuration.
- The use of sodium cyanide as a zinc depressant in the copper flotation circuit will require monitoring. This reagent regime could not only depress secondary sulfide minerals but, due to their presence, also have an increased consumption.

3.6.3 Supporting testwork

The bulk mineralisation of the Prieska deposit is the massive sulfide unit (MSU) containing pyrite, sphalerite, chalcopyrite, pyrrhotite, and minor amounts of galena. The supergene mineralisation contains bornite and chalcocite/digenite, which will affect the use of cyanide as a sphalerite/iron sulfide depressant. There is no indication in the mineral composition data of the presence of pyrrhotite, although pyrrhotite is present in significant quantities in the locked cycle testwork concentrates. The presence of sauconite is noted, in that it may be indicative of deep pockets of weathering.

The hypogene metallurgical testwork program ran from 2017–2019 at Mintek, SGS, P&C and Geomet. Of particular note is:

- The use of a Grind Mill Test, not used outside South Africa, to determine ore breakage numbers.
- The hypogene flotation feed target size of 70% passing 75 µm, based on the previous operations target with no check on liberation of the proposed feed during the testwork program.
- Sphalerite and Chalcopyrite mineralisation is coarse compared with other VHMS deposits.
- With the flotation focus on mass pull rather than concentrate grade, the resulting low copper rougher grades found in the hypogene test work would present difficulty in upgrading the copper concentrate in the cleaner circuit.
- The open circuit cleaner testwork showed highly variable in sample feed and the corresponding flotation results, which impact the requirement to target flotation conditions to plant feed. The inclusion of a high- and low-grade zinc circuit does not allow the production of a saleable concentrate from the low-grade circuit with concentrate grades typically less than 35%.
- Locked cycle flotation tests (LCT) completed on 9 composites produced copper concentrates ranging from 20–25% Cu at 80–87% copper recovery and zinc concentrates at 46–54% Zn at 80–94% zinc recovery. Associated electron probe microanalyser (EMPA) analysis of the concentrate showed variable iron content in the sphalerite indicating the probability of different mineralogical domains in the ore body. Further, the high levels of zinc in the copper concentrate and iron in the zinc concentrate is cause for concern and will require further flotation optimisation. Concentrate analysis also showed the presence of MgO and Cl at penalty levels, which may be indicative of the presence of chloride ions in the water. Comparative LCT programs between Mintek and SGS showed disturbing discrepancies in concentrate grades, which requires resolution. Liberation analysis showed that copper losses to the zinc circuit were predominantly unliberated chalcopyrite and over 40% of the zinc losses to the tailings were as sauconite.
- The supergene metallurgical testwork showed high variability with recoveries, ranging from 44–77% and 10–90% for copper and zinc concentrate respectively. While copper concentrate grade remained steady at 28%, Cu zinc concentrate grade ranged from 25–35% Zn.
- Transportable moisture limit test work (TML) indicated a TML of 15.2% and 10.9% for copper and zinc concentrates, respectively.

3.6.4 SRK comments

- While the grindmill test data is included in the study narrative, it appears that industry standard comminution test data has been used to inform design.
- The hypogene flotation feed target size of 70% passing 75 µm is based on the previous operations target, with no check on liberation of the proposed feed.
- Pyrrhotite is listed as one of the most abundant minerals in the sample summary but not listed in the mineral abundance tables, making the validity of the mineral abundance tables questionable.
- The high iron sulfide to copper sulfide ratios will make flotation separation difficult. Additionally, the presence of hydrophobic minerals such as chlorite will add to final concentrate dilution.

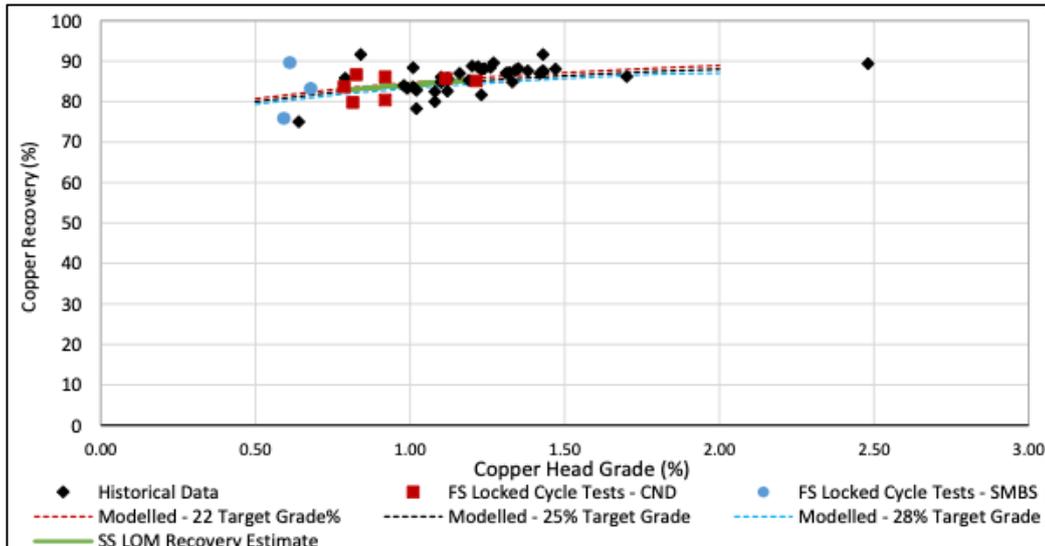
- Ore body sample coverage for testwork needs to confirm that the characteristics of the future material treated falls within the process design envelope.
- Testwork did not show that the low-grade zinc circuit can produce a saleable concentrate. Controlling the concentrate grades from the combined low- and high-grade circuits will be required to achieve target saleable concentrate.
- A geometallurgical program is encouraged to properly characterise the Prieska ore sources and understand the ore body variability.
- Mineralogical analysis completed on the concentrate and tails samples from LCT work on blend 2 and 3 showed poor quality concentrate with zinc concentrate containing only 77% of sphalerite and copper concentrate 78% chalcopyrite. The industry benchmark is for a concentrate to contain 85% of the target mineral. The presence of pyrrhotite in the concentrate, while not identified in the flotation feed mineralogy, is significant due to its tendency to oxidise and increase the flotation circuit oxygen demand, inhibiting flotation. The presence of sauconite indicates that some material may have been incorrectly classified as hypogene.
- EMPA analysis by SGS on the circuit concentrates identified copper in the sphalerite minerals and zinc in chalcopyrite minerals, which is indicative of fine unliberated mineral composites as opposed to a 'new' chemical mineral composition.
- Losses of zinc and copper to the tailings appears to be a combination of liberation and separation issues and further mineralogical work should be a priority of any future test programs and operational start-up to optimise the plant.
- The lack of correlation found in the recovery regression analysis means using these curves for recovery estimates is tenuous. A single model for recovery estimates is not recommended as metallurgical performance should be described by multiple factors (i.e. Cu:Zn, Fe:Cu and Fe:Zn ratios, pyrrhotite content, %Fe in sphalerite). Furthermore, additional samples are recommended around the cut-off grade to make any model meaningful. While SRK commends the inclusion of a ramp-up period, the recovery models show several anomalies that require explanation:
 - the zinc recovery is negatively related to zinc feed grade
 - the lower limit to zinc grade of 45% Zn appears low as this may be below the level of a saleable concentrate
 - the copper recovery concentrate grade cap escalation appears steep with a 1% recovery drop resulting in a 4% increase in copper grade when compared with typical industry values.
- The supergene zinc circuit does not make a saleable concentrate and, while the improvement in performance with the use of fresh water indicates a chemical separation issue, SRK recommends a work program on supergene ore to include diagnostic analysis to understand the mineralogical, liberation and chemical issues within the supergene ores.
- The TML of 10.9% for Zinc concentrate appears reasonable, though the 15.2% for copper is well outside the industry benchmarks and needs investigating.

3.6.5 Process throughput and metallurgical recovery

With no testwork data on comminution supplied for the 2020 BFS, SRK cannot make any comment on the validity of the comminution parameters used in the process design.

The hypogene recovery estimates are based on regression curves with an R² value of 0.1 and 0.3 for copper and zinc respectively (Figure 3.13).

Figure 3.13: Copper recovery model



Source: Orion BFS 2020

Table 3.11: Hypogene recovery models

Metal	Recovery Algorithm	Feed Grade Range	Concentrate Grade Range	Recovery Cap	Recommended Discount for Commissioning and Ramp-up
Copper	$105.17 \left(\frac{\text{Target Cu Concentrate Grade}}{\text{Cu Feed Grade}} \right)^{-0.07}$	0.5 - 1.2%	20 - 26%	90% at 22% concentrate grade 88% at 24% concentrate grade 87% at 28% concentrate grade	Month 1 = 4% Month 2 = 3% Month 3 = 3% Month 4 = 2% Month 5 = 2% Month 6 = 1% Month 7 = 1%
Zinc	$-19.42 \times \ln \left(\frac{\text{Target Zn Concentrate Grade}}{\text{Zn Feed Grade} + 136.14} \right)$	2.8 - 4.8%	45 - 53%	94% at 48% concentrate grade 92% at 50% concentrate grade 90% at 52% concentrate grade	Month 1 = 4% Month 2 = 3% Month 3 = 3% Month 4 = 2% Month 5 = 2% Month 6 = 1% Month 7 = 1%

Sources: Orion 2020 BFS

The lack of correlation found in the recovery regression analysis means using these curves for recovery estimates is tenuous. A single model for recovery estimates is not recommended as metallurgical performance should be described by multiple factors (i.e. Cu:Zn ratio, Pyrrhotite content, % Fe in sphalerite). Furthermore, additional samples are recommended around the cut-off grade to make any model meaningful. While SRK commend the inclusion of a ramp-up period the recovery models show several anomalies that require explanation. It is recommended that as the design progresses model development is investigated in more detail.

- The zinc recovery is negatively related to zinc feed grade.
- The lower limit to zinc grade of 45% Zn appears low as this may be below the level of a saleable concentrate.
- The copper recovery concentrate grade cap escalation appears steep with a 1% recovery drop resulting in a 4% increase in copper grade.

The average of the test data was also used to predict the zinc reporting to the copper concentrate and the copper and iron reporting to the zinc concentrate.

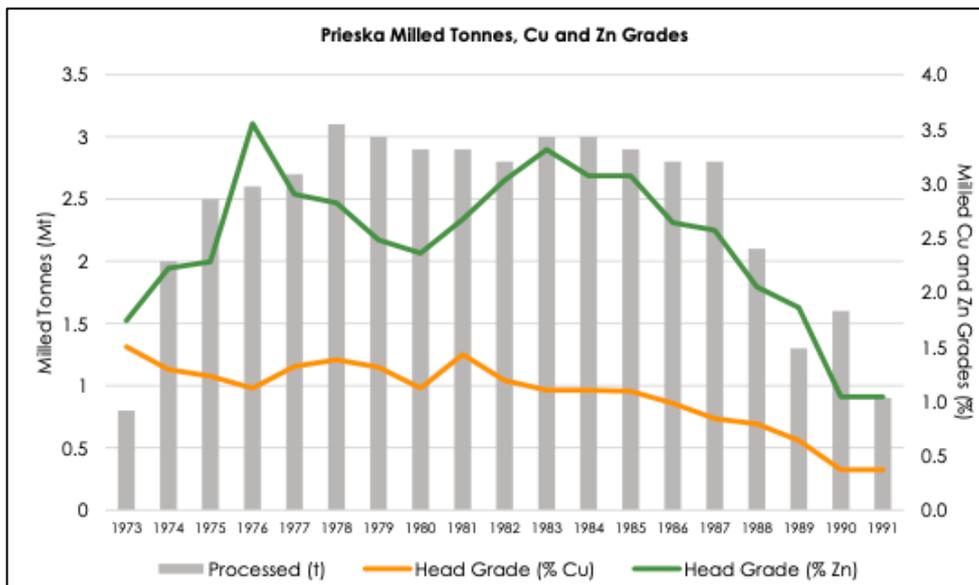
Table 3.12: Process design data

Design Parameter	Unit	Value
Annual tonnes treated	Mt/a	2.4
Zinc Feed Grade	%	2.47 - 4.09
Copper Feed Grade	%	0.80 – 1.23
Iron Feed Grade	%	13.6 – 16.6
Ore Delivery and Crushing		
Days per year	days	365
Shifts per day	number	2
Utilisation	%	63
Hours per annum	h	5,536
Crusher circuit throughput	Dt/h	434
Milling and Concentrating		
Days per year	number	365
Hours per day	h	24
Utilisation	%	91
Hours per annum	h	8,000
Milling design throughput	Dt/h	300
Mill target product size (P ₇₀)	µm	75
Zinc Concentrate Grade Target	% Zn	> 48
Copper Concentrate Grade	% Cu	> 22
Final Concentrate Target Moisture	% w/w	10 -12

Sources: Orion 2020 BFS

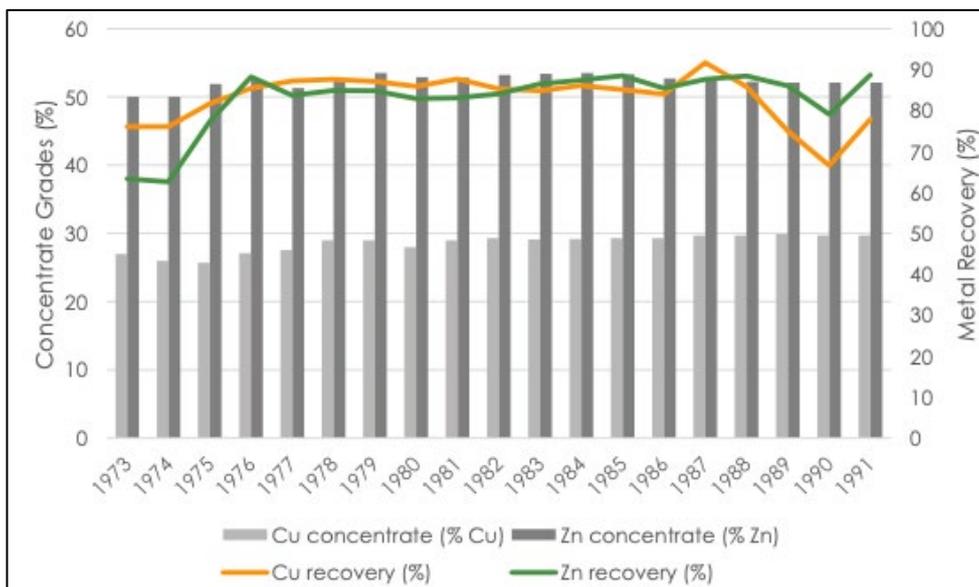
Historical performance records for the Prieska mine show that between 1973 and 1991 the mine produced copper concentrate at 28.6% Cu and 84.9% recovery and zinc concentrate at 52.7% Zn and 84.3% recovery (Figure 3.15).

Figure 3.14: Historical head grade and throughput



Sources: Orion 2020 BFS

Figure 3.15: Historical concentrate grades and recoveries



Sources: Orion 2020 BFS

3.6.6 SRK comments

Although the testwork showed high variability, some confidence can be taken in the historical grade and recovery data presented in Figure 3.14 and Figure 3.15. Additionally, given the nature of VHMS deposits, it could be expected that the past operation will help inform the future performance.

3.6.7 Processing operating and capital costs

SRK has not reviewed the capital costs in detail to comment on the validity of the estimates used. The estimate was completed in January 2020 and purports to be a Class 3 level $\pm 15\%$, though SRK notes that only the 10% contingency has been included. SRK recommends that the estimate is checked in detail against current industry prices, which have been subject to significant price escalation since January 2020.

Opex estimates are reported to have been built-up from first principles but this has not been verified.

Of particular note are the concentrate sales terms:

Zinc Concentrate:

- The payment for silver will be unlikely if sold to the European market.
- A discount for treatment charges is unlikely given the quality of the concentrate.
- Penalty elements, particularly chlorides, may increase depending on the water quality.

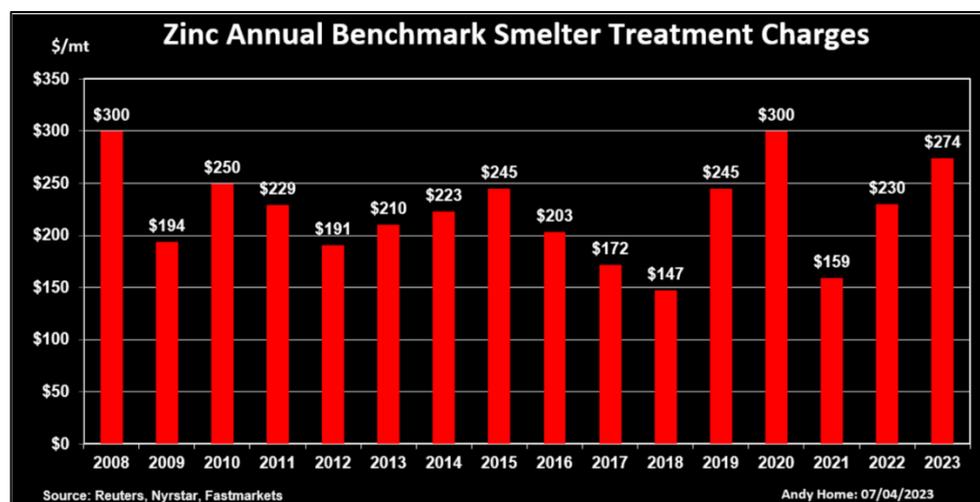
Copper concentrate:

- Payment terms for silver should be confirmed – it is typical to deduct 30 g/t then pay 90% rather than 90% on the total silver content. The same applies for gold.
- Prieska is unlikely to receive a discount to benchmark terms for a low quality concentrate.
- Penalty elements, particularly chlorides, may increase depending on the water quality.

Additionally, the NSR calculations appear incorrect but usual practice for a ‘practical NSR’ would be to include the freight costs in the NSR calculation. In the Orion calculations it should be confirmed that these freight costs are instead included in the operating costs. For example:

- The zinc concentrate treatment charges are not stated in the sighted concentrate letters of intent. However, zinc concentrate benchmark treatment charge average for the last five years is US\$241/dmt of concentrate.

Figure 3.16: Zinc Annual Benchmark Smelter Treatment Charges



Sources: Reuters, Nystar, Fastmarkets

- Using the stated discounts from the Bluequest and Transamine letters of intents of \$25 and \$15/dmt respectively the treatment charges would reduce to \$216 or \$226/dmt. The narrative should be expanded to support the use of a lower treatment charge.
- Therefore, a tonne of zinc concentrate at 53% Zn has a notional value of $(US\$2337 \times 0.53 \times 0.849) = US\$1,051.58/t$. However, the concentrate grade of 53% should be confirmed, given the average concentrate grade prediction is 50% Zn.
- Deducting US\$226/t for TC & RC and US\$61/t for transport charges gives a net revenue of US\$765 per tonne.
- This yields a NSR percentage of 61.7% – not 68.4%.

3.7 Environment and social

This section presents the environmental and social considerations relating to the Prieska Project. It sets out the permitting status as well as assessments and management plans that have been approved for the mine. The systems and capacity associated with environmental and social management are also highlighted, including monitoring and risks.

3.7.1 Permitting

The Prieska Project is in possession of the relevant environmental permits linked to the respective Mining Rights for Repli and Vardocube in fulfilment of South African legislation. In terms of the good international industry practice (GIIP) requirements (e.g. Equator Principles [EP] and International Finance Corporation Performance Standards [IFC PS]), progress is deemed to be appropriate for the current stage of the Prieska Project (TMC, 2021).

Environmental Authorisations (EA) and Waste Management Licence (WML) for Repli were received during Q3 2019. All information requirements for the Repli Integrated Water Use Licence (IWUL) were submitted to the relevant authorities and approved by Department of Water and Sanitation (DWS) in August 2020. The Vardocube EA was granted in Q1 2020. The mining right was issued in August 2020, and no WML or IWUL is required for Vardocube. These authorisations and licences will allow mine construction to commence as soon as funding becomes available (TMC, 2021). Figure 3.17 presents the list of relevant permits and the status of these.

Figure 3.17: Permits held for the Prieska Project

Project Group	Project	Holder	Reference Number	Type	Application Lodged	Issued	Expiry		
Prieska Project	Prieska Cu Zn Project	Prieska Copper Zinc Mining (Pty) Ltd Previously know as Repli Trading (Pty) Ltd	NC 10136MR	MINING RIGHT	6 April 2018 (SAMRAD)	4 December 2019 was 23 August 2019 POA	03 Dec 43		
			NC 10136MR	ENVIRONMENTAL AUTHORISATION	6 April 2018 (SAMRAD)	amended	03 Dec 43		
			NC 10136MR	EA WASTE LICENCE	6 April 2018 (SAMRAD)		03 Dec 43		
				10/05.....GUV9842. SPLUMA	/WUL – WATER USE LICENCE	13 Sept – 17 Pre application meeting	03 Jul 19	02 Aug 43	
					Zoning Permission	03 Mar 20	03 Aug 20	-	
							28 Oct 20		
				Vardocube (Pty) Ltd	NC 10146MR	MINING RIGHT	27 September 2018(SAMRAD)	14 Aug 20	03 Aug 32
					NC 10146MR	ENVIRONMENTAL AUTHORISATION	27 September 2018(SAMRAD)	03 Mar 20	03 Aug 32
					NC00187MR/102	S102 Irrigation EA	11 November 2020 – 12 November 2020 (SAMRAD)	13 Oct 21	03 Aug 32
					SPLUMA Copperton	Re-Zoning Permission to Industrial	03 Mar 20	18 June 2020(28 Oct 2020)	-
			SPLUMA Prieska	Zoning Permission to Residential	Refer to records	7 June 2021 (27 July 2021)	-		

An Independent Expert Scientific Committee (IESC) review (TMC, 2021) noted that two permitting processes were underway:

- a water use licence (WUL) amendment application to address project changes and optimisations, and to relax WUL water quality limits
- an Environmental Impact Assessment (EIA) process to give effect to the conditions of the WUL and for the development of the infrastructure associated with the reverse osmosis (RO) water treatment plant and irrigation of treated water to land. The EA has subsequently been amended.

The relaxation of the WUL limits is an administrative matter with the DWS rather than an impediment to successful execution of the Prieska Project.

The Prieska Project is located 32 km from the nearest Square Kilometre Array (SKA) infrastructure. There is the possibility that electromagnetic interference (EMI) may affect the SKA, which may require Orion to apply for a permit that needs to be in place before operations commence. This should be determined during the detailed design phase. Extensive consultations have been held with the South African Radio Astronomy Observatory (SARAO) in this regard.

Social and Labour Plans (SLP) need to be implemented for the potential high socio-economic benefits of the Prieska Project to be realised. As prescribed by the Minerals and Petroleum Resources Development Act (MPRDA), two linked 5-year SLPs have been submitted and approved with the Vardocube and Prieska Mining Rights applications in 2018.

Both SLPs have been tabled in the prescribed Department of Mineral Resources and Energy (DMRE) format and include all relevant information as per the MPRDA and SLP guidelines. Implementation of these SLPs should reviewed and reported annually and renewed after the five-year period.

3.7.2 Environmental considerations

Orion commissioned an environmental and social due diligence of the Prieska Project in 2021. This review (TMC, 2021) was conducted on the EIA, the Social Impact Assessment (SIA), the 2020 BFS and all relevant ancillary documents. Benchmarked against the EP and IFC PS, the reviewers identified several gaps and developed an action plan.

EIAs

Two EIAs were conducted for the two Mining Rights areas that comprise the Prieska Project, in terms of South African legislation. The EIAs informed the development of Environmental Management Programmes (EMPr), which were developed and approved by the DMRE. These documents are reportedly detailed and have informed the key application permit processes that have been concluded. The EIAs and supporting documentation cover all potential significant environmental and social risks and impacts. They also provide measures to monitor, minimise, mitigate, and offset adverse impacts, which are relevant and appropriate to the location, nature and scale of the Prieska Project (TMC, 2021).

The EIAs assessed risks and impacts on the geographical, physical, biological, social, economic, and cultural heritage aspects of the environment and therefore adequately address the environmental and social risk and impact assessment considerations. The Prieska Project involves the generation and storage of potentially hazardous substances such as mine tailings, to be stored in a new TSF. Brine residues from the evaporation and treatment of water pumped from the mine workings will be stored in an effluent storage facility. Although the impacts are not regarded as 'unprecedented', they are 'irreversible' and will require long-term management (TMC, 2021).

The EIAs identified potential high adverse environmental and social impacts related to health and safety, storage and handling of hazardous substances, loss of habitats, traffic and road safety, management of EMI within the declared Karoo Central Astronomy Advantage Area, water quality management and rehabilitation and closure. Careful mitigation and implementation of management programs over the life of the operations and post-closure will be required to ensure that impacts remain within acceptable levels.

Supporting studies

Several specialist investigations were undertaken in support of the EIAs, including studies on geohydrology, geochemistry and acid mine drainage, geotechnical conditions, current water uses, land use, air quality, biodiversity, blasting, socio-economic, cultural and heritage, archaeology, palaeontology, noise, radiation risks and traffic impacts (TMC, 2021). These studies found that aspects of the planned infrastructure will be located within areas that were disturbed as part of the historical mining operations, but the new TSF is located on land that is largely undisturbed.

To ensure compliance with the conditions of the WUL, additional geohydrological studies were completed and the designs of pollution containment and control measures considered comments and feedback from the DWS, and a water quality monitoring program was developed and is being implemented (TMC, 2021). The geohydrological studies also found that water in the historical mine workings has high sulfate levels and boreholes associated with the historical TSF have elevated sulfate concentrations significantly above the WUL limits.

Physical displacement of people or disturbance/relocation of cultural heritage features are not required and no protected areas, conservation areas or threatened ecosystems will be affected (TMC, 2021). There is no critical habitat in the project area. Orion has prepared detailed designs for the planned new TSF and processing plant, which take account of environmental and social management considerations (TMC, 2021).

Orion has also assessed greenhouse gas (GHG) emissions, based on Scope 1, 2 and 3 emissions. A carbon management strategy was adopted and informs Orion's carbon neutral roadmap. This roadmap will be achieved in a phased approach transitioning through reducing direct emissions of the operations, reducing emissions from the electricity used by using zero carbon power and reducing emissions from the mine's product lifecycle activities.

The heritage study of the Prieska Project found that archaeological and heritage in the area was of low significance due to common widespread nature of artefacts and disturbance by historical mining activities and low to very low significance for palaeontological features. The graveyard in Copperton will not be affected by the proposed mining development and no other burial sites have been recorded (TMC, 2021).

3.7.3 Social considerations

Some social considerations are addressed by Orion in the documentation, notably stakeholder engagement and grievance management and community development. These and other issues are discussed below.

Stakeholder engagement

Stakeholder engagement was undertaken as part of the EIAs and a strategy for ongoing stakeholder engagement during project implementation (construction and operation) has been developed (TMC, 2021). It is understood that Orion has developed a grievance procedure document, which will be applied by mine management to track and address stakeholder complaints.

Through an established stakeholder engagement forum, Orion meets every two to three months with local communities and provides feedback on the Prieska Project. This forum is composed of representatives from the community, local authorities, Black Economic Empowerment (BEE) shareholders, Orion employees and Orion management. Although Orion enjoys support from the Siyathemba Local Municipality and local community; unrest and mobilisation of the community members in recent years presents a potential material risk and needs to be effectively monitored and managed. A Community Social Development Officer regularly visits all the towns in the host community.

In late 2021, Orion agreed to participate in a task team forum comprising local community and business forum representatives to address the community issues and provide feedback to Northern Cape Provincial Government, the DMRE, and Siyathemba Municipality. A grievance procedure has been developed for implementation. Orion confirms that the role of Grievance Officer will be assumed internally whose responsibility will be to develop, record and maintain the grievance database as well as act as the link between the Prieska Mine, the community relations manager, and various stakeholders.

Community development

A Community Participation Framework, outlining the policies and processes through which aspirational targets of 50% employment, 40% contracting and 30% procurement from the host community will be attained, was workshoped by a representative task team during 2022 and published as a report to all stakeholders in April 2023.

Orion is committed to maintaining its social licence to operate. The mine's commitment to community development is addressed in Orion's two SLPs and financial provisions are included for the 5-year period. A total financial provision for the SLP commitments is approximately ZAR56 million.

Prior to the approval of its SLPs, Orion commenced with facilitating several significant social investment projects aimed at benefiting the local communities. These initiatives are managed under a Memorandum of Understanding (MoU) with the municipality as a formal framework for the parties to collaborate on mutually beneficial projects. A steering committee has been established.

The key focus areas of the community development include: upgrading of municipal infrastructure to supply future water requirements to the community and Prieska Project; skills development; support for a feasibility study for a potential residential development in Prieska; and assistance in the municipality's alternative energy development initiative.

Land claims

Based on Orion's enquiry to the land claims commissioner in 2017, there were no registered land claims on the land occupied by the Prieska Project.

3.7.4 Environmental management and compliance

Environmental management system and capacity

Orion has developed several policies that provide corporate guidance on environment and health and safety. Once the Prieska Project moves to the full implementation phase, the approved management plans will need to be rolled out. Environmental and social site staff will be appointed and an environmental and social management system implemented to give effect to the conditions of the environmental authorisations over the life of the project.

This commitment is reflected in Orion's publicly stated recognition that: legal compliance is a minimum standard; the company implements an environmental performance program; conducts periodic reviews of operational environmental management; adheres to best practice in environmental reporting; and supports environmental improvement projects for common benefit.

Orion has mining and engineering staff on site and has reportedly appointed an environmental control officer (ECO) to conduct daily or weekly checks and a community liaison officer to manage stakeholder relations.

Environmental and social management

Based on the available documentation, it appears that the appropriate assessments have been undertaken and Orion understands the potential environmental and social risks and impacts associated with the Prieska Project. These can be mitigated and managed by implementing the approved environmental management programs. In addition, Orion has developed an environmental management program that will assist in implementing measures to minimise, mitigate, and offset adverse impacts.

As the Prieska Project has not proceeded to the full implementation phase (construction and operation), there have been limited site activities. The mine has reportedly reinstated stormwater and flood control berms; activities that had the requisite permit approvals (TMC, 2021). As part of the integrated WUL permitting process, an Integrated Water and Waste Management Plan (IWWMP) was developed and approved by the DWS. The IWWMP covers all water uses and waste management aspects of the Prieska Project.

As no solid waste disposal facilities are to be constructed as part of the mine development; all waste will be managed in accordance with the waste management hierarchy as required by national legislation. Waste will be segregated into general and hazardous waste and contractors appointed to remove the waste to licensed waste disposal facilities. Recyclable waste like glass, wood and plastic will similarly be segregated on site and removed by licensed waste transporters. An oil recycling company will also be appointed to remove waste oil generated by the mining activities. Medical waste arising from the onsite clinic will also be removed from site by a contractor (ABS, 2018).

Informed by various studies and assessments (e.g. geochemical, geohydrological and hydrocensus), Orion plans to implement the necessary design and management measures to avoid groundwater contamination. These include the lining of the new TSF facility with 2 mm high density polyethylene (HDPE) geomembrane as well as the establishment of a Return Water Dam (RWD) that will also be lined with the same geomembrane. The waste rock samples were characterised by relatively low acid-generating and acid-consuming potentials and were all classified as non-acid forming (ABS, 2018).

As cultural and heritage features were identified in the project area during investigations, Orion will implement appropriate management measures, including a chance find procedure.

In order to manage social risks and impacts, Orion has established a community engagement forum and grievance procedure. It will continue to implement SLP obligations as well as develop an emergency preparedness and response plan that addresses community health and safety considerations. In addition, plans for influx management, construction camp management and compensation will be developed.

Monitoring

Based on available documentation, Orion undertakes monitoring for various environmental aspects, including:

- Air quality: Dust fall is being monitored and reports prepared. Dust fall has been within non-residential limits at all monitoring stations since recording began.

- Groundwater: Groundwater quality monitoring is outsourced, and sampling takes place on a monthly basis at several locations for multiple parameters. Recent results indicate no significant change in water levels in sampled boreholes and parameters remain generally consistent with poor quality water in the area, which is not suitable for human consumption without treatment.

Orion will continue to implement the water quality management program to mitigate the spread of the sulfate plume at the historical TSF and to address any non-compliance with the conditions of the WUL, and risks to final closure.

A comprehensive monitoring program will be developed to cover all environmental and social aspects in fulfilment of EA, WUL and EMPr requirements.

Auditing and risk management

The environmental authorisations require the Prieska Project to undertake independent environmental reviews of approved management plans on a regular basis to ascertain the mine's performance and level of compliance. These audit findings will inform actions for continual improvement.

Management of risks will be an ongoing process throughout the life of the project and will inform the development and maintenance of a risk register. Although recent reviews have noted that there are no major risks related to the project (TMC, 2021), three moderate risks were identified and require management:

- Pre-existing groundwater qualities in the area, as well as existing contamination at the historical TSF. The background groundwater quality is resulting in non-compliances with the WUL at various monitoring points, even outside the mining area, and form part of WUL limits amendment. Orion will continue with a comprehensive monitoring program and to maintain rigorous records on water quality.
- High concentrations of certain parameters, particularly sulfate, have been detected at monitoring points around the historical TSF. Due to the levels recorded, these points are expected to remain non-compliant even if DWS agrees to relax the WUL water quality limits to be aligned with background groundwater qualities. Orion indicated that an engineering review of the historical TSF was completed that recommended environmental management controls aimed at addressing contamination from the facility. Orion has developed an environmental management plan for the historical TSF.
- There was previously no formal grievance mechanism in place. Orion has since developed a grievance procedure document.

Orion will need to develop and maintain a comprehensive risk register that clearly sets out the key environmental and social risks and the measures being applied to reduce the identified risks.

4 Okiep Project

4.1 Overview

The Okiep Project is a brownfield project consisting of the Flat Mines Project (two open pits – Flat Mines NababEEP (FM Pit) and the Jan Coetzee (JC) deposit) and three underground mines – Flat Mines North (FMN); Flat Mines South (FMS) and Flat Mines East (FME), as well as other mining and prospecting rights held by SAFTA, NababEEP Copper Company (Pty) Ltd (NCC) and the Bulletrap Copper Co (Pty) Ltd (BCC). The Flat Mines Project is proposed by Orion as an initial proof-of-concept mining phase following the completion of a Scoping Study in May 2021 (Orion, 2021b). The Scoping Study was based on a PFS completed in May 2019 (by Minxcon (Pty) Ltd, for Southern African Tantalum Mining (Pty) Ltd (SAFTA)).

4.1.1 Location, access and climate

The Okiep Project is in the Northern Cape Province of South Africa, approximately 20 km northwest of the town of Springbok (Figure 4.1); other smaller nearby towns are NababEEP and Okiep.

The N7 national sealed highway connects Springbok and Cape Town (the closest city, located in the Western Cape Province). The Okiep Project offices in NababEEP can be reached via the N7 highway and then via a sealed district road to NababEEP.

There are currently no operating rail lines servicing the immediate area; the closest line is the Sishen-Saldanha line to the south that carries iron and manganese ore from mines further east. Port Nolloth lies approximately 140 km northwest of Springbok and was the original port through which copper was despatched, although it is no longer used for this purpose. Saldanha Bay is currently the closest large port, with suitable infrastructure to load mineral ore. Plans to construct a new deepwater port at Boegoebaai on the West Coast were announced by Transnet National Ports Authority in July 2023. However, these plans are at an extremely early stage and construction dates have not yet been determined.

A municipal water pipeline traverses the site, sourcing water from the Orange River, 135 km away.

Power supply to the area is via a municipal power grid that sources power from the national electricity grid via an Eskom substation located 23 km from the Okiep Project.

The closest airport is Oranjemund, although Springbok does have a 1.5 km sealed airstrip suitable for small planes.

Telephone lines, telecommunication towers, radio transmission towers and cellular phone network masts provide a good communications network in the area.

Figure 4.1: Okiep Project location



Source: Orion (2021b)

The climate of the area is typical of a semi-desert with very hot summers and cold winters. Rainfall is predominantly in the winter months with a mean annual precipitation (MAP) of 152.7 mm for the region. Most rain (56%) falls from May to August. The mean annual evaporation potential for the region is approximately 2,200 mm. Highest evaporation (66%) is during the hot, dry summer months from October to March. The area experiences hot summers with mean maximum and minimum daily temperatures of 30°C and 5°C for January and July, respectively (Orion, 2021b).

4.1.2 Tenure and land use

As of the date of this report, SRK has received independent legal verification of tenure for the Okiep Project. SRK has, however, reviewed the various licence documents provided and assured itself of the correct geographical extent of the licences with respect to the exploration activities conducted by Orion.

According to Orion (M Birch, pers comm, 03/10/2023), Orion is in the process of acquiring the Okiep mineral rights from SAFTA, NCC and BCC. Once this is completed, Orion will hold a mining right (Table 4.1 and Figure 4.2), five granted prospecting rights and four prospecting right applications to the Okiep Project.

Orion acquired a 56.25% interest in SAFTA mining and prospecting rights and applications (the Industrial Development Corporation of South Africa Ltd (IDC) holds the other 43.75%), a 100% interest in NCC prospecting rights and applications and 100% interest in BCC prospecting rights and applications in 2021. Note that some of these prospecting rights are being ceded to Orion subsidiaries (for example, the rights currently registered to NCC and BCC have successfully been ceded to New Okiep Exploration Company (Pty) Ltd; registration is in progress. In addition, Orion has submitted prospecting right applications (Table 4.2) to the DMRE, all of which have been accepted and some have been granted; Orion is waiting on the DMRE for the completion of the official documentation. SRK has sighted the acceptance letters and grant letters. Commodities covered in the mining and prospecting rights are listed below Table 4.1 and Table 4.2.

Most of the region (~90%) is used for livestock grazing, while the balance is devoted to agriculture or urban development.

