ELEMENTOS
TOMORROW'S TIN

ASX ANNOUNCEMENT

15 December 2020

New, significant mineralisation detected at Oropesa Tin Project

Elementos Limited (ASX:ELT) has detected several new significant zones of tin mineralisation at the company's flagship Oropesa Tin Project in Spain following a fresh review of historical drill core samples.

Notably, the review, which examined more than 170 diamond drill holes, resulted in the collection of 207 samples for assay for tin (see Table 1). The new zones of mineralisation identified during this program occur from near the surface to towards the base of the known resource *[1].

Elementos Chairman Mr Andy Greig said the company was encouraged by the review which coincides with the company's current diamond drilling program scheduled across 47 holes for approximately 5,000m.

"We're very pleased by the new zones of mineralisation generated to date by this historical core optimisation program, designed to increase the project's overall resource and mine life," Mr Greig said.

"We're confident that the data we're accumulating will also serve to reduce the overall stripping ratio and improve mining dilution for the proposed open cut mining operation*[3] which has a prospective annual production of 2,440 tonnes of tin in concentrate over a 14-year mine life."

Mr Greig said Oropesa's current geological resource was drawn from analytical and geological data collected from 261 drill holes *[1] by the project's previous owners, Eurotin Ltd.

"Following the completion of our optimisation works, Oropesa will be ready to progress into the Definitive Feasibility Study stage and finalise environmental permitting," he said.

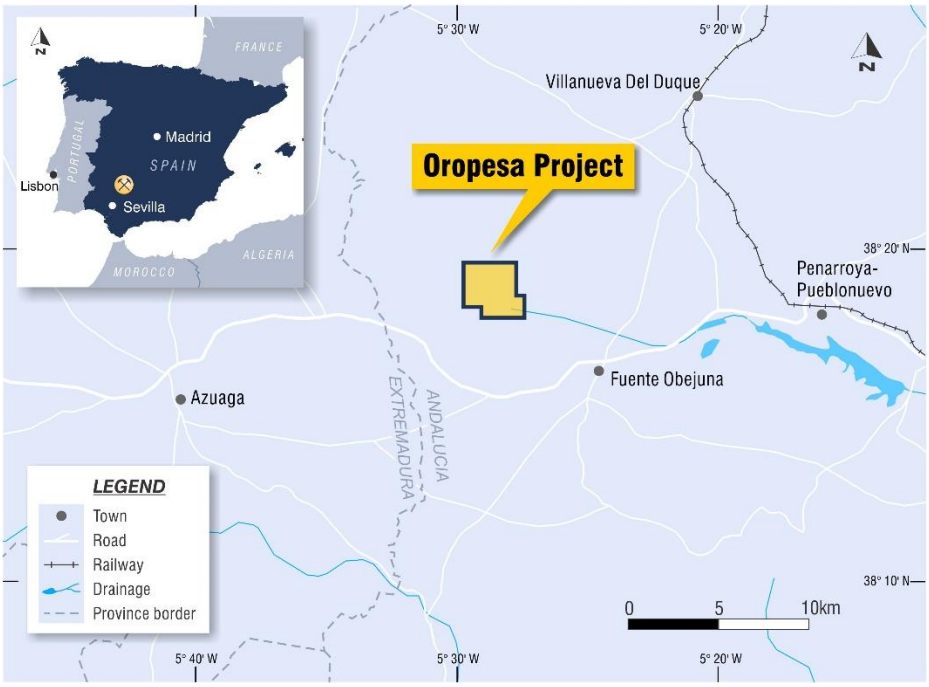

Figure 1. Location of the Oropesa Tin Project, Spain

Level 6, 10 Market Street
Brisbane Queensland 4000
Phone +61 (0)7 3221 7770
admin@elementos.com.au
elementos.com.au

