

# ASX ANNOUNCEMENT

## ORELIA DELIVERS STRIKE EXTENSIONS

- **A single traverse of RC drilling was completed 200m north of the existing Orelia open pit, significant intersections include:**
  - 9m @ 17.34 g/t Au from 54m (ORC033)
  - 11m @ 2.82 g/t Au from 104m, incl. 2m @ 11.96 g/t (ORC031)
- **RC drilling has highlighted an extension of the mineralised Orelia system well north of the existing open pit highlighting that extensions to the north are likely**
- **Resource definition diamond drilling enhances the understanding of the Orelia ore body and highlights the quality of the high-grade zones**
  - 34m @ 10.74 g/t Au from 95m (ODDH010)
  - 29.3m @ 5.30 g/t Au from 88m incl. 1.25m @ 65.62 g/t Au (ODDH007)
  - 23.7m @ 3.53 g/t Au from 60m (ODDH009)
- **Deep diamond drilling at Orelia intersects mineralisation at previously untested depths, including;**
  - 10m @ 1.81 g/t Au from 538m, incl. 2m @ 5.43 g/t Au (ODDH013)
  - 2m @ 6.31 g/t Au from 441m (ODDH013)
  - 1m @ 2.95 g/t Au from 507m (ODDH012)
- **This deep drilling highlights that mineralisation extends at least 150 metres below the current resource base and provides confidence in possible extensions of the Lotus-Orelia system to significant vertical depth**
- **A\$5 million deep diamond drilling campaign has commenced to explore the mineralised envelope of the Lotus-Orelia system.**

Echo Resources Limited (ASX: EAR) ('Echo' or the 'Company') is pleased to release results from the seven recent diamond holes drilled to test mineralisation beneath the extents of current drilling and solidify the quality of the resource at the Orelia Gold Project. The results confirm and extend recent intersections from Echo's RC and diamond drilling and provide high confidence that Orelia may deliver a substantial addition to resources and reserves.

### ASX ANNOUNCEMENT

24 January 2018

### ASX CODE

EAR

### KEY ASSETS

- Julius
- Orelia
- Bronzewing Hub

### DIRECTORS

**Barry Bolitho**  
Non-Executive Chairman

**Simon Coxhell**  
Managing Director and Chief  
Executive Officer

**Anthony McIntosh**  
Non-Executive Director

**Mark Hanlon**  
Non-Executive Director

**Robin Dean**  
Non-Executive Director

**Kate Stoney**  
Company Secretary

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Echo's Chief Executive Officer, Simon Coxhell, commented: "These results demonstrate excellent exploration potential at Orelia both along strike and at depth. Meanwhile, the in-pit diamond holes offer additional predictability to the geometry and tenor of the high grade mineralised zones. The development and exploration of this mineralised system has a long way to go.

"Mineralised systems extend to great depths in the Yandal gold belt and past exploration and mining in the Orelia area has only scratched the surface. We expect to be able to expand the known gold mineralisation with additional exploration at both Orelia and Lotus and we are launching into a significant, deep exploration program in 2018. These latest results encourage us that we are heading in the right direction."

