

# HERA/NYMAGEE RESOURCES AND RESERVES

## HIGHLIGHTS

- **FY18 drill program results in increase in Hera Measured Resources**
- **Upper North Pod drill program planned for December Quarter 2018**
- **Hera Resources and Ore Reserves have reduced with mine depletion**
- **Nymagee has been estimated as an underground resource**
- **Positive mine to mill gold reconciliations**

Aurelia Metals Limited ("AMI" or the "Company") is pleased to report an update to the Mineral Resource Estimate and Ore Reserves Estimate for its 100% owned Hera gold-lead-zinc-silver project and the Mineral Resource Estimate for its 95% owned Nymagee copper-lead-zinc-silver project in NSW. The new Resource and Reserve Estimates include the results of extensive grade control and extensional drilling during the last 12 months and also account for mining depletion during the period.

### Hera Resource Estimate as at 30 June 2018

Class	Tonnes (Kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
<b>Measured</b>	1007	248	2.60	2.70	4.20	20.0
<b>Indicated</b>	951	228	2.70	2.10	3.20	17.0
<b>Inferred</b>	558	239	1.70	3.50	4.70	51.0
<b>Total</b>	<b>2,516</b>	<b>238</b>	<b>2.44</b>	<b>2.65</b>	<b>3.93</b>	<b>25.7</b>

*Note: The updated Hera Resource Estimate utilises optimised A\$120/tonne NSR cut-off shapes that include internal dilution. The inclusion of internal dilution has been implemented to more realistically represent the tonnages and grades that may become available for potential extraction. Net Smelter Return (NSR) is an estimate of the net recoverable value per tonne including offsite costs, payabilities, royalties and mill recoveries. Tonnage estimates have been rounded to nearest 1,000 tonnes.*

### Nymagee Resource Estimate as at 30 June 2018

Class	Tonnes (Kt)	NSR (A\$/t)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)
<b>Indicated</b>	3640	138	1.31	0.85	1.65	14.4
<b>Inferred</b>	140	109	1.10	0.57	1.20	11.3
<b>Total</b>	<b>3,780</b>	<b>136</b>	<b>1.31</b>	<b>0.84</b>	<b>1.63</b>	<b>14.3</b>

*Note: The updated Nymagee Resource Estimate is based on estimation search pass within May 2018 stope design shapes, using a revised \$80 NSR (net smelter return) cut-off grade. Net Smelter Return (NSR) is an estimate of the net recoverable value per tonne including offsite costs, payabilities, royalties and mill recoveries. Tonnage estimates have been rounded to nearest 10,000 tonnes.*

The Nymagee Mineral Resource Estimate has been completed in accordance with the guidelines of the JORC Code (2012 Edition). The updated Mineral Resource Estimate represents a decrease in tonnage since the previous estimate released in December 2011. This change is a result of an approach that assumes an underground mining method as per the Nymagee Scoping Study released in April 2017.

AMI has updated the Mineral Resource Estimate for Nymagee in preparation for an upcoming pre-feasibility study (PFS) that will examine the potential to provide significant additional ore feed to the

Hera processing plant. The Company is currently conducting a metallurgical drill program in support of the PFS, which is due for completion in June 2019.

The 2018 Nymagee Mineral Resource Estimate is based on underground mining methods as opposed to previous estimates utilising an open cut mining.

The 2018 Ore Reserve Estimate has been calculated from the Hera Resource model using ore classified in the Measured and Indicated categories only.

### Hera Ore Reserve Estimate as at 30 June 2018

Category	Geological lenses	Tonnes (Kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
Probable	Far West	363	259	2.39	3.43	5.80	20.6
	Far West Lower	202	232	2.77	2.67	4.00	16.8
	Hays North	21	194	2.75	1.78	2.76	6.5
	Hays South						
	Main North	95	198	2.72	1.68	3.13	8.6
	Main South	66	256	4.49	1.69	2.02	9.1
	North Pod	369	285	3.71	2.91	3.95	34.9
<b>Total Probable Reserve</b>		<b>1,117</b>	<b>256</b>	<b>3.05</b>	<b>2.84</b>	<b>4.36</b>	<b>22.7</b>

*Note: The Hera Reserve Estimate utilises a \$160/tonne NSR cut-off. Net Smelter Return (NSR) is an estimate of the net recoverable value per tonne. Tonnage estimates have been rounded to the nearest 1,000 tonnes.*

This updated Ore Reserve Estimate represents a 31% decrease in tonnage against the previous ore reserve including 406,000t at 5.1 g/t of mining depletion since June 2017. The updated Ore Reserve Estimate represents a 14% decrease in gold grade, a 4% decrease in lead grade and an 8% increase in zinc grade. The reason for the change in gold grade is the mining of higher gold grade material last year relative to the previous ore reserve gold grades.

### Nymagee Production Target as at 30 June 2018

A Scoping Study released on 2 May 2017 utilised a \$140/t NSR cut-off, giving a

**Production Target - 1.38Mt at 2.2% Cu, 1.58% Pb, 3.15% Zn and 23 g/t Ag (NSR \$199/t).**

Based on this target, mine life is estimated at 3.5-4 years at a processing rate of 400,000tpa.

Commenting on the revised Resource and Reserve Estimates, Aurelia Metals Chief Executive Officer, Jim Simpson, said:

*"The geological understanding of the Hera orebody and the extensive drilling program that has been conducted over the past 12 months has provided a new platform for exploration which will be conducted in the FY 2018/19. In particular, the testing of a repeat orebody below Hera from surface is an exciting prospect. The Nymagee metallurgical drilling is well underway and which will allow the completion of the PFS next year."*

### Competent Persons Statement – Hera Resource Estimate

Compilation of the drilling database, assay validation and geological interpretations for the resource update were completed by Adam McKinnon, BSc (Hons), PhD, MAusIMM, who is a full time employee of Aurelia Metals Limited. The resource estimate has been prepared by Rupert Osborn, BSc, MSc, MAIG, who is an employee of H&S Consultants Pty Ltd. Both Dr McKinnon and Mr Osborn have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr McKinnon and Mr Osborn consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

### **Competent Persons Statement – Nymagee Resource Estimate**

Compilation of the drilling database, assay validation and geological interpretations for the resource update were completed by Adam McKinnon, BSc (Hons), PhD, MAusIMM, who is a full time employee of Aurelia Metals Limited. The resource estimate has been prepared by Arnold van der Heyden, BSc, MAusIMM (CPGeo), MAIG, who is an employee of H&S Consultants Pty Ltd. Both Dr McKinnon and Mr van der Heyden have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr McKinnon and Mr van der Heyden consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

### **Competent Persons Statement – Hera Ore Reserves Estimate**

The Ore Reserve Estimate was compiled by Rebecca Roper, the Mining Engineering Manager at the Hera Gold Mine. Rebecca has worked at polymetallic mines including Olympic Dam and Hera. She has also worked at porphyry (Ridgeway and Cadia East) and epithermal gold (Gosowong) deposits. Rebecca is a mining engineer with a BE Mining Eng (Hons) obtained at the University of NSW and has worked in underground hard rock mines since 2001 with 17 years' experience. The Ore Reserve Estimate was produced on site.

Rebecca has sufficient experience which is relevant to the style of mineralisation, type of deposit and mining method under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Rebecca is a member of the AusIMM (310221) and also holds a NSW Mining Engineering Manager Certificate.

## **HERA MINERAL RESOURCE ESTIMATE**

An updated resource estimate has been completed for Aurelia Metals' wholly owned Hera Project, located south of Nymagee, New South Wales. The updated total Measured, Indicated and Inferred Resources based on a \$120 Net Smelter Return (NSR) cut-off are summarised in Table 1, and estimated contained metal in Table 2. The stated resources include all blocks within the volumes produced by Deswick's Stope Shape Optimiser (SSO) but does not include material that has been mined or sterilised by nearby mining. The reported estimates therefore include an appropriate internal dilution component (see below for details). Data compilation and validation for the Resource Estimate has been completed by Adam McKinnon, MAusIMM, who is the Geology Superintendent at Hera. The Resource Estimate has been prepared by Rupert Osborn, MAIG, of H&S Consultants.

*Table 1. Hera Resource Estimate, as at 30 June 2018 with NSR \$120/t Cut-Off*

<b>Class</b>	<b>Tonnes (Kt)</b>	<b>NSR# (A\$/t)</b>	<b>Au (g/t)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>	<b>Ag (g/t)</b>
<b>Measured</b>	1007	248	2.60	2.70	4.20	20.0
<b>Indicated</b>	951	228	2.70	2.10	3.20	17.0
<b>Inferred</b>	558	239	1.70	3.50	4.70	51.0
<b>Total</b>	<b>2,516</b>	<b>238</b>	<b>2.44</b>	<b>2.65</b>	<b>3.93</b>	<b>25.7</b>

# based on metal prices higher than the long term Ore Reserve Estimate metal prices

*Table 2. Estimates of contained metal*

<b>Class</b>	<b>Au (Koz)</b>	<b>Pb (Kt)</b>	<b>Zn (Kt)</b>	<b>Ag (Koz)</b>
<b>Measured</b>	85	27	42	648
<b>Indicated</b>	83	20	31	522
<b>Inferred</b>	31	19	26	922
<b>Total</b>	<b>198</b>	<b>67</b>	<b>99</b>	<b>2092</b>

#Numbers may not sum due to rounding errors

## DRILLING AND ASSAYS DATA

Aurelia provided H&SC with data including a drill hole database, a series of 12 wireframe solids representing mineralised volumes over \$2 NSR, a series of 70 wireframe solids representing mined stopes and five wireframe solids representing the mine developments and depleted volumes. H&SC has retained copies of reports of previous MREs that were provided to H&SC.

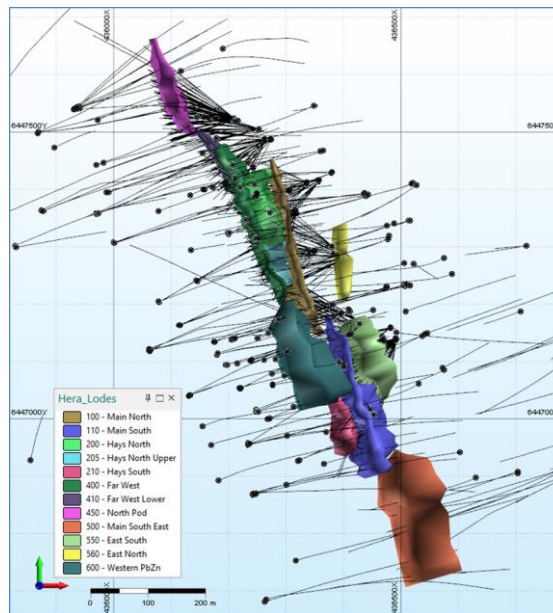


Figure 1. Plan view of the drill holes and \$2 NSR mineralisation wireframes used in the 2018 resource update

The database has been modified in order to be suitable for resource estimation. These modifications included filling unassayed intervals with default low grades and assigning a density to each interval based on a calculation from the Pb, Zn, Cu, Fe and S grades. The surface diamond core comprises HQ and NQ-sized core and underground holes are LTK60 and NQ-sized.

Measured values show that the bulk density of the rock at Hera varies significantly, largely due to sulphide mineralisation. The density of drill hole intervals that had not been subjected to density measurements were produced by calculating the normative mineralogy of each sample, then species weighting the density calculation. This approach takes into account the density differences between galena, sphalerite, chalcopryrite and pyrrhotite.

Figure 1 shows a plan view of the mineralisation wireframes provided. The \$2 NSR boundary was suggested to Aurelia by H&SC following an in-house review in early 2016.

Samples were composited to 1 metre intervals within each zone with a minimum composite length of 0.5m. In order to better reflect the contained metal within each interval, estimates were carried out on density weighted values. Au, Ag, Pb, Zn, Cu, S and Fe grades were multiplied by the density for each assayed interval. The block model estimates of the density weighted elements are then divided by the estimated density for each block.

Variography was carried out within the software program GS3 on the one metre composited data from the eight mineralised domains that contained over 2,000 data points. These domains are Main North, Main South, Hays South, Hays North, Far West, North Pod, East South and Western PbZn. Other domains used the variogram parameters from a nearby domain. Variography for each element showed relatively high continuity in the along-strike and down-dip orientations and poor continuity in the orientation perpendicular to these.

The mineralisation at Hera is relatively narrow with a NNW-SSE strike. The estimates employed a block model rotated  $-16.41^\circ$  around the Z axis to match the historic local mine grid co-ordinate system. Five metre north-south and vertical block dimensions were chosen to reflect drill hole spacing and to provide definition needed for mine planning. The shorter two metre east-west dimension was used to reflect the narrow mineralisation and down hole data spacing. Discretisation was set to 2x5x5 (E, N, RL respectively). The wireframes representing mineralisation and depletion were used to flag the block model. Sub-blocking, with the minimum dimensions of 1m x 2.5m x 2.5m (East x North x RL respectively), was permitted.

The search criteria used to estimate all parameters can be seen in Table 3 and consist of three search passes with progressively increasing search radii. The maximum distance of extrapolation of estimates from data points is 70 m. Declustering was carried out by the use of search sectors. The search ellipsoids for each domain are rotated according to best fit for each lode.

*Table 3. Search criteria used in the estimation process.*

Axis	Pass 1	Pass 2	Pass 3
Axis 1	3 m	5 m	9 m
Axis 2	20 m	35 m	60 m
Axis 3	20 m	35 m	75 m
<b>Composite Data Requirements</b>			
Minimum data points (total)	16	16	8
Max points (total)	32	32	32
Sectors	4	4	4
Max points (per sector)	8	8	8
Max data per drill hole	6	6	8
Minimum number of drill holes	4	4	2

Ordinary Kriging (OK) was used to estimate the density weighted concentrations of Ag, Pb, Zn, Fe, S and As. The density weighted concentration of Sb in North Pod was estimated using OK but was not estimated in the other zones due to lack of data coverage. OK was also used to estimate density, as well as a data location accuracy factor. OK is considered to be appropriate for the estimation of these features as the coefficient of variation (CV) is relatively low and the mineralisation is reasonably well structured.

The gold grades intersected at Hera are highly variable and exhibit a strongly skewed grade distribution. Multiple Indicator Kriging (MIK) was considered a more appropriate estimation method for this type of gold grade distribution because it specifically accounts for the changing spatial continuity at different grades through a set of indicator variograms at a range of grade thresholds. Limited top-cutting was applied to density weighted values of gold, silver, lead, zinc, copper, arsenic and antimony by mineralised zone.

In underground workings, experience has shown some surface drill holes have deviated a moderate distance from the planned and surveyed drill hole traces. Underground drill holes, and surface drill holes that have been intersected in development and adjusted, are considered to be of good accuracy. In order to understand the relative contribution to estimates of samples with a high degree of confidence in their location an OK indicator estimate was also used for hole accuracy. This parameter was used to modify resource classifications described below.

A Net Smelter Return (NSR) value was applied to each block after estimation. The NSR is used to assign a dollar value to the polymetallic mineralisation. The NSR calculation takes into account the recoveries associated with each of the two processing streams; namely production of Au and Ag doré and Pb-Zn concentrate (that also includes Ag credits). The NSR also takes account of the metal price, exchange rates, freight, treatment charges and royalties. Recovery and metal price parameters used in the NSR calculation are given in Table 4 and Table 5.

*Table 4. Processing recoveries for NSR calculation*

Parameter	Recovery
Au Recovery - Gravity	60%
Au Recovery - Leach	30%
Ag Recovery - Dore	10%
Ag Recovery - Concentrate	80%
Pb Recovery - Concentrate	91%
Zn Recovery - Concentrate	90%
Pb + Zn Grade (Concentrate)	55%

Table 5. Metal prices for NSR calculation

<b>Metal</b>	<b>Price (US\$)</b>
Gold (US\$/oz)	1,400
Silver (US\$/oz)	18.8
Zinc (US\$/t)	2,600
Lead (US\$/t)	2,280

Following estimation, a series of wireframed optimised stope designs were produced by Deswick’s Stope Shape Optimiser (SSO). The SSO stope designs were used to constrain the reported mineral resource estimate (MRE). Mineralisation outside these stopes is unclassified as it does not meet the criterion of eventual economic extraction. The smallest mineable unit (SMU) for the SSO shapes is 5 metres long, 25 metres high, with a minimum mining width of 3 metres. The SMU is used as a starting shape and evaluated across the orebody until it finds an area with a SMU head grade above \$120/t. If it is, then it adds it to the SMU and continues across the orebody. Where a slice is below a cut-off of \$120/t it is flagged as waste and not included. If the waste slice is greater than 5 metres wide it is then left as a pillar. If it is less than 5 metres and has some high grade that carries above cut-off, it is then included in the stope.