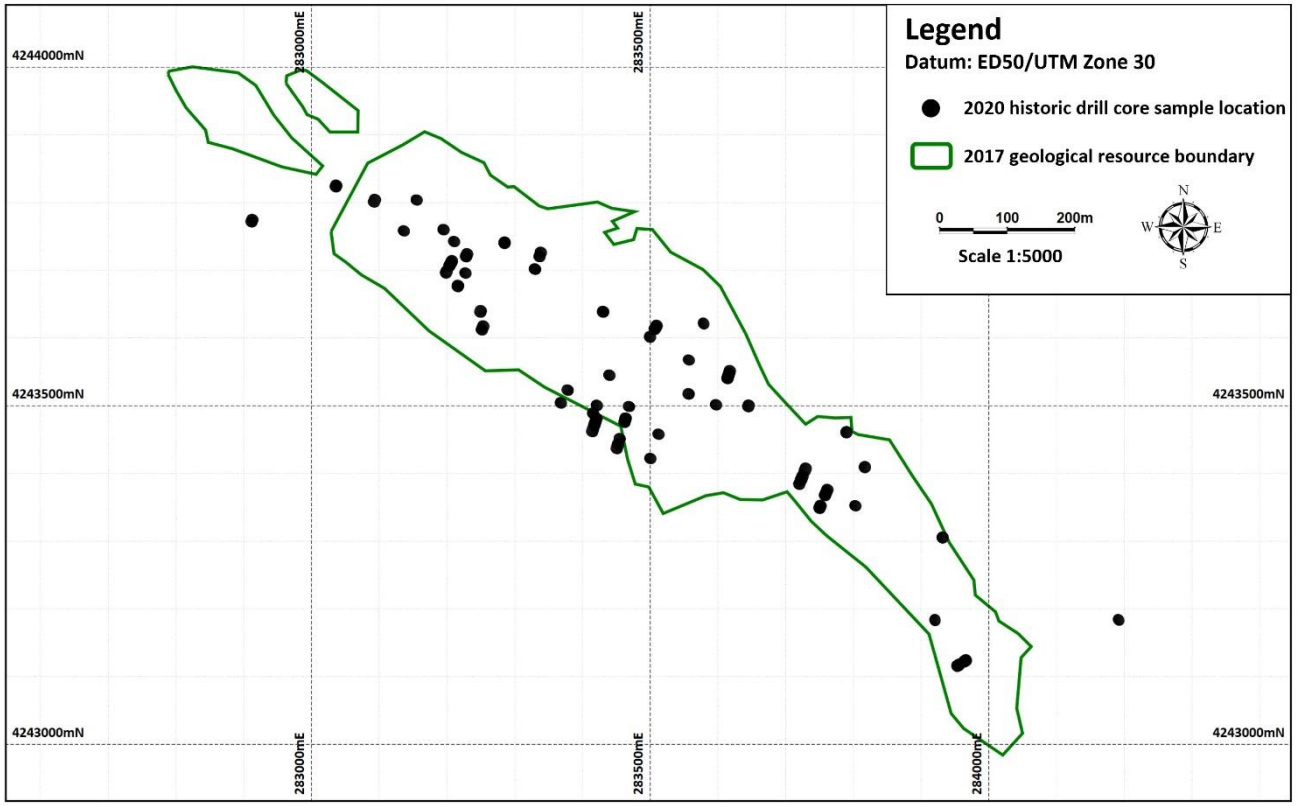

Figure 2. Plan of the distribution of the 2020 drill core re-examination samples within the Oropesa geological resource boundaries