Table 4.1: Okiep Project – approved mining and prospecting rights⁵

Licence Code and Type	Portion(s) and Farm(s)	Area (ha)	Holder and Percentage Holding	Start Date	Execution Date	Period (years)	Expiry Date
NC10150MR ¹ Mining Right	Ptn of Ptns 3, 13, 14 & 21 Nababeep 134	1,210.1900	SAFTA (100%)	28/07/2022	14/12/2022	15	27/07/2037
NC11125PR ^{2, 3, a} Prospecting Right	Ptn of Ptn 3 Nababeep 134 RE Plaatjiesfontein 135 Ptns 2, 3, 4 & 7 Nigramoep 136 Ptn Schaap Rivier 208 Ptn 1 & RE Farm 610 Ptn 9 Ezelsfontein 214	18,475.000	NCC (100%), ceded to NOEC	08/11/2017	08/11/2017	5	07/11/2022
Section 102 ⁴ properties added	Ptn of RE Steinkoph 22 Ptn 1, 5, 6 & RE Nigramoep 136 Ptn Grace's Puts 201 Ptn 1 Plaatjiesfontein 135	17,057.0492					
NC12357PR ^{3, b} Prospecting Right	Ptn of Ptns 9 & 10, Ptn 11 Brakfontein 133 Ptn of Ptns 1 & 23 Melkboschkuil 132	2,547.0791	BCC (100%) ceded to NOEC	14/01/2021	15/09/2021	5	13/01/2026
NC12850PR ^{1, 5, c} Prospecting Right	Ptn of Ptns 3, 13, 14 & 21 of Nababeep 134	1,210.1900	SAFTA (100%)	27/06/2023	Not yet executed	3	26/06/2026
NC12852PR ^d Prospecting Right	Ptns 3 – 8, 10 & RE Ezelsfontein 214 (excluding mining permit area (some other company) on Ptn 7)	7,689		22/08/2023	Not yet executed	5	21/08/2028
NC12854PR ^d Prospecting Right	Ptn1, Ptn of Ptn 23, Ptns 27, 28, and 33 Melkboschkuil 132 Farm 635	7,318	OE6 (100%)	22/08/2023	Not yet executed	5	21/08/2028

Notes:

- ¹ These prospecting right applications are part of the Flat Mines Project
² Prospecting rights expired; renewal accepted (04/04/2023)
³ Cession to New Okiep Exploration Company (Pty) Ltd (NOEC) complete; registration in progress
⁴ Section 102 granted for additional properties (23/08/2023)
⁵ NC12850PR overlies NC10150MR - different commodities, see below
⁶ SAFTA = Southern African Tantalum Mining (Pty) Ltd; NCC = Nababeep Copper Company (Pty) Ltd; BCC = Bulletrap Copper Co (Pty) Ltd; OE6 = Orion Exploration No. 6 (Pty) Ltd

Commodities (please refer to the table of symbols at the beginning of this report):

- ^a Cu, W (not in original PR, but in grant letter)
^b Cu, W
^c Be, Bi, Cr, Co, Au, HM, Fe, Pb, Mo, Mz, Ni, Nb, Ph, PGM, Py, RE, Ru, Ag, S, Spy, Ta, Sn, U, Va, Zn, zir; (Cu and W excluded)
^d Be, Bi, Cr, Co, Au, HM, Fe, Pb, Mo, Mz, Ni, Nb, Ph, PGM, Py, RE, Ru, Ag, S, Spy, Ta, Sn, U, Va, Zn, zir, Cu, W

Table 4.2: Okiep Project – accepted prospecting right applications⁶

Licence Code and Type	Portion(s) and Farm(s)	Holder and Percentage Holding	Acceptance date
NC12897PR ^a Prospecting Right Application	Ptn of Plot 2100 Concordia	NOMC (100%)	15/12/2022
NC13010PR ^b Prospecting Right Application	Ptns of Ptns 5, 6, 10, 17 - 20, & RE Nababeep 134	NOEC (100%)	24/05/2022
NC12755PR ^{2, c} Prospecting Right Application	Ptns of Ptns 3, 10, 13 – 16, & 21 Nababeep 134 Okiep Township Plot 2086	SAFTA (100%)	12/05/2022
NC12848PR ^{2, d} Prospecting Right Application	Ptns of Ptns 3, 10, 13 – 16, & 21 Nababeep 134 Okiep Township Plot 2086		15/06/2021

Notes:

- ¹ NOMC = New Okiep Mining Company (Pty) Ltd; SAFTA = Southern African Tantalum Mining (Pty) Ltd
² These prospecting right applications are part of the Flat Mines Project, NOEC = New Okiep Exploration Company (Pty) Ltd

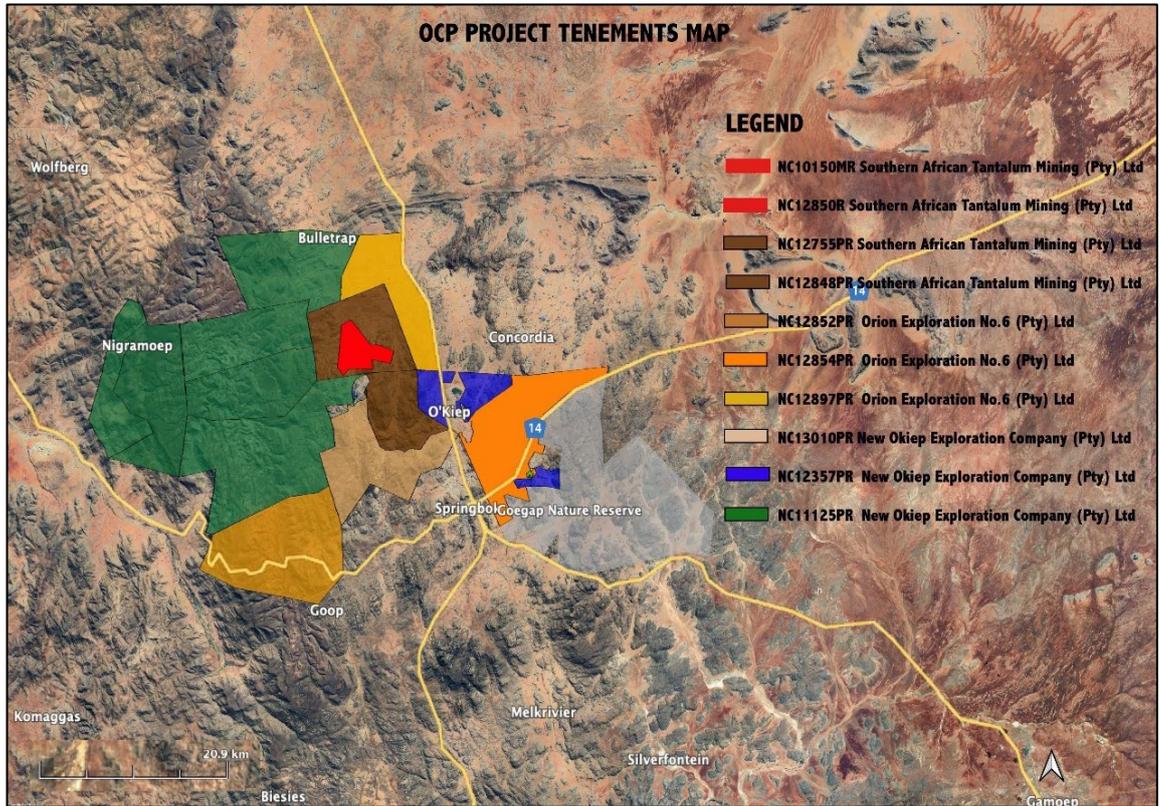
Commodities:

- ^a A Be, Bi, Cr, Co, Au, HM, Fe, Pb, Mo, Mz, Ni, Nb, Ph, PGM, Py, RE, Ru, Ag, S, Spy, Ta, Sn, U, Va, Zn, zir (Cu excluded)
^b Be, Co, Fe, Pb, Li, Mo, Ni, Py, RE, Zn, HM, Ph, Mz, Ni, PGM, Ru, Ag, S, Ta, Sn, Va, zir (Cu and W currently excluded but being remedied by the DMRE)
^c Cu, W
^d D Be, Bi, Cr, Co, Au, HM, Fe, Pb, Mo, Mz, Ni, Nb, Ph, PGM, Py, RE, Ru, Ag, S, Spy, Ta, Sn, U, Va, Zn, zir, (Cu and W excluded)

⁵ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

⁶ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

Figure 4.2: Okiep Project mining and prospecting rights



Source: pers. Comm. M. Robertson 12/09/2023

4.1.3 Agreements and taxes

The Nama Khoi Municipality (NKM) owns the surface rights to Portion 3 of the farm Nababeep 134, which is included in the mining right NC10150MR. Orion, through NOMC, and NKM have signed a legally binding term sheet (NKM and NOMC, 2022) giving NOMC exclusive land access and surface usage to this land for any activities required for mining, as well as the right of first refusal to purchase. A monthly compensation amount has been agreed. The agreement duration is for 20 years from the date of the last signature (i.e. expiry date 05 May 2042) and may be extended unilaterally by NOMC.

Taxes

Applicable taxes are shown in Table 4.3.

The Okiep Project will be subject to income tax in South Africa according to standard corporate tax rates. In the budget speech of 23 February 2022, the South African Minister of Finance announced that the company tax rate would be reduced to 27% in the 2023/24 tax year. At the same time, the treatment of Assessed Losses will change where only 80% of the assessed loss can be offset against taxable income in any tax year.

South African legislation determines mineral royalties based on whether refined or unrefined minerals are produced; as the Okiep Project will be producing a concentrate (defined as an ‘unrefined mineral resource’ according to Schedule 2 to the Mineral and Petroleum Resources Royalty Act, 2008), the royalty for unrefined minerals applies. This is calculated by the following formula:

$$\text{Unrefined Minerals: } Y(\%) = 0.5 + \frac{EBIT}{\text{Gross Sales} \times 9.0} \times \frac{100\%}{1}$$

(EBIT = earnings before interest and taxes)

Note that mineral royalties are only applicable once production commences.

The Carbon Tax Act (Act No. 15 of 2019) was gazetted on 23 May 2019. The first phase of the Act started in June 2019 and the second phase will commence in January 2026. The tax rate is proposed to increase annually, based on the Consumer Price Index, plus an additional two percent. Based on the Carbon Tax Act and the proposed operational activities of the Okiep Project, a business should allow for the following financial impacts:

- direct taxation on fuel combustion emission activities (stationary and mobile)
- increased cost of upstream and downstream carbon intensive activities.

Table 4.3: Okiep Project applicable taxes

Description	Amount
Corporate tax rate	27% of profit
Value Added Tax	15% of base price
Mineral royalty (tax deductible)	$Y = 0.5 + [EBIT / (\text{gross sales of un-refined minerals} \times 9)] \times 100$
Carbon Tax	R159 per tonne of CO ₂ e (2023)

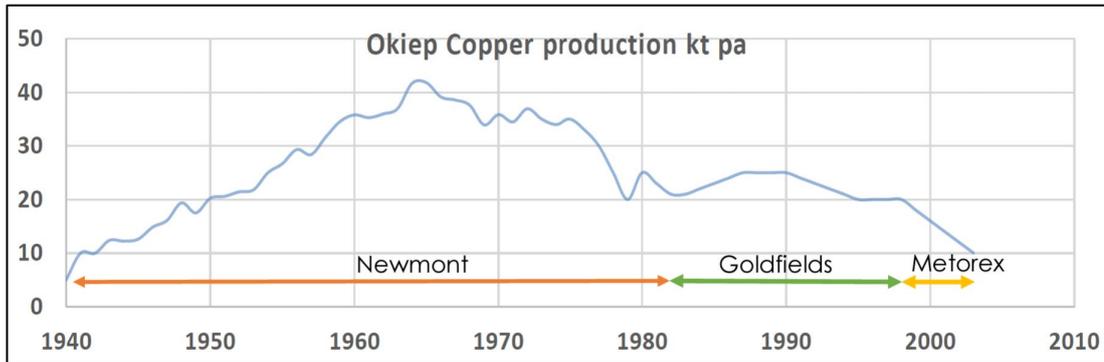
4.1.4 Project history

Copper was first discovered at Carolusberg near Springbok in 1685. However, due to the remoteness and aridity of the site, mining only began in 1846 and the first commercial mine started operations in 1852. Copper was discovered at Okiep in 1855. Over the last 150 years, large mines in the Springbok area are estimated to have produced over 2 Mt of copper.

The recent history of the Okiep Project (Orion, 2021) dates to 1940 when the O’okiep Copper Company (OCC) was bought by Newmont Mining Corporation. Later owners include Gold Fields (1984) and Metorex (1998), who subsequently closed the operations in 2003, with Nababeep being the last mine to close. In 2013 the OCC was acquired by a private individual, together with the prospecting rights to several areas, including the Flat Mines area. In 2018 the IDC funded the Flat Mines Project in exchange for equity and SAFTA applied for a mining right. Orion acquired the Okiep Project in July 2021, by securing an option to acquire the mining and prospecting rights of SAFTA, NCC and BCC.

Figure 4.3 summarises the production between 1940 and 2003 from 42 separate mines in the district. During this period, peak run-of-mine (RoM) production was 2.4 Mt/a, mainly from underground mining. Copper produced amounted to 2.1 Mt at a grade of 1.9% copper from a total RoM of 121 Mt.

Figure 4.3: Okiep district production since 1940



Source: Orion (2021a)

4.2 Geology and resources

4.2.1 Regional setting and local mineralisation

The following description of the regional geological setting and mineralisation is primarily an extract from the 2018 Flat Mines Copper Project Mineral Resource Estimation technical report prepared by Concession Creek Consulting (CCC) (CCC, 2018), and the updated Mineral Resource Estimation technical report prepared by Z Star Mineral Resource Consultants (Z*) (Z*, 2023).

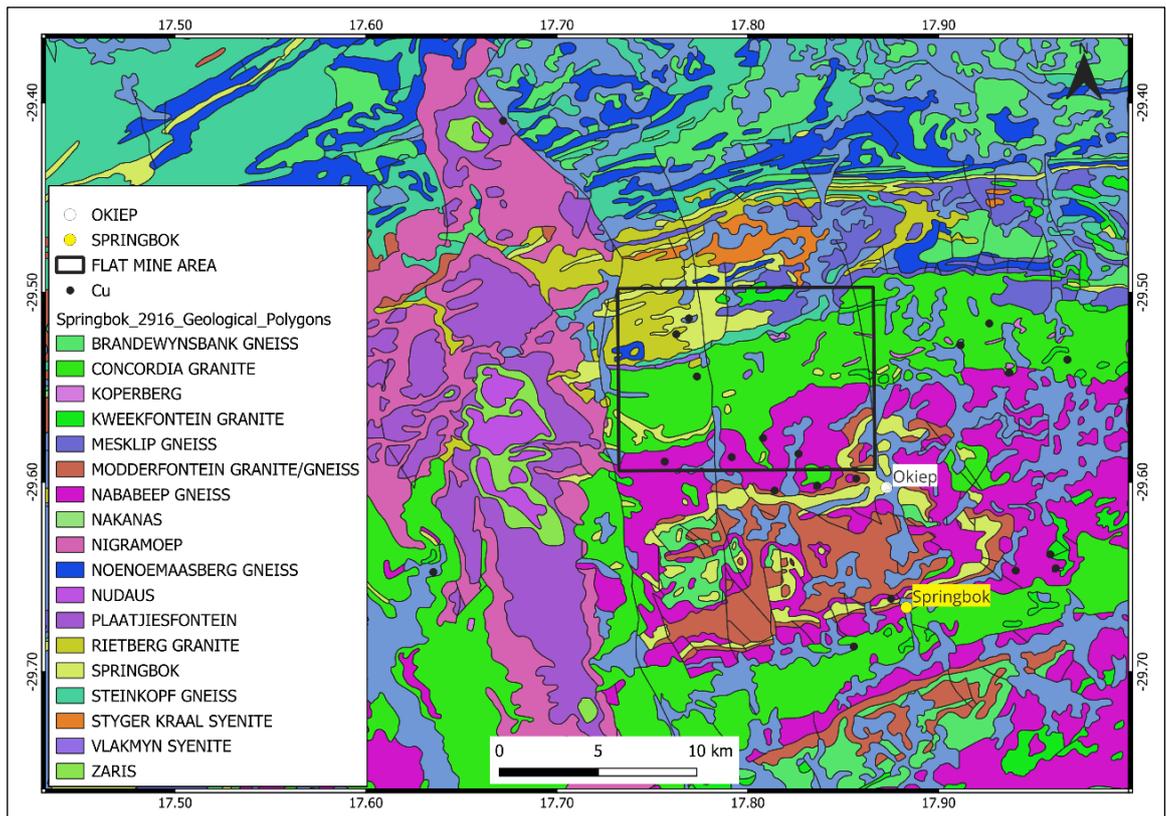
Regional setting

Orion's mining and prospecting rights fall within the Namaqualand Metamorphic Complex (NMC), which extends into the southern part of Namibia (Figure 4.4). The basement complex (i.e. NMC) comprises predominantly granitic rocks and is approximately 2,050 to 1,700 million years old. The supracrustal sequence of mixed sedimentary and volcanic origin, is between 1,900 and 1,200 million years old and, most recently, the syn- and late- tectonic intrusive rocks. Generally, the areas between the rocky hills are filled with late Pleistocene sediments and consist mainly of terrestrial calcrete, sands, and clays. The sediments are fluvial, lacustrine, and largely red dune sand deposits, which overlie most of the area.

The Okiep Copper District and its associated major copper occurrences are located in the Richtersveld Subprovince to the north, which has been interpreted as an island arc complex comprising predominantly andesitic lavas and granitic intrusives. In the west, the Gariep Supergroup of supracrustal sedimentary and volcanic rocks outcrop in the Gariep Belt of the Late Neoproterozoic – Cambrian (Pan-African) orogenesis along the Atlantic Coast. The belt is the southern extension of the Damara Orogen from its Namibian type-region (Miller, 2008), and is characterised by east-verging recumbent folds and thrusts. Metamorphism reached greenschist/lower amphibolite facies (~520°C) around 540 million years ago.

The two most distinct types of copper ore are sulfide and oxide ores. Typically, oxide ore is found near the surface where sulfide ore has been oxidised. Most of the copper deposit within Orion’s permit areas is sulfide ore and will potentially be mined from underground. The common sulfide minerals are chalcopyrite, bornite, chalcocite, pyrrhotite and relatively sparse pyrite and galena. Frequently, bornite predominates over chalcopyrite or occurs to the exclusion of chalcopyrite.

Figure 4.4: Regional geological map of the Flat Mines area (black box)



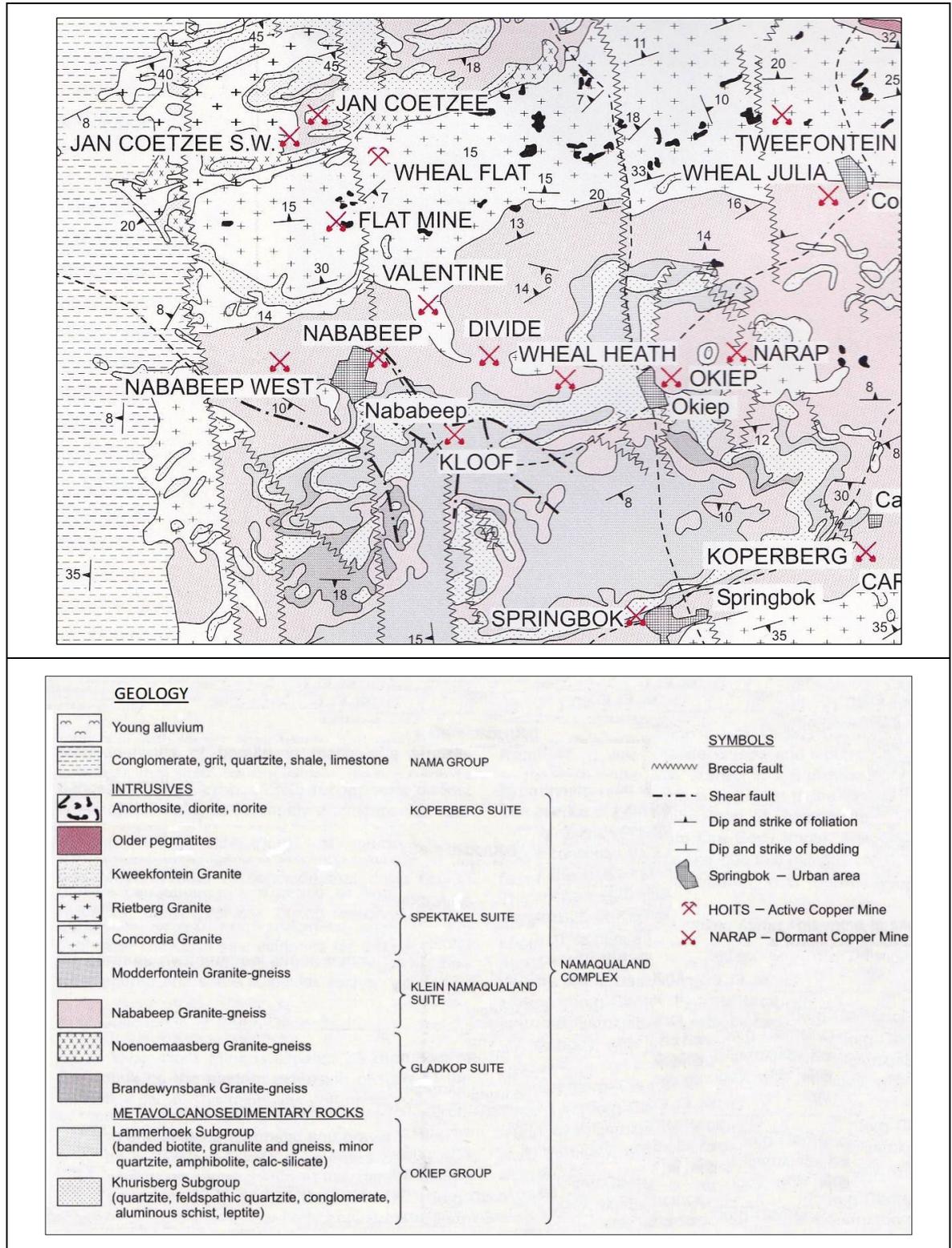
Source: SRK, 2023; Council for Geoscience, no date

Local geology and mineralisation

The major rock type in the Flat Mines area is the Concordia Granite (Figure 4.4 and Figure 4.5) and generally, the host rock to the copper deposits of the FMN, FMS and FME (Figure 4.6). The Concordia Granite is significantly different in texture from place to place. In the western extremities of the area the granite has a coarse porphyritic texture, caused by the presence of anhedral to euhedrally developed alkali feldspar crystals. Twinning of the feldspar crystals is fairly common. The result is that macroscopically this coarse porphyritic Concordia Granite does not differ much from the Rietberg granite. In the eastern parts of the area the Concordia Granite becomes less porphyritic and assumes a medium grained texture in which elongated quartz lathes often impart a pronounced lineation. In the southeast corner of the area, surrounding the anorthosite body, the Concordia Granite displays a bleached white colour as a narrow alteration aureole.

A weak planar fabric is locally imposed on the granite and is more noticeable over <1–3 m adjacent to the contact with Koperberg Suite diorite and anorthosite, while in other places the contact shows no sign of tectonism. Garnet crystals are locally concentrated at various places in the Concordia Granite along with minor magnetite, and so are granulitic intercalations. Granulites are composed predominantly of quartz and feldspar; they are usually finer grained and occur as irregular stringers, more commonly within the Wolfram schist at FMS and FME.

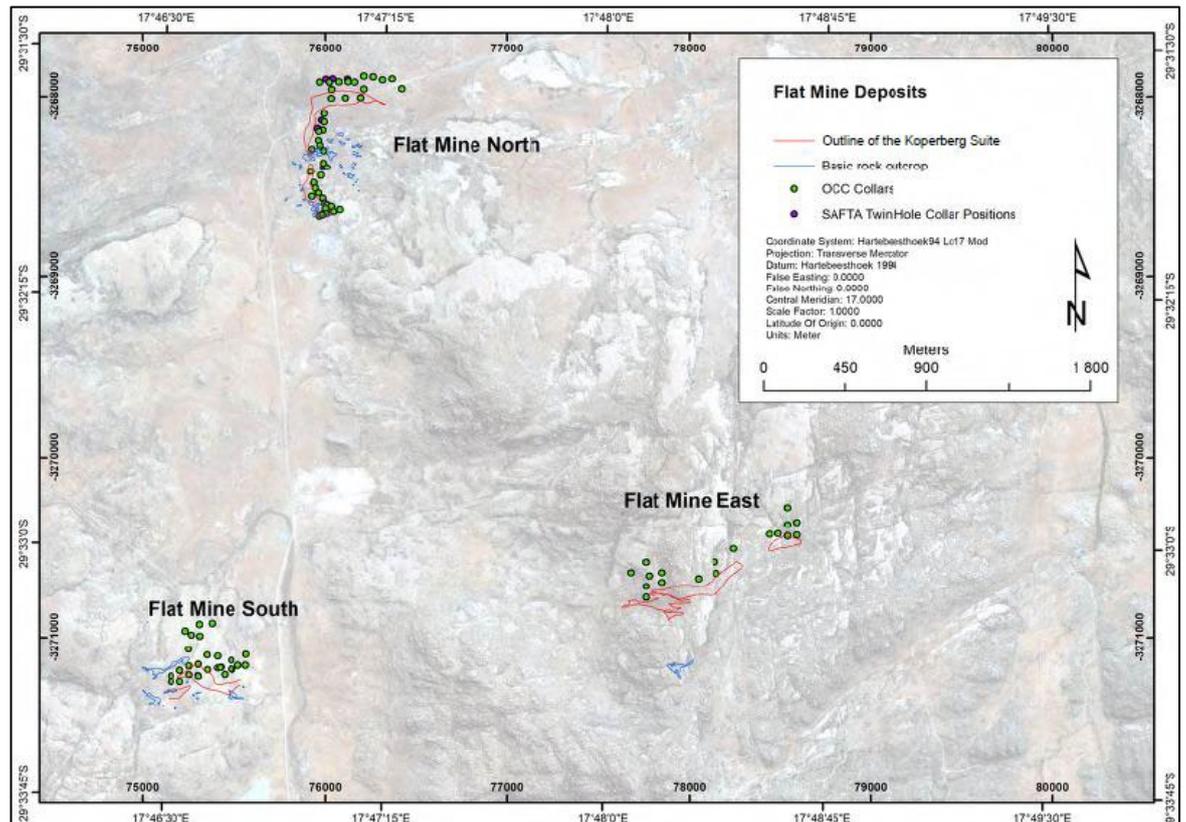
Figure 4.5: Geology of the Flat Mines area



Source: CCC (2018)

Small occurrences of biotite-rich granulite and augen gneiss recorded at different localities are also associated with the Concordia Granite. Small outcrops of syenite often containing a fair amount of amphibole-biotite approaching the composition of shonkinite, are associated with the Flat Mines Fault while intercepts of >40 m shonkinite have been recorded above the northern segment of the FMN area.

Figure 4.6: Generalised plan of the Flat Mines deposits



Source: CCC (2018)

Mapping in the 1960s revealed copper staining in the southern portions of the area, along an east-west-trending diorite lens encompassed by practically barren anorthosite, emplaced into southerly dipping Concordia Granite. The average width of the mineralised diorite was reported to be about 6 m. The enveloping anorthosite body has the same strike length as the diorite lens and, including the width of the almost centrally located diorite, indicated a maximum width of about 30 m. Previous and later prospecting in the diorite indicated that it was mineralised. Several other, similar outcrops in the area have been found to be mineralised.

Geology and mineralisation models

Z Star Mineral Resource Consultants (Pty) Ltd (Z*) was retained by New Okiep Mining Company (Pty) Ltd (NOMC) to provide an updated Mineral Resource Estimate that included estimating and classifying the Flat Mine East (FME) Mineral Resource, the Flat Mine North (FMN) Mineral Resource and the Flat Mine South (FMS) Mineral Resource, with an effective date of January 2023. Orion Minerals made the updated estimates public on 28 August 2023.

The 3D mineralised units represented by the wireframe solids are delineated based on a copper threshold value of 0.5% to identify mineralised domains. The grade cut-of applied during estimation of Mineral Resources was 0.7% Cu.

Mineralisation often occurs as discrete mineralised lenses within and normally following the general trend of a broader mafic intrusive body. With the irregular intrusive nature of the geology and mineralisation it is often difficult to correlate individual lenses between sections and boreholes, and in many cases it was necessary to group lenses into a broader envelope. Modelling of internal 'waste pillars' (mostly associated with granitic inclusions within mafic bodies) as a separate domain for estimation was only possible at FME. In the other areas it was not possible to correlate internal waste zones between drill holes over any significant distance.

No distinction was made between the oxide and sulfide mineralisation as generally the oxide component is insignificant within the Flat Mines deposits.

4.2.2 Mineral Resource Estimation

Data integrity

The historical drill hole dataset predates 2017 and constitutes approximately 97% of the combined dataset of FMN, FME and FMS. SRK understands from the technical report underpinning the Mineral Resource Estimates (Z*, 2023) that none of the historical drill core is available for inspection, though an audit trail of hard copy data indicates a good correspondence with what is captured electronically in the database. Z* (2023) also indicates that actual hardcopies reviewed are sound with respect to geological records and interpretation. There are no historical assay QA/QC results/report to assess the reliability thereof of this component of the assay dataset. SRK notes that the period during which the historical data was acquired, industry QA/QC norms were not as established as those currently in practice, and it is thus practically impossible to assess the accuracy of historical assay dataset; more so, taking cognisance also of the fact that there are no half/split drill cores physically in storage for review. The recent drill holes (13 in number), which were drilled subsequent to 2017, are all twinned diamond drill holes earmarked to validate the accuracy of historical holes. The Cu grade comparison indicates approximately 12% difference across the mineralised zone for the paired data. For a deposit with inherent nugget/variability as is expected for the Cu grade, differences in twinned holes are to be expected and therefore cannot be solely relied upon to measure accuracy of historical data. SRK is, however, satisfied that the delineated mineralised zones (i.e. based on a 0.7% Cu threshold) are spatially reasonably consistent in the paired data. SRK notes that there are no twin holes at FME that are worthy of consideration in the Mineral Resource classification.

Validation of drill hole data

A total of 463 historical holes were drilled using diamond and percussion methods between the 1950s and 1980s. A set of historical drilling sites were selected from the database for twinning by South African Tantalum Mining Pty Ltd (SAFTA) to test the veracity of the historical data; this comprised the 13 twinned holes completed at FMN and FMS in 2018.

The drilling dataset (i.e. both historical and recent) comprises collar, survey, geology, specific gravity (SG), and assay data; the FME dataset did not have records for SG.

SRK’s review of the drilling data indicates that the collars of three twin holes at FMS do not plot within the FMS deposit. Approximately 50% of the raw assay data have Cu grades exceeding 0.7%. SRK notes that not all the drill hole intercepts have records on geological logging. A summary of the findings from the validation process is shown in Table 4.4.

Table 4.4: Validation of the Flat Mines drilling data

Area	Data	Observations	Comments
FMN	Assay	241 DHs (including 9 twin DHs)	4 missing sampling intervals in drill holes WFUG001, WFUG002, WFUG007 and WFUG008; 2,629 sampling intervals out of 10,793 without Cu assays 4,347 sampling intervals of 8,164 (241 DHs) have $\geq 0.7\%$ Cu
	Collar	242 DHs (including 10 twin DHs)	No issues to report
	Geology	232 DHs; 28 lithologies logged relate to the geology	103 depth intervals out of 10,343 without logging data
	SG	235 DHs (no twin DHs)	1 missing sampling interval in DH FMN152; 1,250 sampling intervals out of 3,821 without density data
	Survey	242 DHs (including 10 twin DHs)	No issues to report
FME	Assay	151 DHs	2,970 sampling intervals out of 9,109 without Cu assays. 3,959 sampling intervals of 6,139 (108 DHs) have $\geq 0.7\%$ Cu
	Collar	151 DHs	No issues to report
	Geology	151 DHs; 31 lithologies logged relate to the geology	16 depth intervals out of 91,409 without logging data
	SG	15 DHs	Several missing sampling intervals
	Survey	151 DHs	No issues to report
FMS	Assay	82 DHs (including 2 twin DHs)	3,874 sampling intervals out of 6,857 without Cu assays 479 sampling intervals of 2,983 (82 DHs) have $\geq 0.7\%$ Cu
	Collar	83 DHs (including 3 twin DHs)	3 Twin DHs (FMS016T, FMS027T, FMS039T) plots out of the Okiep Cu Project (collars not well recorded)
	Geology	80 DHs; 31 lithologies logged relate to the geology	20 depth intervals out of 6,785 without logging data
	SG	No available data	No comments
	Survey	83 DHs (including 3 twin DHs)	No issues to report

Source: SRK (2023); Orion Minerals Ltd (2023b)

Notes: DHs: Drill holes

Assay QA/QC validation

The samples from the twinned holes were analysed at the ALS Analytical Laboratory in Edenvale (South Africa). The QA/QC procedures used to monitor the precision and accuracy of the 422 samples included 24 blanks (5.69%), 21 CRMs (4.68%), 17 field duplicates (4.03%), 11 pulp duplicates (2.61%) and 15 coarse rejects (3.55%) as shown in Table 4.5. An umpire laboratory (Intertek, Johannesburg) analysed 5% of the total samples across the entire grade range of assay results. The results of the analysis from ALS and Intertek laboratories were also not provided to SRK.

CCC (2018) provides details on standard operating procedures (SOPs), sampling techniques and preparation, results, and interpretations of the recent assay QA/QC, and information on the CRM types.

Table 4.5: Number of QA/QC and twinned holes samples

QAQC Sample	Number	Percentage
Blanks	24	5.69%
CRMs	21	4.98%
Field Duplicate	17	4.03%
Coarse Reject	15	3.55%
Pulp Duplicate	11	2.61%
Twinned Hole Samples	334	79.15%
Total	422	100%

Source: SRK (2023); CCC (2018)

A summary of the assay QA/QC results for the validation twinned drilling program conducted in 2018 is presented below.

- **Blanks:** a total of 24 blanks comprising clean white, quartzite (confirmed to be pure silica content) were used as part of the QA/QC program. A blank sample was inserted approximately once every 25 to 30 samples, generally after mineralisation, at the beginning of the batch and where there were two holes in a batch, at the beginning of each hole. SRK is satisfied that the blank samples account for 5.69% of the sampling program. The overall results from the blank samples are acceptable and indicate a low level of contamination during sample preparation and between samples
- **CRMs:** Five CRMs (AMIS0088, AMIS0330, AMIS0384, AMIS0399 and AMIS0475) were used. One CRM sample was inserted in every 20 samples for QA/QC analysis. A total of 21 CRMs were inserted for this program, accounting for approximately 4.98% of the total samples. All but two of the CRM results were well within the two standard deviation limits. SRK is satisfied with the selection of CRMs; they offer a suitable grade range, they are the appropriate material/matrix choice, and they account for approximately 5% of sampling. The overall results from the CRM samples are acceptable and indicate accuracy during analysis at the ALS laboratory.

- **Duplicates:** Seventeen field duplicates (4.03%) were submitted as part of the QA/QC program. These were mostly selected from better mineralised intervals by splitting the usual half-core samples into identical quarter samples, before being submitted to the laboratory. The results indicate a wide variation over the entire range of values reflected by the correlation coefficient of 85%, but this is particularly evident above 0.4% Cu. Eleven pulp duplicates, one for each hole, were re-numbered and sent back to ALS for analysis. The results indicate a very close correspondence with the originals with a near-perfect correlation coefficient of 99% (R^2 of 0.9979). In addition, 15 coarse rejects (3.55%) were re-analysed by ALS, including two from places where anomalous results were initially obtained. These results were very closely comparable with a correlation coefficient of 96% (R^2 of 0.96).

SRK is satisfied that duplicates account for approximately 10% of the sampling program. The overall results from the duplicates are acceptable. The high correlation coefficient of the pulp duplicates and coarse rejects indicate precision during analysis at the ALS laboratory.

- **Umpire Laboratory Analysis:** A subset of 22 samples, including one CRM were submitted to Intertek, from the validation twin drilling program for check assays. Routine samples showed a very close correlation coefficient (R of 0.99) with the ALS analyses.

SRK is satisfied with the results from the independent analysis. The overall results are acceptable and indicate integrity in the ALS laboratory analysis.

4.2.3 SRK comments

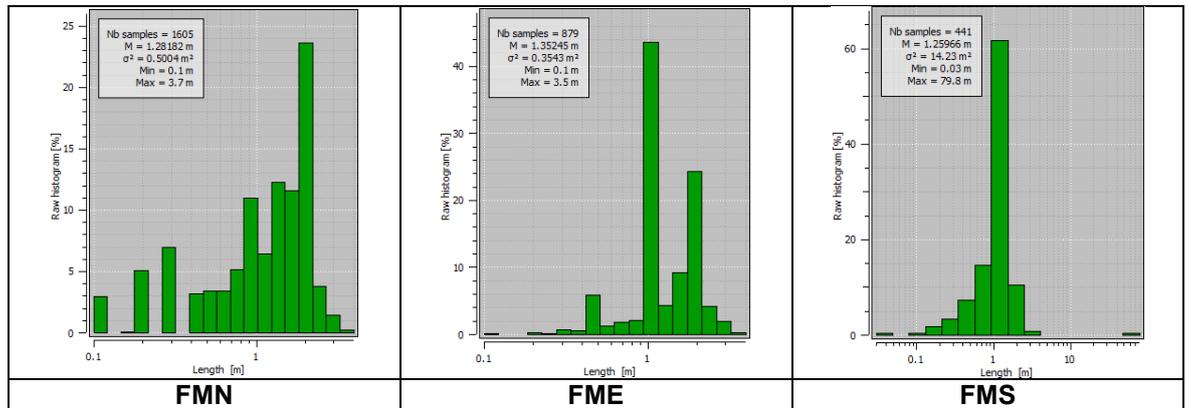
SRK considers that the QA/QC program for the validation twin drilling program put in place at FMN and FMS is sound and consistent with generally recognised industry best practices. The 88 QA/QC samples represent 20.85% of the total 422 samples. Since the results and original laboratory certificates from the laboratory have not been shared, SRK cannot comment on the materiality or accuracy of the QA/QC program. The QA/QC protocol included CRMs, blanks, field duplicates, coarse rejects and pulp duplicates to ensure data integrity for the project. SRK is satisfied with the five CRMs selected, as it offers a suitable grade range and material choice for the deposits.

All sampling intervals with cut-off grade of $\geq 0.7\%$ Cu (orebody) for the FMN, FME and FMS deposits have geological logging data. Similarity of lithologies logged from drill holes for the FMN, FME and FMS deposits allows SG data for the FMN and FME deposits be used for the FMS deposit. Overall, SRK is satisfied with the quality of the twinned drilling data.

Mineral Resource Estimates

The histogram of sample intervals of the mineralised intercepts (Figure 4.7) indicates that the modal length is 1 m at FME and FMS and 2 m at FMN. More than 50% of the samples are at a bigger support than 1 m. At FMN and FME samples were composited to 2 m lengths and at FMS were composited to 1.5 m lengths. SRK considers this to be appropriate in terms of reasonably representing the nugget effect.

Figure 4.7: Histogram of length-mineralised intercept at the Flat Mines deposits



Note: Length (X) axis is in log-transformed space

SRK has reviewed the variography described in the Z* MRE report supporting the 2023 Mineral Resource update and is satisfied that variogram modelling and resulting parameters are acceptable.

Copper assay values were capped to selected threshold using the Parker methodology (Parker 1991). FMN cap 11.79% Cu, FME cap 11.62% Cu, FMS no cap.

After applying a kriging neighbourhood analysis (KNA), the cell sizes and sub cells selected for FMN, FME and FMS block models are shown in Table 4.6.

Table 4.6: Block model cell sizes

Deposit	Block Cell Size	Sub-Cell Size
FMN	30 m (X) × 30 m (Y) × 8 m (Z)	1 m × 1 m × 1 m
FME	30 m (X) × 8 m (Y) × 30 m (Z)	1 m × 1 m × 1 m
FMS	30 m (X) × 6 m (Y) × 30 m (Z)	1 m × 1 m × 1 m

Source: Orion Minerals ASX/JSE Release dated 28 August 2023

The composite data were used to estimate the block grades using ordinary kriging (OK) where this was considered appropriate. Blocks that were not estimated by the first-pass OK were estimated using the first pass estimates as input to a moving average.

