

ASX ANNOUNCEMENT

Yandal Gold Project Mt Joel Mineral Resource Update

- Updated Mt Joel Project JORC Mineral Resource of 1.4 Mt @ 2.1g/t Au for 91,600 oz Au comprising:
- Maiden JORC Resource for the Tiger deposit of 73,800 oz Au
- Maiden JORC Resource for the Adder deposit of 7,300 oz Au
- Updated JORC Resource for the Taipan deposit of 10,400 oz Au
- Total JORC Mineral Resource for the Yandal Gold Project now stands at 28.6 Mt @ 2.0 g/t Au for 1.8M oz Au
- Over 98% of the Mt Joel resource classified as Indicated
- Significant potential to increase the Mt Joel Mineral Resource with all deposits open along strike and at depth
- Targeted RC and diamond drilling will continue through 2019 and 2020 to test for potential extensions

Echo Resources (ASX: EAR) ('Echo' or the 'Company') is pleased to provide an updated Mineral Resource Estimate for the 70% owned Mt Joel Project, part of the Yandal Gold Project, in Western Australia.

The updated Mt Joel Mineral Resource Estimate is 1.4Mt at 2.1 g/t Au for 91,600 ounces Au. The Resource update includes Maiden JORC Resources for the Tiger and Adder deposits and an Updated Resource for the Taipan deposit. Some 98% of the Mineral Resource is classified in the Indicated category.

The Mineral Resource Estimate was completed by Haren Consulting (Haren) and reviewed by Echo's geological team. The details of the Updated Mt Joel Project Mineral Resource are provided in Table 1.

ASX ANNOUNCEMENT

25 June 2019

ASX CODE

KEY ASSETS

- Julius
- Orelia
- Bronzewing Hub

DIRECTORS

Victor Rajasooriar Managing Director and CEO

Barry Bolitho Non-Executive Chairman

Robin Dean Non-Executive Director

Mark Hanlon Non-Executive Director

Anthony McIntosh Non-Executive Director

Alan Thom Non-Executive Director

Kate Stoney Company Secretary

REGISTERED OFFICE

Level 1, 7 Rheola Street West Perth WA 6005

T +61 (8) 9389 8726 F +61 (8) 9467 2896



Deposit	Classification	Tonnes ('000)	Au	Ounces ('000)
Taipan	Measured	-	-	-
	Indicated	178	1.7	9.9
	Inferred	12	1.3	0.5
	Taipan Total	190	1.7	10.4
Tiger	Measured	-	-	-
	Indicated	1,031	2.2	73.3
	Inferred	10	1.8	0.6
	Tiger Total	1,041	2.2	73.8
Adder	Measured	-	-	-
	Indicated	146	1.5	7.1
	Inferred	5	1.0	0.2
	Adder Total	152	1.5	7.3
Total	Measured	-	-	-
	Indicated	1,355	2.1	90.3
	Inferred	27	1.4	1.2
	Total	1,382	2.1	91.6

Table 1 Mt Joel Project Mineral Resource by deposit and classification 0.5 g/t Au cut-off*

*Note this report is rounded to reflect appropriate precision in the estimate therefore there may be discrepancies in totals.

Echo's CEO and Managing Director, Victor Rajasooriar, commented: "The Mt Joel deposits are only 15 kilometres from our existing processing facility and provides Echo with the opportunity to enhance our existing mine plan with quality oxide ounces.

"The deposits are open in multiple directions with further drilling planned for August 2019 aiming to grow the existing resources further and apply our knowledge of these deposits to the region's other numerous exploration targets."

Mt Joel Overview

The Mount Joel Project Area is located 15 km to the north of the Bronzewing Processing Plant, part of the Yandal Gold Project (Figure 1). The Mt Joel tenements are subject to a joint venture with respected prospector Mark Creasy and Echo holds a 70% interest. Mt Joel is currently comprised of three key deposits; Taipan, Tiger and Adder, as well as numerous projects and exploration target areas.

Echo completed a reverse circulation (RC) drilling program in December 2018 to January 2019 (refer EAR ASX announcement 7 February 2019). The RC program was designed to further define and increase confidence in the mineralisation defined from the air core (AC) drilling reported on 30 November 2018 and 21 December 2018. The RC and AC drill holes were drilled at a density with the objective to define Indicated Resources and this drilling has confirmed, extended and increased the confidence in the mineralisation. The drilling results have provided confidence that potential exists to define significant, open-pittable resources over several satellite pits in the Mt Joel Project area.