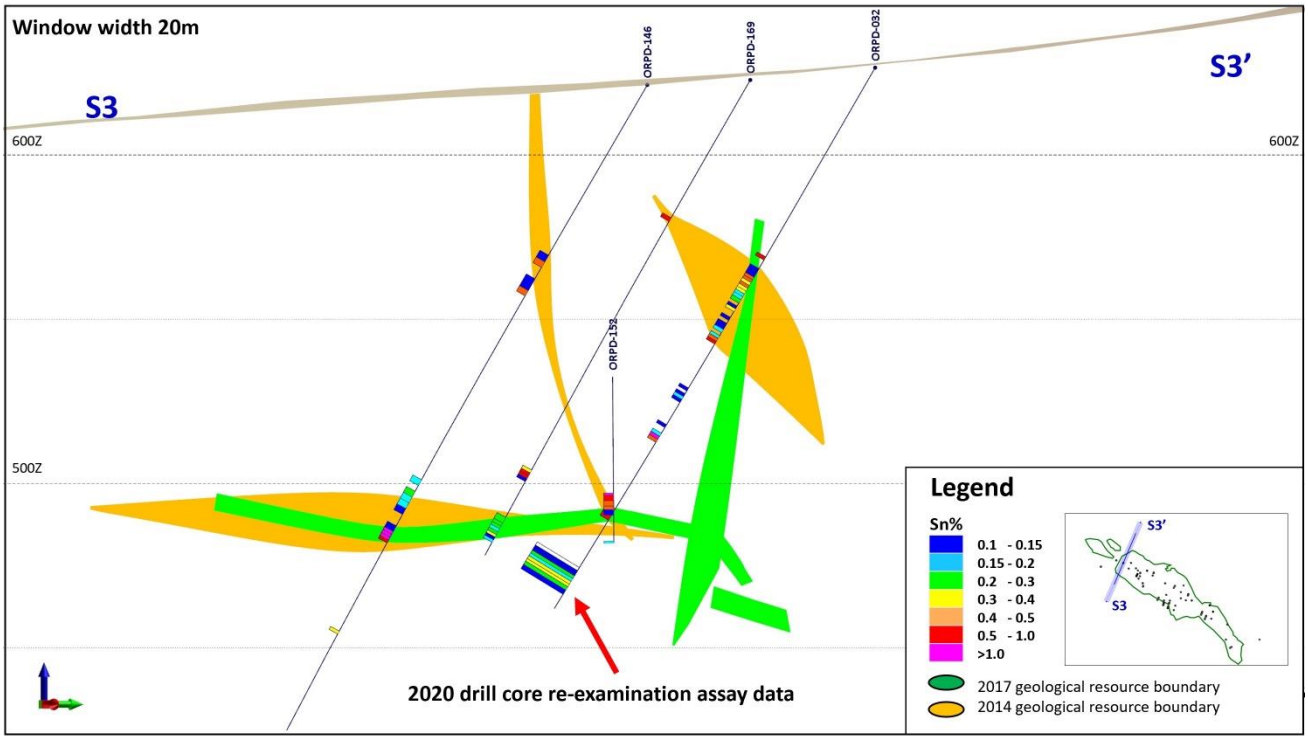

Figure3. Cross-section S3 highlighting a significant intersection of tin mineralisation resulting from the 2020 historical drill core re-examination program at Oropesa

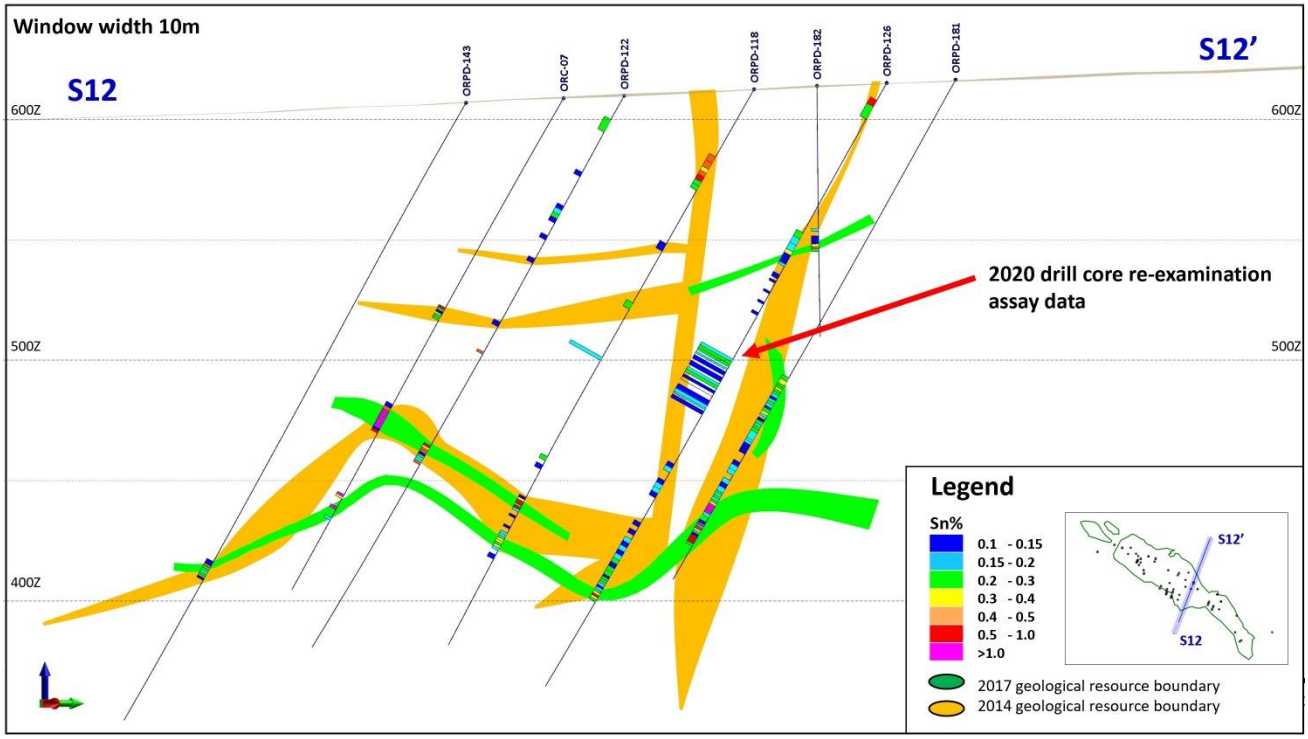

Figure 4. Cross-section S12 highlighting a significant intersection of tin mineralisation resulting from the 2020 historical drill core re-examination program at Oropesa

