Orion Minerals

Detailed ASX/JSE RELEASE: 9 April 2018

Prieska Project total Mineral Resource increases to 29.4 million tonnes containing 1.13 million tonnes Zn and 0.36 million tonnes Cu

- **Maiden Mineral Resource of 5.2 Mt containing 253,000 tonnes Zn and 67,000 tonnes Cu established for the Vardocube Prospecting Right.**
- **The Mineral Resource for Vardocube is for the southern strike extension of the Prieska Zinc-Copper VMS massive sulphide deposit located on the recently granted Vardocube Prospecting Right.**
- **The combined total Mineral Resource for the Prieska Zinc-Copper Project increases to 29.4 Mt containing 1,126,000 tonnes Zn at 3.8% Zn and 365,000 tonnes Cu at 1.2% Cu.**
- **The massive sulphide target remains open on dip and strike on both prospecting rights.**
- **Infill and extension drilling on the Vardocube Prospecting Right is planned to begin shortly.**

Orion Minerals Limited (**ASX/JSE: ORN**) (**Orion** or **Company**) is pleased to announce the addition of a maiden Mineral Resource for Vardocube (Pty) Ltd (70% Orion, 30% BEE) (**Vardocube**) which holds the southern extension of the Prieska Zinc-Copper Project (**Prieska Project**) (refer ASX release 8 February 2018). The Mineral Resource is classified and reported in compliance with the JORC Code (2012), see Tables 1 to 3. The Resource is based on drilling data available as at 31 December 2017 (supporting information included in Appendix 2). Further drilling is ongoing with the objective of achieving an upgrade in the confidence classification of a substantial portion of the Mineral Resource and to test the currently open extensions of the deposit.

Inferred Mineral Resource for Vardocube (Pty) Ltd – Prieska Zn–Cu Deposit Deep Sulphide									
Mineral Resource Category	Tonnes	Zn		Cu		Ag		Au	
		Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Metal Ounces	Grade (g/t)	Metal Ounces	Grade (g/t)
Inferred	5,200,000	253,000	4.9	67,000	1.3	1,627,000	9.7	35,000	0.2

Notes:

The Mineral Resource takes into account mining depletion

All rock tonnages are rounded to hundreds of thousands which may introduce rounding errors in totals

Reported at 0% cut-off within a wireframe volume clipped on a cut-off of (Zn% + (Cu% X2) > 4%

Table 1: Maiden Inferred Mineral Resource for Vardocube (Pty) Ltd – Prieska Project.

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

"The addition of the Vardocube Prospecting Right has included an important higher-grade extension to the Prieska Deep Sulphide deposit. We are confident that the application of the exploration techniques that were successful in extending the northern end of the deposit on Repli will again deliver significant extensions on this southern strike extension, which is also open on dip and strike."

The Vardocube area is geologically continuous with the Repli area (Figures 1 and 2) and both were located within a single mining right at the time when drilling was conducted by previous mine operators, Anglovaal, using the same drilling, sampling and assaying practice across the deposit. Orion conducted extensive twin and infill drilling on the Repli area and up to the Vardocube Prospecting Right boundary during 2017 to confirm and validate the historic Anglovaal drilling data (refer ASX release 8 February 2018).

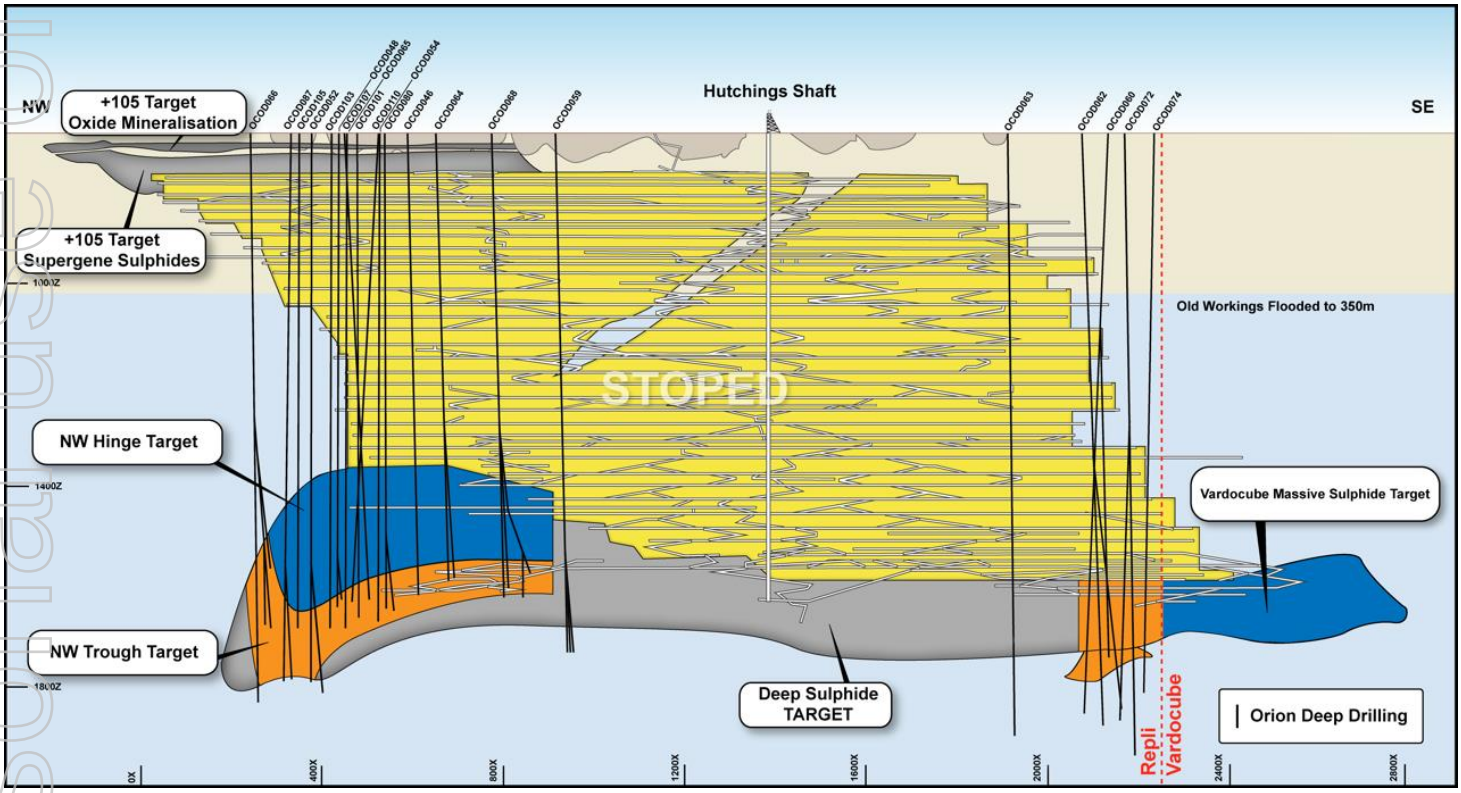


Figure 1: Locality of the +105 Level Target (Open Pit) and Deep Sulphide Target at the Prieska Project, with the lower Deep Sulphide Target area subdivided into areas with infill drilling almost complete (orange), areas for priority infill drilling (blue) and priority 2 targets (grey) (refer ASX release 4 April 2018).

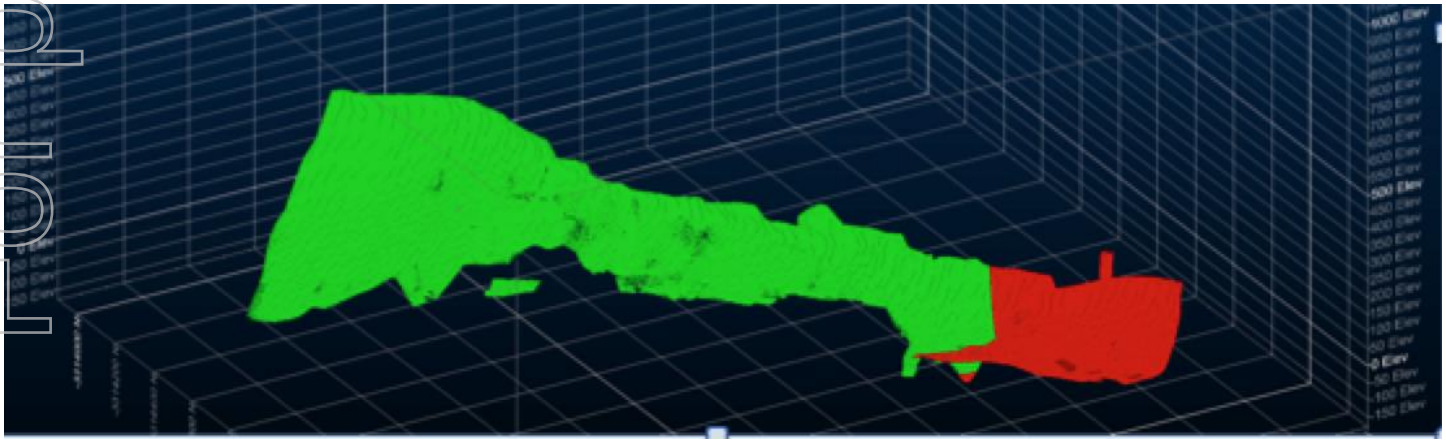


Figure 2: Isometric view looking northeast, showing the Prieska Deep Sulphide Mineral Resource with the Vardocube area indicated in red and Repli in green (refer ASX release 8 February 2018).