The Mineral Resource Estimate, broken down by lode, is reported in Table 6. Estimated resources reported here include all block centroids that lie within the SSO stope wireframes that have not been mined or sterilised by nearby mining. The reported estimates therefore include internal dilution. The small quantity of material that is inside the SSO shapes but outside the mineralised domain wireframes has been included in the ‘Outside’ domain.

Table 6. Mineral Resource Estimate for Hera broken down by lode.

Class	Lode	Tonnes (Kt)	NSR (AUD\$)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
Measured	Main North	142	178	2.0	1.8	2.8	11
	Hays North	68	177	2.2	1.8	2.2	8
	Far West	401	247	2.0	3.3	5.5	20
	Far West Lower	115	238	2.5	2.7	4.1	18
	North Pod	227	311	4.0	2.6	3.4	29
	Outside	4	4	0.0	0.1	0.1	1
	<b>Measured Total</b>	<b>1,007</b>	<b>248</b>	<b>2.6</b>	<b>2.7</b>	<b>4.2</b>	<b>20</b>
Indicated	Main North	196	205	2.5	1.7	3.0	9
	Main South	151	288	4.4	1.6	2.1	9
	Hays North	7	214	3.0	1.8	2.1	7
	Far West	182	207	2.0	2.3	4.0	15
	Far West Lower	192	212	2.4	2.2	3.3	14
	North Pod	214	248	2.6	2.6	3.7	35
	Outside	8	4	0.0	0.1	0.1	0
	<b>Indicated Total</b>	<b>951</b>	<b>228</b>	<b>2.7</b>	<b>2.1</b>	<b>3.2</b>	<b>17.0</b>
Inferred	Main North	18	313	4.5	2.1	3.0	11
	Main South	127	220	3.3	1.4	1.8	7
	Far West	10	180	2.1	1.4	3.0	7
	Far West Lower	12	182	2.8	0.8	1.4	8
	North Pod	386	248	1.0	4.4	6.0	71
	Outside	5	6	0.0	0.1	0.2	2
	<b>Inferred Total</b>	<b>558</b>	<b>239</b>	<b>1.7</b>	<b>3.5</b>	<b>4.7</b>	<b>51</b>
<b>Total</b>		<b>2,516</b>	<b>238</b>	<b>2.5</b>	<b>2.7</b>	<b>3.9</b>	<b>26</b>

Classifications are based predominately on the search pass used to estimate the block. Following estimation, the search pass was locally averaged in order to decrease small isolated volumes of differing classification. The data location accuracy factor that quantifies the relative contribution of data points with high location accuracy confidence was used to downgrade the classification of blocks that were estimated using an excessive number of data with poor confidence in their location. Table 7 shows how the search pass is modified by the location accuracy factor to produce the modified pass.

To produce a single classification for each SSO shape the tonne-weighted modified pass was averaged for each shape. To ensure coherency in the resource classification, some individual isolated Inferred shapes were upgraded to Indicated and isolated Indicated shapes were downgraded to Inferred. The classification of two areas of Indicated shapes in Main South was downgraded to Inferred due to poor reconciliation of adjacent, mined stopes. All Measured resources at Main South were also downgraded to Indicated as reconciliations showed that estimates were significantly underestimating the contained metal. Figure 2 shows an oblique long section of the blocks reported in the resource estimate coloured by resource classification.

Table 7. Classification according to search pass and location confidence

Search Pass	Location Accuracy Factor	Modified Pass	Classification
1	>0.75	1	Measured
1	<0.75	2	Indicated
2	>0.5	2	Indicated
2	<0.5	3	Inferred
3	All	3	Inferred

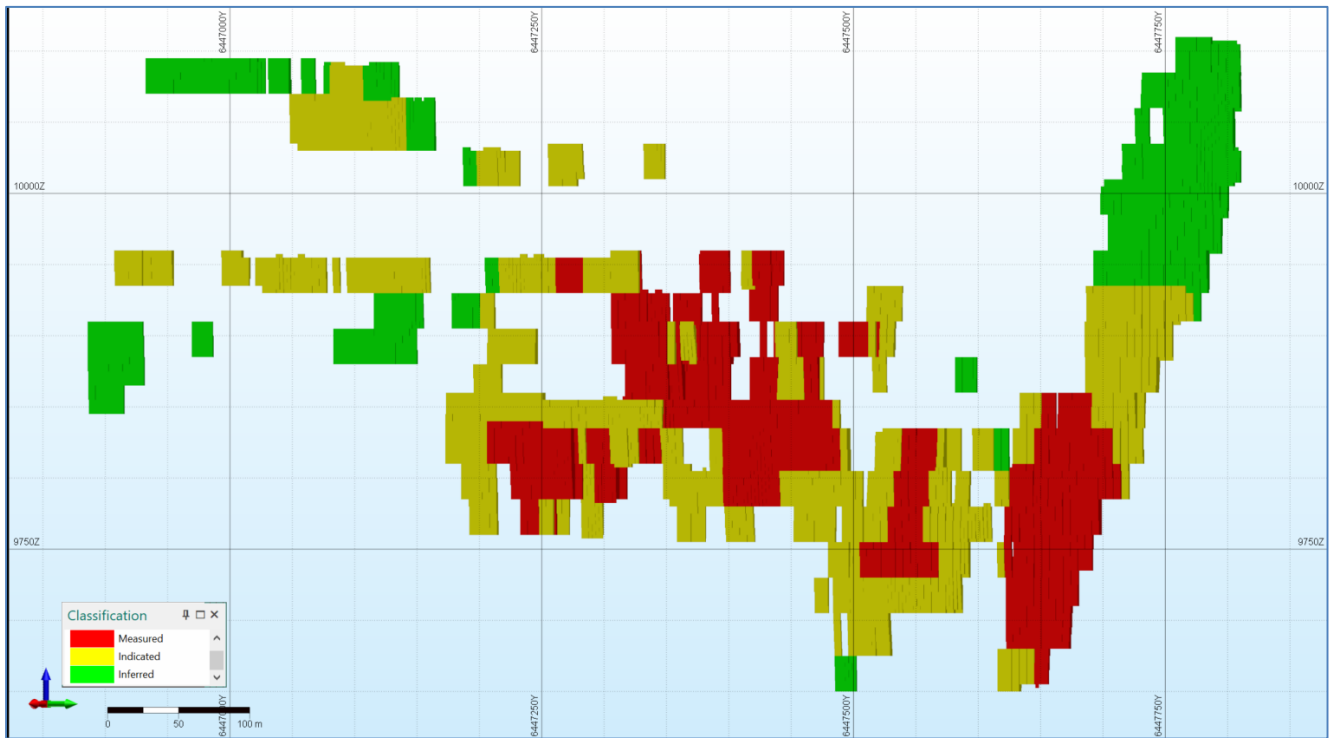


Figure 2. Long section showing the distribution of Measured (red), Indicated (yellow) and Inferred (green) Resources.

An infill drill program from underground targeting the Upper North Pod and any potential up dip extensions of mineralisation is planned to occur during the December 2018 quarter. This program will increase the current Upper North Pod resource confidence from Inferred/Indicated to Measured status (refer Fig. 2 above).

### RESOURCE BLOCK MODEL RECONCILIATION

The 2017/18 Resource block model was reconciled against mill production on a stope by stope and ore development basis. There was good correlation with the base metals and gold positively reconciled at 142% due to the nugget effect within the mineralisation. The reconciliations are shown in Table 8.

Table 8. Block Model Reconciliation

Metal	Mined Grade	Milled Grade	Reconciliation
Gold (g/t)	3.5	5.1	142%
Silver (g/t)	15.1	13.3	88%
Lead (%)	2.5	2.6	102%
Zinc (%)	3.6	3.6	99%



## ORE RESERVES ESTIMATE

The Ore Reserve Estimate is shown by Category and by location as shown in Table 9.

Table 9. Ore Reserve Estimate by Geological Area as at 30 June 2018

Category	Geological lenses	Tonnes (Kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
Probable	Far West	363	259	2.39	3.43	5.80	20.6
	Far West Lower	202	232	2.77	2.67	4.00	16.8
	Hays North	21	194	2.75	1.78	2.76	6.5
	Hays South						
	Main North	95	198	2.72	1.68	3.13	8.6
	Main South	66	256	4.49	1.69	2.02	9.1
	North Pod	369	285	3.71	2.91	3.95	34.9
<b>Probable</b>		<b>1,117</b>	<b>256</b>	<b>3.05</b>	<b>2.84</b>	<b>4.36</b>	<b>22.7</b>
<b>Total Reserves</b>		<b>1,117</b>	<b>256</b>	<b>3.05</b>	<b>2.84</b>	<b>4.36</b>	<b>22.7</b>

The Ore Reserve Estimate has also been assessed by each level of the mine as shown in Table 10.

Table 10. Ore Reserve Estimate by Level as at 30 June 2018

RL	Tonnes (Kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
255						
285	32	229	3.97	1.84	1.62	10.9
310						
335						
360						
385	58	243	4.20	1.62	2.05	10.4
410	35	288	2.35	4.40	5.69	56.0
435	89	202	1.66	2.92	4.57	25.2
460	88	251	2.45	3.28	5.13	26.3
485	134	249	2.74	3.03	4.60	20.9
510	212	267	3.10	2.83	4.88	21.6
535	181	249	2.75	2.84	4.73	22.1
560	113	291	3.67	3.13	4.44	26.5
585	69	258	2.88	3.27	4.44	26.5
615	83	268	4.05	2.15	3.33	15.4
640	23	281	5.25	1.51	1.61	12.8
Grand Total	1,117	256	3.05	2.84	4.35	22.7

## ORE RESERVE CLASSIFICATION

The Ore Reserve Estimate is based on the Mineral Resource classification of Measured and Indicated only. Material classified as Measured and Indicated Resource is converted to a Probable Reserve. It is the competent person's view that the classification used for the Ore Reserve Estimate is appropriate.

A long section of the Hera Mine Mineral Resource classifications overlaid on the Ore Reserves is shown in Figure 3.

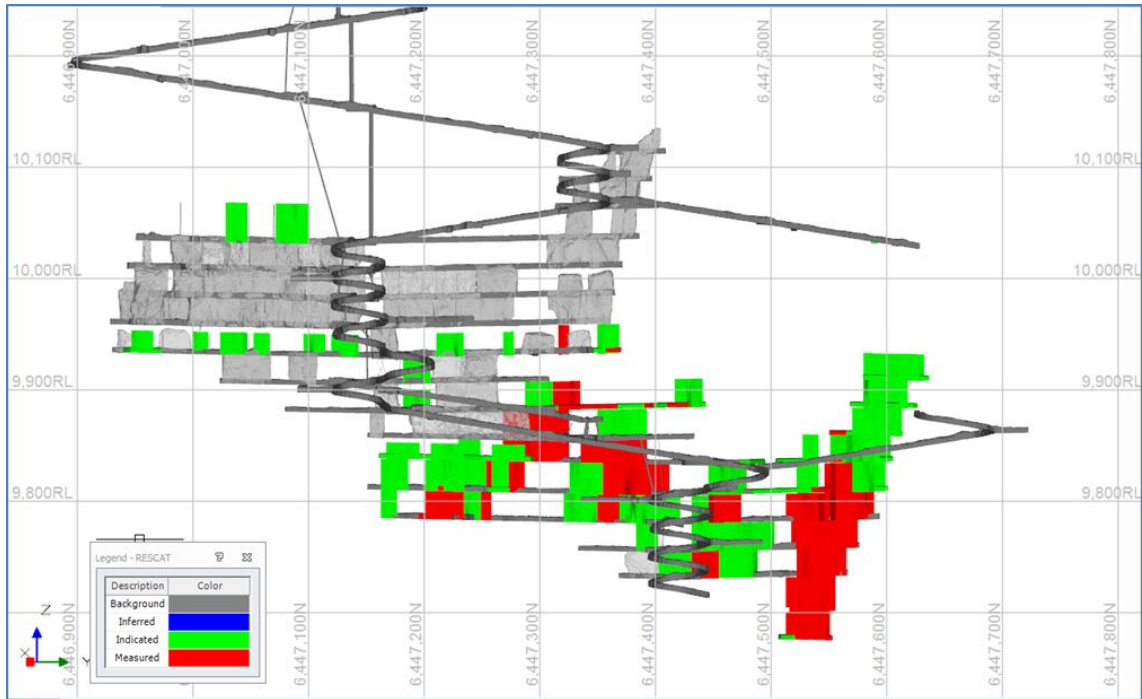


Figure 3. Hera Mine Ore Reserve June 2018 Long Section

### MINING METHOD REVIEW AND ASSUMPTIONS

The mining method provided for estimating the Ore Reserves is sublevel bench and fill stope progressing bottom up in 100m vertical panels.

A schematic of the mining method is shown in Figure 4. Bench and Fill Mining Method.

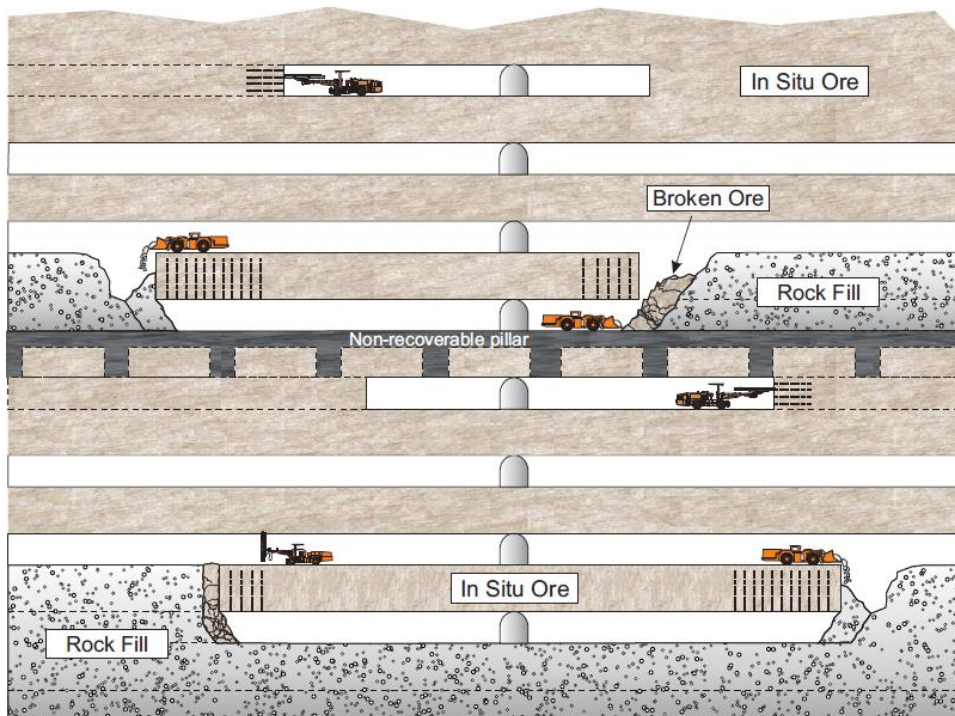


Figure 4. Bench and Fill Mining Method

Sill pillars are every 100m vertically with an open stoping method adopting a yielding pillar above and between the previously filled panels.

Level access is via the hangingwall (east) decline and the decline has a standoff of 50m from the ore body. The decline face is currently 620m vertically below surface and the sublevels are spaced vertically at 25m.

Stopes are typically 30m long, 25m high and 8m wide. Stopes are demonstrating stable characteristics up to a hydraulic radius of 7.5m or approximately 30m along strike.

On review, bench stoping has provided:

- Greater safety
- Less dilution
- Reduced ore loss in pillars,
- Reduced risk from rock fall and damage to equipment
- Reduced oversize and
- Reduced ground support

This Ore Reserve Estimate has been based exclusively on the bench stoping method and sill pillar uphole stoping.

### **MINIMUM MINING WIDTH**

The minimum mining width (MMV) of 3m was based on the production drill rig and development size. The equipment provided in the mining contract allows development down to 4m in width. Stope drilling is possible to 3m in width.

