Maiden Mineral Resource Estimate
Beharra Silica Sands Project

ASX RELEASE

22nd July 2020

ASX: PEC

CORPORATE DIRECTORY

Executive Chairman
Julian Babarczy

Executive Director
Robert Benussi

Non- Executive Director & Company Secretary
George Karafotias

Silica Sand Project Portfolio

- Beharra
- Sargon
- Eneabba
- Eneabba North

CONTACT DETAILS:
Level 8, 84 Pitt Street
Sydney NSW2000

George Karafotias
Phone | +61 042 086 550

Robert Benussi
Phone | +61 410 415 335

HIGHLIGHTS:

- ***Inferred Mineral Resource of 111.3 Million Tonnes at 98.6% SiO_2***
- *An additional Exploration Target has also been estimated (see details below)*
- *Initial test work indicates product specifications may be suitable for the flat and container glass markets, as well as the foundry sand markets*
- *Inputs required for completion of Pre-Feasibility Study currently being collated and tendering commenced*
- *Further promising metallurgical beneficiation testing currently underway, including trade off studies aimed at maximising end product quality relative to production yield*
- *Mining Lease Application planned to be submitted shortly*

Air Core Drilling at Beharra

Perpetual Resources Limited (**ASX: PEC**, "PEC" or "the Company") is pleased to announce the results of the maiden Mineral Resource Estimate for the Beharra High Purity Silica Sands Project. PEC's Managing Director, Mr Robert Benussi commented "*The maiden Mineral Resource Estimation and exploration target has provided us with a compelling investment case for proceeding with a Pre-Feasibility Study across the Project. The scale of the mineral resource in conjunction with the amenability of the silica to produce a high purity product strongly warrants our dedicated focus to advance the Project.*

The delineation of the additional exploration target provides scope to significantly expand the scale of the Project when required."

Mineral Resource Estimation Overview

PEC engaged Snowden Mining Consultants to estimate a Maiden Mineral Resource in accordance with the JORC Code, 2012 Edition, for the Beharra Silica Sands Project. **The Inferred Mineral Resource Estimate for Beharra is 111.3 Million Tonnes at 98.6% SiO_2**. In addition, an Exploration Target of 8-13 Million Tonnes at a grade of 97-99% SiO_2 has been estimated. The exploration target extends beneath the Mineral Resource reported to the north of Mt Adams Road as the depth was constrained to the shallower auger drilling. The potential quantity and grade of the Exploration Target is conceptual in nature as there has been insufficient exploration to estimate a Mineral Resource over this portion of the deposit and it remains uncertain if further exploration will result in the estimation of Mineral Resource.

The Mineral Resource Estimation was based on a total of 40 air core drill holes for 506.7m of drilling and 38 auger drill holes for 76m of drilling. (refer Figure.1) The Mineral Resource excluded the top 0.5m of material which is envisaged to be stockpiled and utilised for rehabilitation purposes. The Mineral Resource extends to an average depth of 10.1m and where relevant is constrained to above the water table. The Mineral Resource extends across an area of up to 1.84km wide by 6.95km of strike.