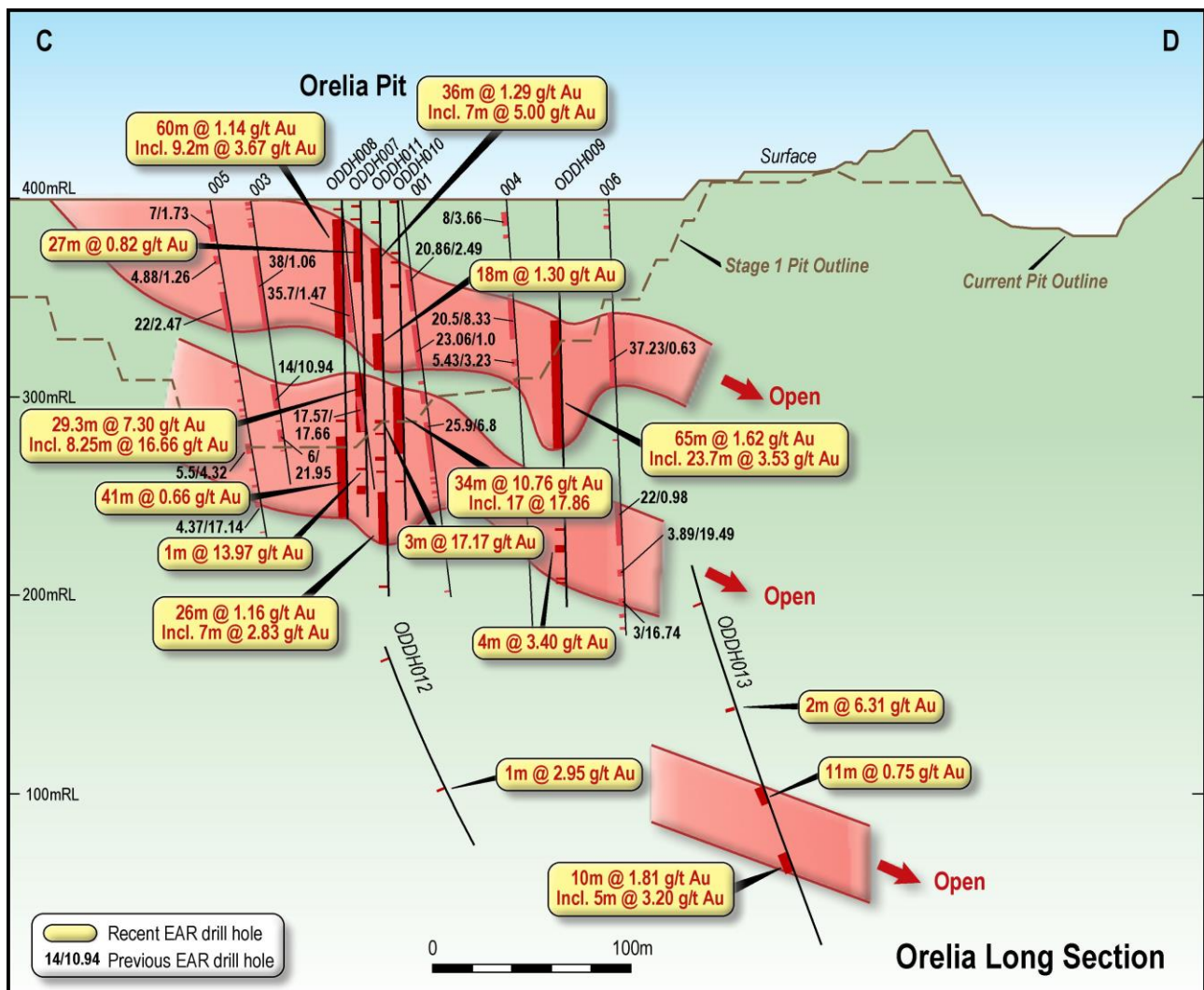


Figure 1: Orelia Long-section with Diamond Drilling Results

This new drilling relates to seven diamond holes for a total of 2,087m, and six RC holes for 768m. Five diamond holes were drilled from the base of the existing Orelia open pit and focused on testing mineralisation underneath and down dip of recent RC and diamond drilling. Two deep diamond holes were drilled from the edge of the pit and targeted depth extensions of mineralisation beneath the current Orelia resource. The RC drilling was conducted approximately 200m north of the open pit targeting shallow, northern extensions. Combined with results from recent drilling, the strike extent of the Orelia system is now well over 400m while remaining open along strike and at depth.

Additionally, valuable information on the structural and lithological controls on mineralisation was gathered from the drilling with further multi-element geochemistry and petrographic work being undertaken to understand the hydrothermal footprint of the system.



Figure 2: Orelia Plan View with Holes and Key intersections

This drilling has validated the geological model of stacked sigmoidal shaped gold zones with a shallow southerly plunge and gives Echo increased confidence in the predictability of confirming these ore shoots at depth. A \$5 million diamond drilling campaign commenced in January 2018 and will step out from the core of the system to test the depth and strike potential of the Orelia and Lotus mineralised system. In this way, Echo hopes to extend the Orelia and Lotus deposits beyond 500m vertical depth with the potential to be the next multi-million-ounce deposit in the Yandal Belt.