Significant results include (refer EAR announcement ASX 7 February 2019):

- 16m @ 24.10 g/t Au from 26m (MJRC119)
- 27m @ 11.43 g/t Au from 45m (MJRC048)
- 4m @ 11.10 g/t Au from 12m (MJRC038)
- 11m @ 5.92 g/t Au from 29m (MJRC125)
- 15m @ 4.12 g/t Au from 80m (MJRC018)
- 9m @ 3.72 g/t Au from 10m, (MJRC002)
- 8m @ 3.46 g/t Au from 27m (MJRC122)
- 4m @ 5.67 g/t Au from 85m AND 5m @ 6.89 g/t Au from 93m (MJRC024)

Future Work Program for Mt Joel Project Area

The Mt Joel Project Area currently has three deposits with JORC 2012 Mineral Resources which remain open in multiple directions and warrant further drilling. This targeted extensional RC and diamond drilling is scheduled to begin in August 2019.

There are four further identified deposits on the eastern D1-D2 shear zone and an additional three identified deposits on the western D1-D2 shear zone (Figure 2). These targets include Dervish, Ashanti, Maitland, Mulga, Dugite and Gwardar, Sundowner and Cyclonix and have not yet been sufficiently drill tested nor have resource estimations completed. Echo plans to conduct further drilling on these seven deposits in the second half of 2019 with a view to extending the known mineralisation along strike and at depth. Further Mineral Resource estimation will then be performed with the potential to add oxide ounces to the existing 4-year mine life of the Yandal Gold Project.

In addition, there are five greenfield exploration targets that cover the litho-structural areas comparable to the defined Mt Joel mineralisation. Echo is currently conducting detailed interpretation of the geophysics to gain higher resolution on the location of the structures. The drilling of these greenfield exploration targets will completed with other drilling in the project area in the second half of 2019.





Figure 1: Location Map of Mt Joel Project Area within the Echo tenure.





Figure 2: Mt Joel Project Area map.



Mt Joel Mineral Resource Estimate – Additional Information

Location

The Mt Joel Project Area is located in the Yandal Greenstone Belt, situated within the Kalgoorlie Terrane of the Yilgarn Craton (**Error! Reference source not found.**) in Western Australia. The Yandal Greenstone Belt is a North North West (NNW) trending Archaean greenstone belt that stretches over a distance of 225 km from the Darlot Gold Mine in the south, to north of the Jundee-Nimary Gold Mine.

Geology

The Yandal greenstone corridor is up to 30 km wide in parts, is flanked by granite-gneiss terranes to the east and west, and to the north by the Proterozoic Earaheedy Basin. The Yandal Belt is bound to the east and west by the Celia and Moilers shear zone, respectively, and comprises a series of NNW trending, shallowly plunging folds, truncated by N to NW trending ductile shear zones. First order, NNW trending ductile shear zones occur on lithological contacts, are laterally discontinuous and commonly display flattening fabrics, with local zones of sinistral strike-slip. Second-order ductile shear zones within the Yandal Belt occur as sets of subparallel, locally en-echelon, generally N and NW trending zones. Late NE-SW and E-W structures cross-cut and offset the earlier formed features in a dextral and sinistral sense respectively and are associated with changes in strike of both the greenstone belt and ductile shear zones.

Gold mineralisation occurs in laminated, foliation parallel veins along first and second order shear zones, and quartz veins along NE-SW and E-W brittle cross-faults. With respect to the regional structural sequence, multiple episodes of gold mineralisation have been documented in the Kalgoorlie Terrane.

Amphibolite grade tholeiitic basalt dominates the greenstone sequence in the Mt Joel region. The basalt is generally fine grained, though coarser-grained flow centres are also recognised. Dolerite sills are more abundant to the west and consist of medium coarse grained, hornblende-plagioclase assemblages. A several hundred metre wide zone of more foliated rocks, including discrete shear zones, occurs within the greenstones along the western edge. This zone is referred to as the Mt Joel shear zone and is comprised of chlorite schist, chloritoid schist, biotite schist and felsic schists and porphyries. Most of the known mineralisation is coincident with this zone. The depth to top of fresh rock is deeper here due to the combined effects of foliated rock types and mineralising fluids.

Present day topography is generally flat with alluvial planes dominating the southern portion of the tenements. Base of complete oxidation represents the redox front. The average thickness of chemical weathering at Mt Joel is approximately 40 to 50 metres which is very similar to Bronzewing.

Mineralisation occurs dominantly in the oxide-transition zone, extending from the base of transported material to the base of weathering, a zone more than 100m deep in places. Mineralisation is associated with quartz veins in the regolith, occurring within or locally removed from the veins. Gold is generally absent in the transported material, though low grade gold anomalism (1<ppm) is associated with lateritic residuum or ferruginous saprolite at the base of transported material.