Cut off (Zn%+(2 x Cu%)) (%)	Tonnes	Zn		Cu		Ag		Au	
		Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Metal Ounces	Grade (g/t)	Metal Ounces	Grade (g/t)
0	5,200,000	253,000	4.9	67,000	1.3	1,627,000	9.7	35,000	0.2
2	5,200,000	253,000	4.9	67,000	1.3	1,626,000	9.7	35,000	0.2
4	5,000,000	248,000	5.0	65,000	1.3	1,554,000	9.7	34,000	0.2
6	3,800,000	211,000	5.5	54,000	1.4	1,205,000	9.8	26,000	0.2

Table 2: Inferred Mineral Resource for Vardocube Deep Sulphide at various higher cut-off grades.

Cut-off (Calc %)*	Tonnes	Zn		Cu		Total Zn (equivalent)		
		Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Cu = Zn(eq) (%)	Metal Tonnes	Grade (%)
0	5,200,000	253,000	4.9	67,000	1.3	3.0	408,000	7.9
2	5,200,000	253,000	4.9	67,000	1.3	3.0	408,000	7.9
4	5,000,000	248,000	5.0	65,000	1.3	3.0	400,000	8.0
6	3,800,000	211,000	5.5	54,000	1.4	3.2	336,000	8.8

* Note: Cut-off based on calculated (Zn% + (2 X Cu%))

Summary Table for Zinc Equivalent Calculations

Parameter	Units	Zinc	Copper	Comments
Copper selling price	USD/t	3 238	6 725	Kitco.com Spot 6 April 2018
Exchange rate USD:ZAR	USD:ZAR	12,0	12,0	Kitco.com Spot 6 April 2018
Metal selling price	ZAR/t	38 520	80 002	Calculated
Metal recovery - Hypogene material	%	85%	85%	Historical performance and recent testwork
Metal in conc sales costs	%	18%	8%	Concentrate traders' estimate
State Royalty	%	0,49%	0,49%	Calculated
Effective Revenue per t of metal	**ZAR/t**	**26 558**	**62 241**	**Calculated**
Copper Equivalent	%	1,00%	**0,43%**	
Zinc Equivalent	%	**2,34%**	1,00%	

Notes

* Copper and Zinc Sales Costs include all concentrate transport, metal treatment and refining charges, and the benchmark discount to spot prices paid by smelters, all expressed as an aggregate percentage of the contained metal value at prevailing spot prices.

Possible by-product credits for Au, Ag and Pb are uncertain, subject to negotiation and are excluded from this metal equivalent estimate.

Table 3: Inferred Mineral Resource at higher cut-off with zinc equivalent values for Vardocube Deep Sulphide Deposit.

Global Mineral Resource For Prieska Project - Repli Trading No 27 (Pty) Ltd & Vardocube (Pty) Ltd

	Classification	Tonnes	Zn		Cu		Ag		Au	
			Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Metal Ounces	Grade (g/t)	Metal Ounces	Grade (g/t)
Deep Sulphide Repli *	Inferred	22,600,000	839,000	3.7	266,000	1.2	6,904,000	9.5	153,000	0.2
Deep Sulphide Vardocube	Inferred	5,200,000	253,000	4.9	67,000	1.3	1,627,000	9.7	35,000	0.2
+105 Supergene Repli *	Indicated	1,200,000	32,000	2.6	30,000	2.4	348,000	8.7	9,000	0.2
+ 105 Oxide Repli *	Inferred	300,000	2,000	0.9	2,000	0.6	17,000	1.8	1,000	0.1
Total Global		29,400,000	1,126,000	3.8	365,000	1.2	8,896,000	9.4	198,000	0.2

Note All Resources Stated at Zero Cut-off.
Rounding, as required by reporting guidelines, may result in apparent differences between tonnes, grade and contained metal content

Table 4: Total Mineral Resource Table for the Prieska Zinc–Copper Deposit (*refer ASX release 8 February 2018).

In compliance with ASX Listing Rule 5.8.1, the following sections present a summary of all information material to understanding the reported Mineral Resource estimates:

Geology & Mineralisation

The Prieska Zn-Cu deposit is a Volcanogenic Massive Sulphide (**VMS**) deposit which is situated in the southernmost exposures of the north-northwest trending Kakamas Terrain, which forms part of the Mid-Proterozoic Namaqualand Metamorphic Complex. The deposit is hosted by the Copperton Formation of the Areachap Group.

The structural sequence at the mine consists of a footwall Smouspan Gneiss Member, Prieska Copper Mines Assemblage, which hosts the sulphide mineralisation, and the hangingwall Vogelstruisbult Gneiss Member.

The Deep Sulphide mineralisation is the depth extension of the strata-bound, stratiform VMS Prieska Zn-Cu deposit. The historically mined section of the deposit is confined to a tabular, stratabound horizon in the northern limb of a refolded recumbent synform, the axis of which plunges at approximately 5° to the south-east. The Deep Sulphide Target area is located below the historical mined area, comprises the steep down dip continuity ("steep limb and hinge zone"), from where it upturns to its subsequent open synformal structure ("trough zone"). The Vardocube Mineral Resource is located in this southeasterly position and is geologically continuous with the mineralisation previously reported for the Repli Mineral Resource.

Drilling Techniques

The drilling techniques used in the historic Anglovaal drilling on which the Mineral Resource estimate is based are surface and underground diamond drilling; however, core size and other technical specifications for the drilling are unknown.

Sampling & Sub-Sampling Techniques

For diamond drilling carried out by Anglovaal between 1968 and 1984, on which the Mineral Resource estimate is based, there is limited information available on sampling and sub-sampling techniques. However, with exploration and resource management being carried out under the supervision of renown resource estimation expert Dr Danie Krige of Anglovaal, it is considered by the Competent Person that there would be procedures in place to the industry best practice standard at that time. This is based on the Competent Persons knowledge of exploration carried out by Anglovaal and discussions with personnel employed by Anglovaal.

Sample Analysis Method

Samples from historical surface drilling samples were analysed at Anglovaal Research Laboratory at Rand Leases Mine and samples from underground drilling at the Prieska Mine laboratory.

Estimation Methodology

The classified and reported Vardocube Mineral Resource is based on historic drilling data available as at 31 December 2017 corresponding to 24 drill holes for 11,516m located on Vardocube.

Mineralised zones were delineated for Mineral Resource estimation using a (Zn% + (2 x Cu%)) > 4% cut off value to create a wireframe model with estimation only selecting samples within the containing wireframe.

Interpolation of the composite data was used to estimate the block grades using Ordinary Kriging for local block estimation supplemented by zonal estimation.

The same parameters were used for both the Repli Mineral Resources reported 8 February 2018 (refer ASX release 8 February 2018) and the Vardocube Mineral Resource.

The Mineral Resource was estimated as a single entity and then reported by prospecting right area. This Mineral Resource was for that area lying within the Vardocube Prospecting Right, corresponding to a strike length of 600m. It has a horizontal width of between 2m and 40m, with a down dip extent of 1,100m below the shaft collar. The true thickness of the mineralisation varies from 1.5m to 25m with an average of 6m.

The position of the prospecting right boundary was imported into Datamine™ and used to delineate the Vardocube Prospecting Right, within the confining wireframe for the deposit modelled by Orion geologists on a 4% Zn equivalent calculated as follows: Zn_eq = Zn% + (2 x Cu%).

Bulk densities (t/m^3) were determined on the adjacent area using the water displacement method. The entire sample (normally 1m length) was measured. Bulk density estimates were produced using Ordinary Kriging in areas of close spaced sampling. A second pass with longer search radii was utilised and the remaining blocks were populated using grid filling. The results were also used for the estimation of the Mineral Resource from the Vardocube historic drilling results.

Resource Classification

The Deep Sulphide Resource is classified at an Inferred level of confidence.