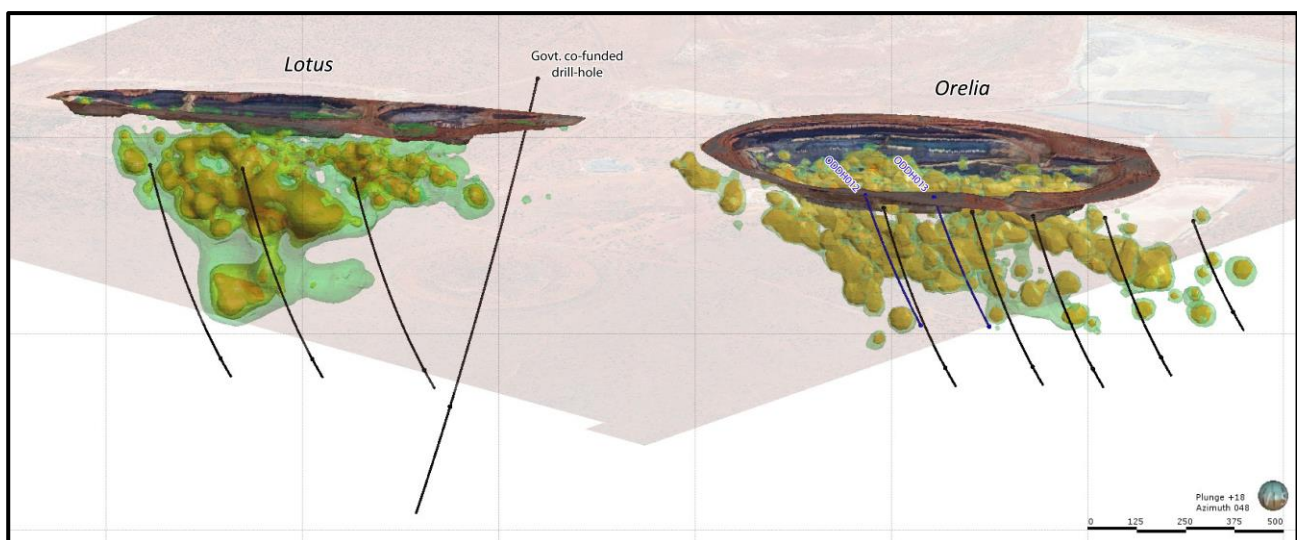


Figure 3: 2018 planned 'Stage 1' diamond drillholes under the Lotus-Orelia system