Currently nine mineralised deposits are recognised in the Mt Joel Project Area, three of which are reported here. The size of the deposits varies along strike. The northern most deposits (Ashanti/Dervish) are more consistent in geometry displaying a stronger or more



obvious structural control. In all cases gold is correlated to quartz veining. Evidence of oxidised sulphide mineralisation is strong throughout the oxide and transition zones and fresh sulphides extend well below the top of fresh rock (dominantly pyrite and pyrrhotite). Chalcopyrite has also been noted to be associated with gold mineralisation. In the primary sulphide zone at Mount Joel, gold occurs mainly as free grains ranging from 5 to 200 μ m in size. Weathered sulphides including box work textures are commonly associated with quartz veins and some veins have a distinctly 'rusty' appearance.

Based on the area of mineralisation, the Mt Joel Project Area represents one of the largest known gold systems in the Yandal Belt. Geological observations suggest that the Mt Joel is a primary system. Excellent correlations between quartz veining and gold mineralisation in the oxide-transition zone and a redox surface controlled by primary structures support a large hydrothermal system overprinted by weathering and regolith formation. Despite the varying regolith environments (from deep paleochannels to greenstone hills) the mineralised zones remain consistent in approximately the top 150 m of the residual profile and over 8 km along strike.

Drilling and Sampling

The Mount Joel Project Area has been explored since 1983 by previous operators with mapping, rotary air blast (RAB), RC and diamond drilling (DDH). Echo carried out a small AC program in 2018 to confirm historical interceptions. This was followed up in late 2018 and early 2019 with an extensive RC drill out of the numerous deposits at Mount Joel.

Drill hole spacing throughout the Mount Joel Project Area ranges from 80 m by 200 m in areas outside of mineralisation to 10 m by 10 m in the centre of higher-grade areas of the deposits.

Logging has been completed with sufficient detail to support Mineral Resource estimation, mining studies and metallurgical studies.

Drilling methods included AC, RAB, RC and DDH. Hole diameter for AC was 90 mm. RC hole diameters were generally 4³/₄ to 5¹/₂ inch with face sampling hammers used to return samples to either a riffle splitter or a rig mounted cone splitter. Diamond core was HQ/NQ2 diameter.

One metre drill chip samples were collected from AC, RC and RAB. Core samples from diamond drill holes were collected based on geology or a nominal 1 m interval and half core samples submitted for analysis. The 1 m chip samples were collected from the riffle splitter or rig mounter splitter and submitted in pre-numbered calico bags to the laboratory where they were pulverised by single stage mix and ground in a jumbo ring mill (mixer mill or LM5).

Drilling from 2018 and 2019 used the laboratories Genalysis and SGS. During the project's history, a wide range of laboratories were used by historical companies. These consisted of Amdel, Analab, SGS, Ultratrace and other laboratories that are not documented. The samples were prepared and assayed using fire assay techniques with AAS finish.

The data used for this Mineral Resource estimation is based on DDH, RC, AC and RAB holes and has been compiled from a digital database of the project provided by Echo comprising exploration work completed by Echo and by various owners of the project licenses since the early 1990's.

Echo has completed a review of the integrity of the database using specialist consultants but has not undertaken any independent verification work on the analytical data.



Sampling and sample preparation protocols for drilling are considered to be industry standard as previously confirmed by reviews undertaken by independent consultants. The Competent Person has completed a review of these reports and the findings from Echo's technical consultants assisting with the project due diligence, and as such is satisfied that industry standard practices have been applied for the various drilling programs and that the DDH, RC, AC and RAB data is suitable for the reporting of exploration results and estimates of Mineral Resources.

Estimation Methodology

Previous attempts to discretely model individual domains of mineralisation have been difficult due to the lack of large coherent and consistent mineralisation between and along sections. This has resulted in significant small mineralised zones to be excluded from estimation. The approach Haren has taken to acknowledge the individual zones of mineralisation within the Taipan, Tiger and Adder deposits was to use a categorical kriging approach to separate mineralised and un-mineralised material.

The composite data was coded as either zero for un-mineralised material or one for mineralised material based on a gold grade value of 0.30 g/t for Taipan, 0.25 g/t for Tiger and 0.30 g/t for Adder which reflect a general break between mineralised and un-mineralised material for each deposit. Thus, the data was transformed into a categorical indicator. The indicator data was used to generate variogram models reflecting the continuity of material at the categorical value. To perform categorical kriging a block model is created using very small blocks of 1 mE by 1 mN by 1 mRL for Taipan and Adder and 2 mE by 2 mN by 2 mRL for Tiger. The estimation of categorical values was converted into mineralised domains by selecting a threshold value of 0.3 for Taipan, 0.4 for Tiger and 0.4 for Adder. The coding was flagged onto the drill holes.