### **STOPE RECONCILIATION & ORE RECOVERY**

On review of the Cavity Monitoring System (CMS) data provided on all bench stoping, the dilution reconciliation over the last 12 months has shown that the 0.5m of dilution used in the ore reserve process for east and west walls has been maintained.

Over the past two years, the trend has been a reduction of overbreak to 12% and reduction of underbreak to 10%. The other area for potential ore loss occurs when ore is left behind from firing onto the rill of the mullock fill. This loss has been estimated as negligible after controls put in place such as; fibrecruting the waste rill, installing waste pods into the open stope on the waste rill, marking the distance to the waste rill on the wall for loader operators and continual CMS monitoring as the fired tonnes are depleted.

Originally, the main causes for underbreak stemmed from poor drilling accuracy and tight firing which mainly occurs on the first lift of a wide orebody. Several design changes have been put in place to remedy this underbreak. Firstly, the production drilling has been modified to 89mm tube drilling from 76mm speed rod drilling. This has seen a major improvement in drill hole accuracy. The last of the 76mm drill holes were fired in early 2017. Secondly, development drives are now centred in the wider orebodies providing reduced burdens for production blast holes.

Under these revised operating conditions, the expected ore loss is estimated to be approximately 5% or a recovery of ore of 95% for bench stopes. A 90% recovery factor has been applied to the sill pillar extraction due to the inherent nature of the ore recovery method. The recovery is estimated based on the tonnage of ore blocks.

### **RESERVE STOPE SHAPE METHODOLOGY**

The stopes were created by applying the Stope Shape Optimiser (SSO) software in Deswik CAD to the 2018 Mineral Resource model (BM\_1803\_D1, 12/03/18) which was completed in Micromine by H&S Consultants (H&SC) under guidance by Adam McKinnon. The block model was converted to Datamine format to enable the SSO process to run.

The parameters used to create the initial stope shapes were:

- All Mineral Resource categories included
- 25m level interval, designed to 1 in 50 graded floors
- 5m strike length
- MMW of 3m
- Minimum dip of 60 degrees
- Minimum waste pillar between parallel stopes of 5m
- \$160/t NSR cut-off applied to create initial 5m shapes
- An external stope dilution of 0.5m to the east and west walls were applied to each 5m shape.
- The SSO process looks at the smallest mineable unit (SMU) of 5m long, 25m high, and a MMV of 3m.

The SMU is used as a starting shape and evaluated across the orebody until it finds an area with a SMU head grade above \$160/t. It then applies a 0.5m skin and evaluates the slice to determine if it is above

cut-off. If it is then it adds it to the SMU and continues across the orebody. Where a slice is below a cut-off of \$160/t it is flagged as waste and not included. If the waste slice is greater than 5m wide it is then left as a pillar. If it is less than 5m and has some high grade that carries above cut-off it is then included in the stope. A graphical explanation is shown in Figure 5.

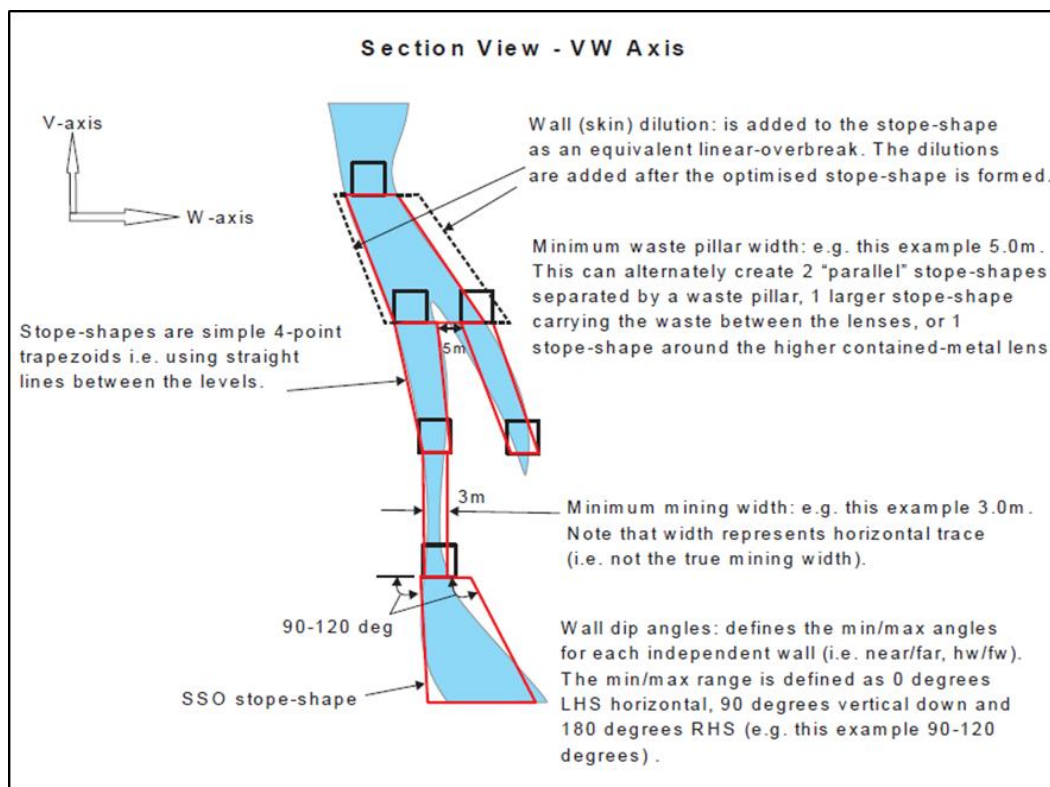


Figure 5. Stope Shape Optimiser Process

The SSO process creates practical shapes but is always evaluating a slice to ensure it is above a cut-off of \$160/t. The final process adds the 0.5m dilution to both side walls and does the final evaluation to ensure the diluted stope is above cut-off. The east and west external dilution consists of 151kt (14%) of the Ore Reserve Estimate.

The final stope shapes were created by combining the 5m SSO shapes together where there was stope continuity. Stopes were designated as bench stopes with fill or sill pillar stopes. Where the bases of stopes were created by the rockfill of the stopes below an allowance of 150mm across the entire stope floor was included as rockfill floor dilution.

All bench stopes, excluding the initial 30m stope for each mining area, would be firing the ore against the rockfill of the adjacent filled stope. An allowance of 300mm of rockfill wall dilution was included over the entire end wall of the stope.

A total of 8kt (1%) of rockfill floor and wall dilution is included in the ore reserve.

### NET SMELTER RETURN (NSR)

The Hera mine has a polymetallic ore source of gold, silver, lead and zinc, hence, a net smelter return (NSR) has been used to estimate the value of the ore net of all costs after it leaves site. This includes road freight, port storage, ship loading, sea freight, treatment charges and royalties. The revenue from the smelter is also net of payable metal and smelter penalties.

The NSR is calculated using the following formula:

$$NSR = [Metal\ grade \times\ expected\ metallurgical\ recovery \times\ expected\ payability \times\ metal\ price] - [concentrate\ freight\ and\ treatment\ charges,\ penalties\ and\ royalties]$$

Metal recoveries have been taken from operating experience and near term operating targets. Metal prices have been based on consensus forecasts.

The metallurgical recoveries for the Ore Reserve Estimate are predicated on the existing Hera ore processing facility with a nominal throughput rate of 430ktpa. It incorporates gravity, flotation and a concentrate leach circuit to produce a gold and silver doré and a 55% Pb+Zn concentrate.

All metallurgical assumptions have been provided by Hera Processing personnel.

*Table 11. NSR Reserve Assumptions June 2018*

<b>Metal</b>	<b>Unit</b>	<b>AU(\$)</b>	<b>US(\$)</b>	<b>Recoveries</b>
Au	Oz	1,605	1,220	90%
Ag	Oz	22	17.00	90%
Zn	t	3,421	2,600	90%
Pb	t	3,000	2,280	91%

The AUD/USD exchange rate is set at 0.76

The Hera Mine has in place life of mine concentrate sales agreements.

Appropriate royalties have been applied and the Gold and Silver doré products are shipped to a receiving mint for refining under a refining agreement.

#### **CUT OFF VALUES**

The Hera mine uses three main cut off values depending on what costs are attributable to each activity. The full breakeven cut off value includes the sustaining capital of the mine and processing, all mine operating costs including development, drill and blast, bogging, haulage, filling, processing and administration.

The stoping cut off value includes:

- Drill and blast
- Loading and Haulage (incl. backfill)
- Processing and administration.

The development cut off value includes processing and administration as it is assumed to be on surface. The costs were based on the average of the past two years from June 2016 to June 2018 and description of each of the cut off values for development ore described below in Table 12.

*Table 12. Cut-off Values used to Estimate the Hera Ore Reserve*

<b>Activity</b>	<b>Description</b>	<b>Cut off Value</b>
Full Cut Off Stopes	All stopes are designed to this full cut-off ensuring that most ore pays for the full site costs on a unit basis.	\$160 NSR
Development	Send to ROM as ore, equal to Stope source.	>\$160 NSR
	If development is required regardless of grade, between these cut off values, it will be sent to ROM and stockpiled for treatment at the end of the mine life and/or processed only if there is no other ore left on the ROM.	\$120 - \$160 NSR
	If development is required regardless of grade, between these cut off values, it will be stockpiled underground for treatment at the end of the mine life.	\$80 - \$120 NSR
	Sent to waste	<\$80 NSR

The 2018 Mining Inventory with an NSR cut off value of \$160 are shown below in Figure 6.

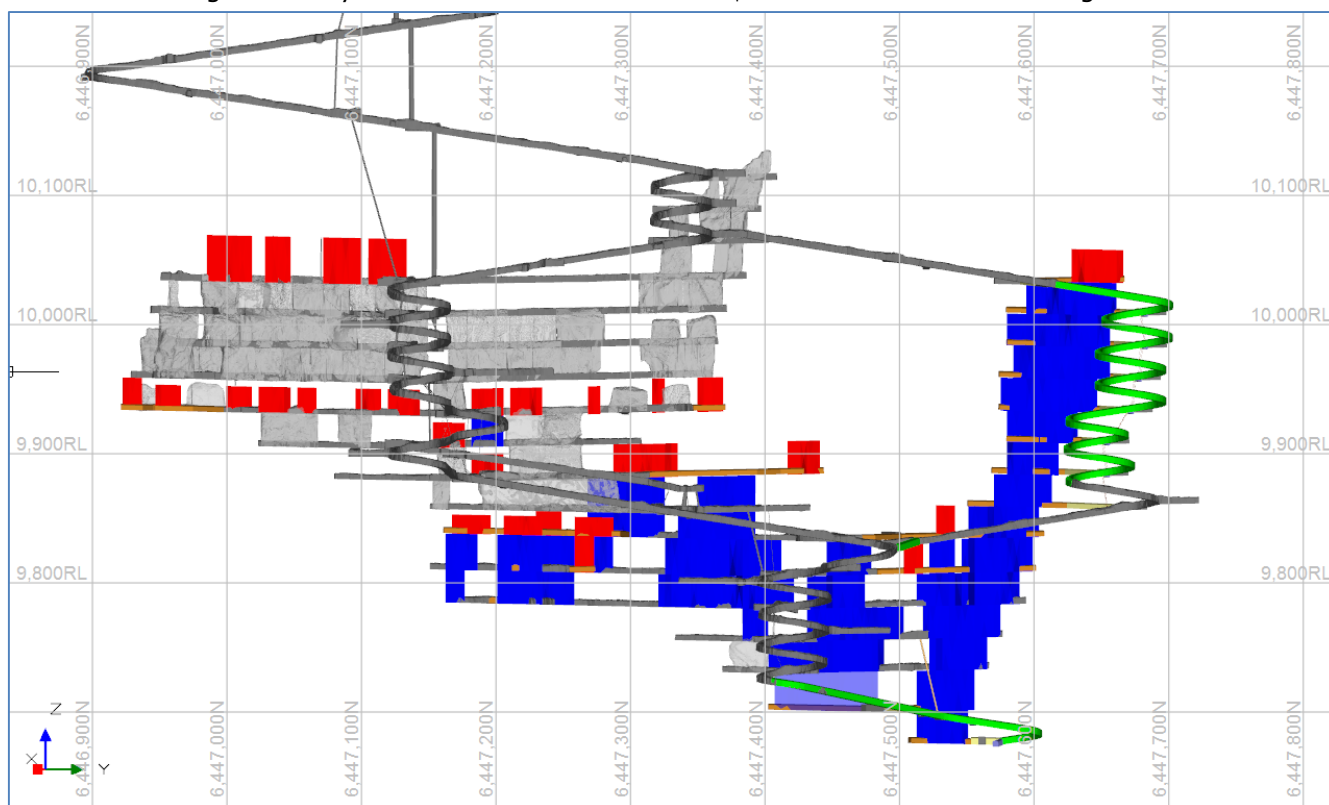


Figure 6. 2018 Mining Inventory at \$160 NSR Cut off

### MINERAL RESOURCE ESTIMATE

The Ore Reserve Estimate is based on the Hera Mineral Resource Estimate completed by Adam McKinnon and H&SC and is shown in Table 13. The Mineral Resource block model (BM\_1803\_D1, 12/03/18) was finalised on 30 May 2018.

Table 13. Hera Mine Mineral Resources as of 30 June 2017 with NSR \$120/t cutoff

Classification	Tonnes (Kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)
Measured	1,007	248	2.60	2.70	4.20	20.0
Indicated	951	228	2.70	2.10	3.20	17.0
Inferred	558	239	1.70	3.50	4.70	51.0
<b>Total</b>	<b>2,516</b>	<b>238</b>	<b>2.44</b>	<b>2.65</b>	<b>25.7</b>	<b>0.10</b>

# based on metal prices higher than the long term Ore Reserve Estimate metal prices

### CONVERSION OF RESOURCES TO RESERVES

The Mineral Resource Estimate, including Inferred Resources as reported at 30 May 2018, is 2,516,000t which contains a mining inventory of 1,463,000t as shown in Table 14.

The mining inventory contains Inferred Resources which have had mining modifying factors applied. The tonnage conversion rate of Mineral Resources to Mining Inventory is 58%.

Table 14. Hera Mine Mining Inventory as at 30 June 2018 with NSR \$160/t Cut-Off

Category	Tonnes (kt)	NSR (A\$/t)	Au (g/t)	Pb (%)	Zn (%)	Ag (g/t)	Cu (%)
Probable Reserve	1,117	256	3.05	2.84	4.36	22.7	0.12
Mining Inventory	345	265	1.82	4.21	5.62	62.1	0.10
<b>Total</b>	<b>1,463</b>	<b>258</b>	<b>2.76</b>	<b>3.16</b>	<b>4.65</b>	<b>32.0</b>	<b>0.12</b>

The 1,117,000t of Probable Ore Reserve is reported from Measured and Indicated Mineral Resources of 1,958,000t for a tonnage conversion rate of 57%.

It is important to note that both the Mineral Resource Estimate and the Ore Reserve Estimate were bounded by mineable shapes.

The two key components for the Mineral Resource to Ore Reserve conversion rates are:

- The Mineral Resource Estimate uses higher metal prices than the Ore Reserve Estimate
- The Mineral Resource Estimate uses a lower cutoff value than the Ore Reserve Estimate

One of the most significant differences between the June 2017 and current estimates is the increase in Measured Resources and a decrease in Indicated Resources. This upgrade in the classification is largely due to additional drilling in Far West, Far West Lower, Main North and North Pod.

There are numerous other small differences between the two estimates such as changes to mineralised domain wireframes and slight changes to the NSR parameters, but these are unlikely to have significantly influenced the global resource estimates.

#### METAL PRICES FOR RESOURCE ESTIMATE

The Net Smelter Return (NSR) for Mineral Resource Estimate provides a higher value of ore in the block model compared to the Ore Reserve Estimate as shown in Table 15.

Table 15. Hera Mine Metal Prices

Metal Price	Unit	Reserves	Resources
Gold	A\$/oz	1,605	1,892
Silver	A\$/oz	22.0	25.0
Zinc	A\$/tonne	3,421	3,514
Lead	A\$/tonne	3,000	3,081
Exchange Rate	\$US:\$AUD	0.76	0.74

The Mineral Resource Estimate has been estimated with higher metal prices in line with 2012 JORC Code stating that:

*A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are **reasonable prospects for eventual economic extraction.***

It is reasonable to state that metal prices stated under the Mineral Resource Estimate section have been achieved in the past and have reasonable prospects of being achieved in future based on the Hera Mine Life.