The Resource classification has been carried out in accordance with the JORC Code (2012). The grade and densities are estimated on the basis of limited geological evidence and sampling. Geological evidence has been derived from sampling gathered through appropriate techniques and is sufficient to imply but not verify geological and grade continuity between data points.

In the Competent Person's view, it is a realistic inventory of the mineralisation which, after preliminary evaluation of technical, economic and development conditions, might, in whole or in part, become economically extractable. In the Competent Person's opinion, it is more likely than not that there are reasonable prospects for eventual economic extraction of the Vardocube Deep Sulphide deposit.

Portions of the deposit that do not have reasonable prospects for eventual economic extraction are not included in the Mineral Resource.

In classifying the Resource, the Competent Person has regarded several aspects that affect resource confidence:

- uncertainty associated with the definition of the mineralised domain and therefore the volume estimate.
- there is more than one drilling and sampling program, and the historical Anglovaal data has a lack of available supporting documentation.
- the estimated Mineral Resource is constrained between a historical stoped area and a densely drilled area without extrapolation.

Metallurgy

Preliminary metallurgical test work on the sulphide mineralisation revealed good concentrate recoveries, matching mine records for treatment of metallurgically identical ore. In the Competent Person's opinion, this is sufficient to determine that a reasonable expectation of good metallurgical recoveries may be expected and supports additional metallurgical test work planned as part of a Bankable Feasibility Study and is in progress.

Cut-off Grades & Mining Methods

The deep sulphide mineralisation is located between 900m and 1,200m below surface and has geometries favouring bulk mechanised underground mining, similar to that used in many deposits worldwide. Open stoping with intermittent support pillars may be applicable in steep dipping areas, while the use of active support such as back filling is likely required in the shallow dipping portions. Preliminary studies have indicated that a lower cut-off for content with (Zn + (2 x Cu)) >4% is a reasonable cut-off to apply to wireframing for Resource estimation. The estimated blocks within this wireframe are found to contain an immaterial number of blocks below the grade of (Zn + (2 x Cu)) <4% and are thus reported at zero cut-off.

Future Work

Importantly, examination of the drill data and geological interpretation reveals that the Vardocube Mineral Resource remains open on dip and strike (Figure 3). Infill and step out drilling together with the use of downhole geophysics, as was used with great success on the Repli portion of the deposit to extend the Mineral Resource, is expected to allow expansion of the Mineral Resource on Vardocube and an upgrade in classification in the near term.

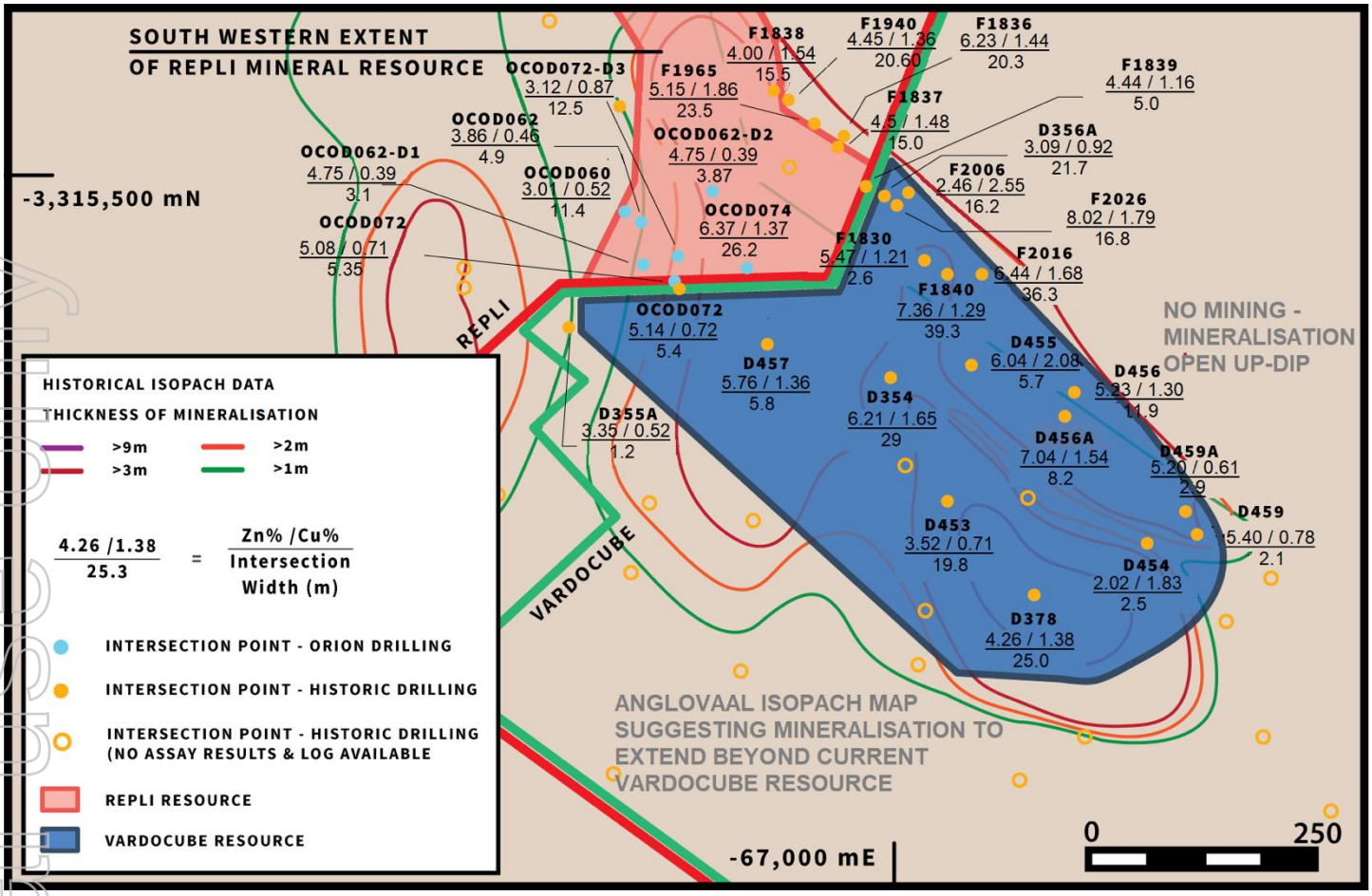
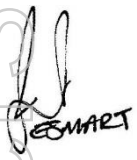


Figure 3: Vardocube Mineral Resource overlay on available drilling data and historic geological interpretation by Anglovaal geologists.



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Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Errol Smart (Pr.Sci.Nat.), a Competent Person who is a member of the South African Council for Natural Scientific Professionals, a Recognised Overseas Professional Organisation (**ROPO**). Mr Smart is a full-time employee of Orion. Mr Smart has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Smart consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Sean Duggan (Pr. Sci. Nat.), a Competent Person who is a member of the South African Council for Natural Scientific Professionals, a ROPO. Mr Duggan is a director and Principal Analyst at Z* Mineral Resource Consultants (Pty) Ltd, and acts as an independent consultant to Orion. Mr Duggan has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Duggan consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

ASX Listing Rule Compliance Requirement

The Company is not aware of any new information or data that materially affects the information included in the market announcements of 8 February 2018 and 4 April 2018 referred to in this announcement. With regards to the Mineral Resource, first reported on the 8th of February 2018, the Company confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

Disclaimer

This release may include forward-looking statements. Such forward-looking statements may include, among other things, statements regarding targets, estimates and assumptions in respect of metal production and prices, operating costs and results, capital expenditures, mineral reserves and mineral resources and anticipated grades and recovery rates, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions. These forward-looking statements are based on management's expectations and beliefs concerning future events. Forward-looking statements inherently involve subjective judgement and analysis and are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Orion. Actual results and developments may vary materially from those expressed in this release. Given these uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. Orion makes no undertaking to subsequently update or revise the forward-looking statements made in this release to reflect events or circumstances after the date of this release. All information in respect of Exploration Results and other technical information should be read in conjunction with Competent Person Statements in this release (where applicable). To the maximum extent permitted by law, Orion and any of its related bodies corporate and affiliates and their officers, employees, agents, associates and advisers:

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- disclaim all responsibility and liability for these forward-looking statements (including, without limitation, liability for negligence).

