Ventnor Resources Limited

20 November 2018

ASX ANNOUNCEMENT

Muchea Silica Sand Project Maiden Resource

Highlights:

- ***Total Indicated and Inferred Mineral Resource of 191 million tonnes @ 99.6% SiO_2***
  - ***Includes Indicated Resource of 19 million tonnes @ 99.7% SiO_2***
- ***Metallurgical testwork to date confirms potential for very high-quality product of +99.9% SiO_2 with less than 100ppm Fe_2O_3***
- ***Result is from shallow hand auger and aircore drilling***
- ***Further deeper drilling expected to significantly increase the Mineral Resource***

Ventnor Resources Limited (**Ventnor** or **Company**) (ASX: VRX) is pleased to announce the results from the independent estimate of the Mineral Resource at its Muchea Silica Sand Project (**Muchea Project**), which is located 50km north of Perth.

This Mineral Resource estimate was carried out by CSA Global and based on aircore and hand auger drilling carried out by Ventnor as part of its due diligence exercise during the March 2018 quarter, prior to the acquisition of the Muchea Project in July 2018.

The large Maiden Mineral Resource of high-grade silica sand vindicates the Company's decision to acquire the Muchea Project.

The area of the Inferred Mineral Resource estimate is predominately based on shallow hand auger results and has the potential to be deeper with a significantly larger Mineral Resource.

The Company believes that the Indicated Mineral Resource area is adequate for detailed mining studies, and closer spaced drilling will also extend the area and tonnage for a potential Ore Reserve.

A third iteration of testwork is being finalised, with additional attritioning that will be used to determine the final circuit design to produce a high-quality feedstock for ultra-clear glass production.

Testwork results are expected during the December 2018 quarter, to be followed by engineering studies.

Ventnor Managing Director Bruce Maluish said, "*This Maiden Mineral Resource Estimate has confirmed our belief that the Muchea Silica Sand prospect is a world class high-grade deposit, which can be processed to supply almost any grade sand for glassmaking in Asia".*

"The Company will move quickly into detailed engineering and mining studies to support mining proposals for forwarding to relevant Government agencies to commence the approvals process", Maluish said.

ASX: VRX

Capital Structure

Shares on Issue:
365 million

Unlisted Options:
51.75 million

Corporate Directory

Paul Boyatzis
Non-Executive Chairman

Bruce Maluish
Managing Director

Peter Pawlowitsch
Non-Executive Director

John Geary
Company Secretary

Company Projects

Arrowsmith Silica Sands Project, 270km north of Perth, WA.

Muchea Silica Sand Project, 50km north of Perth, WA.

Biranup base metals and gold Project adjacent to the Tropicana Gold Mine, WA.

Warrawanda Nickel Project south of Newman, WA.

The Company is actively assessing other projects in Australia.

Executive Summary

The Mineral Resource estimate (**MRE**) for the Muchea Project comprises a combined total of Indicated and Inferred Mineral Resources of 191 Mt @ 99.6% SiO_2 reported in accordance with the JORC Code 2012 Edition. The Indicated component of the MRE comprises 19 Mt @ 99.7% SiO_2, with the Inferred component being 172 Mt @ 99.6% SiO_2.

The MRE is based on the results obtained from 44 hand auger drill holes for 260.7 m and 46 aircore holes for 522 m and defines the upper white silica sand layer, geologically logged and differentiated based on colour and chemical analysis results.

Based on metallurgical testwork completed to date, the white silica sand is considered readily amenable to upgrading by conventional washing and screening methods to produce a high-purity silica sand product with high mass recoveries. The high-purity silica sand product specifications are expected to be suitable for industries such as glassmaking.

The MRE results are shown in Table 1. Summary information is included in this report and JORC 2012 Table 1 is included as Appendix 1.

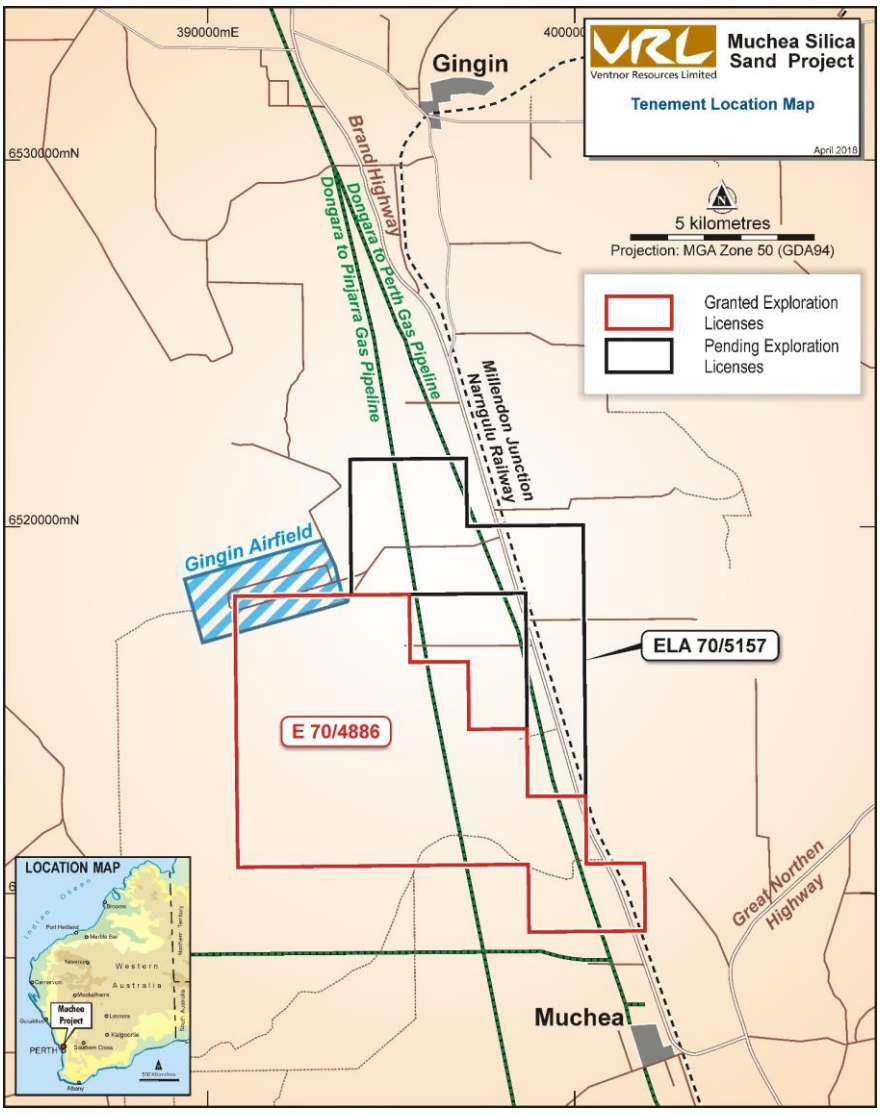

Figure 1: Muchea Silica Sand Project Location

Ventnor Resources Limited

Table 1: Muchea White Silica Sand Mineral Resource Estimate as at November 2018

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	LOI%	TiO_2%
Indicated	19	99.7	0.03	0.03	0.2	0.08
Inferred	172	99.6	0.04	0.02	0.2	0.08
Indicated + Inferred	**191**	**99.6**	**0.04**	**0.02**	**0.2**	**0.08**

**Note: Interpreted white silica sand mineralisation is domained above a basal surface wireframe defined based on drill logging data. The upper (overburden) layer within 0.5 m of surface is depleted from the modelled silica sand unit, being reserved for rehabilitation purposes. All classified silica sand blocks in the model are reported. Differences may occur due to rounding.*

Competent Persons Statements

The information in this Report that relates to Muchea Exploration Results is based on data collected under the supervision of Mr David Reid, in his capacity as Exploration Manager. Mr Reid, BSc (Geology), is a registered member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and the activity being undertaken to qualify as a Competent Person under the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Reid consents to the inclusion of the data in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on information compiled by Mr Grant Louw who is a full-time employee of CSA Global, under the direction and supervision of Dr Andrew Scogings, who is an Associate of CSA Global. Dr Scogings is a Member of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. He is a Registered Professional Geologist in Industrial Minerals. Dr Scogings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). Dr Scogings consents to the disclosure of information in this report in the form and context in which it appears.