A parent block size of 5 mE by 5 mN by 5 mRL was applied to the mineralised domains for gold grade estimation. The drill holes were composited to 1 m within the mineralisation domains and used to generate variogram models reflecting the continuity of mineralisation. Ordinary kriging was used to estimate gold grades using orientations reflecting the continuity observed.

Classification

The Mineral Resource was classified based on data quality, sample spacing, grade continuity and geological continuity of the mineralised domains along with limiting the classified material to within a A\$2,250 per ounce optimised pit shell.

The deposits show a generally consistent continuity of mineralisation within reasonably welldefined geological constraints characteristic of the local geology.

The geological and mineralisation continuity has been assumed with sufficient confidence to allow the classification of Indicated and Inferred Mineral Resources. Haren considers the data underlying the estimate to be reliable.

All reports of Mineral Resources must satisfy the requirement that there are reasonable prospects for eventual economic extraction, regardless of the classification of the Mineral Resources. The Yandal Gold Belt is a world class mining and exploration jurisdiction with a long history of successful gold extraction. Echo have a focus on transitioning into production via the Bronzewing processing facility which is currently under care and maintenance. In this regard the classification of Mineral Resources satisfies the requirement of reasonable



prospects for eventual economic extraction. Metallurgical and engineering studies completed by Echo indicate that a cut-off of 0.5 g/t Au is appropriate.

Pit optimisations completed using a forecast gold price of A\$2,250 per ounce were used to constrain the estimation. Material falling outside the pit shells remains unclassified.

The conceptual pit optimisations do not represent an Economic Study, since no such study has been completed, and are based upon Indicated and Inferred Mineral Resources. Inferred Mineral Resources are not suitable for detailed mine planning. Mineral Resources located within the conceptual pit do not have proven economic viability and are not Mineral Reserves.

Preliminary metallurgical testing has shown average recoveries of around 91% for the Tiger deposit and 95% for the Taipan deposit.









Figure 4: Mt Joel Project – Taipan Resource Cross Section.

Figure 5: Mt Joel Project – Adder Resource Long Section.





ABOUT ECHO

The Yandal Strategy

Echo Resources is an exploration and development Company focused on the Yandal Gold Project, which comprises over 1,600km² of contiguous and highly prospective tenements in the world class yet underexplored Yandal greenstone gold belt in Western Australia.

The Yandal greenstone belt is one of Australia's most prolific gold producing belts, hosting projects such as Jundee (Northern Star Resources), Wiluna (Blackham), Darlot (Goldfields) and Agnew (Goldfields).

The Project has existing Mineral Resources of 1.8 Million ounces and Ore Reserves of 819,000 ounces which Echo is confident it will continue to substantially expand through the application of modern exploration techniques. The application of a sophisticated multidisciplined exploration approach combined with modern tools and techniques which have not been used in the area provides a significant opportunity for Echo to define new world class gold discoveries.

The Yandal Gold Project includes expansive infrastructure at the Bronzewing Processing Hub, centred around a 2.0 million tonnes per annum conventional CIL gold treatment plant. Other infrastructure includes an existing tailings storage capacity for 17.5 Mt, airstrip, roads, electricity reticulation, site administration and workshop buildings, accommodation village for 240 people, borefields and communications infrastructure. These strategic and high value assets are currently on care-and-maintenance.

The Company released an Updated Bankable Feasibility Study in April 2019 demonstrating that under conservative mining, processing and discount rate assumptions the Yandal Gold Project will generate strong cashflows and robust returns on capital with competitive operating costs and minimal pre-production capital. The Project generates an undiscounted pre-tax, free cashflow of \$225 million over an initial 4-year mine life at a A\$1,800/oz gold price. Average annual gold production is 95,000oz and life of mine all-in sustaining costs (AISC) are estimated at A\$1,095/oz. The pre-production capital estimate is \$42M (including a contingency of \$3m) during the 6-month development period until the first gold pour. Capital pay back is less than 12 months from first gold production. All major permits required to commence development and mining have been received. (Refer announcement dated 23 April 2019 entitled "Yandal Gold Project BFS & Growth Strategy")

Echo's short-term vision is to build a mineral inventory that supports a robust and highly economic transition into production via the Bronzewing processing facility.

