Orion Minerals

Detailed **ASX/JSE RELEASE: 8 February 2018**

Clarification Announcement
Prieska Zinc-Copper Project
Maiden JORC Resource Exceeds Expectations

- **Maiden Global Mineral Resource of 24.2Mt containing 874,000 tonnes Zn and 297,000 tonnes Cu.**
- **The Global Mineral Resource is located on the Repli Prospecting Right and comprises material in the Indicated and Inferred Mineral Resource categories.**
- **The Repli prospecting right covers approximately 70% of the primary target area.**
- **The stated Mineral Resource is based on drilling data available as at 31 December 2017 and therefore excludes results from 7 additional intersections which were recently reported and a further 6 holes which are expected to complete by the end of February 2018.**
- **The target massive sulphide body remains open both on strike and dip.**
- **Permitting of the southern extension is underway to allow drilling of the remaining 30% of the primary target area.**

Orion Minerals Limited (**ASX/JSE: ORN**) (**Orion** or **Company**) is pleased to provide clarification on the announcement of 5 February 2018 for the maiden Mineral Resources for the Prieska Zinc-Copper Project (**Prieska Project**). The Mineral Resources stated in Table 1 are for drilling data available as at 31 December 2017. The Mineral Resources are quoted in compliance with the 2012 Edition of the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC 2012**) with supporting information in Appendix 1. Further drilling will be carried out during the first half of 2018 to upgrade the confidence classification of a substantial portion of the global Mineral Resource.

Global Mineral Resource For Prieska Project - Repli Trading No 27 (PTY) Ltd

Classification			Zn		Cu		Au		Ag	
		Tonnes	Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Metal Ounces	Grade (g/t)	Metal Ounces	Grade (g/t)
Deep Sulphide	Inferred	22,649,000	839,000	3.71	266,000	1.17	153,000	0.21	6,904,000	9.48
+105 Supergene	Indicated	1,241,000	32,000	2.57	30,000	2.37	9,000	0.23	348,000	8.73
+ 105 Oxide	Inferred	272,000	2,000	0.86	2,000	0.63	1,000	0.12	17,000	1.82
Total Global		24,162,000	874,000	3.47	297,000	1.23	163,000	0.21	7,269,000	9.36

Note All Resources Stated at Zero Cut-off. All masses rounded to thousands which may result in rounding errors in totals

Table 1: Global Indicated and Inferred Mineral Resource Statement for the Prieska Project of Repli Trading No 27 (PTY) Ltd.

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

"This maiden Mineral Resource for Prieska far exceeds our original expectations for the target tested and demonstrates that the Prieska Project can be classified as a giant VMS body. It also demonstrates the value of modern exploration techniques and methodology applied to high quality, under-explored deposits. As we intensify our regional exploration, having recently completed a regional airborne electromagnetic survey, we are confident of success in making further major discoveries in the Areachap Belt."

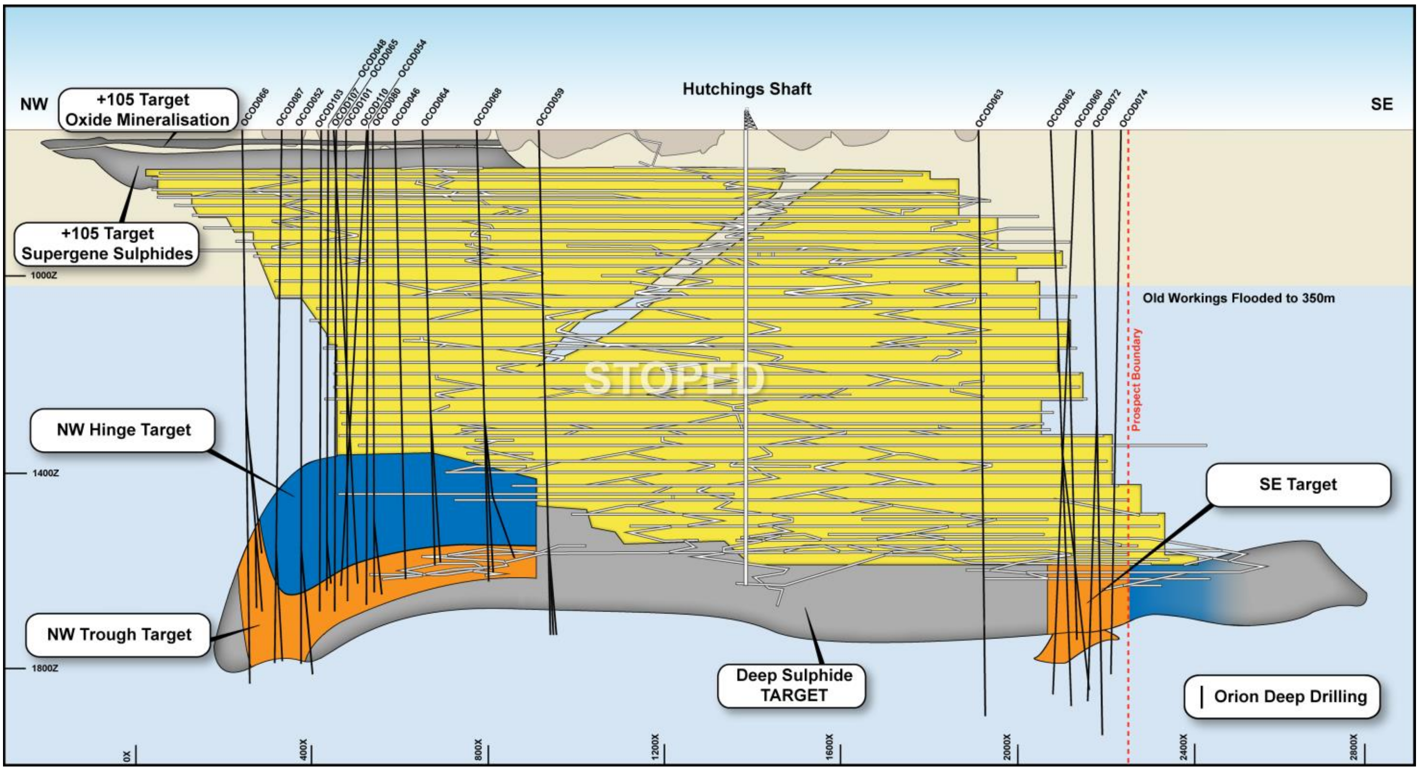


Figure 1: Locality of the +105 Target and Deep Sulphide Target at the Prieska Project, with the lower Deep Sulphide Target area subdivided into areas with infill drilling almost complete (orange), areas for priority infill drilling (blue) and priority 2 target (grey).

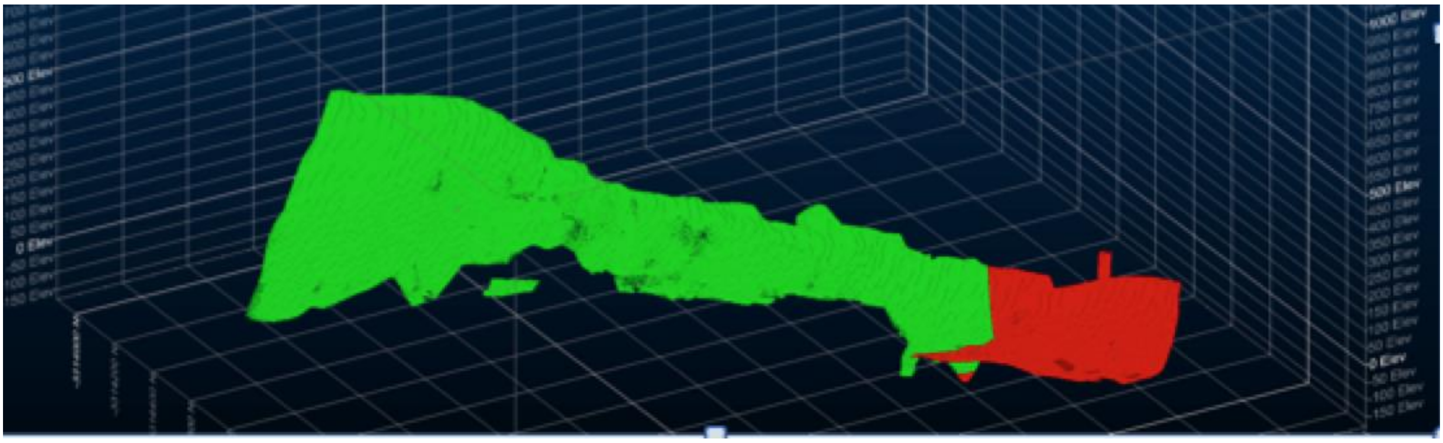


Figure 2: Isometric view showing the Deep Sulphide Target with area in green being the portion on the Repli Prospecting Right infill drilled by Orion and included in maiden Mineral Resource estimates, while the red indicates the target area with permitting pending.

Inferred Mineral Resource for Prieska Project Deep Sulphides

			Zn		Cu		Au		Ag	
Cutoff $\%_{calc}$ *	Volume (m^3)	Tonnes	Tonnes	Grade (%)	Tonnes	Grade (%)	Ounces	Grade (g/t)	Ounces	Grade (g/t)
0.0	6,560,000	22,649,000	839,000	3.71%	266,000	1.17%	153,000	0.21	6,904,000	9.48
2.0	6,511,000	22,485,000	838,000	3.73%	265,000	1.18%	152,000	0.21	6,854,000	9.48
4.0	5,919,000	20,554,000	801,000	3.90%	251,000	1.22%	139,000	0.21	6,246,000	9.45
6.0	3,214,000	11,269,000	509,000	4.51%	158,000	1.40%	77,000	0.21	3,449,000	9.52

			Zn		Cu			Total
Cutoff $\%_{calc}$ *	Volume (m^3)	Tonnes	Metal Tonnes	Grade (%)	Metal Tonnes	Grade (%)	Cu=Zn_eq	Zn_eq%
0.0	6,560,000	22,649,000	839,000	3.71%	266,000	1.17%	2.61%	6.32%
2.0	6,511,000	22,485,000	838,000	3.73%	265,000	1.18%	2.62%	6.35%
4.0	5,919,000	20,554,000	801,000	3.90%	251,000	1.22%	2.72%	6.62%
6.0	3,214,000	11,269,000	509,000	4.51%	158,000	1.40%	3.12%	7.63%

Note: Volumes and masses rounded to thousands, which may result in rounding errors

* Cutoff $\%_{calc}$ = (Zn% + (2 X Cu%))

Summary Table for Zinc Equivalent Calculations

Parameter	Units	Zinc	Copper	Comments
Copper selling price	USD/t	3,549	7,011	Kitco.com 31 Jan 2018 NYSE 20h00
Exchange rate USD:ZAR	USD:ZAR	11.9	11.9	exchange rate obtained from XE.com 31 Jan 2018
Metal selling price	ZAR/t	42,225	83,400	Calculated
Metal recovery - Hypogene material	%	85%	85%	Historical performance and recent testwork
Metal in conc sales costs	%	18%	8%	Concentrate traders' estimate
State Royalty	%	0.50%	0.50%	Calculated
Effective Revenue per t of metal	**ZAR/t**	**29,108**	**64,881**	**Calculated**

Copper Equivalent	%	1.00%	**0.45%**	
Zinc Equivalent	%	**2.23%**	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 metel equivalent estimate

Table 2: Inferred Mineral Resource for the Deep Sulphide Target at various higher cut-offs and indicating zinc equivalent metal content, excluding value of by-product credits for gold or silver.

Orion has now completed approximately 42,000m of drilling on the Deep Sulphide Target and has succeeded in validating extensive historic data for inclusion in geological modelling and geostatistical estimation.

Orion also looks forward to updating the Mineral Resource for the NW Trough Target and the SE Target (orange area on Figure 1) areas with inclusion of additional intersections recently announced (refer ASX release 1 February 2018) and assays from 6 additional holes currently underway. Results from these holes are expected by the end of February 2018. Drilling will continue to infill the areas shown in blue on Figure 1 as a priority.

Orion anticipates that the additional holes will provide satisfactory drill spacing to delineate Mineral Resource estimates with an increased level of confidence as early as next quarter. This will allow inclusion of these Mineral Resources in detailed scheduling and mine design work as possible sources of feedstock for early production, potentially enabling the delineation of a maiden Ore Reserve.

The + 105 Open Pit Target resource presents an interesting early production opportunity for consideration in the bankable feasibility study (**BFS**). Early mining of an open pit may bring forward production while mine dewatering is underway.

With engineering studies (refer ASX release 2 February 2018) and metallurgical optimisation (refer ASX release 15 November 2017) progressing well, Orion is very confident of a positive outcome for the BFS currently underway.

The Maiden Mineral Resource for the Deep Sulphide Target was estimated utilising the following parameters:

- The Mineral Resource was restricted to that lying within the Repli prospecting right (approximately 70% of the mineralisation) corresponding to a strike length of 1,860m. It has a horizontal width of between 6m and 140m, with a down dip extent of 1,228 below the shaft collar. The true thickness of the mineralisation varies from 1m to 30m with an average of 7m.

- The Deep Sulphide mineralisation is the depth extension of the strata-bound, stratiform Volcanogenic Massive Sulphide (**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") and from where it upturns to its subsequent synformal structure ("trough zone").

- The stated Mineral Resource is based on drilling data available as at 31 December 2017 corresponding to 176 drill holes for 53,588m (48,601m diamond core and 4,987m pre-collar percussion) (Figure 3). Additional intersection data was obtained by drilling a total of 13 deflections (totalling 7,517m diamond core) from holes OCOD048, OCOD052, OCOD059, OCOD060, OCOD062, OCOD064, OCOD066, OCOD068, OCOD072, OCOD080, OCOD087.

- Diamond core samples were taken by splitting NQ or BQ core in half (Orion drilling). Core size for the historical drilling is unknown.

- Orion samples were analysed at ALS Chemex PTY Ltd (**ALS**). 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.

- CRM's, blanks and duplicates are inserted and analysed with each batch of Orion drilling. 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%). Historical QA/QC is undocumented and was controlled by the laboratory.

- All Orion collars were surveyed by a qualified surveyor using a Trimble R8 differential GPS. All historical surface and underground hole collars were surveyed by qualified surveyors using a theodolite.

- Downhole surveys for Orion holes were completed using a North-Seeking Gyro instrument. Downhole surveys were carried out for most of the V holes and all of the D and F holes. Both Eastman and Sperry Sun instruments were used in historical downhole surveys.

- Mineralised zones were delineated for resource estimation using a (Zn% + (2 x Cu%) > 4% cut off value.

- Samples were composited to 1m, with two Cu outliers and one Pb high value capped, and two samples with extreme lengths excluded.

- Interpolation of the composite data was used to estimate the block grades using the ordinary kriging for local block estimation supplemented by zonal estimation.

- A block model with cells of 40m X by 40m Y by 5m Z was used with smallest mining units of 2.5m x 2.5m x 2.5m.

- Relative Densities (SG t/m3) were determined using the water displacement method. The entire sample (normally 1m length) was measured. Local block estimates of SG t/m3 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 Deep Sulphide Resource is classified at an Inferred level of confidence. The classification of the Deep Sulphide Resource takes cognisance of uncertainty associated with 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 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

The Maiden Mineral Resource for the +105 Target was estimated utilising the following parameters:

- The +105 Mineral Resource extends over a strike length of 867m, and lies between 5 and 104m below surface. The thickness of the mineralisation varies between 1.5m and 23m.

- The +105 Mineral Resource comprises four defined zones above the primary sulphides of the historically mined Prieska Zn-Cu VMS Deposit. These are:
  - Haematite-goethite-quartz oxide zone (gossan) from surface to approximately 33m;
  - Clay (kaolinite) zone developed in places below 33m;
  - Chalcocite dominant supergene zone between approximately 42 and 70m; and
  - Mixed Supergene-sulphide zone between approximately 70 and 90m below surface. This has a relatively sharp contact with the fresh underlying massive sulphides.

- Of the above four zones, the first and the third are considered as being suitable for quotation of a Mineral Resource. These two are referred to as the oxide and supergene zones, respectively.

- The stated Mineral Resource is based on drilling data available as at 31 December 2017 which comprises 44 RC and diamond core drill holes for 3,924m.

- RC samples were taken using a face sampling hammer, collected in a cyclone and split using a 3 tier riffle splitter. Diamond core samples were taken by splitting NQ core in half.

- Three laboratories were used – Repli drilling used Genalysis South Africa (Pty) Ltd, Orion used ALS with SGS Laboratory used as the referee laboratory. Anglovaal samples were analysed at Anglovaal Research Laboratory at Rand Leases Mine.

- Quality control samples were inserted (> 8% insertion rate) at pre-determined points within the sampling stream. Blanks were inserted at the beginning and end of each sample batch, and in the mineralised zone of each hole. CRMs were inserted to correspond with mineralised zones. Historical QA/QC is undocumented and was controlled by the laboratory.

- All collars were surveyed by a qualified surveyor using a Trimble R8 differential GPS.

- Downhole surveys were completed for all Orion diamond holes using a North-Seeking Gyro instrument. Downhole surveys were completed for all Repli diamond holes using a Reflex EZ Trak instrument. No surveys were done in the RC holes.