For comparison, the average NSR head grade of the Mineral Resource Measured and Indicated estimate is \$238/t and the Ore Reserve Estimate is \$256/t.

## CUT-OFF VALUES FOR RESOURCE AND RESERVE ESTIMATES

Table 16. Cut-off Values

	Unit	Ore Reserves	Mineral Resources
NSR Cut-off	\$/t	\$160	\$120

The Ore Reserve Estimate has been based on a cut-off value of \$160/t which includes full costing as outlined in Section 9.

The Mineral Resource Estimate has been based on a cut-off value of \$120/t which includes stoping, bogging, trucking, processing and administration. Development costs and sustaining capital have been excluded. The rationale behind the incremental cut-off for the Mineral Resource Estimate is based on a number of scenarios which could make Mineral Resources profitable at this \$120/t NSR cut-off.

They are:

1. Development stops in the mine.
2. Stope shapes are smoothed in the design process and material that could fall off within the stope is designed as part of the extracted stope. This material is based on a NSR greater than \$120/t.
3. The mill may potentially run empty which could justify supplying ore to maximise mill throughput based on variable costs only.

The metal pricing and the cost structure create potential opportunities and reasonable prospects for Mineral Resources to be converted to Ore Reserves in the future.

Every isolated stoping area which required excess development was assessed to ensure that the stopes were economic taking into consideration the additional access development. No stoping areas created in the SSO process had to be excluded.

The development cut-off value of \$80/t includes processing and administration as it is assumed to be on surface.



The following graph (Figure 7) shows the 1,117,000t of Probable Ore Reserve tonnes and NSR head grade at various NSR cut off bins. The ore between \$80/t and \$160/t is the ore development that is required to access the stoping areas.

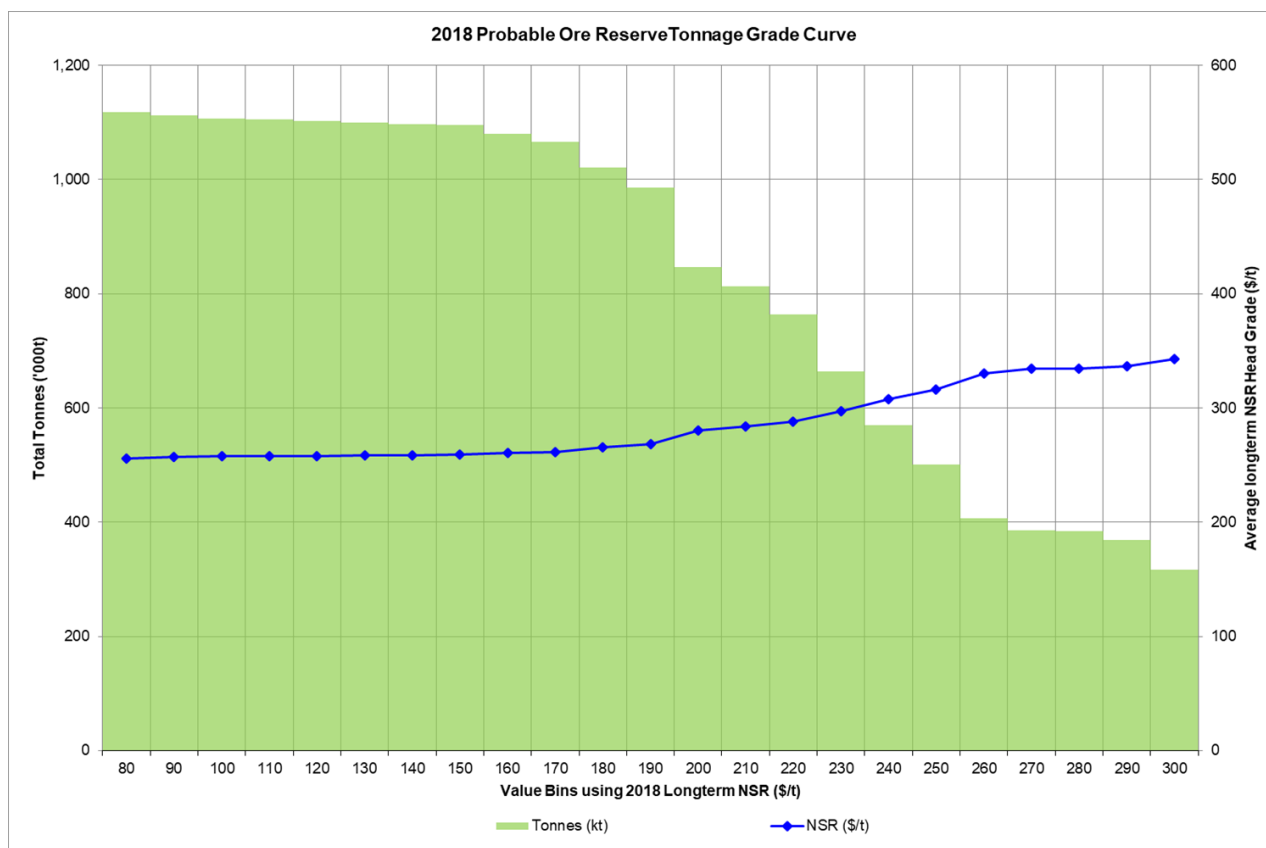


Figure 7. 2018 Probable Ore Reserve Tonnage Grade Curve

## COMPARISON TO 2017 ORE RESERVES

A comparison has been done between the 2018 and 2017 Ore Reserves. This includes the 406,234t mined between the June 2017 Ore Reserve statement and the July 2018 Ore Reserve statement (depletion).

The only shift in Metal prices in used for the 2018 Ore Reserves is the price of lead, which increased by 6% as shown in Table 17.

Table 17. Metal Price Comparison for Ore Reserves 2017 to 2018

Metal Price	Unit	2017 Ore Reserves	2018 Ore Reserves	Change to 2017 Ore Reserve
Gold	A\$/oz	1,605	1,605	0%
Silver	A\$/oz	22.40	22.40	0%
Zinc	A\$/tonne	3,421	3,421	0%
Lead	A\$/tonne	2,829	3,000	6%

There has been no change to the mill recoveries and concentrate grades since 2017 so these have remained unchanged for the NSR estimations.

The zinc treatment charges have reduced for the 2018 Ore Reserves.

The 2018 Ore Reserve cut-off has remained at \$160/t NSR.

The results of the changes can be seen in the waterfall graphs below.

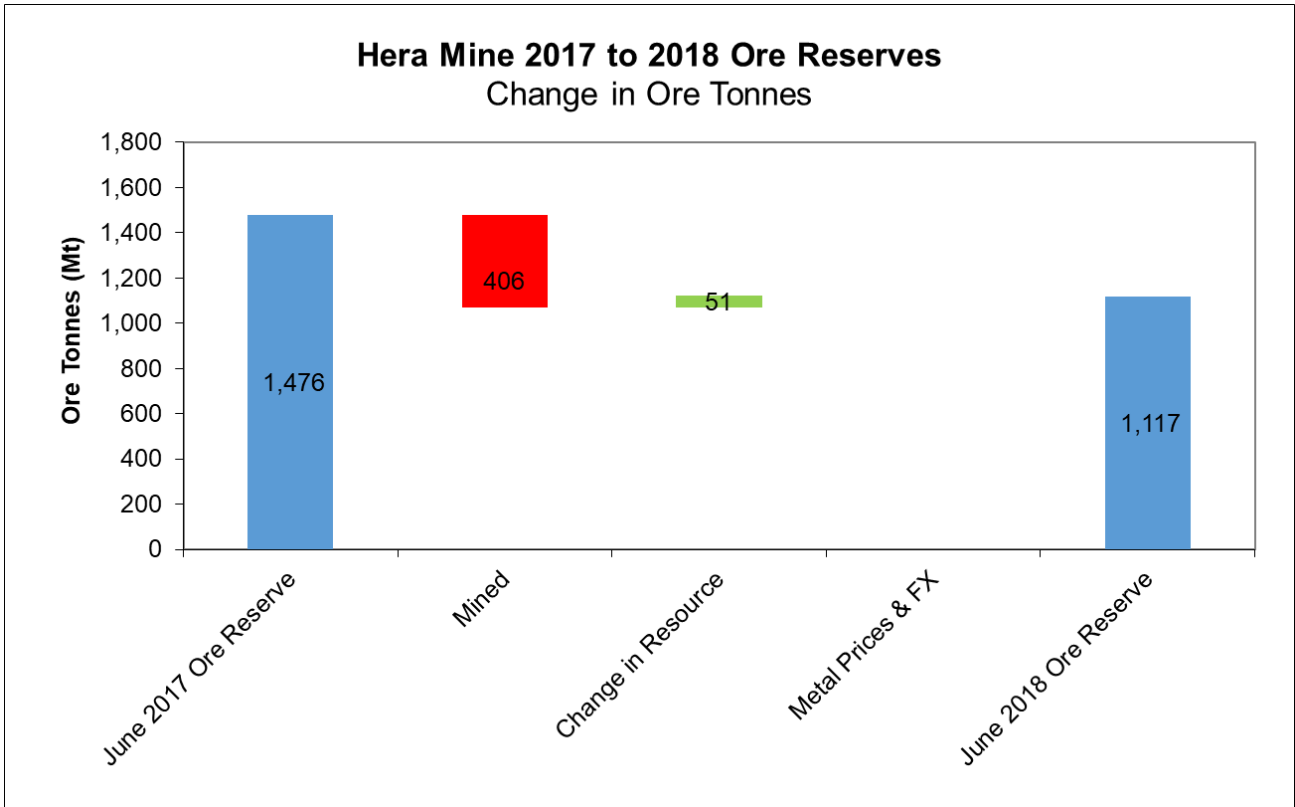


Figure 8. 2017 to 2018 Ore Reserves – Change in Ore Tonnes

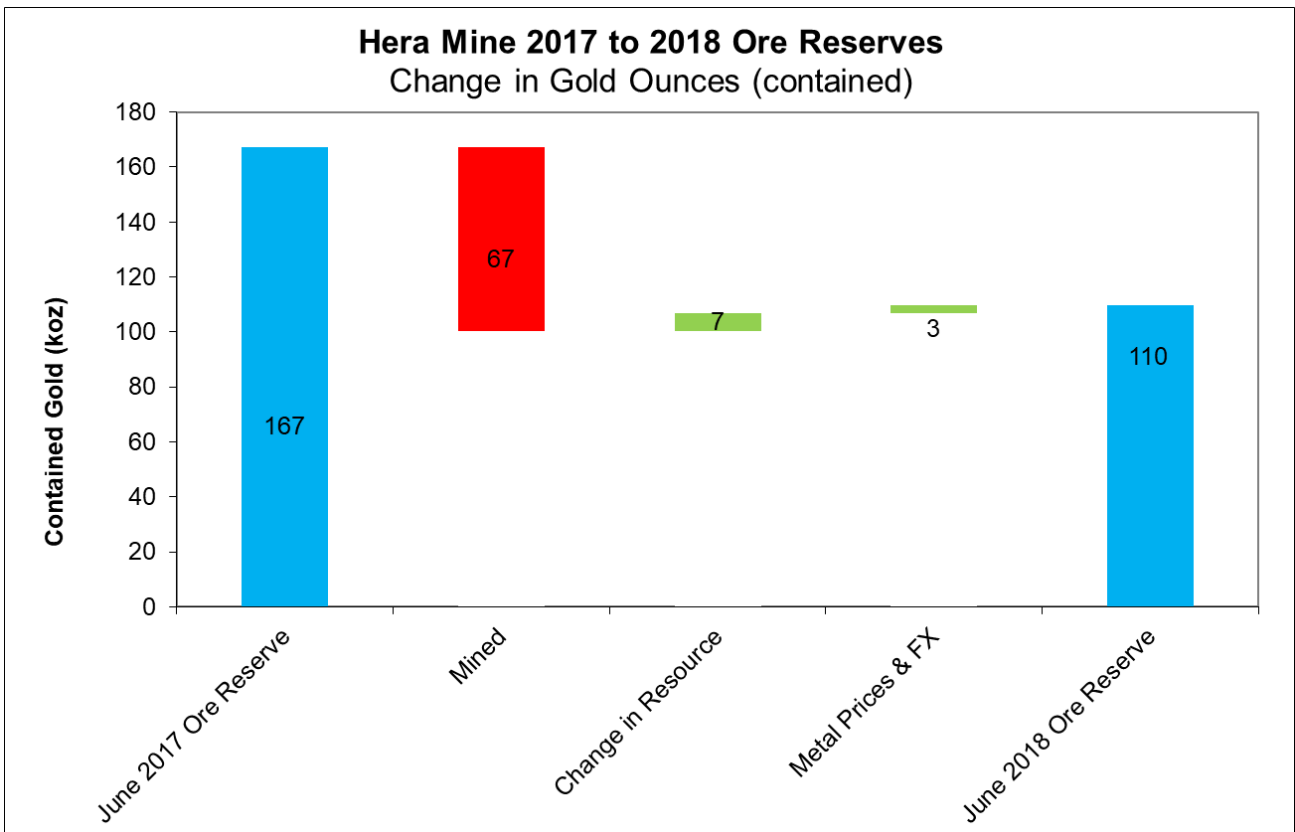


Figure 9. 2017 to 2018 Ore Reserves – Change in Gold Ounces (Contained)

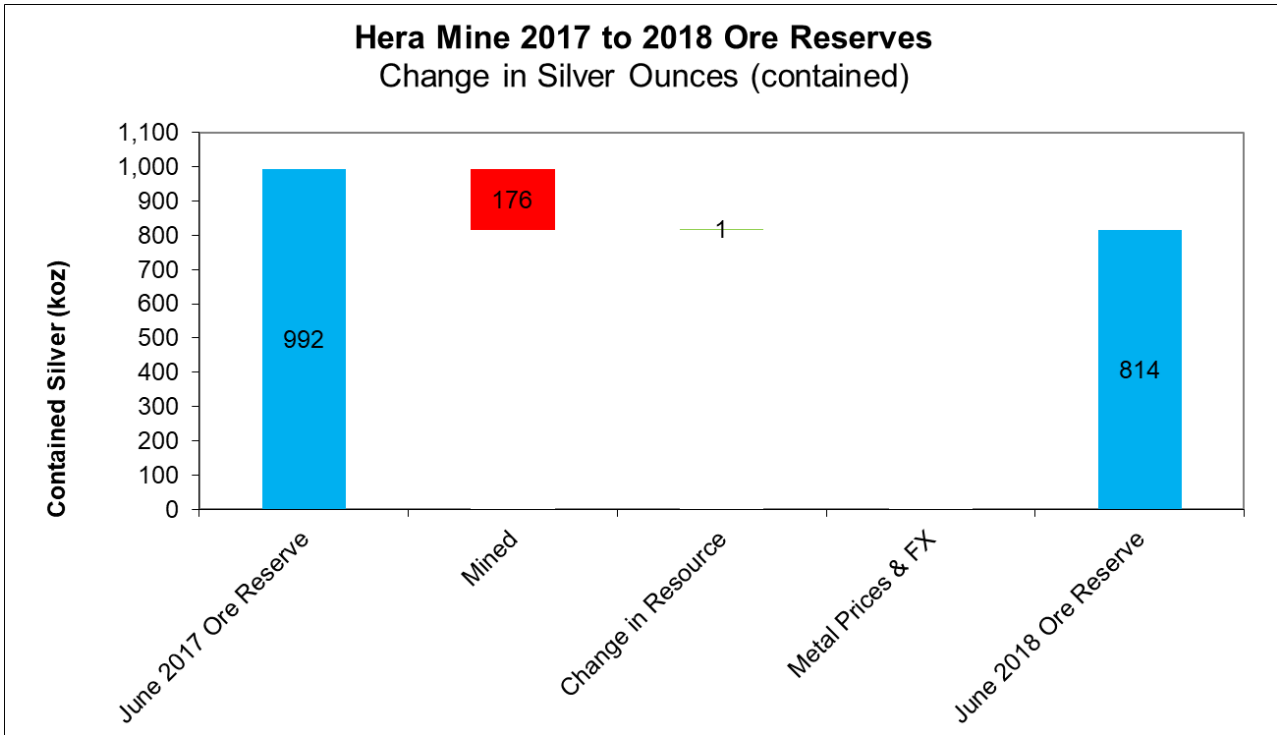


Figure 10. 2017 to 2018 Ore Reserves – Change in Silver Ounces (Contained)