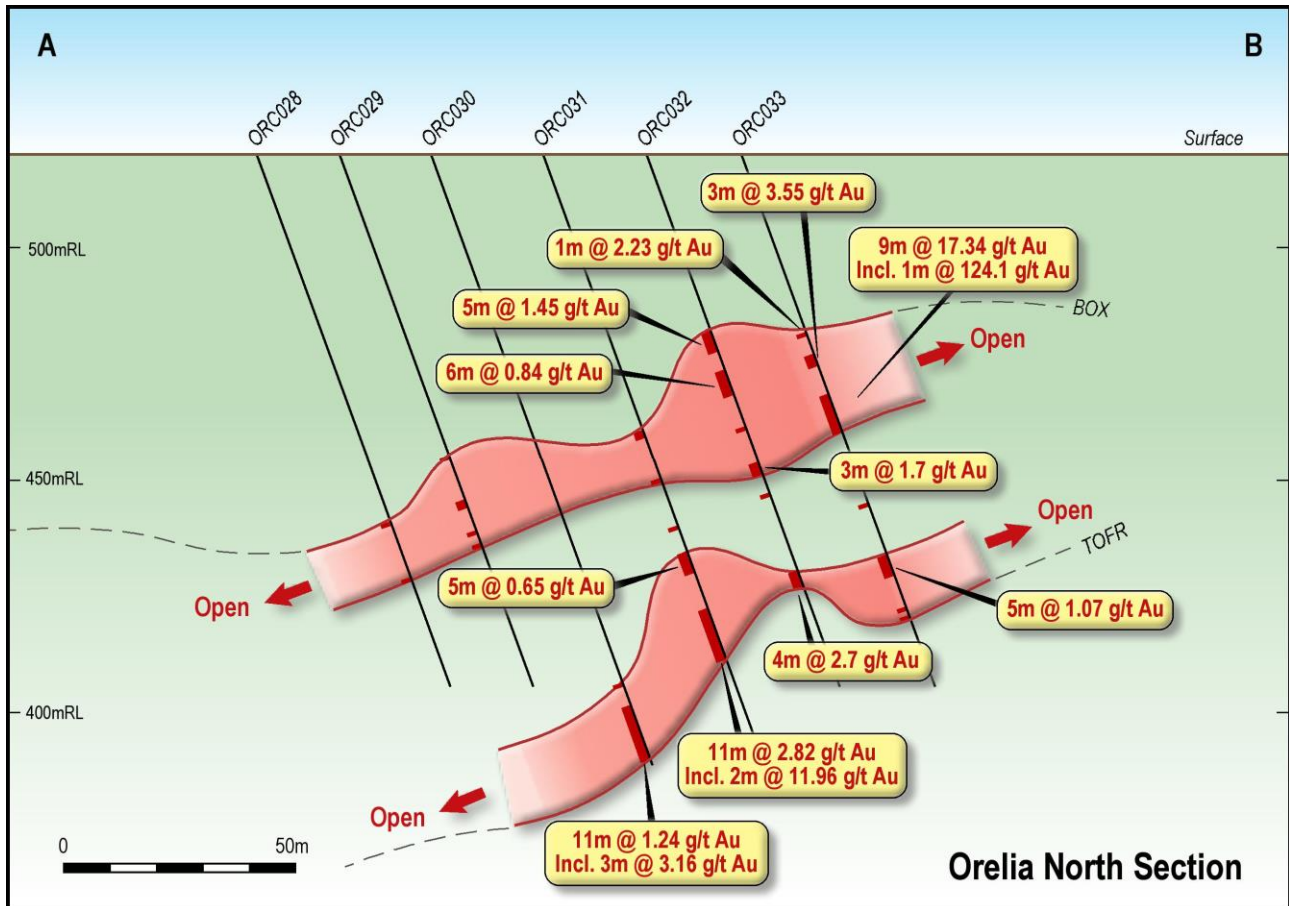


Figure 4: RC holes approximately 200m north of Orelia

The Orelia and Lotus deposits represent an excellent exploration opportunity to add high quality ounces to Echo's increasing resource and reserve base. By taking the time to develop a clear understanding of the mineralised system at Orelia, Echo believes it is in a position to fully exploit the potential of the deposit by conducting deep, targeted drill testing going forward.

-ENDS-

#### For further information:

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For further information about Echo please visit our website at [www.echoresources.com.au](http://www.echoresources.com.au)

## Appendix 1: Mineral Resource & Ore Reserve Estimates

### Echo Mineral Resource Estimates<sup>7</sup>

(Ownership, Cut-off)	Measured			Indicated			Inferred			Total		
	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)
Julius <sup>4</sup> (100%, 0.8)	1.8	2.1	124,227	1.6	1.3	67,789	1.8	2.5	142,991	5.2	2.0	335,007
Regional <sup>5</sup> (100%, 0.5)							2.8	1.5	134,925	2.8	1.5	134,925
Corboys <sup>3</sup> (100%, 1.0)				1.7	1.8	96,992	0.5	1.8	28,739	2.2	1.8	125,731
Orelia <sup>4</sup> (100%, 1.0)				14.1	2.2	980,000	1.8	1.7	100,000	15.9	2.1	1,080,000
Woorana North <sup>2</sup> (100%, 0.5)				0.3	1.4	13,811				0.3	1.4	13,811
Woorana South <sup>2</sup> (100%, 0.5)				0.1	1.0	3,129				0.1	1.0	3,129
Fat Lady <sup>1,2</sup> (70%, 0.5)				0.7	0.9	19,669				0.7	0.9	19,669
Mt Joel 4800N <sup>1,2</sup> (70%, 0.5)				0.2	1.7	10,643				0.2	1.7	10,643
<b>Total Mineral Resources</b>	<b>1.8</b>	<b>2.1</b>	<b>124,227</b>	<b>18.7</b>	<b>2.0</b>	<b>1,192,033</b>	<b>6.9</b>	<b>1.8</b>	<b>406,655</b>	<b>27.4</b>	<b>2.0</b>	<b>1,722,915</b>

### Echo Ore Reserves

(Ownership, Cut-off)	Proved			Probable			Total		
	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)	Tonnes (Mt)	Grade (g/t Au)	Ounces (Au)
Orelia <sup>6</sup> (100%, 0.6)				14.1	1.7	753,000	14.1	1.7	753,000
Julius <sup>6</sup> (100%, 0.8)	1.4	2.2	95,000	0.1	1.8	8,000	1.5	2.1	103,000
<b>Total Ore Reserves</b>	<b>1.4</b>	<b>2.2</b>	<b>95,000</b>	<b>14.2</b>	<b>1.7</b>	<b>761,000</b>	<b>15.6</b>	<b>1.7</b>	<b>856,000</b>

#### Notes:

- Resources are adjusted for Echo's 70% ownership interest
- Resources estimated by CoxsRocks (refer to Competent Persons Statements) in accordance with JORC Code 2012. For full Mineral Resource estimate details refer to the Metaliko Resources Limited announcement to ASX on 1 September 2016. Echo is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.
- Resources estimated by HGS (refer to Competent Persons Statements) in accordance with JORC Code 2012, for full details of the Mineral Resource estimate refer to the Metaliko Resources Limited announcement to ASX on 23 August 2016. Echo is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.
- Resources estimated by Mr Lynn Widenbar (refer to Competent Persons Statements) in accordance with JORC Code 2012, for full details of the Mineral Resource estimate refer to the Echo Resources Limited announcement to ASX on 23 November 2016 & 7 September 2017. Echo Resources Limited is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning mineral resource estimates in the previous announcement continue to apply and have not materially changed.
- Resource estimates include Bills Find, Shady Well, Orpheus, Empire & Tipperary Well and were estimated by Golders (refer to Competent Persons Statements) in accordance with JORC Code 2004, for full details of the Mineral Resource estimates refer to the Echo Resources Limited prospectus released to ASX on 10 April 2006.
- Reserve estimated by Mr Stuart Cruickshanks (refer to Competent Persons Statements) in accordance with JORC Code 2012, for full details of the Ore Reserve estimate refer to the Echo Resources Limited announcement to ASX on 27 November 2017. Echo Resources Limited is not aware of any new information or data that materially affects the information included the previous announcement, and all material assumptions and technical parameters underpinning Ore Reserve estimate in the previous announcement continue to apply and have not materially changed.
- Mineral Resources are inclusive of Ore Reserves.