- Mineralised zones were constructed for resource estimation utilising Cu% values greater than or equal to 0.3% and Zn% values greater than or equal to 0.6%.

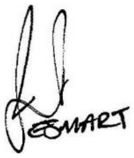
- Samples were composited to 1m. A single sample value has been changed for Au and Pb and two Ag sample values have been capped. The high values for all variables except Zn were reduced in samples within the supergene zone. The Parker methodology was used for capping outliers which involved capping the relevant outliers for each variable to a chosen threshold.

- Interpolation of the composite data was used to estimate the block grades using the ordinary kriging method. Estimation runs on two different neighbourhoods were utilised for all variables and the first estimation run in each case has smaller searches.

- A block model with cells of 40m X by 40m Y by 5m Z was used with smallest mining units of 2.5m x 2.5m x 2.5m.

- Relative Densities (SG t/m3) were determined using the water displacement method. Due to poor core recoveries the density data in the Oxide Zone is sparse with only 13 samples available. There are 112 density measurements in the Supergene Zone. The entire sample (normally 1m length) was measured. Local block estimates of SG t/m3 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 Supergene Zone of the +105 Mineral Resource is classified at an Indicated and the Oxide Zone at an Inferred level of confidence. The geology of the zones making up the +105 Mineral Resource is relatively uncomplicated, and the key issues relate to the delineation of the domain boundaries. For the Oxide Zone there is uncertainty associated with the density estimation due to the low number of samples.



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Competent Persons Statement

The information in this report that relates to Orion's Exploration Results at the Prieska Project complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**) and has been compiled and assessed under the supervision of Mr Errol Smart, Orion's Managing Director. Mr Smart (PrSciNat) is registered with the South African Council for Natural Scientific Professionals, a Recognised Overseas Professional Organisation (**ROPO**) for JORC purposes and 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 Orion's Mineral Resource, complies with the latest Edition of the JORC Code and has been compiled and assessed under the supervision of Mr Sean Duggan, a Director and Principal Analyst at Z Star Mineral Resource Consultants (Pty) Ltd. Mr Duggan (Pri. Sci. Nat.) is registered with the South African Council for Natural Scientific Professionals (Registration No. 400035/01), a ROPO for JORC purposes. 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 is the principal author of this technical report and consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears and as detailed in Appendix 1.

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Appendix 1: The following tables are provided to ensure compliance with the JORC Code (2012) requirements for the reporting of Exploration Results for the Prieska Deep Sulphide Target and +105 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.	**1. <u>Deep Sulphide Target</u>** • Drilling and sampling has been undertaken during three distinct periods since the discovery of mineralisation. These are pre-mine exploration (1968-1971) and during mine operations (1972-1984) holes ("V", "D", and "F" prefixed holes) by Anglovaal Ltd (also known as the Anglovaal Group, "Anglovaal"), and current drilling (2017 to present) by Repli Trading No. 27 (Pty) Ltd (**Repli**), the current Prospecting Right holders, which is a 73.3% owned company of Orion Minerals Ltd (**Orion**). Repli has 26.7% Black Empowerment Equity (**BEE**) holding in compliance with South African Law. 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 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 QA/QC samples were inserted at the time by the

Criteria	JORC Code explanation	Commentary
		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. Repli: • 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 EM survey carried out using standard techniques. **2. <u>+105 Target</u>** • Drilling and sampling of the shallow oxide/supergene ore above the +105 Target of the historic Prieska Copper Mine have been undertaken during three distinct drilling campaigns, between 2012 and 2017, two diamond drill and one reverse circulation (**RC**)campaign. The first campaign was by Agama Exploration and Mining (Pty) Ltd (**Agama**) through subsidiary Repli, and the other two campaigns by Orion. Orion acquired Agama and Repli in March 2017, currently holding 73.3% interest in the prospecting rights covering the historic Prieska Copper Mine. Five holes drilled by Anglovaal in 1968, during the original drill-out of the Prieska deposit, are included in the resource estimation of the +105 Mineral Resource. • Drilling was carried out on approximately 30m spaced lines along strike and at approximately 50m intervals. There were however holes drilled in between these lines. Underground holes, where possible, were spaced at 50m lines. • Diamond core is cut at the core yard and half core taken as the sample.

Criteria	JORC Code explanation	Commentary
		• In friable ore where core splitting was not possible half of the broken friable material was sampled using a spoon and scraper. • Diamond core is sampled on 1m intervals where possible, sample lengths are adjusted to ensure samples do not cross geological boundaries or other features. • RC samples were collected at 1m intervals via a cyclone and collected in polyweave bags. Each sample was split via a 3 tier splitter, followed by a single splitter to produce two samples of approximately 2.5kg each (an "original" and a "duplicate"). • Sampling is undertaken under the supervision of a qualified geologist and intervals were selected on the basis of mineralogy, textures and concentrations of specific minor minerals. A hand held Niton XRF instrument is used as guide during sampling. • Quality control samples were inserted under the direct supervision of a geologist at pre-determined points within the sampling stream.
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.).*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • Records for core size are not available. • No record on core orientation Repli: • Diamond core drilling using NQ and BQ sized core. BQ core was only drilled where problems were encountered in the original NQ drilled borehole 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. **2. <u>+105 Target</u>** • Diamond drilling from surface is with a NQ core size using a triple tube core barrel to improve core recovery in soft formations. • Core is not orientated. • RC holes have been drilled using a 140mm diameter RC hammer bit. • Underground drilling in the mineralised zone was drilled using a TBW coring bit and a double tube core barrel and BX size reverse flush in the country rock.

Criteria	JORC Code explanation	Commentary
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.*	**1. <u>Deep Sulphide Target</u>** 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. Repli: • 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. **2. <u>+105 Target</u>** • Core stick-ups reflecting the depth of the diamond 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 divided by the stick-up measured at the rig to determine the percentage core recovery. Secondly, the measured length is subtracted from the length of the run as recorded from the stick-up to determine the core lost. • During surface drilling a triple tube core barrel is used to minimise the core loss in soft formations. • In underground holes a TBW bit was used to optimise core recovery when drilling in the mineralised zone as opposed to reverse flush drilling in the footwall rocks. • Core loss was significant in some instances in the soft weathered formations (oxides, supergene ore and clay zones). • Analysis of data show that there is no relationship between core loss and

Criteria	JORC Code explanation	Commentary
		grade.
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.*	**1. <u>Deep Sulphide Target</u>** 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. Repli: • 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. **2. <u>+105 Target</u>** • RC drill chips were logged on 1m intervals using visual inspection of washed drill chips. • Core of the entire hole length was geologically logged and recorded on standardised log sheets by qualified geologists. • All intersections were logged. • Qualitative logging of colour, grainsize, weathering, structural fabric, lithology, alteration type and mineralogy was carried out. • After logging the information was entered into digital templates at the project office. • The Orion drilled core was all (entire borehole) photographed and saved in a dedicated folder.
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.*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • Details of sub-sampling techniques not available

Criteria	JORC Code explanation	Commentary
	• *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.*	• No QAQC samples submitted with the exploration samples Repli: • 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%). **2. <u>+105 Target</u>** • RC chip samples were split via a 3-tier splitter, followed by a single splitter to produce two samples of approximately 2.5kg each (an "original" and a "duplicate"). • When wet, the chip samples were allowed to dry before it was split and sampled. • With core samples, the entire sample length was cut, and one half sampled. • In friable ore where core splitting was not possible half of the broken friable material was sampled using a spoon and scraper. • Core samples were dry. • Three laboratories were used: the drilling campaign by Repli used Genalysis South Africa (Pty) Ltd (**Genalysis**) and the two campaigns by Orion used ALS Chemex PTY Ltd ("ALS"). Both laboratories have SANAS accreditation. However, Genalysis only have accreditation for Au and Pb. SGS Laboratory was used as the referee laboratory. • Samples submitted to the primary laboratories were dried and crushed to 70% < 2mm and then pulverised to 85% < 75 microns. • Quality control samples were inserted (> 8% insertion rate) under the direct supervision of a geologist at pre-determined points within the sampling stream. Blanks were inserted at the beginning and end of

Criteria	JORC Code explanation	Commentary
		each batch as well as within the mineralised zone of each borehole. CRM was inserted to correspond more or less with low, medium or high grade mineralised zones. • Due to the poor quality of the core and difficulty to cut half core into quarter core only a few field duplicates could be taken. • Pulp duplicates for repeatability checks were submitted to SGS as referee laboratory.
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.*	**1. <u>Deep Sulphide Target</u>** 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. Repli: • 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 1800m x 600m are used with continuous measurements

Criteria	JORC Code explanation	Commentary
		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. **2. <u>+105 Target</u>** • Samples submitted to Genalysis and 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. These are appropriate analysing techniques for base metals. • Quality control samples were inserted, under the direct supervision of a geologist, at pre-determined points within the sampling stream. For the total of 230 core samples submitted to Genalysis, 31 CRMs (13.5%), 13 Blanks (4%) and 5 Duplicates were inserted. For the total of 1147 samples submitted to ALS, 81 CRMs for Cu (7%), 64 CRMs for Zn (6%), 48 blanks (4% each for Cu and Zn) and 74 duplicates for Cu (6%) and 76 for Zn (6%) were inserted. Sample results of the duplicates and CRMs were examined on a regular basis by the responsible geologist and any discrepancy taken up with the laboratories. • CRM samples show excellent accuracy and precision and duplicate samples show acceptable precision with no obvious bias. • External laboratory checks between ALS and SGS were done by submission of 72 duplicate samples. These show excellent accuracy and precision, except for the Au as can be expected with the very low levels.
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.*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • No records available Repli: • 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.

Criteria	JORC Code explanation	Commentary
		• No adjustments have been made to the assay data. **2. <u>+105 Target</u>** • The drilling and sampling of each drilling campaign was supervised by experienced geologists. • Significant intersections have been visually examined by the Executive: Exploration. • Core recovery, density data, sampling data and geological logs are documented in the core yard onto standard paper templates provided by the company. • Data entry from the primary hard copies is done on excel spreadsheets by the geologists logging the core. The data is then imported in to an Access database by the geologist responsible for the database. Validation of the data is done during importing into the Access database by running queries, and when the resource geologist imports the data into to the modelling software. • No twinning of holes has been done. • 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.*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • All surface and underground hole collars were surveyed by qualified surveyors using a theodolite. • The historic mine survey data is in the old national Lo 23 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

Criteria	JORC Code explanation	Commentary
		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. Repli: • Borehole 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). **2. <u>+105 Target</u>** • Borehole collar positions were laid out using a handheld GPS. • After completion of the drilling all collars were surveyed by a qualified surveyor using a Trimble R8 differential GPS. • Downhole surveys of Orion diamond drill holes were completed using a North-Seeking Gyro instrument. Repli diamond drill holes were surveyed downhole using a Reflex EZ Track multi-shot survey instrument. • No downhole surveys were done in the RC holes. • 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.*	**1. <u>Deep Sulphide Target</u>** 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. Repli: • 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 determine the drill spacing for Mineral Resource estimates.

Criteria	JORC Code explanation	Commentary
		2. <u>+105 Target</u> • Drilling was carried out on approximately 30m spaced lines along strike and at approximately 50m intervals. There were, however a few holes drilled in between these lines. Underground holes, where possible, were spaced at 50m lines. • Variography studies were carried out on the historic data set to determine the drill spacing for Mineral Resource estimates. • No sample compositing has been applied before assaying.
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.*	**1. <u>Deep Sulphide Target</u>** • Historical and current 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. • No sampling bias is anticipated as a result of hole orientations. • EM surveys by Repli were completed in an orientation perpendicular to the interpreted or intersected mineralisation. **2. <u>+105 Target</u>** • Where access allows, drilling is oriented perpendicular, or at a maximum achievable angle to, the attitude of the mineralisation. • Due to the presence of sinkholes, excess was restricted over half of the strike length and drilling had to be executed from the footwall side of the mineralised horizon, which resulted in sub-optimal angles of intersection. The orientations of these holes are, however not considered of significance to the resource estimation by the Competent Person. • No sampling bias is anticipated as a result of hole orientations.
Sample security	• *The measures taken to ensure sample security.*	**1. <u>Deep Sulphide Target</u>** 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. Repli: • Chain of custody is managed throughout. Samples are stored on site in a secure locked building and then freighted directly to the laboratory.

Criteria	JORC Code explanation	Commentary
		2. <u>+105 Target</u> • Access to drill sites are limited to responsible persons, close supervision of the unloading of the core tube and transportation of core to the core yards (Repli's in Kimberley and Orion's on site). Both core yards are enclosed by a security fence, the access gate of which were locked at all times when personnel were not on the premises. • Sample shipments were controlled by the geologists and / or technicians. In the case of the Repli samples geologists and technicians were responsible for the transportation of samples to the Genalysis laboratory in Johannesburg. Orion samples were send with a courier service to the ALS laboratory in Johannesburg. Sample shipments were accompanied with appropriate sign off documentation to ensure all samples were received in good order. • The chain of custody was managed by the individual Companies. Samples were 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.*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • No records available. Repli: • No audits or reviews have been carried out at this stage. **2. <u>+105 Target</u>** • SRK reviewed the Mineral Resource statement document in November 2017. • Their main concern was the water displacement method with lacquer spray used to determine the relative density of the oxide and supergene mineralisation. • A total of 33% of the samples lying within the wireframe used for the estimation of the supergene mineralisation were re-done for relative density using the wax relative density method. These results show excellent precision and no obvious bias when comparing with the original relative densities. • Core from the +105 Target holes and storage facilities has been visually examined by the Competent Person. Discussions have taken place with Repli on the conduct of the drilling programme, sampling techniques and handling of data and the Competent Person is satisfied that work was carried out to JORC 2012 standards.

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.*	**1. Deep Sulphide and +105 Target** • The Prospecting Right is held by Repli, which is a subsidiary of Orion. Orion effectively holds a 73.33% interest in the project and having 26.3% BEE ownership • The Prospecting Right area covers a strike of 1860m for the Deep Sulphide mineralisation out of a total drilled strike of 2460m and covers the complete known strike of the +105 Target (Figures 3 and 6). • All of the required shaft infrastructure and lateral access underground development is available within the Prospecting Right. • +105 Level Target is located on Portion 26 of the farm Vogelstruis-Bult 104, which is wholly owned by Repli.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	**1. Deep Sulphide Target** • The Anglovaal exploration resulted in the delineation and development of a large mine. **2. +105 Target** • Drilling in 2012 of the north-western section of the +105 Target was carried out by the previous owners of Repli (Orion acquired Repli in March 2017).
Geology	• *Deposit type, geological setting and style of mineralisation.*	**1. Deep Sulphide and +105 Target** • The Copperton 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 2400m, is oxidised and / or affected by leached and supergene enrichment to a depth of approximately 100m and crops out as a well-developed gossan. It has a

Criteria	JORC Code explanation	Commentary
		dip of between 55° and 80° to the northeast at surface and a strike of 130° to the north. Current drilling indicates that the Deep Sulphides has a strike length of at least 2860m in depth. • The thickness of the mineralised zone exceeds 30m in places but averages between 7m and 9m. The mineralised zone persists to a depth of 1100m (as deep as 1228m in one section) after which it is upturned due to the folding. • The Deep Sulphide Target area located below the historical mined area, comprises the steep down dip continuity ("steep limb and hinge zone") and 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. • The +105 Target area comprises the oxide/supergene/ mixed zone (and a zone of remnant primary sulphides) situated from above the upper limit of mining at approximately 100m depth below surface, up to surface. This zone of oxide and supergene mineralisation has a strike length of 867m.
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.*	**1. <u>Deep Sulphide Target</u>** Anglovaal: • A summary of the Anglovaal drill hole collar information related to the current Deeps Resource reporting (Section 3 of JORC tables) is included in Table 3. Repli: • A summary of the borehole collar information related to the current Deeps Resource reporting (Section 3 of JORC tables) is given in Table 3. **2. <u>+105 Target</u>** • All drilling information is available and has been compiled digitally. • A summary of the borehole collar information related to the current +105 Mineral Resource reporting (Section 3 of JORC tables) is given in Table 5.
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*	**1. <u>Deep Sulphide Target</u>** Anglovaal:

Criteria	JORC Code explanation	Commentary
	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.*	• Individual intersections were weighted by sample width. • No truncations have been applied. • All grade and density information are incorporated in the Repli database, and due to the large number of intersections made it is in the Competent Person view that it should not be included in this reporting. Repli: • Significant Intersections for the Deep Sulphide Target reported to the ASX are calculated by average of assays result > 0.3% copper or 0.5% 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 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. **2. <u>+105 Target</u>** • All drilling information is available and has been compiled digitally. • All intersections > 1m and >0.3% copper or > 0.6% zinc were quoted in public reporting. • No truncations have been applied. • No metal equivalent values were considered.
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').*	**1. <u>Deep Sulphide and +105 Target</u>** • 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 Deep Sulphide 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.*	**1. <u>Deep Sulphide and +105 Target</u>** • Appropriate diagrams (plan, cross section and long section) are shown in Figures 3 to 9. • A summary of the borehole intersection information related to the

Criteria	JORC Code explanation	Commentary
		current Deeps Resource and +105 Mineral Resource reporting (Section 3 of JORC tables) is given in Table 3 and 5.
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.*	**1. <u>Deep Sulphide and +105 Target</u>** • All drilling information is available and has been compiled digitally. • Drill hole results within the resource wireframe (average grade per intersection) are summarised in Table 4 and 6.
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.*	**1. <u>Deep Sulphide and +105 Target</u>** • Hardcopy plans 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 Prieska 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 (Figure 10). • 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 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	2. *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* 3. *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	**1. <u>Deep Sulphide</u>** • Drilling is ongoing to test the extend of Deep Sulphide Target. **2. <u>+105 Target</u>** • No additional drilling is planned. • Geotechnical and metallurgical test work is underway as part of a BFS study. • Once project is approved grade control drilling will be executed and areas of uncertainty will be covered by this drilling.