ASX Listing Rule 5.8.1 Summary

The following summary presents a fair and balanced representation of the information contained within the Mineral Resource Estimate (MRE) technical report:

- Silica sand mineralisation at the Muchea Project occurs within the Bassendean Sand, which extends along the Swan coastal plains of the Perth Basin, parallel to the coast. (ASX LR 5.8.1 geology & geological interpretation)
- Samples were obtained from auger and aircore drilling. Quality of drilling/sampling and analysis, as assessed by the Competent Person, is of an acceptable standard for use in a Mineral Resource estimate publicly reported in accordance with the JORC Code. (ASX LR 5.8.1 Sampling & 5.8.1 Drilling)
- Major and trace elements apart from SiO_2 were analysed using a four-acid digest followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis at the Intertek Genalysis, Perth laboratory. Loss on Ignition at 1000°C (LOI) was analysed by Thermal Gravimetric Analyser. SiO_2 was back-calculated by subtracting all ICP major and trace elements plus LOI from 100%, as this is the most accurate way of determining SiO_2 content for samples with very high SiO_2. Certain of the ICP results were verified by X-Ray Fluorescence (XRF) analyses. (ASX LR 5.8.1 Analysis)

- The Mineral Resources were estimated above a 3D wireframe basal surface for the uppermost white silica sand layer. The basal surface is interpreted based on the geological logging, chemical analysis results and chip photography and the extents are limited to within the Ventnor nominated Muchea target area. The surfaces are based on the geological boundaries defined by logged sand types from the drill data and with reference to the publicly available soil mapping data. The surface humus layer is typically about 300 mm thick. In consultation with Ventnor, CSA Global considered that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes. This overburden surface forms the upper boundary of the estimated Mineral Resource and is depleted from the reported Mineral Resources. (ASX LR 5.8.1 Estimation methodology)
- Grade estimation was completed using Ordinary Kriging with an inverse distance weighting to the power of two validation check estimate also completed. (ASX LR 5.8.1 Estimation methodology)
- The Mineral Resource is quoted from all classified blocks above the defined basal surface wireframe for the upper white silica sand layer and below the overburden surface layer. (ASX LR 5.8.1 cut-off grades)
- The Mineral Resources are classified as Indicated and Inferred based on drill hole logging, drill hole sample analytical results, drill spacing, geostatistical analysis, confidence in geological continuity, and metallurgical / process test results. (ASX LR 5.8.1 classification)
- Roughly 10% of the interpreted mineralisation is considered extrapolated.
- The JORC Code Clause 49 requires that industrial minerals must be reported “in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals” and that “It may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability.” (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)
- Therefore, the likelihood of eventual economic extraction was considered in terms of possible open pit mining, likely product specifications, possible product marketability and potentially favourable logistics and it is concluded that the Muchea silica sand deposit is an industrial Mineral Resource in terms of Clause 49. (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)

Detailed Information

Geology

Most economically significant silica sand deposits in Western Australia are found in the coastal regions of the Perth Basin, and the targeted silica sand deposits at Muchea are hosted by the Bassendean Sand, which extends over large areas of the Swan coastal plains of the Perth Basin.

The term Bassendean Sand was introduced by Playford and Low (1972) for the widespread unit of quartz sand extending over large areas of the coastal plain, from about 23 km north of Jurien, to about 15 km southwest of Busselton (Figure 2). The Bassendean sand is thought to have a maximum thickness of about 45 m, and the unit is found as a strip parallel to the coast, having a width of about 10–20 km, and with its western edge about 5–10 km inland.

Quartz grains of the Bassendean Sand are interpreted as being derived from granitic rocks in the Darling Range and have accumulated as shoreline and dune sands during two or more periods of relatively stable sea level, ranging from about 8 to 25 m above present sea level (Abeysinghe, 2003).

According to Abeysinghe (2003), the Bassendean Sand is typically clean, well rounded and well sorted; however, its physical, chemical, and mineralogical characteristics can vary considerably resulting in variation in the quality of the sand regionally as well as locally. The sand is generally white near surface (Figure 4) but at depth it is usually high in iron and yellow to brown in colour.

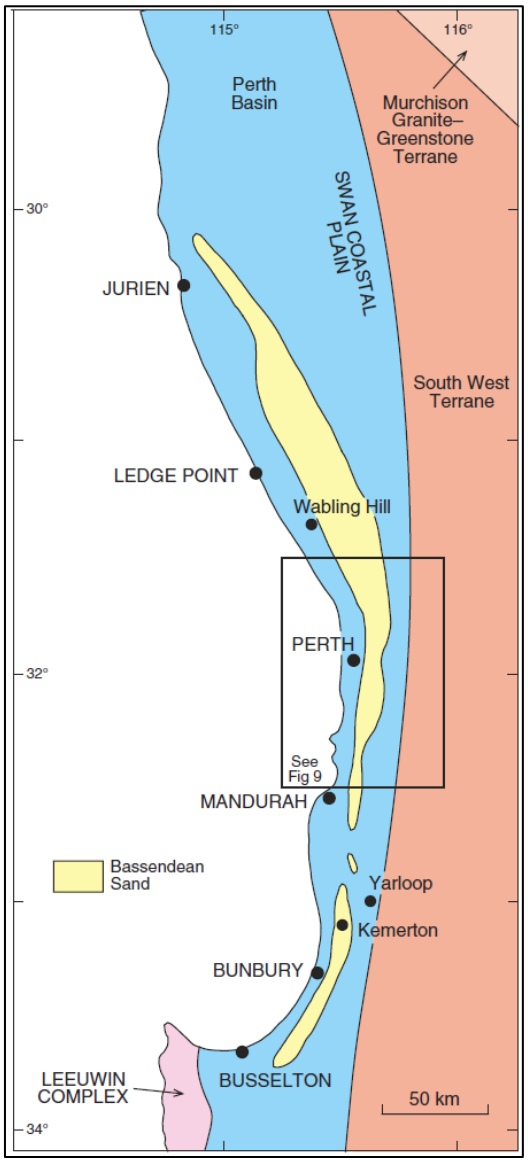

Figure 2: Regional distribution of Bassendean Sand on the Swan Coastal Plain

The Bassendean Sand generally has little or no overburden and it is noted that a discontinuous layer (generally less than a metre thick) of relatively hard ferruginous material, known as 'coffee rock', at a depth ranging from less than a metre to about 15m below the surface. Abeysinghe (2003) interpreted the coffee rock as having formed due to precipitation of Fe oxides and hydroxides from circulating iron-rich groundwater. Below this layer, the white sand can be quite thick, extending to a maximum of about 15m.