### Forward Looking Statements

This announcement includes certain 'forward looking statements'. All statements, other than statements of historical fact, are forward looking statements that involve various risks and uncertainties. There can be no assurances that such statements will prove accurate, and actual results and future events could differ materially from those anticipated in such statements. Such information contained herein represents management's best judgement as of the date hereof based on information currently available. The Company does not assume any obligation to update any forward-looking statement.

### Competent Persons' Declarations

The information in this announcement that relates to Exploration Results and previous historic drilling results is based on information compiled by Simon Coxhell, a Director of Echo Resources and a member of the Australasian Institute of Mining and Metallurgy. He has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are 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". Mr Coxhell consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

## Appendix 2: Detailed Results

Hole	From	To	Width	Grade (g/t Au)	Easting	Northing	RL	Total Depth	Dip	Azimuth
ODDH007	15	42	27	0.82	296142	6965390	400	160	0	-90
ODDH007	88	117.3	29.3	5.30	296142	6965390	400	160	0	-90
including	113.5	114.25	0.75	118.78	296142	6965390	400	160	0	-90
ODDH007	136	137	1	13.97	296142	6965390	400	160	0	-90
ODDH008	9	69	60	1.14	296125	6965386	400	161	0	-90
including	44	45	1	22.10	296125	6965386	400	161	0	-90
ODDH008	119	160	41	0.66	296125	6965386	400	161	0	-90
ODDH009	60	125	65	1.62	296182	6965285	400	204	0	-90
including	81	83	2	23.93	296182	6965285	400	204	0	-90
ODDH009	174	177.3	3.3	3.40	296182	6965285	400	204	0	-90
ODDH010	95	129	34	10.74	296151	6965372	400	162	0	-90
including	111	128	17	18.84	296151	6965372	400	162	0	-90
ODDH011	23	59	36	1.29	296133	6965365	400	200	0	-90
including	52	59	7	5.00	296133	6965365	400	200	0	-90
ODDH011	67	85	18	1.30	296133	6965365	400	200	0	-90
ODDH011	109.7	112	3	17.17	296133	6965365	400	200	0	-90
including	109.7	110.35	0.65	78.19	296133	6965365	400	200	0	-90
ODDH011	147	173	26	1.16	296133	6965365	400	200	0	-90
including	147	154	7	2.83	296133	6965365	400	200	0	-90
ODDH012	507	508	1	2.95	295898	6965248	517	600	70	-55
ODDH013	441	443	2	6.31	296005	6965109	517	599	70	-55
ODDH013	494	505	11	0.75	296005	6965109	517	599	70	-55
ODDH013	538	548	10	1.81	296005	6965109	517	599	70	-55

Hole	From	To	Width	Grade (g/t Au)	Easting	Northing	RL	Total Depth	Dip	Azimuth
ORC028	No Significant Intersection				295867	6965858	510	122	-70	75
ORC029	79	81	2	1.20	295884	6965863	510	122	-70	75
ORC030	121	122	1	1.75	295903	6965868	511	140	-70	75
ORC030	126	131	5	0.76	295903	6965868	511	140	-70	75
ORC030	136	139	3	3.10	295903	6965868	511	140	-70	75
ORC031	91	96	5	0.65	295926	6965875	511	140	-70	75
ORC031	104	115	11	2.82	295926	6965875	511	140	-70	75
including	113	114	1	19.47	295926	6965875	511	140	-70	75
ORC032	40	45	5	1.45	295948	6965879	511	122	-70	75
ORC032	49	55	6	0.84	295968	6965883	512	122	-70	75
ORC032	70	73	3	1.70	295968	6965883	512	122	-70	75
ORC032	95	99	4	2.71	295968	6965883	512	122	-70	75
including	97	98	1	7.50	295968	6965883	512	122	-70	75
ORC033	45	48	3	3.55	295968	6965883	512	122	-70	75
ORC033	54	63	9	17.34	295968	6965883	512	122	-70	75
including	54	55	1	123.09	295968	6965883	512	122	-70	75
ORC033	91	96	5	1.07	295968	6965883	512	122	-70	75