Appendix 1: The following tables are provided to ensure compliance with the JORC Code (2012) requirements for the reporting of Exploration Results and Mineral Resources for the Vardocube Deep Sulphide Target.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	• Drilling and sampling by Anglovaal Ltd (also known as the Anglovaal Group, (**Anglovaal**)) has been undertaken during two distinct periods since the discovery of mineralisation. These are pre-mine exploration (1968-1971) and during mine operations (1972-1984) drill holes ("V", "D", and "F" prefixed holes). Anglovaal: • For diamond drilling carried out by Anglovaal between 1968 and 1984, there is limited information available on sampling techniques for core. However, with exploration and resource management being carried out under the supervision of Anglovaal, it is considered by the Competent Person that there would be procedures in place to the industry best practice standard at that time. This is based on the Competent Persons knowledge of exploration carried out by Anglovaal and discussions with personnel employed by Anglovaal. • The exploration and resource management were under the professional supervision of Dr Danie Krige an internationally recognised expert of the time who published peer reviewed papers based on the sampling data. • The sampling was successful in defining a resource estimate which was used as the basis of successful mine development and operation over a 20-year period. • Drilling of the original surface exploration holes was carried out 200 – 250m line spacing. Underground exploration holes were not drilled on a regular spacing. • Surface drill exploration samples were all sent to Anglovaal Research Laboratory at Rand Leases Mine, and underground drill samples to the mine laboratory for analyses. • No records on the sampling methodology. • Although no formal QC samples were inserted at the time by the geologists on the exploration site or the mine, the Anglovaal Research Laboratory developed their own standards, certified by other commercial laboratories and those were used internally in the laboratory. Duplicate samples were also inserted to check for repeatability.

Criteria	JORC Code explanation	Commentary
		Orion: • Diamond core cut at core yard and half core taken as sample. • Diamond core sampled on 1m intervals where possible, sample lengths adjusted to ensure samples do not cross geological boundaries or other features. • Drilling at the Deep Sulphide Target was carried out, aiming to define an approximate 100m x 100m pattern by use of "mother" holes and deflections from these holes. • Percussion / reverse circulation pre-collars (where used) sampled on a composite basis. • Mineralised zones are drilled using core drilling. • Sampling carried out under supervision of a qualified geologist using procedures outlined below including industry standard QA/QC. • Samples submitted for analysis to ALS Chemex PTY Ltd (**ALS**) are pulverised in its entirety at ALS and split to obtain a 0.2g sample for digestion and analysis. • Downhole electromagnetic (**EM**) survey carried out using standard techniques.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	Anglovaal: • Records for core size are not available. • No record on core orientation. Orion: • Diamond core drilling using NQ and BQ sized core. BQ core was only drilled where problems were encountered in the original NQ drilled drill hole and the drilling could not continue with NQ size. • In the near surface weathered zone HQ core was drilled. • Pre-collar drilled using percussion drilling on certain holes (above mineralisation). • Core was orientated in holes selected for geotechnical studies.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Anglovaal: • All mineralised intersections were done with core drilling. • Core recoveries are documented on the assay sheets. Core recoveries were measured for each "run". • In most V holes and all D and F holes, intersections were in hard rock and recoveries were generally good through the mineralisation.

Criteria	JORC Code explanation	Commentary
		Orion: • All mineralised intersections are done with core drilling. • Core stick-ups reflecting the depth of the drill hole are recorded at the rig at the end of each core run. • A block with the depth of the hole written on it is placed in the core box at the end of each run. • At the core yard, the length of core in the core box is measured for each run. The measured length of core is subtracted from the length of the run as recorded from the stick-up measured at the rig to determine the core lost. • Core recovery in all the mineralised intersections are good. • No grade variation with recovery noted.

Criteria	JORC Code explanation	Commentary
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	Anglovaal: • All relevant intersections for V surface holes have been logged and all of this information is available. It is understood from historical reports that all intersections for D and F holes were logged but not all information is currently available. • Downhole geotechnical information is available for some of the D and F holes only. • Downhole mineralogical logs are available for some D and F holes. Orion: • Pre-collar percussion holes are logged on 1m intervals using visual inspection of washed drill chips. A hand held XRF instrument is used to determine the presence of any metals. • Core of the entire hole length was geologically logged and recorded on standardised log sheets by qualified geologists. • Qualitative logging of colour, grain size, weathering, structural fabric, lithology, alteration type and sulphide mineralogy carried out. • Quantitative estimate of sulphide mineralogy. • Logs are recorded at the core yard and entered into digital templates at the project office.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Anglovaal: • Details of sub-sampling techniques are not available. • No QA/QC samples were submitted with the exploration samples. Orion:

Criteria	JORC Code explanation	Commentary
		• Samples from percussion pre-collars are collected by spear sampling. • Sampling on site aims to generate a < 2kg sub sample to enable the entire sample to be pulverised without further splitting. • Water is used in the dust depression proses during percussion drilling, resulting in wet chip samples. • BQ and NQ core cut at core yard and half core taken as sample. • With core samples, the entire sample length is cut and sampled. • Sample preparation is undertaken at ALS an ISO accredited laboratory. ALS utilises industry best practise for sample preparation for analysis, involving drying of samples, crushing to <5mm if required and then pulverising so that +85% of the sample passes 75 microns. • CRM's, blanks and duplicates are inserted and analysed with each batch. Insertion rates for the current reporting is: CRMs = 10%, blanks = 5% and field duplicates = 2%. • ALS has their own internal QA/QC protocols which include CRM's (5%), blanks (2.5%) and duplicates (2.5%).
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	Anglovaal: • Surface drill exploration samples were all sent to Anglovaal Research Laboratory at Rand Leases Mine. • Underground drill hole samples were sent to the mine laboratory, where the same analytical method was used. • Atomic Adsorption method was used with a Nitric-bromide digest. • Underground drill hole samples were sent to the mine laboratory, where the same analytical method was used. • Although no formal QA/QC samples were inserted with the drill samples of the exploration holes the Anglovaal Research Laboratory developed their own standards, certified by other commercial laboratories and those were used internally in the laboratory. Duplicate samples were also inserted to check for repeatability. Orion:

Criteria	JORC Code explanation	Commentary
		• Samples submitted to ALS were analysed for base metals, Au and Ag. Analysis was by the Inductively Coupled Plasma and Optical Emission Spectroscopy ("ICP-OES") methodology, using a four-acid digest. • External quality assurance of the laboratory assays is monitored by the insertion of blanks, duplicates and CRM's. • CRM samples show high accuracy and tight precision with no consistent bias. • Blank samples indicate no contamination, within the pre-determined thresholds, during the sample preparation process. • Field duplicate samples show acceptable precision with no obvious bias. • Laboratory samples show excellent accuracy and precision. • No external laboratory checks have been carried out at this stage. • Down hole EM surveys were carried out in selected holes, using a 3 component Digi-Atlantis probe and ultra high-power transmitter. • Loop size of 1,800m x 600m are used with continuous measurements taken as the probe travels into the hole and out again. • Surface TDEM surveys were carried out using a Supracon Jesse Beep squid sensor and ultra-high-power transmitter with a Smartem 24 receiver.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	Anglovaal: • No records available. Orion: • Orion's Executive: Exploration Manager is personally supervising the drilling and sampling along with a team of experienced geologists. • The Executive: Exploration reviewed the raw laboratory data and confirmed the calculation of the significant intersections. • Twin holes are drilled to verify historical drill intersections (Anglovaal). • For the EM survey, data is collected on site and validated by a geophysical technician daily. Data (raw and processed) is sent to a consultant geophysicist for review and quality control. • No adjustments have been made to the assay data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	Anglovaal: • All surface and underground hole collars were surveyed by qualified surveyors using a theodolite. • The historic mine survey data is in the old South African national

Criteria	JORC Code explanation	Commentary
		geographic, Clarke 1880, coordinate system. • Downhole surveys were carried out for most of the V holes and all of the D and F holes. Methodology of the downhole surveys is not recorded on the available hardcopy information but plans and sections are meticulously plotted and signed off by a certified surveyor. • Both Eastman and Sperry Sun instruments were used in the downhole surveys. • Significant deflections in the dips of the holes have been noted, especially for the deeper holes. V holes with no downhole surveys are shallower holes drilled earlier on in the initial exploration phase. These holes intersected areas where the mineralisation is now largely mined out. • All hole positions have been converted to Lo23 WGS84 coordinates. Underground D and F holes are recorded in local "V" line and "O" distance coordinates with local mine datum elevations. Level plans have both the local V/O grid and Lo23 Clark 1880 grids plotted and this has been used to define transformation parameters from local grid to geographical coordinates. All hole positions have been converted to Lo23 WGS84 coordinates. Orion: • Drill hole collar positions are laid out using a handheld GPS. • After completion of the Orion drilling all collars were surveyed by a qualified surveyor using a Trimble R8 differential GPS. • Downhole surveys are completed using a North-Seeking Gyro instrument. • All survey data is in the WGS84 ellipsoid in the WG23 Zone with the Hartebeeshoek 1994 Datum. The coordinates are also supplied in Clarke 1880 and in UTM WGS84 Zone 34 (Southern Hemisphere).
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Anglovaal: • Original exploration holes (V) were drilled on 200 - 250 m spacing. • Underground drilled holes (D, F and R) were not drilled on a regular spaced grid. Orion: • At the Deep Sulphide Target drill holes aim to intersect mineralisation on approximately 100m x 100m spacing with infill drilling to be carried out in areas of interest as determined by results. • Variography studies were carried out on the historic data set to