For further information: Victor Rajasooriar Managing Director & CEO Echo Resources Ltd

Media inquiries Michael Vaughan 0422 602 720



Appendix 1 - JORC Code, 2012 Edition Table 1

JORC Code, 2012 Edition Table 1 Section 1 and Section 2 as follows have been provided by Travis Craig of Echo Resources Ltd who takes Competent Person responsibility for these sections as described in this report.

JORC Code, 2012 Edition Table 1 Section 3 as follows have been provided by Elizabeth Haren of Haren Consulting who takes Competent Person responsibility for this section as described in this report.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)									
Criteria	JORC Code explanation	Commentary							
Sampling techniques	 Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information. 	 Recent exploration at Mt Joel has comprised reverse circulation drilling of 165 holes for 11,008 metres. One metre samples were collected within mineralised zones as determined by rig-based geologists. For the 1 m samples approximately 2kg of material collected from each metre by riffle splitting of the sample interval collected via the rig cyclone. 4 metre composite samples were collected from sample intervals outside of the interpreted mineralised areas. 4 metre composite samples consist of ~2 kilogram samples, collected via spear from the drill spoils. Follow-up 1 m samples are collected if 4 m composites return anomalous values greater than 0.2 ppm Au and sent to the laboratory for analysis. Drill hole collar locations were recorded by handheld GPS survey with accuracy +/-2 metres. Analysis was conducted by submitting the 2 kg composite sample whole for preparation by crushing, drying and pulverising at Intertek/Genalysis Laboratories for gold analysis via aqua regia/ICP-MS. 							
Drilling techniques	 Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc.). 	 Reverse Circulation drilling was completed with a modern face sampling bit. 							
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. 	 Drill sample returns as recorded were considered excellent. There is insufficient data available at the present stage to evaluate potential sampling bias. 							
Logging	 Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. The total length and percentage of the relevant intersections logged. 	 Drill chip logging is a qualitative activity with pertinent relevant features recorded: lithology, mineralogy, mineralisation, structural, weathering, alteration, colour and other features of the samples. Rock chip boxes of all sample intervals were collected. All samples were logged. 							
Sub-sampling techniques and sample preparation	 If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. 	 All reverse circulation drill samples were riffle split from the one- metre samples collected from the rig cyclone. Sample preparation for all samples follows industry best practice and was undertaken by Genalysis/Intertek Laboratories in Perth and SGS Laboratory in Kalgoorlie where they were crushed, dried and pulverised to produce a sub-sample for analysis. Sample preparation involving oven drying, fine crushing to 95% 							



Criteria	JORC Code explanation	Commentary
	 Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	 passing 4 mm, followed by rotary splitting and pulverisation to 85% passing 75 microns. QC for sub sampling follows Intertek procedures. Field duplicates were taken at a rate of 1:30. Blanks were inserted at a rate of 1:30 Standards were inserted at a rate of 1:30. Sample sizes are considered appropriate to the grain size of the material being sampled.
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established. 	 The methods are considered appropriate to the style of mineralisation. Extractions are considered near total. No geophysical tools were used to determine any element concentrations at this stage. 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 analytical methods is within acceptable limits.
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data 	 The Company's geologists have visually reviewed the samples collected. No twin holes drilled Data and related information is stored in a validated Access or Micromine database. Data has been visually checked for import errors. No adjustments to assay data have been made.
Location of data points	 Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adeauacy of topoaraphic control. 	 All drillholes have been located by handheld GPS with precision of sample locations considered +/-2 m. Location grid of plans and cross sections and coordinates in this release use MGA94, Z51 datum. Topographic data was assigned based on a DTM of the Yandal district.
Data spacing and distribution	 Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	 The holes have been variably spaced. A nominal hole spacing between 10 metres (E-W spacing) and a line spacing of 20-40 metres between each section line have been used. Sample compositing has occurred on a portion samples in this release (4 metre composite samples).
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	 The orientation of sampling is considered adequate and there is not enough data to determine bias if any. Interpreted lithologies generally strike north-west. Drilling was approximately orthogonal to this apparent strike and comprised vertical drill holes as mineralisation is relatively flat lying.
Sample security	The measures taken to ensure sample security.	 Chain of custody is managed by the Company and samples are transported to the laboratory via Company staff with samples safely consigned to the laboratory for preparation and analysis. Whilst in storage, they are kept in a locked yard. Tracking sheets are used to track the progress of batches of samples.
Audits or reviews	 The results of any audits or reviews of sampling techniques and data. 	 No review or audit of sampling techniques or data compilation has been undertaken at this stage.



Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	 Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	 The Mt Joel gold prospect is located within the central Yandal Greenstone Belt. Mt Joel sits within mining licenses M 53/294, M 53/295, M 53/296, M 53/297 and M 53/393. The Mt Joel mining leases are 70% owned by Echo. A third-party net smelter royalty of 1.5% applies in respect of all minerals produced from the tenement. The tenements are in good standing. No impediments to operating on the permit are known to exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	 Exploration in the Yandal district has been completed by Great Central Mines, Normandy, Newmont and others. Anomalous RAB, aircore and RC drilling in the area by previous operators have been returned.
Geology	 Deposit type, geological setting and style of mineralisation. 	 Highly oxidized/weathered greenstones, sediments and intrusive felsic rocks, with quartz veining with minor sulphides.
Drill hole Information	 A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	 Not applicable given Exploration Results are not being reported.
Data aggregation methods	 In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	 No top cuts have been applied to exploration results. No metal equivalent values are used in this report. The reporting of aggregated results has been completed in previous public announcements and are not repeated in this report.
Relationship between mineralisation widths and intercept lengths	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'). 	 The orientation or geometry of the mineralised zones; strikes NW, NE and WNW. Dips vary but are predominantly 50-60 degrees E True width is variable and further work to clarify is required.
Diagrams	 Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	 Appropriate maps are included in main body of this report and in previous announcements with gold results and full details are in the tables reported.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	 All results for the target economic mineral being gold have been reported previously.
Other substantive	 Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk 	 Previous work in the district by others has estimated total gold resources within the Mt Joel District to total ~200,00 ounces of gold.



Criteria	JORC Code explanation	Commentary
exploration data	samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	 Preliminary metallurgical testing has shown average recoveries of around 91% for the Tiger deposit and 95% for the Taipan deposit.
Further work	 The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	 No further drilling is planned until the results of this Mineral Resource are evaluated by [Keywords].

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
Database integrity	 Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	 The extensive database contains several generations of legacy data and more recent 2018-2019 data acquired by [Keywords]. Haren understands that [Keywords] have undertaken detailed and systematic cross checking of historical data to ensure maximum integrity in the data used for Mineral Resource estimation. Verification of the legacy data by Echo Resources included the examination of some legacy drill logs and sampling records. Recent drill logging data and assay results are generated digitally, compiled and validated prior to import to a central database. A suite of validation routines are carried out across the database on a regular basis. Haren also performed general data audits and checks on the supplied data. Minor corrections were made.
Site visits	 Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	 No site visit has been undertaken by the Competent Person as the area is a well know mining region.
Geological interpretation	 Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	 The interpretations are guided by the broader regional geological setting and local field observations. Drill hole logging by geologists, through direct observation of samples have been used to interpret the geological setting. The continuity of the main mineralised features across all deposits is clearly observed by relevant grades within the drill holes. The nature of the discontinuous mineralisation and overprinting of structural disruptions indicate that alternate interpretations are possible where drill hole density is low. Further drilling may have some impact on the overall Mineral Resource estimation is areas classified as Inferred but are unlikely to modify Indicated mineralisation materially. Weathering horizons were based on geological logging. The confidence in the geological interpretation is considered to be good. The geological logging and the results of the geostatistical analyses have been useful in predicting the continuity of the mineralisation for the Mineral Resource estimation.
Dimensions	 The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource. 	 For the Taipan deposit the northern mineralised area dimensions are ~70 m across strike by ~200 m along strike. For the southern are area dimensions are ~70 m across strike by ~300 m along strike. Mineralisation has been modelled to ~180 metres below surface. For the Tiger deposit five sub-domain areas were modelled. Mineralisation has been modelled to ~200 metres below surface. Sub-domain 2 is ~500 m in easting by ~300 m in northing. Mineralisation is striking ~160° and flat lying. Sub-domain 4 is ~500 m in easting by ~500 m in northing. Mineralisation is striking ~170°, flat lying with a slight