## JORC Code, 2012 Edition

### Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling at Orelia has comprised a total of 7 NQ diamond holes for 2,087 metres and 6 reverse-circulation drillholes for 768m.</li> <li>diamond core samples consisted of halved NQ diamond core with approximately 0.5-2kg of sample collected. Sampling was conducted to geology to ensure samples did not overlap important geological breaks. Sampling was conducted with a minimum sample length of 0.3m and a maximum sample length of 1.2m.</li> <li>RC samples consisted of approximately 20kg of sample collected from each metre, with approximately 2kg samples, collected via the onboard cone splitter, sampled for analysis.</li> <li>Drill hole collar locations were recorded by hand-held GPS with an accuracy of +/- 2 metres</li> <li>Analysis was conducted by submitting the 0.5-2kg sample whole for preparation by crushing, drying and pulverising at Intertek-Genalysis Laboratories. A 50g pulp was analysed at Intertek-Genalysis laboratories, Kalgoorlie, for gold analysis via Fire Assay/ICP-OES.</li> </ul>
Drilling techniques	<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>NQ diamond drilling (60mm) from surface and RC drilling (5 ¼ inch face sampling hammer) from surface.</li> </ul>
Drill sample recovery	<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>Drill sample returns as recorded were considered excellent.</li> <li>There is insufficient data available at the present stage to evaluate potential sampling bias.</li> </ul>
Logging	<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>	<ul style="list-style-type: none"> <li>Drill core and chip logging is a qualitative activity with pertinent relevant features recorded: lithology, mineralogy, mineralisation, structural, weathering, alteration, colour and other features of the samples.</li> <li>NQ core was orientated where possible then logged in detail and photographed wet and dry. Additionally, RQDs and structural measurements were taken on all completed diamond drill holes.</li> <li>All drilling was logged.</li> </ul>
Sub-sampling techniques and sample preparation	<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 dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>NQ diamond core was processed at the on-site core shed and cut in half along orientation lines or cut lines marked by the geologist in the field.</li> <li>Sample preparation for all recent samples follows industry best practice and was undertaken by Intertek-Genalysis Laboratories in Kalgoorlie where they were crushed, dried and pulverised to produce a sub sample for analysis.</li> <li>Sample preparation involving oven drying, fine crushing to 95% passing 4mm, followed by rotary splitting and pulverisation to 85% passing 75 microns.</li> <li>QC for sub sampling follows Intertek-Genalysis procedures.</li> <li>Field duplicates were taken at a rate of 1:30.</li> <li>Blanks were inserted at a rate of 1:30</li> <li>Standards were inserted at a rate of 1:30.</li> <li>Sample sizes are considered appropriate to the grain size of the material being sampled.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g.</li> </ul>	<ul style="list-style-type: none"> <li>The methods are considered appropriate to the style of mineralisation. Extractions are considered near total.</li> <li>No geophysical tools were used to determine any element concentrations at this stage.</li> <li>Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and duplicates as part of the in-house procedures. Repeat and duplicate analysis for samples shows that the precision of</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	analytical methods is within acceptable limits.
<b>Verification of sampling and assaying</b>	<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> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>The Company's Geologist has visually reviewed the samples collected.</li> <li>Data and related information is stored in a validated Access or Micromine database. Data has been visually checked for import errors.</li> <li>No adjustments to assay data have been made.</li> </ul>
<b>Location of data points</b>	<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>All drillholes have been located by hand-held GPS with precision of sample locations considered +/-2m.</li> <li>Location grid of plans and cross sections and coordinates in this release use MGA94, Z51 datum.</li> </ul>
<b>Data spacing and distribution</b>	<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 and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The diamond holes are nominally spaced on a 10 metre (E-W spacing), RC holes were nominally spaced 20 metres (E-W)</li> <li>Data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for Mineral Resource estimation procedures.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The orientation of sampling is considered adequate and there is not enough data to determine bias if any.</li> <li>Mineralised shear zones within the Cockburn open pit strike NW and dip 20-80° SW. Drilling was orthogonal to this strike and comprised angled drill holes, drilled to the NE.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody is managed by the Company and samples are transported to the laboratory via Company staff with samples safely consigned to Intertek-Genalysis for preparation and analysis. Whilst in storage, they are kept in a locked yard. Tracking sheets are used track the progress of batches of samples.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No review or audit of sampling techniques or data compilation has been undertaken at this stage.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<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 Orelia Gold Deposit is located within M36/146 located in the Yandal Greenstone Belt and is 100% owned by MKO Mines Pty Ltd who is a fully owned subsidiary of Echo Resources Ltd.</li> <li>The tenement is in good standing</li> <li>No impediments to operating on the permit are known to exist.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Gold production began at Orelia in 1991 by Arimco Mining Pty Ltd, who had previously operated under the name of Australian Resources Limited and were subsequently purchased by Great Central Mines. Normandy Mining acquired Great Central Mines in 1998 who acquired the Orelia mine at the same time, although it had closed only a short time previously. The Orelia-Cockburn operations were continued under the ownership of Normandy Mining until 2002 when Newmont Mining acquired the whole package. View Resources acquired the operation in 2004 and began developing an open pit and underground mine that took in a number of ore bodies including Orelia-Cockburn, but the low price of gold and the shortage of capital forced the closure of the project in early 2008. Navigator (Bronzewing) Pty Ltd, completed the purchase from the administrators in September 2009 and they re-commissioned the processing plant in April 2010, with production continuing until 2013.</li> </ul>