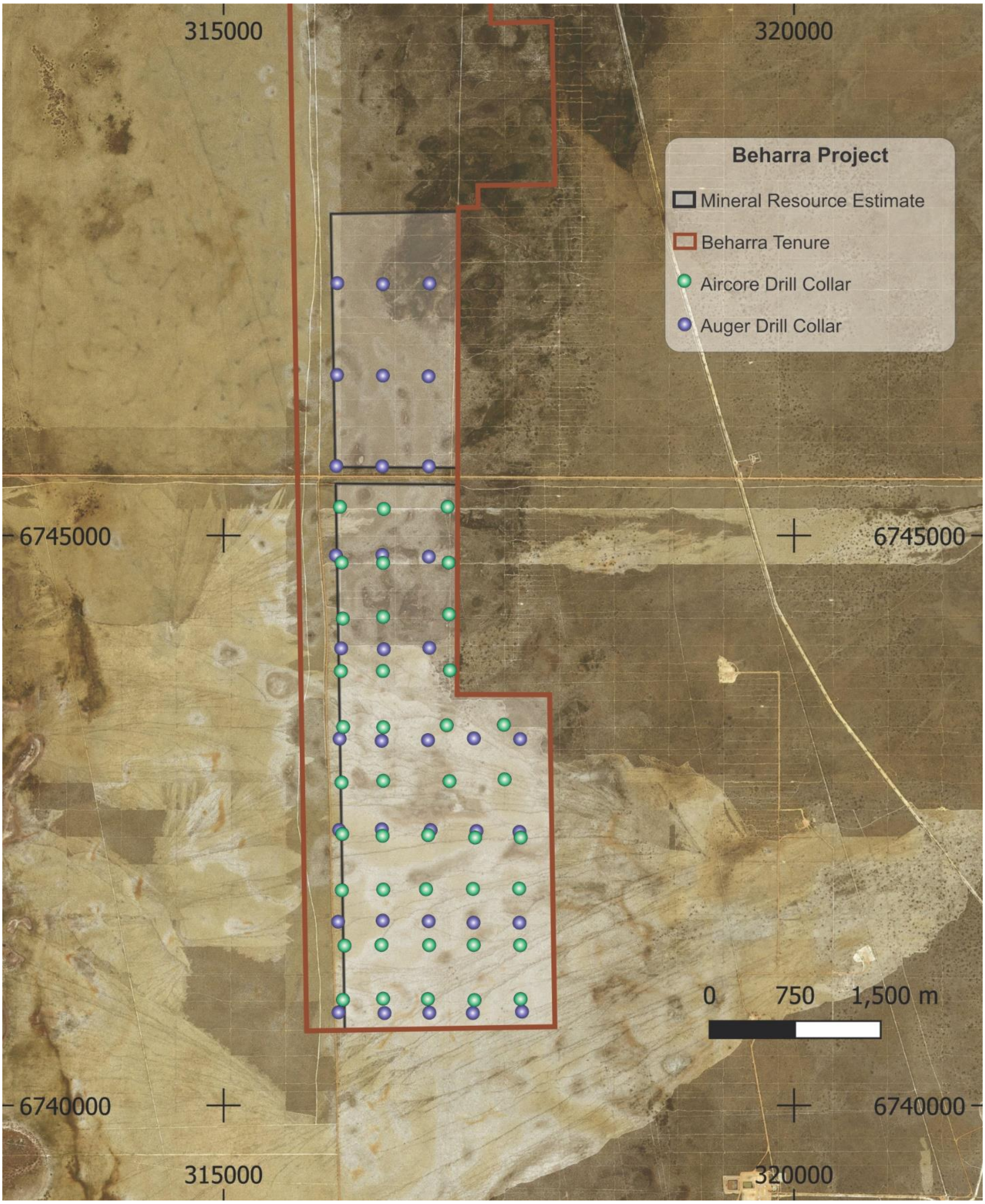

Figure 1: Air Core Drilling & Auger Program Collar Plan

The Mineral Resource Estimation included both white sand and yellow sand intervals based on geological logging and adjusted where required for according to chemical analysis results. Initial metallurgical testing conducted was based on one composite sample from prior shallow auger drilling, which has indicated the amenability of the silica sands material to upgrading via conventional gravity screening, washing and magnetic separation methods. It is noted that the composite sample was from shallow auger holes to a maximum of 2 metres depth, and that the composite may not be representative of the whole deposit. The resultant high purity silica sand product is in accordance with the specifications required for flat and container glass manufacture and also potentially for the foundry sand markets.

Table 1: Beharra Maiden Mineral Resource Estimation

Sand	Volume (Mm^3)	Density	Tonnes (Mt)	SiO_2%	Al_2O_3%	TiO_2%	Fe_2O_3%	LOI%
Yellow	5.9	1.64	9.6	97.9	0.48	0.21	0.21	0.63
White	62.0	1.64	101.7	98.7	0.42	0.35	0.18	0.22
Total	67.9	1.64	111.3	98.6	0.42	0.34	0.18	0.25

Table 2: Beharra Maiden Mineral Resource Estimation- Divided by South and North of Mt Adams Road Respectively

Sand	Volume (Mm^3)	Density	Tonnes (Mt)	SiO_2%	Al_2O_3%	TiO_2%	Fe_2O_3%	LOI%
South of Mt Adams Road								
Yellow	5.2	1.64	8.5	98.1	0.50	0.22	0.20	0.58
White	54.5	1.64	89.5	98.6	0.43	0.37	0.19	0.21
Total South	**59.7**	**1.64**	**98.0**	**98.6**	**0.44**	**0.35**	**0.19**	**0.24**
North of Mt Adams Road								
Yellow	0.7	1.64	1.1	96.8	0.31	0.11	0.32	0.97
White	7.5	1.64	12.3	99.0	0.29	0.21	0.15	0.28
Total North	**8.1**	**1.64**	**13.3**	**98.8**	**0.29**	**0.20**	**0.17**	**0.34**
Total	67.9	1.64	111.3	98.6	0.42	0.34	0.18	0.25

Notes: Interpreted silica sands unit is defined by surface mapping, auger drilling, air core drilling. Depletion zones include the upper 0.5m for rehabilitation purposes. Differences may occur due to rounding to significant figures.

Table 3: Beharra Exploration Target

Classification	Tonnes (Mt)	SiO_2%
Exploration Target	8-13	97-99

The potential quantity and grade of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of Mineral Resource.

Next Steps

Tendering and collating of requisite inputs for the completion of a Pre-Feasibility Study ("PFS") is presently underway. This has included further detailed analysis in regards to the optimisation of the Beharra logistics solution, analysis of the power and water requirements of the project, as well as an evaluation of environmental, heritage and native title related work that must be planned ahead of commencement of a PFS. These various work streams can now be combined with the announced Maiden Mineral Resource Estimate and should provide strong momentum for completion of the PFS study with the aim of quantifying the economic development potential of the Project and establishing a clear path forward with respect to development of the Project. Upon completion of the tendering process and award of the respective contracts to the study team members further updates will be made.

The scope of work for a second phase of detailed metallurgical testing is presently underway. The aim of this second phase program is to optimise the product specifications and define a process flow sheet for utilisation in the PFS, including the undertaking of various trade off studies with regard to end product specification and product yield. The updated testing results will then be incorporated into product marketing documentation and, in conjunction with the Company's marketing consultants, end users will be actively engaged with a view to developing initial Letters of Intent (LOI's) or Memorandums of Understanding (MOU's) based on the Beharra indicative product quality.

The Mineral Resource Estimation is also to be utilised to form the basis of a supporting document for the submission of a Mining Lease Application. Upon completion of consultation with environmental, heritage and permitting consultants, a Mining Lease

Application will be lodged with the Western Australian Department of Mines to facilitate development of the Project.

ASX Listing Rule 5.8.1 Summary

The following summary presents a fair and balanced representation of the information contained within the Mineral Resource Estimation Technical Report for Beharra Project:

- Silica sand at Beharra occurs within the coastal regions of the northern extent of the Perth Basin and the targeted silica sands are located within the sand dunes that overlie the Pleistocene Limestones and Palaeo-coastline (ASX LR 5.8.1 Geology & Geological Interpretation)
- Samples were obtained from auger and air core drilling. The quality of the drilling, sampling methodology and analysis for both methods was assessed by the Competent Person and is of an acceptable standard for the use in a Mineral Resource Estimation publicly reported in accordance with the JORC 2012 Edition Guidelines. (ASX LR 5.8.1 Sampling & 5.8.1 Drilling)
- Major and trace elements with the exception of SiO_2 were analysed using a four acid digestion method followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis by Intertek's Perth Laboratory. Loss on Ignition at 1000^{o}C (LOI) was analysed by a 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 the SiO_2 content of material with very high SiO_2 content. Validation of the ICP results were then undertaken by verification with an umpire laboratory using ICP methods. Furthermore a proportion of the samples were analysed using X-Ray Fluorescence (XRF) at an umpire laboratory (ASX LR 5.8.1 Analysis)
- Mineral Resources were estimated by the use of a 3D wireframe of the base surface for white sands, above the water table and constrained by a surveyed DTM surface. The upper 0.5m of material was excluded from the resource on the basis of it being stockpiled in the future for rehabilitation purposes. (ASX LR 5.8.1 Estimation Methodology)
- Grade estimation was completed using ordinary kriging with hard boundaries applied between identified layers. Top cuts were applied to the data where required. (ASX LR 5.8.1 Estimation Methodology)
- The Mineral Resource Estimation is quoted from all classified blocks above the basal layer wireframes for white sands and below the overburden surface layer (ASX LR 5.8.1)