Figure 3: Plan of Deep Sulphide Target area showing, borehole intersections, ore thickness contours, and Prospecting Right boundary.

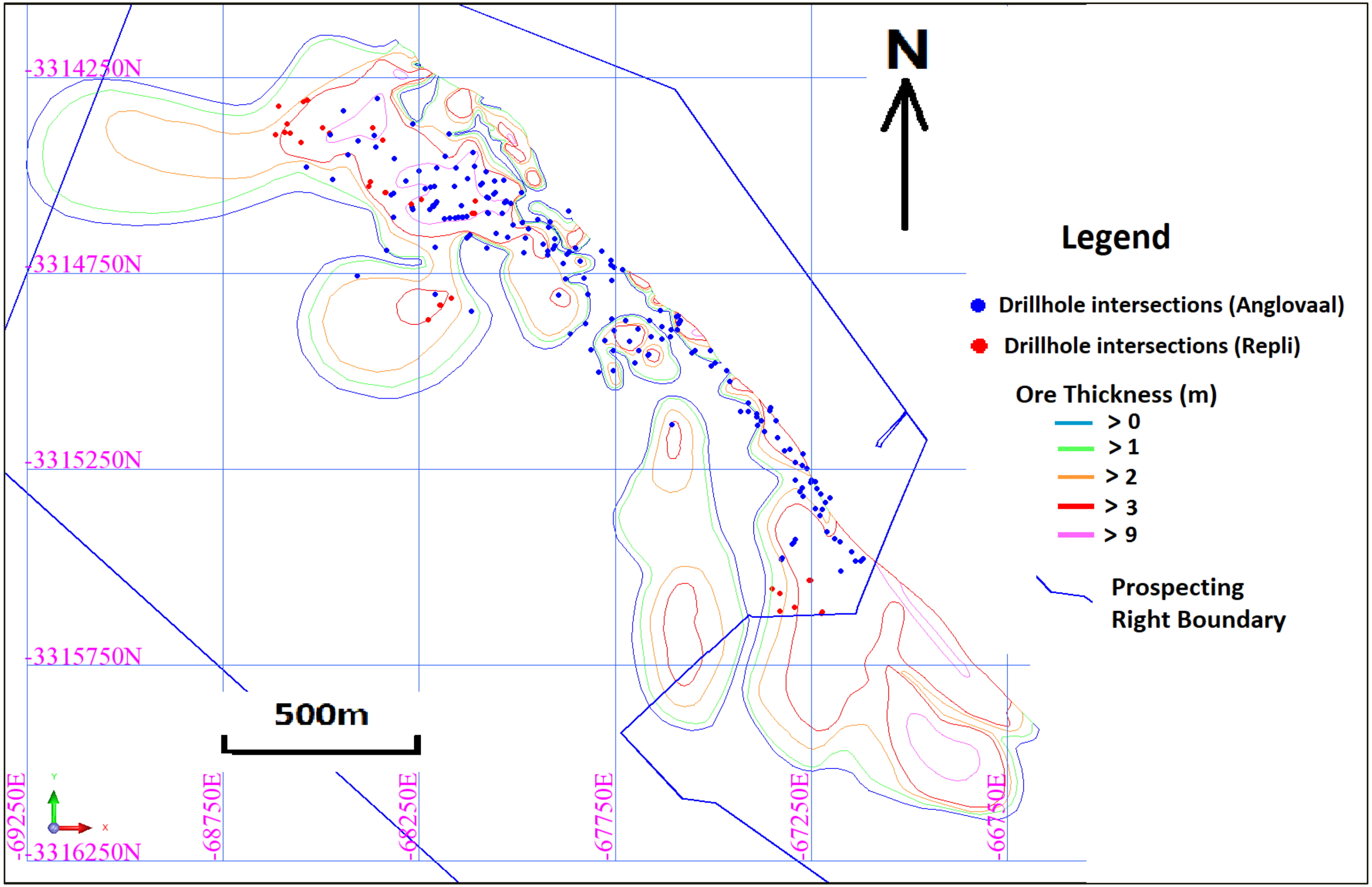
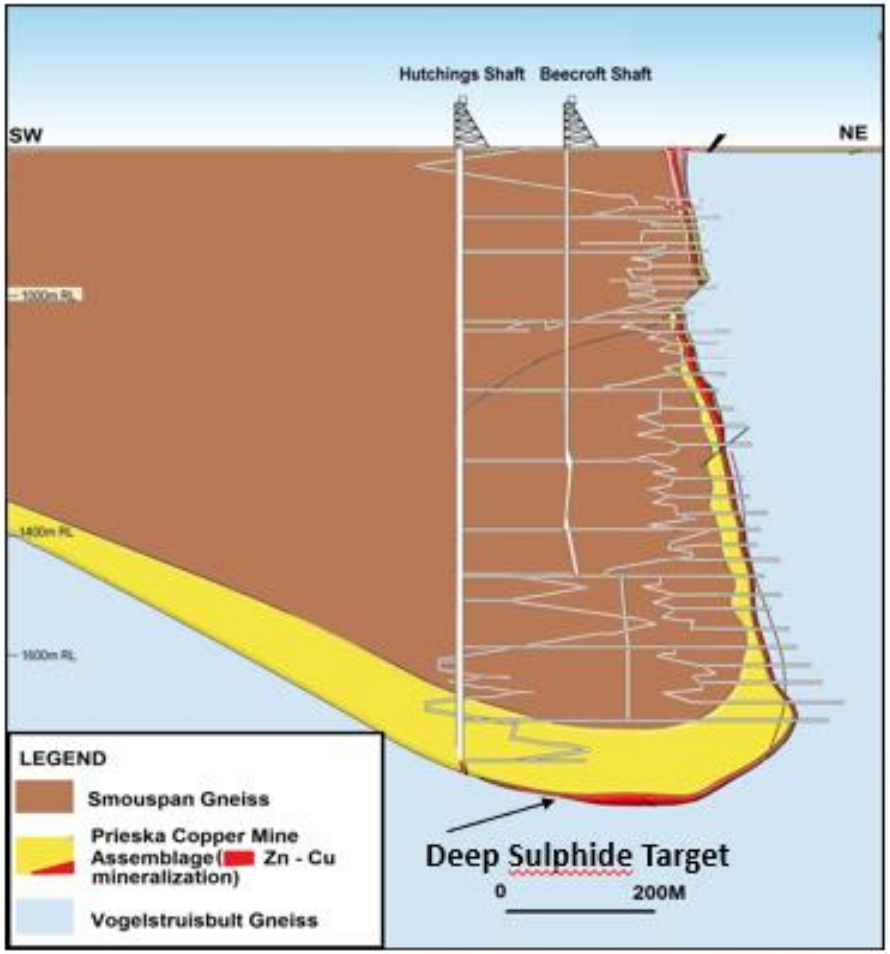


Figure 4: Simplified geological section through Prieska Copper Project showing structure and locality of the Deep Sulphide Target below the old workings.



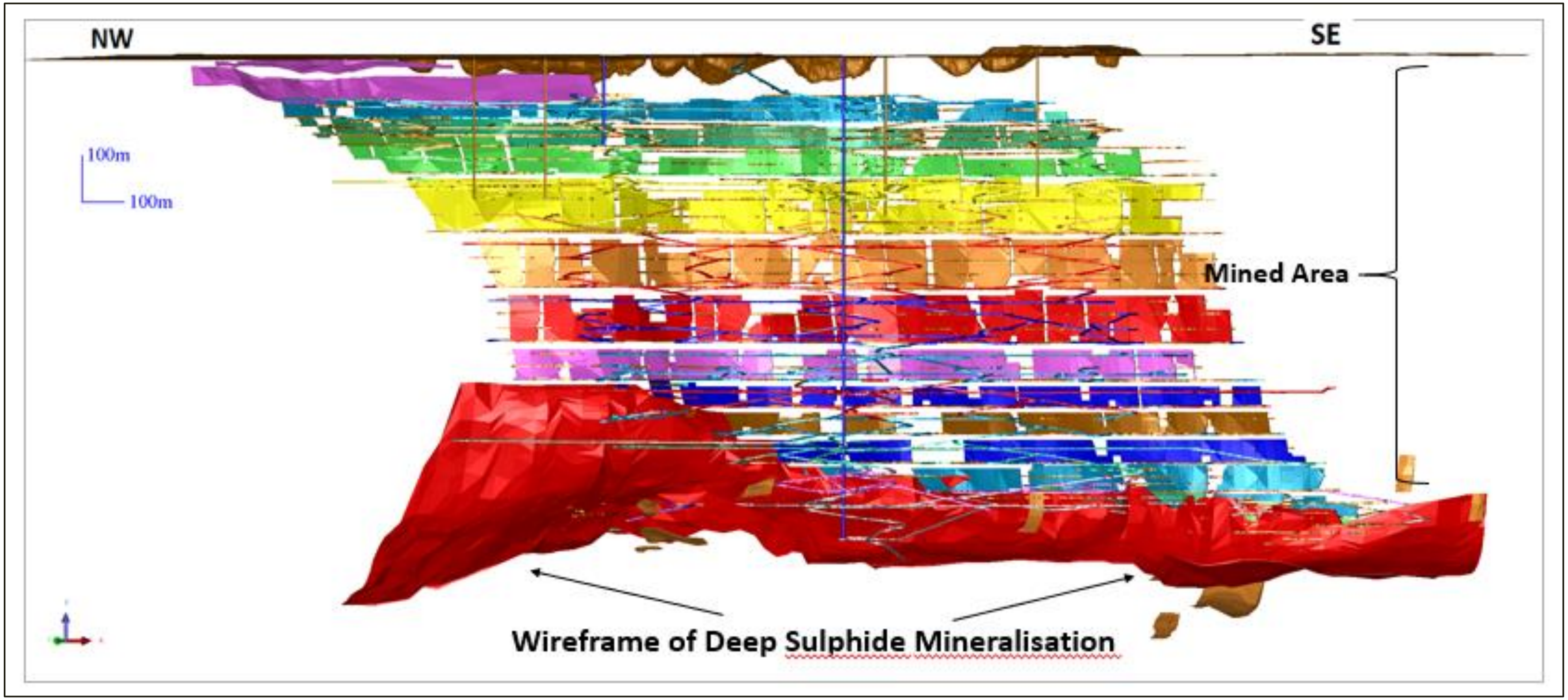


Figure 5: Longitudinal projection of the Prieska Copper Project showing historical mined area and wireframe of the Deep Sulphide Resource.

Figure 6: Prospecting Right area showing locality of the +105 Mineral Resource relative to the Deep Sulphide Resource.

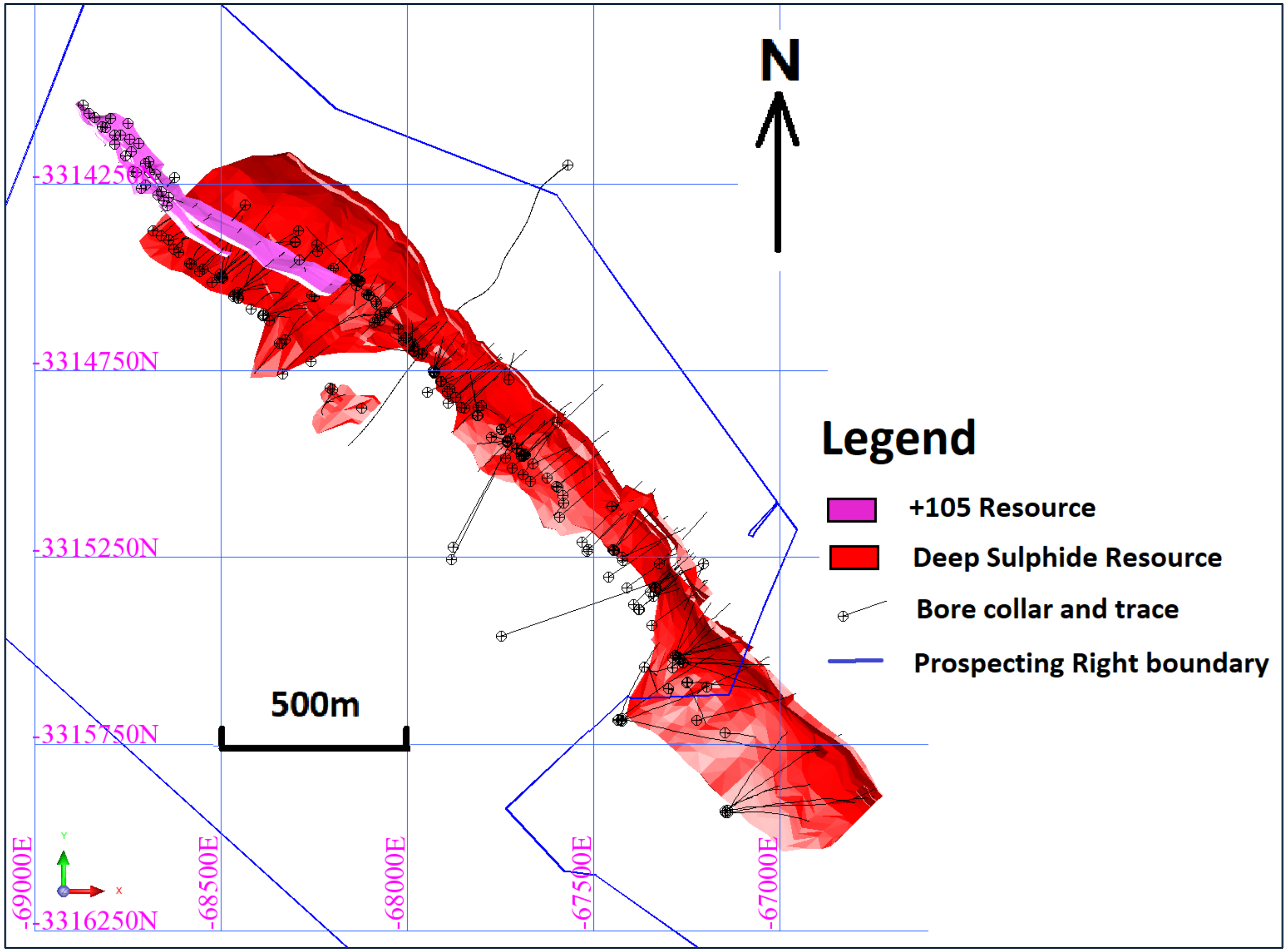


Figure 7: Generalised cross Section (A-B in Figure 3) of the Prieska Copper Project showing the location of the +105 Mineral Resource, and a schematic section showing the geology of the mineralised horizon of the +105 Mineral Resource.