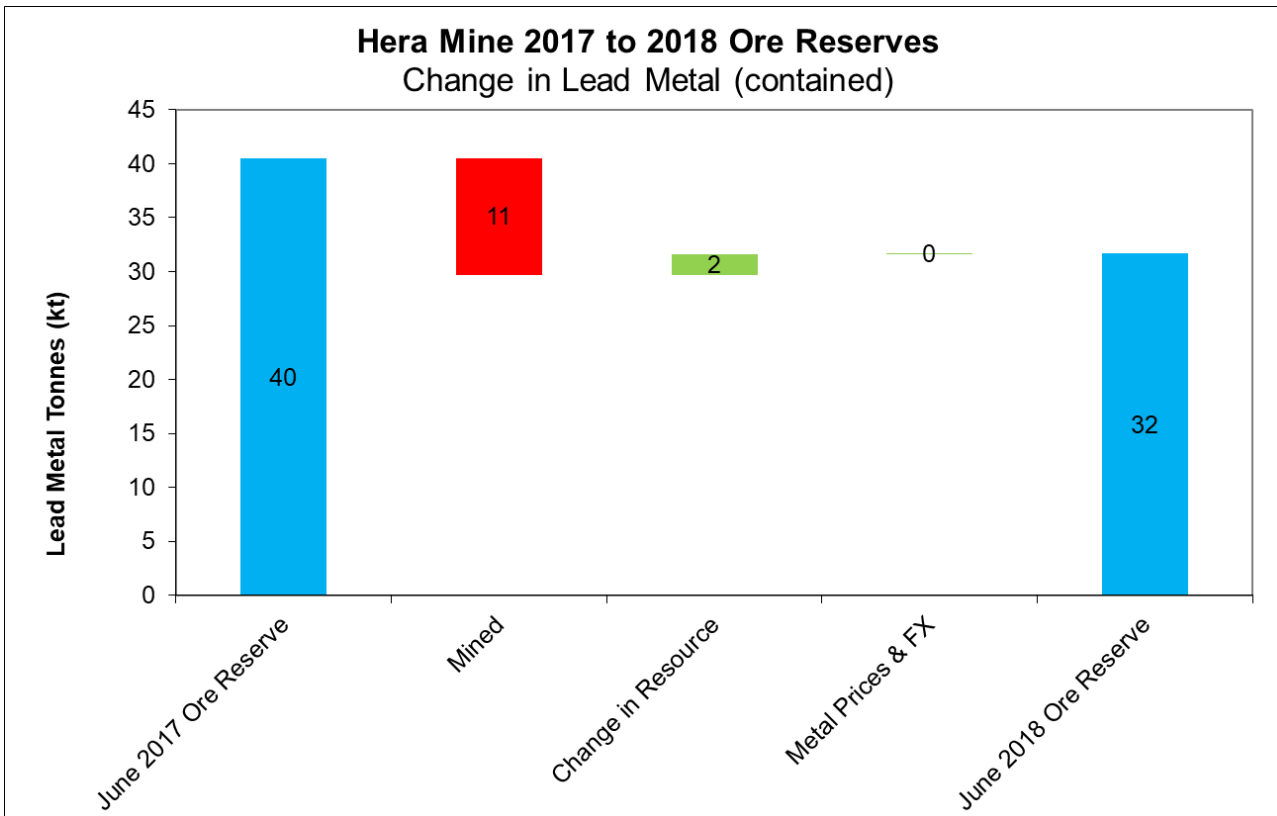


Figure 11. 2017 to 2018 Ore Reserves – Change in Lead Metal (Contained)

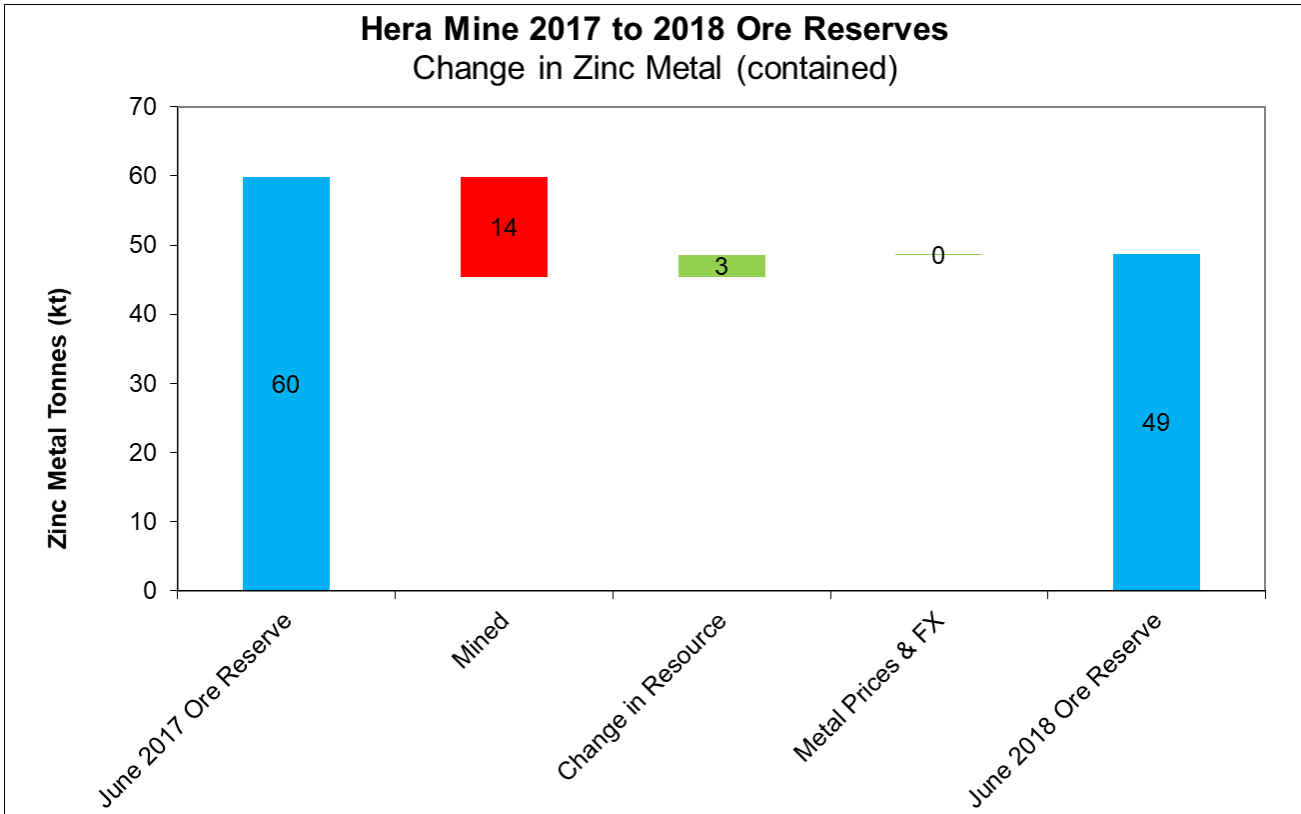


Figure 12. 2017 to 2018 Ore Reserves – Change in Zinc Metal (Contained)

#### NOTES ON AUTHOR AND OTHERS

Anthony Allman, from ANTCIA Consulting Pty Ltd, has assisted Hera Mine in the preparation of the stope designs, mine designs, sensitivity analysis and scheduling of the 2016 Hera Mine Ore Reserve Estimate. Anthony has worked at polymetallic mines at Mt Isa Mines and similar mining methods at Renison Tin mine and Kanowna Belle Gold mine. Anthony also has 20 years of consulting experience, ranging from technical studies and reviews, mine planning assistance and preparation of Ore Reserve Estimate. Anthony is a mining engineer with a BE Min Eng obtained at the University of NSW and has worked in underground hard rock mines since 1990 with over 27 years' experience. Anthony is a chartered professional and member of the AusIMM (107189), and also a registered professional engineer of Queensland (10138).

The Ore Reserve Estimate was compiled by Rebecca Roper, the Mining Engineer at Hera Gold Mine. Rebecca has worked at polymetallic mines including Olympic Dam and Hera Gold Mine. She has also worked at porphyry (Ridgeway and Cadia East) and epithermal gold (Gosowong) deposits. Rebecca is a mining engineer with a BE Mining Eng (Hons) obtained at the University of NSW and has worked in underground hard rock mines since 2001 with 17 years' experience. The Ore Reserve Estimate was produced on site.

Rebecca has sufficient experience which is relevant to the style of mineralization, type of deposit and mining method under consideration and to the activity which she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Rebecca is a member of the AusIMM (310221) and also holds a NSW Mining Engineering Manager Certificate.

## REFERENCES

**JORC Code 2012 (Table 1)** - Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. AusIMM.

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	Sampling is by sawn half core of HQ, NQ, LTK60 core or quarter PQ core. Nominal sample intervals are 1m with a range from 0.5m to 1.5m. From April 2016, all underground delineation drilling (NQ) utilised whole of core sampling. Samples are transported to ALS Geochemistry Orange for preparation and assay. Since April 2016, a whole core sampling regime has been employed for many of the underground infill holes for larger sample sizes and improved accuracy, particularly for gold.
	<ul style="list-style-type: none"> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> </ul>	Assay standards or blanks are inserted at least every 15 samples. Silica flush samples are employed after each occurrence of visible gold. During resource drill out programmes duplicate splits of the coarse reject fraction of the crushed core are assayed every 20 samples
	<ul style="list-style-type: none"> <li><i>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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<p>Diamond drilling was used to obtain core samples of nominally 1m, but with a range between 0.5-1.5m. Core samples are cut in half, dried, crushed and pulverised to 85% passing 75 microns. This is considered to appropriately homogenise the sample. 30g fire assay with AAS finish, (Method Au – AA25) with a detection level of 0.01ppm. For Base Metals a 0.5g charge is dissolved using Aqua Regia Digestion (Method ICP41-AES) with detection levels of: Ag-0.2ppm, As-2ppm, Cu-1ppm, Fe-0.01%, Pb-2ppm, S-0.01%, Zn-2ppm. Overlimit analysis is by OG46- Aqua Regia Digestion with ICP-AES finish. Where specified, coarse gold samples greater than 0.5g/t were reassayed by screen fire assay (Method Au-SCR22AA) using the entire sample. Since April 2016, whole core is used as a representative sample and the determination of the mineralisation in the material is as above. Coarse gold samples greater than 0.2g/t are re-assayed by screen fire assay (method Au-SCR22AA) to improve representivity of gold assays. The method used is:</p> <p>For samples up to 2kg screen the entire sample  For samples between 2-4kg screen with 1 riffle split  For samples &gt; 4kg samples screen with 2 riffle splits</p> <p>The sub-splits from the pulp residue are split using a riffle splitter to obtain the most representative sub-split possible. As the splitters generate a 50:50 split, the exact weight of sample used is based on the starting weight of the sample.</p>

<p><b>Drilling techniques</b></p>	<ul style="list-style-type: none"> <li>• 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.).</li> </ul>	<ul style="list-style-type: none"> <li>• Drilling is by diamond coring. Surface holes generally commence as PQ core until fresh rock is reached. The PQ rods are left as casing thence HQ or NQ coring is employed. Underground holes are LTK60 or NQ-sized drill core from collar. A small number of RC holes are also included in the present resource estimate.</li> </ul>
<p><b>Drill sample recovery</b></p>	<ul style="list-style-type: none"> <li>• Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>• Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Measured core recovery against intervals drilled is recorded as part of geotechnical logging. Recoveries are greater than 95% once in fresh rock. Recovery in the limited number of RC holes was estimated visually. No detailed assessment of RC chip recovery has been conducted.</li> <li>• Surface holes use triple tube drilling to maximise recovery. Underground LTK60/NQ core is double tube drilling.</li> <li>• The relationship between sample recovery and grade has not been assessed.</li> </ul>
<p><b>Logging</b></p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>• The total length and percentage of the relevant intersections logged.</li> </ul>	<p>Systematic geological and geotechnical logging is undertaken. Data collected includes:</p> <ul style="list-style-type: none"> <li>• Nature and extent of lithologies.</li> <li>• Relationship between lithologies.</li> <li>• Amount and mode of occurrence of ore minerals.</li> <li>• Location, extent and nature of structures such as bedding, cleavage, veins, faults etc.</li> <li>• Structural data (alpha &amp; beta) are recorded for orientated core.</li> <li>• Geotechnical data such as recovery, RQD, fracture frequency, qualitative IRS, microfractures, veinlets and number of defect sets. For some geotechnical holes the orientation, nature of defects and defect fill are recorded.</li> <li>• Bulk density by Archimedes principle at regular intervals.</li> <li>• Magnetic susceptibility recorded at 1m intervals for some holes as an orientation and alteration characterisation tool.</li> <li>• Both qualitative and quantitative data is collected. All core is digitally photographed</li> <li>• 100% of all recovered core and chips are geologically and geotechnically logged.</li> </ul>
<p><b>Sub-sampling techniques and sample preparation</b></p>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether Quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or</li> </ul>	<ul style="list-style-type: none"> <li>• Core is sawn with half core submitted for assay. Sampling is consistently on one side of the orientation line so that the same part of the core is sent for assay. PQ core is ¼ sampled. Since April 2016, entire cores have been sent for assay to improve representivity, especially for gold.</li> <li>• RC chips have generally been dry riffle split</li> </ul>

	<p><i>dry.</i></p> <ul style="list-style-type: none"> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples are dried crushed and pulverised to 85% passing 75 microns. This is considered to appropriately homogenise the sample to allow subsampling for the various assay techniques.</li> <li>• The use of Certified Standard Reference Materials and blanks are inserted at least every 15 samples to assess the accuracy and reproducibility. Silica flush samples are employed after each occurrence of visible gold. The results of the standards are to be within <math>\pm 10\%</math> variance, or 2 standard deviations, from known certified result. If greater than 10% variance the standard and up to 10 samples each side are re-assayed. ALS conduct internal check samples every 20 samples for Au and every 20 for base metals. These are checked by Aurelia employees. Assay grades are compared with mineralogy logging estimates. If differences are detected a re-assay can be carried out by either: <math>\frac{1}{4}</math> core of the original sample interval, re-assay using bulk reject, or the assay pulp. Submission of pulps, and coarse rejects to a secondary laboratory (Genalysis, Intertek, Perth) to assess any assay bias.</li> <li>• Second-half sampling is occasionally undertaken. Core samples are cut in <math>\frac{1}{2}</math> for down hole intervals of 1m, however, intervals can range from 0.5-1.5m. This is considered representative of the in-situ material. The sample is crushed and pulverised to 85% passing 75 microns. This is considered to appropriately homogenise the sample. Rejects are occasionally re-assayed to for variability.</li> <li>• Sample sizes are considered appropriate. If visible gold is observed in surface drilling, gold assays are undertaken by both a 30g fire assay and a screen fire assay using a larger portion of the sample (up to several kg).</li> </ul>
<p><b>Quality of assay data and laboratory test</b></p>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory</i></li> </ul>	<ul style="list-style-type: none"> <li>• Standard assay procedures performed by a reputable assay lab (ALS Group) were undertaken. Gold assays are initially by 30g fire assay with AAS finish, (method Au-AA25). Ag, As, Cu, Fe, Pb, S, Zn are digested in aqua regia then analysed by ICPAES (method ME-ICP41). Comparison with 4 acid digestion indicate that the technique is considered total for Ag, As, Cu, Pb, S, Zn. Fe may not be totally digested by aqua regia but near total digestion occurs.</li> <li>• Not applicable as no geophysical tools were used in the determination of assay results. All assay results were generated by an independent third party laboratory as described above.</li> <li>• Certified reference material or blanks are inserted at least every 15 samples. Standards are purchased from Certified Reference Material manufacture companies: Ore Research and Exploration, Gannet Holdings Pty Ltd and Geostats Pty Ltd. Standards were purchased in foil lined packets of between 60g and 100g. Different reference materials are used to cover high grade, medium grade and low grade ranges of elements: Au, Ag, Pb, Zn Cu, Fe, S and As. The standard names on the foil packages were erased before</li> </ul>