- The Mineral Resource Estimation is classified as Inferred on the basis of the drill hole logging, drill hole sample analytical results, drill spacing, statistical analysis, confidence in geological continuity and metallurgical testing results (ASX LR 5.8.1 Classification)
- Approximately 20% of the Mineral Resource Estimation is extrapolated.
- The JORC 2012 Edition Guidelines, 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 specifications of those minerals*" and that "*it may be necessary, prior to reporting of a Mineral Resource or Ore Reserve, to take into 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 and Economic Modifying Factors)
- The likelihood of eventual economic extraction was considered on the basis of its indicative product specifications based on metallurgical testing performed, infrastructure access with respect to road/rail/port, product marketing capacity and potential open pit mining scenarios and concluded that the Beharra Silica Sands Project is an Industrial Mineral Resource in accordance with the terms of Clause 49. (ASX LR 5.8.1 mining, Metallurgy and Economic Modifying Factors)

This ASX announcement has been authorised for release by the Board of Perpetual Resources Ltd.

-ENDS-

For enquiries regarding this release please contact:

Mr George Karafotias

Company Secretary

Ph +61 421 086 550

The information in this report that relates to the Exploration information for the Beharra Project is based on information compiled and fairly represented by Mr Colin Ross Hastings, who is a Member of the Australian Institute of Mining and Metallurgy and consultant to Perpetual Resources Limited. Mr Hastings is also a shareholder of Perpetual Resources Limited. Mr Hastings has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he has undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Hastings consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Exploration Targets and Mineral Resources is based on information compiled by Elizabeth Haren, a Competent Person who is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Elizabeth Haren is employed as an associate Principal Geologist by Snowden Mining Consultants Pty Ltd, who was engaged by Perpetual Resources Limited. Elizabeth Haren has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Elizabeth Haren consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

The information in this report that relates to Exploration Targets and Mineral Resources is based on information compiled by Dr Andrew Scogings, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy, a Member of the Australian Institute of Geoscientists and is a Registered Professional Geologist in Industrial Minerals. Dr Scogings 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". Dr Scogings consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Appendix 1: Detailed Analysis of Beharra Mineral Resource Estimation

Location, Access & Infrastructure

The Beharra Project is located 300km north of Perth and is 96km south of the port town of Geraldton in Western Australia. Access to the Project from Geraldton (to the north) and Perth (to the south) is via the sealed Brand Highway, thence the Mount Adams unsealed road provides access to the Project. (Figure.2)

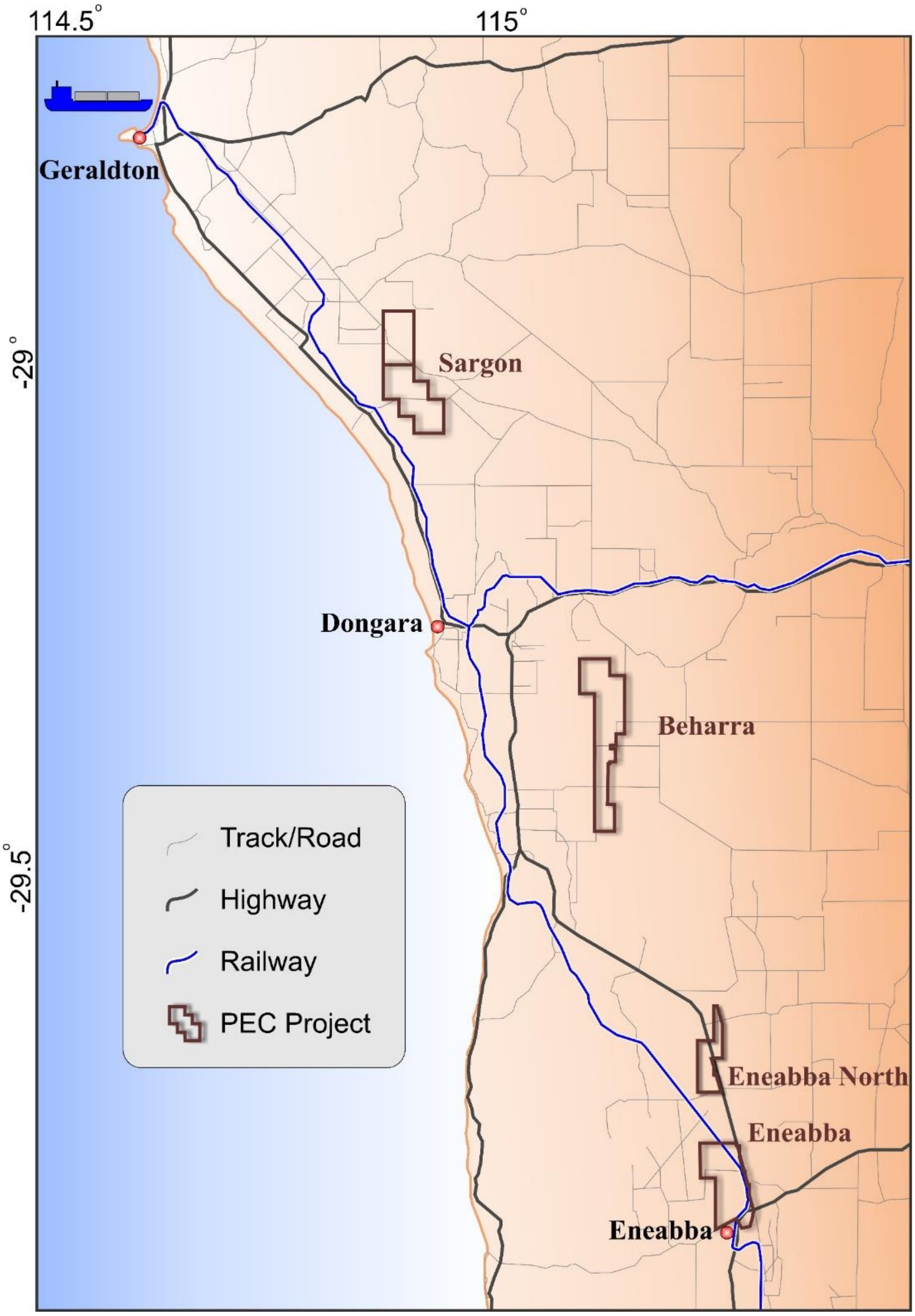

Figure 2: Beharra Project Location Plan

Project Geology

Silica sand mineralisation at Beharra occurs within the coastal regions of the Perth Basin, and the targeted silica sand deposits are the aeolian quartz sand dunes that overlie the Pleistocene limestones and palaeo-coastline. (Figure.3)