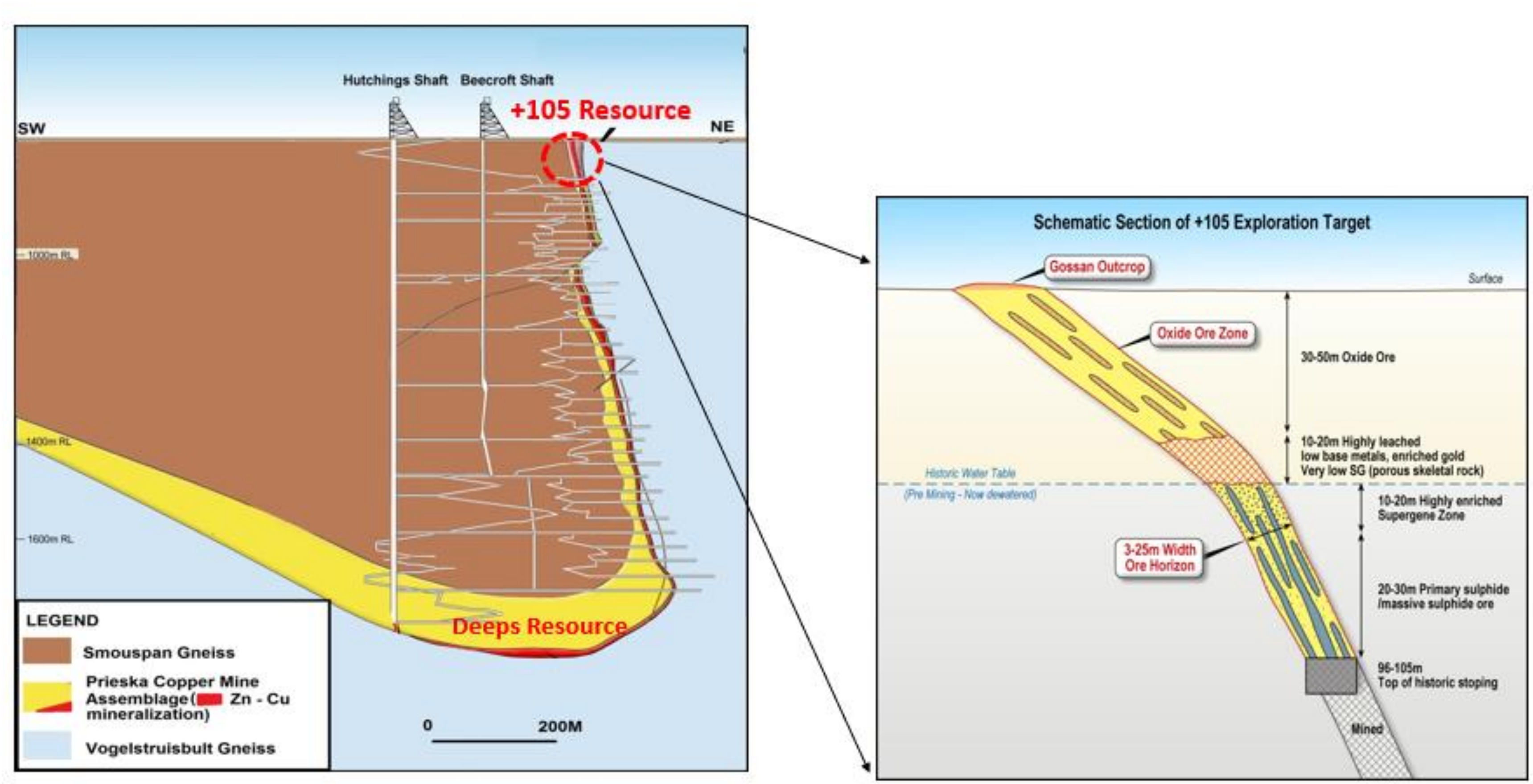


Figure 8: Plan showing drill holes investigating the +105 Mineral Resource, and underground workings of the historic Prieska Copper Mine.

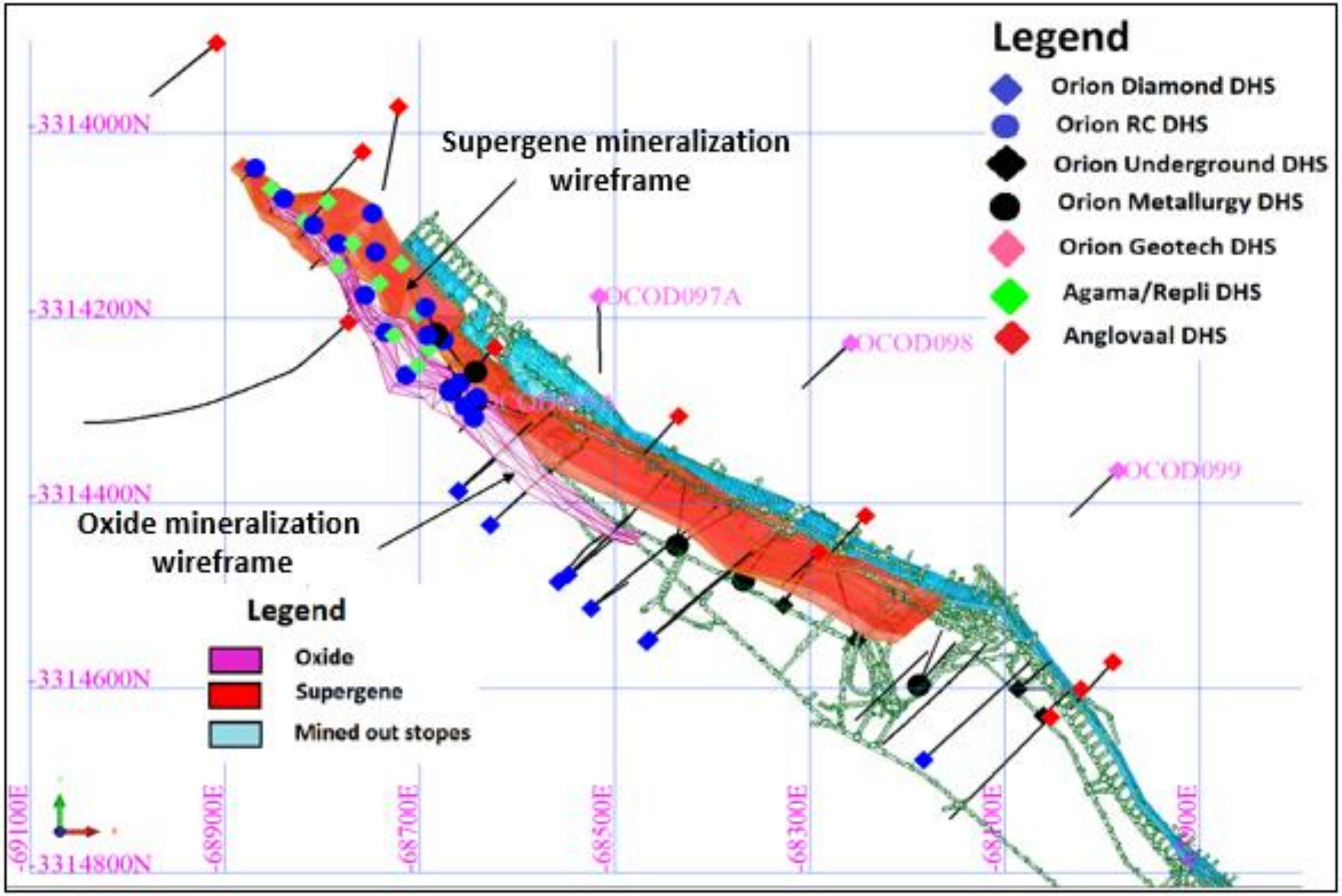


Figure 9: Longitudinal section showing supergene and oxide mineralised zones of the +105 Mineral Resource, in relation to underground mined areas of the historic Prieska Copper Mine.

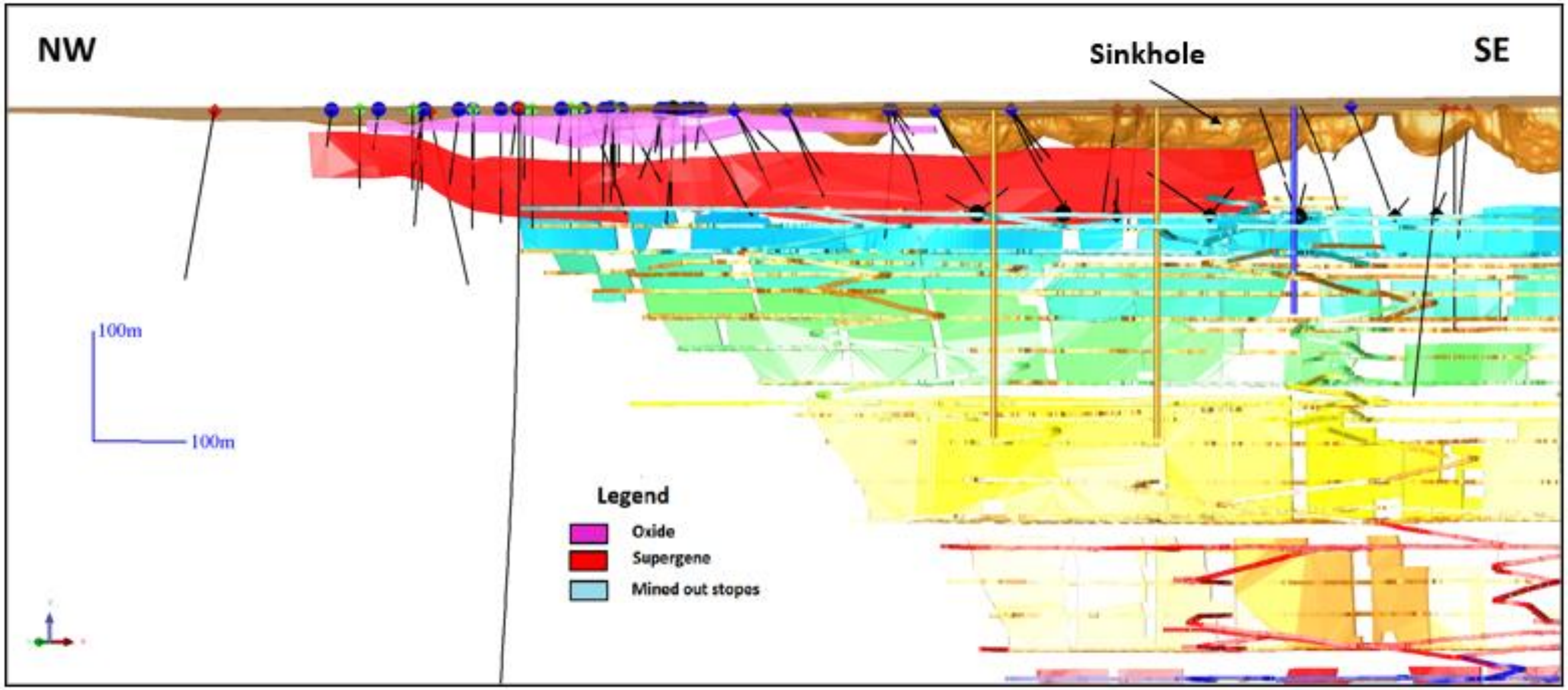
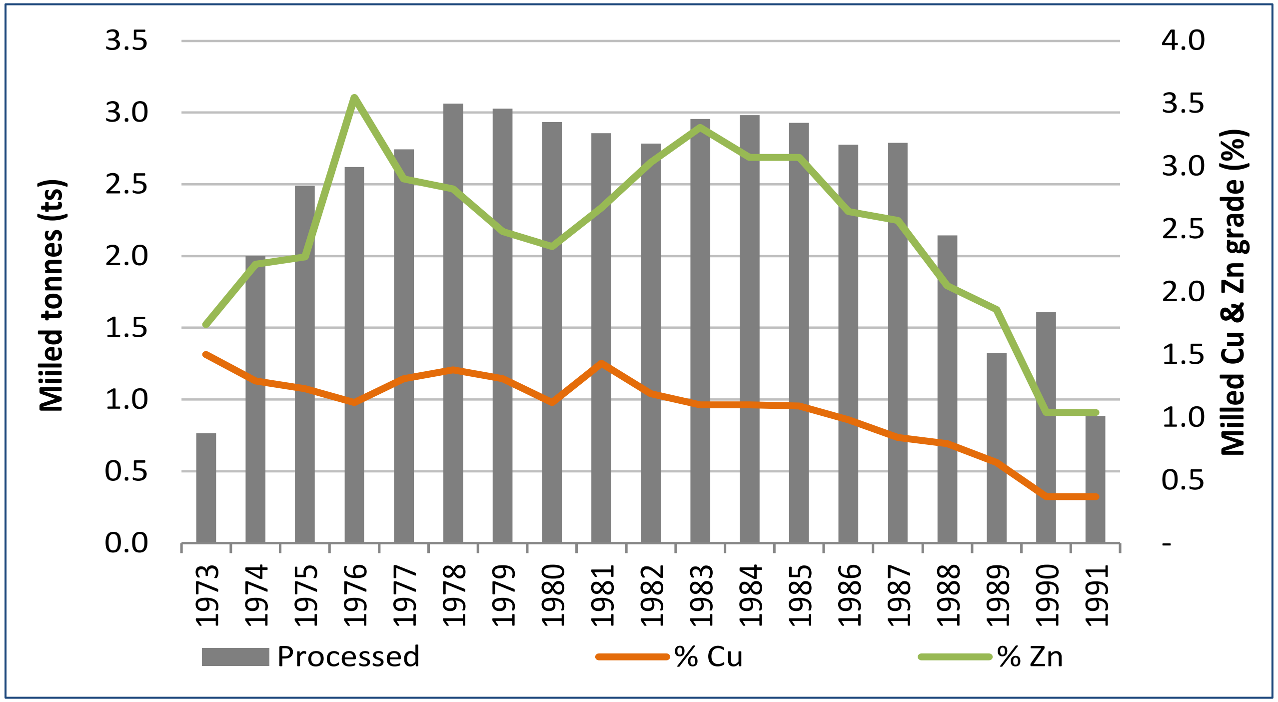


Figure 10: Graphic presentation of the tonnes and grades milled at the Prieska Copper Mine from 1973 to 1991.



Source: Mine Records

Table 3. Drill hole information for the Deep Sulphide Resource.

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
D302	-67881.72	-3315256.05	357.70	501.27	-52.64	26.53	Underground diamond	Anglovaal
D307	-67748.16	-3315461.25	399.92	649.95	-25.06	70.68	Underground diamond	Anglovaal
D310	-67876.62	-3315221.73	385.28	562.43	-47.38	28.76	Underground diamond	Anglovaal
D336	-68087.94	-3314619.00	360.60	319.89	-78.50	227.50	Underground diamond	Anglovaal
D338	-68080.54	-3314610.59	360.15	248.15	-71.00	45.50	Underground diamond	Anglovaal
D339	-68073.12	-3314615.65	361.16	220.57	-57.95	45.00	Underground diamond	Anglovaal
D342	-67962.55	-3314708.09	360.08	272.56	-79.64	40.70	Underground diamond	Anglovaal
D345	-68140.77	-3314503.22	360.97	223.63	-78.45	50.89	Underground diamond	Anglovaal
D346	-68137.21	-3314504.21	361.37	257.35	-82.75	226.00	Underground diamond	Anglovaal
D347	-68137.56	-3314504.70	361.45	313.38	-68.00	226.00	Underground diamond	Anglovaal
D348	-68136.14	-3314504.98	361.38	266.99	-74.00	177.00	Underground diamond	Anglovaal
D390	-67811.48	-3314870.80	237.19	239.85	-86.51	236.23	Underground diamond	Anglovaal
D391	-67813.07	-3314870.11	240.47	198.86	-67.80	354.48	Underground diamond	Anglovaal
D392	-68197.75	-3314475.81	363.10	232.42	-68.28	48.07	Underground diamond	Anglovaal
D393	-68205.51	-3314481.29	362.56	258.39	-88.00	231.50	Underground diamond	Anglovaal
D394	-68205.78	-3314482.84	361.86	321.82	-72.00	254.00	Underground diamond	Anglovaal
D395	-68300.12	-3314404.93	553.30	614.86	-68.00	250.00	Underground diamond	Anglovaal
D396	-67892.62	-3314804.58	241.60	227.87	-89.40	187.00	Underground diamond	Anglovaal
D406	-68123.18	-3314849.21	254.00	248.33	-88.40	91.44	Underground diamond	Anglovaal
D424	-68301.54	-3314404.22	553.30	557.67	-76.00	270.00	Underground diamond	Anglovaal
D457	-67250.48	-3315586.94	361.30	422.55	-75.00	149.00	Underground diamond	Anglovaal
F1347	-67718.32	-3315009.92	367.84	335.05	-63.48	48.09	Underground diamond	Anglovaal
F1522	-67890.90	-3314836.58	356.57	296.65	-50.85	50.54	Underground diamond	Anglovaal
F1527	-67946.51	-3314808.25	327.23	268.17	-35.31	64.60	Underground diamond	Anglovaal
F1630	-67422.00	-3315257.28	124.38	173.07	-13.57	44.00	Underground diamond	Anglovaal
F1636	-67690.86	-3315028.72	236.78	247.97	-34.72	33.96	Underground diamond	Anglovaal
F1639	-67737.18	-3314984.59	232.99	238.95	-34.18	49.50	Underground diamond	Anglovaal
F1641	-67670.43	-3315045.20	242.08	227.82	-48.01	51.60	Underground diamond	Anglovaal