	<p>checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</p>	<p>going into the pre numbered sample bag and the standards are submitted to the lab blind.</p>
<p><b>Verification of sampling and assaying</b></p>	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> </ul>	<ul style="list-style-type: none"> <li>• The raw assay data forming significant intercepts are examined by at least two company personnel.</li> <li>• Twinned holes have been used in various sections of the Hera orebody but have not been in the reported area as this work is intended to test areas not previously explored.</li> <li>• Drill hole data including meta data, orientation methods, any gear left in the drill hole, lithological, mineral, structural, geotechnical, density, survey, sampling and occasionally magnetic susceptibility is collected and entered directly into an excel spread sheet using drop down codes. When complete the spreadsheet is emailed to the geological database administrator, the data is validated and uploaded into an SQL database.</li> <li>• Assay data is provided by ALS via .csv spreadsheets. The data is validated using the results received from the known certified reference material. Using an SQL based query the assay data is merged into the database. Hard copies of the assay certificates are stored with drill hole data such as drillers' plods, invoices and hole planning documents.</li> </ul>
<p><b>Location of data points</b></p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• Surface drill hole collars are initially located using hand held GPS to <math>\pm 5m</math>. Upon completion collars are located with differential GPS to <math>\pm 5cm</math>. All underground drill holes are (collar position and dip/azimuth) are picked up by the mine surveyor using a Total Station Theodolite (TST).</li> <li>• Drill holes are downhole-surveyed from collar to the end of hole by drilling personnel using downhole survey tools which include: Eastman, Proshot, Ranger, Reflex, Pathfinder and EZ-Trac. Drill holes are surveyed by single shot camera during drilling at intervals ranging between 15-30m. Surface holes, and select underground holes, are further surveyed after drilling by multishot camera at approximately 6m intervals. All survey data for every hole is checked and validated by Aurelia Metals personnel before entered into database.</li> <li>• All coordinates are based on Map Grid Australia zone 55H</li> <li>• Topographic control is considered adequate. There is no substantial variation in topography in the area with a maximum relief of 50m present. Local control within the Hera and Nymagee Mine areas is based on accurate mine surveys.</li> </ul>
<p><b>Data spacing and distribution</b></p>	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <li>• Whether the data spacing and distribution is sufficient to establish the degree of geological</li> </ul>	<ul style="list-style-type: none"> <li>• Final drill spacing for stope definition drilling ranges between 10-20m spacing within the mineralised structures. Drill spacing away from the main mineralised lodes is generally wider spaced</li> <li>• and dependent on the stage of exploration.</li> </ul>



	<p><i>and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></p> <ul style="list-style-type: none"> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The mineralised lodes reported are currently classified as Inferred, Indicated and Measured consistent with the number of drill holes intersecting the lode and with the classifications applied under the 2012 JORC code.</li> <li>• Sample compositing is not applied.</li> </ul>
<p><b>Orientation of data in relation to Geological structure</b></p>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drilling is orientated to cross the interpreted, steeply dipping mineralisation trend at moderate to high angles. Holes are drilled from both the footwall and hangingwall of the mineralisation. The use of orientated core allows estimates of the true width and orientation of the mineralisation to be made.</li> <li>• No sample bias due to drilling orientation is known.</li> </ul>
<p><b>Sample security</b></p>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security</i></li> </ul>	<ul style="list-style-type: none"> <li>• Chain of custody is managed by Aurelia Metals. Samples are placed in tied calico bags with sample numbers that provide no information on the location of the sample. Samples are transported from site to the assay lab by courier or directly delivered by Aurelia metals personnel</li> <li>•</li> </ul>
<p><b>Audits or reviews</b></p>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data</i></li> </ul>	<ul style="list-style-type: none"> <li>• An audit and review of the sampling regime at Hera was undertaken by H&amp;S Consultants in November 2015. Recommendations from this review form part of the current sampling practices at Hera</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<p><b>Mineral tenement and land tenure status</b></p>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The Hera Deposit along with the Hebe, Zeus and Athena Prospects are located on ML1686. The land comprising ML1686 is part of “The Peak” property with is a perpetual lease held by Hera Resources Pty Ltd (a wholly owned subsidiary of Aurelia Metals). Production of the first 250,000 ounces of gold from the Hera Deposit is subject to a 4.5% royalty payable to CBH Resources Ltd. as part of the purchase of the project. North Pod extends onto ML1746. ML1746, has a surface exclusion of 100m, is directly north and adjoins ML1686. ML1746 is currently granted to Hera Resources Pty Ltd. EL6162, exploration lease surrounding both ML1686 and ML1746, is granted to Hera Resources Pty Ltd</li> <li>ML1686 is a granted mining lease that expires in 2034; ML1746 is a granted mining lease with a 100m surface exclusion, which expires December 2037. EL6162, an exploration lease which surrounds both mining leases expires in November 2018.</li> </ul>
<p><b>Exploration done by other parties</b></p>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The area has a 50 year exploration history involving reputable companies such as Cyprus Mines, Buka, ESSO Minerals, CRAE, Pasminco, Triako Resources and CBH Resources. Previous exploration data has been ground truthed where possible. Historic drill hole collars have been relocated and surveyed. Most of the drill core has been relocated and re-examined and resampled. This is particularly the case in older drilling where Au assays were sparse or non-existent.</li> </ul>
<p><b>Geology</b></p>	<p>Deposit type, geological setting and style of mineralisation.</p>	<ul style="list-style-type: none"> <li>All known mineralisation in the area is epigenetic “Cobar” style. Deposits are structurally controlled quartz + sulphide matrix breccias grading to massive sulphide. In a similar fashion to the Cobar deposits, the Nymagee deposits are located 1km to 3km to the west of the Rookery Fault, a major regional structure with over 300km strike length. The deposits are about the boundary of the Devonian Lower Amphitheatre Group and the underlying Roset Sandstone. Both units show moderate to strong ductile deformation with tight upright folding coincident with greenschist facies regional metamorphism. A well-developed sub vertical cleavage is present.</li> <li>The deposits are located in high strain zones. Metal ratios are variable but there is a general tendency for separate Pb+Zn+Ag±Au±Cu and Cu+Ag±Au ore bodies. These are often in close association with the Pb+Zn lenses lying to the west of the Cu lenses. At Hera Zn is usually more abundant than Pb.</li> <li>Formation temperatures are moderate to high. At Hera the presence of Fe-rich sphalerite, non-magnetic pyrrhotite and cubanite indicates formation temperatures between 350°C and 400°C. Recognised at Hera are quartz + K-feldspar veins, scheelite, and minor skarn mineralogy which suggest a possible magmatic input. Deposit timing is enigmatic. The main mineralisation occurs as brittle</li> </ul>

		<p>sulphide matrix breccias with silicification grading to ductile massive sulphides that crosscut both bedding and cleavage. Recent age dating on micas and galena gives an age of ~385Ma for the Hera deposit.</p>
<p><b>Drill hole Information</b></p>	<ul style="list-style-type: none"> <li>• <i>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:</i> <ul style="list-style-type: none"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable as exploration results are not being reported here.</li> <li>• Not applicable.</li> </ul>
<p><b>Data aggregation methods</b></p>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li>• <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Exploration results are not being reported here. See next section for details of compositing and treatment of grades applied to resource estimation.</li> <li>• Not applicable</li> <li>• No metal equivalences are quoted, although a Net Smelter Return (NSR) is used and discussed in detail in Section 3</li> </ul>
<p><b>Relationship between</b></p>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with</i></li> </ul>	<ul style="list-style-type: none"> <li>• Orientated drill core is used to allow determination of orientation of structures and mineralisation. Orientation of the Hera and Nymagee deposits is well constrained by extensive drilling and mine exposures.</li> </ul>

<b>mineralisation widths and intercept lengths</b>	<p>respect to the drill hole angle is known, its nature should be reported.</p> <ul style="list-style-type: none"> <li>• 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').</li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable to this report.</li> <li>• Not applicable to this report.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• See body of report.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Individual exploration results are not being reported here.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• See body of report.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Exploration drilling for extending the mineralised system at depth and along strike is planned. The exact timing and quantity is yet to be determined.</li> <li>• An infill drill program from underground targeting the Upper North Pod and any potential up dip extensions of mineralisation is planned to occur during the December 2018 quarter. This program will increase the current Upper North Pod resource confidence from Inferred/Indicated to Measured status (refer Fig. 2 above).</li> <li>• Not applicable at this time (see above).</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources - HERA

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

Criteria	JORC Code Explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<p>All geological data is stored electronically with limited automatic validation prior to upload into the secure DataShed database, managed in Orange office by the Senior Geologist – Data Administration. The master drill hole database is located on an SQL server, which is backed up on a daily basis.</p> <p>The drill hole database was provided to H&amp;SC as a series of excel files. H&amp;SC did not modify these tables and any adjustments, such as compositing, were carried out programmatically so a transcript of any changes was recorded and checked.</p> <p>Basic drill hole database validation completed by H&amp;SC include:</p> <ul style="list-style-type: none"> <li>Intervals were assessed and checked for duplicate entries, sample overlaps, intervals beyond end of hole depths and unusual assay values</li> <li>Downhole geological logging was also checked for interval overlaps, intervals beyond end of hole depths and inconsistent data.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>Dr McKinnon, who takes responsibility for the data underpinning the Mineral Resource Estimate, works full time at the Hera Mine and has therefore visited the site on numerous occasions. Dr McKinnon has a thorough understanding of the geology and data on which the Mineral Resource Estimate is based.</p> <p>Rupert Osborn, who takes responsibility for the estimated grades, tonnages and classification has not visited the Hera Mine due to time and cost constraints. Arnold van der Heyden, the Managing Director of H&amp;SC, worked closely with Rupert Osborn throughout this Mineral Resource Estimate and acted as H&amp;SC's internal reviewer. Arnold van der Heyden visited the Hera Mine in November 2015, April 2016 and September 2016. The purposes of these visits was to review and calibrate existing resource estimates.</p>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<p>A purely geological model of the Hera deposit has not been produced as there are no obvious lithological marker units to allow a lithology/stratigraphy model to be constructed.</p> <p>The mineralisation at Hera, indicated by elevated gold, silver, lead, zinc and sulphur grades, appears to be structurally controlled and is associated with shearing, brecciation and quartz veining.</p> <p>Aurelia produced a total of 12 wireframe solids that represent volumes of mineralisation over AUD\$2 NSR. These zones form coherent, sub-parallel, nominally tabular bodies and are well supported by drilling. The highest metal grades tend to occur in the core of each lode with generally gradational boundaries to the country rock; sharp boundaries appear to be uncommon. There is a broad envelope of alteration associated with the mineralisation, which includes the development of sericite, chlorite, silica and pyrrhotite.</p> <p>The low value boundary was suggested to Aurelia by H&amp;SC following a review of an in-house estimate at the end of 2015. H&amp;SC believe that it is important that the threshold for mineralisation is at least one order of magnitude below the economic cut-off grade because otherwise the estimates are likely to be conditionally biased.</p> <p>The twelve solid wireframes representing mineralised domains were treated as hard boundaries during estimation of all elements except arsenic. This means that blocks inside a particular domain were estimated using only data from inside that domain. Blocks and data that lie outside of all of the mineralised domain wireframes were treated as a single additional</p>

		<p>domain. Variogram models were produced for each of the domains with sufficient data and search ellipse orientations were defined for each domain individually.</p> <p>Arsenic mineralisation appears antithetic to gold, silver, lead, zinc mineralisation. A single wireframe solid was created, encompassing the North Pod mineralised zone, to define a zone of enriched arsenic mineralisation. This wireframe was treated as a hard boundary whilst estimating arsenic.</p> <p>Small local variations in the interpretation of the continuity of individual domains are possible but are unlikely to significantly impact the global resource estimate as the interpretation of the domains is well supported by drill hole data and the domain boundary was set at a relatively low grade.</p> <p>Recent work indicates that the mineralisation may be concentrated within a skarn horizon although H&amp;SC is not fully aware of the evidence to support this. This alternative interpretation of the geology is very unlikely to impact estimated resources as mineralised domains are based on zones of elevated assay grades and these zones are unlikely to change due to a change in the deposit genesis model.</p> <p>A fault, observable in underground developments, cross cuts the deposit at the southern end of Main North and is interpreted to off-set Main South by about 25 m to the west.</p>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>The reported resources at Hera span a length of around 800 m and consist of seven en echelon volumes that dip steeply to the west-southwest. The plan width of the resource varies from 2 m to 70 m (including internal low grade zones) with individual stopes reaching up to 25 m wide. The upper limit of the reported estimates occurs at a depth of around 230 m from surface and the lower limit of the resource extends to a depth of 630 m below the surface.</p>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, maximum distance of extrapolation from data points.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> </ul>	<p>The concentrations of gold, silver, lead, zinc, copper, iron, sulphur, arsenic and antimony were estimated on density weighted values in order to better reflect the contained metal within each interval. The estimated density weighted concentrations were then divided by the estimated density to produce grade estimates for each block.</p> <p>The concentration of antimony was only estimated for North Pod due to lack of data coverage in the other domains.</p> <p>The density weighted concentration of gold was estimated using Multiple Indicator Kriging (MIK). The gold grades at Hera exhibit a highly positively skewed distribution with coefficients of variation within each domain of over 5. The gold estimates at Hera therefore show extreme sensitivity to a small number of high grades. MIK is considered an appropriate estimation method for the gold grade distribution at Hera because it specifically accounts for the changing spatial continuity at different grades through a set of indicator variograms at a range of grade thresholds. It also reduces the need to use the practice of top cutting.</p> <p>The density weighted concentrations of silver, lead, zinc, copper, iron, sulphur, arsenic and antimony were estimated using Ordinary Kriging. Density was also estimated using Ordinary Kriging on drill hole data. Ordinary Kriging is considered appropriate because the coefficients of variation (except arsenic) were generally low to moderate and the grades are reasonably well structured spatially.</p> <p>The Micromine software was used for both the MIK and Ordinary Kriging estimates.</p> <p>The Hera deposit was estimated by H&amp;SC in July 2017. H&amp;SC considers that the current Mineral Resource Estimate takes appropriate account of previous estimates. Significant additional drilling and mining has occurred since these estimates were produced.</p> <p>Mine production data were provided to H&amp;SC and compared to the current estimate. As such, H&amp;SC considers that the Mineral Resource Estimate takes appropriate account of these data. This is discussed in more detail below, with reference to reconciliation data.</p>