Soil mapping reported by Purdie et al. (2004, page 57; refer to Figure 3) described the Bassendean Zone as comprising “fixed dunes inland from coastal dune zone”. The Pinjarra Zone to the east was described as “alluvial deposits…..between the Bassendean Dunes Zone and the Darling Scarp”. By comparison with the map presented by Abeysinghe (2003, page 43. Map from Low, et al. 1978 and 1980) the Bassendean Zone is underlain by the Bassendean Sand, while the Pinjarra Zone at Muchea is underlain by clays of the Guildford Formation.

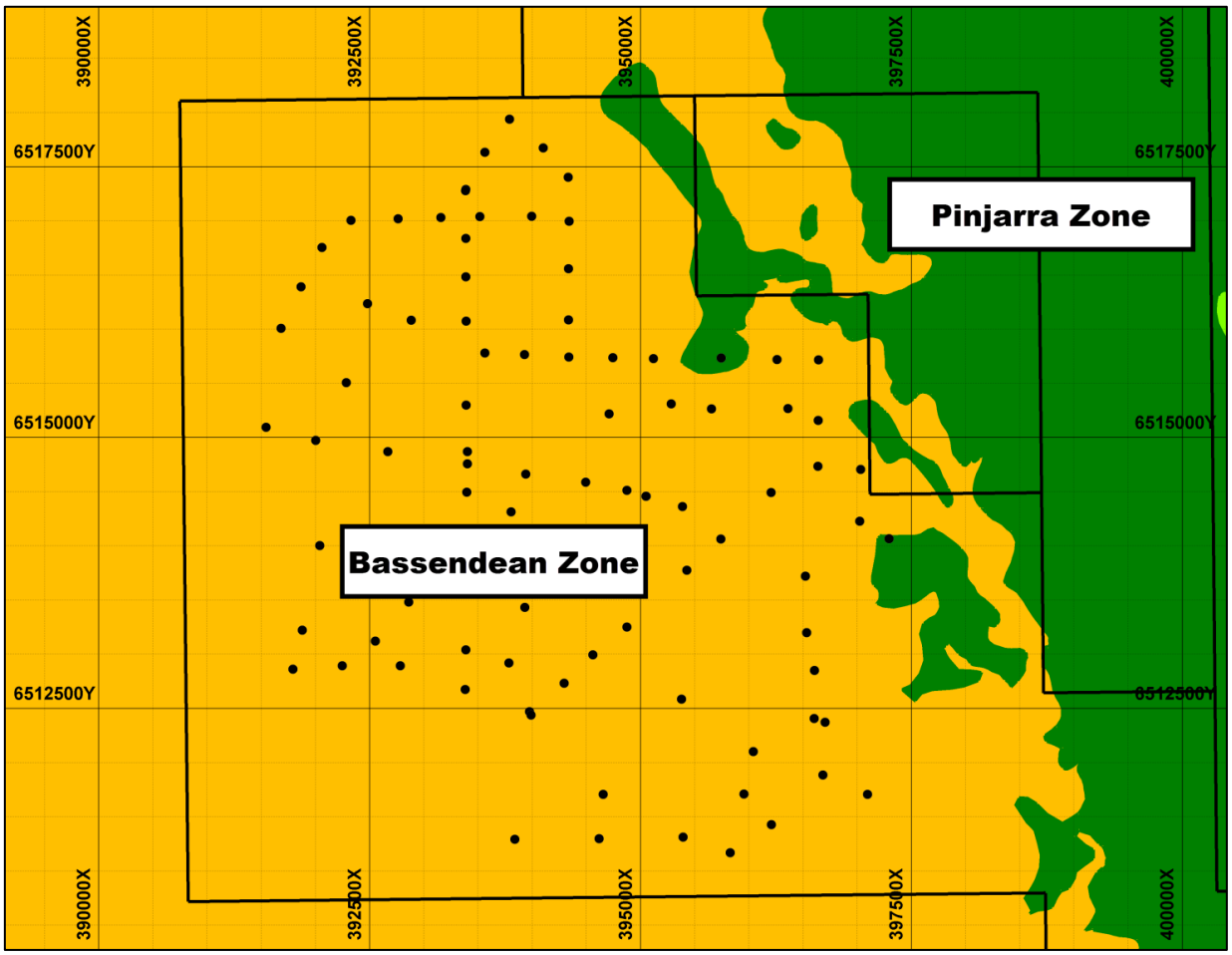

Figure 3: Simplified geology / soil zones of the Muchea area.

Figure 4: Dunes underlain by silica sand of the Bassendean Sand at surface, view looking east

Bulk Testwork

As was announced to ASX on 20th September 2018 – "*Silica Sand Bulk Testwork Results*", it has been demonstrated that the Muchea Project sand can be upgraded using a simple flowchart to produce glass grade silica sand. A bulk 300kg metallurgical composite was generated from selected aircore holes, used in this MRE. See Figure 5 below for holes selected for bulk testwork:

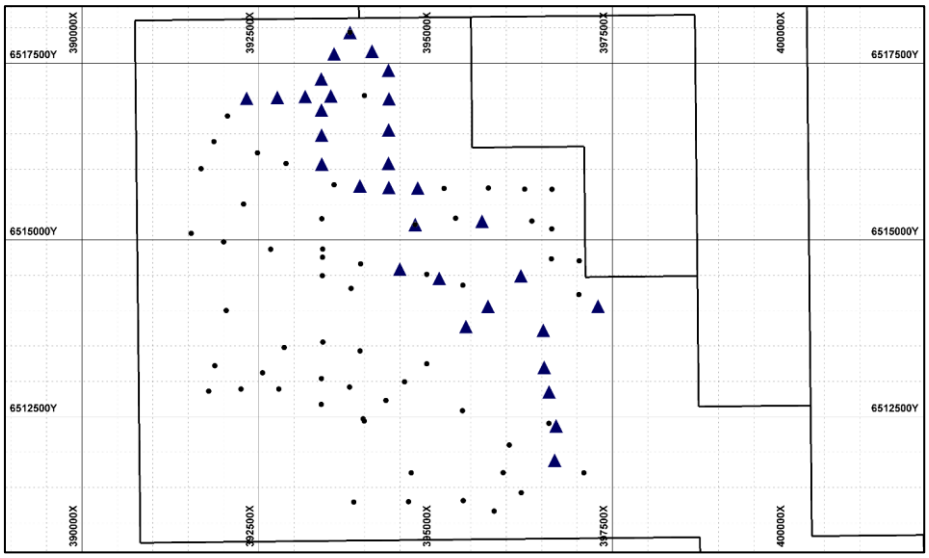

Figure 5: Muchea Metallurgy holes

The composite was sent to the CDE Global facility in Cookstown, Ireland. The Bulk testwork returned the following results, Table 2 below, after de-sliming, attritioning, spirals and magnetic separation. The final product grade and particle sizes as reported are considered to be of glass making quality.