Criteria	JORC Code explanation	Commentary
		determine the drill spacing for Mineral Resource estimates.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Historical drilling is oriented perpendicular, or at a maximum achievable angle to, the attitude of the mineralisation. • As a result, most holes intersect the mineralisation at an acceptable angle. • Due to the hole orientation no sampling bias is anticipated.
Sample security	• *The measures taken to ensure sample security.*	Anglovaal: • No details of sample security available. However, during the mining operations the site was fenced and gated with security personnel employed as part of the staff. Orion: • Chain of custody is managed throughout. Samples are stored on site in a secure locked building and then freighted directly to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	Anglovaal: • No records available. Orion: • No audits or reviews have been carried out at this stage.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Repli: • NC 30/5/1/1/2/NC2105PR (NC10445PR): A prospecting right, a prospecting right renewal and a Section 102, have been granted to Repli No. 27 (Pty) Ltd; an indirect subsidiary of Orion, in terms of section 17(1) of the Minerals and Petroleum Development Act No 28 of 2002, as amended, for Copper, Zinc, Gold, Silver, Cobalt, Barytes, Limestone, Pyrite, Sulphur in Pyrite, Molybdenum, Lead, Iron and Tungsten in respect

Criteria	JORC Code explanation	Commentary
		of the farm Vogelstruisbult No 104, portion RE25 and portion 26 and the farm Slimes Dam 154, in the Prieska District, Northern Cape Province. The date of expiry is 2 November 2019. • Orion effectively holds a 73.3% interest in the project, with the remaining 26.7% as BEE ownership in compliance with existing legislation. Vardocube: • NC 30/5/1/1/2/11841PR: The South African Department of Mineral Resources (**DMR**) has officially notified Vardocube (Pty) Ltd (**Vardocube**), an indirect subsidiary of the Company, that is has been awarded a prospecting right, in terms of section 17(1) of the Minerals and Petroleum Development Act No 28 of 2002, as amended, for Copper, Zinc, Gold, Cobalt, Barytes, Limestone, Pyrite, Sulphur in Pyrite, Molybdenum, Lead and Tungsten in respect of the farm Vogelstruisbult No 104, portion RE1 in the Prieska District, Northern Cape Province. The date of grant is 9 March 2018. • The grant is subject to notarial execution and registration of the right. • Orion effectively holds a 70% interest in the Vardocube Prospecting Right, with the remaining 30% as BEE ownership in compliance with existing legislation.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Anglovaal exploration resulted in the delineation and development of a large mine.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Prieska Zn-Cu deposit is a Volcanogenic Massive Sulphide (**VMS**) deposit which is situated in the southernmost exposures of the north-northwest trending Kakamas Terrain, which forms part of the Mid-Proterozoic Namaqualand Metamorphic Complex. • The deposit is hosted by the Copperton Formation of the Areachap Group. The Areachap Group, also hosts several other but smaller VMS deposits such as the Areachap, Boks Puts, Kantien Pan, Kielder, and Annex Vogelstruisbult deposits. • The structural sequence at the mine consists of a footwall Smouspan Gneiss Member, Prieska Copper Mines Assemblage (**PCMA**), which hosts the sulphide mineralisation, and the hangingwall Vogelstruisbult Gneiss Member. • The historically mined section of the deposit is confined to a tabular, stratabound horizon in the northern limb of a refolded recumbent synform, the axis of which plunges at approximately 5° to the south-east. • The mineralised zone outcrop has a strike of 2,400m, was oxidised and / or affected by leached and supergene enrichment to a depth of

Criteria	JORC Code explanation	Commentary
		approximately 100m and is exposed as a well-developed gossan. It has a dip of between 55° and 80° to the northeast at surface and a strike of 130° to the north. Current drilling indicates a strike length of at least 2,860m. • The thickness of the mineralised zone exceeds 30m in places but averages between 7m and 9m. The mineralised zone persists to a depth of 1,100m (as deep as 1,228m in one section) after which it is upturned due to the folding. • The Vardocube Massive Sulphide Target below the historical mined area, comprises the steep down dip continuity ("steep limb and hinge zone") from where it upturns to its subsequent synformal structure ("trough zone"). • The morphology of the mineralised horizon in the eastern limb is well mapped out by drilling and historic mining while the western limb up dip extent is poorly tested and mapped.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Anglovaal: • A summary of the Anglovaal drill hole collar information related to the current Vardocube Deep Sulphide Resource (Vardocube Prospecting Right) reporting (Section 3 of JORC tables) is included in Appendix 2, Table 1. Orion: • A summary of the Orion drill hole collar information related to the Deeps Resource reporting (Section 3 of JORC tables) was reported in ASX release 8 February 2018.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Anglovaal: • Individual intersections were weighted by sample width. • No truncations have been applied. • All grade and density information are incorporated in the Vardocube database. Intersections related to the Vardocube Massive Sulphide Resource (Vardocube Prospecting Right) reporting (Section 3 of JORC tables) is included in Appendix 2, Table 2. Orion: • Significant Intersections for the Deep Sulphide Target reported to the ASX are calculated by average of assays result > 0.3% copper or 0.5%

Criteria	JORC Code explanation	Commentary
		zinc and weighted by the sample width and specific gravity of each sample. • In general, the significant intersections correspond strongly to geological boundaries (massive sulphides) and are clearly distinguishable from country rock / surrounding samples. • No truncations have been applied. • The significant intersections made by Repli were reported in ASX releases of 8 February 2018, 12 December 2017, 8 November 2017, 9 October 2017, 5 October 2017, 19 September 2017, 6 September 2017, 27 July 2017 and 17 July 2017.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• All intersection widths quoted are down hole widths. • Most holes intersected the mineralisation perpendicular or at high angle to the attitude of the mineralisation. • The geometry of the mineralisation is complex and true widths can be obtained from the three-dimensional wireframe created of the mineralisation.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Appropriate diagrams (plan, cross section and long section) are shown in Appendix 2, Figures 1 to 3. • A summary of the drill hole intersection information related to the current Vardocube Massive Sulphide Resource reporting (Section 3 of JORC tables) is given in Appendix 2, Table 2. • A summary of the drill hole intersection information related to the Repli Massive Sulphide Resource was reported in ASX release 8 February 2018.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All drilling information is available and has been compiled digitally. • Drill hole results which have been detailed in previous public announcements are not repeated here.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Hardcopy maps are available for a range of other exploration data. This includes mine survey plans, geological maps, airborne magnetic, ground magnetic, electromagnetic, gravity and induced polarisation information. All available exploration data has been viewed by the Competent Person. • The mine operated from 1972 to 1991 and is reported to have milled a total of 45.68 Mt of ore at a grade of 1.11% copper and 2.62% zinc, recovering 0.43 Mt of copper and 1.01 Mt of zinc. Detailed production and metallurgical results are available for the life of the mine. • In addition, 1.76 Mt of pyrite concentrates and 8,403 t of lead concentrates as well as amounts of silver and gold were recovered. • Copper and zinc recoveries averaged 84.9% and 84.3% respectively

Criteria	JORC Code explanation	Commentary
		during the life of the mine. • Comprehensive geotechnical work as part of a Bankable Feasibility Study (**BFS**) is in progress on the Deep and +105 Target areas and the data is available. • Metallurgical test work as part of a BFS is in progress. All data to date is available.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Drilling to test the extension of the Vardocube Deep Sulphide Target will start in April 2018.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in Section 1, and where relevant in Section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary

Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*
	• *Data validation procedures used.*
		• Orion is in the process of compiling a robust Geobank™ database however, in the interim sample data is stored and managed on Access™ and Excel™ spreadsheets.
		• Validation includes the following;
		  ○ Ensuring that all drill holes have appropriate XYZ coordinates.
		  ○ Comparing the maximum depth of the hole against the final depth indicated in the collar file.
		  ○ Comparing the final depth in the survey file against final depth in the collar file.
		  ○ Comparing the final depths of all geology, assay, core recovery against the final depth in the collar file.
		  ○ Checking for duplicate drill holes.
		  ○ Checking that each depth interval has a main lithology.
		  ○ Checking that all fields that were set up as mandatory fields contain entries.
		  ○ The core recoveries were checked for unrealistic percentages.
		  ○ Density results are checked for unrealistic values.
		• Procedures used are queries in the Access database. In addition, when the drill hole data was imported into the Geovia Surpac™ (**Surpac**) modelling software. The data was validated for duplicates, gaps, overlaps, impossible intervals in down-hole sequence for assay, collar coordinates, geology data and survey data. The drill holes were also