Criteria	JORC Code explanation	Commentary
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Main host rocks of mineralisation at Orelia are deformed and altered tholeiitic basalts, and intermediate to felsic volcanoclastic rocks. Gold mineralisation typically occurs as; 1) southerly plunging ore-shoots, either at the intersection between steeply-dipping transgressive faults and favourable lithological units, 2) along fold hinges, and 3) on lithological contacts. At Orelia gold values are not necessarily associated with total sulphide content. In sedimentary lithologies, much of the sulphide is considered primary and is unrelated to the gold. The gold is associated with the hydrothermal phase of sulphide formation, that consists of pyrite-pyrrhotite±chalcopyrite. Gold related alteration consists of biotite-sericite-carbonate altered deformation zones.</li> </ul>
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling at Orelia has comprised a total of 7 NQ diamond holes for 2,087 metres and 6 RC drill-holes for 768 metres.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>No averaging or aggregation techniques have been applied.</li> <li>No top cuts have been applied to exploration results.</li> <li>No metal equivalent values are used in this report.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <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>The orientation or geometry of the mineralised zones strikes in a northwest direction and dips steeply to the southwest.</li> </ul>
Diagrams	<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>Appropriate maps are included in main body of report with gold results and full details are in the tables reported.</li> </ul>
Balanced reporting	<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>All results for the target economic mineral being gold have been reported.</li> </ul>
Other substantive exploration data	<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>A thorough review of the Orelia historical data was conducted by Echo geologists. This included collating and reviewing historical reports compiled by View and Navigator resources, assessing all historical drilling, and familiarisation with the geological data such as pit maps cross-section interpretations.</li> <li>Reconnaissance pit mapping was conducted by Echo geologists and contract structural geologists in late-2016 to understand the structural controls and deformation history linked to mineralisation in the Orelia system</li> </ul>
Further work	<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</li> </ul>	<ul style="list-style-type: none"> <li>Future RC, diamond and aircore drilling is being considered to further evaluate the Orelia Gold Deposit.</li> <li>Refer to maps in main body of report for potential target areas.</li> </ul>

Criteria	JORC Code explanation	Commentary
	commercially sensitive.	

## Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	<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>	<ul style="list-style-type: none"> <li>Data was provided as a validated Micromine Database and was digitally imported into Micromine software. Validation routines were run to confirm validity of all data.</li> <li>Analytical results have all been electronically merged to avoid any transcription errors.</li> </ul>
Site visits	<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>	<ul style="list-style-type: none"> <li>No site visit has been undertaken by the Competent Person, as little relevant information is available on site and the Competent Person is familiar with the type of gold deposit under consideration. Diamond core and aircore and RC chip boxes have been reviewed. Drilling techniques and methods have been reviewed.</li> </ul>
Geological interpretation	<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>	<ul style="list-style-type: none"> <li>The confidence in the geological interpretation is very good, with the latest infill drilling allowing a detailed interpretation.</li> <li>Geological logging and interpretation allows extrapolation of drill intersections between adjacent sections.</li> <li>Alternative interpretations would result in similar tonnage and grade estimation techniques.</li> <li>Geological boundaries are determined by the spatial locations of the various mineralised structures.</li> <li>Flat lying laterite gold mineralisation confined to individual wireframes, supergene and fresh material individually assessed. Oxidation profiles established and assigned into the model.</li> </ul>
Dimensions	<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>	<ul style="list-style-type: none"> <li>The lateral dimensions of the resources at Orelia are shown in the diagrams in the body of this release. The mineralisation dips steeply (maximum 70-80o) but variably to the southwest as shown in diagrams in the body of this release, and ranges from 6m to 30m thick. A shallow plunge to the southeast is suggested based on drilling to date. The resource extends over approximately 1200m metres of strike and extends to a vertical depth of 250 metres. .</li> </ul>
Estimation and modelling techniques	<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, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>Grade estimation using an Ordinary Kriging methodology has been applied to all Resources. A series of wireframes has been used to subset and constrain the data points used in the interpolation and only individual grades from individual wireframes were used.</li> <li>Variography was carried out on four major zones to define the variogram models for Ordinary Kriging interpolation.</li> <li>All estimation was carried out in Micromine 2016 (64-bit SP3) software.</li> <li>The block models were constructed using a 5m (E) by 10m (N) by 2.5m (Z) block size, constrained by a series of individual wireframes, with sub-cells to 1m x 1m x 0.5m to accurately represent wireframe shapes.</li> <li>Block size is generally half the sample spacing or greater in areas of infill drilling, and typically one quarter in wider spaced drilling areas.</li> <li>No deleterious elements have been identified</li> <li>No assumptions regarding recovery of byproducts have been made</li> <li>An unfolding (or flattening) methodology has been used in the interpolation; this obviates the need for varying search ellipses with dip, with all searches being horizontal, and oriented along the strike direction of each mineralised zone.</li> <li>Search ellipsoids use multiple passes to ensure blocks are filled in areas with sparser drilling. Sizes of searches are based on Kriging Neighbourhood Analysis and are covered in detail in the body of the accompanying report.</li> <li>Sample data was composited to 1m down-hole composites, while honouring breaks in mineralised zone interpretation.</li> <li>The geological interpretation follows a shallow dipping contact zone between a granite to the east and an ultramafic/mafic to the west. Strong shearing accompanies the contact and gold</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>mineralisation.</p> <ul style="list-style-type: none"> <li>Geological interpretation was carried out of the mineralised zones; consistent, generally shallow-dipping mineralised structures with 1-12m true thickness were interpreted.</li> <li>Top cut analysis was carried out on each mineralised zone, using a combination of inflection points on log probability plots, outliers on log histograms and the effect of top cuts on cut mean and coefficient of variation.</li> <li>Validation was carried out in a number of ways, including</li> <li>Visual inspection section, plan and 3D</li> <li>Swathe plot validation</li> <li>Model vs composite statistics</li> <li>ID2 vs OK model checks</li> </ul>
Moisture	<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>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>A nominal downhole cut-off of 0.5 g/t Au has been used to define the mineralised zones. The basis of the 0.5 g/t Au cutoff is an economic analysis coupled to mining dilution considerations. The cut-off corresponds reasonably well with the mineralised shear zone contact zone between the mafic and granite contact.</li> </ul>
Mining factors or assumptions	<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 is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>The resources defined to date would potentially be amenable to simple open pit mining.</li> <li>The shallow dip of the mineralisation, coupled to the extensive near surface laterite mineralisation lends itself to open pit mining with a relatively low stripping ratio.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Preliminary metallurgical testwork has suggested excellent gold recoveries, via conventional CIP/CIL gold treatment.</li> <li>Test work to date has shown that the gold mineralisation is amenable to conventional recoveries via gravity and leaching with approximately 33.2% of the total gold content recovered via gravity separation and mercury amalgamation.</li> <li>A very high total gold recovery of 98.6% was achieved.</li> <li>The gold extraction was very fast with 95.4% of the gold recovered by gravity separation followed by only 2 hours of cyanide leaching.</li> </ul>
Environmental factors or assumptions	<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 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.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental studies have been completed and a Mining Proposal is well advanced. The general Yandal area is well known for gold mining and no environmental impediments are expected.</li> </ul>
Bulk density	<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> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Bulk density/specific gravity have been assigned based on testwork (Archimedes Method) of material of various geological and mineralisation types. The following densities are applied to the resource model.</li> <li>ALS completed the Bulk Density determinations based on weight in water/weight in air, after wax coating of the diamond core samples.</li> <li>Base of oxidation, top of fresh and a silcrete digital terrain models were constructed and assigned into the block model, for both waste and ore.</li> </ul>
Classification	<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 (ie relative confidence in tonnage/grade</li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resources have been classified as Measured, Indicated and Inferred based on the drill spacing and geological continuity at the various deposits.</li> <li>The Resource model uses a classification scheme based upon</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></p> <ul style="list-style-type: none"> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<p>drill hole spacing plus block estimation parameters, including kriging variance, number of composites in search ellipsoid informing the block cell and average distance of data to block centroid.</p> <ul style="list-style-type: none"> <li>• The results of the Mineral Resource Estimation reflect the views of the Competent Person.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Echo Resources personnel have reviewed the block model relative to the drilling data and considers the estimate to be an accurate reflection of the gold mineralisation at Julius.</li> </ul>
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The relative accuracy of the Mineral Resource is reflected in the reporting of the Mineral Resource as being in line with the guidelines of the 2012 JORC.</li> <li>• The statement relates to global estimates of tonnes and grade, with reference made to resources above a certain cut-off that are intended to assist mining studies.</li> <li>• No production data is available for comparisons.</li> </ul>