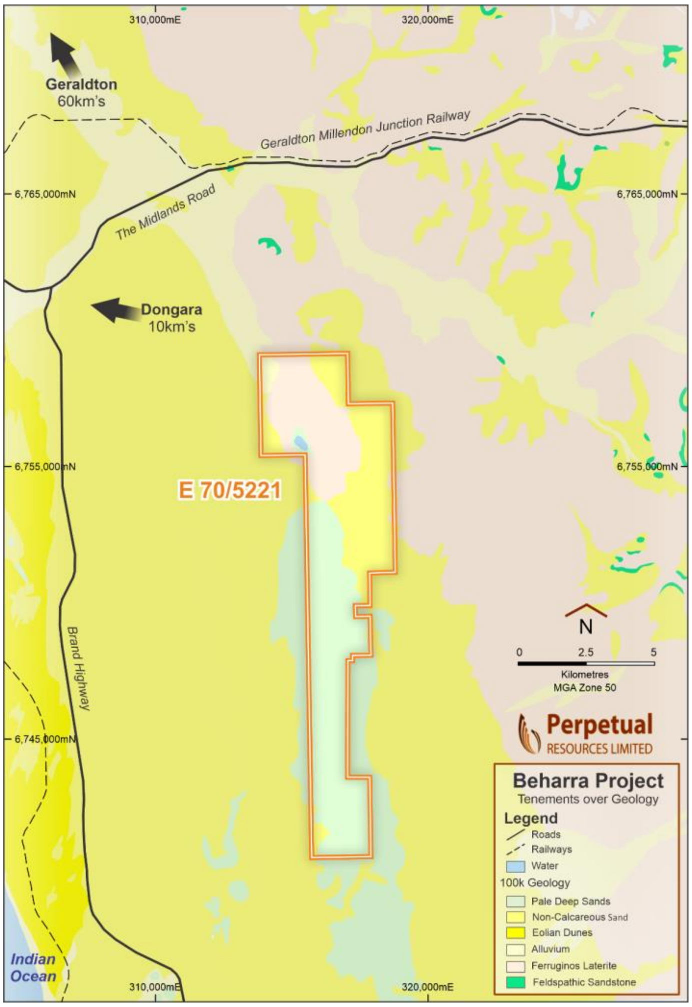

Figure 3: Beharra Geology

Drilling & Sampling

The Beharra Deposit was initially explored in February 2019 using auger drilling across the southern extent of the tenement E70/5221. A total of 38 drill holes to a maximum depth of 2m were completed on a ~800mE x ~400mN grid, covering 7,215m strike and average width of 1,700m.

After positive results from the auger drilling, an aircore program was completed in March 2020 over the same southern portion of the tenure south of Mt Adams road. A total of 40 holes for 506.7m was completed on a ~400mE x ~480mN grid. A sum of 509 samples were obtained. 502 of the assayed samples were 1m in length, one was 1.5m and five were 0.5m and one was 0.2m in length. X ray fluorescence (XRF) assays were obtained for 509 samples analysed by Nagrom and 509 assay results were obtained by inductively coupled plasma (ICP) techniques from Intertek Genalysis. The estimation only utilises the ICP analysis results.

Samples were submitted to the Intertek Laboratory in Maddington, Perth, Western Australia. The assay method for multi element analysis consisted of four acid digest including perchloric and hydrochloric acids in Teflon beakers with ICP optical (atomic) emission spectrometry finish. Silica is reported by difference.

Internal laboratory quality assurance/quality control (QAQC), which includes duplicates, standards and blanks was used. In addition, a high purity silica standard was used at the rate of 1:20.

The Mineral Resources were estimated within horizons defining the white and yellow sands above the logged water table surface. Surfaces were based on the geological boundaries of logged sand types and chemical analysis form the drill data.

Mineral Resource Estimation

Grade estimation was completed using ordinary kriging with hard boundaries applied between identified layers. Top cuts were applied to the data where required.

Six in-situ bulk density measurements were completed by Western Geotechnical and Laboratory Services using a nuclear densometer. The sites were sampled in accordance with AS 1289.1.2.1-6.5.1 and tested in accordance with AS 1289.12.1.1 and AS 1289.5.8.1. The results from the six measurements are corrected based on the measured moisture factor. The dry density ranged from 1.57 to 1.68 t/m^3 with an average dry in-situ density result of 1.64 t/m^3 which was applied to the estimate.

Mineral Resource Classification

The Mineral Resource was classified as Inferred based on data quality, sample spacing, grade continuity, geological continuity of the domains and metallurgical/process tests. The grey sand domain was defined as being low grade at this stage as there is no metallurgical testwork supporting its beneficiation potential and as such has been excluded. The reported Mineral Resource has excluded a buffer zone of 50m on the western side adjacent to the Yardanogo Nature Reserve and a 50m buffer to the north and south of the Mount Adams Road. The surface humus layer is typically about 300mm thick. The upper 500mm of overburden is likely to be reserved for rehabilitation purposes and was therefore excluded from the Mineral Resource.

No cut-off grade has been used for the reported Mineral Resource as the layers considered potentially economic are amenable to beneficiation to a suitable product specification through a relatively simple process, as demonstrated by initial metallurgical testing based on shallow auger drilling.