Criteria	JORC Code explanation	Commentary
		visually checked in plan and section in Surpac.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• A site visit was conducted by Z* Competent Person/s during the 4th quarter of 2017. The visit included a review of the drilling and sampling operations, discussion on the geology and associated mineralisation, review of the planned drill holes and examination of the assay data and a high level spatial analysis.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• The Vardocube Massive Sulphide mineralisation is the depth extension of the strata-bound, stratiform VMS Prieska Zn-Cu deposit and is hosted by the 3km thick Copperton Formation of the Areachap Group. The massive sulphide mineralisation is characterised by abundant rounded fragments of gangue material of various sizes contained in a matrix of sulphide minerals. The gangue includes fragments of both hanging- and footwall material. • No clear metal zonation is evident from the modelling. High Cu is generally not in the same place as the high Zn (with a few exceptions). • Geological data and conclusions reached were based on observations made in drill core from recent drilling and sampling programmes. • Like many other VMS deposits domaining for estimation is not possible using the geology, and the best method is therefore to utilise the assay data. • There is a sharp decrease in the Zn and Cu grades on the boundary of the massive sulphide unit. For the construction of the wireframes a Zn equivalent cut-off of 4% (Zn Eq = Zn% + (Cu%*2)) for the mineralised zones was used.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Within the prospecting right area, the known strike length of the mineralisation is 600m, horizontal width varies from 2m to 40m and the down dip extent is 1,100m below shaft collar. True thickness of the orebody varies between 1.5m to 25m with an average of 6m.

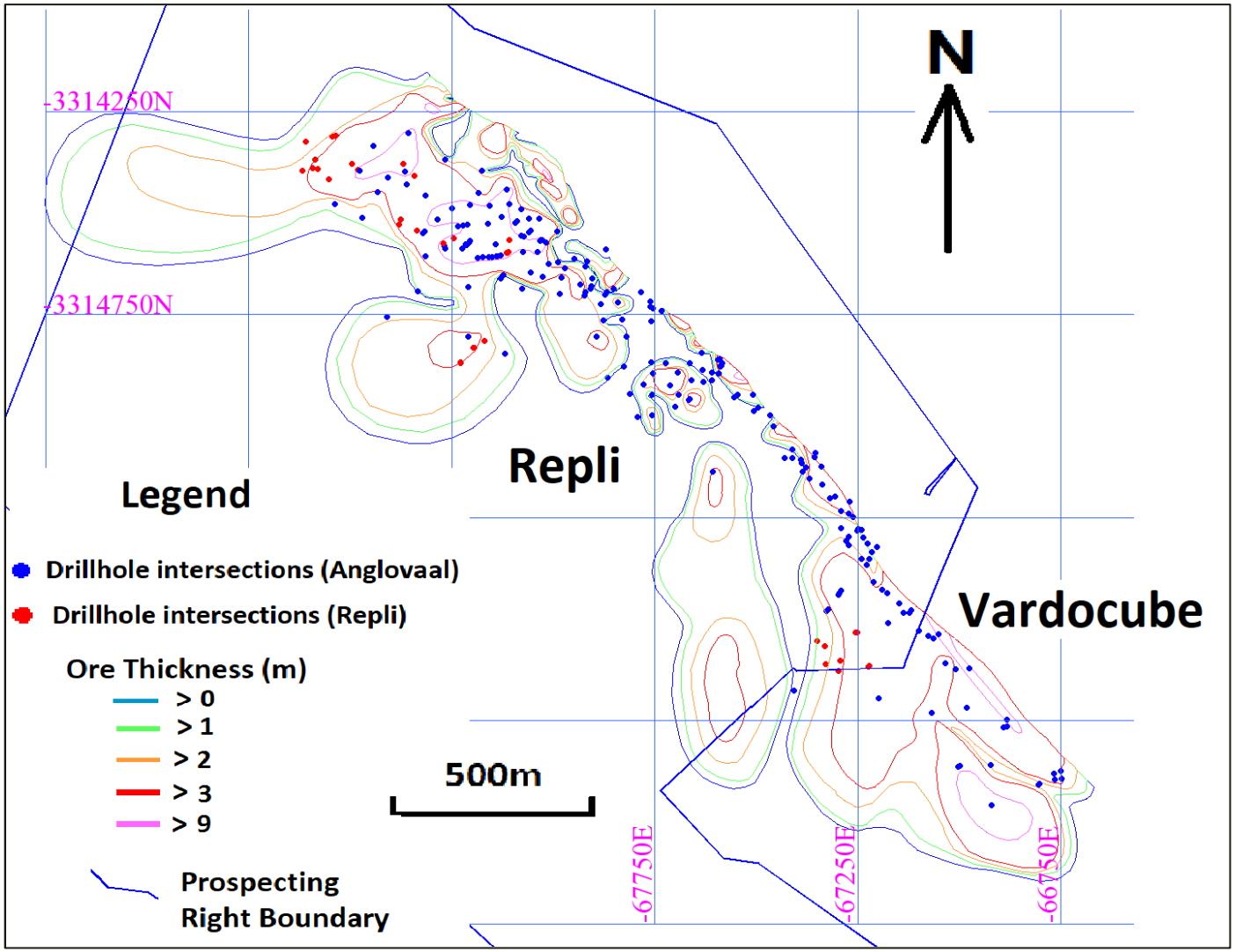
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*
	• *The assumptions made regarding recovery of by-products.*
		• The estimation of the Vardocube Massive Sulphide included the following steps:
		  ○ The creation of a wireframe model for the Vardocube Massive Sulphide Target by Orion geologists using a 4% Zn equivalent cut-off;
		  ○ Data validation and selection of samples within the Vardocube Massive Sulphide Target and analysis of the variables to be estimated, i.e. Cu%, Zn%, Ag g/t, Au g/t, Pb% and SG;
		  ○ Exploratory Data Analysis (**EDA**) that included:
		  ▪ Compositing the data to 1m;
		  ▪ Capping two Cu% outliers and a single Pb% high value; and

Criteria	JORC Code explanation	Commentary
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulfur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	▪ Exclusion of two samples with extreme lengths. o Creation of a suitable block model with estimation blocks (40m x 40m x 5m) and Smallest Mining Units (SMU's) of 2.5m x 2.5m x 2.5m; o A spatial analysis of estimation variables followed by a neighbourhood analysis taking cognisance of the folding; o Estimation using an appropriate method and modelled parameters, i.e. Ordinary Kriging for local block estimation supplemented by zonal estimation; o Validation of block estimates including statistical and visual methods as well as comparison with the results of a second method (moving average); o The software used for estimation was Isatis™. • There is no previous Mineral Resource declaration for the Vardocube Massive Sulphide Target. • There are no previous mine production plans for the Vardocube Massive Sulphide Target. • No assumptions have been made regarding the recovery of by-products. • No deleterious elements or non-grade variables were estimated.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• No moisture content was calculated, and the core was naturally dried when logged and sampled. The estimated tonnages are therefore based on a natural basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A Zn equivalent cut-off of 4% was used for the Mineral Resource Statement that corresponds with the wireframe modelling. • The cut-off was on the recommendation of the Orion Executive: Mining & Development.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Minimum mining thickness of 2m and cut-off of 4% Zn equivalent were proposed by the Orion Executive: Mining & Development, as based on historical data from the Prieska Copper Mine and a dataset of parameters from similar operations in the region. • The minimum thickness is based on long hole open stope and drift and fill mining methods. • A preliminary mine design which will form the basis of a BFS is in progress.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic*	• Preliminary metallurgical test work on the sulphide mineralisation revealed good concentrate recoveries. Additional metallurgical test work is planned as part of a BFS is in progress.