Table 2: CDE Global Bulk Testwork results

SAMPLE MATERIAL	SAMPLE DESCRIPTION	Al_2O_3 ppm	Fe_2O_3 ppm	K_2O ppm	TiO_2 ppm	LOI_{1000C} %	SiO_2 Calc.	SiO_2 + LOI
MUCHEA	Raw Material	562	175	54	414	0.23	99.64	99.87
	Non-magnetic	**262**	**68**	**38**	**179**	**0.1**	**99.84**	**99.94**

Mineral Resource Estimate

Drilling

Drilling over the project area has been completed by means of hand auger and aircore drilling (Figure 7 and Figure 8). Auger hole depths ranged from 1.8m to 11.4m with an average depth of 5.4m, while aircore drill hole depths ranged from 6m to 36m with an average depth of 11.7m. Drilling has been completed at a nominal 400m spacing along existing tracks, which are nominally between 400m and 1,200m apart, thus forming a somewhat irregular drilling pattern (Figure 6). Two pairs of close spaced (~<10m) auger / aircore drill hole twin holes have been drilled, along with a further two pairs at roughly 100m apart and a pair of auger holes ~35m apart.

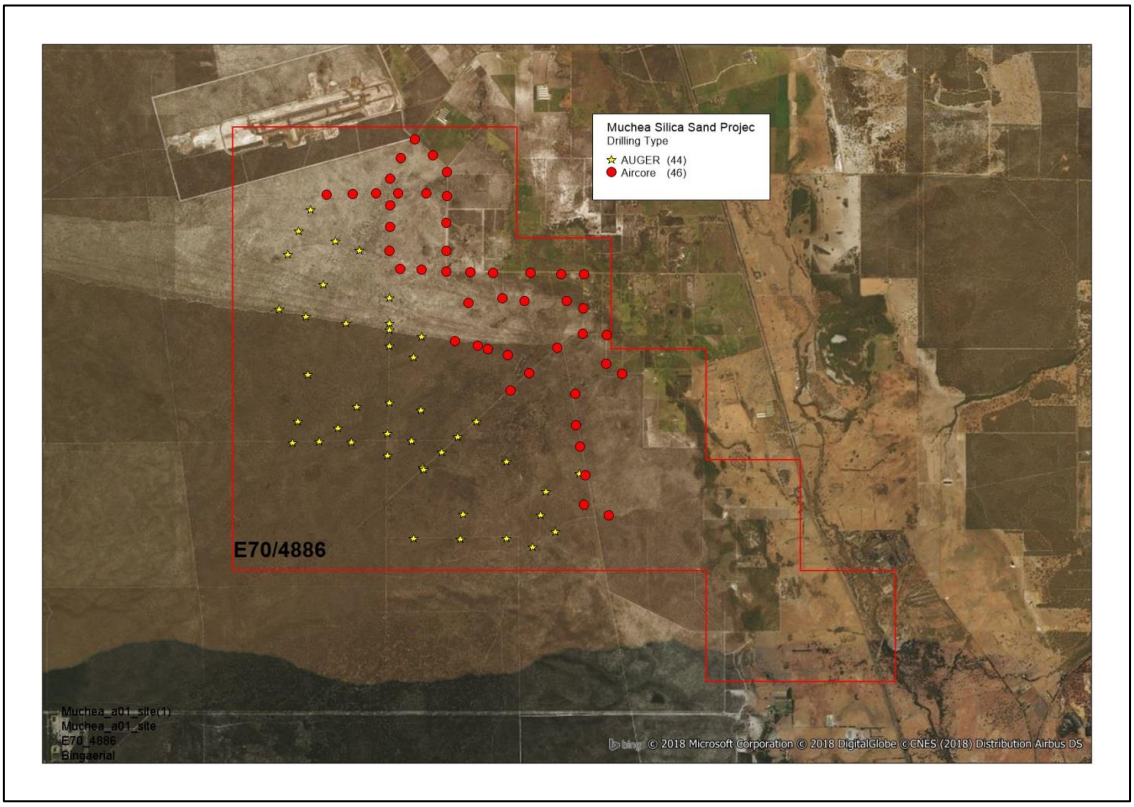

Figure 6: Location of drill collars at Muchea

Figure 7: Sand sampling using a hand auger at Muchea

Figure 8: Drilling for sand using a typical 4WD mounted aircore rig

Mineral Resource Modelling

The Mineral Resource is estimated above a 3D wireframe basal surface for the uppermost white silica sand layer (Figure 9). Based on analysis of the results from the drilling data this basal surface appears to nominally follow the topographic surface. Only the uppermost white silica sand layer has been modelled at this stage despite the evidence in the deeper AC holes for additional white silica sand and yellow sand layers occurring below. This is due to the limitations on depth sampled from auger drilling, the variable depths of AC drilling and the drill hole spacing making interpretation of the geological extents of these layers difficult.

The basal surface of the uppermost white silica sand is interpreted based on the geological logging, chemical analysis results and chip photography from the auger and AC drilling and with reference to the topographic surface and publicly available soil mapping data. The modelled extents are limited to within the Ventnor nominated Muchea target area and are extrapolated to a nominal maximum of 400 m away from the drilling data. It should be noted that for some auger holes the full depth of the uppermost white silica sand layer was not tested due to the limitations of the sampling methodology. The modelled basal surface therefore does not necessarily represent the full sand layer thickness over parts of the auger drilled area.

Over a small area in the central west of the modelled area the surface white silica sand layer is overlain by a minor clay in white sand zone, defined by the Al_2O_3 content being nominally above 1% (Figure 9 and Figure 10). The basal surface of this material has been modelled and it forms the upper boundary surface of the modelled white silica sand layer in this part of the model. This material has not been grade estimated and is not reported as part of the MRE.

The surface humus layer is typically about 300 mm thick. In consultation with Ventnor, CSA Global considered that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes. This overburden surface forms the upper boundary (Figure 9) of the estimated Mineral Resource and is depleted from the reported Mineral Resources.

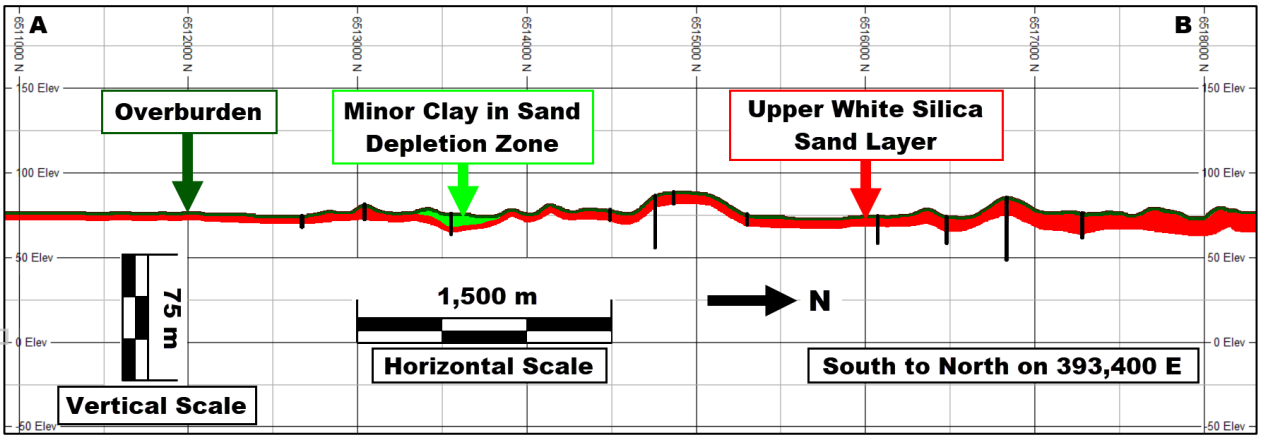

Figure 9: Cross section A – B at 393,400 mE (See Figure 10), Looking west; 10 times Vertical exaggeration