Table 4: Beharra Maiden Mineral Resource Estimation

Sand	Volume (Mm^3)	Density	Tonnes (Mt)	SiO_2%	Al_2O_3%	TiO_2%	Fe_2O_3%	LOI%
Yellow	5.9	1.64	9.6	97.9	0.48	0.21	0.21	0.63
White	62.0	1.64	101.7	98.7	0.42	0.35	0.18	0.22
Total	67.9	1.64	111.3	98.6	0.42	0.34	0.18	0.25

Exploration Target

Beneath the reported yellow and white sands of the Mineral Resource reported to the north of Mount Adams Road, there is an Exploration Target of between 8 and 13 million tonnes (Mt) with a target grade of between 97 to 99% SiO_2 with a target thickness between 2.3 to 3.3m. The Exploration Target was estimated by using the area and multiplying by the average nearby thickness of the target silica sand and the density used in the nearby Beharra Mineral Resource Estimate. The target SiO2 ranges are determined from the average grades in the nearby Beharra Mineral Resource Estimate. The potential quantity and grade are conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. (Table 5)

Table 5: Beharra Exploration Target

Classification	Tonnes (Mt)	SiO_2%
Exploration Target	8-13	97-99

The potential quantity and grade of the Exploration Target is conceptual in nature.

Metallurgical Beneficiation Testwork

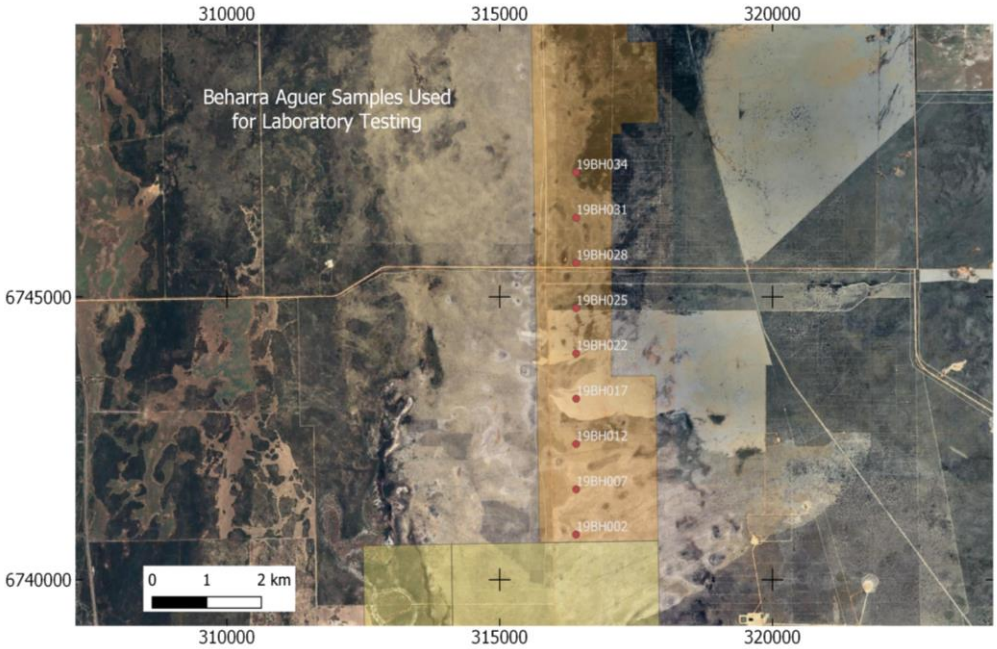

Figure 4: Beharra Drill Collar Plan

Nagrom Metallurgical Laboratories ("Nagrom") was provided with a total of 9 auger drill holes samples from depth intervals of 0.5 to 2m and generated a single 178kg bulk composite sample of the material.