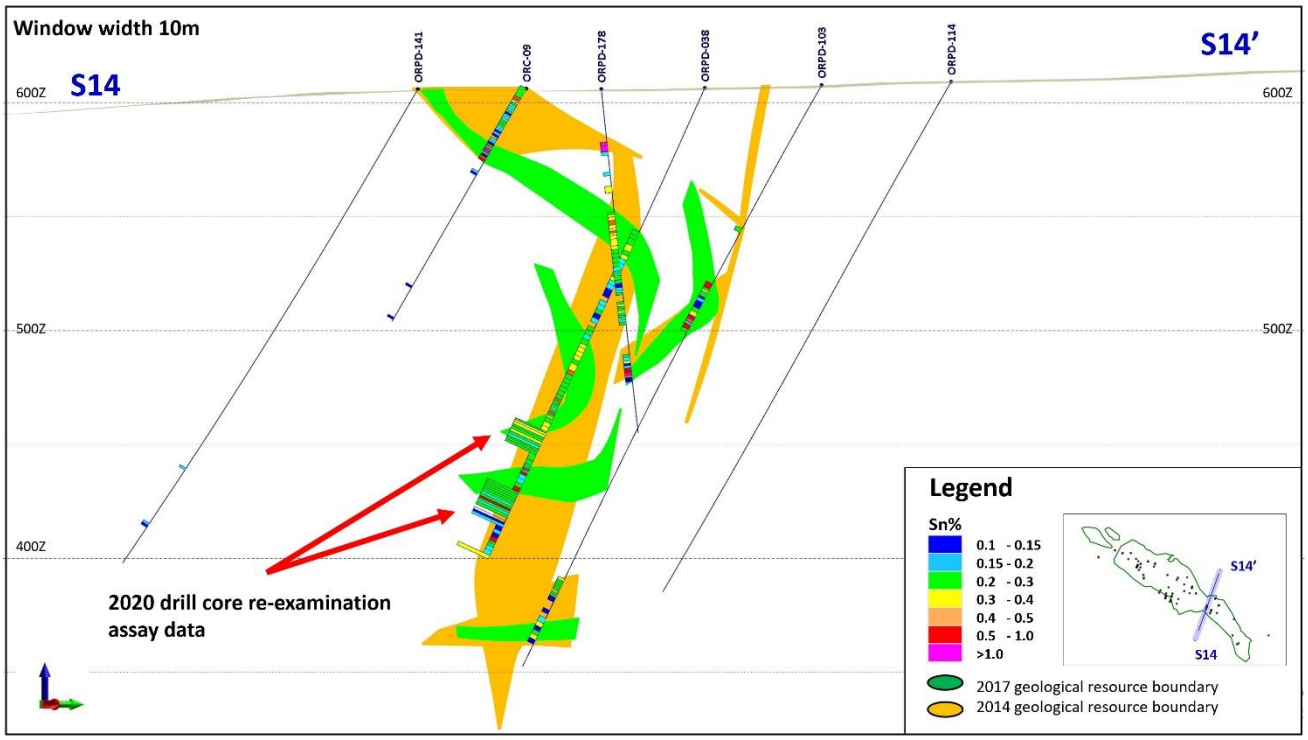

Figure 5. Cross-section S14 highlighting a significant intersection of tin mineralisation resulting from the 2020 historical drill core re-examination program at Oropesa