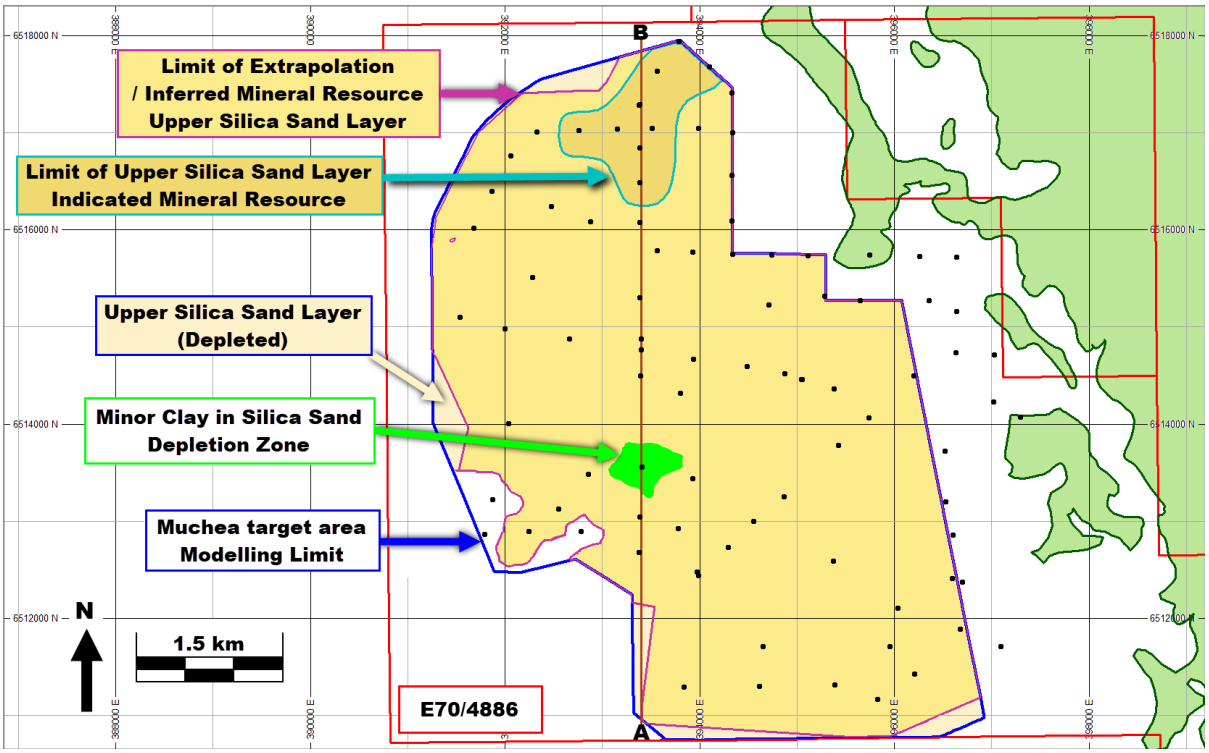

Figure 10: Modelled extents of mineralisation and depletion domains

Mineral Resource Classification

The Mineral Resource is classified as Indicated and Inferred according to the principles contained in the JORC Code 2012. Material that has been classified as Indicated was considered by the Competent Person to be sufficiently informed by adequately detailed and reliable geological and sampling data to assume geological and grade continuity between data points. Material that has been classified as Inferred was considered by the Competent Person to be sufficiently informed by geological and sampling data to imply but not verify geological and grade continuity between data points. The results of the MRE are presented in Table 3.

Table 3: Muchea Mineral Resource

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	LOI%	TiO_2%
Indicated	19	99.7	0.03	0.03	0.2	0.08
Inferred	172	99.6	0.04	0.02	0.2	0.08
Indicated + Inferred	**191**	**99.6**	**0.04**	**0.02**	**0.2**	**0.08**

**Note: Interpreted white silica sand mineralisation is domained above a basal surface wireframe defined based on drill logging data. The upper (overburden) layer within 0.5 m of surface is depleted from the modelled silica sand unit, being reserved for rehabilitation purposes. All classified silica sand blocks in the model are reported. Differences may occur due to rounding.*

Future Work

A further iteration of testwork has been commenced by CDE Global using a refined flow sheet to incorporate additional attritioning to further improve the quality of the potential final products. The results of this work are expected to be available in the December 2018 quarter. Process circuit design and engineering will then follow, allowing for capital cost estimates to be generated before the end of 2018.

The Company intends to drill additional infill holes in and around the Indicated resource area to increase the amount of Indicated resource for inclusion into a mine plan.

The drill program is expected to commence early in 2019 due to limited suitable drill rig availability and the requirement for native title heritage clearance.

Further information:

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Ventnor Resources Limited

Appendix 1 - JORC 2012 Table 1 Report

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
Sampling techniques	AC drilling samples are 1m down hole intervals with sand collected from a cyclone mounted rotary cone splitter, ~2-3kg (representing 50% of the drilled sand) was collected. Two sub-samples, A and B, of ~200g were taken from the drill samples. The remainder was retained for metallurgical testwork. Auger drilling samples are 1m down hole intervals with sand collected from a plastic tub which received the full sample, ~8kg, from the hole. The sand was homogenised prior to sub sampling, two sub-samples, A and B, of ~200g were taken from the drill samples. A bulk sample of ~5kg was retained for each 1m interval for metallurgical testwork. The "A" sample was submitted to the Intertek Laboratory in Maddington, Perth for drying, splitting (if required), pulverisation in a zircon bowl and a specialised silica sand 4 Acid digest and ICP analysis. All auger samples were weighed to determine if down hole collapse was occurring, if the samples weights increased significantly the hole was terminated to avoid up hole contamination. Due to the visual nature of the material, geological logging of the drill material is the primary method of identifying mineralisation.
Drilling techniques	Vertical NQ sized aircore drilling was completed by Wallis Drilling using a Landcruiser mounted Mantis 82 drill rig. A 100mm diameter hand screw auger was used to drill until hole collapse.
Drill sample recovery	Aircore Visual assessment and logging of sample recovery and sample quality Reaming of hole and clearance of drill string after every 3m drill rod Sample splitter and cyclone cleaned regularly to prevent sample contamination No relationship is evident between sample recovery and grade Hand Auger All material recovered from the hole is collected in a plastic drum and weighed, the weights are used to determine when the hole is collapsing, and drilling is terminated. No relationship is evident between sample recovery and grade
Logging	Geological logging of drill samples is done by the field geologist with samples retained in chip trays for later interpretation. Logging is captured in an excel spreadsheet, validated and uploaded into an Access database
Sub-sampling techniques and sample preparation	AC drill samples are rotary split 50:50 into a calico bag resulting in 2-3kg of dry sample, 2 x 200g sub-samples, A and B, are taken from the drill sample. The A sample is submitted to the laboratory and the B sample is retained for repeat analysis and QA/QC purposes. The bulk sample is retained for later metallurgical testwork. Auger drill material, ~8kg, is collected in a plastic tub and homogenised, 2 x 200g sub-samples, A and B, are taken from the drill material. The A sample is submitted to the laboratory and the B sample is retained for repeat analysis and QAQC purposes. A 5kg bulk sample is retained for later metallurgical testwork. The sample size is considered appropriate for the material sampled. The 200g samples are submitted to the Intertek Laboratory in Maddington, Intertek use a zircon bowl pulveriser to reduce the particle size to -75um.
Quality of assay data and laboratory tests	Samples were submitted for analysis to the Intertek Laboratory in Maddington in Perth WA. The assay methods used by Intertek are as follows: multi-elements are determined by a specialised four-acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids in Teflon tubes. Analysed by Inductively Coupled Plasma Mass Spectrometry, silica is reported by difference. The assay results have also undergone internal laboratory QAQC, which includes the analysis of standards, blanks and repeat measurements.