	<ul style="list-style-type: none"> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>Hera currently utilises two processing routes namely; a gold and silver dore and a lead-zinc concentrate that also includes gold and silver credits. It is assumed that recoveries will continue at the current level.</p> <p>The gold, silver, lead, zinc and copper estimates are considered to be of economic significance. The iron, sulphur, arsenic and antimony estimates are not considered to be of economic significance, with sulphur, arsenic and antimony being potentially deleterious.</p> <p>Two additional indicator parameters were estimated using Ordinary Kriging and the gold metal variogram model, namely a data location accuracy factor and a screen fire assay factor.</p> <p>The data location accuracy factor was estimated because Aurelia have found evidence in underground developments that some surface drill holes have deviated a significant distance from the planned and surveyed drill hole traces. Aurelia provided a list of drill holes for which the location of the drill hole traces was known with a high degree of confidence. These drill holes consisted of all underground drill holes and surface drill holes that had been located in underground development. The relative contribution to estimates of samples with a high degree of confidence in their location was estimated and used to modify the resource classification as described below.</p> <p>The data from some surface drill holes was removed from some mineralised zones in areas where extensive underground drilling had superseded the less reliable surface drilling.</p> <p>The screen fire assay factor gives an estimate of the relative contribution of data derived from screen fire assays versus the contribution of fire assays. This was provided for reference but was not used to modify resource classification</p> <p>Samples were composited to nominal 1.0 m intervals, whilst honouring the mineralised domain wireframes. The minimum composite length was set to 0.5 m.</p> <p>A three pass search strategy was used for estimation. Each pass utilised a search ellipse with four radial sectors. The maximum number of samples per sector was set to four with a maximum of 8 data per sector for each pass. Additional search parameters are given below:</p> <ol style="list-style-type: none"> <li>1. 3x20x20m search, 16-32 samples, minimum 4 drill holes used, maximum 6 data per hole</li> <li>2. 5x35x35m search, 16-32 samples, minimum 4 drill holes used, maximum 6 data per hole</li> <li>3. 9x60x75m search, 8-32 samples, minimum 2 drill holes used, maximum 8 data per hole</li> </ol> <p>The maximum distance of extrapolation of estimates from data points is 70 m.</p> <p>The drill hole spacing at Hera is difficult to quantify due to the irregular distribution of collars, which is largely a result of underground collar locations being limited to development. In general, drill hole spacing is around 20 m along strike and down dip. Composite length is 1 m. The block model was set up on a rotated grid to honour the historic mine grid rotation. Parent block dimensions are 2x5x5 m (X, Y, vertical respectively). The five metre Y and vertical block dimensions were chosen to reflect drill hole spacing and to provide definition requested for mine planning. The shorter two metre X dimension was used to reflect the narrow mineralisation and down hole data spacing. Discretisation was set to 2x5x5 (X, Y, vertical respectively).</p> <p>No assumptions were made regarding the correlation of variables during estimation as each element is estimated independently.</p> <p>Variography was carried out using the software program GS3 on the one metre composited data from the eight mineralised domains that contained over 2,000 data points. These domains are Main North, Main South, Hays South, Hays North, Far West, North Pod, East South and Western PbZn. The other domains used the variogram parameters from a nearby domain.</p> <p>Each domain was estimated separately using only data from within that domain. The orientation of the search ellipse was varied to reflect the orientation of the mineralisation in each domain.</p>
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		<p>Grade cutting was applied to gold, silver, lead, zinc on a domain by domain basis in order to reduce the impact of extreme values on the resource estimates. The top-cut values were chosen by assessing the high end distribution of the grade population within each domain and selecting the value at which the distribution became erratic.</p> <p>Top-cuts were not applied to arsenic or antimony composites although top-cutting may be warranted. These elements are considered to be potentially deleterious.</p> <p>The final H&amp;SC block model was reviewed visually by H&amp;SC and Aurelia and it was concluded that the block model fairly represents the grades observed in the drill holes. H&amp;SC also validated the block model statistically using histograms and summary statistics.</p> <p>The estimates were compared to the previous resource estimate produced by H&amp;SC in July 2017. That estimate was produced following essentially the same methodology as the estimates presented here. Small differences include removal of some surface drill holes where superseded by new drilling and changes to the NSR calculation. The July 2017 and May 2018 estimated grades are very similar.</p> <p>Significant additional drilling and mining has occurred between the July 2017 and current resource estimate. Despite minor differences the two models agree well.</p> <p>The estimates were compared to Run of Mine (ROM) production records for verification. It was found that estimates for Main North performed reasonably well on average, although relatively large differences were found for individual stopes.</p> <p>Reconciliation of Main South showed that estimates had underestimated the grade of Au, Ag and Pb. Investigation into this issue indicated that the ROM grades produced were significantly higher than the mineralisation intersected by local drilling. This poor reconciliation instigated the downgrade of all Measured Resources to Indicated in Main South.</p> <p>Reconciliation of Hays South also showed that the grade of Au, Ag, Pb and Cu had been underestimated relative to ROM figures. A relatively small amount of material has been mined from Hays South.</p> <p>Only one stope has been mined at Far West.</p>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>• <i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<p>Tonnages are estimated on a dry weight basis.</p>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>• <i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<p>The cut-off grade is a Net Smelter Return (NSR) value, which is used to assign a dollar value to the polymetallic mineralisation in order to simplify reporting. Aurelia provided the NSR calculation to H&amp;SC.</p> <p>A NSR cut-off of AUD\$120 was selected by Aurelia. Material at this cut-off is considered by Aurelia to have reasonable prospects of extraction in the medium term.</p> <p>Hera is an operating mine and the NSR calculation is well developed and informed. The NSR calculation takes account the recoveries associated with each of the two processing routes; namely production of Au and Ag dore and Pb-Zn concentrate (that also includes Ag credits). The NSR also takes account of the metal price, exchange rates, freight and treatment charges and royalties. The metal recoveries and metal prices used in the NSR calculation are given below. Costs associated with royalties, processing and transport are considered to be commercially sensitive to Aurelia and are not given. The calculation formula is complex as it takes into account the two processing routes and the recoveries and costs associated with each. For this reason the formula is not provided. An AUD\$ to USD\$ exchange rate of 0.74 was assumed.</p>



		<p>Recoveries:</p> <table border="1" data-bbox="1290 233 1742 464"> <thead> <tr> <th>Parameter</th> <th>Recovery</th> </tr> </thead> <tbody> <tr> <td>Gold Recovery - Dore</td> <td>60%</td> </tr> <tr> <td>Silver Recovery - Dore</td> <td>10%</td> </tr> <tr> <td>Silver Recovery - Concentrate</td> <td>80%</td> </tr> <tr> <td>Lead Recovery - Concentrate</td> <td>91%</td> </tr> <tr> <td>Zinc Recovery - Concentrate</td> <td>90%</td> </tr> </tbody> </table> <p>Assumed metal prices:</p> <table border="1" data-bbox="1290 504 1742 711"> <thead> <tr> <th>Metal</th> <th>Price (US\$)</th> </tr> </thead> <tbody> <tr> <td>Gold (oz)</td> <td>1,400</td> </tr> <tr> <td>Ag (oz)</td> <td>18.8</td> </tr> <tr> <td>Lead (t)</td> <td>2,280</td> </tr> <tr> <td>Zinc (t)</td> <td>2,600</td> </tr> </tbody> </table> <p>All elements included in the NSR calculation are currently being recovered and sold. Copper is reported in the mineral resource estimate but is not currently being recovered and sold. H&amp;SC are informed that work is currently underway to test the feasibility of recovering copper.</p>	Parameter	Recovery	Gold Recovery - Dore	60%	Silver Recovery - Dore	10%	Silver Recovery - Concentrate	80%	Lead Recovery - Concentrate	91%	Zinc Recovery - Concentrate	90%	Metal	Price (US\$)	Gold (oz)	1,400	Ag (oz)	18.8	Lead (t)	2,280	Zinc (t)	2,600
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<p><b>Mining factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It may not always be possible to make assumptions regarding mining methods and parameters when estimating Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	<p>Hera currently uses longwall stoping. The reported resources are limited to block centroids that lie within planned stopes that were designed using Deswick's Stope Shape Optimiser. The Smallest Mineable Unit (SMU) is 5 m long, 25 m high, with a minimum mining width of 3 m.</p> <p>The reported resources include all estimated blocks that lie within the planned stopes and therefore include internal dilution. Additional external mining dilution may be incurred during mining.</p>																						
<p><b>Metallurgical factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It may not always be possible to make assumptions regarding metallurgical treatment processes and parameters when reporting Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	<p>Hera is an operating mine and the assumptions about metallurgical amenability are based on actual performance of the mill over a period of time. Processing recoveries have been shown to consistently meet or exceed those quoted above.</p>																						
<p><b>Environmental factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>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</li> </ul>	<p>It assumed that process residue disposal will continue to take place in existing facilities at Hera Mine, which are currently licensed for this purpose.</p> <p>Waste rock will continue to be utilised at Hera as stope fill. Any remaining waste will be added to surface dumps.</p> <p>All waste and process residue disposal will continue to be done in a responsible manner and in accordance with the mining license conditions.</p>																						

	<p>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.</p>																									
<p><b>Bulk density</b></p>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Dry bulk density is measured on-site using an immersion method (Archimedes principle) on selected core intervals for full 1.0 m assay samples. A total of 4,021 density measurements have been taken from drill core at the Hera deposit.</p> <p>Samples are weighed before and after oven drying overnight at 110°C to determine dry weight and moisture content.</p> <p>Measured density values show that the density of the rock at Hera varies significantly. The density variations are largely due to sulphide mineralisation which has the effect of increasing density. Aurelia calculated the density data for drill hole intervals that had not been subjected to density measurements by calculating the normative mineralogy of each sample, and then species weighting the density calculation. This approach takes into account the density differences between galena, sphalerite, chalcopyrite, pyrrhotite and gangue and compares well with the actual measurements.</p>																								
<p><b>Classification</b></p>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<p>The classification is based predominately on the search pass used to estimate the block. The data location accuracy factor that quantifies the relative contribution of data points with low location accuracy confidence was used to downgrade the classification of blocks that were estimated using an excessive number of data with poor confidence in their location. The changes to the search pass are shown in the table below.</p> <table border="1" data-bbox="1122 762 1910 956"> <thead> <tr> <th>Search Pass</th> <th>Location Accuracy Factor</th> <th>Modified Pass</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>&gt;0.75</td> <td>1</td> <td>Measured</td> </tr> <tr> <td>1</td> <td>&lt;0.75</td> <td>2</td> <td>Indicated</td> </tr> <tr> <td>2</td> <td>&gt;0.5</td> <td>2</td> <td>Indicated</td> </tr> <tr> <td>2</td> <td>&lt;0.5</td> <td>3</td> <td>Inferred</td> </tr> <tr> <td>3</td> <td>All</td> <td>3</td> <td>Inferred</td> </tr> </tbody> </table> <p>In order to produce a single classification for each stope the tonne-weighted modified pass was averaged for each stope. Stopes with an average modified pass of less than 1.5 were classified as Measured, stopes averaging between 1.5 and less than 2.5 were classified as Indicated and stopes averaging 2.5 or over were classified as Inferred. Following discussion with Aurelia personnel individual isolated Inferred stopes were upgraded to Indicated and isolated Indicated stopes were downgraded to Inferred. The classification of two areas of Indicated stopes in Main South was downgraded to Inferred due to poor reconciliation of adjacent, mined stopes.</p> <p>This scheme is considered by H&amp;SC to take appropriate account of all relevant factors, including the relative confidence in tonnage and grade estimates, confidence in the continuity of geology and metal values, and the quality, quantity and distribution of the data.</p> <p>The classification appropriately reflects the Competent Persons' (Dr Adam Mckinnon and Rupert Osborn) view of the deposit.</p>	Search Pass	Location Accuracy Factor	Modified Pass	Classification	1	>0.75	1	Measured	1	<0.75	2	Indicated	2	>0.5	2	Indicated	2	<0.5	3	Inferred	3	All	3	Inferred
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2	>0.5	2	Indicated																							
2	<0.5	3	Inferred																							
3	All	3	Inferred																							
<p><b>Audits or reviews</b></p>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<p>This Mineral Resource estimate has been reviewed by Aurelia personnel and the resource report was peer reviewed by both Aurelia and H&amp;SC. No material issues were identified as a result of these reviews.</p>																								

**Discussion of relative accuracy/ confidence**

- Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.
- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

The relative accuracy and confidence level in the Mineral Resource estimates are considered to be in line with the generally accepted accuracy and confidence of the nominated JORC Mineral Resource categories. This has been determined on a qualitative, rather than quantitative, basis, and is based on H&SC's experience with a number of similar deposits in the Cobar region. The main factor that affects the relative accuracy and confidence of the Mineral Resource estimate is sample data density due to the high variability in gold grades.

The estimates are local, in the sense that they are localised to model blocks of a size considered appropriate for local grade estimation. The tonnages relevant to technical and economic analysis are those classified as Measured and Indicated Mineral Resources.

The estimates were compared to Run of Mine (ROM) production records for verification. It was found that estimates for Main North performed reasonably well on average, although some very large differences were found for individual stopes. Reconciliation of Main South showed that estimates had underestimated the grade of Au, Ag and Pb. Investigation into this issue indicated that the ROM grades produced were significantly higher than the mineralisation intersected by local drilling. This poor reconciliation instigated the downgrade of all Measured Resources to Indicated in Main South. Hays South and Far West also appear to underestimate gold, silver, lead and copper grades although this is only supported by a relatively small amount of mining. The table below shows the estimated grades over the ROM recorded grades. Values less than 100% indicate that the estimated grades are lower than the ROM records i.e. an underestimation.

Domain	Tonnes (Kt)	Au	Ag	Pb	Zn	Cu
Main North	406	97%	107%	96%	103%	103%
Main South	395	86%	96%	97%	96%	94%
Hays South	61	84%	83%	83%	98%	86%
Far West	16	36%	88%	76%	102%	77%
<b>Total</b>	<b>879</b>	<b>89%</b>	<b>101%</b>	<b>96%</b>	<b>100%</b>	<b>99%</b>

## Section 3 Estimation and Reporting of Mineral Resources - NYMAGEE

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

Criteria	JORC Code Explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<p>All geological data is stored electronically with limited automatic validation prior to upload into the secure DataShed database, managed in Orange office by the Senior Geologist – Data Administration. The master drill hole database is located on an SQL server, which is backed up on a daily basis.</p> <p>Basic checks were performed prior to this resource estimate to ensure data consistency, including checks for FROM_TO interval errors, missing or duplicate collar surveys, excessive down hole deviation, and extreme or unusual assay values.</p> <p>All data errors/issues were reported to the Senior Geologist – Data Administration to be corrected or flagged in the primary DataShed database.</p>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>H&amp;SC, as independent resource estimator, has not visited the Nymagee site nor examined core samples for the deposit, as this was not considered essential at this stage of the project. H&amp;SC is familiar with data collection by Aurelia and the nearby Hera Mine, which is carried out in a professional manner and to a high standard, and a proportion of holes were drilled and processed by Aurelia.</p>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<p>Aurelia has developed a new interpretation of the Nymagee deposit based on total sulphide volume, derived from chemical assays. Six lodes were interpreted, comprising a Main lens with 3 footwall lenses in the north and 1 footwall lens in the south.</p> <p>Mineralisation at Nymagee is hosted by a monotonous sequence of sediments with no obvious marker horizons or structures, so sulphide content is the best available indicator of mineralisation.</p> <p>Surfaces for base of complete oxidation and top of fresh rock were also provided and a base of soil/slag was also developed; these surfaces are based on geological logging.</p> <p>The current mineralised domain modelling strategy is based on experience with a similar style of polymetallic mineralisation at the nearby Hera Mine.</p> <p>A reasonable degree of confidence can be attributed to the interpretation of mineralisation.</p> <p>The previous Mineral Resource estimate for Nymagee used an alternative interpretation based on metal grades. While this approach is now considered inappropriate, the results are broadly comparable to the current estimate, suggesting that an alternative interpretation is unlikely to change the global resources substantially.</p> <p>Geology guides and controls the Mineral Resource estimate through the use of total sulphide envelopes.</p> <p>The sulphide envelopes define a coherent shear couple system, which controls the continuity of geology and grade.</p>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>The Mineral Resource (within stopes) for Main lens and associated footwall lodes cover a volume of:</p> <ul style="list-style-type: none"> <li>525m along strike</li> <li>130m maximum plan width, with individual stopes varying from 3 to 30m</li> <li>From surface to a depth of 525m.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values,</li> </ul>	<p>Only diamond core and reverse-circulation percussion holes were used in the Mineral Resource estimate, including some historical underground core holes.</p>