For FMN, neighbourhood analysis resulted in an optimum search neighbourhood of 45 m × 25 m × 8 m for local block estimation. The second-pass estimates were calculated from the first-pass OK estimates using a moving average technique with the search radii doubled. 72% of blocks (94% of the volume) were estimated by the first pass, with the remaining blocks estimated by the second pass.

For FME eastern bodies, neighbourhood analysis resulted in an optimum search neighbourhood of 100 m × 5 m for local block estimation. The second pass estimates were calculated from the first pass OK estimates using a moving average technique with the search radii doubled. Ninety-three percent of blocks were estimated by the first pass, with the remaining blocks estimated by the second pass.

For the waste pillars a length-weighted average grade was applied. For the FME western body, there is a lower sample density and no clear spatial relationship between samples. Local block estimation using OK was not feasible and an inverse distance weighting to the power of two (IDW²) approach was used.

For FMS, neighbourhood analysis resulted in an optimum search neighbourhood of 70 m × 70 m × 5.5 m for local block estimation. The second-pass estimates were calculated from the first-pass OK estimates using a moving average technique with the search radii increased. 54% of blocks were estimated by the first pass, with the remaining blocks estimated by the subsequent passes.

Bulk densities (t/m³) were determined using the water displacement method. For FMN there was a good spread of density measurements through the deposit with a total of 549 data points. For FMS there are 79 density measurements, but these are restricted to the shallower holes in the deposit. For FME eastern bodies, there are no recorded density measurements with 43 measurements in the FME western body. Bulk density was interpolated into blocks using OK in FMN and IDW² in FME and FMS.

The updated Z* Flat Mines Mineral Resource Estimate includes approximately 3% more volume than the previous (CCC, 2018) estimate with approximately 3% more copper but with ~2% drop in the overall grade. However, it should be borne in mind that these figures apply to the total Flat Mines Mineral Resources and the Measured Mineral Resource has been significantly reduced. The increase in copper tonnes is mainly related to a higher mean density estimated by Z* compared to the 2018 zonal values. The updated 2023 Mineral Resource is shown in Table 4.7.

Table 4.7: Okiep Flat Mine North, East and South Mineral Resources as at August 2023

Classification	Flat Mine	Volume (m ³)	SG (t/m ³)	Tonnes (t)	Cu (%)	Cu (tonnes)
Measured	North	159,700	2.78	444,000	1.13	5,000
	Total	159,700	2.78	444,000	1.13	5,000
Indicated	North	332,200	2.82	938,300	1.42	13,300
	East	1,179,200	2.88	3,401,900	1.37	46,730
	South	906,600	2.86	2,592,200	1.35	34,900
	Total	2,418,000	2.87	6,932,400	1.37	94,930
Measured+Indicated		2,577,700	2.86	7,376,400	1.35	99,930
Inferred	North	84,900	2.82	239,600	1.46	3,500
	East	337,300	2.85	961,000	0.95	9,100
	South	288,400	2.85	822,100	1.63	13,400
	Total	710,600	2.85	2,022,700	1.29	26,000
Grand Total		3,288,300	2.86	9,399,100	1.34	125,930

Source: Orion Minerals ASX/JSE Release dated 28 August 2023

Note: cut-off grade of 0.7% Cu, numbers and totals have been rounded

SRK has reviewed the updated Mineral Resource models provided by Z* and is satisfied that the modelling methodologies and estimation parameters and techniques are appropriate. However, SRK is of the opinion that the declaration of a Measured Mineral Resource is over-optimistic when one considers the lack of QA/QC with respect to the historic assay data and no physical drill core is available for inspection. As opined above, twin drilling does not necessarily confirm the reliability of historical assay data for a nuggety copper orebody; more so considering the twin drilling constitutes only 3% of the dataset and is not widely distributed across the deposits. This said, the twin hole program did not identify any previously unrecognised issues with the historical data.

SRK therefore recommends that the Measured Mineral Resources reported for FMN be downgraded to Indicated Mineral Resources for valuation purposes. The revised (downgraded) Flat Mines Mineral Resource for valuation purposes is shown in Table 4.8.

Table 4.8: SRK restated Mineral Resources for valuation purposes

Classification	Flat Mine	Volume (m ³)	SG (t/m ³)	Tonnes (t)	Cu (%)	Cu (tonnes)
Indicated	North	491,900	2.81	1,382,300	1.33	18,300
	East	1,179,200	2.88	3,401,900	1.37	46,730
	South	906,600	2.86	2,592,200	1.35	34,900
	Total	2,577,700	2.86	7,376,400	1.35	99,930
Inferred	North	84,900	2.82	239,600	1.46	3,500
	East	337,300	2.85	961,000	0.95	9,100
	South	288,400	2.85	822,100	1.63	13,400
	Total	710,600	2.85	2,022,700	1.29	26,000
Grand Total		3,288,300	2.86	9,399,100	1.34	125,930

Source: SRK calculation, October 2023

4.2.4 Risks and opportunities

SRK considers that the declaration of a Measured Resource category is over-optimistic when one considers the lack of historical assay QA/QC data and the fact that the historical data contributes approximately 97% of the entire dataset. This should be taken into account when converting Mineral Resources into Ore Reserves.

While based on survey estimates at the time of mining, there is some uncertainty around the accuracy of the mining voids provided for depletion.

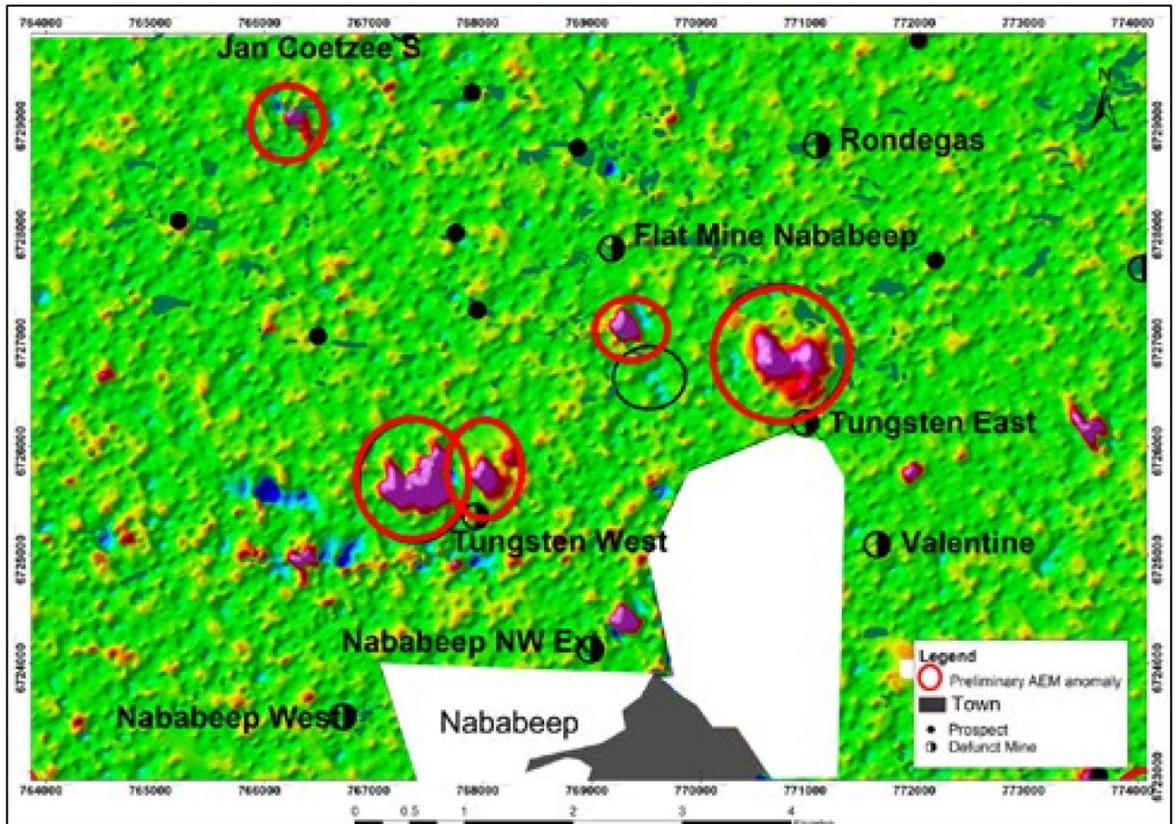
4.2.5 Prospectivity

Outside the three mineralised footprints, there exists a significant amount of geophysical data that demonstrates potential copper mineralisation and drill hole data that has been used to ground-truth the presence of Cu mineralisation. There is also evidence of historical mining outside these footprints. A recent geophysical survey undertaken by Orion using extensive SkyTEM™ helicopter-borne electromagnetic geophysical (AEM) survey within the permit area, has been able to identify significant copper anomalies, of which some have been ground-truthed with drilling (Figure 4.8).

The magnetic data from the SkyTEM™ survey has assisted in the prioritisation of AEM targets. The emplacement of the mafic intrusions that host copper deposits within the permit area are known to be structurally controlled and the magnetic data from the SkyTEM™ survey has contributed to the understanding of the geology and structure, which has assisted with exploration targeting.

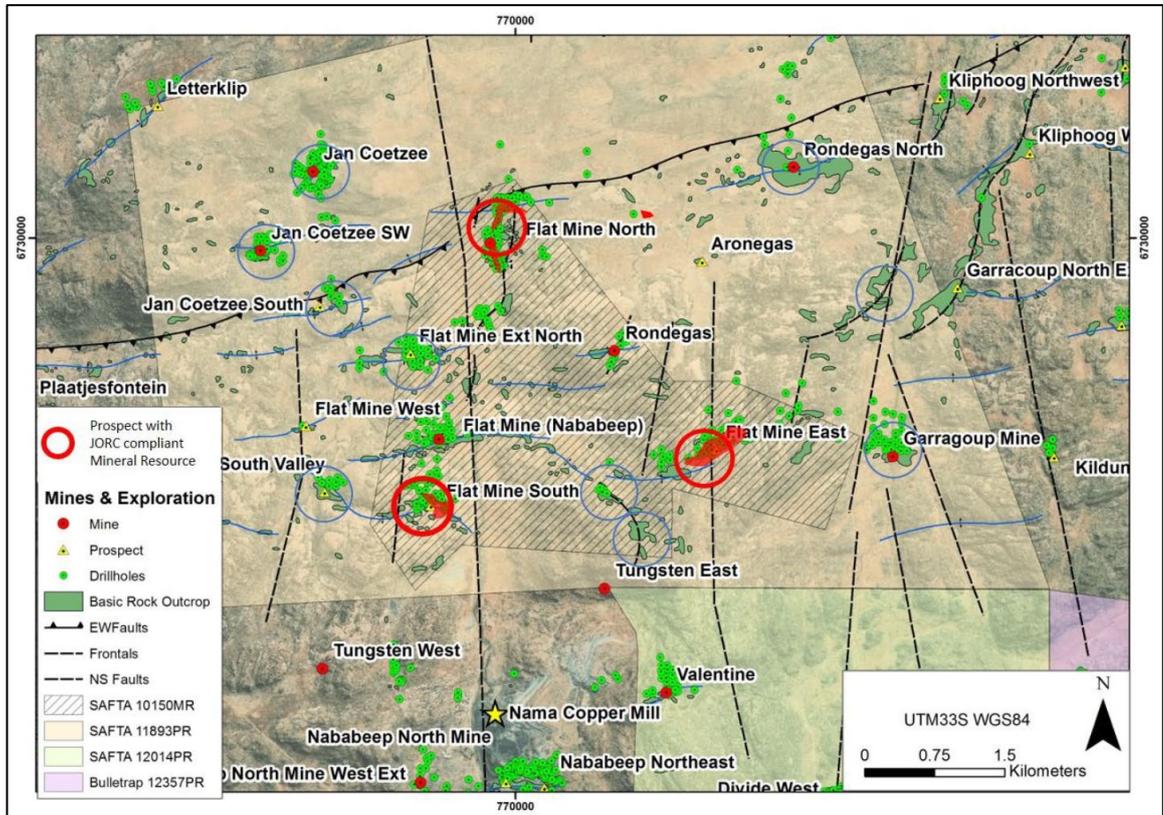
Figure 4.9 is a plan view showing historical drill holes within and outside of the Flat Mines area.

Figure 4.8: AEM targets on the SAFTA mining right close to Nababeep, illustrating the proximity of these targets to large known deposits



Source: Orion (2022a)

Figure 4.9: Layout of historical drill holes (green) within and outside of the Flat Mines areas (red circles)



Source: Orion's 2022 Annual Report

4.3 Hydrology/hydrogeology

4.3.1 Water supply

Numerous water supply sources have been identified including:

- Nababeep North Mine Shaft (NMS)
- Nama Khoi Municipality Water
- Sedibeng Water Sedibeng Water
- Nababeep Wastewater Treatment Works
- Flat Mines South Ventilation Shaft (FMS-VS1).

All these sources need to be further investigated to finalise the water supply scheme although there has been progress regarding an offtake agreement to abstract the treated water from the Nababeep wastewater treatment works. The make-up water supply for process water will be sourced from the Nababeep wastewater works up to 1,000 kl/d in terms of the agreement with the NKM (NKM, 2019).

4.3.2 Water balance

A high-level site-wide water balance from where the water supply sources and infrastructure detailed in the Scoping Study were evaluated. The following should be noted:

- The raw water requirement for the process plant without any return water from the TSF is 1,632 m³ per day.
- The raw water requirement for the process plant is 1,032 m³ per day when the process plant is at full capacity and there is 35% return water from the TSF.
- The make-up water for the process plant with 35% return water from the TSF is therefore 600 m³ per day.
- The potable water requirement for the Project is 48 m³ per day.
- The decline and open pit mining and dust suppression water requirements are 80 m³ per day.
- It is estimated that the (NMS) can supply 1,363 m³ of water per day.

4.3.3 Groundwater

Groundwater that accumulates in the existing FMN underground section is currently the only water source on the Okiep Project. This is not sufficient to meet the estimated requirements of the project. Additional water sources to supply water to the Okiep Project will be required, as outlined above. Water from mine dewatering activities and rainfall run-off running through the area will be utilised to supplement the supply from these sources. No hydrogeological or groundwater studies have been conducted during this phase of the Okiep Project. However, yield and drawdown tests conducted on the 'water raise' and old Nababeep shaft recommend yields of 2.5 m³/hr and 56.8 m³/hr, respectively.

4.3.4 Summary of issues

The biggest issue with regards to water management is the supply of water. Mitigation measures undertaken include an estimation of the accumulated groundwater in the FMN workings with the opportunity to dewater over a longer period to maximise the evaporation potential. The annual 2023 report indicates that dewatering has already started.

Nababeep Wastewater Treatment Works is the likely water supply source.

4.4 Rock engineering

No rock engineering information for the Okiep Project was available for review. The geotechnical parameters in Orion (2021b) – mine design criteria – are reportedly based on a report by OHMS completed in October 2018, which was not provided to SRK. It is stated in the mine design criteria that the rock is very competent and "Stable spans were determined to be upward of 100 m at all depths". It is very rare to have such good ground conditions and therefore there should be good geotechnical data and evidence to support such a bold statement. Conceptual longhole stope and vertical crater retreat stope layouts are presented. An extraction ratio of 85% is applied to account for rib pillars. It is stated that no backfill will be used.

The methods are non-entry, so personnel will not be exposed in the stopes. However, if the spans are too large for the actual rock mass conditions, there may be excessive overbreak, which could result in damage to drill drives, ore loss and dilution. If the rib pillars fail or the spans are generally excessive, caving may occur, which could result in damage to underground and surface infrastructure.

The geotechnical investigations and designs are important to manage these risks. There is insufficient information to evaluate the geotechnical risks at this stage.

4.5 Mining and Ore Reserves

4.5.1 Underground mining

Strategy

The Flat Mines Project consists of three orebodies, namely FMN, FMS and FME. FMN has a pre-existing decline and level accesses, ventilation raises and some production areas already partially prepared for production blasting by the previous mining operations and is thus planned to be mined first.

The FME and FMS deposits are undeveloped and will require new decline accesses to be established from surface.

Production is planned to commence from the three deposits as follows:

- FMN: Month 11
- FME: Month 51
- FMS: Month 102.

Production will peak at 65 kt/m, with FMN underground peaking at 35 kt/m, with the balance from the FM open pit. FME and FMS will both be mined at 65 kt/m.

Mining methods

FMN was historically mined using vertical crater retreat method (VCR). Orion has planned to continue using this method together with bord and pillar (B&P) and long hole open stoping (LHOS). The methods have been selected according to the varying orebody geometries. SRK concurs with the application of the three methods. Both B&P and LHOS are well known and widely used, less so with VCR, although it this appears to be appropriately selected for the narrow steeply dipping areas and was practised prior to the mine closing previously.

Access to all three mines will be via the existing decline for FMN and new declines for the other two mines. The declines will be used for men and material as well as truck haulage.

All development and production operations are planned to be undertaken using trackless mobile equipment, i.e. LHDs, dump trucks and drill rigs, with vertical development being raise bored.

Access development and in-stope development, with perpendicular and transverse drill drives, is standard for this type of operation. Turning bays are provided off the access crosscuts that link the haulage to the orebody; these will also serve as dumping bays for the LHD when a truck is not available. SRK concurs with this arrangement.

The three methods are well described, with no apparent deviations from what would be regarded as standard practice.

4.5.2 Mining schedule

Two 10-hours shifts are proposed, with a 2-hour re-entry between the shifts, which is reasonable for this type of operation.

Development has been scheduled at 80 m per month for the decline and 100 m per month for the draw-point drives and drill drives. SRK concurs with the rate for the decline but considers that this rate should also be applied to the other drives.

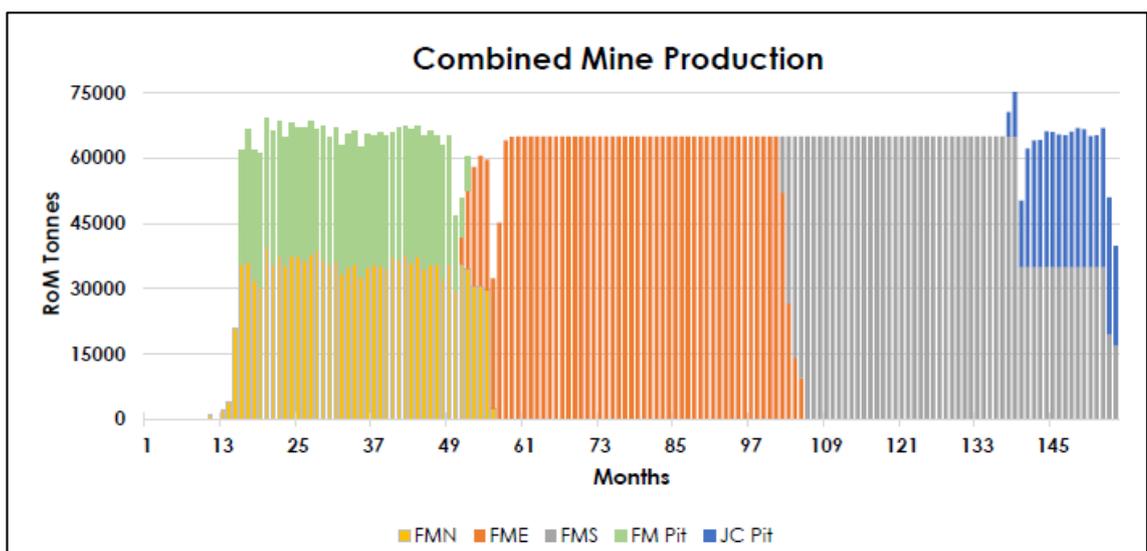
A 6-month production ramp-up period is proposed to allow for the mining crew’s learning curve, which SRK concurs with. Production from FMN is scheduled to end within four years. The head grade is variable ranging from 0.9% Cu and peaking at 2.0% Cu later in the mine life.

FME is scheduled to start before FMN is mined out and last for 54 months, during which period 3.1 Mt will be mined, at an average RoM grade of 1.33% Cu. Steady state production will take longer at FME to achieve, taking 10 months. SRK considers this reasonable.

2.9 Mt are mined from FMS, the third and final Flat Mines deposit to be exploited. Production starts five months after 16 months of access decline development having been completed. The average RoM grade for FMS is 1.31% Cu.

Figure 4.10 shows the combined mine production schedule.

Figure 4.10: Okiep Project combined mine production schedule



4.5.3 Ventilation

The ventilation study proposes a quantity of 134 m³/s, using an input parameter of 0.06 m³/s/kW, which is reasonable. A standard vent system is proposed, with intake air down the access decline, with three exhaust shafts.

The ventilation systems for FME and FMS are not discussed in detail, but mention is made of fresh air intakes being via the declines and exhaust air up two vent raises for each deposit.

4.5.4 Modifying factors

The same set of modifying factors (overbreak of 5% and mining recovery of 95%) have been applied to all three mines. SRK considers that more work will need to be done in this area in the next phase of study.

4.5.5 Mining equipment

Standard trackless mobile mining equipment has been selected and efficiency factors have been provided. SRK considers a factor of 250 m per month for a development face jumbo to be on the high side and considers 200 m per month to be more appropriate.

4.5.6 Operating costs

Development costs (contractor) have been assumed to be ZAR35,000 per metre, which SRK considers reasonable. Stopping costs of ZAR235/t for LHOS and VCR appear to be optimistic, with a mining cost of ZAR396/t being more reasonable.

4.5.7 Surface and open pit mining

The 2021 Scoping Study (Okiep, 2021b) focused on extracting a portion of the FM and Jan Coetzee Inferred Resources using open pit mining as a prospect for early cash flow. The Scoping Study has been prepared to an accuracy level of ± 25% using Inferred Mineral Resources for open pits.

Flat Mines (Nababeep) and Jan Coetzee Mineral Resources outcrop at surface and have been identified as potential open pit operations. The Inferred Mineral Resources estimated for the Flat Mines (Nababeep), Jan Coetzee Mine, total 2.0 Mt grading 1.4% copper for 29,000 t of contained copper. The Mineral Resource Estimate for Nababeep Kloof Mine is excluded from the preliminary production target .

4.5.8 Methods and design

The open pits were planned to be mined using conventional drilling and blasting in conjunction with loading and hauling methods. Contract mining is planned to be used for all drill and blast and load and haul activities, which will eliminate the upfront mining fleet capital costs.

Pit optimisation was not performed at this concept study level, and the ultimate pit shells were determined by estimating a realistic pit depth based on the specified pit slope criteria. Key mine design parameters used to develop the conceptual pit designs are presented in Table 4.9.

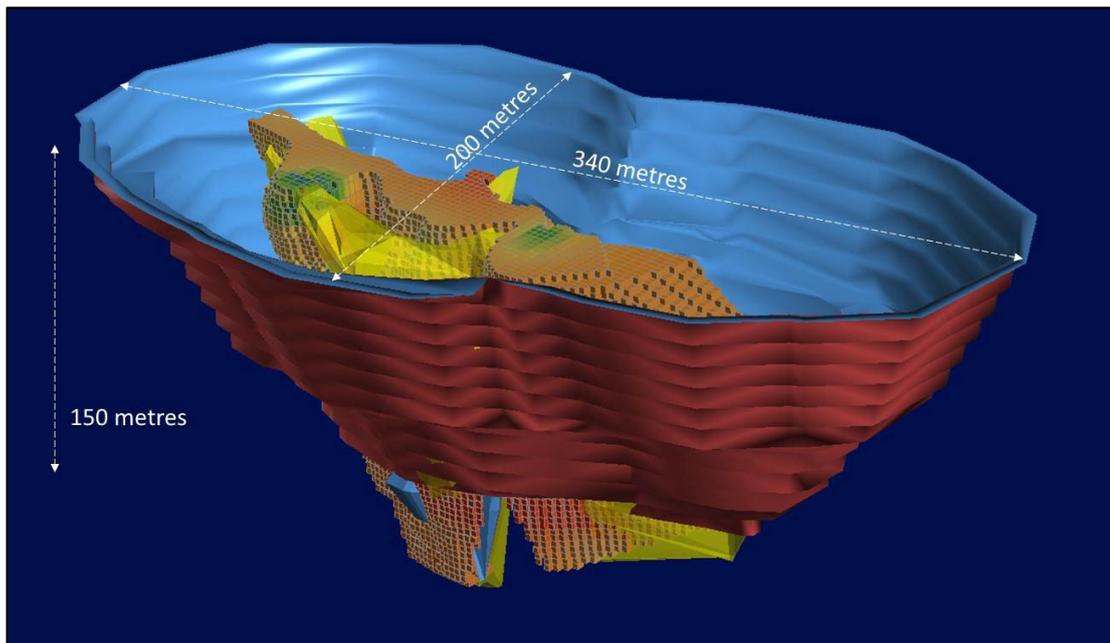
Table 4.9: Open pit mine design parameters

Parameters	Unit	Flat Mine (Nababeep)	Jan Coetzee
Face angle	°	90	90
Bench height	m	10	10
Berm width	m	5	5
Ramp width	m	15	15
Slop angle	°	53	57
Maximum ramp inclination	%	10	10

Source: Orion (2021b)

The Flat Mines (Nababeep) Mineral Resource is irregular in shape and approximately 200 m in length and 35 m at its widest point, extending approximately 180 m below surface. The proposed pit is planned to mine 1.05 Mt at an average RoM grade of 1.32% Cu over a three-year period to a depth of 150 m, with a stripping ratio of 5.8:1. Historical drift mining following the higher-grade vein has taken place in the deposit from a small vertical shaft. The resultant voids from historic mining will need to be considered in the open pit mining. A general view of the Flat Mine (Nababeep) open pit design including the Mineral Resources model is shown in Figure 4.11.

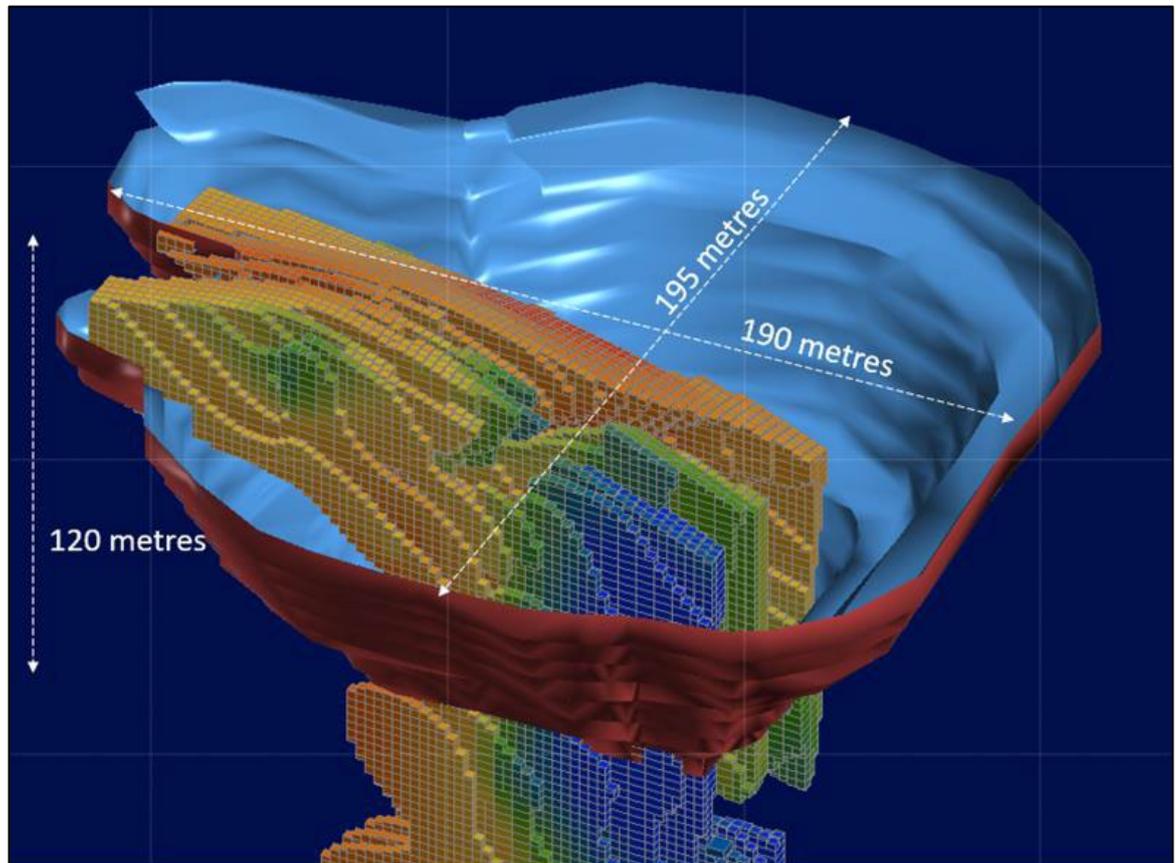
Figure 4.11: Flat Mine open pit design



Source: (Orion, 2021b)

The Jan Coetzee deposit also outcrops on surface and has an irregular structure comprising several lenses. The Mineral Resource has a length of 170 m on surface and is approximately 80 m wide, extending 300 m below surface. The proposed pit is planned to mine 480,000 t at an average RoM grade of 1.15% Cu over 18 months to a depth of 120 m, with the average stripping ratio of 5.4:1. A general view of the proposed pit design including the resource model is shown in Figure 4.12.

Figure 4.12: Jan Coetzee open pit design



Source: (Orion, 2021b)

4.5.9 SRK comments

The study has been performed at a conceptual level. No material issues were identified by SRK. The mine planning and modifying factors have been applied to a scoping study level of accuracy and the chances for technical and economic viability are considered reasonable. However:

- Pit optimisation was not performed at this concept study level; the ultimate pit shells were determined by estimating the optimal depth based on the specified slope criteria.
- No geotechnical assessment on open pit designs is available.
- The voids from historic mining in Flat Mine (Nababeeb) will need to be considered in the open pit mining.

Therefore, further study phases are necessary to improve the economics of the open pit operations using optimisation practice with steady state costs and prices, pit slope design and operational risk assessments.

4.5.10 Ore Reserves

No Ore Reserves have been declared for the Okiep Project. The 2 Mt Inferred Mineral Resources with average Cu grade of 0.14% estimated for the Flat Mine (Nababeep) and Jan Coetzee is the basis for the open pit mine design. The proposed Flat Mine pit is planned to mine 1.05 Mt at an average RoM grade of 1.32% Cu. The proposed Jan Coetzee open pit is planned to mine 480,000 t at an average RoM grade of 1.15% Cu.

4.5.11 Production schedule

The FM Pit was planned with production starting in Month 16, providing time for a new pit to be developed and to coincide with the mineral processing plant's commissioning. Combined production from the FMN underground and FM Pit is scheduled to build up to the steady state output of 65 kt/m by Month 9.

The JC open pit was scheduled to commence production at a later stage of the LoM production schedule.

The RoM production rate for both the FM and JC open pits is expected to be approximately 30 kt/m. The FM Pit contains 1.05 Mt ore in total, to be mined at an average diluted copper grade of 1.32% (5% dilution and 95% mining recovery); the JC pit contains 0.48 Mt ore to be mined at an average diluted copper grade of 1.15% (8% dilution and 95% mining recovery). It also includes an 0.84% break-even in situ copper equivalent grade (the 2021 Scoping Study (Orion, 2021b) operating costs were applied to the financial model to determine break-even grades for the underground and open pit mining scenarios).

4.5.12 Mining operating and capital costs

Open pit costs were based on written contractor rates for drill and blast and load and haul, as of March 2021. The services and utilities costs were estimated by the mining team conducting the Scoping Study. The drill and blast costs include a 5% allowance for pre-split drilling. The load and haul costs are based on a rate of ZAR51.50/t at surface, with a depth premium of 5% increase per 10 m additional pit depth. Based on the average stripping ratio of the two open pits of 5.7:1, the direct open pit mining cost per tonne treated equates to ZAR486/t.

In addition to the direct mining costs, mobilisation and de-mobilisation costs of ZAR1.6 million for an open pit contractor were assumed.

Other capital estimates provided by Orion's experts that may apply wholly or partially to the open pit operation are indicated in Table 4.10.

Table 4.10: Flat Mines 2021 Scoping Study capital cost estimates

Capex Summary	ZAR (‘000)	A\$ (‘000)
Access Roads and Haul Roads	5 965	536
Open Pit Power Supply & Surface Reticulation	5 627	506
Geological Capex	5 300	476
Miscellaneous Capex	3 250	292
Environmental rehabilitation	2 500	225

Source: Orion (2021b)

Capital expenditure estimated to an estimation accuracy of ±25% was compiled by the various engineering consultants employed by Orion who participated in the 2021 Scoping Study; i.e. A&B Global Mining – underground and open pit mining; METC – processing plant and general engineering; METC – bulk power and bulk water infrastructure; Gariep Mining – processing plant equipment; Epoch Resources – TSF; and ABS Africa – environmental rehabilitation.

4.5.13 Engineering and infrastructure

Mechanical engineering

The purpose of this section is to review the mechanical infrastructure and engineering servicing the mine operations envisaged for the Project – at Scoping Study level – to determine its fitness for purpose in sustaining the planned ore production rate of 65 kt/m. The information reviewed was made available by Orion.

Background

Orion commissioned an internal team (assisted by various experts and specialists who contributed in their speciality areas) to conduct a Scoping Study to assess the viability of the Okiep Project. Three underground and two open pit operations are envisaged. The underground operations are at FMN, FME and FMS; the open pit operations are at FM Open Pit and at Jan Coetzee. There is existing infrastructure only at FMN; including a decline shaft, processing plant and bulk services. FME and FMS will be satellite mines while FMN will be the main site. All shared services and infrastructure are at FMN. This review therefore considered the existing infrastructure, determined what could be used, what needed refurbishment or upgrading and what had to be constructed from new, based on the requirements of the envisaged operations.

The project leaned heavily on an earlier PFS completed in May 2019 (by Minxcon (Pty) Ltd), for SAFTA as well as a host of other experts in the respective areas of the scope. There appears to be ongoing work to convert this study to a Feasibility Study. Currently, what is publicly available is an update of the Mineral Resources; nothing is available to indicate a revision of mining information that would affect the design and extent of the concomitant engineering infrastructure, leading to a revised costing. This section of the report can only assess the fitness for purpose of the mechanical engineering infrastructure envisaged in the 2021 Scoping Study (Orion, 2021b).

Surface Infrastructure

- access roads
- perimeter and indirect mining security
- decline access shafts at each of all three underground operations
- new decline shafts envisaged for FME and FMS
- RoM stockpile, service water provision and storage, stores yard
- buildings: e.g. administration offices, change house, stores, service workshops, proto room and medical stabilisation facility
- explosives storage, including emulsion storage.

Underground infrastructure

- TMM, utility vehicles and cassette loading and off-loading infrastructure and personnel carrier and supervisory vehicles
- ore-handling infrastructure from face, through sizing grizzly into ore passes, to the RoM stock pile on surface
- dirty water handling infrastructure such as face, haulage and transfer dam pump stations, pumps piping, settling and storage facilities
- service workshop, including maintenance bays with ramps and overhead cranes, crawl beams, spares and equipment store, fuel and lubricant storage and dispensing facilities as well as waste handling facilities
- service and potable water reticulation.

4.5.14 SRK comments

- The 2021 Scoping Study (Orion, 2021b) costs are no longer current and require updating; SRK assumes that if a higher level of study has been undertaken, this will have been attended to.
- The 2021 Scoping Study costs were used and where the quotations were older than the base date of the Scoping Study, costs were inflated by 4.5% per annum, to bring them up to date. SRK finds this practice acceptable for a study of this level of accuracy.
- The dewatering of the mine is mentioned but is not described in any detail. This needs to be described and equipment specified.
- Schematic layout drawings define the infrastructure to a level appropriate for a Scoping Study, with sufficient detail to enable costing of the infrastructure to this level of accuracy.
- Ore and waste are handled using well established technologies and methodologies, which reduces the likelihood of fatal flaws; i.e. pick up by LHDs and loaded onto trucks that deliver ore/waste to surface through the access declines.

Electrical engineering

SRK's review of the electrical engineering requirements is based on the review of the 2021 Scoping Study report (Orion, 2021b). The 2021 Scoping Study indicates that the forecast load requirements were taken from the earlier SAFTA 2019 PFS and compared to similar operations for benchmarking. At a power factor of 0.96, the total load forecast was estimated to be in the region of 10 MVA, made up of the following:

- 4.5 MW for the process plant
- 0.23 MW for the TSF
- 4.87 MW for mining operations, reported to be derived from the SAFTA PFS.

The 2021 Scoping Study also indicates that the first production will be at the underground FMN and FM Open Pit, followed by FME (underground), FMS (underground) as well as Jan Coetzee Open Pit in Year 4, 8 and 14, respectively. The LoM for each mine, when incorporating the Inferred Mineral Resources, is estimated to be 12 years. This means:

- In Year 4 – FMN, Flat Mines Open Pit, FME and the plant will be operating.
- In Year 8 – FME, FMS and the plant will be operating.
- In Year 14 – FME, FMS, Jan Coetzee Open Pit and the plant will be operating.

Looking at the above, it is clear that the worst-case scenarios will be between Year 4 and 8 and Year 14 onwards, whereby a minimum of at least two underground mines which, amongst others, will require power supply to ventilation fans and underground dewatering pumps. Although the scoping study has allowed for a 15 MVA transformer with future allowance for another 15 MVA transformer for redundancy and future expansions, Orion has indicated that power requirements of 10 MVA have been confirmed.

Different power supply options were reviewed in the Scoping Study to have an idea of the best possible option to consider going forward. Although it appears as if Eskom supply with a supplementary onsite solar photovoltaic system is the preferred option, Orion has indicated that Eskom was approached and a cost estimate letter was received. However, Eskom's timing appears to be unreliable and undoubtedly long. Eskom's power supply will require 30 km of 66 kV overhead power lines with, amongst others, wayleaves and Environmental Authorisations. For this reason, a power supply agreement has been concluded with NKM resulting in, amongst others, immediate availability of construction power and lower capital cost albeit with higher unit cost. Orion has also indicated that the Notified Maximum Demand issues that NKM and Eskom had previously have since been resolved, including the outstanding legacy Eskom billing issue. As an option, emergency diesel generators have been allowed to supply power to critical equipment during grid power failure.

The capital costs for the bulk power supply options appear to be in the right range as, for example, looking at the Eskom power supply costs of ZAR60,973 million, this works out to about ZAR2.7 million per kilometre, which is within the acceptable estimate. However, it is not clear whether the estimated operating (energy) cost included fixed costs (e.g. network access charge). Also, Eskom has implemented tariff increases of 9.61% in the 2022/2023 financial year and 18.49% in the 2023/2024 financial year.

For this reason, it is recommended that the energy costs be reviewed and updated in the next phase of the study. It is also recommended that the capital cost be reviewed in the next phase of the study, to ensure that they are still within the right range due to escalation that might have occurred during the period. Other costs to be considered will be those such as the budget quotation costs charged by Eskom.

PLC and Supervisory, Control and Data Acquisition (SCADA) systems have been allowed for plant automation.