Criteria	JORC Code explanation	Commentary						
		 plunge. Sub-domain 5 is ~300 m in easting by ~380 m in northing. Sub-domain 6 is ~400 m in easting by ~700 m in northing. For the Adder deposit three sub-domains were modelled. Mineralisation has been modelled to ~260 metres below surface. Sub-domain 10 is a flat lying supergene style domain related to the redox boundary. Dimensions are ~530 m in strike which slightly west of north at ~350° and up to 100 m wide. ~10 m spaced section lines. Sub-domain 20 is a flat lying domain to the south below domain 10. Dimensions are ~300 m in strike which slightly west of north at ~350° and up to 40 m wide. Sub-domain 30 dimensions are ~530 m in strike which slightly west of north at ~350° and plunging ~10 towards the south. 						
Estimation and modelling techniques	 The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. 	 Ordinary Kriging ("OK") interpolation has been used for estimation of gold. Dynamic anisotropy oriented 'ellipsoid' searches were used for Taipan. Tiger and Adder used oriented 'ellipsoid' searches by sub-domains. Datamine software (Studio RM (64 bit) Version 1.4.205.0) was used for the estimations. Three dimensional mineralised wireframes or planar string files along with categorical sub-domaining were used to domain the deposits for estimation purposes. Sample data was composited to 1 m down hole lengths using the 'best fit' method. Intervals with no assays were excluded from the estimates. The maximum distance of extrapolation from data points for reportable Mineral Resources was around 50 m. No assumptions have been made regarding recovery of by-products. No non-grade elements have been estimated. The parent block dimensions used was 5 mE by 5 mN by 5 mRL with sub-cells of 1.0 mE by 1.0 mN by 1.0 mRL. The parent block size was selected through kriging neighbourhood testing and considering the dimensions of the domains and drill hole spacing. Selective mining units were not modelled. The mineralisation domains were constrained by indicator categorical estimation. Hard boundaries were used between mineralised domains and country rock. Soft boundaries were used between weathering horizons. The influence of extreme grade values was addressed by applying top-cuts to the data. These cut values were determined through statistical analysis (histograms, log probability plots, CVs, and summary statistics) using Supervisor and Microsoft Excel software. To validate the models, a qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. A quantitative assessment of the estimate was completed by comparing the interpolated blocks to the sample data within all the lodes. This analysis was completed by comparing the interpolated blocks to the sample data within						
Moisture	 Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. 	 Tonnages and grades were estimated on a dry in situ basis. No moisture values were reviewed. 						
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	 A cut-off of 0.50 g/t Au has been applied for reporting Mineral Resources. 						
Mining factors or assumptions	 Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be 	 The deposit is similar in size and style to other deposits in the region that have been successfully mined by open pit techniques. 						



Criteria	JORC Code explanation	Commentary
	reported with an explanation of the basis of the mining assumptions made.	
Metallurgical factors or assumptions	 The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made. 	 No metallurgical assumptions have been built into the resource models. Preliminary metallurgical testing has shown average recoveries of around 91% for the Tiger deposit and 95% for the Taipan deposit.
Environmen- tal factors or assumptions	 Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made. 	 No assumptions have been made by Echo or Haren regarding possible waste and process residue disposal options.
Bulk density	 Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	 No bulk density measurements have been obtained from the Mt Joel deposits. Bulk density has been assigned in the models based on values derived from similar deposits in the region. A value of 1.6 t/m³ was assigned to alluvial cover, 1.8 t/m³ to oxide, 2.2 t/m³ to transition and 2.7 t/m³ to fresh.
Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	 Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012 Edition). The various deposits have been tested with high quality drilling, sampling and assaying. Geological logging has defined structural and lithological controls that provide a basis for using the categorical approach to interpret mineralisation boundaries. Haren considers that geological and mineralisation continuity has been assumed and demonstrated with sufficient confidence to allow the Taipan, Tiger and Adder deposits to be classified as Indicated or Inferred Mineral Resources. The Mineral Resources have only been classified where they occur within an optimised pit shell using a forward gold price of AUD\$2,250. The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• Internal audits have been completed which verified the technical inputs, methodology, parameters and results of the estimate.
Discussion of relative accuracy/ confidence	 Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and 	 The Taipan, Tiger and Adder Mineral Resource estimates have been reported with degree of confidence commensurate with the classification applied. The data quality is good. Recognised laboratories have been used for all analyses. The Mineral Resource statement relates to global estimates of tonnes and grade. No significant mechanised mining has occurred at the deposits.



Criteria	JORC Code explanation	Commentary
	 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. 	

Competent Persons Statements

Exploration

The information in this report that relates to Exploration Targets and Exploration Results as reported in Table 1 Section 1 and Section 2 is based on information compiled by Mr Travis Craig, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Travis Craig is a full-time employee of Echo Resources Ltd and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Travis Craig consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

Mineral Resource Estimation

The information in this report that relates to Mineral Resources as reported in Table 1 Section 3 is based on information compiled by Elizabeth Haren, a Competent Person who is a Member and Chartered Professional of The Australasian Institute of Mining and Metallurgy and Member of the Australian Institute of Geoscientists. Elizabeth Haren is employed by Haren Consulting Pty Ltd and a consultant to Echo Resources. Payment for work completed is not contingent on any particular outcome of the work. Elizabeth Haren has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Elizabeth Haren consents to the inclusion in the report of the matters based on the information in the form and context in which it appear