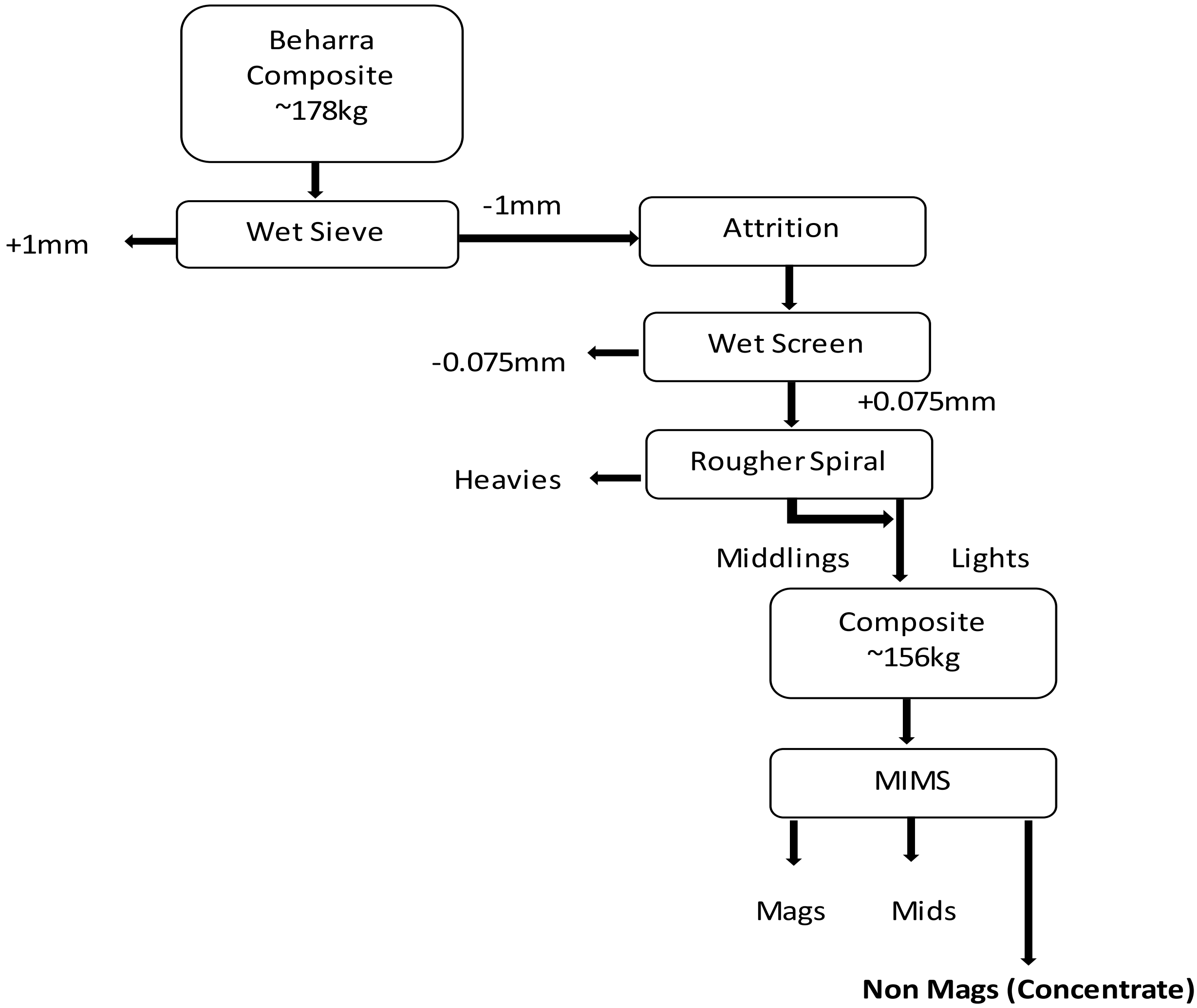

Figure 5: Beharra Initial Testwork Flowsheet

The auger drill holes were evenly distributed along the strike length of the prospective target area within the Vacant Crown Land proportion of the Beharra Project. Organic contaminants were visually identified in these respective intervals due to the proximity to surface. It was expected that the samples obtained from the resource definition drilling program at greater depth will have less influence of organic content.

This first stage of laboratory testing was designed to establish responses to conventional processing methods. (Figure.5) Further test work will provide a guide towards the final product specifications and end user applications.

The sample was wet screened to -1mm then scrubbed in an attrition cell and wet sieved to remove -0.075mm material. This stage resulted in removal of approximately 2% of the feed mass demonstrating a very clean sand with minor slimes present.

Figure 6: Spiral Separation

The +0.075mm fraction was spiralled (Figure.6) and the middlings and light fractions were combined and passed over a medium intensity magnetic separator (MIMS). The non-magnetic fraction formed the final concentrate for this stage of testing. The recovery of the non-magnetic fraction was 99.1%.

The test work shows that the Beharra sand is very clean with minor slimes and that removal of heavy minerals by spiralling and magnetic separation is effective and applicable to the sand tested. (Table.6)

Table 6: Initial Testwork Results Beharra

Sample	Al_2O_3 ppm	CaO ppm	Fe_2O_3ppm	K_2Oppm	MgO ppm	MnO ppm	Na_2O ppm	TiO_2 ppm	SiO_2%	SiO_2+ LOI %
Raw Sample	2,500	30	1,270	350	170	0	110	1,690	99.15	99.37
Final Product	1,150	40	315	<100	50	<5	<100	350	99.85	99.89

Note: The final product assays for SiO_2 have been calculated by difference, by totaling the oxides of the elements that have been assayed and subtracting from 100%. Material prepped in Zirconia Bowl for analysis so has been excluded for SiO_2 calculation.

Table 7: Silica Specifications Required For Glass Industry

Type of Application	Specification
Float (Plate) Glass	99.5% SiO_2
Container Glass	99.5% SiO_2
Cover Glass (Solar Panels)	99.95% SiO_2& Low Fe
Smart Glass (Ultra Clear)	99.97% SiO_2& Low Fe
Specialist Glass (Thin Screen)	99.97% SiO_2

Appendix 2: Air Core Drilling Summary Results

A significant amount of analysis of the sand has been carried out as part of the air core drilling, earlier shallow hand auger drilling and preliminary metallurgical test work. The earlier hand auger analyses are not included in this report however the samples have been included in the Mineral Resource Estimate that is pending.

Initially the air core samples were analysed at Nagrom's laboratory. The samples were split and dried then pulverised to P90 -75 micron in a zirconium bowl. The assay method for multi element analysis consisted of prepared samples fused in a lithium borate flux with lithium nitrate additive then analysed by X-ray Fluorescence (XRF) (test method XRF001). LOI was also carried out on each sample out at 1,000oC (test method TGA002).

Inter-laboratory checking was carried out by submitting 28 prepared representative pulps (umpire samples) to the Intertek Laboratory located in Maddington. The samples were analysed by two methods, XRF (test method FB1/XRF20) and Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP) (test method 4ABSi/OE901). Samples for ICP analysis consisted of a four acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids in Teflon Beakers. Silica is reported by difference.

The same 28 samples analysed by Intertek were also analysed by ICP at Nagrom's laboratory. For analysis of Al2O3 and SiO2 the samples were fused with sodium peroxide and digested in dilute hydrochloric acid and then analysed by ICP (test method ICP005). All other elements were determined by ICP after dissolution in an acid mixture (test method ICP003).

Final analyses of the air core samples were carried out at Intertek's laboratory using four acid digest followed by ICP determination. The samples used consisted of pulps that were prepared by Nagrom. The analytes consisted of Al, Ba, Ca, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Na, Ni, P, S, Si Ti, and V. LOI was also carried out on each sample out at 1,000oC. The elements were reported as commonly occurring oxides by applying metal oxide conversion factors. The SiO2 grade was calculated by difference, which is calculated by totaling the oxides of all elements that have been assayed plus LOI and subtracting those from 100%.

The extensive analysis by different laboratories and different methods are industry standard procedures and methods producing high level of confidence on the results produced. The ICP method is considered industry standard for reporting sand grades and therefore are the assay results that have been adopted in this report.

Laboratory and assay checks were carried out by both laboratories and included 1 in 20 duplicate assays and 1:20 blanks. Each laboratory provided their own standards that were incorporated into the sample batches.

The air core assay results were extremely encouraging. Although the average hole depth drilled was 12.6m the population group used in the reporting following was restricted to samples up to 10m below surface level. It can be seen from the total hole assay results that the silica dioxide grade reduces near the water table and below due mainly to increasing Al2O3 grade related to the clayey sands reported in the lithology logs.

If the project was proved feasible, mining below the water table would not be considered and as such the pending MRE would include only material above the water table, which is approximately from 10 to 13m.

The Beharra Silica Sand Project is targeting high grade - high purity silica sand for the clear glass market as well as other specialist markets that require minimum sand grades of >98.5% SiO_2 and low levels of Fe_2O_3 (typically <300ppm) as well as reduced levels of other deleterious minerals.