4.5.15 SRK comments and recommendations

- Orion has indicated that power requirements of 10 MVA have been confirmed.
- Orion indicated that Eskom was approached and a cost estimate letter received. However Eskom's timing appears to be unreliable and long. Hence NKM was approached and a power supply agreement has been concluded with the municipality.
- It is recommended that electricity operating costs and capital costs be reviewed in the next phase of the study. Although the bulk power capital cost appeared to be within the right range, there might be some requirements to increase capital due to inflation. Also, Eskom has implemented a tariff increase of about 28.1% in the two-year period since the Scoping Study was done, hence the recommendation to review these operating costs in the next phase of the study to bring them to more up-to-date figures. It must also be noted that municipalities charge higher unit power costs when compared to Eskom.

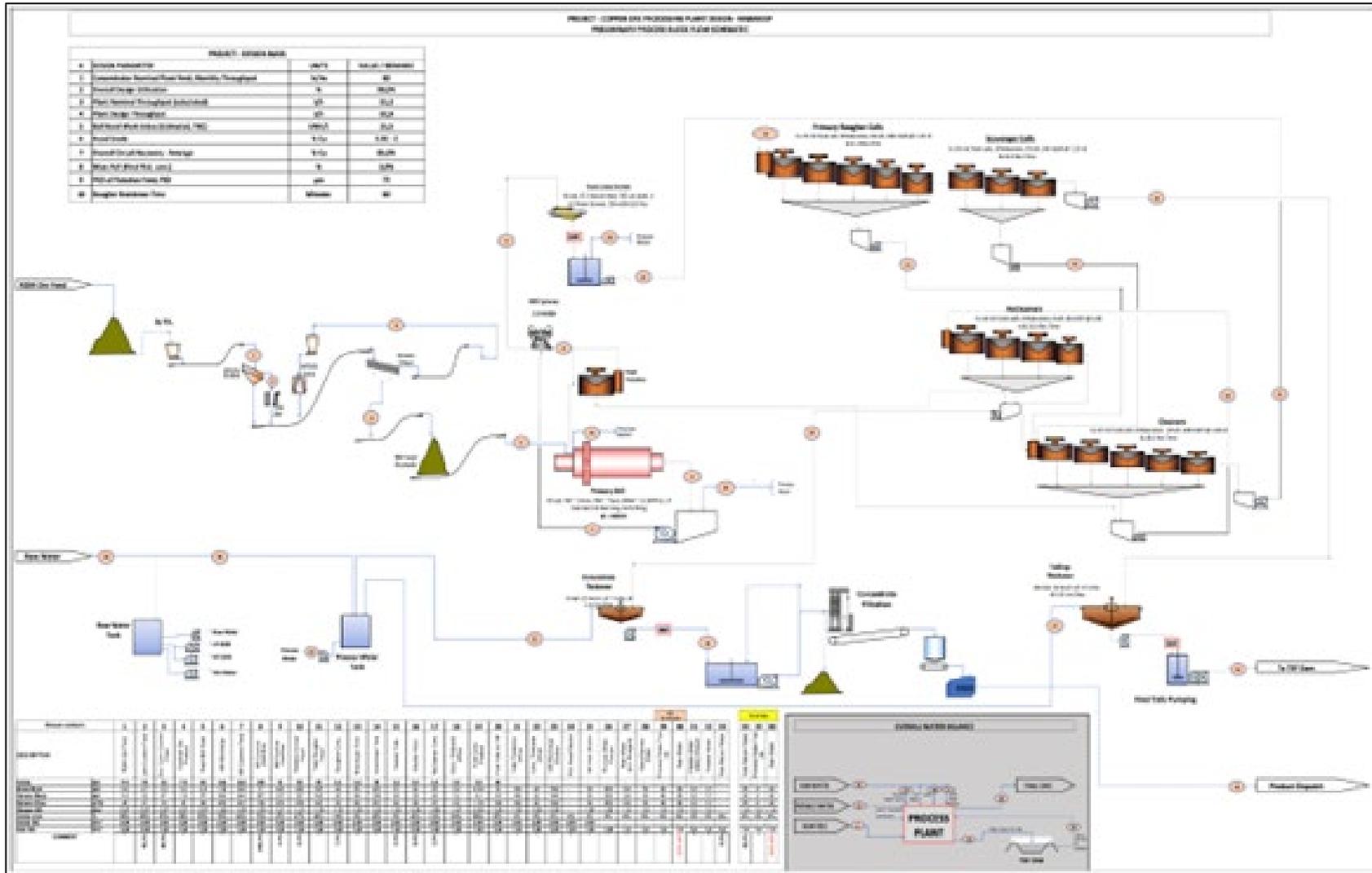
4.6 Metallurgical testwork and process design

The metallurgical review of the Okiep Project is based on the 2021 Scoping Study (Orion, 2021b).

4.6.1 Process flowsheet

The proposed flowsheet in the 2021 Scoping Study is shown in Figure 4.13.

Figure 4.13: Process flowsheet for the Okiep Project



Sources: Orion (2021b)

The proposed processing flowsheet is based on the flowsheet selected for the earlier 2019 PFS study designed to treat 60 kt/m. The processing plant consists of:

- a comminution circuit consisting of two stages of crushing (a primary jaw crusher and secondary cone crushers) followed by a single stage ball mill to achieve a P80 of 106 µm
- a flash flotation cell to remove liberated copper minerals, particularly bornite, which has historically been over ground
- a flotation circuit consisting of rougher scavenger followed by two stages of cleaning.

4.6.2 SRK comments

Two stage crushing to achieve -10 mm may be optimistic and should be confirmed with testwork.

The use of a single stage ball mill was implemented in the scoping study to reduce capital costs to produce a grind size P80 of 106 µm, compared with the historical target grind size P60 of 75 µm.

Concentrate and tailings thickeners with the concentrate filtered prior to trucking/rail to the smelter.

Process control via a control panel rather than a control room should be reconsidered given the size of the plant.

The proposed design includes the recovery of 35% of the TSF water which, without understanding the hydrology of the area and an active management strategy, may be ambitious.

4.6.3 Supporting testwork

Historical performance of the Okiep Project indicated simple mineralogy with no mention of iron sulfides and no problem minerals containing arsenic. Copper recovery to the concentrate was 85–94% producing a copper concentrate at 20–36% copper. Copper minerals in the feed were 60% chalcopyrite up to 40% bornite and the remainder chalcocite so the copper concentrate was poor relative to industry best practice of a concentrate containing 85% w/w copper sulfides which would assay ~40% Cu. Loss of 'fines' was reported as a consequence of overgrinding bornite but could also be attributed to oxidation of bornite and chalcocite from storage in stockpiles. The low level of iron sulfides present suggests oxidation rates would be low.

Metallurgical testwork completed in the 2019 PFS was completed on a single sample and while the recovery results were encouraging, the sample had a head grade significantly higher than the ore body average.

Comminution testwork results were also highly variable between laboratories with results not reconciled in the report narrative.

4.6.4 SRK comments

The metallurgical sample used for testwork cannot be considered representative and further testwork is needed to confirm metallurgical design parameters.

Variable laboratory results require further investigation before processing equipment selection can be finalised.

Given this is a scoping study, the assumption of the very limited testwork aligns with historical processing of ores in the district but should be confirmed with testwork to carry the project forward.

4.6.5 Process throughput and metallurgical recovery

There is limited narrative on the process throughput and metallurgical recovery.

4.6.6 Processing operating and capital costs

The Capex estimates have been developed for both new and second-hand plant equipment from METC's databases and factored to suit the Okiep Project's process design. Operating costs were developed based on assumptions and reviews of similar projects and the Prieska Project plant design.

4.6.7 SRK comments

There is no detail on the origin or basis behind the capital or operating costs. However, SRK does note that with the escalation in costs over the last decade the capital and operating costs in the 2021 Scoping Study can no longer be considered valid, and a full recosting is required.

Ramp-up of concentrate grade, recoveries and throughput appear to be built into the operating model though there is not enough detail to assess the validity of the assumptions used. Operating cost ramp-down should also be incorporated.

4.7 Environment and social

4.7.1 Permitting

In July 2022, the DMRE granted a 15-year mining right over the Flat Mines area enabling completion of drilling work for the feasibility study for the Okiep Project. There is the option of extending the mining right up to a maximum of 30 years. The Flat Mines Project, involving the additional prospecting areas as well as a mill and TSF, will meet the permit requirements of South African legislation.

The key environmental permissions for the mining (Flat Mines) and prospecting activities have either been obtained or are already under application. Environmental permissions for additional areas are also under application (ABS, 2021).

The proposed changes to the project description for the Flat Mines Mining Right Application Area, which require further permitting or amendments to existing permits, are as follows:

- proposed 25 km 66 kV overhead powerline
- proposed expansion of the TSF from 4.5 Mt to 7.2 Mt
- Jan Coetzee (West) open pit and Flat Mines open pit and associated structures (e.g. WRDs, haul roads).

These changes will require additional environmental permit applications and amendment to existing approvals. The applications for the WUL and environmental authorisation for the new TSF have been made, and include relevant data, water management plans and tailings designs aligned to international standards. A decision from the DWS is imminent.

Mine companies are required to prepare an SLP for each mining right in terms of Regulation 46 of the MPRDA. The SLP was approved as part of the mining right and includes Local Economic Development (LED) projects, which were endorsed by Nama Khoi Local Municipality (NKLM), as well as Human Resource Development (HRD) projects.

4.7.2 Environmental and social considerations

The studies and assessments completed to date have reportedly been done in accordance with South Africa legislation and focus on the Flat Mines Mining Right area, which comprises the Okiep Project. Baseline information is available for aspects, including landform and topography, soils, climate, fauna and flora, hydrogeology, surface water resources, heritage resources and local socio-economic context (ABS, 2021). The following key features and sensitivities have been identified:

- Soils are susceptible to erosion and not suitable for dry land crop production.
- Watercourses are non-perennial, and an unnamed tributary of the Skaaprivier traverses the area.
- Effluent discharge from the Nababeep wastewater treatment works is released into the abovementioned tributary, which is not of good quality for consumption.
- Although there are no protected natural areas within the mining and prospecting rights, there are high levels of vegetation diversity, high rates of endemism for invertebrates and many reptile species are near endemic.
- There are no spatially designated critical biodiversity areas and no threatened ecosystems as identified by the National Environmental Management: Biodiversity Act.
- Groundwater in the area is naturally of poor quality (i.e. high salinity and sulfate levels and elevated concentrations of trace metals) and hence not fit for long-term human consumption and usage is limited.
- Heritage resources are present (e.g. pre-colonial structures and stone age artefacts) but of low significance and there is a low likelihood of palaeontological resources.
- Surface evidence of graves or cemeteries have not been identified.
- Key land uses are livestock grazing and production, agriculture and urban development.
- The local area is sparsely populated and is characterised by high unemployment.
- The largest contributing employment sectors are retail, catering and accommodation.
- There are no requirements for involuntary resettlement or economic displacement.

As part of the permitting processes to accommodate the proposed changes related to the Okiep Project, several additional environmental studies and/or fieldwork will be required, and/or are underway. Those that have been completed since 2021 (not sighted by SRK, but personal communication with M. Meyer, Orion, 2023) include:

- updated groundwater assessment to include modelling of drawdown and contamination impacts associated with the revised project design
- biodiversity study focussed on new footprint areas and search for indigenous and protected plant species declared in the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009)
- air quality modelling of particulate emissions
- baseline noise monitoring
- commencement with baseline dust and groundwater and surface water monitoring
- stormwater management plan and associated site-wide water balance
- heritage study to assess new footprint (i.e. opencast, changes to road, power and water lines).

In order to meet GIIP requirements (i.e., IFC Performance Standards and World Bank Group Environmental, Health and Safety Guidelines), the following additional studies will be required for the Okiep Project:

- review and update of the EMP to include requirements of IFC PS 1 for assessment and management of environmental and social risks and impacts
- Air Quality Predictive Modelling and Impact Assessment Study to address the requirements of IFC PS 3 for resource efficiency and pollution prevention
- Biodiversity Assessment Study in accordance with the requirements of IFC PS 6 for biodiversity conservation and sustainable management of living natural resources
- Climate Change Risk Assessment that takes account of requirements in IFC Performance Standards
- Identify and compile required action plans for management of specific environmental and social aspects.

4.7.3 Environmental and social management

Orion has developed several policies that provide corporate guidance on environment and health and safety across projects, including the Okiep Project. Once the project moves to the full implementation phase, the approved management plans will need to be rolled out. Environmental and social site staff will be appointed to develop and implement the environmental and social management system to give effect to the conditions of the environmental authorisations over the life of the project. In 2021, an experienced Senior Community Social Development Coordinator was appointed.

Orion's publicly stated commitment to legal compliance, environmental performance, monitoring, auditing and reporting and socio-economic development will need to be applied to the Okiep Project.

The environmental authorisations and WULs will require that the Okiep Project undertake independent environmental reviews of approved management plans on a regular basis to ascertain the mine's performance and level of compliance. These audit findings will inform actions for continual improvement.

As required by the MPRDA, stakeholder engagement would have been required as part of the EIA processes for the Flat Mines mining rights area. Based on the limited available data, it is not possible to determine the status of relations with local stakeholders. SRK has been made aware that Orion's corporate strategy and procedures for stakeholder engagement and grievance management for the Okiep Project is applied. Orion maintains a Community Liaison Office in Springbok.

Based on available specialist investigation it does not appear that there will be a need for physical or economic displacement.

Management of risks will be an ongoing process throughout the life of the project and will inform the development and maintenance of a risk register. Orion will need to develop and maintain a comprehensive risk register that clearly sets out the key environmental and social risks and the measures being applied to reduce the identified risks at the Okiep Project.

5 Jacomynspan Project

5.1 Overview

5.1.1 Location, access and climate

The Jacomynspan Project is located in the Northern Cape Province, about 70 km east-northeast of the town of Kenhardt and 15 km east of the ghost town of Putsonderwater.

Jacomynspan can be accessed from east from the sealed N10 national highway between the towns of Prieska, Marydale and Groblershoop, then via the gravel regional road (R383) towards Kenhardt. The sealed R27 regional highway in the west connects Kenhardt with the large town of Upington to the north.

Although a rail line runs from Marydale through Putsonderwater and on to Upington, the siding at the town is no longer operational and a request for tender (RfQ) to invest in and develop the dormant siding was published by Transnet Freight Rail in 2022; it is unknown whether any interest was received regarding the tender. The RfQ states the required siding capacity as 1,200,000 t/a, accommodating 50 wagon trains. However, the siding will require the development of rail lines, a loading site and office buildings, plus land for development to become operational.

There is currently no piped water to the site; underground water is also scarce. Water would need to be extracted from the Boegoeberg Dam on the Orange River (approximately 40 km to the northeast), or an alternative extraction point, and a system of pump stations and pipelines would need to be constructed (approximately 56 km in length).

Although a 13 kV power line ran west of the project area, the line is obsolete and was in the process of being decommissioned (RHDHV, 2013). Section 0 discusses potential options described in the Concept Study (RHDHV, 2013).

An unsealed airstrip is located immediately east of Kenhardt, accessed from the R383.

5.1.2 Tenure and land use

As of the date of this report, SRK has received independent legal verification of tenure for the Jacomynspan Project. SRK has reviewed the various licence documents provided and assured itself of the correct geographical extent of the licences with respect to the exploration activities conducted by Orion.

Orion holds a mining right (Table 5.1 and Figure 5.1) to the Jacomynspan Project through its subsidiary, Namaqua Nickel Mining (Pty) Ltd (NNM) as well as three prospecting rights (or accepted prospecting right renewal applications) through subsidiaries NNM and Disawell (Pty) Ltd. Commodities covered in the mining and prospecting rights are listed below the tables.

Table 5.1: Jacomynspan Project – mining and prospecting rights⁷

Licence Code and Type	Project	Portion(s) and Farm(s)	Area (ha)	Holder and Percentage Holding	Start Date	Execution Date	Period (years)	Expiry Date
NC10032MR ^{1, a} New Order Mining Right	Namaqua-Disawell Ni-Co-Cu-PGM	Ptn 5 & RE Hartebeest Pan 175 Ptn 1 & RE Jacomyns Pan 176 Ptn 1 – 3 & RE Rok Optel 261 Farm 387	55,504.8690	Namaqua Nickel Mining (Pty) Ltd	19/09/2016	14/12/2022	30	18/09/2046
NC10938PR ^{1, 2, 3, b} Prospecting Right		Ptns 3 – 5 & RE Hartebeestpan 175 Farm 387	16,399.3970	Disawell (Pty) Ltd	09/11/2017	09/11/2017	5	08/11/2022
NC11010PR ^{1, 2, 3, b} Prospecting Right		Ptns 2 – 4 Rooiputs 172 Ptns 1, 2 & RE Jacomyns Pan 176 Ptns 1 – 3 & RE Rok Optel 261	52,998.7310		09/11/2017	09/11/2017	5	08/11/2022
NC12216PR ^a Prospecting Right		Ptns 2 - 4 Rooiputs 172 Ptns 3 & 4 Hartebeest Pan 175 Ptn 2 Jacomyns Pan 176	13,889.3041	Namaqua Nickel Mining (Pty) Ltd	14/01/2021	15/09/2021	5	13/01/2026

Notes:

¹ Section 11 application; change of shareholding (15/10/2020)

² Renewal applications accepted (04/04/2023)

³ Section102 application for added minerals (17/08/2018)

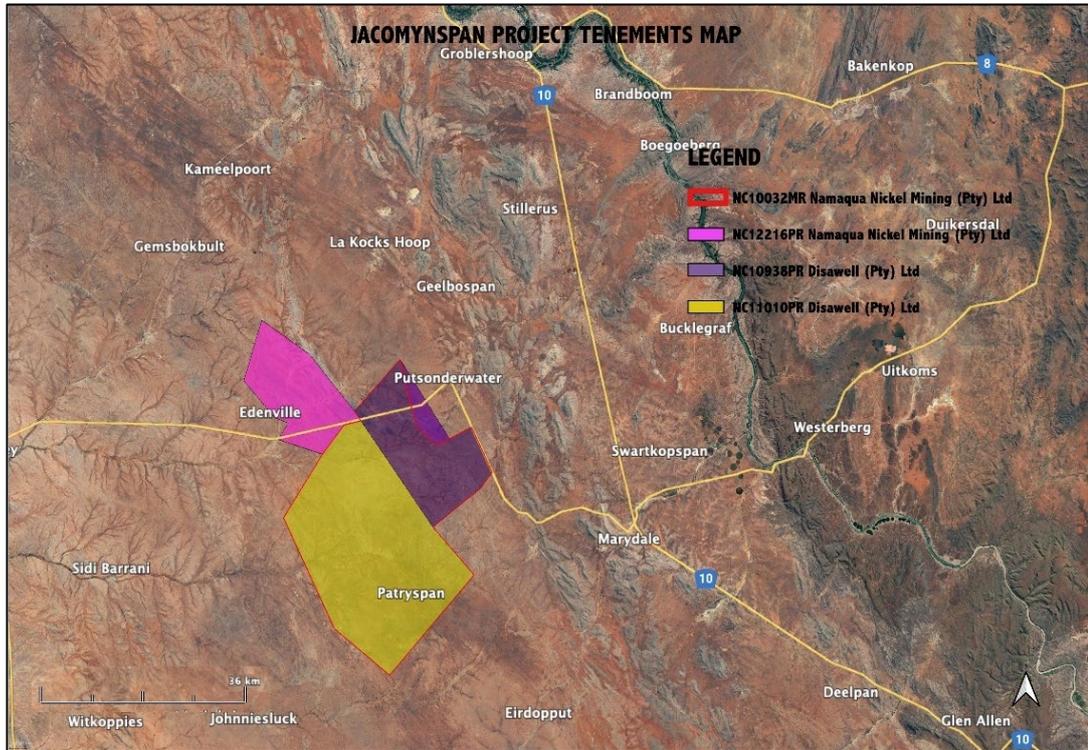
Commodities:

^a Cu, Au, Co, Ni, PGM

^b Zn, Pb, S (excludes S102 application commodities)

⁷ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

Figure 5.1: Jacomynspan Project mining and prospecting rights



Source: pers. Comm. M. Robertson 12/09/2023

5.1.3 Agreements, contracts and taxes

No written agreements or contracts are in place (RHDHV, 2013).

Taxes

Applicable taxes are shown in Table 5.2.

The Jacomynspan Project will be subject to income tax in South Africa according to standard corporate tax rates. In the budget speech of 23 February 2022, the South African Minister of Finance announced that the company tax rate would be reduced to 27% in the 2023/24 tax year (note that the corporate tax rate used in the BFS (Orion, 2020) was 28%). At the same time, the treatment of Assessed Losses will change where only 80% of the assessed loss can be offset against taxable income in any tax year.

South African legislation determines mineral royalties based on whether refined or unrefined minerals are produced; as the Jacomynspan Project will be producing a concentrate (defined as an ‘unrefined mineral resource’ according to Schedule 2 to the Mineral and Petroleum Resources Royalty Act, 2008), the royalty for unrefined minerals applies. This is calculated by the following formula:

$$\text{Unrefined Minerals: } Y(\%) = 0.5 + \frac{EBIT}{\text{Gross Sales} \times 9.0} \times \frac{100\%}{1}$$

(EBIT = earnings before interest and taxes)

Note that mineral royalties are only applicable once production commences.

The Carbon Tax Act (Act No. 15 of 2019) was gazetted on 23 May 2019. The first phase of the Act started in June 2019 and the second phase will commence in January 2026. The tax rate is proposed to increase annually, based on the Consumer Price Index, plus an additional two percent. Based on the Carbon Tax Act and the proposed operational activities of the Jacomynspan Project, a business should allow for the following financial impacts:

- direct taxation on fuel combustion emission activities (stationary and mobile)
- increased cost of upstream and downstream carbon intensive activities.

Table 5.2: Jacomynspan Project applicable taxes

Description	Amount
Corporate tax rate	27% of profit
Value Added Tax	15% of base price
Mineral royalty (tax deductible)	$Y = 0.5 + [\text{EBIT}/(\text{gross sales of un-refined minerals} \times 9)] \times 100$
Carbon Tax	R159 per tonne of CO _{2e} (2023)

5.1.4 Project history

The Jacomynspan Ni-Cu-Co-PGE deposit was discovered in 1971 during a regional airborne aeromagnetic and magnetic survey, conducted on behalf of Anglo American Prospecting Services (Pty) Ltd (Atteridge, 1986) and subsequently explored by several other companies (Anglo American Corporation of South Africa (AACSA), Goldfields of South Africa (GFSA), Alenti, BHP, Glencore and Anglovaal (AV). During 2010, African Nickel concluded an agreement to explore and develop the project. (RHDHV, 2013).

Surface exposure of the orebody is limited; consequently, exploration has been by various geophysical methods (used to delineate potential drilling target areas), which was then followed up with diamond drilling. Geophysical methods include magnetics, time domain electro-magnetics (EM), airborne EM, 3-D induced polarisation (IP), magnetic IP, radio metrics and magnetic and audio-magnetotellurics (AMT). Orion reports that geochemical sampling has also been undertaken (Orion, 2023d).

A Mineral Resource Estimate was completed by the MSA Group (MSA) in 2013 (MSA, 2013) on behalf of Namaqua Nickel Mining (Pty) Ltd and African Nickel Holdings (Pty) Ltd (ANHL). African Nickel subsequently commissioned a Concept Study, which was conducted by Royal Haskoning DHV (RHDHV) and completed in June 2013 (RHDHV, 2013).

5.2 Geology and resources

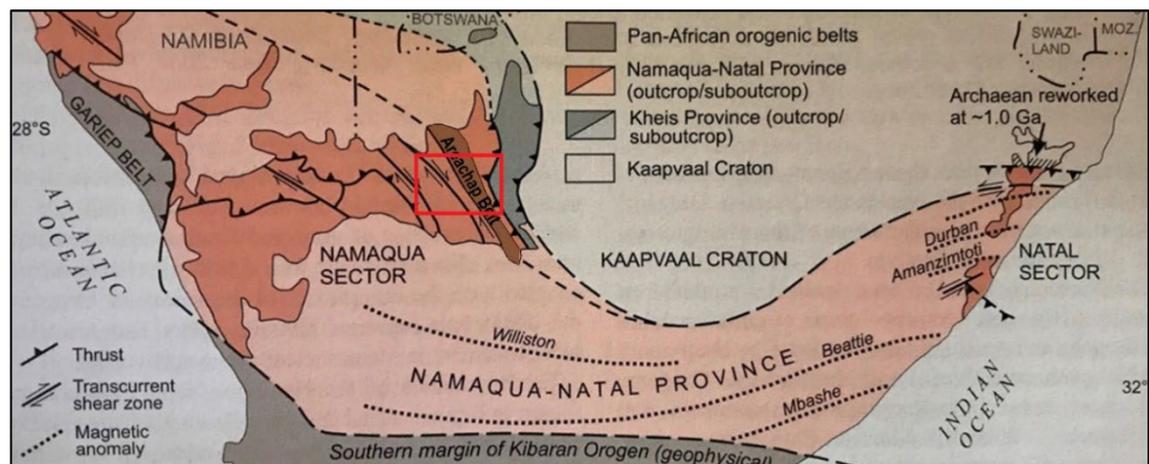
5.2.1 Regional setting and local mineralisation

Regional setting

The commentary on the regional geology is an extract from The Geology of South Africa book as authored by Johnson, M. A., Anhaeusser, C.R. and Thomas, R.J. (2006).

The Areachap Belt is a north-northwest striking Mesoproterozoic volcano-sedimentary complex in the Namaqua Sector on the eastern margin of the Namaqua – Natal Metamorphic Province (NMP) in the Northern Cape Province (Figure 5.2). The belt extends for 250 km from the PCML in the southeast to the Areachap Copper Zinc area in the northwest. Immediately to the south of PCML and to the north of Areachap, younger cover sequences overlie the basement rocks. Deposition took place at 1.30 to 1.24 Ga in a volcanic arc environment along the Kaapvaal Craton during the Namaqua Orogen. This event correlates to the Grenville Orogeny that is associated with the amalgamation of the Mesoproterozoic supercontinent of Rodinia.

Figure 5.2: Regional setting of the Areachap Belt in the Namaqua-Natal Province



Source: Orion Minerals Ltd, 2020b

Note: Red box shows the location of the Jacomynspan Project.

The supra-crustal succession, the Areachap Group, consists of amphibolite, hornblende gneiss, quartz feldspar gneiss, calc-silicate rocks, meta-pelite and psammite that is intruded by various phases of granite, granodiorite and mafic-ultramafic rocks. Intrusion of Ni-Cu bearing mafic – ultramafic magmas took place during the late orogenic phases in the Bushmanland–Kaapvaal inter-continental collision. The Areachap Group was subjected to various phases of deformation of which the F2, F3 fold and thrust phases and the D5 north-northwest-trending shear zones are the most important in defining the geometry of the Belt. The Jacomynspan deposit occurs within the NMC, which comprises a sequence of porphyroblastic quartz-feldspar-biotite-garnet gneiss rocks containing minor meta-diorite and amphibolite lenses (Attridge, 1986).

Local geology and mineralisation

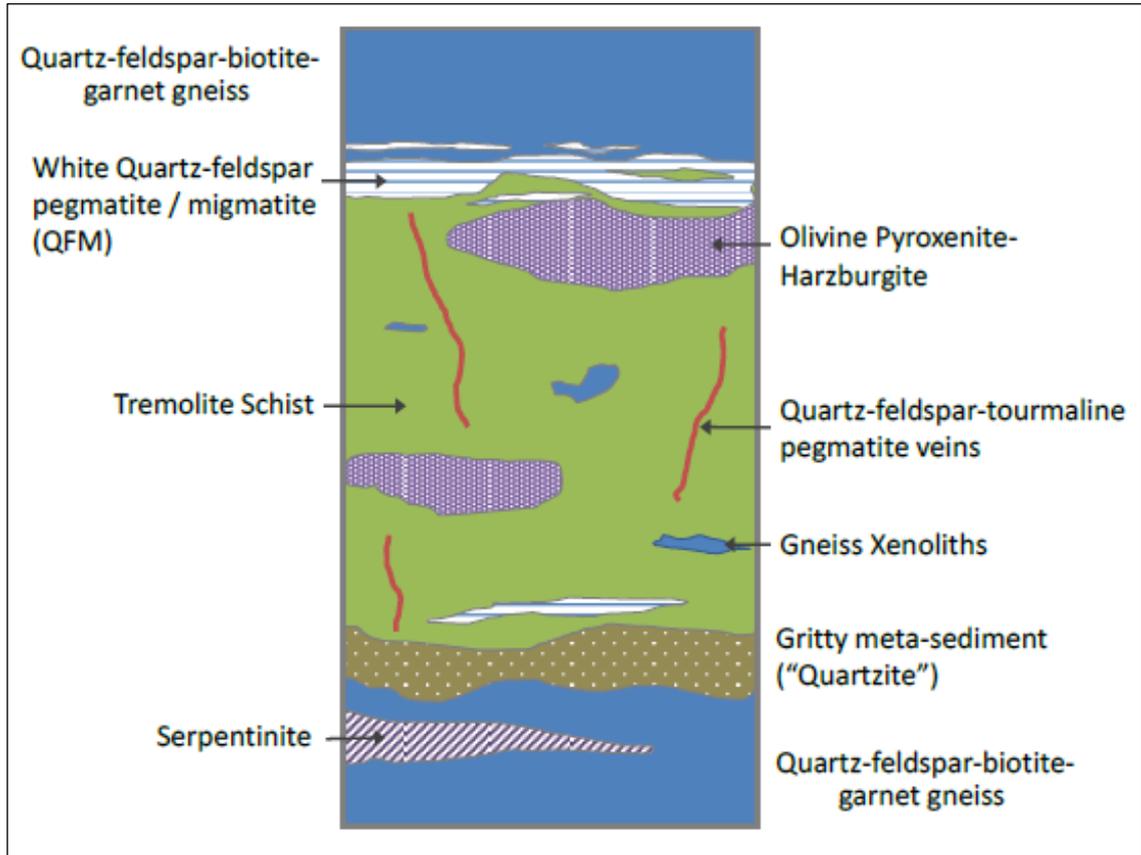
Commentary on the local geology is an extract from 2013 Mineral Resource Estimate technical report (MSA, 2013).

The Jacomynspan deposit comprises portions of a metamorphosed mafic to ultramafic intrusion containing Ni-Cu sulfides. The dyke-like intrusion has been metamorphosed on a regional scale to amphibolite facies. The original mafic rocks have been metamorphosed into tremolite schist. Within the tremolite schist, large lenses of olivine-rich rocks occur, which range from olivine-pyroxenite to harzburgite. These ultramafic zones are non-schistose and are important in the context of the Mineral Resource as they are associated with enhanced grades of mineralisation. The intrusion is enclosed within quartz-feldspar-biotite-garnet gneiss country rocks.

Based on observations from the drill holes, the simplified rock sequence used in modelling the Mineral Resource at local scale is shown in Figure 5.3 and consists, from the base upwards, of:

- a metasedimentary footwall unit (distinguished by a gritty texture) which may be identified as quartzite or meta-greywacke of varying thickness (~2 m to >35 m). Quartzo-feldspathic gneiss occurs below the quartzite country rock, which has a similar appearance to the gneiss occurring above the quartzo-feldspathic hanging wall unit that has a migmatite texture (QFM).
- a tremolite schist and harzburgite unit hosting Ni-Cu-Co-PGE mineralisation. The host rock consists of tremolite schist (several tens of metres thick), an olivine-rich zone varying from olivine pyroxenite (olivine <10%) to harzburgite (olivine >10%). The latter is predominantly well-developed towards the top but has also been identified at the base of the intrusion. Harzburgites vary in thickness reaching a maximum thickness of over 30 m. The intrusion hosts other barren rock types which consists of migmatite bodies (same as the hanging wall QFM), xenoliths of the country rock gneiss (Quartz-feldspar-biotite-garnet gneiss) and quartz-feldspar-tourmaline pegmatite veins cutting across lithologies and host sulfides in places. An ultramafic rock has been intersected beneath the tremolite schist in some of the holes. This is a fine-grained serpentinite that does not contain significant visible sulfide mineralisation and is a different unit to the harzburgite contained within the tremolite schist.
- A quartzo-feldspathic hanging wall unit that has a migmatite texture (i.e. QFM). The thickness of the QFM is variable and usually in the order of several metres. The contact between the intrusion and the QFM comprises intercalations of QFM and tremolite schist over a few tens of centimetres to one or two metres. This unit also occur at the base top of the intrusion suggesting the intrusion was emplaced along a weakness associated with the QFM.

Figure 5.3: Simplified rock sequence of the Jacomynspan intrusion



Source: MSA (2013)

The intrusion body forms a gently curving arcuate surface expression striking close to east west and is approximately 50 m thick and dips to the south at approximately 70°. Some of the intersections display evidence of faulting. The harzburgite units are irregularly shaped lenses. That of the country rock xenoliths (although unknown) are also assumed to have irregularly shaped bodies within the intrusion and/or may form rafts.

The mineralisation consists predominantly of pyrrhotite and chalcopyrite with lesser amounts of pyrite and pentlandite. Sulfides in tremolite schist are aligned with schist fabric and in harzburgite mineralisation occurs as coarse disseminations grading into net-textured sulfides. In the disseminated zones of the tremolite schist, the intensity of sulfide mineralisation is very consistent. Occasional stringers occur, particularly near the base of the intrusion, and pyrrhotite is concentrated in semi-massive sulfide veins sometimes exhibiting a *Durchbewegung* texture where fragments of the wall rocks have been broken, deformed, and rotated within the ductile sulfide matrix. Chalcopyrite tends to occur in fine, hairline-sized fractures.

Mineralisation is enhanced in, and possibly around, the olivine-rich zones, except for the basal ultramafic intrusion below the tremolite schist, which is poorly mineralised. Elevated base metal content also occurs towards the base of the tremolite schist that appears to be more structurally controlled, occurring in shears and veins.

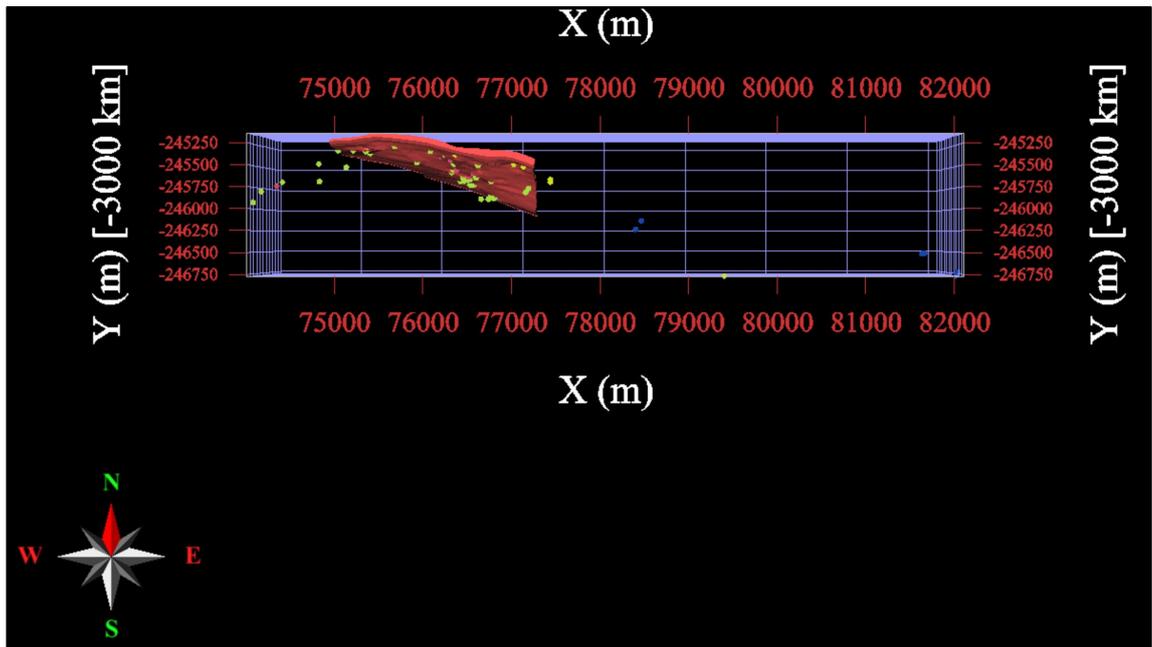
The character of the mineralisation may be summarised as several higher-grade zones within a consistently mineralised but relatively low-grade envelope. The higher-grade mineralisation is two-fold; that contained within the olivine pyroxenite–harzburgite lenses, and potentially an enhanced grade vein-dominant zone towards the base of the tremolite schist intrusion.

Geology and mineralisation model

A 3D lithological model of the dyke-like intrusion (i.e. tremolite schist) and the olivine pyroxenite-harzburgite lenses, which is in a form of a wireframe solid exist; this tremolite schist-harzburgite package is the primary host to the mineralisation of interest. SRK is of the opinion that the wireframe solid is an appropriate representation of the in situ package and honours the corresponding lithological contacts reasonably in the desurveyed drill hole data; the only exception is in drill hole PC2-28UD1 where the harzburgite wireframe solid does not overlap the corresponding lithological contacts in the drill hole.

Figure 5.4 is a plan view of the lithological model/mineralised footprint (in red) overlaid with the drill hole intercepts for the tremolite schist and harzburgite only. MSA (2013) is of the opinion that the full lateral extent of this package has not been modelled; this is evident in the drill hole intercepts to the east and west of the wireframe solid in Figure 5.4.

Figure 5.4: Jacomynspan model plan view showing tremolite schist and harzburgite assemblage as per drill hole intercepts and modelled wireframe solid (red)



The grade estimates have been compiled only within this package, using drill hole intercepts constrained within the wireframe solid and declared as a Mineral Resource using a 0.2% Ni cut-off grade (Orion, 2022a). Applying a Ni threshold value of 0.2% and above to the drill hole intercept shows that significant amount of nickel mineralisation exists outside of the current modelled footprint; in Figure 5.5, the upside mineralisation is demonstrated in the drill hole intercepts beyond the east-west extent of the wireframe solid, whereas in Figure 5.6, focus is on the potential mineralisation in the parent rock (gneiss) directly in contact with the modelled footprint (i.e. hanging and footwall drill hole intercepts).