Criteria	Commentary
	The Company has been validating a high-purity silica standard that was created for the Company by OREAS Pty Ltd. This was required as there is no commercial standard available for high purity silica sand. The standard was "round robin" assayed at several laboratory's in Perth prior to the commencement of drilling. The standard was then included in the drill sample submissions to Intertek, in sequence, on a ratio of 1:20. Field duplicate samples were submitted in a ratio of 1:20 and in addition to this Intertek routinely duplicated analysis from the pulverised samples in a ratio of 1:25. The number of QAQC samples therefore represents ~14% of the total assays. A full analysis of all the quality control data has been undertaken. This analysis validates the drill assay dataset and conforms with the guidelines for reporting under the JORC 2012 code.
Verification of sampling and assaying	Significant intersections validated against geological logging At Muchea, twinned holes AC Vs Auger were completed validate the robustness of hand auger as an appropriate method of testing the in-situ sand. Assay comparisons shown an acceptable correlation between the 2 drilling methods.
Location of data points	Drill hole locations were measured by hand-held GPS with the expected relative accuracy; GDA94 MGA Zone 50 grid coordinate system is used. The reduced level (RL) of the drilling collars is generated from LIDAR contour data obtained from the Department of Water.
Data spacing and distribution	At Muchea drill holes were spaced 400-800m apart along existing tracks, auger holes were spaces ~800m apart along tracks with some off tracks. It is believed that due to the relatively low variability of assays between drill holes that the current spacing may be sufficient for the estimation of a Mineral Resource. No sample compositing (down hole) has been done.
Orientation of data in relation to geological structure	Sampling is being undertaken on aeolian sand dunes; the drill orientation is therefore considered appropriate.
Sample security	All samples are selected onsite under the supervision of Ventnor Geological staff. Samples are delivered to the Intertek laboratory in Maddington. Intertek receipt received samples against the sample dispatch documents and issued a reconciliation report for every sample batch.
Audits or reviews	There has been no audit or review of sampling techniques and data at this time.

Section 2 Reporting of Exploration Results

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

Criteria	Commentary
Mineral tenement and land tenure status	All drilling has been within Tenement E70/4886, which is owned by Wisecat Pty Ltd a 100% owned subsidiary of Ventnor Resources Limited. The tenement was granted 27 March 2017 and all drilling was conducted on VCL.
Exploration done by other parties	Minor exploration for mineral sands has been completed by Tronox in the South Eastern corner of E70/4886 and has been excluded in any assessment by VRX.
Geology	Most economically significant silica sand deposits in Western Australia are found in the coastal regions of the Perth Basin, and the targeted silica sand deposits at Muchea are hosted by the Bassendean Sand, which extends over large areas of the Swan coastal plains of the Perth Basin. The term Bassendean Sand was introduced in 1972 (Playford, P. E., and Low, G. H. 1972. Definitions of some new and revised rock units in the Perth Basin: Western Australia. Geological Survey, Annual Report for 1971, p. 44–46) for the widespread unit of quartz sand extending over large areas of the coastal plain, from about 23 km north of Jurien, to about 15 km southwest of Busselton. Quartz grains of the Bassendean Sand are interpreted as being derived from granitic rocks in the Darling Range and have accumulated as shoreline and dune sands during two or more periods of relatively stable sea level, ranging from about 8 to 25 m above present sea level. According to published reports (e.g. GSWA Bulletin 21) the Bassendean Sand is typically clean, well rounded and well sorted; however, its physical, chemical, and mineralogical characteristics can vary. The sand is generally white near surface but at depth it is usually high in iron and yellow to brown in colour. The Bassendean Sand generally has little or no overburden and it is noted from a report by the Geological Survey of Western Australia (Bulletin 21) that a discontinuous layer (generally less than a metre thick) of relatively hard ferruginous material, known as 'coffee rock', may occur at depths ranging from less than a metre to about 15 m below the surface. The coffee rock was interpreted as having formed due to precipitation of Fe oxides and hydroxides from circulating iron-rich groundwater. Below this layer, the white sand can be quite thick, extending to a maximum of about 15 m (Abeysinghe, P. B., 2003. Silica Resources of Western Australia. Geological Survey of Western Australia, Mineral Resources Bulletin 21).
Drill hole Information	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3). Sample and drillhole coordinates are provided in previous market announcements.
Data aggregation methods	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Relationship between mineralisation widths and intercept lengths	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Diagrams	Refer to figures within the main body of this report.
Balanced reporting	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Other substantive	Geological observations are consistent with aeolian dune mineralisation Four, certified, dry in-situ bulk density measurements were completed at Muchea by Construction Sciences Pty Ltd using a nuclear densometer. The

Criteria	Commentary
exploration data	arithmetic average of these was used in the determination of the exploration targets. Groundwater was intersected in only a few holes that were drilled deeper deliberately to ascertain the position of the water table. The water table is typically below 15m depth. The mineralisation is unconsolidated sand. There are no known deleterious substances at this time.
Further work	Further testwork is being completed to determine the best quality and value sand that is achievable using conventional sand processing techniques. This testwork will also generate final product samples that will be supplied to potential customers. Infill drilling will be undertaken prior to the final mine design to further assess the depth and variability of the high-grade silica sand.