New Assay Results from Historical Drill Core

Drill Hole No.	From (m)	To (m)	Length (m)	Sn (%)	Drill Hole No.	From (m)	To (m)	Length (m)	Sn (%)
ORPD-116	147.9	152.6	4.7	0.11	ORPD-055 BIS	208.9	209.7	0.8	0.06
ORPD-116	153.5	154.3	0.8	0.13	ORPD-117	7.0	13.0	6.0	0.29
ORPD-116	155.4	156.4	1.0	0.30	ORPD-140	141.8	143.0	1.2	0.13
ORPD-116	161.0	163.6	2.6	0.24	ORPD-123	114.0	114.5	0.5	0.25
ORPD-116	191.7	193.7	2.0	0.50	ORPD-177	73.7	76.6	2.9	0.36
ORPD-022	103.2	112.0	8.8	0.10	ORPD-014	211.8	213.1	1.3	0.16
ORPD-022	145.5	147.0	1.5	0.03	ORPD-014	216.0	217.0	1.0	0.09
ORPD-022	161.4	163.5	2.1	0.07	ORPD-014	221.7	222.8	1.1	0.14
ORPD-022	175.5	176.5	1.0	0.11	ORPD-014	249.8	250.9	1.1	0.15
ORPD-133	164.1	167.0	2.9	0.15	ORPD-014	257.2	260.4	3.2	0.33
ORPD-133	174.4	181.5	7.1	0.08	ORPD-016	49.7	50.6	0.9	0.22
ORPD-133	183.5	186.5	3.0	0.47	ORPD-048	176.8	178.3	1.5	0.12
ORPD-133	195.7	204.5	8.8	0.09	ORPD-062	121.9	123.5	1.6	0.10
ORPD-042	123.5	129.5	6.0	0.07	ORPD-062	124.4	126.7	2.3	0.14
ORPD-073	101.5	103.3	1.8	0.04	ORPD-074	162.5	164.0	1.5	0.75
ORPD-073	114.7	116.8	2.1	0.09	ORPD-078	158.6	159.5	0.9	0.04
ORPD-118	127.9	129.4	1.5	0.16	ORPD-079	106.4	107.6	1.2	0.20
ORPD-038	166.2	177.3	11.1	0.27	ORPD-079	107.8	108.8	1.0	0.18
ORPD-038	195.5	207.8	12.3	0.24	ORPD-136	188.4	190.2	1.8	0.06
ORPD-038	209.1	212.2	3.1	0.13	ORPD-142	47.0	47.3	0.3	0.15
ORPD-038	225.9	227.6	1.7	0.35	ORPD-144	143.5	144.4	0.9	0.14
ORPD-054	217.6	224.5	6.8	0.21	ORPD-144	145.8	147.2	1.4	0.15
ORPD-054	225.5	228.6	3.1	0.14	ORPD-150	182.0	183.7	1.7	0.26
ORPD-109	164.8	167.2	2.4	0.17	ORPD-150	189.9	190.7	0.8	0.16
ORPD-109	173.9	180.4	6.5	0.18	ORPD-158	227.4	228.1	0.7	0.05
ORPD-109	184.9	186.0	1.1	0.17	ORPD-164	152.7	153.8	1.1	0.13
ORPD-109	218.2	220.5	2.3	0.17	ORPD-205i	202.3	202.9	0.6	0.11
ORPD-109	222.0	223.9	1.9	0.17	ORPD-140	63.3	64.2	0.9	0.07
ORPD-109	225.1	227.8	2.7	0.18	ORPD-135	29.5	30.5	1.0	0.03
ORPD-109	228.1	228.8	0.7	0.19	ORPD-135	64.0	67.0	3.0	0.16
ORPD-124	179.3	181.5	2.2	0.09	ORPD-135	68.7	70.6	1.9	0.06
ORPD-130	5.4	7.8	2.4	1.35	ORPD-135	77.7	78.7	1.0	0.12
ORPD-126	131.3	139.1	7.8	0.15	ORPD-135	126.0	127.0	1.0	0.10
ORPD-126	140.1	142.0	1.9	0.11	ORPD-135	142.2	143.3	1.1	0.34
ORPD-126	143.0	149.0	6.0	0.14	ORPD-135	146.6	157.3	10.7	0.09
ORPD-126	151.1	155.4	4.3	0.15	ORPD-067	103.1	108.6	5.5	0.10
ORPD-032	176.7	186.2	9.5	0.18	ORPD-128	126.0	128.3	2.3	0.09
ORPC-02B	25.1	26.1	1.0	0.49	ORPD-035	162.0	164.6	2.6	0.09
ORPC-02B	45.0	45.9	0.9	1.18	ORPD-035	165.7	168.4	2.7	0.07
ORPC-02B	46.9	49.9	3.0	0.10	ORPD-129	83.0	84.8	1.8	0.14
ORPC-02B	51.8	52.5	0.7	0.17	ORPD-129	180.8	182.3	1.5	0.09
ORPC-02B	52.8	53.3	0.5	0.22	ORPD-129	206.0	209.0	3.0	0.08
					ORPD-183	67.7	69.3	1.6	0.08

Table 1. Composited tin assay data from the 2020 Oropesa historical drill core review and sampling program

Elementos' Board has authorised the release of this announcement to the market.

For more information, please contact:

Mr Duncan Cornish
Company Secretary
Phone: +61 7 3221 7770
admin@elementos.com.au

Christopher Dunks
Executive Director
Phone 0410 435 554
cd@elementos.com.au

ABOUT ELEMENTOS

Listed on the ASX in 2009, Elementos is committed to the safe and environmentally-conscious exploration and production of high-grade tin resources.