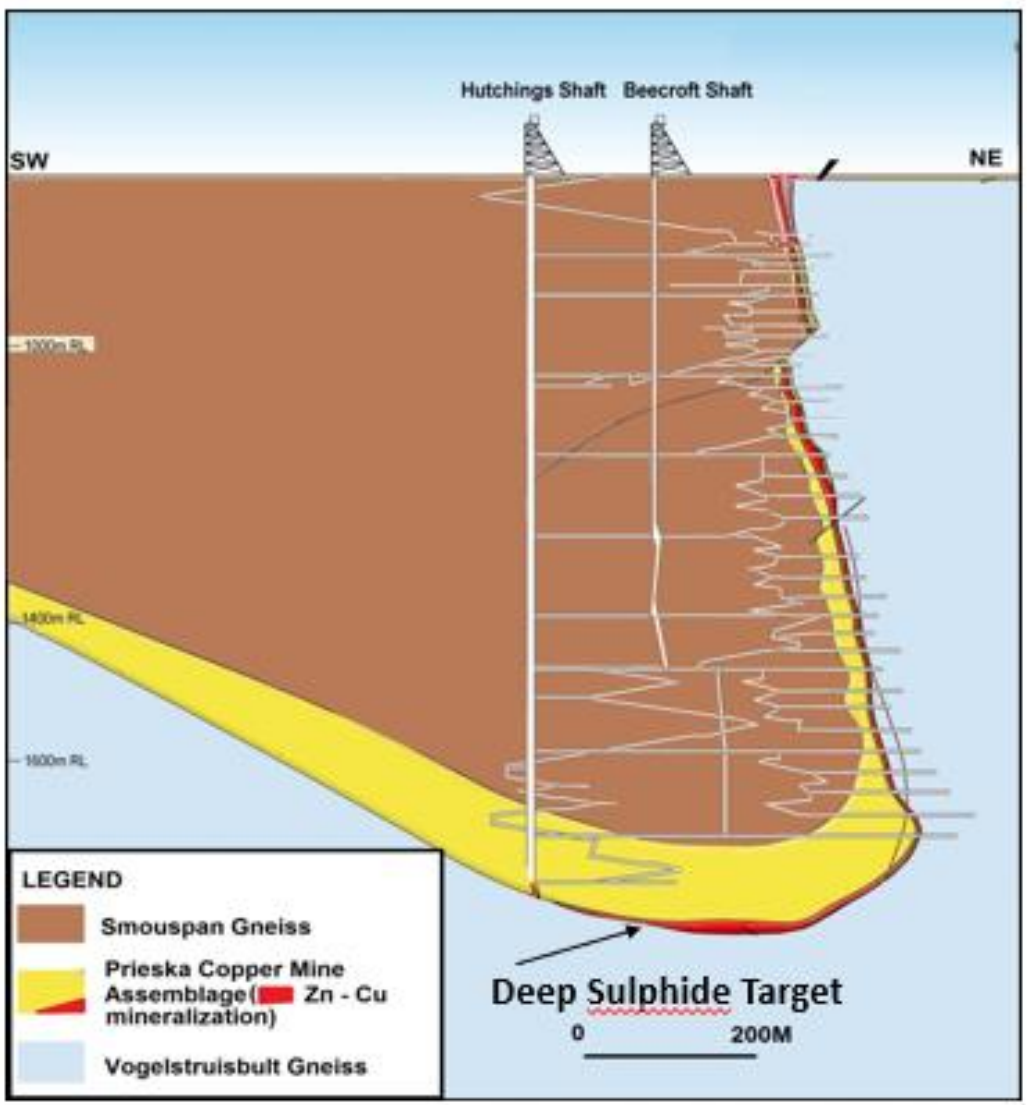
Criteria	JORC Code explanation	Commentary
	extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The Vardocube Massive Sulphide Target is on the environmental footprint of the now defunct Prieska Copper Mine site. Environmental impact assessment studies form part of the on-going BFS.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• No records are available on the method used to determine the relative densities. It is assumed that the water displacement method was used. • Relative densities were obtained from Anglovaal geological log sheets and geological sections. • No moisture content was determined. • Local block estimates of SG t/m^3 were produced using Ordinary Kriging in areas of close spaced sampling. A second pass with longer search radii was utilised and the remaining blocks were populated using grid filling. The tonnage per block was determined using the volume (as per the wireframe model) and the SG on a block by block basis.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors, i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data.* • *Whether the result appropriately reflects the Competent Person(s)' view of the deposit.*	• The classification of the Vardocube Massive Sulphide Mineral Resource takes cognisance of the uncertainty associated with the geology with the focus being on the definition of the mineralised domain and therefore the volume estimate. The classification also takes cognisance of the fact that there is more than one drilling and sampling programme, and the historical Anglovaal data has a lack of available supporting documentation. A further important consideration is the methodology used to estimate Cu%, Zn%, Ag g/t, Au g/t, Pb% and SG t/m3 and an assessment of the results (refer to discussion of relative accuracy and confidence below). • The Vardocube Massive Sulphide Mineral Resource is classified at an Inferred level of confidence. • The results conform to the view of the Competent Persons.

Criteria	JORC Code explanation	Commentary
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No reviews or audits were done of the Mineral Resource estimate however, numerous validation methods were utilised included a second estimation method and the estimates were found to be well within the requirement for an Inferred category.
Discussion of relative accuracy/confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Vardocube Massive Sulphide mineralisation was modelled together with the Deep Sulphide mineralisation occurring along strike to the north-west. • The summary statistics of the Deep Sulphide mineralisation do not show any significant differences between Anglovaal and Orion data. There is a reasonable compatibility between the histograms (despite a significant difference in the number of assays) but the Orion data shows a larger percentage of very low values for both Cu% and Zn%. • In general, the variogram models for Cu% and Zn% for both Anglovaal and Orion data compare very favourably. • Ordinary Kriging was undertaken on all variables (Cu%, Zn%, Pb%, Ag g/t, Au g/t and SG t/m3) on a 40m x 40m x 5m block scale, utilising the capped 1m composite input datasets, the modelled variograms and the search neighbourhood parameters. The results from the first pass for Cu%, Zn% and SG t/m3 populate between 28% and 40% of the blocks. However, the same results for Ag g/t, Au g/t and Pb% populate very few blocks (<17%), due to a lack of sampling. Consequently, a second kriging pass was deemed appropriate for Cu%, Zn% and SG t/m3, this resulted in between 59% and 71% of the blocks being populated. A decision was taken to utilise the "grid filling" option in Isatis™ using a moving average interpolator. The grid filling option is suited to filling grid nodes not populated by the second kriging pass and was deemed to be a better option than applying a zonal mean. • Given the low number of blocks populated from the first pass for Ag g/t, Au g/t and Pb%, it was decided that a second pass would produce unsubstantiated estimates with high levels of uncertainty. Instead, a zonal mean was applied to estimate the remaining blocks. This volume weighted mean was calculated from the first pass local block estimates and applied to each of these three variables. • No production data is available.

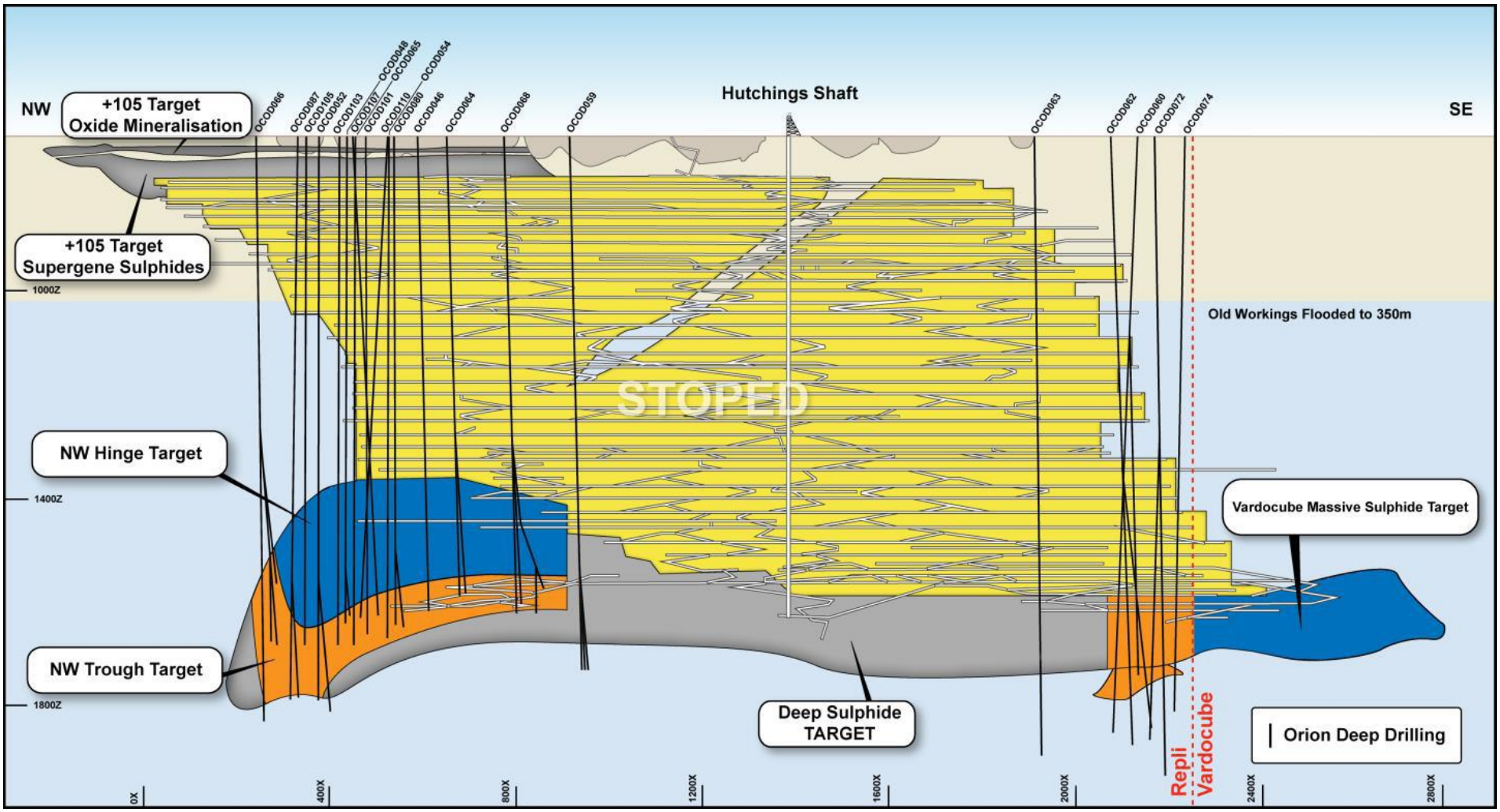
Appendix 2:



Appendix 2 Figure 1: Plan of Vardocube Massive Sulphide Target area showing drill hole intersections, mineralisation thickness contours, and Prospecting Right boundary. The reader is made aware that "ore" on the diagram refers to historic mining nomenclature used by Anglovaal and does not have the same meaning as "ore" defined by the JORC Code, 2012.



Appendix 2 Figure 2: Simplified geological section through historic Prieska Copper Mine showing structure and locality of the Deep Sulphide Target below the old workings. The Vardocube Massive Sulphide Target is the southeastern strike extension of the Deep Sulphide mineralisation (refer ASX release 8 February 2018).



Appendix 2 Figure 3: Longitudinal projection of the Prieska Copper Mine showing historical mined area and wireframe of the Deep Sulphide Target and the Vardocube Massive Sulphide Target (refer ASX release 4 April 2018).

Hole Number	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
D351	-67424.53	-3315682.51	440.46	608.00	-30.25	102.50	Underground diamond	Anglovaal
D354	-67147.07	-3315720.71	102.43	138.45	-53.00	92.00	Underground diamond	Anglovaal
D355	-67435.63	-3315685.96	440.26	475.71	-88.50	66.00	Underground diamond	Anglovaal
D355A	-67435.63	-3315685.96	440.26	436.41	-88.50	66.00	Underground diamond	Anglovaal
D356	-67424.74	-3315689.07	440.41	570.30	-53.50	67.50	Underground diamond	Anglovaal
D356A	-67424.74	-3315689.07	440.41	531.11	-53.50	67.50	Underground diamond	Anglovaal
D373	-67147.41	-3315929.86	362.97	444.86	-56.50	56.00	Underground diamond	Anglovaal
D378	-67142.08	-3315933.99	363.00	508.00	-60.00	85.00	Underground diamond	Anglovaal
D453	-67148.47	-3315930.08	362.98	436.25	-66.00	56.00	Underground diamond	Anglovaal
D454	-67142.08	-3315933.99	363.00	505.57	-42.50	83.00	Underground diamond	Anglovaal
D454A	-67142.08	-3315933.99	363.00	499.15	-42.50	83.00	Underground diamond	Anglovaal
D455	-67144.62	-3315933.63	363.30	465.20	-52.00	34.00	Underground diamond	Anglovaal
D456	-67147.66	-3315929.88	362.97	559.65	-43.00	55.75	Underground diamond	Anglovaal
D456A	-67147.66	-3315929.88	362.97	571.00	-43.00	55.75	Underground diamond	Anglovaal
D457	-67250.48	-3315586.94	361.30	424.00	-75.00	149.00	Underground diamond	Anglovaal
D459	-67140.74	-3315926.93	363.80	497.00	-31.00	84.00	Underground diamond	Anglovaal
D459A	-67140.74	-3315926.93	363.80	472.00	-31.00	84.00	Underground diamond	Anglovaal
F1830	-67249.22	-3315583.90	362.05	441.58	-57.00	87.00	Underground diamond	Anglovaal
F1839	-67272.79	-3315518.81	241.82	330.18	-47.00	93.00	Underground diamond	Anglovaal
F1840	-67260.35	-3315532.03	242.20	347.22	-31.25	105.00	Underground diamond	Anglovaal
F2006	-67260.70	-3315532.60	242.41	275.86	-31.00	95.75	Underground diamond	Anglovaal
F2016	-67223.85	-3315685.83	362.11	392.38	-49.00	76.00	Underground diamond	Anglovaal
F2026	-67260.66	-3315531.22	241.86	283.20	-38.00	87.25	Underground diamond	Anglovaal
OCOD072	-67299.21	-3315602.45	1,077.44	1,303.23	-89.80	242.90	Surface diamond	Orion

Foot Note: Shaft collar is 1070.26 RL.

Appendix 2 Table 1: Drill hole information for the Vardocube Massive Sulphide Mineral Resource estimation.

HOLE NUMBER	DOWN HOLE DEPTH (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	SG	WGS84 Wg23		
	From	To								Northing	Easting	RL
D351	595.14	601.42	6.28	0.53	3.11	0.12			3.77	-3315765.95	-66891.74	187.97
D354	134.85	137.78	2.93	1.65	6.21	0.04			3.79	-3315729.96	-67067.19	-7.55
D355	422.18	423.15	0.97	0.52	1.75	0.04			3.14	-3315676.25	-67407.03	18.85
D355A	421.31	422.54	1.23	0.52	3.35	0.03			3.51	-3315676.66	-67407.48	19.55
D356	501.49	526.61	25.12	1.01	3.06	0.06			3.71	-3315539.87	-67075.22	105.74
D356A	500.35	522.00	21.65	0.92	3.09	0.14			3.72	-3315540.63	-67077.06	108.22
D373	429.95	431.46	1.51	0.53	6.67	0.04			3.65	-3315859.55	-66923.27	4.31
D378	431.05	456.08	25.03	1.38	4.26	0.15			3.61	-3315957.13	-66920.38	-19.57
D453	408.07	427.88	19.81	0.71	3.52	0.04			3.37	-3315862.14	-67001.38	-21.60
D454	477.75	480.20	2.45	1.83	2.02	0.15			3.31	-3315906.83	-66804.81	27.06
D454A	478.27	480.72	2.45	0.98	0.35	0.03			2.89	-3315906.19	-66803.41	27.66
D455	447.55	453.30	5.75	2.08	6.04	0.07			3.88	-3315717.68	-66980.97	4.38
D456	451.55	463.41	11.86	1.27	5.23	0.07			3.73	-3315746.01	-66878.15	43.03
D456A	439.47	447.67	8.20	1.54	7.04	0.08			3.72	-3315764.17	-66882.73	52.06
D457	400.98	406.78	5.80	1.36	5.76	0.03			3.66	-3315695.62	-67199.25	-24.06
D459	463.45	465.57	2.12	0.78	5.40	0.09			3.95	-3315892.52	-66748.82	118.95
D459	444.31	446.84	2.53	1.11	4.59	0.04			3.52	-3315894.20	-66764.79	128.99
D459A	468.08	470.95	2.87	0.61	5.22	0.07			3.72	-3315872.99	-66750.87	114.53
D459A	447.37	450.02	2.65	0.49	6.23	0.03			3.56	-3315880.46	-66766.43	126.17
F1830	395.60	398.24	2.64	1.21	5.47	0.07			3.70	-3315607.57	-67034.74	29.31
F1839	249.94	254.98	5.04	1.16	4.44	0.06			3.87	-3315528.22	-67099.13	58.96
F1840	296.54	335.83	39.29	1.29	7.36	0.07			3.64	-3315621.09	-67008.93	73.40
F2006	237.40	253.57	16.17	2.55	2.46	0.05			3.83	-3315537.05	-67051.37	114.47
F2016	348.78	385.05	36.27	1.68	6.44	0.07			3.74	-3315621.26	-66974.98	100.80
F2026	243.20	259.95	16.75	1.79	8.02	0.07			4.10	-3315546.88	-67064.02	86.33
OCOD072	1,101.70	1,107.05	5.35	0.72	5.14	0.05	0.22	6.28	3.29	-3315628.17	-67296.67	-26.22

Appendix 2 Table 2: Drill hole intersections on Vardocube Prospecting Right used for the Vardocube Mineral Resource estimation (Cut-off = 4% (Zn + (2 x Cu)) to construct the wireframe.