Figure 5.5: Jacomynspan modal plan view showing tremolite schist and harzburgite assemblage (red) and drill hole intercepts (light blue) above a 0.2 % Ni threshold value

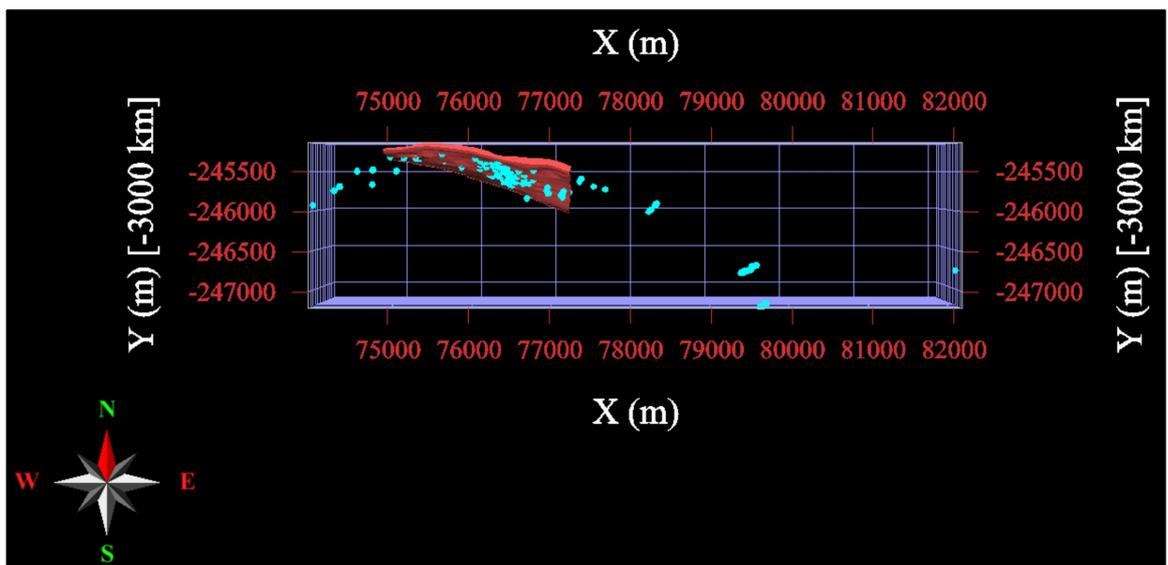
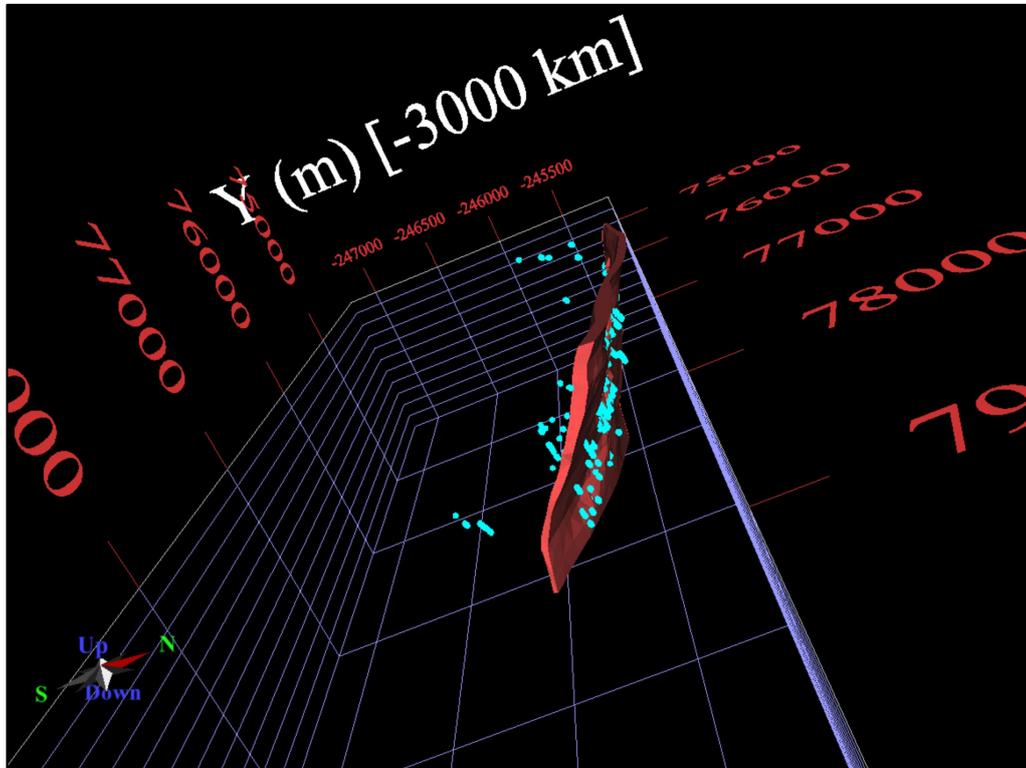


Figure 5.6: Jacomynspan model oblique view (Looking NW) showing tremolite schist and harzburgite assemblage (red) and foot and Hanging wall drill hole intercepts (light blue) above a 0.2 % Ni threshold value



SRK understands that the Jacomynspan Mineral Resource Estimate prepared by MSA with effective date of 31 January 2013 does not include all the holes completed in the 2011–2012 drilling campaign either because drilling of some of the holes was ongoing at the time or the assay results were not available at the time of the grade estimation. SRK however notes that MSA was of the opinion that the incorporation of the additional drill holes would not materially impact on the model and grade estimate.

5.2.2 Mineral Resource Estimation

Data integrity

SRK understands that MSA undertook a site visit to review the drilling protocols that underpinned the 2011 and 2012 drilling campaign and inspected the drill core. SRK notes that MSA was satisfied with the implementation of the protocols and that the geological records as captured were consistent with what was observed in the drill core. Where raw historical assay data underpinning composites was not available, they have been excluded from the actual grade estimation. SRK has not undertaken an independent site visit as part of this due diligence.

Validation of drill hole data

A total of 141 drill holes were completed over the Jacomynspan deposit, 32 of which were drilled between 2011 and 2012. Pre-dating this period, 109 drill holes were completed between the 1970s and 2008. Several drill holes had second intersections drilled from deflections. Three twinned drill holes exist. The deposit was sampled using core from diamond drilling. SRK notes that some of the drill holes lacking assay values were used only for geological interpretation. The drilling dataset provided to SRK for review includes collar, survey, geology, SG, and assay data.

SRK notes that not all 141 collars plot over the Jacomynspan deposit. Seven drill holes appear to be deflected holes. SRK also notes that drill hole PC2-11D1 has negative dip values in the survey data, and a positive average dip value in the collar data. Additionally, drill hole BP002 is the only hole with a positive dip value of 40.15° (at 84 m depth), whereas the data for the remaining 140 drill holes are negative. SRK further notes that not all the sampled intervals have Ni, Cu and PGE (i.e. Pt, Pd and Au) assay values, and not all the drill hole intercepts have geological logging records. There are 55 drill holes with SG records. A summary of the findings from the validation process is shown in Table 5.3.

Table 5.3: Validation of the Jacomynspan Project drill hole data

Data	Observations	Comments
Assay	105 DHs.	Not all sampling intervals have assay data.
Collar	141 DHs including: 53 DHs by ANHL 42 DHs by AACSA 24 DHs by AV 12 DHs by ALENTI 7 DHs by BHP 3 DHs by GFSA (twinned of AACSA)	Collar points not plotting over the Jacomynspan deposit in QGIS. Coordinates need to be checked DH PC2-11D1 has a positive dip value in contrast to the other 140 DHs 7 deflected DHs Not all sampling intervals were assayed for Ni, Cu and PGEs
Geology	140 DHs	21 DHs have few missing intervals without logging data
SG	55 DHs	No issues to report
Survey	141 DHs including:	DH BP002 is the only hole with positive dip value of 40.15 at 84 m as opposed to the remaining 140 DH DH PC2-11D1 has negative dip values in contrast to the average dip value in the collar data

Sources: SRK, 2023; Orion Minerals Ltd, 2023

Notes:

DH: Drill hole

2011–2012 Assay QA/QC validation

There are no assay QA/QC data/reports predating the 2011–2012 drilling campaign. Commentary here is with respect to the assay QA/QC undertaken during the 2011–2012 drilling campaign. Hence SRK cannot comment on reliability of historical assay data. It is however noted that the mining companies who were custodians to the historical drilling campaigns were considered to be in good standing with best practice during those periods.

SRK considers the sampling protocol adopted and implemented for the recent campaign is consistent with industry best norms. The primary samples were assayed at Intertek in 2011 and at ALS in 2012. For base metals assaying, Intertek used aqua regia digest with ICP-OES finish and ALS used a four-acid digest with ICP-AES finish. For both laboratories, the method used for PGE analysis was lead fire assay. Intertek used 25 g sample aliquots and concentrations were determined by ICP-MS with a lower detection limit (LDL) of 1 ppb. ALS used a 30 g sample aliquot with ICP-AES finish with a LDL of 1 ppb for Pd and Au, and a LDL of 5 ppb for Pt.

The QA/QC procedures used to monitor the precision and accuracy of analysis for the samples included blanks, CRMs and coarse field duplicates. The QA/QC samples were regularly inserted each at a frequency of one in twenty, so that every 20 samples submitted to the laboratory contain 1 blank, 1 CRM, 1 coarse duplicate and 17 field samples. The analytical data of the QA/QC assay from Intertek and ALS laboratories were not provided to SRK.

MSA (2013) details SOPs, sampling techniques and preparation, plot and chart results, and interpretations of the QA/QC assay, and information on the CRM types.

A summary of the QA/QC assay results in 2011 and 2012 is presented below:

- **Blanks** consisting of commercially available fine-grained swimming pool filter sand used in 2012 and rock chips of feldspar used in 2011.
- Based on the results shown on the control charts presented in MSA (2013), SRK notes that, for the 2011 data, more than 90% of blank samples reported values <3 ppb for Pt, i.e. more than 55% of blanks reported values <1 ppb Pt and more than 40% of blanks reported values 1–2 ppb Pt. For Pd and Au, more than 80% of blanks reported values of 1–3 ppb. For the 2012 QA/QC results, SRK notes that more than 95% of blanks reported values <5 ppb for Pt and Pt, and more than 90% of blanks reported values <10 ppb for Au.
- Overall SRK is satisfied with the results of the blanks, which are acceptable and indicate minimal contamination during sampling, sample preparation and analysis.
- **CRMs:** Two CRMs (AMIS0073 from Nkomati Ni-Cu-PGE mine and AMIS0093 from Tati Nickel Mine) were used for the 2011 drilling, and one CRM (AMIS170 from the Platreef) was used in 2012.
- Based on the results of the control charts presented in MSA (2013), SRK notes that, for the 2011 data, all CRM AMIS0073 samples reported values within ± 3 standard deviation (SD) from the mean for Cu and Pt. More than 90% of CRM AMIS0073 samples reported values within ± 3 SD from the mean for Ni, Pd and Au. For Co, only 74% of the CRM samples reported values within ± 3 SD from the mean.
- For the CRM AMS0093, all samples reported values within ± 3 SD from the mean for Ni, Cu, Pd and Pt. Cobalt seems to fail the accuracy test with 44% of the CRM samples reporting values within ± 3 SD from the mean of which 78% were parts of the last analytical run which may either indicate poor calibration or drifting.
- For the 2012 QA/QC results, SRK notes that more than 90% of CRM AMIS0017 samples reported values within ± 3 SD from the mean for Ni, Cu, Pd, Pt and Au. Like the 2011 results, Co seems to fail the accuracy test with less than 50% of the CRM samples reporting values within ± 3 SD from the mean.

- SRK's preferred threshold for assessing accuracy/bias based on CRMs for brown/greenfield projects of this kind is ± 2 SD. Using a ± 3 SD as a threshold, the results are acceptable.
- **Duplicates** consisted of a split sub-sample of the original crushed sample material.
- Based on the results of the control charts presented in MSA (2013), SRK notes that, for 2011, the Ni, Cu and Co data for most field duplicates plot within $\pm 10\%$ from the 1:1 control line. For the precious metals, the Pd and Au data show many field duplicates plotting within $\pm 20\%$ from the 1:1 control line with Au data showing few more scattered points than the Pd data. The Pt data, on the other hand, show many scattered.
- Like the 2011 results, SRK notes that, for the 2012, the base metals data (Ni, Cu and Co) for most field duplicates plot within $\pm 10\%$ from the 1:1 control line. Several field duplicates plot within $\pm 20\%$ from the 1:1 control line for the Pd and Au data with Au data showing few more scattered points than Pd. The Pt data shows many scattered duplicate samples.
- The results for the base metals show that the analyses done were precise indicating that the samples' homogeneity was achieved. The scattered results for Pd, Pt and Au can also be expected because these metals occur as very tiny particles mainly hosted within sulfides, which may be difficult to homogenize after sample crushing and mixing.
- SRK's preference for assessing precision is pulp duplicates and not coarse duplicates. However, with the satisfactory results from the coarse duplicates one can infer that pulp duplicates would have performed better.

5.2.3 SRK comments

In terms of the results of the drilling data check, SRK recommends the following:

1. Dip values for drill hole PC2-11D1 in the survey and collar data be verified.
2. The dip value of 40.15 for drill hole BP002 at 84m depth be verified.

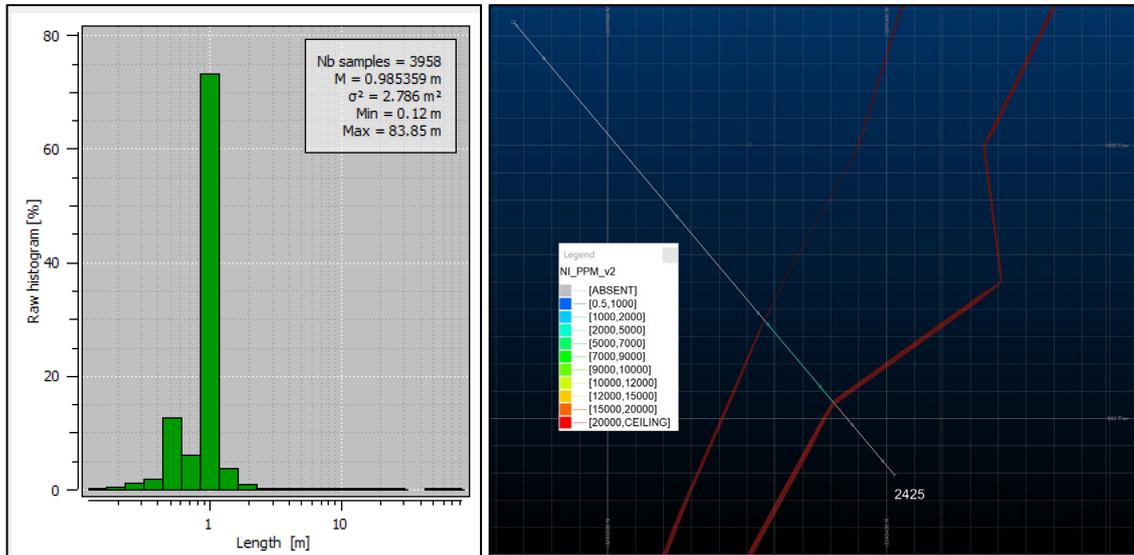
Overall, SRK is satisfied with the survey and logging data of drill holes from the Jacomynspan deposit.

Mineral Resource Estimates

The grade estimates have been compiled using assay data constrained within the tremolite schist-Harzburgite assemblage as represented by the wireframe solid in Figure 5.4. It is important to emphasise that the mineralised footprint is therefore not based on a grade shell but on lithology.

With respect to the delineated mineralised footprint, there are Ni assay records for all intercepts; except for one. Figure 5.7 (left image) displays the histogram of sample lengths; notably, there are long samples with assay values. A typical example is observed in Figure 5.7 (right image) where drill hole 2543 has a sample length of over 25 m with a Ni of 0.23% (i.e. 2,300 ppm). The reason(s) for the long assay sample intervals is not explained. Any sampling of this nature in the order of 3 m and above is considered inappropriate by SRK; the reason being that the local scale grade variability along that drill length is lost leading to a reduced nugget value.

Figure 5.7: Histogram of Jacomynspan drill sample lengths (left) and example of one long assay interval (Right) within the mineralised footprint shown in red



Grade estimates have been compiled for Ni, Cu, Co, Pt, Pd, Au and SG using OK. The number of raw assay records differs for each of these variables estimated. This is primarily because the drilling campaigns over the period was executed by different companies who had different objectives with respect to the primary mineral(s) of economic importance.

Two estimation domains are present; the High Grade (HG) harzburgite lens and the Lower Grade (LG) tremolite schist. SRK considers the separation of the estimation data into two domains appropriate based on the basic statistics of the two datasets. Based on the histogram distribution of sampling length/interval (Figure 5.4) the assay dataset was composited at 1 m. No capped values are applicable to the composite dataset for each of the variables in the HG domain. In the LG domain capping was undertaken only on the Co, Pt, Pd and Au variables and the threshold values adopted result in only a few data points capped and without any material impact on the basic statistics of the corresponding composite datasets.

Variogram models do not exist for the HG domain due to poorly structured experimental semi variograms for each of the variables. With the LG domain, where MSA has generated variogram models they are omnidirectional with fixed ranges considered for some variables. Variograms were generated for Ni, Co, Cu and SG; SRK understands that this was not possible for Pt, Pd and Au. However, this was possible for the 2PGE+Au (i.e. Pt, Pd, Au combined) and hence the 2PGE +Au variogram model is borrowed for the individual variables. SRK was unable to assess how well the variogram model compares to the variogram parameters for each of the variables as presented in the Report, as plots of the variogram models are not provided in MSA (2013). The 2PGE+Au variogram parameter indicates that only one structure was fitted; the robustness of such a variogram model, in SRK’s opinion, cannot be guaranteed. In regenerating the Ni variogram models based on the estimation parameters provided in MSA’s report, SRK notes reasonably robust experimental semi variogram models in the major direction and down hole; that of the minor direction is poorly to moderately structured – in essence there is anisotropy observed, which is inconsistent with MSA’s findings.

The HG domain estimates are compiled using the corresponding variogram models of the LG variables. The basis for borrowing the LG domain variogram models for the HG domains is not justified. More so, the lack of this justification has not been considered as part of the Mineral Resource classification criteria.

The interface between these two domains is treated as a hard boundary, and SRK considers this to be appropriate. The choice of block size and search parameters used for the grade estimation are largely based on an optimisation study (Quantitative Kriging Neighbourhood Analysis) of the Ni variable. The only concern SRK has is the non-activation of the quadrant search and the lack of restriction of the number of composites per drill hole that must contribute to the QKNA; this is important due to the splitting of long samples to 1 m composites so as to avoid over-smoothing of the estimates locally. In SRK's opinion, activating the quadrant search can also materially impact on the optimal threshold values appropriate for the estimation and search parameters.

The Ni, Cu and Co variables use the same search distances for the estimation runs (i.e. SVOL), which is different from that of the 2PGE+Au variables. Search distances for SVOL-1 approximate the respective variogram ranges. The SVOL-2 and SVOL-3 search distances use a factor of 1.5 and 20 of SVOL 1. SRK notes that the SVOL-3 estimates have not been classified as Mineral Resources. The choice of applying dynamic anisotropy to cater for the gentle undulation within the mineralised footprint is considered appropriate.

SRK has assessed the correspondence in grade between the estimates and composites independently for the HG harzburgite and LG tremolite schist domains. For the tremolite schist domain the correspondence in Ni, Cu and Co grades both locally and globally between the estimates and the composites is very good; this trend is also observed for Co in the harzburgite domain. The local grade correspondence for Ni and Cu in the harzburgite domain show the estimates consistently overstating that of the composites. Globally this is approximately 5% and 9% respectively for Ni and Cu. This is due to the non-capping of the composite dataset for grade estimation; distance capping during the grade estimation would be appropriate.

The Mineral Resource classification criteria relied heavily on SVOL. No Measured Mineral Resources is declared. SVOL-1 and -2 estimates are classified in the Indicated Category. SVOL-3 estimates that fall within twice the variogram range are classified as Inferred Category. SRK is satisfied that majority of SVOL-3 estimates are thus not considered as Mineral Resources. SRK expected that some of the output kriging parameters would have been considered as part of the classification criteria; this is premised on the fact that they were critical in the QKNA when assessing the optimal estimation and search parameters for grade estimation.

Based on the block model, SRK can confirm that the total Mineral Resources as stated in Orion's 2022 Annual Report is accurate; i.e. " *Mineral Resource of 65 Mt at 0.28% Ni, 0.19% Cu & 0.02% Co, using a cut-off of 0.2% Ni (refer ASX/JSE release 8 March 2018)*". MSA's grade tonnage table in its updated letter report of 26 January 2018 also confirms these figures at the same cut-off grade of 0.2% Ni. A breakdown of the Mineral Resources per resource category and domain is presented in Table 5.4. The first 50 m of the estimate relative to the topography is excluded from the Mineral Resources; MSA (2013) is of the opinion that this is an oxide material which is not of economic importance. SRK's concerns with this approach is that there is no empirical evidence (i.e. in the drill hole data) that justifies this conclusion.

The RPEEE considerations that informs the choice of a 0.2% Ni is not substantiated. The Jacomynspan Concept Study (RHDHV, 2013) proposed a sub level caving mining method (with delayed draw) which, by its nature, is not selective with respect to grade. Hence there is a disconnect between how the 0.2% Ni was arrived at and the proposed mining method. Table 5.4 is the Mineral Resource statement as reported from the block model at a 0.2% Ni cut-off grade.

Table 5.4: Jacomynspan Project Mineral Resource Statement reported at a 0.2% Ni cut-off grade

Classification	Domain	Mt	Grade (%)			Metal Content (tonnes)		
			Ni	Cu	Co	Ni	Cu	Co
Indicated	Harzburgite	2.1	0.51	0.26	0.03	10,597	5,494	576
Indicated	Tremolite Schist	30.9	0.24	0.17	0.02	75,453	52,586	5,740
Subtotal-Indicated		33.0	0.26	0.18	0.02	86,050	58,080	6,315
Indicated	Harzburgite	6.4	0.53	0.31	0.02	33,800	19,957	1,488
Indicated	Tremolite Schist	25.9	0.23	0.17	0.02	60,475	43,419	4,613
Subtotal-Inferred		32.3	0.29	0.19	0.02	94,275	63,376	6,101
Total (Indicated +Inferred)		65.3	0.28	0.19	0.02	180,325	121,456	12,417

Notes:

- ¹ The stated Mineral Resources is discounted at a 5% geological loss.
- ² Mineral Resources quoted are inclusive of Mineral Reserves.
- ³ The stated Mineral Resources is Reported a Ni cut-off grade of 0.2%.
- ⁴ SG estimates range from 3.1 to 3.2 within each of the domains and classification footprints.

5.2.4 Risks and opportunities

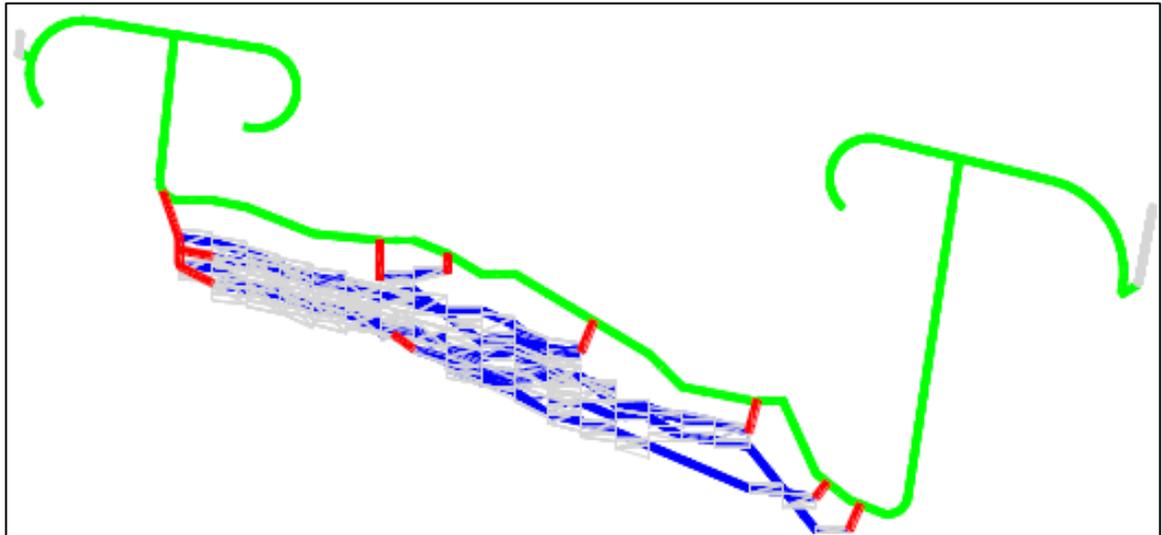
The lack of details on the RPEEE consideration is a risk that needs to be mitigated. This deposit as per Orion’s 2022 Annual statement is considered a polymetallic deposit of interest. It is important that the RPEEE takes this as well as the mining method and metal recovery factors into consideration. There is upside potential of Mineral Resources on the strike extent of the delineated mineralised footprint.

5.2.5 Prospectivity

Beyond the current Mineral Resource footprint; mineralisation has been intersected in several drill holes. Some of the intersections have Ni grades above the cut-off grade used to declare the Mineral Resources and there is continuity in the mineralisation. It is noted that the declared Mineral Resources covers only 15% of its lateral extent within the permit area. This provides a platform for additional target generation in the east-west extent along the orebody strike direction.

Figure 5.9 shows a plan section of the layout at 740 m below surface. The green line is the exploration drive and access from the decline in the footwall and the blue lines are the ore drives. The red lines represent the access from the footwall waste development to the targeted ore drives. The layout is appropriate for the application.

Figure 5.9: Jacomynspan mine layout at 740 m below surface

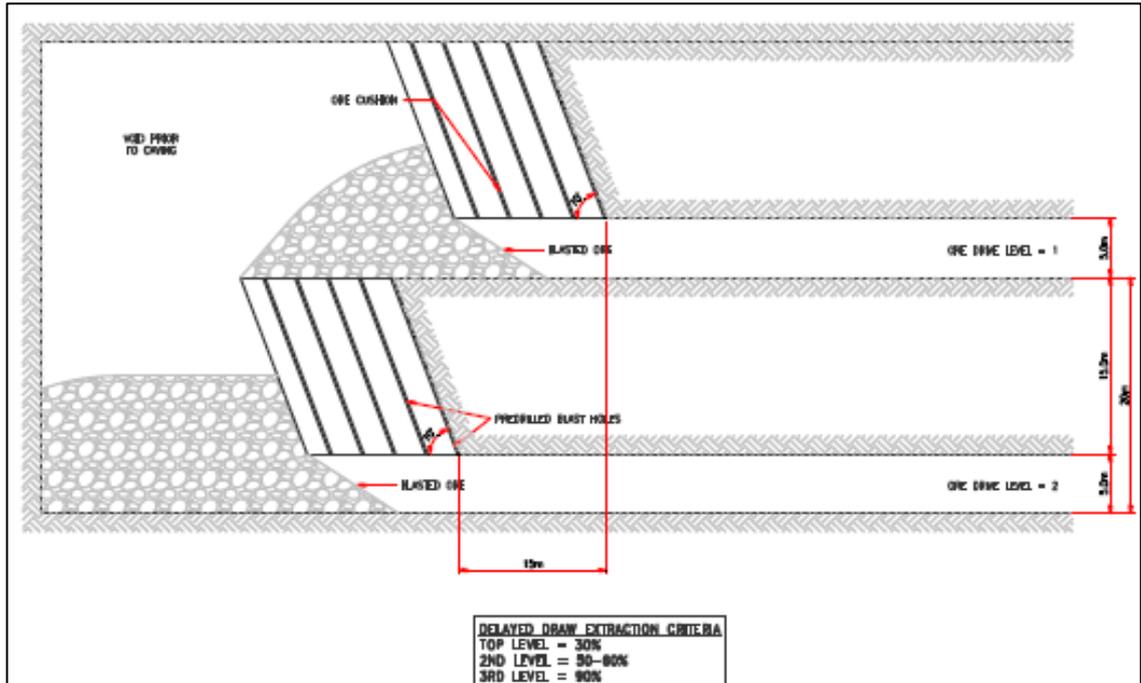


Source: RHDHV, (2013)

The method requires sub levels at 20 m vertical intervals with ore drives, typically with a 5 m by 5 m cross section, driven longitudinally and accessed from the exploration drives towards the centre of the ore body. The slot is placed at the midpoint with mining retreated towards the two accesses.

Mining can take place on several levels simultaneously with the lag between levels at least 15 m (Figure 5.10).

Figure 5.10: Schematic long section of delayed draw SLC continuous retreat stoping



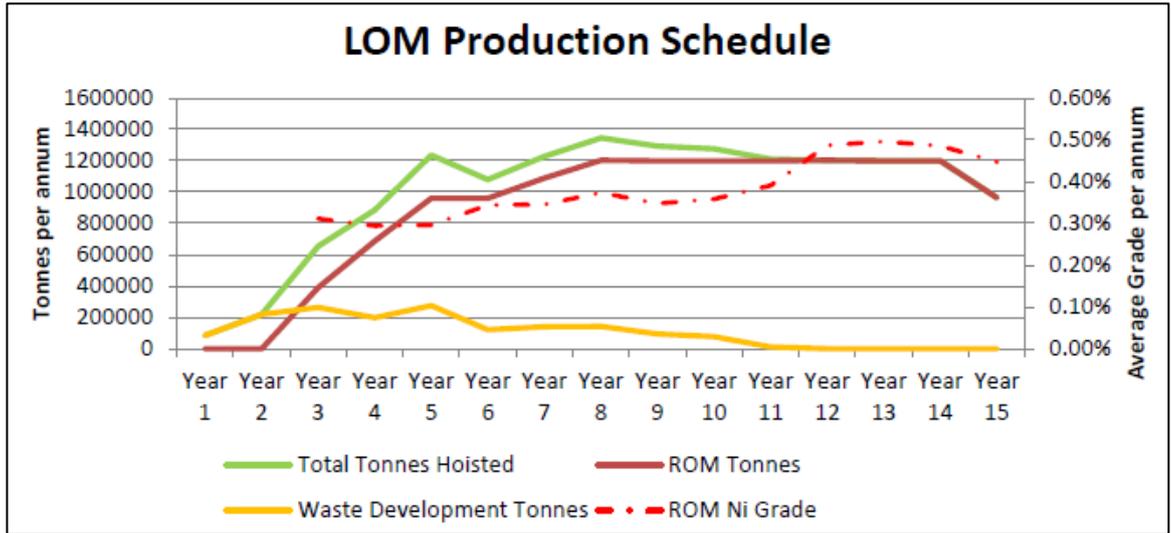
5.3.2 Ore Reserves

No Ore Reserves have been declared for the Jacomynspan Project.

5.3.3 Production schedule

Production is planned to build up to 80 kt/m in year and 100 kt/m in Year 8. SRK considers the build up to be reasonable. The vertical advance rate is 800 m over 15 years, i.e. 53 m per year, which is marginally on the high side. The Concept Study technical report states that this is higher for the first three years, however, although reasonable advance rates have been planned for the development (Figure 5.11).

Figure 5.11: Jacomynspan LoM production schedule



Source: RHDHV, (2013)

5.3.4 Ventilation

The ventilation study proposes a quantity of 410 m³/s for full production, using an input parameter of 0.06 m³/s/kW, which is reasonable. A standard vent system is proposed, with intake air down the access declines for the first four years, after which the vertical shaft will provide additional air once it has holed, with three exhaust shafts. Additional downcast holes will be required late in the mine life to supply air to the lower levels.

Exhaust ventilation will be provided by two main upcast vent shafts.

5.3.5 Modifying factors

Dilution is stated as 10% in the mine design criteria and 3% in a table showing the Concept Study financial model inputs. SRK considers this too low for this mining method. Mining recovery is not stated.

5.3.6 Mining operating and capital costs

Unit mining costs as inputs to the financial model are not stated in the report, although overall mine-wide annual operating costs are provided in the operating costs section. It should be noted however, that the Concept Study was completed in 2013 and all cost assumptions used are now out of date.

5.3.7 Engineering and infrastructure

Mechanical engineering

This section of the report assesses the fitness for purpose of the mechanical engineering infrastructure envisaged in the 2013 Concept Study (RHDHV, 2013). The purpose of this section is to review the mechanical infrastructure and engineering servicing mine operations envisaged for the Jacomynspan Project (at Concept level) to determine its fitness for purpose in sustaining the planned ore production rate of 108 kt/m. The information reviewed was made available by Orion.

Surface infrastructure

- A single portal splitting into a twin decline to provide access into the mine
- RoM stockpile, service water provision and storage, stores yard
- buildings: e.g. administration offices, change house, stores, workshops, proto room and medical stabilisation facility – all these are shared facilities amongst the operations
- explosives storage, including emulsion storage
- security arrangements
- access roads.

Underground infrastructure

- mining trackless mining machinery (TMMs), utility vehicles and cassette loading and off-loading infrastructure and personnel transporting and supervisory vehicles
- ore handling infrastructure from face, loaded by LHDs onto ADTs which transports both ore and waste to their respective stockpiles on surface
- dirty water handling infrastructure such as face, haulage and transfer dam pump stations, pumps piping
- service workshops, including maintenance bays with ramps and overhead cranes, crawl beams, compressors, spares store, fuel and lubricant storage and dispensing facilities as well as waste handling facilities
- service and potable water reticulation.

5.3.8 SRK comments

- The 2013 Concept Study covers all areas necessary for a mining operation and thus, covers all areas to be costed.
- It is SRK's view that the engineering and infrastructure requirements for the 2013 Concept Study are fit for the purpose intended and no fatal flaws have been identified for this level of study.
- SRK further notes that the level of detail in the description of the infrastructure is appropriate for Concept level study and provides a good basis for further studies.

Electrical engineering

The 2013 Concept Study indicates that the forecast load requirements will be in the region of 12 MVA. This power draw was estimated using a connected load of 16.625 MW, at a diversity factor of 60% and power factor of 0.85. It is recommended that the diversity factor be looked at in more detail in the next phase of the study, to determine if a higher diversity factor of about 70% will be the more appropriate to use.

It is noted that in the early stages of the 2013 Concept Study, Eskom was contacted to assist with the provision of indicative costs for the provision of the 10 MVA bulk power supply. Eskom then proposed four different options for supplying power to the mine. It is recommended that these options be re-visited in the next phase of the study, to determine the most favourable option so that bulk power supply capital costs can be more accurately estimated based on the selected option/s. Also, a more accurate maximum demand figure needs to be determined once the loads have been better refined in the next phase of the study, so Eskom can be approached with a more realistic maximum demand figure in mind.

Three of the options proposed by Eskom indicate that only one 20 MVA 132/11 kV transformer has been allowed at the mine's main incoming substation. It is recommended that the possibility of introducing a second transformer to allow for redundancy be investigated in the next phase of the study. This will allow for the mine load to be switched over to the other transformer should one transformer fail or be brought out of service for maintenance or repairs, thus reducing the impact on production losses.

Emergency power requirements are not mentioned anywhere in the concept study. Internal power reticulation is also not described in the concept study. It is recommended that these items be considered in more detail in the next phase of the study. Opportunities for renewable energy should also be explored, to try and reduce power costs. In addition to reducing power costs, although the renewable energy will not be a replacement for Eskom power but supplement it, this will also help in reducing total reliance on Eskom power due to load shedding that results in the mines being asked to reduce or curtail their loads.

5.3.9 SRK comments and recommendations

- It is recommended that Eskom should be re-engaged and the power supply options be investigated in more detail so as to identify a more suitable option in the next phase of the study. This will also help in a more accurate estimate of the bulk power supply capital requirements.
- Electricity operating costs be updated to the more recent tariff charges, as the study was done about ten years ago.
- It is recommended that the diversity factor of 60% be re-evaluated once the loads have been more defined in the next phase of the study, to determine if a higher diversity factor is not required.
- Emergency power requirements and internal power reticulation should be defined in the next phase of the study.
- Opportunities for a second main incoming transformer to use as redundancy and renewable energy power sources be explored in the next phase of the study.

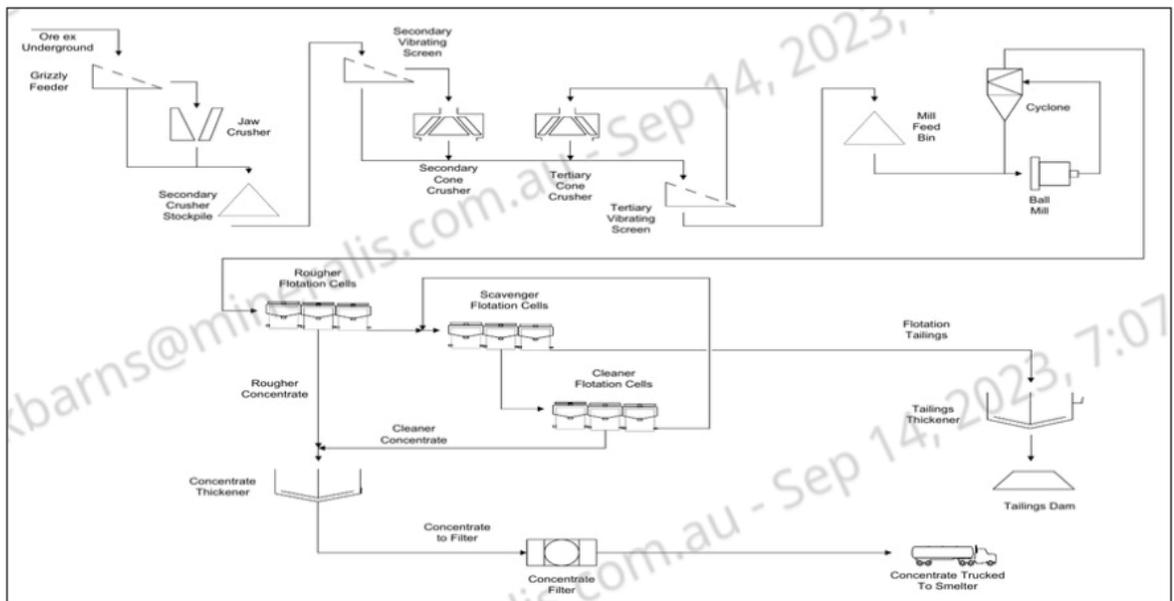
5.4 Metallurgical testwork and process design

The metallurgical review of the Jacomynspan Project is based on the 2013 Concept Study (RHDHV, 2013).

5.4.1 Jacomynspan Project process flowsheet

The process flowsheet for the Jacomynspan Project is presented in Figure 5.12.

Figure 5.12: Proposed process flowsheet for the Jacomynspan Project



Source: RHDHV, (2013)

The proposed processing plant design is stated to be based on similar plants treating nickel ores to produce a final concentrate. The processing plant consists of:

- comminution circuit consisting of three stages of crushing (a primary jaw crusher followed by two stages of cone crushing) followed by a ball mill grinding to 60% passing 75 μm
- flotation circuit consisting of rougher/scavenger and possibly two stages of cleaning
- concentrate and tailings thickeners with the concentrate filtered prior to trucking/rail to the smelter.

5.4.2 SRK comments

- No comminution testwork was used to size the comminution equipment.
- There is no description of the sizing of the flotation circuit and the circuit configuration had not been decided for the Concept Study.
- There is no evidence of testwork to determine thickener or filter requirements.

5.4.3 Supporting testwork

The scoping study reviewed the twelve testwork programs completed since 1973. Early testwork was completed at AARL (1972–73) with later work completed at Mintek, Gencor and Golden Point Laboratories (1983–2012). Early testwork looked at the flotation response of Jacomynspan ore while later work expanded the test program to incorporate bacterial leaching, separation (heavy liquid and magnetic) and mineralogy.