Section 3: Estimation and Reporting of Mineral Resources

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

Criteria	Commentary
Database integrity	Data used in the MRE is sourced from a Microsoft Access database. Relevant tables from the Microsoft Access database are exported to Microsoft Excel format and converted to csv format for import into Datamine Studio 3 software. Validation of the data imported comprises checks for overlapping intervals, missing survey data, missing analytical data, missing lithological data, and missing collars.
Site visits	The Competent Person (CP) Dr AJ Scogings, a representative of CSA Global visited the Ventnor warehouse in Perth and the Muchea site on 17 October 2018, addressing the following: Sample storage – originals, field duplicates, pulps, standards and chip trays are housed appropriately. Some chip trays were photographed by the CP as a check against Company photographs and geology logs. Geology – the CP noted that the Muchea tenements are underlain by unconsolidated white / off-white fine-grained silica sand. Drill collars – the CP recorded and verified several unmarked drill sites using hand-held GPS. Project location – several points such as road intersections were located and plotted in Google Earth™ to verify the tenement location. Auger drilling method – Mr David Reid of Ventnor demonstrated the Company's hand auger drilling and sampling method at location MA001. The CP was satisfied that, providing the sand is sufficiently damp and stable at the time of drilling, samples collected by this method are representative, relatively uncontaminated and hence suitable for use in a Mineral Resource estimate. Aircore drilling method – although this was not observed during the site visit, the CP is of the opinion that aircore drilling is an appropriate method for drilling and sampling sand deposits such as Muchea.
Geological interpretation	Silica sand mineralisation at Muchea are hosted by the Bassendean Sand, and the targeted silica sand deposits are the aeolian sand dunes that overlie the Pleistocene limestones and paleo-coastline. Within the project area, data obtained from the Department of Agriculture soil mapping shows the Bassendean Sand covering the full extent of the modelled area. The geological modelling was completed based on this soil mapping data in conjunction with the auger and air core drill (AC) logging data. The Mineral Resource is estimated above a 3-d wireframe basal surface for the upper white silica sand layer. Based on analysis of the results from the drilling data this basal surface appears to nominally follow the topographic surface. Only the uppermost white silica sand layer has been modelled at this stage despite the evidence in the deeper AC holes for additional white silica sand and yellow sand layers occurring below. This is due to the limitations on the depth sampled from auger drilling, the variable depths of AC drilling, and the drill hole spacing making interpretation of the geological extents of the lower sand layers difficult. The modelled basal surface therefore does not necessarily represent the full sand layer thickness over parts of the auger drilled area. The modelled extents of the upper white silica sand layer are further limited to within the Ventnor nominated Muchea target area. The surface humus layer is typically about 300 mm thick. In consultation with Ventnor, CSA Global decided that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes.

Criteria	Commentary
	This overburden surface forms the upper boundary of the estimated Mineral Resource and is depleted from the reported Mineral Resources. Over a small area in the central west of the modelled are the surface white silica sand layer is overlain by a minor clay in white sand zone, defined by the Al2O3 content being nominally above 1%. The basal surface of this material has been modelled and it forms the upper boundary surface of the modelled white silica sand layer in this part of the model. This material has not been grade estimated and is not reported as part of the MRE. Assumptions have been made on the horizontal extents of the mineralisation based on the soil mapping data and the spacing and extents of the drilling information. A nominal maximum horizontal extrapolation limit of 400 m past known drill data points has been applied with the interpretation additionally constrained within the Ventnor nominated target. Although it is understood that the thickness of the upper white silica sand layers is likely to be more than current auger drilling depths over the areas of the modelled area covered only by auger drilling, the vertical extents have been nominally limited to the current auger drilling depths. Approximately 10% of the modelled mineralisation can be considered to be extrapolated. Alternative interpretations based on the currently available data are considered unlikely to have a significant influence on the global MRE. Continuity of geology and grade can be identified and traced between drillholes by visual and geochemical characteristics. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification.
Dimensions	The modelled and classified extents of the upper white silica sand layer material within the target area are roughly 7 km north to south, and on average roughly 3.5 km west to east. The modelled sand layer is roughly horizontal, with fairly low relief. The currently modelled thickness of the sands is on average about 4.5 m. The current modelling (limited by the drilling methodology in parts) shows the thickness ranging between about 14 m in the north east, thinning to a nominal 3 to 5 m through the centre where it appears to pinch out in the west in part, thickening to between 5 and 8 m in the south east, and is a nominal 3 to 5 m in the south west.

Estimation and modelling techniques	Ordinary Kriging (OK) was the selected interpolation method, with Inverse distance squared (IDS) used as a check estimate. Grade estimation was carried out at the parent cell scale, with sub-blocks assigned parent block grades. Grade estimation was carried out using a hard boundary. Statistical analysis on the 1 m downhole composited drillhole data to check grade population distributions using histograms, probability plots and summary statistics and the co-efficient of variation, was completed for the estimated grade variables. The checks showed there were no significant outlier grades in the interpreted sand layer that required top-cutting. In addition to SiO2, the grade variables Al2O3, Fe2O3, LOI, and TiO2 are estimated into the model. A volume block model was constructed in Datamine constrained by the topography, overburden layer, sand type zone, material depletion zone and target area limiting wireframes. Drilling has been completed at a nominal 400 m spacing along existing tracks, which are nominally between 400 m and 1,200 m apart, thus forming a somewhat irregular drilling pattern. Two pairs of close spaced (~<10 m) auger / aircore drill hole twin holes have been drilled, along with a further two pairs at roughly 100 m apart and a pair of auger holes ~35 m apart. Spatial (variogram) analysis was completed on SiO2 from the 1 m drill composite samples, yielding a low relative nugget of 10%. No clearly preferred mineralisation trend direction was recognised from the variogram modelling with primary and secondary variogram directions modelled at 090° and 000° respectively. For both these directions the modelled two structure spherical models yielded the same ranges of 500 m to the first structure and 800 m to the second. Based on the sample spacing and validated by means of a kriging neighbourhood analysis (KNA), a parent block size of 200 m(E) x 200 m(N) x 4 m(RL) or nominally half the average drill section spacing, was selected for the model. Sub-cells down to 12.5 m(E) x 25 m(N) x 0.25 m(RL) were used to honour the geometric shapes of the modelled mineralisation. The search ellipse orientations were defined as being horizontal based on the overall geometry of the mineralisation and with reference to the variogram modelling study. The search ellipse was doubled for the second search volume and then increased ten-fold for the third search volume to ensure all blocks found sufficient samples to be estimated. The search ellipse dimensions of 650 m x 650 m x 10 m, have been optimised by means of the KNA. A minimum of 12 and a maximum of 24 samples, based on the KNA results, were used to estimate each parent block for both zones. These numbers were reduced for the second search volume to 12 and 20 samples and in the third search volume to 8 and 16 samples. A maximum number of five samples per drillhole were allowed. Based on the results from the KNA, cell discretisation was 3 (E) x 3 (N) x 4 (RL) and no octant-based searching was utilised. Model validation was carried out visually, graphically, and statistically to ensure that the block model grade reasonably represents the drillhole data. Cross sections, long sections and plan views were initially examined visually to ensure that the model grades honour the local composite drillhole grade trends. These visual checks confirm the model reflects the trends of grades in the drillholes. Statistical comparison of the mean drillhole grades with the block model grade shows reasonably similar mean grades. The IDS check estimate shows similar grades to the OK model, adding confidence that the grade estimate has performed well. The model grades and drill grades were then plotted on histograms and probability plots to