Led by an experience-heavy management team and Board, Elementos is positioned as a diversified tin platform, with an ability to develop exciting projects in multiple countries.

As tin stocks hover at historic lows, the company is well-positioned to help bridge the significant supply shortfall in coming years. This shortfall is being partly driven by increasing global interest in renewable energy and electric vehicles. In 2018, Rio Tinto, through research by Boston's Massachusetts Institute of Technology (MIT), announced tin was predicted to be the metal most impacted by the transition to the new energy economy for its use in electric vehicles, robotics, renewable energy storage and advanced computation.

Competent Persons Statement:

The information in this report that relates to the Annual Mineral Resources and Ore Reserves Statement, Exploration Results and Exploration Targets is based on information and supporting documentation compiled by Mr Chris Creagh, who is a consultant to Elementos Ltd. Mr Creagh is a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and who consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Chris Creagh 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 (JORC Code 2012).
The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.

References to Previous Releases

The information in this report that relates to the Mineral Resources and Ore Reserves were last reported by the company in compliance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Mineral Resources, Ore Reserves, production targets and financial information derived from a production target were included in market releases dated as follows:

- *1 - Acquisition of the Oropesa Tin Project, 31st July 2018
- *2 - Oropesa optimisation work and drilling to unlock further value, 13th July 2020
- *3 - Positive Economic Study for the Oropesa Tin Project, 7th May 2020
- *4 – Drilling starts at Oropesa, 29th September 2020

The company confirms that it is not aware of any new information or data that materially affects the information included in the market announcements referred above and further confirms that all material assumptions underpinning the production targets and all material assumptions and technical parameters underpinning the Ore Reserve and Mineral Resource statements contained in those market releases continue to apply and have not materially changed.

JORC CODE, 2012 EDITION – TABLE 1

SECTION 1 SAMPLING TECHNIQUES AND DATA

Historical Diamond Drill Core Re-examination, Oropesa Tin Project, Spain – December 2020

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg 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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• All drill holes reported in this program are from exploration drilling programs carried out by Eurotin Ltd between 2010 and 2016. Diamond Core Drill Holes (DDH) are predominantly HQ in diameter, PQ diameter pre-collar and HQ diameter tail have been used in more broken ground. • Cassiterite mineralisation at Oropesa is rarely visible to the naked eye. The Oropesa drill core re-examination work has been based on observations from previous exploration programs. Historical exploration mineralogical reports (*[1]) have reported a strong relationship between tin mineralisation (cassiterite) and sulphide mineralisation. High levels of oxidation of the sulphide mineralisation to iron oxides has been observed. These oxidised zones occur near the surface (gossans) and within sub-vertical fault zones. Historical drilling data indicates that these highly oxidised zones can contain significant quantities of tin mineralisation (cassiterite). Additional indicators of potential cassiterite mineralisation zones (± sulphides) at Oropesa include silicification of the host sandstones with finely disseminated to semi-massive sulphides (pyrite ± arsenopyrite) with late-stage infill colloform and/or vuggy quartz(*[1]). Cassiterite mineralisation at Oropesa has also been observed to be associated with intense silicification, leaching and chlorite alteration of the host rocks. Physical or chemical weathering of the fine-grained sulphides has been observed as small voids (pitting) in the host rocks. • A portable NITON XRF analyser was used to determine the presence of tin mineralisation in the zones of interest identified from visual observations. The NITON portable XRF data has been used solely as a guide to sample boundaries for analysis at a commercial laboratory and are not presented in this report.

Criteria	JORC Code explanation	Commentary
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	• Diamond core drilling, double tube, size PQ pre-collars (85.0mm ID) and HQ tails (63.5mm ID). Standard diamond drill bit. PQ diameter is converted to HQ diameter when hole stability and orientation are consistent with the planned hole orientation. • Core is not oriented.
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.*	• Diamond drill core was generally extracted in 3m runs. Drill core recoveries are recorded after each core run. Measurements are taken systematically downhole between core blocks. • Core recovery averaged approximately 92%, ranging from 0% to 100%. • Visual assessment of the drill core shows that core recovery is variable with zones of lower recoveries often noted in zones of significant oxidation, mineralisation or structure. No clear relationship exists between tin grade and recovery.
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.*	• Geotechnical (RQD and estimated core recovery) and geological logging has been carried out for all core. All data has been entered and stored electronically in digital databases. • Both quantitative (geotechnical) and qualitative (lithological) logging has been carried out. • All drill core has been logged and photographed. The core is photographed within core boxes, which are identified by drill hole number and start and finish depths. Drill run depths are marked on core blocks.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• Whole core was split using a core saw operated by trained Company personnel. The samples were recorded and submitted to an ISO-accredited ALS facility in Seville for preparation. This facility followed procedure CRU-31 to weigh, dry and crush the samples where 70% <2mm. A 1000g sample was split and pulverised to 85% passing 75 microns. Prepared samples were sent to the ALS laboratory in Galway, Ireland for analysis.