5.4.4 SRK comments

- The origin of the samples used in the AARL test programs is unknown, therefore it is impossible to determine how representative the samples were and so test results are of the ore body or whether they could be considered composite or variability samples representing the ore body spatially, or by ore type, lithology or weathering characteristics.
- No comminution testwork appears has been completed with circuit selection based on its suitability to low throughput operations.
- Copper and nickel minerals are reported to be liberated at 61% passing 74 µm however the definition of liberation is not stated in the narrative.
- Flotation achieved concentrate grades of 4–11% Ni at 70–80% recovery depending on feed grade. Although critical to producing a smeltable concentrate, no Fe or MgO analysis is reported in the limited testwork summary.
- The mineralogy identified pyrrhotite as the major sulfide mineral with minor occurrences of pentlandite and chalcopyrite. Pentlandite occurs as fine inclusions and therefore cannot be liberated. The major gangue minerals are chlorite and amphibole.

5.4.5 Process throughput and metallurgical recovery

No comminution testwork has been completed on the Jacomynspan ore and limited flotation test work makes commentary on the applicability of the process throughput and recovery impossible. The viability of producing a saleable nickel concentrate at 4% Ni with very low precious metals credits needs to be confirmed.

5.4.6 Processing operating and capital costs

Plant Capital costs have been based on factorising costs from other projects in engineering company RHDHV's data base. Plant operating costs are reported to be determined from a first principles basis but data has not been reviewed to substantiate this.

5.4.7 SRK comments

There is no detail on the origin or basis behind the capital or operating costs. However, SRK does note that with the escalation in costs over the last decade the capital and operating costs in the 2013 Concept Study can no longer be considered valid and a full re-costing is required.

5.5 Environment and social

5.5.1 Permitting

Namaqua Nickel submitted a Mining Right Application (MRA) over the properties previously approved and subjected to and received an acceptance letter from the DMR dated 10 July 2013 (Reference No.: NC 30/5/1/2/2/10032 MR). As part of the MRA, environmental authorisations were conducted in fulfilment of relevant legislation (NEMA, MPRDA and NWA) for the Jacomynspan Project (GCS, 2014). An SLP was also developed for the Mining Right area.

At Jacomynspan, which includes a SAMREC-compliant Mineral Resource, extensive metallurgical testwork, geotechnical appraisal, environmental studies and mine design work were previously carried out by Orion's project partner, Namaqua Nickel Mining (Pty) Ltd, to complete a concept study and economic assessment for the mining of the deposit. These appraisals were sufficiently positive to support an application for a Mining Right, which has been granted and executed (Table 5.1).

5.5.2 Environmental and social considerations

The studies and assessments completed to date have reportedly been done in accordance with South African legislation and focus on the Jacomynspan Project. Historic baseline information is available for aspects, including topography, soils, land use and land capability, climate, air quality, terrestrial biodiversity (fauna and flora), wetland, hydrogeology, surface water, noise, heritage and archaeology and socio-economic and visual (GCS, 2014). The following key features and sensitivities have been identified:

- The site is remote from any declared conservation areas.
- Soils and land types possess two land capability classes, i.e. land with wetland/wilderness land capability and land with wilderness land capability, which support extensive grazing.
- There are no major rivers or dams within or close to the site although many undefined non-perennial streams are situated in the area.
- The only wetlands identified on site were depression/pan wetlands, which are inundated in the wet season.
- The geohydrology of the area is characterised by intergranular and fractured aquifers.
- The majority of bore holes in the area are used for either livestock watering use and/or domestic use.
- Groundwater quality shows elevated levels of chloride, nitrate and sulfate linked to animal waste and background geology.
- The project area is largely untransformed.
- Plants of conservation importance are likely to be present on the site.
- Fauna diversity is present, with three Red Data bird species and 54 threatened animal species identified.
- Habitats in the area do not exhibit a particular sensitivity.

- Twenty-three sites of cultural heritage significance were identified within the area, including graveyards.
- There is very low population density (2 person/km²) and sparse settlements.
- High unemployment exists in the area due to limited economic opportunities.
- There are no communities within the vicinity of the project and surrounding farms are privately owned.
- The local economy is characterised by agriculture, fishing and mariculture as well as mining and tourism.

Based on available documentation, it is unclear if additional EIAs or studies have been undertaken in recent years. Hence, baseline information will need to be updated and assessments conducted as part of an EIA and EMP process.

5.5.3 Environmental and social management

As the Jacomynspan Project has yet to be developed, environmental and social management is not in place. The project will, however, need to align with Orion's policies that provide corporate guidance on environment and health and safety. Prior to project commencement, the EIA must be amended, and management plans developed for implementation. Environmental and social site staff should be appointed to ensure compliance to the conditions of the environmental authorisations and licences over the life of the project.

Stakeholder engagement was conducted as part of the EIA process for the Jacomynspan Project in 2014. There is no recent documentation indicating ongoing engagement with stakeholders and the current status of social relations. It will be necessary for Orion to apply its corporate strategy and procedures for stakeholder engagement and grievance management for the Jacomynspan Project.

As the Jacomynspan Project borders on the Karoo Central Astronomy Advantage Area, the activities that are proposed are unlikely to have a significant influence on the SKA and its operation in future. The mining activities will have a negligible influence on the radio frequencies of the SKA.

Management of risks will be an ongoing process throughout the life of the project and will inform the development and maintenance of a risk register. Orion will need to develop and maintain a comprehensive risk register that clearly sets out the key environmental and social risks and the measures being applied to reduce the identified risks at the Jacomynspan Project.

6 Other South African Mineral Interests

6.1 Areachap tenures outside of Jacomynspan

Orion has three other exploration projects outside of Prieska, Okiep and Jacomynspan – the Masiqhame, Marydale and Orion Exploration No. 1 (Pty) Ltd (OE1) projects – collectively, the Areachap Projects. Orion holds mineral rights to 175,738 ha in the Areachap Belt (excluding Jacomynspan), with the potential to discover further volcanogenic massive sulfide (VMS) and intrusive Ni-Cu-PGE mineralisation⁸. These rights, contiguous to the Jacomynspan Project, are located to the northwest of the Prieska Project.

6.1.1 Location, access and climate

The location, access and climate are the same as that for Jacomynspan (Section 5.1.1).

6.1.2 Tenure

As of the date of this report, SRK has not received independent legal verification of tenure for the Areachap Projects. SRK has, however, reviewed the various licence documents provided and assured itself of the correct geographical extent of the licences with respect to the exploration activities by Orion.

Orion holds prospecting rights or accepted prospecting right applications (Table 6.1 and Figure 6.1) to the Areachap Projects through its subsidiaries Orion Exploration No. 1 (Pty) Ltd (OE1), Orion Exploration No. 4 (Pty) Ltd (OE4) and Masiqhame 855 (Pty) Ltd. Commodities covered in the mining and prospecting rights are listed below the tables.

⁸ <https://orionminerals.com.au/areachap-exploration/> accessed 15/09/2023

Table 6.1: Areachap Projects – prospecting rights and prospecting rights applications outside of the Jacomynspan Project⁹

Licence Code and Type	Project	Portion(s) and Farm(s)	Area (ha)	Holder and Percentage Holding	Start Date	Execution Date	Period (years)	Expiry Date
NC12292PR ^{1, a} Prospecting Right	Masiqhame	Ptns 1 – 12 & RE Koegrabe 117 Ptns 1, 7 – 10 & RE Bokputs 118 Ptns 1, 2 & RE Kantien Pan 119 Ptns 1 – 5 & RE Van Wyks Pan 170 Ptns 1, 5 – 8 & RE Zonderpan 173	98,435.8548	Masiqhame 855 (Pty) Ltd (100%)	24/03/2022	14/12/2022	3	23/03/2025
NC12197PR ^b Prospecting Right	OE1	Ptn 2 & RE Klein Begin 115 Ptns RE1, RE2, RE3, RE4 & Ptn 9 Zand Ruggens 116 Ptn RE2 Gemsbok Bult 120	34,706.15	Orion Exploration No. 1 (Pty) Ltd (100%)	14/01/2021	25/08/2021	5	13/01/2026
NC12721PR ^c Prospecting Right Application	Marydale Au-Cu	Ptns 1 – 4 Eyerdrop Pan 58	17,555	Orion Exploration No. 4 (Pty) Ltd (100%)		Application accepted 14/12/2020		
NC12196PR ^d Prospecting Right Application		Ptn 1 & 2 Geitjies Pan 59 Ptns 5, 8 & RE Brakbosch Poort 13	25,041			Application accepted 06/09/2018		

Notes:

¹ First renewal; Section 11 application; change of ownership granted (22/08/2019)

Commodities:

^a Cu, Zn, Au, Co, Cr, Mo, Pb, Py, Fe, W, RE, Ti, Ni, PGM, Sn, V

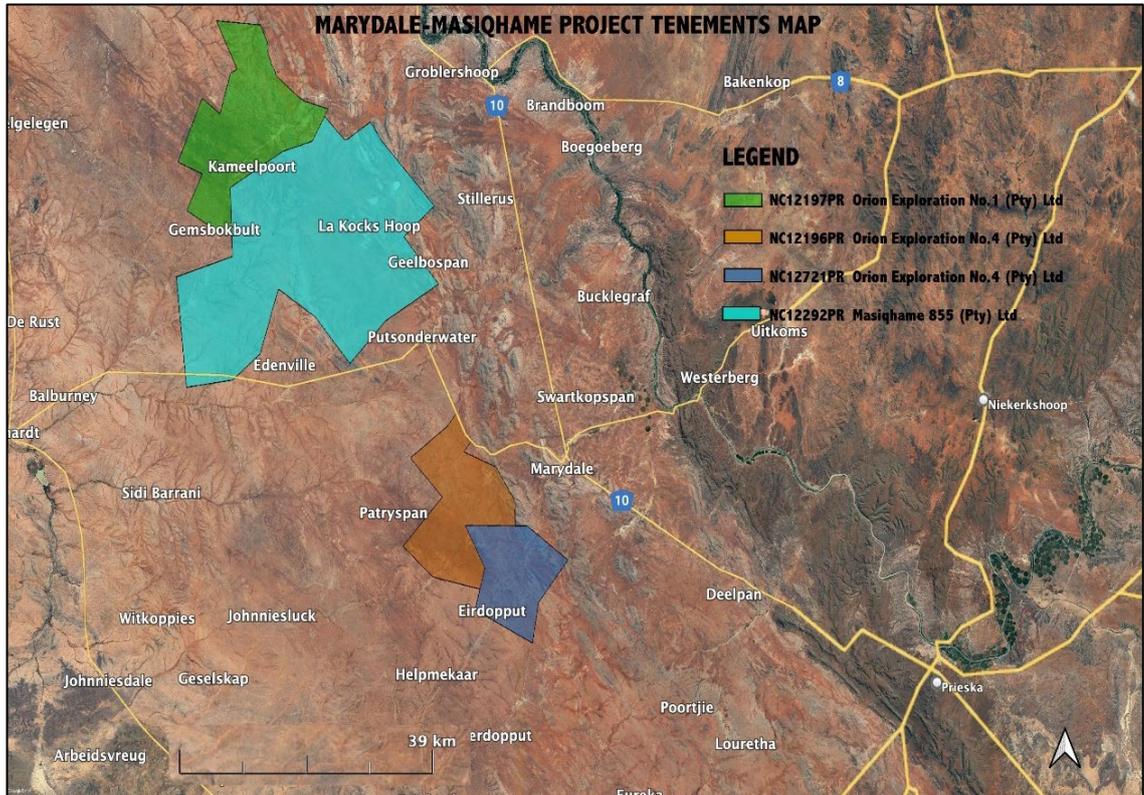
^b Cu, Zn, Au, Ag, Co, Ba, Pb, S, Fe, Qy, W, Li, Be, Ta, RM, Fs, GFS, Mc, Pr, Mz, Xt, HM, RE, Cd, Sc, Y, Te, La, Nd, Sm, Eu, Ce, Gd, Pm, Tb, Dy, Ho, Er, Tm, Yb, Th, Cr, In, Ge, Ga, Bi, Ti, Mn, Sn, U, Ra, Ni, PGM

^c Cu, Zn, Au, Ag, Co, Ba, Ls, Mo, Pb, Py, S, Spy, Fe, St, Qy, W, Li, Be, Ta, RM, Fs, GFS, Mc, Pr, PR, Mz, Xt, HM, RE, Cd, Sc, Y, Te, La, Nd, Sm, Eu, Ce, Gd, Pm, Tb, Dy, Ho, Er, Tm, Yb, Th, Cr, In, Ge, Ga, Bi, Ti, Mn, Sn, U, Ra, Ni, PGM, grav, Stw

^d Cu, Zn, Ag, Au, Co, Ba, Pb, S, Fe, Qy, W, Li, Be, Ta, RM, Fs, Mc, Pr, PR, Mz, Xt, HM, RE, Cd, Sc, Y, La, Nd, Sm, Ce, Gd, Pm, Tb, Dy, Ho, Er, Tm, Yb, Th, Cr, In, Ge, Ga, Bi, Ti, Mn, Sn, U, Ra, Ni, PGM.

⁹ Information sourced from documentation from the Department of Mineral Resources and Energy, provided by Orion

Figure 6.1: Areachap Projects prospecting rights and prospecting rights applications



Source: M. Robertson 12/09/2023

Note: OE1 Project is shown in green, the Masiqhame Project in cyan and the two prospecting rights of the Marydale Project in orange and blue.

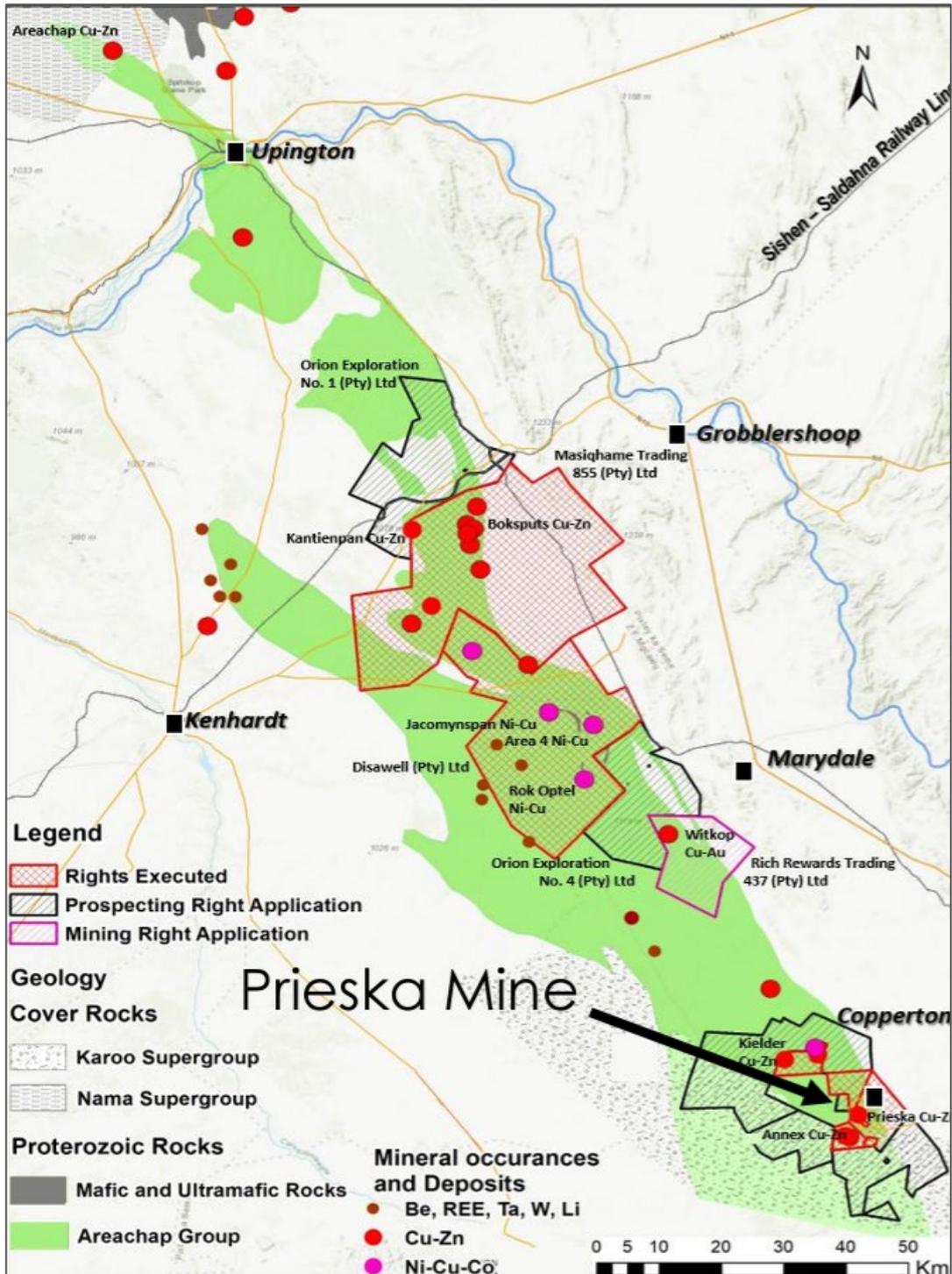
6.1.3 Project history

The northernmost of the Areachap Projects, the OE1 Project (Figure 6.2) holds potential for nickel, copper, cobalt and PGMs. Mapping over an identified geophysical conductor identified gossanous eluvium, characteristic of oxidation of sulfide deposits, and occasional highly pyritiferous quartzite.

The largest project, the Masiqhame Project (Figure 6.2), is focused on copper and zinc. It includes three known such mineral occurrences at Kantienpan (zinc, copper, silver, gold) in the northwest of the project area; Bokspuits (copper, gold) in the northern part of the project area and Van Wyk’s Pan, suggesting regional potential for hosting VMS copper-zinc and nickel sulfide mineralisation. High-priority targets at Bokspuits have been identified by electromagnetic surveys at two locations and diamond drilling programs have commenced (Orion, 2022a). Soil sampling revealed copper soil anomalies in 2020 and was extended in 2022. Elevated nickel values have also been identified; field mapping continues over the Bokspuits area.

The target minerals at the greenfields Marydale Project (Figure 6.2) to the south are gold and copper, based on a new geological interpretation that recognises the mineralisation as shear-hosted. This has led to a re-interpretation of historical data, which may lead to a mining right application if the results of this exercise suggest that small-scale mining might be feasible.

Figure 6.2: Location and regional geology of the Areachap Projects in relation to the Prieska Project



Source: Orion (2021a)

No Mineral Resource Estimates have been reported for the Areachap Projects.

Part B: Australian Mineral Interests of Orion

7 Fraser Range Project

7.1 Overview

7.1.1 Location, access and climate

The Fraser Range Project comprises four exploration tenements held in a Joint Venture (JV) with IGO Ltd (formerly Independence Group NL) (IGO) and two other parties that include Kamax Resources Ltd and Independent Newsearch Pty Ltd. The project is located approximately 350 km northeast of Kalgoorlie.

Access from Kalgoorlie is via the Trans Australia Railway access road then 190 km northwards along the western boundary of Kanandah Station and the Cable Haul Road to the Plumridge airstrip. Access can also be made by way of the Pinjin Road and then following the Tropicana Gold Mine access road and then subsequently turning onto historic sandalwood logging access roads.

The area has a semi-arid climate with hot summers and mild winters. The average annual rainfall is around 260 mm, while the average rainfall is fairly evenly distributed throughout the year, there is considerable variation from year to year. January is the hottest month, with an average maximum temperature around 33.6 °C, but temperatures above 40.0 °C occur when dry, north to northeasterly winds arrive. Such high temperatures are usually followed by a cool change from the south, and occasionally with a thunderstorm.

By contrast, winters are cool, with July average maximum and minimum temperatures being 16.5°C and 4.8°C, respectively. Overnight temperatures can fall below freezing. Such events occur on clear nights following a day of cold southerly winds.

7.1.2 Tenure and land use

SRK has reviewed the Western Australia Government website Tengraph and confirms that the subject are registered to Orion (formerly Orion Gold NL) through its wholly owned subsidiaries Kamax Resources Ltd (Kamax) and Orion Gold NL. Table 7.1 summarises the status of the four tenements.

SRK has not undertaken a legal review of the tenements for the Fraser Range Project.

Table 7.1: Fraser Range Project tenure

Tenement	Ownership	Registered holders	Area (km ²)	Granted	Expire
E28/2367	30%	Kamax Resources Ltd/ IGO Newsearch Pty Ltd	123.2	07/05/2015	07/05/2025
E28/2596	30%	Kamax Resources Ltd/ IGO Newsearch Pty Ltd	268.8	06/09/2016	06/09/2026
E39/1653	35%	Kamax Resources Ltd/ IGO Geological Resources Pty Ltd	64.4	20/04/2012	20/04/2024
E39/1654	10%	Orion Gold NL/NBX Pty Ltd/ IGO Newsearch Pty Ltd	112	23/04/2012	23/04/2024

Tenement	Ownership	Registered holders	Area (km ²)	Granted	Expire
E69/2707	10%	Orion Gold NL / Ponton Minerals Pty Ltd / IGO Newsearch Pty Ltd	145	19/06/2015	19/06/2025

Sources: Tengraph, https://www.dmp.wa.gov.au/Tengraph_online.aspx

In the State of Western Australia an exploration licence is granted for 5 years, which may be extended by 5 years and further period(s) of 2 years. In this case tenements expire in 2024, 2025 and 2026.

The project area is covered by pastoral lease Crown Land and Unallocated Crown Land.

7.1.3 Agreements, contracts and taxes

On 10 March 2017, Orion entered into a JV agreement with IGO to support the ongoing exploration and evaluation of the Fraser Range Project.

The JV agreement covers all four subject tenements listed in Table 6.1. Under the terms of the JV, IGO can acquire a 60% interest in the Orion and NBX and Panton JV (PLJV), 65% interest in the Geological Resource Pty Ltd (GR) tenements and a 70% interest in the Albany Fraser JV (AFJV) tenements by purchasing the Sales assets from Orion and Kamax. IGO also has the option to acquire a further 5% interest in the PLJV, GR tenements and AFJV tenements. Further to this it is agreed that if Kamax does not wish to exercise the Kamax option, IGO will be entitled to direct Kamax to exercise the Kamax option and then transfer the 20% interest in the GR tenements to IGO.

While SRK has outlined the Sale and Joint Venture Agreement, it has not been engaged to comment on any legal matters. SRK notes that it is not qualified to make legal representations as to this JV arrangement.

7.1.4 Project history

Imperial Mining NL held tenements over the area of E 39/1654 during 1994 to 1999. The target of this exploration was for chromite and PGE mineralisation of massive layered intrusions using the Bushveld intrusive complex as a proxy for target intrusion style.

Western Areas NL held a package of tenements over E 39/1654 during 2002–2007. The package of tenements, the Plumridge Project, were held for Nickel-Copper-PGE exploration.

Between 2013 and 2014, three MLTEM traverses were completed along with a focused survey over the CE target area.

The maiden drilling program took place over the CE prospect in late 2013 to early 2014. Aircore drilling was completed over the anomalous conductive response with 97 holes for 5,009 m. Drilling intersected a variety of lithologies including several identified in the field as mafic intrusives.

A RC drilling program of 13 holes for 2,111 m were drilled at the CE, Peninsula HA1 and HA2-prospects.

First pass shallow aircore/RC drilling at the Pennor prospect was carried out in August 2014 and confirmed the presence of a substantial mafic-ultramafic intrusion. Drilling intersected numerous mafic-ultramafic lithologies with elevated Ni-Cu content and magmatic sulfides. Geochemical analysis confirmed the Pennor and HA2 prospects.

On 03 September 2014, Orion gold NL entered into a partnership with Creasy Group company NBX Pty Ltd and took a 70% share in E 39/1654.

Between 2015 and 2016, a technical review of all data over the tenement and others in the region was performed by Orion Gold NL. The purpose of this review was to synthesise and consolidate the substantial dataset generated over the life of the project. This review fed into the development of a ranking system for the different potential targets in the area.

An important outcome of this activity was that while gravity highs in the area can be modelled as intrusions, there are several gravity lows adjacent to these bodies. The gravity lows could represent metasediments and gneisses of the Biranup Complex. Gravity lows could also represent zones of intrusions that have been altered to lower density alteration products.

The technical review also considered the different structural features in the area to explore potential for remobilised mineralisation. This process used a combination of magnetic data interpretation and modelling using analogues from mesothermal gold genetic models and the Thomson Nickel Deposit in Canada. The structural review developed a series of potential targets for follow-up.

In 2016, an outcome of this review was that gravity modelling indicated the presence of a significant dense body at depth beneath the tenement areas. This was promising as it shows analogous elements to that of the Nova-Bollinger deposit, which is proximal to a large, deep gravity feature assumed to be a feeder/staging chamber.

On 10 March 2017, Orion entered into the Tenement Sale and Joint Venture Agreement with IGO. Under the JV, Orion is free carried to the completion of a pre-feasibility study by IGO over the Fraser Range ground.

IGO progressed exploration activities including ground-based geophysics over prospective areas delineated by initial air-core drilling completed in 2017.

In January 2020, encouraging diamond drill results were received from the North West Passage, Hook 1 and 2 and Pike prospects within the Fraser Range Belt, with all five diamond holes completed intersecting mafic-ultramafic intrusive bodies.

Orion considers the presence of anastomosing sulfide veins, sulfide-bearing graphite-rich horizons and meta-carbonates as intersected in the host rocks to the mafic-ultramafic bodies to be the ideal setting for the discovery of magmatic massive nickel-copper sulfide deposits.

7.2 Geology and resources

7.2.1 Regional setting and local mineralisation

The Fraser Range Project occurs within the Albany-Fraser Orogen of southeast Western Australia. This belt is described as a fault-bound belt of metagabbroic rocks on the margin of the Yilgarn Craton (Spaggiari et al., 2013). The geological setting of this district is a source of ongoing debate. Options proposed include exhumed block of lower crust, a layered mafic intrusion intruded into granitic and sedimentary rocks, multiple accreted magmatic oceanic arcs and an oceanic arc (Spaggiari et al, 2013).

Whilst the tectonic and geologic setting is still debated, the mineral potential of this mafic complex has been confirmed in recent years following the discoveries of the Nova nickel-copper deposit in 2012 (Bennett et al., 2014) – 14.3 Mt @ 2.3% Ni, 0.9% Cu, 0.08% Co (Independence Group, 2016) and Mawson Nickel-Copper-Cobalt deposit in 2019 – 1.45 Mt @ 1.2% NiEq (Legend Mining, 2023).

7.2.2 Targeted mineral systems

Exploration in the project area has focussed on the discovery of magmatic sulfide Ni–Cu–PGE mineral systems (Barnes, 2016). IGO and Orion have also noted both VMS potential at the Pike prospect based on the geochemical signature of limited massive sulfide zones and IOCG potential at Angler, based on the occurrence of coincident magnetic and gravity highs.

7.2.3 Resource estimation

No Mineral Resources have been reported for the Fraser Range Project. Existing resources in the belt include.

- Mawson Nickel-Copper-Cobalt deposit in 2019 – 1.45 Mt @ 1.2% NiEq (Legend Mining, 2023)
- 14.3 Mt @ 2.3% Ni, 0.9% Cu, 0.08% Co (IGO, 2016).

7.2.4 Available data and exploration results

Exploration has continued in defining prospective mafic-ultramafic intrusions that are emplaced into sulfur-bearing mineralisation. Data reviewed includes publicly available stock market announcements, scientific literature on the geology and metallogeny of the Fraser Range and internal reports generated as part of the JV. Commentary on the progress of the project in quarterly reports and referenced exploration announcements from both IGO and Orion have been reviewed. Exploration data had been acquired prior to the JV agreement in March 2017. Numerous exploration methods have been deployed in the project area over multiple phases of activity including:

- ground gravity
- moving loop electromagnetic (EM) survey
- spectrem airborne (EM) survey
- aircore drilling
- reverse circulation drilling

- diamond drilling
- passive seismic survey
- petrographic analysis
- Versatile Time Domain Electromagnetic (VTEM) survey
- a semi-detailed (1:50k) structural framework study
- geochemical sampling analysis
- host rocks in favourable structural settings.

Further exploration has continued to primarily target magmatic nickel systems with short-term analysis of VMS and IOCG systems. Given the scale of the exploration program, several targets appear to have been deferred due to operational or technical reasons. These may still prove worthy of drill testing. Key prospects that may require additional work identified during this review include:

- Pike 1 – VMS and Ni sulfide target that was originally drilled in 2019, following up modelled EM plates and aircore anomalism in an area prospective for magmatic nickel and VMS deposits. Mid program, access was deemed unsafe due to track deterioration and 3 holes from the program were left undrilled. Follow-up modelling confirmed air core had tested this zone however there remains potential to test this zone with additional diamond drilling.
- Hook 1 – 19AFDD1008 – DHEM survey conducted in 2019 confirms a strongly conductive response lies beneath the end of hole and remains untested.

Twenty-six prospects were investigated but no significant results were reported from these prospects, confirming no significant evidence of an economic mineral system has been identified at the project to date. The Fraser Range Project therefore remains an early-stage exploration project. It should also be noted no significant exploration is planned for the upcoming quarter other than track and drill site rehabilitation.

7.2.5 Risks and opportunities

Despite continuous exploration and the intersection of both prospective host units and mafic intrusions, no significant assay results have been reported from the project to date. A review of internal reports confirms no significant assays have been noted. The existing data collected may have extinguished some potential for discovery by applying traditional geophysical and geochemical exploration methods typically applied in this geological environment. This observation is further supported by Orion's and IGO's decision to voluntarily surrender E28/2378 and E28/2462 during the March 2023 quarter. It should be noted that many nickel sulfide discoveries are made by exploration groups that persist over the long term, testing province-wide systems in a methodical manner as currently being undertaken on the tenements by IGO.

7.2.6 Prospectivity

Exploration activity has predominantly focused on magmatic nickel sulfide mineral systems associated with the mafic-ultramafic bodies defined at the project to date. The geochemical signature of these intrusions is considered prospective based on IGO's in-house geochemical 'Mafic Prospectivity Index'. Host rock packages for these intrusions include sulfide-bearing graphite-rich horizons and meta-carbonates indicating these rocks have potential to provide abundant sulfur source for a magmatic nickel mineral system. Favourable structural zones of shearing and folding have also been defined by exploration to date and appear similar in character to IGO's Nova Bollinger deposit to the south. These observations are further supported by Geoscience Australia's prospectivity modelling of the magmatic nickel sulfide potential of Australia, identifying Orion's tenement position as highly prospective for the magmatic nickel mineral system (Barnes et al , 2016). Nearby occurrences of notable nickel deposits at Mawson and Nova Bollinger further demonstrate the potential for magmatic nickel sulfide deposits at the Fraser Range Project. Whilst economic VMS deposits are not noted in the area, the occurrences of massive sulfide occurrences with elevated zinc values also raises the potential for this deposit style in the belt.

8 Walhalla Project

8.1 Overview

8.1.1 Location, access and climate

The Walhalla Project is situated approximately 225 km east of Melbourne by road in the eastern Victorian region of Gippsland. It comprises two exploration tenements that surround the historical township of Walhalla. The area around the town is designated as a historic area, adjoining the Baw Baw National Park. The town was founded as a gold mining community in late 1862.

Access is along sealed roads from Melbourne on the M1 highway and then various secondary roads to the town of Walhalla. Gippsland is best known for primary industry production such as mining, power generation and farming, as well as its tourist destinations.

The climate of Gippsland is temperate and generally humid. In the highlands of the Baw Baw Plateau, temperatures range from a maximum of 18 °C to a minimum of 8 °C. However, in winter, mean minima in these areas can be as low as –4 °C, leading to heavy snowfalls.

8.1.2 Tenure and land use

SRK has reviewed the Victorian Government website GeoVic and confirm that EL5042 and EL6069 are both registered to Orion Minerals Ltd. Table 8.1 summarise the status of the two tenements.

SRK has not undertaken a legal review of the tenements for the Walhalla Project.

Table 8.1: Tenure at Walhalla

Tenement	Ownership	Area (km ²)	Granted	Expire	Required Expenditure ¹ (A\$)
EL5042	100%	34.7	20/02/2023	19/02/2028	37,800
EL6069	100%	53.7	20/02/2023	19/02/2028	37,800

Sources: GeoVic, <https://earthresources.vic.gov.au/geology-exploration/maps-reports-data/geovic>

Note:

¹ 5th year of tenure.

In the State of Victoria, an exploration licence is granted for 5 years and can be renewed for a further 5 years. In this case both tenements expire in February 2028.

The exploration permits cover Crown Land.

8.1.3 Project history

Alluvial gold was initially discovered at Stringers Creek in 1862. Early prospectors migrated to the area to explore for alluvial gold, forming the township of Walhalla. At the township's peak, it reached a population of approximately 4,000. Hard rock prospecting for the source of the alluvial gold followed. Quartz gold lodes associated with the Woods Point dyke swarm were discovered in 1864.

Copper-Nickel PGE mineralisation was also discovered at Coopers Creek in 1864, with sporadic records of production occurring through until 1971. This site is recognised as the location of the first copper production in Victoria.

In total, the Walhalla–Woods Point Goldfield is estimated to have produced 120 tonnes of gold (Enever, 2008). Records indicate 197 mineral occurrences have been identified throughout the belt. Eventually the economics of mining in the area became unprofitable, with the last major mine from this early period closing in 1915. Modern exploration activity in the district has subsequently identified gold Mineral Resources at A1, Morning Star, Eureka, Tubal Cain and Cohen's.

Orion's tenement position over the central portion of the goldfield was reduced in April 2023 when Currawong Resources Pty Ltd successfully applied for EL7297 and EL7300. Recent mining activity in the district has had several attempted restarts, most recently by Kaiser Reef Limited with mining operations currently underway at its A1 Mine.

8.2 Geology and resources

8.2.1 Regional setting and local mineralisation

The Walhalla Project is within the Walhalla–Woods Point Goldfield of eastern Victoria. The area occurs within the Lachlan Orogen and southern end of the broader Tasmanides tectonic domain (Hough M. et al., 2010). Devonian sedimentary rocks in the area were accreted onto the eastern edge of Gondwana during the Palaeozoic (Gray & Forster, 2004). At the district scale, this turbidite host unit is referred to as the Walhalla synclinorium and contains all major gold deposits within the area (Figure 2). (Hough, M. et al., 2010). These rocks are weakly metamorphosed, and record two significant phases of deformation associated with the Tabberaberan Orogeny resulting in open to isoclinal folding, faulting, and shearing. The Woods Point dyke swarm was emplaced into this deformed package of rocks during a short extensional window around 378–376 million years ago. Subsequent resumption of compression drove further faulting, foliation development and hydrothermal alteration associated with the gold mineralisation in the district. Gold mineralisation is interpreted to occur 2–4 million years after the emplacement of the Woods Point dyke swarm. Gold occurs in quartz reefs that often occur along or subparallel to the dykes, in faults that crosscut the dykes or in dyke bulges. Alluvial gold deposits occur sourced from these primary orogenic gold deposits. In total, prospectors have reported 197 mineral occurrences throughout the belt (Whiterock Minerals presentation, Nov 2021).

Studies of the deposits and the Woods Point dykes have indicated the gold may have been remobilised from magmatic nickel sulfide systems in particular phases of the dyke swarm (Jowitt et al., 2012). This model is supported by Cu-Ni-PGE sulfide occurrences in gabbroic mafic intrusions throughout the belt. Some records of sporadic copper production have been reported from Coopers Creek (Enever, J. 2008). Significant Cu-Ni-PGE drill results from Coopers Creek include CC003 – 36 m @ 0.39g/t Au, 0.78 g/t Pt, 1.08 g/t Pd, 6.6 g/t Ag, 1.75% Cu & 0.20% Ni (re-reported in Orion March 2016 quarterly report).

8.2.2 Targeted mineral systems

Initial prospecting in the district focussed initially on alluvial gold and near-surface copper nickel PGE occurrences. The discovery of the gold reefs triggered an intense phase of deeper prospecting and underground mining focussed on the orogenic style gold associated with the Woods Point dyke swarm. Published literature on the Woods Point dyke swarm has indicated this dyke swarm may have potential to host magmatic Cu-Ni-PGE sulfide deposits (Keays and Kirkland, 1972; Jowitt et al. 2012). Orion is targeting both magmatic Cu-Ni-PGE systems and orogenic style gold throughout the project area.

8.2.3 Resource estimation

No Mineral Resources or Exploration Targets have been reported for the Walhalla Project.

Other resources in the nearby goldfield include

- Tubal Cain – 932,000 tonnes @ 4.1 g/t Au : (March 2016 ORN quarterly report)
- Eureka – 153,000 tonnes @ 9.9 g/t Au (March 2016 ORN quarterly report)
- Cohen's – 825,000 tonnes @ 3.63 g/t Au (March 2016 ORN quarterly report)
- A1 – 1,200,000 tonnes @ 4.4 g/t Au (Kaiser ASX announcement, 21 July 2022).

Exploration Targets reported in the belt include:

- Tuban Cain – 500,000–1,500,000 tonnes @ 1.5-2.5 g/t Au (March 2016 ORN quarterly report)
- Cohen's – 100,000-300,00 tonnes @ 2–4 g/t Au (March 2016 ORN quarterly report)
- A1– 1,750,000–2,700,000 tonnes @ 3-4 g/t Au Kaiser ASX announcement, 21 July 2022)
- Rose of Denmark – 100,000–200,000 tonnes @ 5–8 g/t Au (ASX Announcement 28 June 2019 by Austar Gold Ltd).

8.2.4 Available data and exploration results

Data reviewed include publicly available stock market announcements, available scientific literature on the geology and metallogeny of the Walhalla–Woods Point Goldfield and tenement Orion's tenement application documentation. Commentary on the progress of the project in Orion quarterly market reports has been reviewed and indicates that no significant on ground exploration has been conducted dating back to December 2015.

8.2.5 Risks and opportunities

The scale and geometry of mineralisation in the Walhalla–Woods Point district has proven challenging to mine with modern mining techniques and costs as demonstrated by the recent closure of the Morning Star gold mine after a short-lived attempt to restart mining operations (White Rock Minerals ASX announcement, March 2023). Whilst the A1 mine is currently producing, Kaiser Reef Limited’s recent quarterly report noted that the operation is marginal with costs equal to revenue from gold sales (Kaiser Reef Limited June 2023 quarterly report). Despite these examples, Victorian style orogenic gold remains an attractive exploration target based on the recent performance of the Fosterville Gold Mine after the discovery of the ultra-high grade gold Swan Zone in 2016 (Phillips, 2022).

Magmatic nickel sulfide exploration in the district remains immature. Very little exploration has been conducted focusing on this mineralisation style. It is noted that the recognition of this potential is not pervasive throughout the scientific literature and restricted to a few key proponents representing a novel exploration concept that will require additional validation with further exploration data.

8.2.6 Prospectivity

Orion’s exploration activity to date has been limited to desktop studies, focussed on both orogenic gold and magmatic nickel sulfide deposits in the Walhalla Project area. Orion’s work to date and the historical production from both these deposit styles in the project confirms the area’s prospectivity for orogenic gold and magmatic Cu-Ni-PGE. Orion’s tenement position covers the margins of the mineralised district with few of named gold and Ni-PGE occurrences occurring on the tenure.