Criteria	Commentary
	compare the grade population distributions. This showed reasonably similar distributions with the expected smoothing effect from the estimation taken into account. Swath or trend plots were generated to compare drillhole and block model with SiO_2% grades compared at 400 m E, 400 m N and 4 m RL intervals. The trend plots generally demonstrate reasonable spatial correlation between the model estimate and drillhole grades after consideration of drill coverage, volume variance effects and expected smoothing. No reconciliation data is available as no mining has taken place.
Moisture	Tonnages have been estimated on a dry, in situ, basis. The sampled sand material was generally reasonably dry, with data collected from the density testing of seven intervals showing an average moisture content of 1.8%.
Cut-off parameters	No cut-off parameters have been applied, as the sand appears to be readily amenable to beneficiation to a suitable product specification through relatively simple metallurgical processes as demonstrated by initial reported metallurgical testing results.
Mining factors or assumptions	It has been assumed that this deposit will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled. No assumptions regarding minimum mining widths and dilution have been made. No mining has yet taken place.
Metallurgical factors or assumptions	A composite aircore sample of 104 white, 45 brown and 4 coffee rock (sand) intervals from Muchea was tested in Ireland during 2018. The sample was screened at 4mm to remove oversize particles. The remaining material was then subjected to an attrition process followed by spiral and magnetic separation methods. Attrition testing was carried out a retention period of 5 minutes, with the sample washed after attritioning to remove any liberated fine particles. Spiral testing was then carried out with approximately 80kg of attritioned material, after which the samples then underwent wet magnetic separation to explore the possibility of reducing the magnetic mineral content. Chemical analysis showed a general decrease in the Al_2O_3. Processing, attritioning and washing the material removed the largest fraction of Al_2O_3. The spiral separation process produced samples where the largest fraction of Al_2O_3 was found in the heavy mineral fraction. Magnetic separation resulted in the largest fraction of Al_2O_3 being in the magnetic fraction. The results for Fe_2O_3 follow the same general trend as for Al_2O_3. The percentage fraction of SiO_2 in the samples increased during the test process. Attritioning and washing the material removed fines and silt, which increased the SiO_2 content. The spirals test produced samples where the largest fraction of SiO_2 was found in the light fraction. Magnetic separation indicated that the largest fraction of SiO_2 was in the middling fraction. Two composite samples of brown sand and two composites of coffee sand were submitted to a laboratory in Perth for preliminary process tests to assess amenability for upgrading the silica content and removing impurities. It was concluded that one of the samples, known as 'Brown #1', which had the highest initial SiO_2 content, also showed the best potential to be upgraded to glass grade. CSA Global is of the opinion that further process testwork is required to verify whether the brown or coffee sands are amenable to purification and if so, which markets may be supplied. In the production of glass, there is both the need and requirement for silica to be chemically pure (composed of over 98% SiO2), of the

Criteria	Commentary
	appropriate diameter (a grain size of between approximately 0.1 mm and 0.4 mm and with low iron content (less than approximately 0.04% Fe2O3). CSA Global is of the opinion that available process testwork indicates that product quality is considered favourable for eventual economic extraction and production of silica sand for glass markets. In addition, project location and logistics support the classification of the Muchea deposit as an industrial mineral Mineral Resource in terms of Clause 49 of the JORC Code.
Environmental factors or assumptions	No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be correctly managed as required under the regulatory permitting conditions. Ventnor has indicated that initial botanical studies are underway, and in the modelling the top 500 mm is reserved for rehabilitation purposes and is depleted from the model and is not reported.
Bulk density	Four, certified, dry in situ bulk density measurements were completed by Construction Sciences Pty Ltd using a nuclear densometer. The results from the four measurements are corrected based on the measured moisture factor. The mean dry in situ density result of 1.66 t/m^3 is used for all modelled material reported in the MRE.
Classification	Classification of the MRE was carried out accounting for the level of geological understanding of the deposit, quality of samples, density data, drillhole spacing and geostatistical parameters. The MRE has been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. Overall the mineralisation trends are reasonably consistent over the drill sections. The MRE appropriately reflects the view of the Competent Person.
Audits or reviews	Internal audits were completed by CSA Global, which verified the technical inputs, methodology, parameters, and results of the estimate. No external audits have been undertaken.
Discussion of relative accuracy/ confidence	The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012). The Mineral Resource statement relates to global estimates of in situ tonnes and grade.

Ventnor Resources Limited

About Ventnor

Ventnor Resources Ltd (**Ventnor**) (ASX: VRX) has significant silica sand projects being four granted exploration licences and one application pending over the Arrowsmith Silica Sand Project, located 270km north of Perth, Western Australia, and one granted exploration licence and one application pending over the Muchea Silica Sand Project, 50km north of Perth, which complements Arrowsmith with additional significant silica sand resources. Initial testwork has confirmed that the silica sand at both Projects can be upgraded to glassmaking quality. Further work is underway on both Projects to enable feasibility studies to be completed.

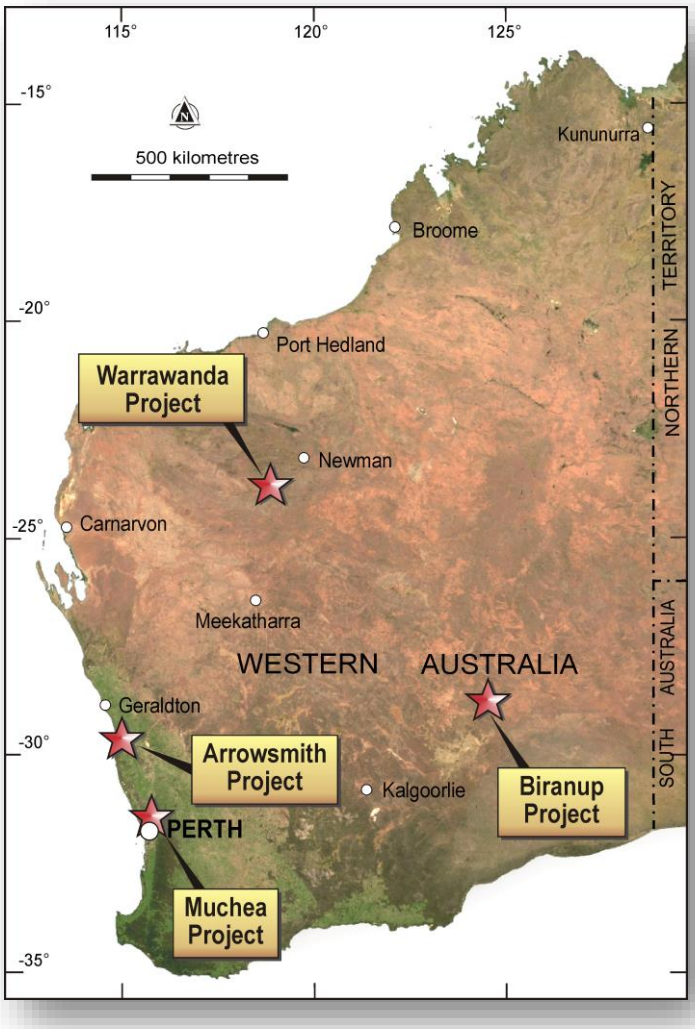
Ventnor also has granted tenements at its Biranup Project, adjacent to the Tropicana Gold Mine in Western Australia's Goldfields that are prospective for gold and base metals, which are currently under option for partial sale and farm-in joint venture.

Also, in Western Australia, 40km south of Newman, is Ventnor's Warrawanda Nickel Project, which is prospective for nickel sulphides.

Proven Management

The Ventnor Board and management team have extensive experience in mineral exploration and mine development into production and in the management of publicly listed mining and exploration companies.

Project Locations



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