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
F1642	-67662.89	-3314999.69	120.77	164.63	20.42	64.96	Underground diamond	Anglovaal
F1653	-67339.66	-3315353.45	121.32	148.83	-1.70	62.92	Underground diamond	Anglovaal
F1657	-67411.52	-3315087.54	153.59	46.89	40.36	225.00	Underground diamond	Anglovaal
F1700	-67774.65	-3314927.33	239.26	236.59	-37.90	59.55	Underground diamond	Anglovaal
F1712	-68291.16	-3314375.25	362.29	328.27	-72.50	242.00	Underground diamond	Anglovaal
F1721	-67810.66	-3314870.16	240.97	196.05	-51.43	349.28	Underground diamond	Anglovaal
F1741	-67598.33	-3314887.02	239.42	196.13	-82.10	47.06	Underground diamond	Anglovaal
F1743	-67378.30	-3315390.27	241.40	221.38	-30.19	48.97	Underground diamond	Anglovaal
F1746	-67379.89	-3315389.53	239.55	235.71	-39.02	51.97	Underground diamond	Anglovaal
F1747	-67410.81	-3315086.82	153.18	16.62	74.93	45.00	Underground diamond	Anglovaal
F1762	-67591.67	-3315141.01	240.14	232.99	-34.99	50.05	Underground diamond	Anglovaal
F1766	-67870.16	-3314820.05	237.63	181.42	-23.82	46.99	Underground diamond	Anglovaal
F1767	-67869.96	-3314820.35	238.57	185.41	-32.87	53.47	Underground diamond	Anglovaal
F1770	-67531.78	-3315207.89	242.05	248.85	-44.82	45.50	Underground diamond	Anglovaal
F1776	-67886.74	-3314799.37	241.03	193.36	-27.90	44.00	Underground diamond	Anglovaal
F1796	-67844.89	-3314849.18	237.51	249.95	-26.29	45.00	Underground diamond	Anglovaal
F1799	-67854.67	-3314847.02	234.01	200.42	-42.94	50.16	Underground diamond	Anglovaal
F1802	-67907.52	-3314778.31	239.77	168.25	-54.34	49.04	Underground diamond	Anglovaal
F1803	-67911.26	-3314778.99	239.89	176.92	-76.71	66.53	Underground diamond	Anglovaal
F1806	-67928.42	-3314749.11	239.50	171.75	-47.86	49.89	Underground diamond	Anglovaal
F1807	-67927.18	-3314754.85	240.78	150.92	-69.48	54.18	Underground diamond	Anglovaal
F1808	-67411.58	-3315087.59	149.28	27.83	-33.25	225.00	Underground diamond	Anglovaal
F1811	-67930.40	-3314748.57	244.21	155.90	-33.53	34.11	Underground diamond	Anglovaal
F1812	-67926.21	-3314751.58	242.51	142.95	-57.67	15.72	Underground diamond	Anglovaal
F1813	-67928.47	-3314754.55	240.99	147.66	-63.06	4.65	Underground diamond	Anglovaal
F1815	-67982.71	-3314684.93	242.00	153.46	-45.56	49.00	Underground diamond	Anglovaal
F1816	-67927.76	-3314755.61	238.56	152.57	-42.02	13.84	Underground diamond	Anglovaal
F1818	-67960.26	-3314703.17	250.52	206.89	-80.85	272.79	Underground diamond	Anglovaal
F1821	-67987.04	-3314680.72	242.57	142.84	-37.10	49.01	Underground diamond	Anglovaal

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
F1822	-67981.02	-3314696.89	241.11	206.44	-73.86	5.41	Underground diamond	Anglovaal
F1824	-67984.18	-3314696.16	240.73	179.78	-44.63	357.11	Underground diamond	Anglovaal
F1825	-67983.06	-3314696.16	241.17	188.71	-59.00	298.50	Underground diamond	Anglovaal
F1826	-67982.49	-3314697.70	241.58	225.95	-62.74	274.35	Underground diamond	Anglovaal
F1827	-67518.49	-3315232.76	238.20	263.36	-47.93	48.06	Underground diamond	Anglovaal
F1829	-67408.98	-3315084.99	153.15	69.01	36.20	45.00	Underground diamond	Anglovaal
F1830	-67249.22	-3315583.90	362.05	402.13	-57.00	87.00	Underground diamond	Anglovaal
F1834	-67411.07	-3315332.44	240.87	234.79	-39.46	53.80	Underground diamond	Anglovaal
F1836	-67273.68	-3315517.22	242.44	208.29	-34.00	71.75	Underground diamond	Anglovaal
F1837	-67273.22	-3315516.12	242.13	239.40	-45.00	77.50	Underground diamond	Anglovaal
F1838	-67270.60	-3315521.48	240.83	296.54	-47.65	39.04	Underground diamond	Anglovaal
F1839	-67272.79	-3315518.81	241.82	308.33	-47.00	93.00	Underground diamond	Anglovaal
F1840	-67260.35	-3315532.03	242.20	339.96	-31.00	105.00	Underground diamond	Anglovaal
F1851	-67445.14	-3315231.63	118.64	182.63	-2.15	32.94	Underground diamond	Anglovaal
F1861	-67205.37	-3315266.19	123.32	135.11	-3.04	204.09	Underground diamond	Anglovaal
F1863	-67393.62	-3315375.76	238.58	235.73	-26.98	46.00	Underground diamond	Anglovaal
F1870	-67459.54	-3315302.40	233.36	276.82	-34.65	56.10	Underground diamond	Anglovaal
F1875	-67514.21	-3315230.02	242.73	239.98	-25.63	43.98	Underground diamond	Anglovaal
F1876	-67324.44	-3315266.06	150.84	192.03	-14.26	43.99	Underground diamond	Anglovaal
F1879	-67343.47	-3315432.86	239.43	226.88	-35.25	53.03	Underground diamond	Anglovaal
F1881	-67282.42	-3315512.89	237.50	282.29	-40.22	20.27	Underground diamond	Anglovaal
F1882	-68240.89	-3314429.92	360.42	236.90	-71.21	62.17	Underground diamond	Anglovaal
F1896	-68136.78	-3314521.53	361.03	253.75	-73.00	121.00	Underground diamond	Anglovaal
F1900	-67693.27	-3314978.66	119.47	175.44	-69.12	296.69	Underground diamond	Anglovaal
F1902	-67690.44	-3314979.08	118.45	131.34	-85.08	279.07	Underground diamond	Anglovaal
F1903	-67690.68	-3314977.42	118.52	130.24	-72.33	54.13	Underground diamond	Anglovaal
F1904	-67686.60	-3314974.60	118.15	116.50	-42.84	44.01	Underground diamond	Anglovaal
F1905	-67686.43	-3314973.10	119.59	161.13	-17.09	44.07	Underground diamond	Anglovaal
F1907	-67683.63	-3314975.68	119.59	294.12	18.94	49.02	Underground diamond	Anglovaal

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
F1912	-67707.57	-3314957.46	118.74	163.44	-77.08	59.84	Underground diamond	Anglovaal
F1913	-67705.82	-3314958.47	118.71	141.27	-48.94	44.00	Underground diamond	Anglovaal
F1914	-67707.06	-3314956.47	119.28	132.75	-23.11	47.99	Underground diamond	Anglovaal
F1915	-67705.03	-3314958.07	118.63	190.10	0.22	48.60	Underground diamond	Anglovaal
F1916	-67724.30	-3314931.76	118.98	113.51	-55.99	38.97	Underground diamond	Anglovaal
F1917	-67723.30	-3314932.22	119.36	150.29	-24.96	43.00	Underground diamond	Anglovaal
F1922	-67731.97	-3314939.16	119.02	134.30	-77.93	249.89	Underground diamond	Anglovaal
F1923	-68057.88	-3314592.64	248.82	138.57	-32.04	55.03	Underground diamond	Anglovaal
F1924	-67732.56	-3314941.12	118.95	182.67	-52.45	222.95	Underground diamond	Anglovaal
F1926	-67732.55	-3314939.42	119.69	158.34	-56.58	268.17	Underground diamond	Anglovaal
F1927	-67732.16	-3314937.47	119.24	130.22	-66.79	290.03	Underground diamond	Anglovaal
F1928	-67348.99	-3315342.71	121.86	156.12	2.21	54.93	Underground diamond	Anglovaal
F1929	-67339.48	-3315353.69	120.88	156.72	-16.33	74.04	Underground diamond	Anglovaal
F1935	-67599.70	-3315059.86	123.37	166.03	24.06	52.94	Underground diamond	Anglovaal
F1936	-67597.22	-3315062.01	120.81	142.80	9.01	48.97	Underground diamond	Anglovaal
F1940	-67267.38	-3315523.66	242.50	179.92	-42.00	47.00	Underground diamond	Anglovaal
F1943	-67624.99	-3315036.17	123.83	206.90	-8.32	53.05	Underground diamond	Anglovaal
F1948	-68062.69	-3314594.38	242.05	121.74	-76.00	95.75	Underground diamond	Anglovaal
F1959	-68062.09	-3314594.31	241.91	172.03	-55.68	63.91	Underground diamond	Anglovaal
F1961	-67582.14	-3315082.96	120.04	155.38	-7.18	54.00	Underground diamond	Anglovaal
F1962	-67288.68	-3315518.22	241.97	228.18	-38.29	35.98	Underground diamond	Anglovaal
F1964	-67579.54	-3315103.28	119.50	141.79	-69.62	219.08	Underground diamond	Anglovaal
F1965	-67273.22	-3315516.12	242.09	220.18	-40.00	70.75	Underground diamond	Anglovaal
F1968	-67747.72	-3314907.26	119.00	100.37	-55.91	34.06	Underground diamond	Anglovaal
F1969	-67748.15	-3314906.38	119.53	124.80	-83.82	332.46	Underground diamond	Anglovaal
F1972	-67800.65	-3314842.27	119.93	145.05	-61.40	120.81	Underground diamond	Anglovaal
F1974	-67809.68	-3314848.34	120.00	179.32	-56.17	227.00	Underground diamond	Anglovaal
F1975	-68002.88	-3314662.71	241.63	143.27	-66.24	48.96	Underground diamond	Anglovaal
F1976	-68010.18	-3314669.82	243.52	206.94	-88.16	294.84	Underground diamond	Anglovaal

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
F1977	-68004.80	-3314660.80	241.62	138.23	-41.38	49.02	Underground diamond	Anglovaal
F1982	-68023.75	-3314638.73	242.59	134.75	-80.00	50.75	Underground diamond	Anglovaal
F1984	-68108.74	-3314543.99	242.20	113.41	-52.17	28.79	Underground diamond	Anglovaal
F1985	-68102.55	-3314548.33	242.27	129.70	-75.00	21.00	Underground diamond	Anglovaal
F1986	-68104.07	-3314546.10	241.91	125.46	-56.72	53.99	Underground diamond	Anglovaal
F1987	-68082.22	-3314571.12	242.33	125.06	-70.00	43.50	Underground diamond	Anglovaal
F1988	-68084.98	-3314564.32	244.32	113.81	-42.15	45.00	Underground diamond	Anglovaal
F1989	-68126.04	-3314509.79	241.93	127.52	-90.00	180.00	Underground diamond	Anglovaal
F1990	-68072.90	-3314598.17	242.45	207.22	-53.50	262.00	Underground diamond	Anglovaal
F1991	-68072.66	-3314598.27	242.31	204.67	-63.00	262.50	Underground diamond	Anglovaal
F1992	-68072.16	-3314598.83	242.16	134.83	-90.00	180.00	Underground diamond	Anglovaal
F1993	-68133.07	-3314505.38	242.54	128.83	-47.63	16.54	Underground diamond	Anglovaal
F1994	-68127.59	-3314509.08	241.93	214.03	-55.00	253.25	Underground diamond	Anglovaal
F1995	-68126.93	-3314508.07	242.34	253.70	-35.00	314.50	Underground diamond	Anglovaal
F1996	-68131.66	-3314509.76	243.60	156.23	-55.38	319.05	Underground diamond	Anglovaal
F1997	-68126.78	-3314508.07	241.92	122.52	-69.00	314.75	Underground diamond	Anglovaal
F2000	-68327.24	-3314667.72	255.30	234.20	-60.00	45.00	Underground diamond	Anglovaal
F2001	-68385.83	-3314598.33	256.53	227.81	-68.00	45.00	Underground diamond	Anglovaal
F2003	-68385.80	-3314598.58	256.95	274.80	-42.00	45.00	Underground diamond	Anglovaal
F2005	-68337.02	-3314675.11	255.13	274.46	-85.70	170.25	Underground diamond	Anglovaal
F2006	-67260.70	-3315532.60	242.41	269.70	-31.00	95.75	Underground diamond	Anglovaal
F2007	-68496.61	-3314500.37	256.76	277.20	-66.00	354.75	Underground diamond	Anglovaal
F2008	-68496.65	-3314500.69	257.05	290.19	-49.00	12.50	Underground diamond	Anglovaal
F2009	-68497.79	-3314498.29	257.36	307.84	-34.00	30.75	Underground diamond	Anglovaal
F2011	-68259.48	-3314724.77	255.56	210.00	-64.00	44.00	Underground diamond	Anglovaal
F2012	-68206.94	-3314796.96	255.13	260.17	-87.92	209.57	Underground diamond	Anglovaal
F2013	-68342.37	-3314676.55	257.75	279.18	-66.45	219.93	Underground diamond	Anglovaal
F2017	-68504.42	-3314499.98	257.00	314.45	-78.00	301.75	Underground diamond	Anglovaal
F2020	-68386.43	-3314602.40	255.89	230.93	-57.00	70.25	Underground diamond	Anglovaal

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
F2021	-68388.69	-3314601.84	255.60	220.43	-72.00	87.00	Underground diamond	Anglovaal
F2023	-67925.72	-3314752.86	242.18	143.71	-41.14	45.03	Underground diamond	Anglovaal
F2025	-68455.21	-3314539.73	256.97	255.03	-47.00	64.00	Underground diamond	Anglovaal
F2026	-67260.66	-3315531.22	241.86	278.93	-38.00	87.25	Underground diamond	Anglovaal
F2027	-68495.53	-3314501.47	257.18	263.80	-74.00	41.75	Underground diamond	Anglovaal
F2028	-68495.80	-3314501.54	256.84	281.46	-47.00	41.00	Underground diamond	Anglovaal
F2030	-68326.98	-3314667.61	255.44	249.85	-45.00	44.25	Underground diamond	Anglovaal
F2036	-67728.06	-3314774.60	152.09	102.42	46.45	3.97	Underground diamond	Anglovaal
F2038	-67336.63	-3315328.26	123.33	143.91	17.83	49.12	Underground diamond	Anglovaal
F2039	-67425.10	-3315249.88	121.33	192.65	13.35	66.19	Underground diamond	Anglovaal
F2042	-67451.06	-3315113.28	149.93	76.08	38.42	75.18	Underground diamond	Anglovaal
F2045	-67448.42	-3315229.77	124.09	204.83	12.84	33.81	Underground diamond	Anglovaal
F2046	-67446.62	-3315230.46	122.85	161.61	14.82	46.01	Underground diamond	Anglovaal
F2093	-67333.65	-3315332.01	123.63	128.92	6.46	47.01	Underground diamond	Anglovaal
F2095	-67335.19	-3315331.70	123.12	131.90	-15.45	45.00	Underground diamond	Anglovaal
OCOD046	-68418.51	-3314583.97	1067.74	1074.05	-79.80	43.17	Surface diamond	Orion
OCOD048	-68578.92	-3314463.89	1067.74	1179.30	-79.90	54.86	Surface diamond	Orion
OCOD052	-68613.02	-3314433.80	1067.60	1164.89	-89.46	204.86	Surface diamond	Orion
OCOD054	-68454.02	-3314554.92	1067.78	1065.88	-77.86	33.27	Surface diamond	Orion
OCOD059	-68200.76	-3314800.33	1071.35	1096.51	-89.60	172.80	Surface diamond	Orion
OCOD060	-67288.88	-3315545.55	1077.82	1216.07	-89.30	231.90	Surface diamond	Orion
OCOD062	-67364.87	-3315543.53	1077.05	1230.02	-89.70	356.00	Surface diamond	Orion
OCOD064	-68369.23	-3314616.38	1067.89	989.79	-82.50	64.20	Surface diamond	Orion
OCOD065	-68501.28	-3314491.08	1068.03	1052.72	-77.10	42.30	Surface diamond	Orion
OCOD066	-68682.76	-3314374.35	1068.30	1221.49	-89.30	174.80	Surface diamond	Orion
OCOD068	-68334.75	-3314757.45	1069.71	1037.72	-69.20	42.30	Surface diamond	Orion
OCOD072	-67299.21	-3315602.45	1077.44	1303.23	-89.80	242.90	Surface diamond	Orion
OCOD074	-67195.80	-3315596.29	1078.51	1248.24	-88.80	339.00	Surface diamond	Orion
OCOD080	-68451.73	-3314556.31	1070.20	1086.65	-89.70	283.80	Surface diamond	Orion

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Drill type	Company
OCOD087	-68640.54	-3314400.25	1070.20	1171.40	-89.20	224.90	Surface diamond	Orion
OCOD103	-68583.61	-3314461.40	1067.90	1156.04	-89.74	120.85	Surface diamond	Orion
V41	-67569.8	-3314198.71	1072.5	1533.45	-81.00	230.17	Surface diamond	Anglovaal

Table 3. Foot Note:

1. Shaft collar is 1070.26 RL.
2. Deflections for additional intersections (13 in total) were drilled from Holes OCOD048, OCOD052, OCOD059, OCOD060, OCOD062, OCOD064, OCOD066, OCOD068, OCOD072, OCOD080, OCOD087, it is however not possible to include their coordinate and depth detail in this Table. The assay results of these deflections are included in Table 4.
3. All drill holes were surveyed with down hole instruments. The dip and azimuth of the Repli holes (OCOD) were determined by the first reading taken in the hole with a North-Seeking Gyro Smart instrument. Anglovaal drill hole dip and azimuth is assumed to be taken by surveying the dip and azimuth with a rod and a theodolite.

Table 4. Drill hole intersections for the Deep Sulphide Resource.