Criteria	JORC Code explanation	Commentary
	• *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.*	
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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• ALS, Galway, Ireland, analysed the samples for tin by peroxide fusion, ICP-AES (ME-ICP81X). • The QAQC procedures featured the insertion of accredited standards and blanks at an insertion rate of 5% in every batch to the laboratory. • No sample repeats were submitted for analysis as an external laboratory check. • Elementos considers the assay data from the drill core re-examination program to be accurate, based on the generally accepted industry standard practices employed by the company and the QAQC procedure adopted by ALS.
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.*	• Drill core for analysis was selected by a geologist under the supervision of either a Company senior geologist or the Competent Person for this report. NITON portable XRF data was used to assist in determining the boundaries of the sections of drill core to be sampled for analysis. • Drill core is available for verification at the Company's facility in Fuente Obejuna, Spain. • All analytical data is recorded on laptop computers onto a standardised Excel logging template utilising the Company's coding system. Data is uploaded onto a commercial "cloud" data storage system.
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.*	• All drill core sampled for the re-examination program comes from drilling programs carried out between 2010 and 2016. A majority of the drill holes have been surveyed using a Leica 530 SR GPS. A small number of drill holes have been surveyed using a triangulation method from known survey points.

Criteria	JORC Code explanation	Commentary
	• *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Downhole surveys (dip and azimuth) have been collected using a single shot tool. Measurements are made at 25 - 50m intervals, depending on ground conditions. • The grid system used for the GPS is 1989 ETRS Spanish Datum (ETRS89) Zone 30. Data is recorded in ETRS89 and ED50 co-ordinate systems. • The mineralized zone uses high accuracy collar pint data to generate topography over a generally flat area with LIDAR data (5m accuracy) used outside this zone.
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.*	• Drill holes used in the drill core re-examination program are included in the current 2017 geological resource (*[1]). Drill hole spacing used in the Oropesa 2017 geological resource model ranges from 20 to 100m.
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.*	• Where applicable, drill hole orientation is approximately perpendicular to known mineralisation, as previously reported. • The orientation of the drilling is not considered to have introduced any material bias to the sample data.
Sample security	• *The measures taken to ensure sample security.*	• Transport of core samples to the ALS preparation facility in Seville is carried out by Company personnel. All drill core and crushed reject samples are stored in the Company's secure facility in Fuente Obejuna, Spain
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The sample assay data has been added to the existing digital drill hole database. This database has been audited and reviewed by SRK, UK.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Ground Magnetic Survey at Cleveland

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.*	Elementos Limited announced to the ASX the acquisition of Minas De Estaño De España, SLU ("MESPA or the Company") from TSX-V listed Eurotin Ltd on 31July 2018:- (Acquisition of the Oropesa Tin Project) MESPA has registered title to the Oropesa project property with the Andalucia mining authorities (Permit number 13.050), under the Spanish Mining Act. The property is a 14.51km² concession in Andalucía, southern Spain, located 75 km northwest of Cordoba and 180 km northeast of Seville. On 10 October 2017 the Company filed an Exploitation Permit application for the Oropesa property. Under Spanish Law an Exploitation Concession is granted for a 30-year period, and may be extended for two further periods of 30 years each and up to a maximum of 90 years. Completing and filing the Exploitation Application prior to the expiration of the Investigation Permit allows the Company to remain in compliance with its title for the Oropesa property There are no known litigations potentially affecting the Oropesa Project.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Instituto Geológico y Minero de España ("IGME") conducted an exploration program in southern Spain between1969–1990, including geological mapping and geochemical surveys, which led to the discovery of tin on the Oropesa property in 1982.Additional tin exploration targeted Oropesa and the neighbouring La Grana property during 1983–1990, which included further mapping, stream sediment sampling, geochemical soils, geophysical surveys, trenching and initial drilling.
Geology	• *Deposit type, geological setting and style of mineralisation.*	The Oropesa deposit is characterised by replacement-style tin mineralisation (cassiterite and minor stannite) occurring mainly at sandstone-conglomerate contacts in the Peñarroya Basin, a Carboniferous basin formed during the Hercynian/Variscan Orogeny. Reactivation of syn-sedimentary and basin-controlling faults has resulted in complex, folded geometries. Subordinate fault-hosted mineralisation is also present.