Part C: Valuation

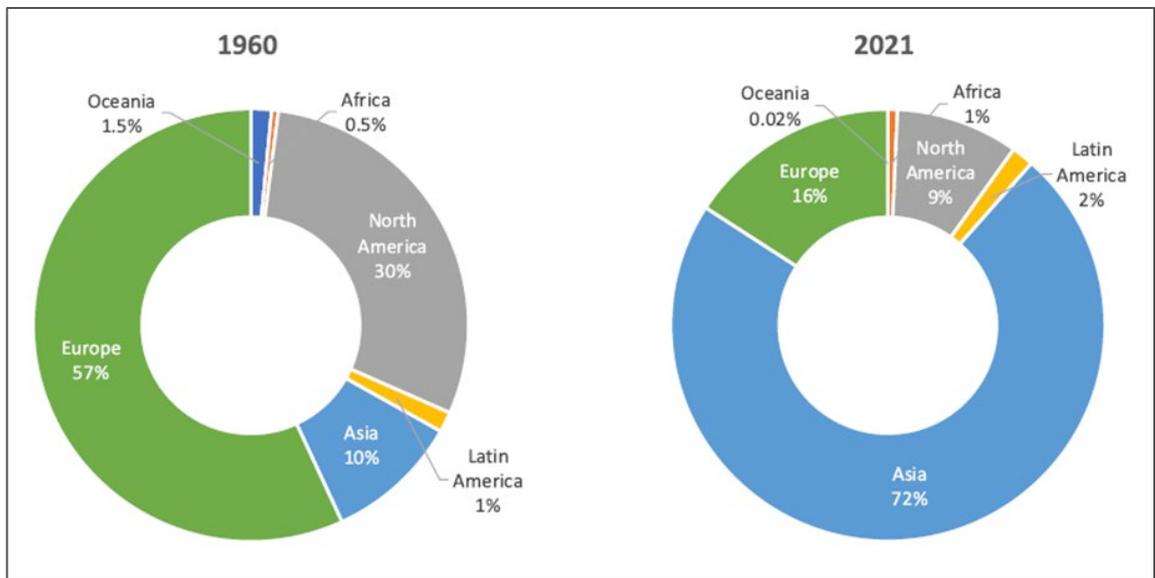
9 Considerations

Orion is a mineral exploration and development company focusing mostly on copper projects. Therefore, in assessing the value of Orion’s mineral assets, SRK has concentrated primarily on the key value drivers evident within the copper market.

9.1 Copper market

The International Copper Study Group (ICSG) notes that the key driver of global refined copper usage has been Asia, where demand has expanded eight-fold over the past four decades, mainly due to China.

Figure 9.1: Refined copper usage by region, 1960 to 2021



Source: International Copper Study Group, Factbook 2022

According to the prevailing edition of the Resources and Energy Quarterly (June 2023) by the Office of the Chief Economist at the Australian Department of Industry, Innovation and Science (OCE), despite China’s GDP growth surpassing analyst expectations in March quarter 2023, the effects on copper demand are relatively small. Unlike previous periods of growth, this recovery was led by demand for services (over goods).

ICSG expect growing demand from the power and electric vehicles (EV) sectors are key drivers of copper consumption in the future. An improvement in automotive production following COVID-19 supply disruptions is providing some support to copper consumption. EV penetration has increased at the same time, which will support copper demand (as EVs are more copper intensive than combustion vehicles).

ICSG forecast copper consumption is expected to grow by 2.8% in 2024 and by 3.5% in 2025, where it is forecast to reach 28 Mt, supported by growing demand from the power and EV sectors.

OCE reported that global mined copper production is forecast to grow to 22 Mt in 2023, an increase of 5.1% year-on-year. Global mined production fell by 0.1% year-on-year in the March quarter 2023 but is expected to improve throughout the year.

More significant growth in mined copper production is expected over the next two years. Global mined copper production is expected to reach almost 24 Mt in 2025.

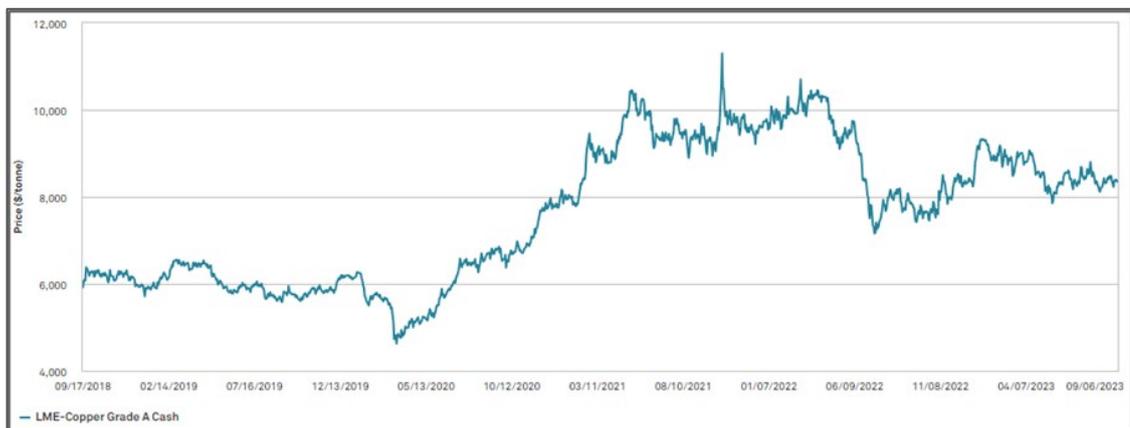
The forecast for higher mine production contains significant downside risks. Declining ore grades, higher production costs, aging facilities and increased environmental and social scrutiny increases challenges for producers.

OCE quarterly report stated refined copper production is expected to grow by 3.0% to 26 Mt in 2023. Global refined output in the March quarter 2023 was 3.4% higher than the same period a year ago. Global refined copper production growth is being strongly driven by China, with March quarter 2023 production up 10% compared to the March quarter 2022.

Copper prices rose to a record level (US\$10,720/t) in May 2021 (Figure 9.2), propelled by rising demand for material used in low emission technologies and batteries, fears of shortages, rising industrial activity in China, and the prospect of infrastructure roll-outs in the US. Since then the spot copper price declined finding support around the US\$8,000/t level and then has moved sideways reaching US\$8,800/t on 31 July 2023.

OCE forecast that demand will be a stronger driver of price than supply over the year, with risks skewed to the downside if the Chinese recovery stalls or major economies experience a hard landing.

Figure 9.2: Copper price (US\$/t)



Source: S&P Capital IQ Pro (accessed 18 September 2023)

9.2 Previous valuations

The VALMIN Code (2015) requires that an Independent Valuation Report should refer to other recent valuations or Expert Reports undertaken on the mineral properties being assessed.

Having asked the question of Orion, SRK is not aware of any previous publicly disclosed valuations prepared in accordance with the VALMIN Code (2015) relating to its Mineral Assets.

10 Valuation

The objective of this section is to provide RSM and the shareholders of Orion with SRK's opinion regarding the Market Value of Orion's Mineral Assets. SRK has not valued Orion, this being the corporate entity that is the beneficial owner of the respective Mineral Assets.

SRK has relied on information provided by Orion, as well as information sourced from the public domain, SRK's internal databases and SRK's subscription databases.

10.1 Mineral Asset valuation

The term 'Mineral Asset' refers to all property including, but not limited to:

- tangible property
- intellectual property
- mining and exploration tenure
- other rights held or acquired in connection with the exploration, development of and production from those tenures.

The VALMIN Code classifies Mineral Assets according to their maturity. Most Mineral Assets can be classified as either:

- **Early-Stage Exploration Projects** – tenure holdings where mineralisation may or may not have been identified, but where Mineral Resources have not been identified.
- **Advanced Exploration Projects** – tenure holdings where considerable exploration has been undertaken and specific targets identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resources category.
- **Pre-Development Projects** – tenure holdings where Mineral Resources have been identified and their extent estimated (possibly incompletely), but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources have been identified, even if no further work is being undertaken.
- **Development Projects** – tenure holdings for which a decision has been made to proceed with construction or production or both, but which are not yet commissioned or operating at design levels. The economic viability of Development Projects will be proven by at least a pre-feasibility study.
- **Production Projects** – tenure holdings – particularly mines, wellfields and processing plants – that have been commissioned and are in production.

10.2 Valuation approach

The VALMIN Code (2015) outlines three generally accepted valuation approaches:

- Market Approach
- Income Approach
- Cost Approach.

The Market Approach is based primarily on the principle of substitution and is also called the Sales Comparison Approach. The mineral asset being valued is compared with the transaction value of similar mineral assets under similar time and circumstance on an open market (VALMIN Code [2015]). Methods include comparable transactions, metal transaction ratio (MTR) and option or farm-in agreement terms analysis.

The Income Approach is based on the principle of anticipation of economic benefits and includes all methods that are based on the anticipated benefits of the potential income or cashflow generation of the mineral asset (VALMIN Code (2015)). Valuation methods that follow this approach include discounted cashflow (DCF) modelling, capitalised margin, option pricing and probabilistic methods.

The Cost Approach is based on the principle of cost contribution to value, with the costs incurred providing the basis of analysis (VALMIN Code (2015)). Methods include the appraised value method and multiples of exploration expenditure (MEE), where expenditures are analysed for their contribution to the exploration potential of the Mineral Asset.

The applicability of the various valuation approaches and methods varies depending on the stage of exploration or development of the mineral asset and hence the amount and quality of the information available on the mineral potential of the assets.

Table 10.1 presents the valuation approaches for the valuation of mineral properties at the various stages of exploration and development.

Table 10.1: Suggested valuation approaches according to development status

Valuation Approach	Exploration Projects	Pre-Development Projects	Development Projects	Production Projects
Market	Yes	Yes	Yes	Yes
Income	No	In some cases	Yes	Yes
Cost	Yes	In some cases	No	No

Source: VALMIN Code (2015)

The market approach to valuation is able to be used for the valuation of Mineral Assets regardless of development status but is typically applied as a primary approach for exploration to development projects.

An income-based method, such as a DCF model is commonly adopted for assessing the value of a tenure containing a deposit where an Ore Reserve has been produced following appropriate level of technical studies and to accepted technical guidelines such as the JORC Code (2012). However, an income-based method is generally not considered appropriate for deposits that are less

advanced or where technical risk is not quantified (i.e. no declared Ore Reserve and/or supporting mining and related technical studies).

The use of cost-based methods, such as considering suitable MEE is best suited to exploration projects, where Mineral Resources remain to be reliably estimated.

In general, these methods are accepted analytical valuation approaches that are in common use for determining the value of mineral assets. Given its direct reference to values paid in the market and ability to be actively observed, the market approach provides a direct link to Market Value. In contrast both income-based and cost-based methods derive a Technical Value (as defined below) which typically require the application of various adjustments to account for market considerations in order to convert these values to a Market Value.

The **Market Value** is defined in the VALMIN Code (2015) as, in respect of a Mineral Asset, the *'estimated amount of money (or the cash equivalent of some other consideration) for which the Mineral Asset should exchange on the date of Valuation between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing wherein the parties each acted knowledgeably, prudently and without compulsion'*. The term Market Value has the same intended meaning and context as the International Valuation Standards Council (IVSC) term of the same name. This has the same meaning as Fair Value in Regulatory Guide 111. In the 2005 edition of the VALMIN Code, this was known as Fair Market Value.

The 'Technical Value' is defined in the VALMIN Code (2015) as *'an assessment of a Mineral Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by a Practitioner, excluding any premium or discount to account for market considerations'*. The term 'Technical Value' has an intended meaning that is similar to the IVSC term 'Investment Value'.

Under prevailing industry norms, regulatory guidance and as required by the VALMIN Code (2015), Practitioners are required to estimate Market Value. There is no requirement to report Technical Value, which is only generally estimated as a step to report Market Value.

Valuation methods are, in general, subsets of valuation approaches and for example the Income Approach comprises several methods. Furthermore, some methods can be considered to be primary methods for valuation while others are secondary methods or rules of thumb considered suitable only to benchmark valuations completed using primary methods.

Methods traditionally used to value exploration and development projects include:

- MEE (expenditure-based)
- JV Terms Method (expenditure-based)
- Geoscience Ratings Methods (e.g. Kilburn – area-based)
- Comparable Transaction Method (market-based)
- MTR analysis (ratio of the transaction value to the gross dollar metal content, expressed as a percentage – market-based)
- Yardstick/Rule of Thumb Method (e.g. A\$/resource or production unit, percentage of an in situ value)
- The geological risk method.

In summary, however, the various recognised valuation methods are designed to provide an estimate of the mineral asset or project value in each of the various categories of development. In some instances, a particular mineral asset or project may comprise assets that logically fall under more than one of the previously discussed development categories.

10.3 Valuation basis

In estimating the value of the Mineral Assets of Orion as at the Valuation Date, SRK has considered various valuation methods within the context of the VALMIN Code (2015) as outlined in Section 10.3.3.

10.3.1 Reasonableness of technical inputs to the Prieska Model

SRK has reviewed the techno-economic model provided by Orion and denoted as "20210922_ORN_PCZM Fin Model BC8_v07.27-BCCG" (BC8 V7). The model was reviewed in conjunction with other documents supplied by Orion in particular the *Bankable Feasibility study of 2020 (BFS)* and the *updated ITE due diligence Report: Prieska Project revision Date 3 December 2021*, authored by The Minerals Corporation (hereinafter referred to as the ITE Report).

SRK had previously reviewed the BFS and the associated model "20200512 ORN PCZM Fin Model BC6 V8_Peer Review.xlsm" (BC6 V8). As an initial step for the current review, SRK compared BC8 V7 to previous comments provided to Orion regarding BC6 V8. It was found that most of the comments made for BC6 V8 were still valid and are discussed below.

It is important to note that, since the BC8 V7 was last updated in 2021, it did not incorporate the most recent price information. Some of the costs are escalated by 4.45% from the costs projected in BC6 V8 financial model, while some costs remained unchanged. Copper and zinc prices have increased by 15% (7,417 to 8,514 US\$/t) and 3% (2,362 to 2,431 US\$/t), respectively, from the time when the current model was last updated.

In SRK's opinion, it is likely that costs have increased by more than 4.45% since the BFS was completed in 2021, driven by higher than expected inflation worldwide due to supply chain issues associated with the COVID-19 pandemic and the onset of the Russia–Ukraine war. The supplied financial model should be updated to incorporate current economic indicators, and costs should also be re-evaluated, as SRK considers they are likely to be materially underestimated based on the date of the model's last update. Commentary on the appropriateness of the technical inputs is provided in detail below.

10.3.2 SRK's LoM Plan recommendations

Set out below are SRK's comments from this review, in no particular order or significance:

Impact of Prieska Model update from BC6 V8 to BC8.V7

It has come to SRK's attention, after reviewing the ITE Report, that the supplied model was developed subsequent to SRK's initial review of the BC6 V8 model associated with the BFS. Orion updated the BC6 V8 model to incorporate some of the recommendations stemming from the due diligence process. The ITE Report also notes that Orion made several additional changes to the Prieska Model, which were not influenced by either the ITE Report recommendations or the BFS study. These changes were informed by additional technical studies that Orion was conducting at the time. SRK has not been provided with access to reports associated with these subsequent studies, making it difficult to comment on the reasonableness of the inputs to the supplied financial model.

The ITE Report further states, a sentiment with which SRK concurs, that the updated model contains significant differences compared to the BC6 V8 model and the BFS report. These differences include adjustments to the mining schedule and grade, as well as revised project capital schedules and quantum. These changes will have an impact on the scheduled JORC Code compliant Ore Reserves. Consequently, the model is no longer based on the JORC Code compliant Ore Reserve statement and no reconciliation to the supporting study work was provided.

Scheduled Life-of-Mine plan

The Life-of-Mine (LoM) plan includes a significant amount of Inferred Mineral Resource material that has been included in the schedule for both open pit (56%) and underground (32%). SRK is aware that recent drilling has been conducted for the open pit, followed by an update to the Mineral Resource Estimate and subsequent classification upgrade. Commentary on the latest Mineral Resource Estimate is provided in Section 3.2. However, the reviewed model does not include the updated Mineral Resource Estimate data and still shows 56% of Inferred Resources.

Of particular concern for the underground portion is that these low-confidence Mineral Resources are scheduled early in the LoM with, after just over two years, 30% of the production coming from the Inferred Resources, which increases the risk of potentially not being able to achieve the plan. No additional drilling has been conducted (or to SRK's knowledge is proposed) for further study of these underground resources, so the risk remains.

SRK recommends that a model includes an option to report valuation parameters, such as NPV and IRR, excluding the Inferred Resources in the LoM (for at least the first three years of the schedule).

The total scheduled open pit ore to be mined is estimated at 1.117 Mt over a 14-month period towards the end of the LoM. Production varies significantly from month to month and sometimes exceeds the proposed design of 98.6 kt/m. SRK has noted from publicly available information that Orion is planning to bring the mining of the open pit forward but this information is not incorporated in the financial model.

Schedule LOM plan summary:

- The LoM plan contains 25.2 Mt of material with an underground average mined grade of 1.0% Cu and 3.3% Zn and 1.9% Cu and 2.4% Zn from the open pit. This plan is expected to produce 226 kt of Cu and 679 kt of Zn contained in separate concentrates.
- Underground mining is proposed to be carried out in years 1–11 at 2.4 Mt/a while the open pit is scheduled to be mined in years 11 and 12 with total 1.2 Mt ore (1.117 Mt is a total ore tonnage from open pit that will be mined within 14 months, after of 8 months pre-stripping of waste).

Processing

The designed ore processing rate is 2.4 Mt/a or 200 kt/m. However, the peak plant feed rate reaches 215 kt/m. There are several months where the plant's capacity of 200 kt/m is exceeded. While plant feed can often be optimised through proper control and understanding of plant operations, for feasibility assessment, it is advisable to maintain a constant feed rate at the nameplate capacity.

SRK also notes that during start-up, a reduced throughput of 150 kt/m is considered good practice. However, there is concern that achieving this rate in the first 2–3 months may be challenging. The transition from 150 kt/m to 200 kt/m over two months is considered by SRK to be unrealistic given the level of supporting technical information available. In SRK's opinion, it is more common to increase the feed rate gradually over 6–12 months to reach the nameplate capacity.

Development rates

SRK considers that the advance rates for the drill rigs, currently set at 275 m/month, are excessively high. SRK recommends revising this rate to 180 m/month for the purpose of planning within the valuation. The use of the higher rate in the model suggests that additional drill rigs will be necessary to meet the target development rates. This will have implications for both Capex (due to the need for additional rigs) and Opex (resulting from increased maintenance and labour requirements).

Cost estimates

Cost estimates were forecast from 2020 onwards with minor adjustments based on previous review recommendations and escalation due to inflation. Capital costs need to be reviewed based on changes in input prices that are likely to have increased more than the forecasted inflation, as well as the depreciation of the ZAR against other major currencies.

The total capital cost allocation for the Prieska Project differs from that presented on the Dashboard tab (total project capital, including contingency, at ZAR5,126 million) and what is included in the Capital Input tab (total project capital at ZAR5,732 million).

Sustaining capital is forecasted at 6% of direct costs under the proj_sum_mnth tab and at 3% of direct costs under the Capital inputs tab. This is likely to be an error, as the calculated amount used is based on the 6%. SRK recommends consistency within the model.

The open pit mining section of the report, Section 6.5.3, mentions that underground voids and sinkholes will interact with open pit mining. Therefore, backfilling of these voids will be required. The report references a ZAR21 million investment that will be capitalised in years 11 and 12 of the schedule. However, the review of the Capital tab in the financial model does not include any capital costs associated with backfilling in those years.

Cost inputs included in the Cost_Rate_Inputs tab have not changed from the BV6 V8 model. However, they have escalated by 4.45%. Therefore, if costs were originally underprovided, they remain so under the new model. SRK has, however, noted that the railroad costs had been adjusted upwards from ZAR703/t and ZAR730/t to ZAR768/t and ZAR798/t respectively for both Cu and Zn. This change was noted as made based on the due diligence review recommendations. SRK still maintains that the numbers are expected to be the same for Cu and Zn.

Closure costs

Closure costs have not been updated from the BV6 V8 model, therefore the following comments still remain: it would appear that the closure cost estimate, as determined in 2020 (cashflow V4 2020_0332), is ZAR224 million for Concurrent Rehabilitation, Decommissioning, and Rehabilitation, as well as aftercare and maintenance.

The annual commitment to the South African Department of Mineral Resources (DMR) over nine years accumulates to ZAR86.5 million. The basis for these annual commitments is not clear. As some of the DMR commitments' cost is covered by concurrent rehabilitation, additional funds are provided to meet the DMR commitment each year.

A financial provision of ZAR65.3 million will be available at the end of year nine. This provision is then used to reduce the decommissioning liability at the end of the LoM, where the remaining ZAR45.7 million is expended in a 12-month period. This approach was considered by SRK to be reasonable.

Recommendation

Based on its assessment of the supplied models and associated supporting information, SRK recommends that an alternative method other than an income-based approach such as a DCF, be considered for the valuation of the Prieska Mineral Resource currently included in the mine plan. In SRK's view there remains considerable uncertainty associated with the input parameters to the Project financial model, including the incorporation of significant tonnages of Inferred material, as well as contradictory costs and limited adjustments to reflect recent cost escalation.

10.3.3 Valuation basis

As summarised in Table 10.2, for the valuation of Orion's defined Mineral Resources, SRK elected to adopt a comparable transaction analysis as its primary valuation approach. The derived values determined using this approach were then crosschecked against values determined using the Yardstick Valuation method.

For the valuation of the exploration potential outside of the defined Mineral Resource areas, SRK elected to adopt values implied by comparable transaction analysis which have been crosschecked using a geoscientific rating approach and/or multiples of exploration expenditure.

Table 10.2: SRK’s adopted valuation basis

Project	VALMIN Development Stage	Description	Valuation basis
Prieska	Development	Mineral Resources	Market: Comparable Transactions Market: Yardstick Factors
		Exploration Potential	Not valued: Justification provided
Okiep	Pre-development	Mineral Resources	Market: Comparable Transactions Market: Yardstick Factors
		Exploration Potential	Cost: Geoscientific Rating Cost: Multiples of exploration expenditure
Jacomynspan	Advanced stage exploration	Mineral Resources	Market: Comparable Transactions Market: Yardstick Factors
		Exploration Potential	Cost: Geoscientific Rating Cost: Multiples of exploration expenditure
Areachap	Early-stage exploration	Exploration Potential	Cost: Geoscientific Rating Cost: Multiples of exploration expenditure
Fraser Range	Early-stage exploration	Exploration Potential	Market: Comparable Transactions Cost: Geoscientific Rating
Walhalla	Early-stage exploration	Exploration Potential	Market: Comparable Transactions Cost: Geoscientific Rating

Source: SRK Analysis

SRK notes that the VALMIN Code (2015) cautions in ascribing value to tenures under application. In considering these, SRK in its professional judgement has elected not to value tenures under application due to uncertainty in the timing and likely conditions associated with grant.

10.4 Mineral Resource

10.4.1 Project Mineral Resource Copper Equivalent

Prieska

Table 10.3 presents a summary of the Prieska Project Mineral Resources as reported on a 100% basis. The contained metal was converted to a copper-equivalent (CuEq) using the ratio of the average Zn and Cu prices for August 2023 of US\$2,407/t and US\$8,350/t respectively as outlined by the World Bank, to yield 695.3 kt of CuEq.

Table 10.3: Summary of the Mineral Resources

Mineral Resource category	Mineral Resource (Mt)	Cu %	Zn %	Contained CuEq (tonnes)
Indicated	20.4	1.2	3.4	453,496
Inferred	10.6	1.1	4.0	241,782
Total Mineral Resource	31.0	1.2	3.6	695,279

Source: SRK analysis

Notes: In calculating the CuEq metal ratio for valuation purposes the metal price adopted were US\$2,407/t zinc and US\$8,350/t copper, representing the average monthly spot price of each metal as sourced from World Bank data

Rounding errors may occur.

Okiep

As discussed in section 4.2, it is SRK’s opinion that the Measured Resource be downgraded to Indicated Resource for the purpose of this valuation exercise. On this basis, SRK has applied an Indicated 7.4 Mt at 1.35% Cu and Inferred 2.0 Mt at 1.29% Cu to value 99,930 t Cu and 26,000 t Cu, respectively.

Jacomynspan

Orion’s previous Concept Study relating to the Jacomynspan Project identified several risks including the small size of the defined deposit (at 0.3% Ni-eq cut-off) and low concentrate grade. SRK notes that arsenic in the concentrate is at 0.02%, which could be a problem.

RHDHV (2013) concluded that the project showed technical viability at a concept level. Further work was required for, *inter alia*, geotechnical assessment, metallurgical testwork, confirmation of power and water supply, and marketing assessment.

The contained metal within the Jacomynspan Mineral Resource was converted to a Cu-equivalent using the ratio of the average Ni and Cu prices for August 2023 of US\$20,439/t and US\$8,350/t respectively, to yield 562.9 kt of CuEq.

Table 10.4: Jacomynspan Copper Equivalent Mineral Resource Estimate

	Mt	Ni (%)	Cu (%)	Ni (t)	Cu (t)	CuEq (t)
Indicated	33.0	0.26	0.18	86,050	58,080	268,712
Inferred	32.3	0.29	0.19	94,275	63,376	294,141
Total	65.3	0.28	0.19	180,325	121,456	562,853

Sources: SRK analysis (2023)

Notes: In calculating the copper metal ratio the metal price used were US\$20,439/t Ni and US\$8,350/t copper

10.4.2 Actual transactions

On 02 August 2021, Orion acquired the Okiep Project from SAFTA, NCC and BCC for ZAR76.5 million. The aggregate purchase consideration payable by Orion to the Target Entities and their shareholders is ZAR76.5 million, to be settled as ZAR18.4 million in cash and ZAR58.1 million in Orion fully paid ordinary shares. At the time of the transaction, the Okiep Project had a reported Mineral Resource of 11.5 Mt at 1.4% Cu for 159 kt of contained copper. While it is stated that the acquisition was for a controlling interest, it is not clear from the public details available if this was a 100% interest. Assuming that the purchase consideration was for 100% interest, the implied multiple is ZAR481/t CuEq. On a normalised basis, the implied multiple is ZAR429/t CuEq. If converted to A\$ using the exchange rate of ZAR12.25 = A\$1.00, the normalised implied multiple is A\$35/t CuEq.

In applying this multiple to the Prieska, Okiep and Jacomynspan Mineral Resources, the market is likely to pay in the range of between A\$44.9 M and A\$67.3 M.

Table 10.5: Comparable Market Transaction of Mineral Resource

Project	Total CuEq (tonnes)	Low (A\$/t)	High (A\$/t)	Mid-point (A\$/t)	Low (A\$ M)	High (A\$ M)	Mid-point (A\$ M)
Prieska	695,279	40	60	50	27.81	41.72	34.76
Okiep	125,930	28	42	35	3.53	5.29	4.41
Jacomynspan	562,853	24	36	30	13.51	20.26	16.89
Total	1,384,061				44.85	67.27	56.06

Sources: SRK analysis (2023)

Notes: Exchange rate of ZAR12.25 = A\$1.00.

10.4.3 Comparable market transactions

For its valuation of the Mineral Resources as outlined in Section 10.4.1, SRK has compiled copper resource transactions using its internal databases as well as the S&P Capital IQ Pro subscription database. The raw data relied on for the Mineral Resource valuation are presented in Table 10.6 (Comparable Market Transactions).

After compiling the relevant data, SRK reviewed transactions involving African copper projects (at various development stages) that occurred between 2015 and 2022. SRK identified 11 transactions that it considered sufficiently relevant and for which sufficient information was available to calculate a resource multiple. The comparable transactions used were primarily sourced from Zambia, where the mineralisation differs from the VMS styles prevalent in the Northern Cape, South Africa. Projects from various life stages, including those in reserve development, were also included due to the limited number of projects found at the feasibility/scoping level. However, despite the use of projects at different stages, the range of multiples did not vary significantly. The implied transaction multiple for defined Mineral Resources was then expressed in ZAR/t terms. This implied multiple was calculated using the transaction value (at the implied 100% acquisition cost) and the total contained Mineral Resources supporting the transaction. Given the copper price volatility and future price uncertainty, SRK elected to use the August 2023 average US\$ denominated copper price of US\$8,350/t (as represented by the World Bank's average spot price for August 2023) to normalise the implied multiples and inform its market analysis.

Importantly, while transaction multiples are widely used in valuation, they rely on the assumption that the reported Mineral Resources have been appropriately reported and can be taken at face value. The method assumes that differences in reporting regimes, between different Competent Persons, resource classification, metal recovery and adopted cut-off grades (which may change between assets and/or companies) do not materially influence the implied multiple. The method implicitly assumes total recoverability of all metal tonnes/ounces, as reliable and accurate data are generally not disclosed or available around the time of most transactions or for all companies. Further, transaction multiples to be applicable to the target properties should be comparable in all material aspects. Importantly, SRK's implied value calculations are for the purposes of its valuation and do not attempt to estimate or reflect the metal likely to be recovered as required under the JORC Code (2012).

The multiples derived from SRK analysis both raw and normalised are presented in Table 10.6.

Table 10.6: Resource-based transaction multiple analysis for copper

	Resource Multiple – Raw ZAR/t)	Resource Multiple – Normalised ZAR/t)
All		
Transaction 1	3,233	2,601
Transaction 2	959	1,179
Transaction 3	1,041	1,279
Transaction 4	843	1,036
Transaction 5	1,407	1,730
Transaction 6	224	268
Transaction 7	204	291
Transaction 8	171	239
Transaction 9	20	17
Transaction 10	5	6
Transaction 11	3,502	3,668
Median	843	1,036
Average	1,055	1,119

Table 10.6 summarises the multiples implied by recent transactions involving similar assets to those held by Orion prior to the Proposed Transaction. SRK has used these implied multiples to establish the value of the Mineral Resources held by Orion on a 100% attributable basis.

In the case of Prieska, the market comparable multiples used above (low of ZAR1,500/t and high of US\$2,000/t) were applied to the contained CuEq tonnage and converted to A\$ using the exchange rate of ZAR12.25 = A\$1.00.

In the case of Okiep, SRK has applied the mid-point of the estimated Exploration Target and multiples of ZAR843/t and ZAR1,119/t for the low and high, respectively.

For the Mineral Resources at Jacomynspan, SRK has applied multiples of ZAR800/t and ZAR1,000/t for the low and high, respectively.

Table 10.7: Comparable Market Transaction of Mineral Resource

Project	Total CuEq (tonnes)	Low (A\$/t)	High (A\$/t)	Low Value (A\$ M)	High Value (A\$ M)	Mid-point (A\$ M)
Prieska	695,279	122.45	163.27	85.14	113.52	99.33
Okiep	125,930	68.82	91.35	8.67	11.50	10.08
Jacomynspan	562,853	65.31	81.63	36.76	45.95	41.35
Total	1,384,061			130.56	170.97	150.76

Sources: SRK analysis (2023)

Notes: Exchange rate of ZAR12.25 = A\$1.00.

Based on this comparable transaction analysis, SRK considers the implied value of the Mineral Resources held by Orion lies in the range A\$130.6 million to A\$171.0 million with a mid-point valuation of A\$150.8 million on a 100% basis.

10.4.4 Industry Yardstick crosscheck

As a crosscheck to the values implied by market multiples, SRK has also considered standard industry yardsticks.

Under the Yardstick method of valuation, specified percentages of the spot price are used to assess the likely value. Commonly used Yardstick factors range between 0.5% and 5.0% of the prevailing spot price, as set out below.

Measured Resources	–	2.0% to 5.0% of the spot price
Indicated Resources	–	1.0% to 2.0% of the spot price
Inferred Resources	–	0.5% to 1.0% of the spot price
Exploration Target	–	0.1% to 0.5% of the spot price.

To determine the relevant Yardstick factors for use, SRK adopted the August 2023 average US\$ copper price of US\$8 350/t and the US\$/A\$ of 1.55. On this basis, the implied value range multiplies with a copper price of A\$12,943/t using the yardstick factors are summarised in Table 10.8.

Table 10.8: Yardstick factors value range for copper

Resource	Percentage of the spot price	Value Range	
		Low A\$/t	High A\$/t
Measured	2.0% to 5.0%	259	647
Indicated	1.0% to 2.0%	129	259
Inferred	0.5% to 1.0%	65	129
Target	0.1% to 0.5%	13	65

Source: SRK Analysis

Based on this Yardstick analysis, SRK considers the implied value of the Mineral Resources in the three projects held by Orion lies in the range A\$142.8 million to A\$285.5 million with a mid-point valuation of A\$214.2 million.

Table 10.9: Yardstick valuation of the Mineral Resources

Project	Total CuEq (tonnes)	Low (A\$ M)	Value High (A\$ M)	Mid-point (A\$ M)
Prieska	695,279	74.3	148.7	111.5
Okiep	125,930	14.62	29.23	21.92
Jacomynspan	562,853	53.81	107.63	80.72
Total	1,384,061	142.77	285.54	214.15

Sources: SRK analysis (2023)

10.4.5 Summary of the Mineral Resource valuation

SRK has elected to adopt the values implied by its comparable transaction analysis which have been crosschecked against the values implied by an actual transaction relating to Okiep and industry yardsticks to inform its valuation range for Orion’s Mineral Resources (Table 10.13).

SRK notes that the Yardstick method returns values significantly higher than the other methods as it is generic and does not take into account differences in the inherent characteristics between projects that may include stage of development, geology, mineralisation, infrastructure, geopolitical, corporate structure and other factors.

Table 10.10: Summary of SRK’s Valuation of Mineral Resources

Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Actual transaction	27.8	41.7	34.8
Comparable transactions	85.1	113.5	99.3
Yardstick	74.3	148.7	111.5
Selected Prieska (100%)	85.1	113.5	99.3
Actual transaction	3.5	5.3	4.4
Comparable transactions	8.7	11.5	10.1
Yardstick	14.6	29.2	21.9
Selected Okiep (100%)	8.7	11.5	10.1
Actual transaction	13.5	20.3	16.9
Comparable transactions	36.8	45.9	41.4
Yardstick	53.8	107.6	80.7
Selected Jacomynspan (100%)	36.8	45.9	41.4
TOTAL	130.6	171.0	150.8

Source: SRK Analysis

Based on this analysis, SRK considers the value of Orion’s Mineral Resources in South Africa resides between A\$130.6 million to A\$171.0 million with a preferred valuation of A\$150.8 million on a 100% basis.

10.5 Exploration potential – South Africa

In addition to the value associated with the defined Mineral Resources, SRK considers the broader tenure holding may also have value above and beyond that reflected in its valuation of the Mineral Resources. To this end, SRK has considered geoscientific rating and MEE methods for early-stage to advanced exploration projects. Details of SRK's review and the associated outcomes are presented below.

10.5.1 Exploration potential at Prieska

In addition to its assessment of the Mineral Resources, SRK has also considered the value associated with the mineral tenure surrounding the currently defined Mineral Resource and Ore Reserve areas held by the parties.

Valuation of Prieska prospecting licences outside of the mine area

SRK has reviewed information made available by Orion in the supplied virtual data room in addition to other online, public information, including relevant Company annual reports, in order to find relevant information for evaluating the prospecting rights near the Prieska copper-zinc mine. Unfortunately, very limited information was found.

The primary focus for SRK was obtaining the Prospecting Work Program reports for both executed and pending licences. For executed licences, the Work Progress report was essential. These documents were expected to provide valuable insights into the planned prospecting work and associated costs, as well as detailing the previously incurred exploration expenditures.

Below are the details of the information, able to be compiled and reviewed by SRK regarding the Company's relevant prospecting rights:

NC11850PR

The prospecting right expired 08 March 2023, but a renewal application has been submitted, with no anticipated issues in its approval. Previous exploration details for this tenure are included in the Orion Areachap Belt exploration report dated 02 May 2020. The tenure is divided into two sections: the northern section just above the PCML mining right and the southern portion southeast of the Prieska current mining right.

Regional exploration efforts in the area, including SkyTeM geophysical surveying and soil geochemical sampling, have identified two mineralised occurrences within the southern portion of the licence. The first occurrence, named Annex deposit, was discovered by Anglovaal between 1961 and 1981. The second, Ayoba deposit, was discovered by Orion in 2018 (Orion Annual Report to Shareholders, 2021). Unfortunately, SRK could not access exploration expenditures associated with the Ayoba discovery.

No mineral occurrences have been identified in the northern portion of the prospecting right. It is important to note that drilling on the Annex deposit was halted due to its subeconomic nature (Orion Exploration Report, 2020).

SRK initially attempted to estimate exploration costs for the prospecting right using information within the exploration and annual reports, such as reported costs for soil sampling, SkyTEM and Airborne Electromagnetic surveys, and drilling. However, it became evident that these costs were

incurred on a deposit or regional level, making it challenging to allocate them accurately to the prospecting right. Therefore, SRK considers access to Orion's incurred costs per prospecting right is required to support a defensible valuation.

Additionally, SRK explored the possibility of finding comparable transactions for reference but could not locate any recent prospecting rights transactions, either in South Africa or elsewhere in Africa.

NC11840PR

This prospecting right expired on 28 August 2023. The application to renew the prospecting right was accepted by DMRE on 15 September 2023. According to Orion's Annual Report in 2021, mineral occurrences were identified within this prospecting right by Newmont South Africa between 1976 and 1979. These were named PK1, PK3, and PK6, and they were discovered through airborne geophysical surveys and drilling. The exploration report even mentions a non-compliant small resource estimate relating to the K3 deposit. The report mentions 30 diamond holes drilled, totalling approximately 7,500 m. However, this data is presented on a deposit basis, making it challenging for SRK to make precise inferences without information on the drilling locations.

NC12257PR, NC12258PR, NC12287PR, NC12405PR

Applications for these prospecting rights have been submitted, but the licence execution is still pending. Unfortunately, the documents reviewed provided no information associated with these prospecting rights. There is currently no evidence of mineralisation occurrences and deposit discoveries within these prospecting rights.

Conclusion

SRK is unable to provide a valuation for exploration potential associated with the prospecting rights near Prieska Mine for the following reasons:

- **Cost Approach:** The cost approach would have been SRK's preferred valuation method, given the difficulty in finding comparable transactions. However, SRK lacks the necessary information to conduct a cost-based valuation.
- **Historical Exploration at regional level:** There is a complex history of exploration work conducted in the region by previous owners and Orion. SRK considers it challenging to differentiate and allocate costs to specific prospecting rights without more precise information.
- **Necessity of Work Program Reports:** Prospecting Work Program reports and Work Progress reports associated with each prospecting right are essential for accurately valuing these properties. Unfortunately, SRK does not have access to these critical documents.

10.5.2 Geoscientific rating method for Okiep, Jacomynspan and Areachap projects

As a primary valuation method for exploration potential value in South Africa, SRK has also considered the Geoscientific Rating method. The Geoscientific Rating or modified Kilburn method of valuation attempts to quantify the relevant technical aspects of a property through appropriate multipliers (factors) applied to an appropriate base (or intrinsic) value and is considered to be a cost-based method of valuation. The intrinsic value is referred to as the base acquisition cost (BAC), which represents the "average cost to identify, apply for and retain a base unit of area of title" for one year.

Multipliers are considered for off-property aspects, on-property aspects, anomaly aspects and geology aspects. The geoscientific rating criteria are presented in Table 10.12. These multipliers are applied sequentially to the BAC to estimate the Technical Value for each tenement.