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
D302	465.60	469.87	4.27	0.51	6.17	NA	NA	NA	-3314998.63	-67755.88	-11.74
D307	575.73	613.68	37.95	1.47	5.02	NA	NA	NA	-3315280.51	-67240.14	149.30
D310	499.74	503.08	3.34	0.50	3.89	NA	NA	NA	-3314924.12	-67713.25	16.29
D336	242.16	246.03	3.87	1.19	2.23	0.24	NA	NA	-3314652.47	-68121.76	121.21
D336	261.93	265.52	3.59	0.65	4.53	0.38	NA	NA	-3314655.18	-68123.98	101.89
D336	304.10	305.97	1.87	2.25	4.00	0.10	NA	NA	-3314660.30	-68128.72	61.18
D338	212.48	215.41	2.93	4.46	1.80	0.08	NA	NA	-3314569.43	-68032.71	155.77
D338	226.30	230.45	4.15	1.47	1.64	0.04	NA	NA	-3314566.78	-68029.44	141.97
D338	233.73	236.45	2.72	2.55	3.94	0.08	NA	NA	-3314565.54	-68027.91	135.55
D342	234.36	242.30	7.94	1.05	4.34	NA	NA	NA	-3314675.11	-67933.53	125.86
D345	205.50	211.00	5.50	2.05	2.74	NA	NA	NA	-3314476.90	-68108.43	156.93
D346	229.06	255.42	26.36	1.11	3.29	0.13	NA	NA	-3314527.34	-68160.02	121.35
D347	262.90	286.98	24.08	1.26	3.83	0.11	NA	NA	-3314572.26	-68207.86	104.42
D347	294.93	311.72	16.79	1.53	3.85	0.06	NA	NA	-3314578.90	-68214.25	77.57
D348	238.95	263.99	25.04	1.51	5.41	0.09	NA	NA	-3314577.73	-68142.68	120.79
D390	228.87	230.53	1.66	0.46	2.03	NA	NA	NA	-3314878.14	-67825.12	8.08
D391	176.38	178.93	2.55	0.38	2.42	NA	NA	NA	-3314803.27	-67819.56	76.00
D393	240.14	255.39	15.25	1.09	3.05	0.07	NA	NA	-3314480.19	-68205.79	114.87
D394	284.39	315.56	31.17	1.55	3.64	0.17	NA	NA	-3314515.03	-68284.61	74.77
D395	603.10	605.24	2.14	0.71	5.67	0.11	NA	NA	-3314511.21	-68470.62	-14.32
D396	208.25	216.47	8.22	0.73	3.40	NA	NA	NA	-3314804.83	-67893.87	29.33
D406	199.48	206.22	6.74	0.37	3.73	NA	NA	NA	-3314847.08	-68117.71	51.26
D424	530.18	538.80	8.62	1.51	5.01	0.05	NA	NA	-3314411.98	-68406.49	30.54

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
D457	400.98	406.78	5.80	1.36	5.76	0.03	NA	NA	-3315695.62	-67199.25	-24.06
F1347	327.16	329.90	2.74	0.42	1.60	NA	NA	NA	-3314911.57	-67609.03	74.06
F1522	265.15	267.78	2.63	0.98	0.52	NA	NA	NA	-3314729.60	-67761.06	149.93
F1630	123.41	129.16	5.75	1.08	2.60	NA	NA	NA	-3315169.10	-67336.61	94.69
F1636	225.45	239.49	14.04	0.94	2.85	NA	NA	NA	-3314870.13	-67584.07	104.54
F1639	225.36	230.99	5.63	0.93	4.39	NA	NA	NA	-3314861.14	-67593.93	105.33
F1641	219.64	222.77	3.13	0.76	2.73	NA	NA	NA	-3314953.43	-67553.89	77.99
F1642	120.43	152.73	32.30	1.11	4.85	NA	NA	NA	-3314946.53	-67546.47	168.40
F1653	71.88	81.57	9.69	0.36	3.99	NA	NA	NA	-3315318.54	-67271.38	119.04
F1653	105.35	127.23	21.88	1.24	4.72	NA	NA	NA	-3315299.89	-67236.51	118.24
F1700	205.46	206.81	1.35	0.41	0.14	NA	NA	NA	-3314844.78	-67634.64	112.49
F1712	318.64	327.49	8.85	0.89	5.16	0.06	NA	NA	-3314428.74	-68360.51	52.05
F1721	176.19	178.14	1.95	0.60	2.75	NA	NA	NA	-3314761.82	-67830.61	102.22
F1741	96.41	96.59	0.18	0.49	0.26	NA	NA	NA	-3314878.13	-67588.67	143.82
F1741	107.48	108.33	0.85	0.01	0.01	NA	NA	NA	-3314877.09	-67587.56	132.52
F1741	110.86	117.04	6.18	0.91	0.01	NA	NA	NA	-3314876.56	-67587.02	126.52
F1741	132.09	135.18	3.09	2.14	2.21	NA	NA	NA	-3314874.90	-67585.35	106.98
F1743	162.05	164.08	2.03	1.29	2.77	NA	NA	NA	-3315297.74	-67272.29	159.00
F1743	180.73	217.79	37.06	1.12	4.49	NA	NA	NA	-3315277.16	-67249.24	140.17
F1746	165.50	169.47	3.97	0.27	7.19	NA	NA	NA	-3315307.03	-67278.31	135.09
F1746	198.96	226.10	27.14	0.63	2.85	NA	NA	NA	-3315282.67	-67251.60	108.28
F1762	212.87	216.29	3.42	0.44	6.88	NA	NA	NA	-3315025.83	-67457.48	118.81
F1766	163.34	165.60	2.26	1.17	2.87	NA	NA	NA	-3314717.05	-67760.59	171.16
F1767	170.14	173.22	3.08	0.04	0.69	NA	NA	NA	-3314734.88	-67753.82	145.42
F1770	202.16	205.56	3.40	1.72	4.93	NA	NA	NA	-3315102.86	-67429.82	100.31
F1770	239.05	244.85	5.80	0.19	5.07	NA	NA	NA	-3315081.53	-67410.27	75.56

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F1776	165.19	166.98	1.79	1.27	3.26	NA	NA	NA	-3314693.78	-67784.78	163.31
F1796	172.44	176.05	3.61	0.17	0.15	NA	NA	NA	-3314740.90	-67732.47	160.60
F1799	169.20	171.58	2.38	0.55	1.19	NA	NA	NA	-3314767.10	-67758.89	117.94
F1802	151.39	154.53	3.14	1.56	2.84	NA	NA	NA	-3314719.69	-67840.12	115.62
F1803	161.83	163.39	1.56	0.61	2.61	NA	NA	NA	-3314764.20	-67877.08	81.60
F1806	108.34	110.93	2.59	1.47	0.41	NA	NA	NA	-3314701.72	-67872.16	158.20
F1806	146.16	148.55	2.39	1.81	2.79	NA	NA	NA	-3314686.37	-67851.84	130.39
F1807	148.35	149.25	0.90	0.38	3.51	NA	NA	NA	-3314724.77	-67882.83	102.01
F1812	124.19	125.37	1.18	1.27	2.06	NA	NA	NA	-3314686.89	-67907.82	137.42
F1812	137.62	138.33	0.71	0.60	2.99	NA	NA	NA	-3314679.95	-67905.54	126.44
F1813	114.66	116.99	2.33	0.68	1.97	NA	NA	NA	-3314702.41	-67922.81	137.74
F1813	134.38	136.81	2.43	0.45	2.30	NA	NA	NA	-3314693.71	-67921.70	120.02
F1815	115.92	117.42	1.50	1.46	0.56	NA	NA	NA	-3314631.41	-67921.14	158.59
F1816	130.90	133.34	2.44	0.92	2.51	NA	NA	NA	-3314661.61	-67904.02	149.02
F1818	172.62	178.71	6.09	0.42	3.40	NA	NA	NA	-3314698.12	-67984.24	77.12
F1821	114.80	118.70	3.90	0.34	3.15	NA	NA	NA	-3314619.54	-67916.85	172.14
F1822	131.04	145.92	14.88	1.50	1.73	NA	NA	NA	-3314659.74	-67978.63	107.75
F1824	106.05	107.25	1.20	1.76	0.27	NA	NA	NA	-3314620.41	-67987.61	165.75
F1825	176.19	185.71	9.52	2.42	5.96	0.19	NA	NA	-3314647.33	-68054.66	82.43
F1826	210.26	212.43	2.17	0.06	6.17	NA	NA	NA	-3314685.35	-68077.37	53.20
F1827	257.36	259.90	2.54	1.08	2.17	NA	NA	NA	-3315116.62	-67388.76	47.03
F1830	395.60	398.24	2.64	1.21	5.47	0.07	NA	NA	-3315607.57	-67034.74	29.31
F1834	205.05	213.04	7.99	1.06	3.97	NA	NA	NA	-3315239.78	-67272.28	117.44
F1836	182.59	202.86	20.27	1.44	6.23	0.22	NA	NA	-3315477.42	-67118.29	136.34
F1837	206.00	220.97	14.97	1.48	4.53	0.03	NA	NA	-3315484.53	-67123.18	93.76
F1838	175.51	191.04	15.53	1.54	4.86	NA	NA	NA	-3315427.52	-67190.68	105.54

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F1839	249.94	254.98	5.04	1.16	4.44	0.06	NA	NA	-3315528.22	-67099.13	58.96
F1840	297.60	336.96	39.36	1.29	7.40	0.07	NA	NA	-3315622.55	-67008.39	72.82
F1851	123.35	126.86	3.51	0.97	0.56	NA	NA	NA	-3315126.25	-67378.08	112.94
F1851	149.09	169.75	20.66	1.44	3.59	NA	NA	NA	-3315100.55	-67355.57	111.26
F1861	39.89	63.50	23.61	1.08	4.94	NA	NA	NA	-3315313.66	-67225.49	120.56
F1861	83.59	100.81	17.22	1.44	3.56	NA	NA	NA	-3315351.15	-67240.67	118.51
F1863	158.56	162.06	3.50	0.91	3.34	NA	NA	NA	-3315276.54	-67290.87	165.78
F1863	183.26	227.28	44.02	1.49	2.33	NA	NA	NA	-3315248.81	-67262.15	145.13
F1870	223.15	229.29	6.14	1.30	3.64	NA	NA	NA	-3315198.00	-67305.63	104.63
F1875	151.51	233.10	81.59	2.39	3.36	NA	NA	NA	-3315107.71	-67389.40	163.16
F1876	47.61	50.35	2.74	0.34	4.71	NA	NA	NA	-3315233.01	-67290.41	138.85
F1876	75.97	83.28	7.31	0.54	7.79	NA	NA	NA	-3315211.14	-67270.32	131.43
F1879	214.63	219.29	4.66	2.10	4.73	NA	NA	NA	-3315321.92	-67202.49	118.18
F1881	198.88	208.44	9.56	1.64	6.77	NA	NA	NA	-3315367.01	-67228.55	105.99
F1881	223.77	226.36	2.59	0.66	7.05	NA	NA	NA	-3315351.90	-67222.47	92.10
F1881	238.79	261.03	22.24	0.91	5.79	NA	NA	NA	-3315334.63	-67214.56	76.09
F1882	231.22	233.61	2.39	1.10	3.35	NA	NA	NA	-3314394.70	-68174.57	140.47
F1896	223.36	228.55	5.19	3.72	4.03	0.07	NA	NA	-3314554.98	-68078.10	145.44
F1896	243.62	250.75	7.13	2.31	1.28	0.05	NA	NA	-3314557.64	-68073.27	124.94
F1902	100.29	108.93	8.64	0.45	1.51	NA	NA	NA	-3314977.67	-67699.23	14.23
F1903	96.51	102.05	5.54	0.67	2.13	NA	NA	NA	-3314959.49	-67666.89	23.82
F1903	108.39	113.74	5.35	1.26	2.63	NA	NA	NA	-3314957.26	-67664.24	12.56
F1904	108.83	110.65	1.82	1.62	1.95	NA	NA	NA	-3314916.71	-67630.67	43.56
F1905	116.98	117.18	0.20	0.15	2.62	NA	NA	NA	-3314893.55	-67608.32	85.62
F1907	128.33	130.79	2.46	1.16	5.44	NA	NA	NA	-3314894.39	-67591.53	160.67
F1912	95.93	98.87	2.94	0.62	2.98	NA	NA	NA	-3314946.52	-67690.13	23.57

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F1913	99.79	101.90	2.11	1.58	4.34	NA	NA	NA	-3314911.72	-67658.94	42.67
F1914	111.33	112.97	1.64	0.32	1.45	NA	NA	NA	-3314886.19	-67631.50	75.40
F1915	150.28	152.50	2.22	0.24	0.89	NA	NA	NA	-3314858.90	-67590.84	119.65
F1916	89.57	94.65	5.08	0.90	5.03	NA	NA	NA	-3314891.68	-67692.80	42.29
F1917	95.40	96.81	1.41	0.26	1.61	NA	NA	NA	-3314869.62	-67663.20	78.12
F1922	114.14	116.63	2.49	1.25	3.02	NA	NA	NA	-3314947.01	-67756.06	6.46
F1923	98.11	99.21	1.10	0.34	0.71	NA	NA	NA	-3314544.72	-67989.35	196.47
F1924	141.49	142.82	1.33	0.63	1.72	NA	NA	NA	-3315003.01	-67791.79	5.63
F1926	142.06	146.66	4.60	0.82	2.36	NA	NA	NA	-3314945.41	-67811.91	-0.62
F1927	120.95	123.24	2.29	0.80	2.83	NA	NA	NA	-3314921.96	-67777.37	6.90
F1935	121.76	140.88	19.12	1.54	3.83	NA	NA	NA	-3314986.68	-67505.05	176.88
F1936	132.04	134.66	2.62	0.27	2.44	NA	NA	NA	-3314979.20	-67494.61	139.82
F1940	156.36	176.92	20.56	1.36	4.45	0.06	NA	NA	-3315435.63	-67176.70	133.98
F1943	147.13	151.10	3.97	0.31	0.11	NA	NA	NA	-3314947.42	-67507.01	102.98
F1948	90.07	118.74	28.67	1.49	2.09	0.13	NA	NA	-3314596.18	-68038.89	140.43
F1959	89.13	90.81	1.68	0.54	0.39	NA	NA	NA	-3314572.07	-68016.60	167.54
F1961	142.62	146.54	3.92	0.69	1.08	NA	NA	NA	-3314998.64	-67466.08	102.06
F1962	161.40	181.71	20.31	0.88	6.61	NA	NA	NA	-3315408.46	-67210.53	135.82
F1964	121.25	125.55	4.30	0.76	5.39	NA	NA	NA	-3315136.57	-67606.51	3.78
F1965	167.10	190.64	23.54	1.86	5.15	0.27	NA	NA	-3315460.59	-67148.18	127.17
F1968	78.61	80.65	2.04	0.58	3.60	NA	NA	NA	-3314870.01	-67723.35	52.99
F1969	106.04	109.66	3.62	0.89	3.61	NA	NA	NA	-3314895.48	-67753.66	12.38
F1972	101.09	102.14	1.05	0.32	0.76	NA	NA	NA	-3314867.10	-67758.84	30.72
F1974	143.27	146.32	3.05	0.46	1.75	NA	NA	NA	-3314904.35	-67866.14	-0.75
F1975	100.27	109.46	9.19	0.48	5.27	NA	NA	NA	-3314635.54	-67970.53	145.66
F1976	163.05	172.65	9.60	0.41	2.68	NA	NA	NA	-3314657.14	-68025.37	78.83

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F1977	98.35	100.42	2.07	1.12	0.95	NA	NA	NA	-3314611.80	-67948.41	176.07
F1982	100.12	108.78	8.66	1.01	2.69	0.07	NA	NA	-3314625.57	-68011.50	139.71
F1984	97.06	100.36	3.30	0.46	4.64	NA	NA	NA	-3314490.90	-68079.56	164.26
F1985	96.01	103.08	7.07	1.46	4.35	0.11	NA	NA	-3314524.69	-68092.75	146.09
F1985	119.16	125.08	5.92	1.47	2.80	0.30	NA	NA	-3314520.00	-68090.15	124.16
F1986	100.21	101.72	1.51	0.79	6.08	NA	NA	NA	-3314514.09	-68058.83	157.53
F1987	96.61	99.61	3.00	1.25	1.48	0.30	NA	NA	-3314547.55	-68060.05	149.72
F1987	108.13	120.70	12.57	0.78	2.90	0.10	NA	NA	-3314543.64	-68056.28	134.35
F1988	95.71	100.18	4.47	0.69	4.97	NA	NA	NA	-3314512.98	-68033.64	178.58
F1989	96.19	120.39	24.20	0.90	3.74	0.10	NA	NA	-3314508.91	-68127.69	133.67
F1990	142.30	158.72	16.42	0.81	1.74	0.16	NA	NA	-3314607.80	-68158.70	119.45
F1990	170.86	182.33	11.47	2.17	3.70	0.10	NA	NA	-3314609.29	-68172.83	97.57
F1990	197.73	203.45	5.72	1.03	3.56	0.09	NA	NA	-3314610.65	-68185.83	77.44
F1991	123.99	139.09	15.10	1.75	6.62	0.16	NA	NA	-3314604.58	-68129.10	123.69
F1991	151.62	155.02	3.40	2.11	0.34	0.11	NA	NA	-3314605.81	-68137.88	103.79
F1991	156.81	160.03	3.22	3.76	6.86	0.09	NA	NA	-3314606.10	-68139.93	99.13
F1991	170.56	201.67	31.11	1.12	4.49	0.19	NA	NA	-3314607.67	-68151.09	73.83
F1992	97.26	101.58	4.32	0.90	5.95	0.18	NA	NA	-3314596.41	-68074.19	142.80
F1992	112.51	119.16	6.65	1.32	3.80	0.17	NA	NA	-3314596.11	-68074.68	126.39
F1992	131.82	131.83	0.01	0.98	2.23	0.17	NA	NA	-3314595.65	-68075.09	110.41
F1993	92.64	106.57	13.93	1.61	5.78	NA	NA	NA	-3314441.04	-68113.97	168.94
F1994	155.62	159.12	3.50	0.66	5.27	0.11	NA	NA	-3314528.96	-68212.19	110.78
F1994	172.49	175.87	3.38	1.38	3.02	0.08	NA	NA	-3314530.56	-68220.95	96.53
F1994	190.84	211.03	20.19	0.93	2.14	0.13	NA	NA	-3314533.39	-68234.85	73.84
F1995	237.19	245.27	8.08	1.11	2.51	0.06	NA	NA	-3314368.87	-68267.04	104.09
F1996	135.80	140.37	4.57	1.69	3.60	NA	NA	NA	-3314450.55	-68183.02	129.92