Criteria	JORC Code explanation	Commentary

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.*
		• All material data for the drill hole information related to this report is referenced in the following report that was released to the ASX on 31st July 2018 - "Acquisition of the Oropesa Tin Project". Please refer to this announcement for information related to the drill hole data and geological resource.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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.*	• N/A. No samples have been assayed at the time of reporting
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 (eg 'down hole length, true width not*	• This report is based on analytical data from ALS, Seville on drill core analyses only. • The drill holes sampled in this report were targeted to intersect the mineralisation perpendicular to the known mineralisation boundaries. • All drill hole lengths reported in the release are "down hole lengths". True

Criteria	JORC Code explanation	Commentary
	known').	widths are not included in this report.
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.*	• A drill core sample distribution plan is included in this report. • Three sections of re-examined drill holes are also included in this report.
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.*	• The reporting is considered to be balanced.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	
Further work	• *The nature and scale of planned further work (eg 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.*	• The additional drill core analytical data will be used in conjunction with information from an exploration drilling program currently underway to adjust the geological resource boundaries and calculate a new geological resource for the Oropesa project.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

n/a

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.*	N/A

Criteria	JORC Code explanation	Commentary
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.*	
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.*	
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.*	

Criteria	JORC Code explanation	Commentary
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 behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	•
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	•

Criteria	JORC Code explanation	Commentary
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	•
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.*	•
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	•
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.*	•

Criteria	JORC Code explanation	Commentary
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	
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.*	•
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	•
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	•

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

n/a

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• n/a
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.*	•
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	•
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	•
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.*	•

Criteria	JORC Code explanation	Commentary
	• *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	•
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	•
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk*	•

Criteria	JORC Code explanation	Commentary
	commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	•
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	•
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	•
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.*	•

Criteria	JORC Code explanation	Commentary
	• *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	•
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	•
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	•
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	•
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the*	•

Criteria	JORC Code explanation	Commentary
	relative accuracy and confidence of the estimate. • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

SECTION 5 ESTIMATION AND REPORTING OF DIAMONDS AND OTHER GEMSTONES

n/a

Criteria	JORC Code explanation	Commentary
Indicator minerals	• *Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.*	•
Source of diamonds	• *Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.*	•
Sample collection	• *Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose (eg large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution).* • *Sample size, distribution and representivity.*	•
Sample treatment	• *Type of facility, treatment rate, and accreditation.* • *Sample size reduction. Bottom screen size, top screen size and re-crush.* • *Processes (dense media separation, grease, X-ray, hand-sorting, etc).* • *Process efficiency, tailings auditing and granulometry.* • *Laboratory used, type of process for micro diamonds and accreditation.*	•
Carat	• *One fifth (0.2) of a gram (often defined as a metric carat or MC).*	•
Sample grade	• *Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume.* • *The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation.*	•

Criteria	JORC Code explanation	Commentary
	• *In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive sample grade (carats per tonne).*	
Reporting of Exploration Results	• *Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.* • *Sample density determination.* • *Per cent concentrate and undersize per sample.* • *Sample grade with change in bottom cut-off screen size.* • *Adjustments made to size distribution for sample plant performance and performance on a commercial scale.* • *If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.* • *The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.*	•
Grade estimation for reporting Mineral Resources and Ore Reserves	• *Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.* • *The sample crush size and its relationship to that achievable in a commercial treatment plant.* • *Total number of diamonds greater than the specified and reported lower cut-off sieve size.* • *Total weight of diamonds greater than the specified and reported lower cut-off sieve size.* • *The sample grade above the specified lower cut-off sieve size.*	•

Criteria	JORC Code explanation	Commentary

Value estimation	• *Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.*
	• *To the extent that such information is not deemed commercially sensitive, Public Reports should include:*
	  o *diamonds quantities by appropriate screen size per facies or depth.*
	  o *details of parcel valued.*
	  o *number of stones, carats, lower size cut-off per facies or depth.*
	• *The average $/carat and $/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.*
	• *The basis for the price (eg dealer buying price, dealer selling price, etc).*
	• *An assessment of diamond breakage.*
		•

Security and integrity	• *Accredited process audit.* • *Whether samples were sealed after excavation.* • *Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.* • *Core samples washed prior to treatment for micro diamonds.* • *Audit samples treated at alternative facility.* • *Results of tailings checks.* • *Recovery of tracer monitors used in sampling and treatment.* • *Geophysical (logged) density and particle density.* • *Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.*	•

Criteria	JORC Code explanation	Commentary
Classification	• *In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.*	•