As outlined in Table 10.11, SRK has developed a BAC for Orion’s South African tenures in the Northern Cape for the purposes of this valuation, which incorporates annual rental, administration and application fees in addition to nominal indicative minimum expenditure on acquisition and costs of identification.

Table 10.11: Underlying assumption to the base acquisition cost

	Unit	Value
Average licence size ¹	km ²	202
Average licence age ²	years	5
Application fee	ZAR per licence	500
Environmental Authority cost ³	ZAR per licence	1,000,000
Annual rent ⁴	ZAR per licence	20,248
BAC of average licence	ZAR per km ²	5,041
BAC of average licence	ZAR per ha	50
BAC of average licence	A\$ per km ²	412
BAC of average licence	A\$ per ha	4

Sources: SRK analysis (2023)

Notes:

¹ Average size

² Initial term 5 years

³ Estimate including hire of consultant.

⁴ Estimated rent to farmer average rate of ZAR100 per km² per year

An average BAC of A\$412/km² has been assumed in this valuation, which incorporates annual rental, environmental authority survey as well as acquisition and holding costs.

Table 10.12: Modified property rating criteria

Rating	Off-property factor	On-property factor	Anomaly factor	Geological factor
0.1			No mineralisation identified – area sterilised	Unfavourable geological setting
0.5	Unfavourable district/basin	Unfavourable area	Extensive previous exploration provided poor results	Poor geological setting
0.9			Poor results to date	Generally favourable geological setting, under cover or complexly deformed or metamorphosed
1.0	No known mineralisation in district	No known mineralisation on lease	No targets outlined	Generally favourable geological setting
1.5	Minor workings	Minor workings or mineralised zones exposed	Target identified, initial indications positive	Multiple exploration models being applied simultaneously
2.0		Several old workings or exploration targets identified		Well-defined exploration model applied to new areas
2.5	Several old workings in district		Significant grade intercepts evident but not linked on cross sections or long sections	Significant mineralised zones exposed in prospective host rock
3.0	Mine or abundant workings with significant previous production	Mine or abundant workings with significant previous production		Well-understood exploration model, with valid targets in structurally complex area, or under cover
3.5				Well-understood exploration model, with valid targets in well understood stratigraphy
4.0	Along strike from a major deposit		Several economic grade intercepts on adjacent sections	Advanced exploration model constrained by known and well-understood mineralisation
5.0	Along strike for a world class deposit	Major mine with significant historical production		
6.0				
10.0		World class mine		

Source: Modified after Xstract, 2009 and Agricola Mining Consultants, 2011.

A further market factor is then considered to derive a Market Value. In converting its implied technical values to a market value, SRK considers that market participants would not apply a premium or discount to the technical value to account for the current market sentiment and recent commodity price performance.

In addition, SRK considers that any tenures in application should not be valued due to uncertainty in likely timing of the grant, as well as approval conditions associated with the grant.

Using the geoscientific rating method (calculations presented as Appendix B), SRK considers a 100% interest in the exploration potential of the South African Mineral Assets (excluding the areas covered by the defined Mineral Resources) resides between A\$5.7 million and A\$19.6 million.

Table 10.13: Summary of exploration potential value using the Geoscientific (Kilburn) Method – 100% basis

Licence	Area (km ²)	BAC (A\$/km ²)	Market Value (A\$'000)		
			Lower	Upper	Mid-point
NC12292PR	984.36	412	\$1,825	\$7,300	\$4,563
Areachap			\$1,825	\$7,300	\$4,563
NC11010PR	529.99	412	\$655	\$2,948	\$1,801
NC10938PR	163.99	412	\$203	\$912	\$557
Jacomynspan			\$858	\$3,860	\$2,359
NC10150MR	12.10	412	\$67	\$183	\$125
NC11125PR	184.75	412	\$1,028	\$2,797	\$1,912
Section 102 added	170.57	412	\$949	\$2,583	\$1,766
NC12357PR	25.47	412	\$142	\$386	\$264
NC12850PR	12.10	412	\$67	\$183	\$125
NC12852PR	76.89	412	\$428	\$1,164	\$796
NC12854PR	73.18	412	\$407	\$1,108	\$758
Okiep			\$3,087	\$8,404	\$5,746
Total			\$5,770	\$19,564	\$12,667

Source: SRK analysis (Total is rounded)

Note: This valuation is on a 100% basis

10.5.3 Multiples of Exploration Expenditure method for Okiep, Jacomynspan and Areachap projects

The MEE method is largely based on the assumption that, where possible, vendors will seek a return on sunk investments and, as a result, multipliers are used to estimate the possible market value. This method uses previous exploration expenditure and future committed exploration expenditure to derive a base estimate of value for the tenements. This base value is then factored by a prospectivity enhancement multiplier (PEM) with adjustments for market premium or discount and consideration of the quality of the exploration results used to derive a Market Value for the tenements (Table 10.14).

Table 10.14: Prospectivity enhancement multipliers

Adjustment Factor range	Criteria
0.2–0.5	Exploration has downgraded the potential. Relinquishment recommended on technical grounds.
0.5–1.0	Exploration has maintained the potential. Scattered surface indications including regional mapping and rock chip results. Further work may be warranted.
0.1–1.3	Exploration has slightly increased the potential with some encouraging surface results. Further exploration recommended on sound technical grounds.
1.3–1.5	Exploration has considerably increased the potential. Anomalous zones defined from geochemistry and/or geophysics.
1.5–2.0	Preliminary drilling intersected interesting mineralisation intersections, not on adjacent sections.
2.0–2.5	Detailed drilling has defined targets with potential economic interest. Results can be linked between sections. Exploration Targets could be estimated.
2.5–3.0	Mineral Resource has been estimated to at least the inferred category in accordance with the JORC Code. Further detailed drilling recommended to define or expand the resource.

Source: Agricola (2018)

Based on the available geological reports, SRK has estimated past exploration expenditure that included regional airborne surveys, geophysical surveys, drilling and sampling for each of the prospecting rights in the Northern Block of the Areachap tenements. The historical expenditure and planned exploration activities were estimated in 2023 money terms and added before applying a PEM, as shown in Table 10.14.

The Company purchased mining and exploration data from the Okiep database for ZAR24 million in July 2021. At the average exchange rate at the transaction date of ZAR10.70 = A\$1.00, this translates into a minimum value for the historical data of A\$2.24 million.

The MEE calculations are summarised in Table 10.15.

Based on its analysis using the MEE method, SRK considers the value of the exploration potential associated with the South African Mineral Assets resides between A\$32.1 million and A\$45.08 million on a 100% equity interest basis.

Table 10.15: Multiples of Exploration Expenditure Value

Tenement	Estimated Exploration Expenditure (A\$ M)		PEM range	Low (A\$M)	High (A\$M)	Preferred (A\$M)
	Historical	Planned				
NC12292PR	7.4	2.0	1.0–2.0	11.5	15.5	13.5
NC11010PR	12.7	1.8	1.0–2.0	16.1	22.8	19.4
NC10938PR						
North Block Jacomynspan				27.6	38.3	32.9
NC10150MR						
NC11125PR						
Section 102 added						
NC12357PR	Purchase of historical data					
NC12850PR						
NC12852PR						
NC12854PR						
Okiep		2.24		2.0–3.0	4.5	6.7
Total				32.1	45.0	38.5

Source: SRK analysis (2023)

10.5.4 Summary of the exploration potential valuation in South Africa

SRK has elected to adopt the values implied by the geoscientific rating and MEE methods and applied an equal weighting to inform its valuation range for Orion’s exploration potential in South Africa (Table 10.16).

Table 10.16: Summary of SRK’s Valuation of Exploration Potential in South Africa

Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Geoscientific rating	3.1	8.4	5.7
MEE	4.5	6.7	5.6
Selected Okiep (100%)	3.8	7.6	3.8
Geoscientific rating	0.9	3.9	2.4
MEE	16.1	22.8	19.4
Selected Jacomynspan (100%)	8.5	13.3	8.5
Geoscientific rating	1.8	7.3	4.6
MEE	11.5	15.5	13.5
Selected Areachap (100%)	6.7	11.4	6.7
TOTAL	18.9	32.3	18.9

Source: SRK Analysis

Based on this analysis, the implied value range of the exploration potential in South Africa is estimated to reside between A\$18.9 million to A\$32.3 million on a 100% basis. SRK has considered the wide range of the different methods arises due to uncertainty of assumptions used and has therefore selected the low of the range as its preferred value (i.e. A\$18.9 million) on a 100% basis.

10.6 Exploration potential – Australia

10.6.1 Introduction

In addition to its assessment of the Mineral Resources and exploration potential in South Africa, SRK has also considered the value associated with the mineral tenure situated in Australia.

In doing so, SRK has considered the values implied by comparable transaction analysis for early to advanced stage exploration projects and geoscientific rating methods. Details of these valuation methods and the associated outcomes are presented below.

10.6.2 Comparable transactions

SRK has also reviewed transactions involving early to advanced stage gold and nickel exploration projects in Australia (i.e. those without defined Mineral Resources) occurring between 2020 and 2023. SRK has identified and compiled data for 18 gold transactions in Victoria and 27 nickel transactions in Western Australia (Table 10.17) for which sufficient information was available to calculate an area-based multiple (i.e. US\$/km² or US\$/ha). SRK's analysis of the implied multiples was based on the reported areal extent of mineral tenure.

For the purposes of this section, SRK has expressed the area-based transaction multiple in A\$/km² terms. This value has been calculated using the transaction value (at the implied 100% acquisition cost) and the total area of the project tenure acquired at the time of the transaction. To normalise the implied multiples to inform its market analysis, SRK elected to use the average Australian dollar gold and nickel prices of A\$2,959/oz and A\$31,517/t, being the respective average spot prices for the month of August 2023.

SRK notes a broad relationship between the size of the tenure acquired and the implied value (in A\$/km² terms). As exploration progresses on a tenure, explorers will, in accordance with regulatory requirements, intermittently relinquish those areas of perceived lower potential and retain only those areas considered to be the most prospective. At the same time, exploration information is added with expenditure on exploration activity resulting in an increase in value to the tenure. This results in an inverse relationship between increasing value and reducing size of the tenure.

Table 10.17: Area-based transaction multiple analysis

	Area Multiple (US\$/km²)	Normalised Area Multiple (US\$/km²)
Gold transactions in Victoria		
Number	18	18
Minimum	153	180
Average	45,602	54,713
Median	9,722	10,770
Maximum	294,677	381,378
1st Quartile	2,013	2,488
3rd Quartile	38,462	42,868
Nickel Transactions in Western Australia		
Number	27	27
Minimum	337	390
Average	10,975	12,004
Median	3,618	3,618
Maximum	69,536	77,387
1st Quartile	1,652	1,496
3rd Quartile	10,222	11,306

Source: S&P Global IQ Pro, SRK analysis

Based on its review of the available technical information, SRK has assessed the value of the exploration holdings for the relevant parties. All values were estimated on a net attributable equity basis.

Based on its review of the available technical information, SRK has selected ranges for exploration potential based on the size of the tenure and perceived prospectivity of each tenement.

The implied values of a 100% interest in the exploration potential of Orion's mineral tenures using the comparable transaction method are provided in Table 10.18.

Table 10.18: Exploration potential value using Transaction Analysis – 100% basis

Project	Area (km ²)	Ownership (%)	Average Multiples by area (A\$/km ²)			Market Value (A\$)		
			Lower	Upper	Preferred	Lower	Upper	Preferred
E28/2367	123.2	100%	3,200	4,800	4,000	394,200	591,400	492,800
E28/2596	268.8	100%	1,600	2,400	2,000	430,100	645,100	537,600
E39/1653	64.4	100%	3,600	5,400	4,500	231,800	347,800	289,800
E39/1654	112	100%	2,640	3,960	3,300	295,700	443,500	369,600
Fraser Range	568.40					1,351,800	2,027,800	1,689,800
EL5042	34.73	100%	12,000	18,000	15,000	416,700	625,100	520,900
EL6069	53.68	100%	8,000	12,000	10,000	429,400	644,100	536,800
Walhalla	88.41					846,100	1,269,200	1,057,700
Total						2,197,900	3,297,000	2,747,500

Source: SRK Analysis

Note: While this valuation is on a 100% basis, Fraser Range tenement ownership ranges between 10% and 35%

Using the Comparative Transactions – area-based method, SRK considers the Market Value of the exploration potential associated with Orion’s mineral tenures in Australia resides between A\$1.5 M and A\$2.3 M, with a preferred value of A\$1.9 M.

10.6.3 Geoscientific Rating

As a crosscheck to the values implied by market multiples, SRK has also considered the Geoscientific Rating method, a cost-based method. The Geoscientific Rating or modified Kilburn method of valuation attempts to quantify the relevant technical aspects of a property through appropriate multipliers (factors) applied to an appropriate base (or intrinsic) value and is considered to be a cost-based method of valuation. The intrinsic value is referred to as the BAC, which represents the “average cost to identify, apply for and retain a base unit of area of title” for one year.

Multippliers are considered for off-property aspects, on-property aspects, anomaly aspects and geology aspects. The geoscientific rating criteria are presented in Table 10.12. These multipliers are applied sequentially to the BAC to estimate the Technical Value for each tenement.

A BAC has been assumed in this valuation, which incorporates annual rental, administration and application fees in addition to nominal indicative minimum expenditure on acquisition and costs of identification (Table 10.19) to be the following:

1. A\$492/km² (US\$5/ha) for EL in Western Australia
2. A\$423/km² (US\$4/ha) for EL in Victoria.

Table 10.19: Underlying assumptions to the base acquisition cost

Exploration Licence BAC in Western Australia		
Metric	Unit	Value
Average licence size	km ²	67.7
Average licence age	years	4
Application fee	A\$ per licence	1,580
Annual rent Year 1–3	A\$ per km ²	45.82
Annual rent Year 4	A\$ per km ²	38.67
Minimal annual expenditure Year 1–3	A\$ per km ²	324.96
Minimal annual expenditure Year 4	A\$ per km ²	243.72
Costs of identification, legal costs and negotiations and compensation agreements	A\$ per licence	35,132
Annual rates	A\$ per licence	2,000
BAC of average exploration licence	A\$ per km ²	492
BAC of average exploration licence	A\$ per ha	4.92
BAC of average licence	A\$ per km ²	500
BAC of average licence	A\$ per ha	5.00

Victoria: Exploration Licence	Cost (A\$)	Area (km²)	Cost (A\$/km²)
Identification Cost	5,000.00	246.77	20.26
Native title assessment	1,088.50	246.77	4.41
Landowner notices, negotiations, legal costs and compensation	8,911.50	246.77	36.11
Application	2,159.00	246.77	8.75
Administration costs other	7,841.00	246.77	31.78
Rent	12,609.69	246.77	51.10
Minimum Exploration Spend	334,103.25	246.77	270.79
BAC	371,712.94		423.20

A further market factor is then considered to derive a Market Value. In converting its implied technical values to a market value, SRK considers that market participants would not apply a premium or discount to the technical value to account for the current market sentiment and recent commodity price performance.

In addition, SRK considers that any tenures in application would attract a 20% discount to reflect the uncertainty in likely timing of the grant, as well as approval conditions associated with the grant.

Using the geoscientific rating method (calculations presented as Appendix B), SRK considers a 100% interest in the exploration potential of the Mineral Assets (excluding the areas covered by the defined Mineral Resources) resides between A\$0.4 million and A\$1.8 million.

Table 10.20: Summary of Exploration Potential Value using the Geoscientific (Kilburn) Method – 100% basis

Project	Area (km ²)	Basis (%)	Market Value (A\$)		
			Lower	Upper	Mid-point
E28/2367	123.2	100%	73,646	409,147	241,397
E28/2596	268.8	100%	53,561	446,342	249,952
E39/1653	64.4	100%	12,832	106,936	59,884
E39/1654	112	100%	22,317	185,976	104,147
Fraser Range	568.40		162,000	1,148,000	655,000
EL5042	34.73	100%	69,407	264,408	166,908
EL6069	53.68	100%	107,286	408,708	257,997
Walhalla	88.41		177,000	673,000	425,000
Total			339,000	1,821,000	1,080,000

Source: SRK analysis (Total is rounded)

Note: While this valuation is on a 100% basis, Fraser Range tenement ownership ranges between 10% and 35%

10.6.4 Summary of the exploration potential valuation in Australia

SRK has elected to adopt the values implied by the comparable transactions and geoscientific rating methods and applied an equal weighting to inform its valuation range for Orion's Exploration Potential in Australia (Table 10.21).

Table 10.21: Summary of SRK's valuation of exploration potential in Australia

Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Comparable transactions	1.4	2.0	1.7
Geoscientific rating	0.2	1.1	0.7
Selected Fraser Range (100%)	0.8	1.6	1.2
Comparable transactions	0.8	1.3	1.1
Geoscientific rating	0.2	0.7	0.4
Selected Walhalla (100%)	0.5	1.0	0.7
TOTAL	1.3	2.6	1.9

Source: SRK Analysis

Based on this analysis, the implied value range of the exploration potential in Australia is estimated to reside between A\$1.3 million to A\$2.6 million. SRK has considered the wide range of the different methods and has selected the mid-point of the range as the preferred value at A\$1.9 million on a 100% basis.

10.7 Valuation summary

Based on its technical assessment presented in the earlier sections of this Report, SRK has completed a valuation of Orion’s Mineral Assets in accordance with its mandate.

SRK has reviewed the Prieska LoM schedule and has decided not to use an income approach in valuing the mining inventory.

SRK has elected to adopt the values implied by the comparable transaction analysis and industry yardsticks to inform its valuation range for Orion’s Mineral Resources (Table 10.22). SRK has applied equal weighting to these valuation methods as it has no strong inclination to the values either side.

In estimating the value of the exploration potential of Orion’s mineral tenures outside the defined Mineral Resource areas, SRK has considered the values implied by geoscientific rating and MEE methods. SRK has applied equal weighting to these valuation methods as it has no strong inclination to the values at either end of the valuation range.

Based on its analysis, SRK considers the current Market Value of Orion’s Mineral Assets on a 100% basis resides between AS\$150.8 million and A\$205.8 million, with a preferred value of A\$171.6 million, as summarised in Table 10.22.

Table 10.22: Summary of the Market Value of the Mineral Assets, on 100%e basis

Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Mineral Resource	85.1	113.5	99.3
Exploration Potential	0.0	0.0	0.0
Selected Prieska (100%)	85.1	113.5	99.3
Mineral Resource	8.7	11.5	10.1
Exploration Potential	3.8	7.6	3.8
Selected Okiep (100%)	12.4	19.1	13.9
Mineral Resource	36.8	45.9	41.4
Exploration Potential	8.5	13.3	8.5
Selected Jacomynspan (100%)	45.2	59.3	49.8
Exploration Potential	6.7	11.4	6.7
Selected Areachap (100%)	6.7	11.4	6.7
Total South Africa	149.5	203.2	169.7
Exploration Potential	0.8	1.6	1.2
Selected Fraser Range (100%)	0.8	1.6	1.2
Exploration Potential	0.5	1.0	0.7
Selected Walhalla (100%)	0.5	1.0	0.7
Total Australia (100%)	1.3	2.6	1.9
Total assets (100%)	150.8	205.8	171.6

Note: Any discrepancies between values in the tables are due to rounding.

Closure

This report, Independent Specialist Report – Mineral Assets of Orion Minerals Limited, was prepared by

The image shows the SRK Consulting logo, which consists of an orange stylized 'S' followed by the text 'srk consulting' in a grey sans-serif font. A large, handwritten signature in black ink is written over the logo, appearing to read 'Shaun Barry'.

Shaun Barry
Principal Consultant

and reviewed by

A handwritten signature in blue ink, appearing to read 'Gerard McCaughan', is written on the page.

Gerard McCaughan
Principal Consultant

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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Appendix A Comparable market transactions

Comparable copper transactions for Africa Projects

Agreement Date	Project	Buyer	Seller	Deal Value ZARM	R&R equivalent tonnes (000)	Implied ZAR/t Multiple Normalised	Implied ZAR/t Multiple Normalised	Country	Developmental Stage
05/12/2022	Kalaba project	Anglo American plc	Arc Minerals Limited	233.03	72.072	3,233	2,601	Zambia	Prefeas/Scoping
07/11/2018	Zamsort project	Arc Minerals Limited	Undisclosed seller	7.48	7.8	959	1,179	Zambia	Reserves Development
06/18/2018	Zamsort project	Arc Minerals Limited	Shareholders of Zamsort Limited	9.74	9.36	1,041	1,279	Zambia	Reserves Development
05/15/2018	Zamsort project	Arc Minerals Ltd.	Terra Metals Ltd	46.00	54.6	843	1,036	Zambia	Reserves Development
06/05/2018	Zamsort project	Arc Minerals Ltd.	Terra Metals Limited	13.17	9.36	1,407	1,730	Zambia	Reserves Development
09/06/2018	Mumbwa and Kitumba projects	Consolidated Mining and Investments Limited	Intrepid Mines Limited	76.76	342	224	268	Zambia	Prefeas/Scoping
02/14/2017	Haib project	Deep-South Resources Inc.	Teck Resources Limited	191.58	940.1	204	291	Namibia	Feasibility
08/15/2017	Lubambe mine	EMR Capital Group	Investor group	1,292.24	7576	171	239	Zambia	Operating
12/29/2021	Luansobe copper project	Galileo Resources Plc	Statunga Investments Limited	7.42	376.5	20	17	Zambia	
04/15/2019	Kangaluwi project	Grand Resources Limited	Trek Metals Limited	1.50	306	5	6	Zambia	Reserves Development
01/19/2021	Mopani mine	ZCCM Investments Holdings Plc	Glencore Plc	22,781.40	6,505.148	3,502	3,668	Zambia	Expansion
09/06/2018	Mumbwa and Kitumba projects	Consolidated Mining and Investments Limited	Intrepid Mines Limited	76.76	342	224	268	Zambia	Prefeas/Scoping

Comparable gold transactions for exploration tenure in Victoria, Australia

Date	Project	Buyer	Seller	Area (km ²)	Implied Value (A\$/km ²)	Implied Value Normalised (A\$/km ²)
17/02/2020	Rutherglen project	Gladiator Resources Limited	Undisclosed seller	338.0	1,775	2,194
17/02/2020	Rutherglen project	Gladiator Resources Limited	Undisclosed seller	338.00	1,775	2,194
17/02/2020	Bendoc project	Gladiator Resources Limited	Undisclosed seller	220.00	2,727	3,370
16/03/2020	Block 4	Battery Minerals	Gippsland Prospecting Pty Ltd	809.00	5,944	6,848
28/05/2020	Yandoit project	Nubian Resources Ltd.	B.S.B. Mining Pty Ltd.	38.0	41,667	46,754
03/06/2020	VicGold	First Au Limited	Victorian Goldfields Pty Ltd	2,250.00	153	180
09/06/2020	Jubilee Project	Navarre Minerals Limited	Undisclosed seller	122.00	328	386
08/07/2020	Glenfine project	Petratherm Limited	Investor group	96.0	20,425	23,022
21/07/2020	Glenorchy	North Stawell Minerals	Leviathan Resources and SGM MLIA	18.00	11,111	12,524
05/08/2020	Beechworth project	Fosterville South Exploration Ltd.	Northern Mine Ventures Pty Ltd.	36.0	8,333	9,016
24/08/2020	Toolleen-Fosterville project	A.I.S. Resources Limited	Providence Gold and Minerals Pty Ltd	26.0	28,846	31,209
25/08/2020	Glenfine, Yuengroon and Silver Spoon projects and Ballarat West license application	Skarb Exploration Corp.	Petratherm Limited	1,291.0	16,266	17,599
18/09/2020	Kingston (Kingston and Ararat, EL006318)	A.I.S. Resources Limited	Connor Coote Mining	167.00	3,755	4,181
22/03/2021	Queens project	Novo Resources Corporation	Kalamazoo Resources Limited	22.0	138,313	183,640
01/04/2021	263 Hectare	Investor group	Undisclosed sellers	2.63	294,677	381,378
04/07/2022	Mt Piper Gold project	Kalamazoo Resources Limited	Coda Minerals Ltd.	1,609.00	352	413
06/07/2022	Berringa project	Red Rock Resources plc	Shen Yao Holdings Ltd.	2.88	52,083	61,022
09/03/2023	Queens project	Castlemaine	Novo Resources Corp.	15.6	192,308	198,906

Comparable nickel transactions for exploration tenure in Western Australia, Australia

Date	Project	Buyer	Seller	Area (km ²)	Implied Value (A\$/km ²)	Implied Value Normalised (A\$/km ²)
01/07/2020	E70/5204	Todd River Resources Limited	Avenger Projects Ltd	171.05	5,301	8,768
01/07/2020	E70/5385	Todd River Resources Limited	Undisclosed seller	97.60	18,374	30,396
24/07/2020	Tenement E29/1041	St George Mining Limited	Single Figures Pty Ltd	84.00	679	1,123
27/07/2020	Four exploration licences	Auroch Minerals Ltd.	Jindalee Resources Limited	151.90	658	1,089
26/10/2020	Jimperding project	Mandrake Resources Limited	Andean Energy Resources Pty Ltd	68.60	7,872	11,594
10/12/2020	McKenzie Springs project	Fin Resources Limited	Cazaly Resources Limited	57.54	1,043	1,464
08/02/2021	Bedonia East project	Moneghetti Minerals Limited	Ardea Resources Limited	300.00	1,000	1,315
11/03/2021	Barracuda Project	Carnavale Resources Limited	Investor Group	48.00	4,375	6,480
04/08/2021	E58/571	Aldoro Resources Limited	Mining Equities Pty Ltd	9.00	23,611	28,371
29/08/2021	Snake Hill tenement	Metal Hawk Limited	Private investor - Rino Borromei	1.71	26,254	31,547
14/10/2021	E09/2359 tenement	Dreadnought Resources Limited	Prager Pty Ltd.	3.00	19,250	23,206
25/10/2021	E70/5762 Tenement & technical information of six Project areas	Moho Resources Limited	Whistlepipe Exploration Pty Ltd	35.61	2,247	2,708
05/11/2021	E28/2797 tenement	Galileo Mining Ltd	Private investor - S. E. Creasy	70.00	2,297	2,660
08/11/2021	Mulga Tank project	Western Mines Group Ltd	Duketon Mining Limited	282.00	337	390
19/11/2021	Mt Murray project	Santa Fe Minerals Limited	North West Stone Pty Ltd	23.20	66,810	77,387
13/12/2021	Nepean South E15/1702	Sabre Resources Limited	Metals Australia Ltd	28.15	8,525	9,566
13/12/2021	Sherlock Pool project	Sabre Resources Limited	Jindalee Resources Limited	38.37	7,167	8,042
28/01/2022	E70/5464	Intra Energy Corp. Ltd.	Century Minerals Pty Ltd	274.42	656	664
22/04/2022	Miriam project	Corazon Mining Ltd.	Limelight Industries Pty Ltd	8.63	69,536	48,912
28/09/2022	Dalwallinu Nickel Project	NickelX Limited	Investor Group	68.80	11,919	11,018
19/10/2022	Deep Well Project	Dynamic Metals Ltd	M61 Holdings Pty Ltd	141.99	1,902	1,729
02/02/2023	Bertram Prospect	GreenTech Metals Limited	Mining Equities Pty Ltd	16.00	1,875	1,528
21/02/2023	E62/2050	Boadicea Resources Ltd	Duketon Mining Limited	28.00	1,429	1,164
24/03/2023	E 36/1028 tenement	Western Yilgarn NL	St Barnabas Investments Pty Ltd	48.00	2,284	2,067
05/07/2023	Yarmany Tenements	Metal Hawk Limited	Horizon Minerals Limited	281.80	4,968	4,961
15/08/2023	Hawkstone Project	Stavely Minerals Limited	Chalice Mining Limited	600.00	2,333	2,333
29/08/2023	Dante Project	GCX Metals Limited	Private Investors	851.21	3,618	3,618

Appendix B Geoscientific rating method

Tenement	Area (km ²)	BAC (A/km ²)	Off-property	On-property	Anomaly	Geology	Technical Value (A'000)		Market Factor	Market Value (A'000)						
							Low	High		Low	High	Preferred				
NC10150MR	12.10	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	67	183	1	67	183	125
NC11125PR	184.75	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	1,028	2,797	1	1,028	2,797	1,912
Section 102 added	170.57	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	949	2,583	1	949	2,583	1,766
NC12357PR	25.47	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	142	386	1	142	386	264
NC12850PR	12.10	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	67	183	1	67	183	125
NC12852PR	76.89	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	428	1,164	1	428	1,164	796
NC12854PR	73.18	412	3.0	3.5	3.0	3.5	1.5	2.0	1.0	1.5	407	1,108	1	407	1,108	758
Okiep Total													3,087	8,404	5,746	
NC11010\PR Jaco	529.99	412	2.0	3.0	1.5	2.0	1.0	1.5	1.0	1.5	655	2,948	1	655	2,948	1,801
NC10938PR Jaco	163.99	412	2.0	3.0	1.5	2.0	1.0	1.5	1.0	1.5	203	912	1	203	912	557
Jacomynspan													858	3,860	2,359	
NC12292PR Areachap	984.36	412	2.0	3.0	1.5	2.0	1.5	2.0	1.0	1.5	1,825	7,300	1	1,825	7,300	4,563
Areachap													1,825	7,300	4,563	
Total South Africa (100% basis)													5,770	19,564	12,667	
E28/2367	123.20	492	0.9	1.5	0.9	1.5	1.0	1.5	1.5	2.0	73,646	409,147	1	74	4094	2414
E28/2596	268.80	492	0.9	1.5	0.9	1.5	0.5	1.0	1.0	1.5	53,561	446,342	1	54	4464	250
E39/1653	64.40	492	0.9	1.5	0.9	1.5	0.5	1.0	1.0	1.5	12,832	106,936	1	13	107	60
E39/1654	112.00	492	0.9	1.5	0.9	1.5	0.5	1.0	1.0	1.5	22,317	185,976	1	22	186	104
Fraser Range													162	1,148	655	
EL5042	34.73	423	3.5	4.0	0.9	1.5	1.0	1.5	1.5	2.0	69,407	264,408	1	69	264	167
EL6069	53.68	423	3.5	4.0	0.9	1.5	1.0	1.5	1.5	2.0	107,286	408,708	1	107	409	258
Walhalla													177	673	425	
Total Australia (100% basis)													339	1,821	1,080	

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Orion Minerals Ltd

ABN 76 098 939 274

LODGE YOUR PROXY FORM

ONLINE
<https://investorcentre.linkgroup.com>

BY MOBILE DEVICE
As per instructions on reverse of this Proxy Form.

BY MAIL
Orion Minerals Ltd
C/- Link Market Services Limited
Locked Bag A14
Sydney South NSW 1235 Australia

BY FAX
+61 2 9287 0309

BY HAND
Link Market Services Limited
Level 12, 680 George Street, Sydney NSW 2000

ALL ENQUIRIES TO
Telephone: +61 1300 554 474



X99999999999

PROXY FORM

I/We being a member(s) of Orion Minerals Ltd (**Company**) and entitled to attend and vote hereby appoint:

APPOINT A PROXY

the Chairman of the Meeting (mark box)

OR if you are **NOT** appointing the Chairman of the Meeting as your proxy, please write the name of the person or body corporate you are appointing as your proxy

or failing the person or body corporate named, or if no person or body corporate is named, the Chairman of the Meeting, as my/our proxy to act on my/our behalf (including to vote in accordance with the following directions or, if no directions have been given and to the extent permitted by the law, as the proxy sees fit) at the Annual General Meeting of the Company to be held at **3:00pm (AWST) on Tuesday, 28 November 2023 at Clayton Utz, Level 27, QV. 1 Building, 250 St Georges Terrace, Perth, Western Australia (the Meeting)** and at any postponement or adjournment of the Meeting.

Important for Resolution 1 and Resolution 4: If the Chairman of the Meeting is your proxy, either by appointment or by default, and you have not indicated your voting intention below, you expressly authorise the Chairman of the Meeting to exercise the proxy in respect of Resolution 1 and Resolution 4, even though the Resolution is connected directly or indirectly with the remuneration of a member of the Company's Key Management Personnel (**KMP**).

The Chairman of the Meeting intends to vote all available undirected proxies in favour of each item of business.

VOTING DIRECTIONS

Proxies will only be valid and accepted by the Company if they are signed and received no later than 48 hours before the Meeting. Please read the voting instructions overleaf before marking any boxes with an

Resolutions

	For	Against	Abstain*		For	Against	Abstain*
1 Remuneration Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 Approval to issue of Shares to Clover Alloys upon exercise of Options and increase in voting power of Clover Alloys (or its nominee)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Re-election of Mr Philip Kotze	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6a Ratification of prior issue of Shares to Webb Street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Re-election of Mr Godfrey Gomwe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6b Approval to issue shares to Webb Street (or its nominee)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Approval to Grant Options & Performance Rights under the Orion Minerals Option & Performance Rights Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7 Approval to Issue Shares – OCP Consideration Shares	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

i * If you mark the Abstain box for a particular Resolution, you are directing your proxy not to vote on your behalf on a show of hands or on a poll and your votes will not be counted in computing the required majority on a poll.

SIGNATURE OF SHAREHOLDERS – THIS MUST BE COMPLETED

Shareholder 1 (Individual)

Joint Shareholder 2 (Individual)

Joint Shareholder 3 (Individual)

Sole Director and Sole Company Secretary

Director/Company Secretary (Delete one)

Director

To be valid, this form must be signed by the shareholder. If a joint holding, either shareholder may sign. If signed by the shareholder's attorney, the power of attorney must have been previously noted by the registry or a certified copy attached to this form. If executed by a company, the form must be executed in accordance with the company's constitution and the *Corporations Act 2001* (Cth).

ORN PRX2302C



HOW TO COMPLETE THIS SHAREHOLDER PROXY FORM

YOUR NAME AND ADDRESS

This is your name and address as it appears on the Company's share register. If this information is incorrect, please make the correction on the form. Shareholders sponsored by a broker should advise their broker of any changes. **Please note: you cannot change ownership of your shares using this form.**

APPOINTMENT OF PROXY

If you wish to appoint the Chairman of the Meeting as your proxy, mark the box in Step 1. If you wish to appoint someone other than the Chairman of the Meeting as your proxy, please write the name of that individual or body corporate in Step 1. A proxy need not be a shareholder of the Company. Otherwise, if you leave the box in Step 1 blank, the Chairman of the Meeting will be appointed as your proxy by default.

DEFAULT TO CHAIRMAN OF THE MEETING

Any directed proxies that are not voted on a poll at the Meeting will default to the Chairman of the Meeting, who is required to vote those proxies as directed. Any undirected proxies that default to the Chairman of the Meeting will be voted as the Chairman sees fit, including where the Resolutions are connected directly or indirectly with the remuneration of KMP. If you complete and return this Proxy Form and either you do not nominate a person to act as your proxy or your named appointed proxy does not attend the Meeting, then the proxy appointment will automatically default to the Chairman of the Meeting.

VOTES ON ITEMS OF BUSINESS – PROXY APPOINTMENT

You may direct your proxy how to vote by placing a mark in one of the boxes opposite each item of business. All your shares will be voted in accordance with such a direction unless you indicate only a portion of voting rights are to be voted on any item by inserting the percentage or number of shares you wish to vote in the appropriate box or boxes. If you do not mark any of the boxes on the items of business, your proxy may vote as he or she chooses, subject to any voting restrictions that apply to the proxy. If you mark more than one box on an item your vote on that item will be invalid.

APPOINTMENT OF A SECOND PROXY

You are entitled to appoint up to two persons as proxies to attend the Meeting and vote on a poll. If you wish to appoint a second proxy, an additional Proxy Form may be obtained by telephoning the Company's share registry or you may copy this form and return them both together.

To appoint a second proxy you must:

- on each of the first Proxy Form and the second Proxy Form state the percentage of your voting rights or number of shares applicable to that form. If the appointments do not specify the percentage or number of votes that each proxy may exercise, each proxy may exercise half your votes. Fractions of votes will be disregarded; and
- return both forms together.

VOTING EXCLUSIONS

Voting exclusions apply to each Resolution, as set out in the Notice of Meeting. The Chairman of the Meeting intends to vote all available undirected proxies in favour of these Resolutions.

SIGNING INSTRUCTIONS

You must sign this form as follows in the spaces provided:

Individual: where the holding is in one name, the holder must sign.

Joint Holding: where the holding is in more than one name, either shareholder may sign.

Power of Attorney: to sign under Power of Attorney, you must lodge the Power of Attorney with the registry. If you have not previously lodged this document for notation, please attach a certified photocopy of the Power of Attorney to this form when you return it.

Companies: where the company has a Sole Director who is also the Sole Company Secretary, this form must be signed by that person. If the company (pursuant to section 204A of the *Corporations Act 2001*) does not have a Company Secretary, a Sole Director can also sign alone. Otherwise this form must be signed by a Director jointly with either another Director or a Company Secretary. Please indicate the office held by signing in the appropriate place.

CORPORATE REPRESENTATIVES

If a representative of the corporation is to attend the Meeting the appropriate "Certificate of Appointment of Corporate Representative" must be produced prior to admission in accordance with the Notice of Meeting. A form of the certificate of appointment can be obtained from the Company's registered office.

LODGEMENT OF A PROXY FORM

This Proxy Form (and any Power of Attorney under which it is signed) must be received at an address given above by **3:00pm (AWST) on Sunday, 26 November 2023**, being not later than 48 hours before the commencement of the Meeting. Any Proxy Form received after that time will not be valid for the scheduled Meeting.

Proxy Forms may be lodged using the reply paid envelope or:



ONLINE

<https://investorcentre.linkgroup.com>

Login to the Link website using the holding details as shown on the Proxy Form. Select 'Voting' and follow the prompts to Lodge your Proxy. To use the online lodgement facility, shareholders will need their "Holder Identifier" - Securityholder Reference Number (SRN) or Holder Identification Number (HIN).



BY MOBILE DEVICE

Our voting website is designed specifically for voting online. You can now lodge your proxy by scanning the QR code adjacent or enter the voting link <https://investorcentre.linkgroup.com> into your mobile device. Log in using the Holder Identifier and postcode for your shareholding.

QR Code



To scan the code you will need a QR code reader application which can be downloaded for free on your mobile device.



BY MAIL

Orion Minerals Ltd
C/- Link Market Services Limited
Locked Bag A14
Sydney South NSW 1235
Australia



BY FAX

+61 2 9287 0309



BY HAND

delivering it to Link Market Services Limited*
Level 12
680 George Street
Sydney NSW 2000

*during business hours Monday to Friday (9:00am - 5:00pm)



COMMUNICATION PREFERENCE

We encourage you to receive all your shareholder communication via email. This communication method allows us to keep you informed without delay, is environmentally friendly and reduces print and mail costs.



ONLINE

www.linkmarketservices.com.au

Login to the Link website using the holding details as shown on the Proxy Form. Select 'Communications' and click the first button to receive all communications electronically and enter your email address. To use the online facility, securityholders will need their "Holder Identifier" (Securityholder Reference Number (SRN) or Holder Identification Number (HIN) as shown on the front of the Proxy Form).

**IF YOU WOULD LIKE TO ATTEND AND VOTE AT THE ANNUAL GENERAL MEETING, PLEASE BRING THIS FORM WITH YOU.
THIS WILL ASSIST IN REGISTERING YOUR ATTENDANCE.**