	<p><i>domaining, interpolation parameters, maximum distance of extrapolation from data points.</i></p> <ul style="list-style-type: none"> <li>• <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li>• <i>The assumptions made regarding recovery of by-products.</i></li> <li>• <i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li>• <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li>• <i>Any assumptions behind modelling of selective mining units.</i></li> <li>• <i>Any assumptions about correlation between variables.</i></li> <li>• <i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li>• <i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li>• <i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>All elements were estimated by ordinary kriging with density weighting. This is considered appropriate because the coefficients of variation (CV = standard deviation/mean) were generally low to moderate and the grades are reasonably well structured spatially. New variography was performed for all elements (density weighted).</p> <p>Estimates were generated for Cu, Pb, Zn, Ag, Au, Fe, S, As &amp; density.</p> <p>Minimal grade cutting was applied to the elements with more skewed grade distributions, namely Cu, Pb, Zn, Ag, Au, As. Top-cuts were based on the global 99.95th percentile, but varied by domain as appropriate.</p> <p>Each lode was estimated separately and the Main lens was divided into two sub-domains based on a change in mineralisation orientation.</p> <p>Samples were composited to nominal 1.0m intervals within each lode for data analysis and resource estimation.</p> <p>A three pass search strategy was used for estimation:</p> <ol style="list-style-type: none"> <li>4. 4x30x30m search, 16-32 samples, minimum of 4 octants informed</li> <li>5. 8x60x60m search, 16-32 samples, minimum of 4 octants informed</li> <li>6. 16x120x120m search, 8-32 samples, minimum of 4 octants informed</li> </ol> <p>The maximum extrapolation distance is difficult to quantify because of the requirement for 4 octants to be informed; this means that at least 2 holes must be used, so the maximum extrapolation distance will be somewhat less than the maximum search radii. Maximum extrapolation distance is around 100m.</p> <p>Due to the low number of samples in the oxide zones (complete and partial), a methodology was developed to factor the grades from adjacent zones in the absence of local data. This factoring was based on the relative depletion/enrichment ratios between the zones for each element.</p> <p>The resource model was depleted using the wireframe model of underground mining voids.</p> <p>It is assumed that separate Cu and Pb-Zn concentrates will be produced, with Au and Ag recovered as by-products – all elements have been estimated independently for each domain.</p> <p>A few potentially deleterious elements have also been estimated, being As and S.</p> <p>Density was estimated directly into the model from the drill hole samples, using a similar methodology to the other elements.</p> <p>The resource model block size is 2x15x15m. The drill hole spacing is highly variable but the nominal drill hole spacing is approximately 30x60m in the plane of mineralisation. So the block size one half to one quarter the hole spacing, which is considered appropriate. The block size effectively is the SMU.</p> <p>The general strike direction of mineralisation is 330°, so the data and block model were rotated 30° clockwise for estimation to align the blocks with the strike of the deposit. The final model was then rotated back into real space.</p> <p>No assumptions were made regarding the correlation of variables during estimation as each element is estimated independently. Some elements do show moderate to strong correlation in the drill hole samples, and the similarity in variogram models more or less guarantees that this correlation is preserved in the estimates.</p> <p>The geological interpretation controls the Mineral Resource estimates through the use of total sulphide envelopes defining each lode, which were used as hard boundaries during estimation.</p> <p>The new model was validated in a number of ways – visual comparison of block and drill hole grades, statistical analysis, examination of grade-tonnage data, and comparison with the previous model. All the validation checks suggest that the grade estimates are reasonable when compared to the composite grades, allowing for data clustering.</p>
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		The new Mineral Resource estimate is broadly comparable to the previous (December 2011) version, although the interpretation of mineralisation is quite different. The new model has higher tonnage and lower grade at the same cut-off grades as the old model, but tonnage and grade can be matched approximately using different cut-off grades for each model. This indicates that both models have similar metal content and that the new Mineral Resource estimate takes appropriate account this previous estimate.																												
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	Tonnages are estimated on a dry weight basis. Moisture content has been determined for some of the density samples, by comparing sample weights before and after oven drying.																												
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<p>The cut-off grade is a net smelter return (NSR) value, based on grades, recoveries and costs for Cu, Pb, Zn, Au and Ag, as shown below.</p> <table border="1" data-bbox="1167 475 1850 703"> <thead> <tr> <th>Metal</th> <th>Unit</th> <th>Price (USD)</th> <th>Recovery</th> </tr> </thead> <tbody> <tr> <td>Cu</td> <td>%</td> <td>\$7,000</td> <td>90%</td> </tr> <tr> <td>Pb</td> <td>%</td> <td>\$2,280</td> <td>90%</td> </tr> <tr> <td>Zn</td> <td>%</td> <td>\$2,600</td> <td>90%</td> </tr> <tr> <td>Au</td> <td>oz</td> <td>\$1,400</td> <td>90%</td> </tr> <tr> <td>Ag</td> <td>oz</td> <td>\$18.80</td> <td>84%</td> </tr> <tr> <td>AUD/USD</td> <td>\$</td> <td>\$0.74</td> <td></td> </tr> </tbody> </table> <p>The adopted cut-off grade of AUD \$80 is considered likely to economic for the mining method and scale of operation envisioned for Nymagee.</p>	Metal	Unit	Price (USD)	Recovery	Cu	%	\$7,000	90%	Pb	%	\$2,280	90%	Zn	%	\$2,600	90%	Au	oz	\$1,400	90%	Ag	oz	\$18.80	84%	AUD/USD	\$	\$0.74	
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<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It may not always be possible to make assumptions regarding mining methods and parameters when estimating Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	<p>Underground mining using a sub-level caving method is currently planned for Nymagee.</p> <p>Mineral Resources for Nymagee have been restricted to planned stopes that were designed using Deswick's Stope Shape Optimiser. Minimum stope size is 15 m long, 25 m high, with a minimum mining width of 3 m.</p> <p>The reported resources include all estimated blocks that lie within the planned stopes and therefore include internal dilution. Additional external mining dilution may be incurred during mining.</p>																												
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It may not always be possible to make assumptions regarding metallurgical treatment processes and parameters when reporting Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	Ore from Nymagee will be treated through the Hera Mine mill. The recovery for each metal is based on available metallurgical test work and knowledge gained through treatment of the similar ores from Hera.																												
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>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</li> </ul>	<p>It is currently assumed that process residue disposal will take place in existing facilities at Hera Mine, which is currently licensed for this purpose.</p> <p>Waste rock will be utilised on site at Nymagee as stope fill as much as possible, leaving only a small amount for disposal on surface dumps.</p> <p>All waste and process residue disposal will be done in a responsible manner and in accordance with the mining license conditions.</p>																												

	<p>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.</p>	
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<p>Dry bulk density is measured on-site using an immersion method (Archimedes principle) on selected core intervals for full 1.0m assay samples. The Nymagee database contains 1,841 measurements from 76 drill holes.</p> <p>Samples are weighed before and after oven drying overnight at 110°C to determine dry weight and moisture content.</p> <p>For intervals without measurements, density is determined from assay values by calculating the proportion of each sulphide mineral and gangue. This method compares well with the actual measurements.</p>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>• Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>• Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<p>The classification scheme is based on the estimation search pass for Cu, where Pass 1&amp;2 = Indicated and Pass 3 = Inferred.</p> <p>This scheme is considered to take appropriate account of all relevant factors, including the relative confidence in tonnage and grade estimates, confidence in the continuity of geology and metal values, and the quality, quantity and distribution of the data.</p> <p>The classification appropriately reflects the Competent Person's view of the deposit.</p>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<p>This Mineral Resource estimate has been reviewed by Aurelia personnel and no material issues were identified.</p>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<p>The relative accuracy and confidence level in the Mineral Resource estimates are considered to be in line with the generally accepted accuracy and confidence of the nominated JORC Mineral Resource categories. This has been determined on a qualitative, rather than quantitative, basis, and is based on the estimator's experience with a number of similar deposits in the Cobar region. The main factor that affects the relative accuracy and confidence of the Mineral Resource estimate is drill hole spacing, because there are no strong geological controls on the primary mineralisation.</p> <p>The estimates are local, in the sense that they are localised to model blocks of a size considered appropriate for local grade estimation. The tonnages relevant to technical and economic analysis are those classified as Indicated Mineral Resources.</p> <p>No production data is available for the small part of the deposit that was mined historically.</p>

## Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 & 3, also apply to this section)

Criteria	JORC Code explanation	Commentary
<p><b>Mineral Resource estimate for conversion to Ore Reserves</b></p>	<ul style="list-style-type: none"> <li>• <i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li>• <i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<p>The Ore Reserve Estimate is based on the Mineral Resource block model received on the June 2018 and the same block model was used to create the “Hera Mineral Resource Estimate 30 May 2018” by Adam McKinnon.</p> <p>The Mineral Resource Estimate includes the Ore Reserve Estimate.</p> <p>All known mineralisation in the area is epigenetic “Cobar” style. Deposits are structurally controlled quartz + sulphide matrix breccias grading to massive sulphide</p> <p>At Hera the presence of Fe-rich sphalerite, non-magnetic pyrrhotite and cubanite indicates formation temperatures between 350°C and 400°C. Recognised at Hera are quartz + K-feldspar veins, scheelite, and minor skarn mineralogy which suggest a possible magmatic input. Deposit timing is enigmatic. The main mineralisation occurs as brittle sulphide matrix breccias with silicification grading to ductile massive sulphides that crosscut both bedding and cleavage.</p>
<p><b>Site visits</b></p>	<ul style="list-style-type: none"> <li>• <i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li>• <i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<p>Ore Reserve Estimate was completed on and off site by Rebecca Roper and Anthony Allman</p>
<p><b>Study status</b></p>	<ul style="list-style-type: none"> <li>• <i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li>• <i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</i></li> </ul>	<p>A full Life of Mine Plan (LOM) was conducted in June 2018 to incorporate the Ore Reserve Estimate. This included development design, stope access, mining method application, scheduling and resource levelling. The mine is currently in operation. The order of accuracy is at least or better than a definitive feasibility study with actual costs, stope performance and recoveries applied to the Ore Reserve Estimate.</p>



<p><b>Cut-off parameters</b></p>	<ul style="list-style-type: none"> <li>• <i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<p>The cut-off values were calculated using the current economic performance of the mine. Cutoff values incorporate all costs including sustaining capital, development, stoping haulage, processing and administration. Costs beyond the mine gate including concentrate haulage, port facilities, shipping, treatment charges, penalties and royalties are netted from revenues of gold and concentrates and form the Net Smelter Return estimates</p>
<p><b>Mining factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>• <i>The method and assumptions used as reported in the Pre- Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li>• <i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li>• <i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></li> <li>• <i>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li>• <i>The mining dilution factors used.</i></li> <li>• <i>The mining recovery factors used.</i></li> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li>• <i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<p>No Inferred Mineral Resource was considered for this report.</p> <p>The mining method used for the LOM is benching over 25m sublevels. The mining method is a bottom up process. This is still the most appropriate method for control of dilution, reduction of pillars and ore loss, ground control, safety and regional stability.</p> <p>Access is from the hanging wall (east) decline and the decline has a standoff of 50m from the ore body. The decline face is currently 585m vertical from surface.</p> <p>Level spacing is 25m</p> <p>Sill pillars will be extracted every 100m vertical extent using a an open stoping and yielding pillar arrangement.</p> <p>Stopes are typically 30m long, 25m high and 8m wide.</p> <p>Stopes are assumed to be stable up to 40m in strike based on current CMS survey information. This represents a side wall hydraulic radius of 7.7m.</p> <p>A minimum stoping width of 3m has been used.</p> <p>Stope shapes in the Ore Reserve Estimate include an expected dilution of 0.5m on both eastern and western walls. This equates to approximately 14%. Survey of current voids suggests this is reasonable.</p> <p>Bench stopes and sill pillar stopes in the Ore Reserves include the expected recovery of 95% and 90% respectively. Survey of current voids suggests this is reasonable.</p> <p>Stope shapes and mine development were assessed every 5m along strike</p>

<p><b>Metallurgical factors or assumptions</b></p>	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li>• <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> <li>• <i>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications</i></li> </ul>	<p>The Ore Reserve Estimate is predicated on the existing Hera ore processing facility with a nominal throughput rate of 430Ktpa. It incorporates gravity, flotation and a concentrate leach to produce a gold and silver doré and a PbZn concentrate.</p> <p>All metallurgical assumptions are based on current operation processing criteria.</p> <p>The main deleterious elements present at Hera ore body is Silica (SiO<sub>2</sub>) &gt;3%, iron (Fe) &gt;10% and arsenic.</p> <p>It is assumed that all deleterious elements are within tolerances and no penalties have been applied to financial calculations.</p>
<p><b>Environmental-</b></p>	<ul style="list-style-type: none"> <li>• <i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<p>The Hera Mine is in full operation and has all environmental, statutory and social approvals and licenses to operate. The project continues to meet the reporting requirements under the terms of the project approval and as such remains in good standing with all regulatory authorities.</p> <p>The Hera Deposit along with the Hebe, Zeus and Athena Prospects are located on ML1686. The land comprising ML1686 is part of “The Peak” property with is a perpetual lease held by Aurelia Metals.</p>
<p><b>Infrastructure</b></p>	<ul style="list-style-type: none"> <li>• <i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation;</i></li> </ul>	<p>All surface infrastructures are complete with no new surface infrastructure required for constructing for the current Ore Reserve.</p> <p>Ongoing sustaining capital and infrastructure underground including declines, level accesses, escapeways, vent accesses and rises, pump stations and substations will need to be developed to develop this Ore</p>

	<i>or the ease with which the infrastructure can be provided, or accessed.</i>	Reserve Estimate. This has been accounted for in the cost analysis and cut-off values in determination of ore																												
<b>Costs</b>	<p><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></p> <ul style="list-style-type: none"> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<p>Sustaining and operation costs have been based on the last four months of actual costs. A cost reduction on the unit costs has been applied to account for the new rates in the re-tendered mining contract. Production of the first 250,000 ounces of gravity gold from the Hera Deposit is subject to a 4.5% royalty payable to CBH Resources Ltd. as part of the purchase of the project.</p> <p>Metal Price and exchange rate assumptions are as provided by Aurelia Metals management and have been based on consensus forecasts</p>																												
<b>Revenue factors</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<p>The following table represents revenue assumptions. Treatment costs of US\$190/dmt were used</p> <table border="1"> <thead> <tr> <th>Metal</th> <th>Unit</th> <th>USD</th> <th>Recoveries</th> </tr> </thead> <tbody> <tr> <td>Au</td> <td>oz</td> <td>1220</td> <td>90%</td> </tr> <tr> <td>Ag</td> <td>oz</td> <td>17.00</td> <td>90%</td> </tr> <tr> <td>Zn</td> <td>t</td> <td>2600</td> <td>90%</td> </tr> <tr> <td>Pb</td> <td>t</td> <td>2280</td> <td>91%</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AUD/USD</td> <td>0.76</td> <td></td> <td></td> </tr> </tbody> </table>	Metal	Unit	USD	Recoveries	Au	oz	1220	90%	Ag	oz	17.00	90%	Zn	t	2600	90%	Pb	t	2280	91%					AUD/USD	0.76		
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<p><b>Market assessment</b></p>	<ul style="list-style-type: none"> <li>• <i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li>• <i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li>• <i>Price and volume forecasts and the basis for these forecasts.</i></li> </ul> <p><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract</i></p>	<p>Hera project has in place all necessary contracts and approvals for the transportation of concentrate to agreed Glencore clients. The transport contracts are renewable on standard commercial terms. The concentrate offtake agreement is life of mine.</p> <p>Gold and silver doré products produced on site are shipped to receiving Mint for refining under a refining agreement and the refined metals are either delivered into hedge book commitments and contracts or sold directly into the spot gold market</p>
<p><b>Economic</b></p>	<ul style="list-style-type: none"> <li>• <i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</i></li> <li>• <i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></li> </ul>	<p>A financial model of the Hera Project has been completed by suitably qualified and experienced accounting and financial staff employed by Aurelia Metals Limited and has been reviewed by senior management of Aurelia. The financial model demonstrates a positive NPV.</p>
<p><b>Social</b></p>	<ul style="list-style-type: none"> <li>• <i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></li> </ul>	<p>Hera mine is in full operation and has all environmental and social approvals and licenses to operate. The project continues to meet the reporting requirements under the terms of the project approval and as such remains in good standing with all regulatory authorities</p> <p>The land comprising ML1686 is part of “The Peak” property with is a perpetual lease held by Aurelia Metals. ML1686 is a granted mining lease that expires in 2031</p>
<p><b>Other</b></p>	<ul style="list-style-type: none"> <li>• <i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></li> <li>• <i>Any identified material naturally occurring risks.</i></li> </ul>	

	<ul style="list-style-type: none"> <li>• <i>The status of material legal agreements and marketing arrangements.</i></li> <li>• <i>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i></li> </ul>	
<b>Classification</b>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> <li>• <i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<p>The Ore Reserve Estimate is based on the Mineral Resource Estimate. Measured and Indicated Resources become Probable.</p> <p>It is the competent person's view that the classifications used for the Ore Reserve Estimate are appropriate.</p>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	No external audit of this Ore Reserve Estimate has been done to date

<p><b><i>Discussion of relative accuracy/ confidence</i></b></p>	<ul style="list-style-type: none"> <li>•</li> </ul>	<p>The Ore Reserve Estimate is mostly determined by the order of accuracy associated with the Mineral Resource model, the metallurgical inputs and the cost adjustment factors used.</p> <p>There is some risk that the operating costs are not achieved due to reduced output of the processing plant.</p> <p>In the opinion of the competent person, there is some risk associated with the metallurgical inputs especially the throughputs. Continue debottlenecking will be carried out over time to align the Ore Reserve Estimate assumptions with actual metallurgical performance.</p> <p>There is a risk with maintaining silica below 3%, so as not to incur penalties as is assumed. There is a risk with the high arsenic and antimony values in the North Pod. Further work is ongoing to ensure the levels are acceptable in the concentrate feed.</p>
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