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F1997	107.45	120.52	13.07	1.86	5.03	0.05	NA	NA	-3314481.67	-68156.95	135.24
F2000	194.82	224.40	29.58	1.14	3.77	0.15	NA	NA	-3314587.00	-68265.73	72.45
F2001	204.96	213.43	8.47	0.88	5.32	0.04	NA	NA	-3314549.04	-68321.05	63.97
F2001	220.42	226.81	6.39	0.65	5.88	0.14	NA	NA	-3314546.22	-68316.17	50.69
F2003	232.70	257.55	24.85	0.78	3.13	0.13	NA	NA	-3314488.14	-68249.89	86.08
F2005	222.36	225.47	3.11	0.84	2.61	NA	NA	NA	-3314691.64	-68334.19	31.84
F2006	237.40	253.57	16.17	2.55	2.46	0.05	NA	NA	-3315537.04	-67051.37	114.47
F2007	264.30	277.20	12.90	1.98	3.89	0.06	NA	NA	-3314396.38	-68476.64	8.10
F2008	277.00	286.33	9.33	1.06	5.08	0.07	NA	NA	-3314334.55	-68442.60	36.51
F2009	288.00	304.84	16.84	0.87	4.05	0.05	NA	NA	-3314304.10	-68356.95	83.55
F2011	168.16	171.49	3.33	0.58	4.51	0.09	NA	NA	-3314683.03	-68209.04	98.97
F2012	226.36	233.00	6.64	0.62	5.29	NA	NA	NA	-3314803.26	-68210.04	25.57
F2013	253.81	257.06	3.25	0.64	3.59	NA	NA	NA	-3314755.48	-68408.22	23.91
F2017	293.92	297.15	3.23	0.03	6.84	0.52	NA	NA	-3314478.23	-68538.11	-35.63
F2020	206.29	228.93	22.64	0.94	2.83	0.17	NA	NA	-3314581.77	-68268.49	74.43
F2021	213.17	217.43	4.26	1.54	4.68	0.08	NA	NA	-3314607.33	-68315.41	53.29
F2023	106.32	111.58	5.26	1.23	2.51	NA	NA	NA	-3314694.92	-67867.57	170.54
F2025	244.25	253.03	8.78	1.14	5.22	0.19	NA	NA	-3314456.77	-68313.95	70.21
F2026	243.20	259.95	16.75	1.79	8.02	0.07	NA	NA	-3315546.88	-67064.02	86.33
F2027	256.76	260.80	4.04	1.20	1.49	0.10	NA	NA	-3314448.33	-68431.36	12.30
F2028	252.59	267.35	14.76	0.59	3.35	0.10	NA	NA	-3314397.61	-68364.48	58.20
F2030	192.89	201.06	8.17	1.05	6.62	0.05	NA	NA	-3314586.32	-68222.90	109.69
F2030	210.57	220.15	9.58	1.67	5.61	0.05	NA	NA	-3314577.64	-68215.18	95.46
F2030	229.17	246.27	17.10	1.27	5.04	0.08	NA	NA	-3314567.75	-68205.14	78.11
F2039	119.22	119.28	0.06	0.53	0.01	NA	NA	NA	-3315203.01	-67318.93	148.75
F2042	25.68	76.08	50.40	1.04	2.30	NA	NA	NA	-3315102.21	-67411.63	180.12

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
F2045	110.17	116.79	6.62	1.19	5.02	NA	NA	NA	-3315137.84	-67386.86	149.31
F2045	151.85	191.63	39.78	1.87	2.91	NA	NA	NA	-3315091.63	-67353.87	162.37
F2046	110.67	114.27	3.60	2.96	3.88	NA	NA	NA	-3315153.97	-67369.38	151.44
F2046	148.67	161.61	12.94	1.44	2.89	NA	NA	NA	-3315125.10	-67339.75	161.75
OCOD046	1022.00	1027.65	5.65	1.16	6.19	0.08	0.20	7.50	-3314543.61	-68336.33	49.16
OCOD046	1031.70	1034.00	2.30	1.04	4.14	0.04	0.33	5.42	-3314544.02	-68335.42	41.19
OCOD048	1060.00	1082.45	22.45	1.34	5.32	0.09	0.26	10.60	-3314393.19	-68479.82	4.85
OCOD048_D2	1064.00	1089.10	25.10	1.32	2.98	0.16	0.33	13.38	-3314378.13	-68496.41	-0.50
OCOD052	1117.00	1132.15	15.15	1.77	3.41	0.08	0.27	14.01	-3314390.26	-68593.09	-55.34
OCOD052_D2	1117.59	1133.51	15.92	0.95	5.55	0.06	0.22	7.55	-3314392.39	-68579.30	-55.68
OCOD054	1026.20	1036.09	9.89	1.10	2.78	0.09	0.17	9.39	-3314379.55	-68369.68	55.93
OCOD059	1003.43	1004.11	0.68	0.09	5.45	0.27	0.08	14.00	-3314868.23	-68227.53	70.82
OCOD059	1010.89	1011.89	1.00	0.07	4.50	0.20	0.08	9.00	-3314868.63	-68227.44	63.21
OCOD059_D1	997.70	1009.15	11.45	0.34	3.33	0.21	0.15	9.65	-3314831.05	-68197.55	70.55
OCOD059_D1	1023.60	1033.40	9.80	0.72	7.96	0.14	0.13	5.46	-3314830.84	-68195.81	45.54
OCOD059_D1	1040.86	1045.32	4.46	0.55	5.06	0.21	0.10	8.42	-3314830.75	-68194.82	30.98
OCOD059_D2	1028.00	1032.74	4.74	0.64	3.14	0.19	0.13	7.65	-3314814.08	-68168.41	46.97
OCOD060	1115.19	1126.60	11.41	0.52	3.01	0.14	0.19	7.85	-3315554.16	-67349.53	-40.16
OCOD060_D2	1127.24	1131.11	3.87	0.39	4.75	0.12	0.11	5.27	-3315533.32	-67254.97	-50.18
OCOD060_D2	1167.29	1172.45	5.16	1.30	6.30	0.06	0.43	11.73	-3315532.88	-67251.44	-90.72
OCOD062	1122.26	1127.20	4.94	0.46	3.86	0.10	0.14	7.00	-3315565.73	-67330.99	-46.73
OCOD062_D1	1108.45	1111.52	3.07	0.59	3.87	0.10	0.24	7.43	-3315611.44	-67329.29	-28.65
OCOD064	979.43	989.79	10.36	1.71	3.46	0.07	0.30	12.63	-3314561.67	-68245.21	93.42
OCOD064_D1	988.91	1004.50	15.59	0.55	1.01	0.09	0.11	4.22	-3314573.86	-68270.09	77.54
OCOD065	1022.20	1029.45	7.25	1.09	5.07	0.06	0.22	6.69	-3314409.40	-68342.65	59.18
OCOD066	1126.15	1128.00	1.85	2.20	1.08	0.01	0.37	15.70	-3314324.12	-68609.71	-54.74

Hole Number	Down hole Depth (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t	Northing	Easting	RL
	From	To									
OCOD066_D1	1071.60	1092.82	21.22	1.20	2.61	0.08	0.26	10.01	-3314308.64	-68535.30	1.35
OCOD066_D4	1076.90	1098.60	21.70	1.71	2.72	0.03	0.24	10.43	-3314310.99	-68544.97	-6.43
OCOD068	974.55	997.85	23.30	0.84	5.37	0.10	0.18	7.04	-3314565.93	-68107.31	129.74
OCOD068_D2	977.00	985.10	8.10	0.94	6.16	0.06	0.16	8.49	-3314597.87	-68115.31	128.62
OCOD068_D2	987.10	1000.70	13.60	1.14	2.79	0.18	0.27	14.27	-3314596.93	-68112.45	116.13
OCOD068_D2	1003.35	1006.80	3.45	0.30	5.16	0.04	0.09	2.93	-3314596.10	-68110.00	105.26
OCOD072_D3	1109.00	1121.50	12.50	0.87	3.12	0.29	0.21	16.10	-3315602.46	-67293.05	-37.44
OCOD074	1103.63	1129.80	26.17	1.32	6.37	0.10	0.26	13.94	-3315614.62	-67221.47	-37.37
OCOD074	1184.70	1193.40	8.70	0.95	2.40	0.20	0.21	22.43	-3315617.91	-67223.42	-109.60
OCOD080	1035.03	1047.55	12.52	0.72	3.74	0.23	0.19	9.73	-3314527.78	-68379.19	34.08
OCOD080_D1	1033.50	1046.00	12.50	0.44	3.44	0.13	0.12	5.51	-3314516.74	-68375.20	34.15
OCOD087	1129.90	1142.35	12.45	1.10	4.88	0.16	0.25	11.18	-3314395.40	-68616.60	-65.29
OCOD087_D1	1109.45	1120.47	11.02	0.71	3.45	0.06	0.18	6.07	-3314367.97	-68586.22	-40.33
OCOD103	1102.00	1106.40	4.40	1.10	2.79	0.04	0.12	8.26	-3314416.31	-68552.08	-34.43
V41	1049.43	1055.83	6.40	2.10	3.43	NA	NA	NA	-3314590.18	-67869.26	218.78

Table 4. Foot Note:

1. Cut-off used for intersections = 4% Zn Eq.

Table 5. Drill hole information for the +105 Mineral Resource.

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Intersection depth				Drill type	Company
							Oxides		Supergene			
							From	To	From	To		
COC01	-68818.28	-3314095.36	1070.81	73.41	-90.00	0.00	16.39	21.05	25.34	49.78	Surface diamond	Repli
COC02	-68795.21	-3314074.15	1070.99	72.80	-90.00	0.00			43.95	52.28	Surface diamond	Repli
COC03	-68853.22	-3314060.15	1070.83	71.86	-90.00	0.00			49.04	52.65	Surface diamond	Repli
COC04	-68741.24	-3314162.28	1070.75	63.70	-90.00	0.00			46.79	53.29	Surface diamond	Repli
COC05	-68719.32	-3314141.02	1070.78	107.86	-90.00	0.00			84.69	91.33	Surface diamond	Repli
COC06	-68702.87	-3314251.15	1069.83	55.50	-90.00	0.00	12.85	21.59			Surface diamond	Repli
COC08	-68727.13	-3314218.22	1070.39	61.30	-90.00	0.00	18.72	27.80	47.68	51.80	Surface diamond	Repli
COC09	-68702.60	-3314194.88	1070.56	89.50	-90.00	0.00			70.69	76.48	Surface diamond	Repli
COC10	-68768.74	-3314119.22	1070.71	72.90	-90.00	0.00			51.90	61.48	Surface diamond	Repli
COC11	-68784.23	-3314143.78	1070.53	45.67	-90.00	0.00	5.95	15.03			Surface diamond	Repli
OCOD033	-68524.43	-3314513.40	1066.62	186.14	-22.31	48.90			170.71	180.05	Surface diamond	Orion
OCOD035	-68557.88	-3314484.86	1067.65	184.68	-17.00	35.00			157.83	176.70	Surface diamond	Orion
OCOD036	-68660.11	-3314387.84	1067.71	149.25	-24.23	46.73			103.00	142.00	Surface diamond	Orion
OCOD037	-68627.57	-3314423.73	1067.19	157.69	-23.20	44.50			148.00	152.75	Surface diamond	Orion
OCOD038	-68627.57	-3314423.73	1067.19	141.21	-19.10	45.00			103.80	138.00	Surface diamond	Orion
OCOD039	-68683.31	-3314217.11	1070.27	84.27	-90.00	0.00			49.34	72.26	Surface diamond	Orion
OCOD040	-68464.43	-3314547.58	1067.53	149.41	-15.56	46.00			119.48	123.60	Surface diamond	Orion
OCOD043	-68466.99	-3314550.24	1067.61	202.33	-29.63	46.55			187.76	199.29	Surface diamond	Orion
OCOD044	-68547.71	-3314477.66	1067.95	94.58	-10.30	45.00	59.56	69.23			Surface diamond	Orion
OCOR012A	-68869.19	-3314038.21	1070.77	39.00	-60.00	225.00			24.00	31.00	RC	Orion
OCOR013A	-68839.45	-3314070.67	1070.97	42.00	-60.00	225.00	15.00	20.00	36.00	42.00	RC	Orion
OCOR014	-68808.98	-3314098.95	1070.83	42.00	-60.00	225.00	15.00	18.00	35.00	41.00	RC	Orion
OCOR015	-68748.62	-3314086.26	1070.82	108.00	-90.00	0.00			83.00	86.00	RC	Orion
OCOR016	-68694.12	-3314188.77	1070.60	108.00	-59.73	154.60			57.00	79.00	RC	Orion
OCOR017	-68675.70	-3314223.39	1070.22	77.00	-60.00	145.00			57.00	69.00	RC	Orion
OCOR019	-68682.01	-3314228.61	1070.15	53.00	-90.00	0.00			48.44	53.00	RC	Orion

Hole ID	Easting	Northing	RL	Hole length	Dip	Azimuth	Intersection depth				Drill type	Company
							Oxides		Supergene			
							From	To	From	To		
OCOR020	-68735.58	-3314215.60	1070.31	38.00	-60.00	225.00	10.00	19.00			RC	Orion
OCOR021	-68756.68	-3314175.07	1070.51	49.00	-60.00	225.00	19.00	20.00			RC	Orion
OCOR022	-68714.45	-3314261.59	1069.70	39.00	-60.00	225.00	9.00	18.00			RC	Orion
OCOR023	-68692.07	-3314218.24	1070.35	85.00	-90.00	0.00			48.00	69.00	RC	Orion
OCOR025	-68654.38	-3314295.35	1069.34	49.00	-90.00	0.00	11.00	25.00			RC	Orion
OCOR026	-68659.05	-3314269.84	1069.50	68.00	-68.00	330.00	37.00	38.00	59.00	62.00	RC	Orion
OCOR027	-68640.98	-3314285.78	1069.29	110.00	-60.00	111.00			55.00	97.00	RC	Orion
OCOR028	-68644.41	-3314307.39	1069.20	43.00	-60.00	225.00	7.00	21.00			RC	Orion
OCOR029	-68669.86	-3314279.15	1069.46	46.00	-60.00	225.00	7.00	18.00			RC	Orion
OCOR030	-68745.18	-3314128.85	1070.83	103.00	-90.00	0.00			71.00	75.00	RC	Orion
OCOR031	-68783.93	-3314119.14	1070.66	61.00	-60.00	225.00	18.00	20.00	46.00	54.00	RC	Orion
OCOU073	-68248.55	-3314550.07	974.27	62.33	28.13	52.27			50.00	59.00	Underground diamond	Orion
OCOU075	-68255.66	-3314545.84	973.70	85.63	27.78	342.43			62.53	79.31	Underground diamond	Orion
V01	-68795.85	-3314074.21	1071.58	60.96	-55.00	221.19			38.71	60.96	Surface diamond	Anglovaal
V02	-68623.34	-3314231.79	1070.36	121.92	-60.00	220.50			65.84	77.11	Surface diamond	Anglovaal
V04	-68434.65	-3314306.16	1069.39	134.30	-60.00	220.50			109.43	114.35	Surface diamond	Anglovaal
V05	-68290.49	-3314453.39	1069.78	108.51	-60.00	225.75			57.99	68.33	Surface diamond	Anglovaal
V09	-68242.93	-3314413.77	1070.09	126.50	-60.00	220.50			106.05	112.47	Surface diamond	Anglovaal

Table 5. Foot Note:

1. Diamond drill holes were surveyed with down hole instruments. The dip and azimuth of the Orion holes (OCOD) were determined by the first reading taken in the hole with a North-Seeking Gyro Smart instrument, and the Repli holes (COC) by Reflex EZ Track multi-shot survey instrument. Anglovaal (V) drill hole dip and azimuth is assumed to be taken by surveying the dip and azimuth with a rod and a theodolite.

Table 6. Drill hole intersections for the +105 Mineral Resource.