Appendix 2 – JORC Code (2012) Tables and additional information

MINERAL RESOURCE AND ORE RESERVE ESTIMATES

MINERAL RESOURCES															
Resource adjusted for ownership %				MEASURED						INFERRED		TOTAL RESOURCES			
	Ownership	Cut of Grade	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	
	% EAR	(g/t Au)	(Mt)	(g/t Au)	(Au)	(Mt)	(g/t Au)	(Au)	(Mt)	(g/t Au)	(Au)	(Mt)	(g/t Au)	(Au)	
JULIUS ¹	100%	0.8	1.8	2.1	121,140	1.8	1.3	77,313	1.5	2.0	96,743	5.2	1.8	295,196	
ORELIA ¹	100%	1.0	2.8	2.6	237,000	11.2	2	732,000	1.9	1.7	101,000	15.9	2.1	1,070,000	
REGIONAL ²	100%	0.5	-	-	-	-	-	-	2.8	1.5	134,925	2.8	1.5	134,925	
CORBOYS ³	100%	1.0	-	-	-	1.7	1.8	96,992	0.5	1.8	28,739	2.2	1.8	125,731	
WOORANA NORTH ⁴	100%	0.5	-	-	-	0.3	1.4	13,811	-	-	-	0.3	1.4	13,811	
WOORANA SOUTH ⁴	100%	0.5	-	-	-	0.1	1	3,129	-	-	-	0.1	1	3,129	
FAT LADY ⁴	70%	0.5	-	-	-	0.7	0.9	19,669	-	-	-	0.7	0.9	19,669	
MT JOEL ⁷	70%	0.5	-	-	-	1.4	2.1	91,350	0.03	1.4	1,250	1.4	2.1	92,600	
TOTAL MINERAL RESOURCES ⁶			4.6	2.4	358,140	17.2	1.9	1,034,264	6.7	1.7	362,657	28.6	2.0	1,755,061	
ORE RESERVE				PROVED			PROBABLE			TOTAL					

ORE RESERVE				PROVED				PROBABLE		TOTAL			
	Ownership	Cut of Grade	Tonnes	Grade	Ounces		Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	
	% EAR	(g/t Au)	(Mt)	(g/t Au)	(Au)		(Mt)	(g/t Au)	(Au)	(Mt)	(g/t Au)	(Au)	
JULIUS (Stage 1 BFS) ⁵	100%	0.8	0.8	2.3	59,887		0.2	1.7	9,183	1.0	2.2	69,070	
ORELIA (Stage 1 BFS) ⁵	100%	0.6	2.5	2.2	178,781		3.4	1.5	163,807	6.0	1.8	342,588	
TOTAL STAGE 1 (BFS)			3.3	2.2	238,668		3.6	1.5	172,991	6.9	1.8	411,658	
JULIUS (Stage 2 PFS) ⁶	100%	0.8	0.7	1.6	38,495		0.0	1.4	2,006	0.8	1.6	40,501	
ORELIA (Stage 2 PFS) ⁶	100%	0.6	1.1	1.5	55,047		7.2	1.3	312,363	8.4	1.4	367,410	
TOTAL STAGE 2 (PFS)			1.9	1.5	93,542		7.2	1.3	314,369	9.1	1.4	407,911	
TOTAL ORE RESERVE			5.2	2.0	332,210		10.8	1.4	487,359	16.0	1.6	819,569	

ROUNDING ERRORS MAY OCCUR

NOTE:

1. Resources estimated by Mr Lynn Widenbar (refer to Competent Persons Statements) in accordance with JORC Code 2012. For full Mineral Resource estimate details refer to the Echo Resources Limited announcement to ASX on 7 September 2017, 14 June 2018 and 23 April 2019. Echo Resources Limited is not aware of any new information or data that materially affects the information included in 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.

2. Resource estimates include Bills Find, Shady Well, Orpheus, Empire and 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.

- 3. Resources estimated by HGS (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 23 August 2016. Echo is not aware of any new information or data that materially affects the information included in 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.
- 4. Resources estimated by Coxrocks (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 in 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.
- 5. 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 and 23 April 2019. Echo Resources Limited is not aware of any new information or data that materially affects the information included in 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.
- 6. Reserve estimated by Mr Jim Moore (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 23 April 2019. Echo Resources Limited is not aware of any new information or data that materially affects the information included in 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.
- 7. Resource estimated by Haren Consulting (refer to Competent Persons Statements) in accordance with JORC Code 2012. For full details of the Mineral Resource estimates refer to the Echo Resources Limited announcement to ASX on the 25 June 2019.
- 8. Mineral Resources are inclusive of Ore Reserves