HOLE NUMBER	DOWN HOLE DEPTH (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t
	From	To						
COC01	16.39	21.05	4.66	0.43	0.91	0.02	0.04	0.03
COC01	25.34	49.78	24.44	1.21	0.92	0.06	0.13	6.77
COC02	43.95	52.28	8.33	1.93	1.20	0.02	0.07	7.01
COC03	49.04	52.65	3.61	0.02	1.56	0.25	0.02	0.03
COC04	46.79	53.29	6.50	2.17	0.43	0.05	0.10	3.31
COC05	84.69	91.33	6.64	1.61	3.78	0.20	0.25	9.65
COC06	12.85	21.59	8.74	0.62	0.76	0.13	0.19	4.70
COC08	18.72	27.80	9.08	0.31	0.63	0.08	0.11	2.35
COC08	47.68	51.80	4.12	1.39	0.07	0.00	0.02	0.03
COC09	70.69	76.48	5.79	1.44	7.33	0.08	0.46	10.32
COC10	51.90	61.48	9.58	6.52	0.62	0.05	0.13	7.58
COC11	5.95	15.03	9.08	0.45	1.00	0.24	0.06	0.03
OCOD033	170.71	180.05	9.34	1.66	4.83	0.06	0.15	10.79
OCOD035	157.83	176.70	18.87	0.78	1.68	0.22	0.14	11.15
OCOD036	103.00	142.00	39.00	1.48	2.57	0.04	0.34	8.84
OCOD037	148.00	152.75	4.75	1.53	4.83	0.48	0.40	17.10
OCOD038	103.80	138.00	34.20	1.52	1.83	0.04	0.18	5.15
OCOD040	119.48	123.60	4.12	2.83	0.35	0.01	0.01	0.57
OCOD043	187.76	199.29	11.53	1.24	4.13	0.18	0.28	11.28
OCOD044	59.56	69.23	9.67	0.61	1.20	0.01	0.01	0.99
OCOR012A	24.00	31.00	7.00	0.33	0.90	0.01	0.03	0.93
OCOR013A	15.00	20.00	5.00	0.92	1.52	0.01	0.04	0.50
OCOR013A	36.00	42.00	6.00	0.60	0.66	0.01	0.03	0.75
OCOR014	15.00	18.00	3.00	0.22	0.71	0.10	0.01	0.50
OCOR014	35.00	41.00	6.00	1.82	0.33	0.02	0.04	0.58

HOLE NUMBER	DOWN HOLE DEPTH (m)		Intersection width (m)	Cu %	Zn %	Pb %	Au g/t	Ag g/t
	From	To						
OCOR015	83.00	86.00	3.00	0.40	1.37	0.05	0.05	2.33
OCOR016	57.00	79.00	22.00	1.37	10.54	0.17	0.31	9.73
OCOR017	57.00	69.00	12.00	4.14	1.86	0.07	0.29	8.00
OCOR019	48.44	53.00	4.56	0.55	0.19	0.19	1.27	37.49
OCOR020	10.00	19.00	9.00	0.41	1.16	0.12	0.12	1.28
OCOR021	19.00	20.00	1.00	0.28	1.44	0.04	0.01	0.50
OCOR022	9.00	18.00	9.00	0.45	0.61	0.08	0.05	0.67
OCOR023	48.00	69.00	21.00	2.11	8.24	0.07	0.35	11.64
OCOR025	11.00	25.00	14.00	0.98	1.02	0.62	0.66	9.82
OCOR026	37.00	38.00	1.00	0.88	0.19	0.11	0.28	6.00
OCOR026	59.00	62.00	3.00	0.57	0.02	0.01	0.14	1.33
OCOR027	55.00	97.00	42.00	2.36	4.41	0.10	0.42	13.62
OCOR028	7.00	21.00	14.00	0.56	0.94	0.32	0.09	1.14
OCOR029	7.00	18.00	11.00	0.92	0.69	0.15	0.13	1.09
OCOR030	71.00	75.00	4.00	1.15	2.61	0.16	0.55	11.25
OCOR031	18.00	20.00	2.00	0.27	1.45	0.03	0.02	1.00
OCOR031	46.00	54.00	8.00	1.23	0.13	0.01	0.01	0.94
OCOU073	50.00	59.00	9.00	3.25	0.88	0.24	0.34	15.67
OCOU075	62.53	79.31	16.78	5.60	0.18	0.02	0.19	7.02
V01	38.71	60.96	22.25	1.02	0.39	NA	NA	8.36
V02	65.84	77.11	11.27	0.86	3.88	NA	NA	5.26
V04	109.43	114.35	4.92	1.31	7.32	0.72	NA	NA
V09	106.05	112.47	6.42	5.68	3.06	0.10	NA	NA

Table 6. Foot Note:

Cut-off used for intersections = 0.3% Cu and/or 0.6% Zn

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.*	**1. <u>Deep Sulphide and +105 Mineral Resource</u>** • 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; o Ensuring that all boreholes have appropriate XYZ coordinates. o Comparing the maximum depth of the hole against the final depth indicated in the collar file. o Comparing the final depth in the survey file against final depth in the collar file. o Comparing the final depths of all geology, assay, core recovery against the final depth in the collar file. o Checking for duplicate drill holes. o Checking that each depth interval has a main lithology. o Checking that all fields that were set up as mandatory fields contain entries. o The core recoveries were checked for unrealistic percentages. o Density results are checked for unrealistic values. • Procedures used are queries in the Access database. A further check was when the drill hole data was imported into the Geovia SurpacTM (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 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.*	**1. <u>Deep Sulphide and +105 Mineral Resource</u>** • Z* Star Mineral Resource Consultants (Pty) Ltd were requested by Orion Services South Africa (Pty) Ltd to estimate and classify a mineral resource for the Deep Sulphide and +105m deposits. They visited the site from 17 to 19 October 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.*	**1. <u>Deep Sulphide Mineral Resource</u>** • The Deep Sulphide mineralisation is the depth extension of the strata-

Criteria	JORC Code explanation	Commentary
	• *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.*	bound, stratiform Volcanogenic Massive Sulphide (**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 are 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. **2. <u>+ 105 Mineral Resource</u>** • The +105m Resource comprises four defined zones above the primary sulphides (Figure 7). These are: • Haematite-goethite-quartz oxide zone (gossan) from surface to approximately 33m. • Clay (kaolinite) zone developed in places below 33m. • Chalcocite dominant supergene zone between approximately 42 and 70m. • Mixed Supergene-sulphide zone between approximately 70 and 90m below • surface. This has a relatively sharp contact with the fresh underlying massive sulphides. • Of the above four zones, the first and the third are considered as being suitable for inclusion as part of the Mineral Resource. These two are referred to as the oxide and supergene zones, respectively. • The boundaries of the mineralisation are relatively sharp irrespective of the geology. Therefore, wireframes for the oxide and supergene zones were created by interpretation of the Cu% and Zn% values along 31 sections across the deposit. The wireframes were constructed utilising Cu% values greater than or equal to 0.3% and Zn% values greater than or equal to 0.6%. Where possible both values were utilised during modelling,

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		but greater emphasis was placed on the copper values as the zinc was leached out towards surface. In places, this resulted in the inclusion of mineralised areas based only on high Cu% values. • In the NW part of the deposit, mineralisation occurs in two lenses. The Orion geologists are still investigating whether this is stacked mineralisation formed during deposition or a structural duplication due to thrusting or isoclinal folding. The upper lens does not seem to have depth extent and is part of the oxide zone. • Geological data and conclusions reached are based on observations in drill core. • The oxide and supergene zones are treated separately in the resource estimation.
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.*	**1. <u>Deep Sulphide Resource</u>** • Within the prospecting right area, the strike length of the mineralisation is 1 860m, horizontal width varies from 6m to 140m and the down dip extent is 1 228m below shaft collar. True thickness of the orebody varies between <1m to 30m with an average of 7m. **2. <u>+105 Mineral Resource</u>** • The strike length is 867m and the depths below surface to the upper limits are from 5 to 20m and to the lower limits from 61 to 104m below surface. • Thickness of the mineralised zone varies from 1.5m to 23m.
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.* • *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.*	**1. <u>Deep Sulphide Resource</u>** • The estimation of the Deep Sulphide included the following steps: o The creation of a wireframe model for the Deep Sulphide target by Orion geologists using a 4% Zn equivalent cut-off; o Data validation and selection of samples within the Deep Sulphide target and analysis of the variables to be estimated, i.e. Cu%, Zn%, Ag g/t, Au g/t, Pb% and SG; o Exploratory Data Analysis that included: o Compositing the data to 1m; o Capping two Cu% outliers and a single Pb% high value; an o 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 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

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	• *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.*	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 Deep Sulphide target. • There are no previous mine production plans for the Deep Sulphide target. • No assumptions have been made regarding the recovery of by-products. • No deleterious elements or non-grade variables were estimated. **2. <u>+105 Mineral Resource</u>** • Density weighting is standard practice for VMS deposits. However, in the oxide and supergene zones the density measurements do not correlate well with the assay values and density weighting was therefore not included. The poor correlation is probably due to the friable nature of the core. • The distribution of composites for each of the variables (Cu%, Zn%, Ag g/t, Au g/t, Pb% and SG) were assessed and a decision was taken to utilise the Parker methodology for capping outliers. The process involved capping the relevant outliers for each variable to a chosen threshold. • A single sample value has been changed for Au and Pb and two Ag sample values have been capped. The high values for all variables except Zn were reduced in samples within the supergene zone. A decision was made not to cap the SG data in either the oxide or the supergene zone. • Datamine™ was utilised to create a block model and measure individual block volumes within each zone and these data were imported into Isatis™ for further analysis. • The oxide and supergene zones were analysed independently to ensure that the plane for estimation had an optimal orientation. • Variograms for all variables were created from the laboratory assay capped composites data only and modelled in two directions, downhole (along the drill hole) and omni-directionally on the plane of the ore zone. Assessment of the variogram models was preferentially focused on the Cu and Zn spatial structure. • Repli (2014) stated a near-surface oxide resource of 1.2Mt at 1.02% Cu

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		and 1.13% Zn for the north-west oxide and leached zone, based on 12 diamond drill holes. • No mining production took place above the 105 level of the mine. • No assumptions have been made regarding the recovery of by-products. • No deleterious elements or non-grade variables were estimated. • A block model was created to allow estimation into 40m x 40m x 5m blocks with sub-cells of 2.5m x 2.5m x 2.5m. • Ordinary kriging (OK) was undertaken on all variables on a 40m x 40m x 5m block scale, utilising the capped composite input datasets and the modelled variograms. Estimation runs on two different neighbourhoods were utilised for all variables and the first estimation run in each case has smaller searches, particularly in the Z direction. This ensures that the variography and therefore the nature of the mineralisation is honoured and ensures that negative weights are minimised. The neighbourhood of the second kriging run was expanded to allow population of most of the remaining blocks. • No assumptions were made regarding selective mining methods. • The oxide and supergene zones were treated separately in the resource statement.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	**1. <u>Deep Sulphide and +105 Mineral Resource</u>** • 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.*	**1. <u>Deep Sulphide Resource</u>** • 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 which is based on historical data from the Prieska Mine and a dataset of parameters from similar operations in the region. **1. <u>+105 Mineral Resource</u>** • A Cu% cut-off of 0.3% 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 which is based and a dataset of parameters from similar operations.

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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, as based on historical data from the Prieska 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 Bankable Feasibility Study (**BFS**) in progress. **1. <u>+105 Mineral Resource</u>** • A Cu% cut-off of 0.3% 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 which is based on a dataset of parameters from similar operations. • The assumption is to use open cast mining methods with 10m benches. • The major risk is mining between sinkholes and above the partly collapsed crown pillar of the underground mined-out stopes. • Whittle pit optimisation study and detail pit design as part of a BFS 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 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.*	**1. <u>Deep Sulphide Resource</u>** • 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 (Figure 10). • 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 during the life of the mine. • Preliminary metallurgical test work on the Deep Sulphide mineralisation revealed good concentrate recoveries, similar to those reported for the historical Anglovaal operation. • Additional metallurgical test work as part of a BFS is in progress. **2. <u>+ 105 Mineral Resource</u>** • Preliminary metallurgical test work on oxide and supergene mineralisation revealed much lower concentrate recoveries in the oxides than in the supergene mineralisation. • The oxide mineralisation has a reasonable prospect for eventual

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		economic extraction as it occurs close to the surface and treatment of this type of ore is well known in the industry. • Additional metallurgical test work as part of a BFS is in progress.
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.*	**1. Deep Sulphide and +105 Mineral Resource** • The Deep Sulphide and +105 Mineral Resource is on the environmental footprint of the historic 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.*	**1. Deep Sulphide Resource** • Relative Densities (SG t/m^3) were determined using the water displacement method. The entire sample (normally 1m length) was measured. Cognisance of the change in lithology was taken in the selection of samples for relative density measurements. • 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. **2. +105 Mineral Resource** • Due to the poor core recoveries the density data in the Oxide Zone is sparse with only 13 samples available. There are 112 density measurements in the Supergene Zone. • Relative Densities were determined using the water displacement method. A representative sample of full core at 15cm length was collected per metre length, taking cognisance of the change in lithology. • A total of 33% of the samples lying within the wireframe used for the estimation of the supergene mineralisation were re-done for relative density using the wax relative density method. These results show excellent precision and no obvious bias when comparing with the original relative densities.

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		• No moisture content was determined. • Core is mostly weathered in the Oxide Zone with obvious core loss. The representative sample selected for density measurement was sprayed with a clear lacquer spray and allowed to dry prior to being weighed. • The low number of samples and the lack of a variogram model for density samples in the Oxide Zone resulted in a different approach to estimation. The estimation methodology for density in this zone is as follows: • Calculation of a length weighted average SG per drill hole • Calculation of the average density per spatial area from the drill holes (declustering). • Calculation of the average of the spatial areas (declustered mean). This marginally lower but more representative mean SG value was applied as a zonal estimate for all blocks within the Oxide Zone, i.e. 2.66 g/m3. • The densities in the supergene zone were estimated with Ordinary Kriging.
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.*	**1. <u>Deep Sulphide Resource</u>** • The classification of the Deep Sulphide 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 Deep Sulphide Resource is classified at an Inferred level of confidence. • The results conform to the view of the Competent Persons. **2. <u>+105 Mineral Resource</u>** • The geology of the two zones making up the +105 Resource is relatively uncomplicated, and the key issues relate to the delineation of the domain boundaries (not geology). The assay data used for estimation is reliable and has been acquired with good governance associated with all processes. With one exception (SG in the oxide) all ten variables were estimated using independent variogram models and Ordinary Kriging. • Oxide Zone: Inferred Mineral Resource - the geological model is defined to a reasonable level and there is sufficiently accurate data to produce local block estimates using Ordinary Kriging, albeit there is a limited

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		number of samples. Approximately two thirds of the volume are populated by 1st pass kriging. However, there is a high level of uncertainty associated with the estimation of density due to a low number of samples (and a possible bias in the methodology) as well as possible inaccuracies associated with core loss. The collapse breccia (part of sinkhole) will also have the largest effect on this zone and this has not been well defined. • Supergene Zone: Indicated Mineral Resource - the geological model is defined to a reasonable level and there is sufficiently accurate data coverage to produce local block estimates using Ordinary Kriging. There are sufficient data in the Supergene Zone for reasonably accurate local block estimates of grade (80% of volume populated by 1st Pass kriging). The low number of density samples is a concern but local block estimation with reasonable accuracy was possible. • The results conform to the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	**1. <u>Deep Sulphide Resource</u>** • 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. **2. <u>+105 Mineral Resource</u>** • SRK did a review on the +105Mineral Resource Estimate.
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*	**1. <u>Deep Sulphide Resource</u>** • The Deep Sulphide target was originally modelled on the historic Anglovaal drilling only. It is important to recognise that the Orion holes that targeted this Deep Sulphide deposit intersected the mineralised zone at the expected depths. The Orion holes have not altered the shape of the original Deep Sulphide deposit significantly. The compatibility of the two drilling campaigns thus adds considerable support in terms of including the Anglovaal drilling. • The summary statistics 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.

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	available.	• 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 in the Deep Sulphide target. 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. **2. <u>+105 Mineral Resource</u>** • Final estimates for all variables in both zones were validated by comparing the mean composite grades to the mean estimate grades. The data for Cu and Zn with the 1st Pass and final estimates are within 5% of the composites mean. However, the Ag first pass is 7% below the composite mean for the oxide zone. • The comparison between the block estimates and the composites in the supergene zone is poor for Cu, Zn and Au but reasonable for Ag and SG. • Composite and estimated final grade and density distributions were compared to ensure that the block estimates represent the original data distribution. These were found to be reasonably compatible. • Swath plots were created in the Y, X and Z directions and all the estimates followed the trend of the composite data. • All estimates were studied graphically and compared to the composite data in three-dimensional space and they compared reasonably well. • A second estimation method provide a good indication of the accuracy of the local block estimate. An independent software package Surpac to produce block estimates of all grade variables using an inverse distance weighting (IDW) method. The results of 40m x 40m x 5m local block estimates were compared to the results of the ordinary kriging as a

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		check. The differences in Cu and Zn estimates for the oxide zone are less than 5% and for Au and Pb less than 10%. However, the grades of the Ag estimates differ by 20%. • In the supergene zone, the differences between IDW and OK are mostly less than 10% but the Zn grade estimated using OK is marginally higher than for the IDW. • No production data is available.