The following SiO_2 drill intercepts are reported by applying a lower cut of 98% SiO_2 as shown in Table 2. In addition to the lower cut, only samples above 10m below surface are included. A one metre <98% interval may also be included as indicated "*" against the drill hole number. The sand colour interval is also reported. Every drill hole had an intercept with average SiO_2 grade >98.0%. The maximum intercept was 10m (AC_25, AC_26 and AC_28) and the minimum intercept was 3m (AC_24). The average intercept width for all holes was 7.9m and the average grade of all intercepts was 98.63% SiO_2, and the average weighted grade was 98.64% SiO_2. Fe_2O_3 average grade for all reported intercepts was 0.19%.

Silica dioxide intercepts greater than 99.0% have also been reported and are presented in table 3. These intercepts have been taken from the >98.0% SiO_2 intercepts reported in Table 2. The average intercept width was 2.9m and the average grade was 99.07% SiO_2.

Table 8:

Beharra Silica Sand Project Air Core Drilling Intercepts

>98.0 SiO_2 Lower Cutoff

*** intercept has 1m <98.0% SiO_2 included**

Intercept above the water table maximum depth 10m

Hole No.	SiO_2 Intercept	Colour Intercept Yellow	Colour Intercept White	Fe_2O_3%
AC_16	9m @ 98.5% from surface	0-3m	3-9m	0.28
	incl. 1m @ 99.1% from 4m			
AC_17*	6m @ 98.5% from surface		0-6m	0.22
	incl. 2m @ 99.1% from surface			
AC_18*	5m @ 98.0% from surface		0-5m	0.23
	incl. 1m @ 99.2% from surface			
AC_19	7m @ 98.5% from surface		0-7m	0.21
	incl. 2m @ 99.0% from surface			
AC_20	7m @ 98.8% from surface		0-7m	0.24
	incl. 3m @ 99.0% from surface			
AC_21	7m @ 98.8% from 1m		1-8m	0.23
	incl. 2m @ 99.0% from 5m			
AC_22	8m @ 98.8% from surface		0-8m	0.19
	incl. 4m @ 99.0% from surface			
AC_23	6m @ 98.6% from surface		1-6m	0.26
AC_24	3m @ 98.4% from surface		1-4m	0.30
AC_25	10m @ 98.9% from surface	0-4m	4-10m	0.17
	incl. 5m @ 99.1% from 3m			
AC_26	10m @ 98.8% from surface		0-10m	0.18
	incl. 4m @ 99.0% from 1m &			
	1m @ 99.3% from 4m			
AC_27	4m @ 98.8% from surface	0-2m	0-4m	0.17
	incl. 1m @ 99.1% from surface			
AC_28	10m @ 98.7% from surface		1-10m	0.17
	incl. 3m @ 99.0% from surface			
AC_29	9m @ 98.9% from surface		0-9m	0.17
	incl. 4m @ 99.0% from surface			
AC_30	9m @ 98.5% from surface		0-9m	0.20

Table 8: (Cont)

AC_31	9m @ 98.6% from surface			
	incl. 2m @ 99.0% from 2m		0-9m	0.18
AC_32	10m @ 98.8% from surface		0-10m	0.14
	incl. 3m @ 99.1% from 1m			
AC_33	8m @ 98.9% from surface		0-8m	0.16
	incl. 5m @ 99.1% from 1m			
AC_34*	3m @ 98.3% from surface		0-3m	0.21
AC_35	9m @ 98.6% from surface	0-4m	4-9m	0.22
	incl. 2m @ 99.0% from 4m			
AC_36	9m @ 98.6% from 1m	1-4m	4-9m	0.23
AC_37	10m @ 98.7% from surface	0-3m	3-10m	0.17
	incl. 3m @ 99.0% from 3m			
AC_38	9m @ 98.6% from surface	0-2m	2-9m	0.17
	incl. 1m @ 99.0% from 3m			
AC_39	10m @ 98.5% from surface	0-3m	3-10m	0.21
AC_40	6m @ 98.5% from surface		0-6m	0.21
AC_41	9m @ 98.7% from surface	0-3m	3-9m	0.20
	incl. 1m @ 99.0% from 5m			
AC_42*	9m @ 98.5% from surface		0-9m	0.18
	incl. 1m @ 99.0% from surface &			
	1m @ 99.0% from 3m			
AC_43*	7m @ 98.6% from surface		0-7m	0.20
	incl. 2m @ 99.0% from 2m			
AC_44*	10m @ 98.6% frm surface	0-2m	2-10m	0.13
	incl. 2m @ 99.2% from 2m			
AC_45	9m @ 98.8% from surface		0-9m	0.13
	incl. 4m @ 99.1% from surface			
AC_46*	10m @ 98.3% from surface	0-4m	4-10m	0.26
AC_47*	7m @ 98.6% from surface		0-7m	0.18
	incl. 2m @ 99.0% from 1m			
AC_48	7m @ 98.8% from surface		0-7m	0.14
	incl. 4m @ 99.1% from 1m			
AC_49	5m @ 98.8% from surface		0-5m	0.16
	incl. 3m @ 99.1% from surface			
AC_50	8m @ 98.8% from surface		0-8m	0.17
	incl. 5m @ 99.0% from 1m			
AC_51	8m @ 99.1% from surface		0-8m	0.11
	incl. 5m @ 99.3% from 1m			
AC_52	9m @ 98.8% from surface	0-2m	2-9m	0.14
	incl. 4m @ 99.1% from 2m			
AC_53*	8m @ 98.8% from surface		0-8	0.13
	incl 5 m @ 99.3% from surface			

Table 8: (Cont)

AC_54*	10m @ 98.0% from surface		0-10m	0.15
	incl. 1m @ 99.2% from surface &			
	2m @ 99.1% from 2m			
AC_55	8m @ 98.4% from surface		0-8m	0.19

Table 9:

Beharra Silica Sand Project **Air Core Drill Intercepts >99.0% SiO_2 within the >98.0% SiO2 Intercepts (refer to Table 2)**
1m @ 99.1% SiO_2 from 4m, hole AC_16
2m @ 99.1% SiO_2 from surface, hole AC_17
1m @ 99.2% SiO_2 from surface, hole AC_18
2m @ 99.0% SiO_2 from surface, hole AC_19
3m @ 99.0% SiO_2 from surface, hole AC_20
2m @ 99.0% SiO_2 from 5m, hole AC_21
4m @ 99.0% SiO_2 from surface, hole AC_22
5m @ 99.1% SiO_2 from 3m, hole AC_25
4m @ 99.0% SiO_2 from 1m, & 1m @ 99.3% SiO_2 from 4m, hole AC_26
1m @ 99.1% SiO_2 from surface, hole AC_27
3m @ 99.0% SiO_2 from surface, hole AC_28
4m @ 99.0% SiO_2 from surface, hole AC_29
2m @ 99.0% SiO_2 from 2m, hole AC_31
3m @ 99.1% SiO_2 from 1m, hole AC_32
5m @ 99.1% SiO_2 from 1m, hole AC_33
2m @ 99.0% SiO_2 from 4m, hole AC_35
3m @ 99.0% SiO_2 from 3m, hole AC_37
1m @ 99.0% SiO_2 from 3m, hole AC_38
1m @ 99.0% SiO_2 from 5m, hole AC_41
1m @ 99.0% SiO_2 from surface, & 1m @ 99.0% SiO_2 from 3m, hole AC_42
2m @ 99.0% SiO_2 from 2m, hole AC_43
2m @ 99.2% SiO_2 from 2m, hole AC_44
4m @ 99.1% SiO_2 from surface, hole AC_45

Table 9: (Cont)

2m @ 99.0% SiO_2 from 1m, hole AC_46
4m @ 99.1% SiO_2 from 1m, hole AC_47
3m @ 99.1% SiO_2 from surface, hole AC_48
5m @ 99.0% SiO_2 from 1m, hole AC_50
5m @ 99.3% SiO_2 from 1m, hole AC_51
4m @ 99.1% SiO_2 from 2m, hole AC_52
5m @ 99.3% SiO_2 from surface, hole AC_53
1m @ 99.2% SiO_2 from surface, & 2m @ 99.1% SiO_2 from 2m, hole AC_54

Table 10.Collar Drill Hole Location

Hole	Easting	Northing	RL	Depth	Method	Dip	Azimuth
AC_16	316,026	6,745,235	30	12	AC	-90	0
AC_17	316,400	6,745,237	28	13	AC	-90	0
AC_18	316,973	6,745,232	27	8	AC	-90	0
AC_19	316,036	6,744,753	26	20	AC	-90	0
AC_20	316,399	6,744,755	27	11	AC	-90	0
AC_21	316,972	6,744,754	27	13	AC	-90	0
AC_22	316,039	6,744,268	28	12	AC	-90	0
AC_23	316,397	6,744,279	26	12	AC	-90	0
AC_24	316,990	6,744,291	27	13	AC	-90	0
AC_25	316,031	6,743,795	30	15	AC	-90	0
AC_26	316,400	6,743,797	29	12	AC	-90	0
AC_27	316,986	6,743,801	30	17	AC	-90	0
AC_28	316,041	6,743,315	27	11.2	AC	-90	0
AC_29	316,389	6,743,313	28	13	AC	-90	0
AC_30	316,970	6,743,314	28	13	AC	-90	0
AC_31	317,463	6,743,315	31	14	AC	-90	0
AC_32	316,031	6,742,811	28	13	AC	-90	0
AC_33	316,401	6,742,834	27	13	AC	-90	0
AC_34	316,980	6,742,834	28	12	AC	-90	0
AC_35	317,462	6,742,836	33	14	AC	-90	0
AC_36	316,044	6,742,371	31	14	AC	-90	0
AC_37	316,391	6,742,356	30	14	AC	-90	0
AC_38	316,793	6,742,358	30	12	AC	-90	0
AC_39	317,206	6,742,356	31	13	AC	-90	0
AC_40	317,595	6,742,358	29	11.5	AC	-90	0
AC_41	316,039	6,741,874	31	14	AC	-90	0
AC_42	316,405	6,741,877	29	13	AC	-90	0
AC_43	316,794	6,741,881	30	13	AC	-90	0
AC_44	317,201	6,741,884	31	13	AC	-90	0
AC_45	317,584	6,741,891	30	11.5	AC	-90	0
AC_46	316,034	6,741,398	32	14	AC	-90	0
AC_47	316,396	6,741,394	29	10.5	AC	-90	0
AC_48	316,801	6,741,394	30	13	AC	-90	0
AC_49	317,202	6,741,397	30	7.5	AC	-90	0
AC_50	316,040	6,740,914	29	11.5	AC	-90	0
AC_51	316,398	6,740,914	30	12	AC	-90	0
AC_52	316,793	6,740,916	31	12	AC	-90	0
AC_53	317,195	6,740,899	31	12	AC	-90	0
AC_54	317,595	6,740,909	32	12	AC	-90	0
AC_55	317,600	6,741,398	31	12	AC	-90	0

Table11.

Criteria **All Assays**

Compound	Count	Detection Limit %	Average Analysis %	Max. %	Min. %
Al2O3	509	0.01	1.53	20.68	0.12
CaO	138	0.01	0.02	0.06	0.01
Cr2O3	207	0.001	0.003	0.025	0.001
Fe2O3	509	0.002	0.241	1.941	0.041
K2O	509	0.004	0.230	1.185	0.024
MgO	433	0.004	0.023	1.149	0.004
MnO	509	0.0002	0.0050	0.0131	0.0006
Na2O	509	0.004	0.023	0.124	0.001
SO3	147	0.015	0.030	0.161	0.015
SiO2*	**509**	**0.1**	**96.9**	**99.4**	**68.0**
TiO2	509	0.001	0.376	0.992	0.063
LOI-1000C	509	0.01	0.65	8.51	0.02

* SiO2 calculated by difference (not all compounds shown in this table)

Appendix 3: JORC Tables 1, 2, 3

JORC Table 1 – Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Air-core drilling and sampling referred to in this report was completed in March 2020 and information reported on that program on 1 April 2020. • Air-core samples were collected via a cyclone, the entire sample for each 1 m drill interval was collected and placed in a calico sample bag. No splitting on the rig was undertaken. The sample was labelled with the drillhole number and sample interval, and a waterproof tag nominating a sample number was placed in the bag and then sealed with a tie. • Air-core samples were collected from each metre drilled or part metre if the hole was not ended on a full metre. • Representative samples of each interval drilled were placed in a chip tray for reference. • Auger drilling and sampling referred to in this report and reported previously were obtained from hand auguring to a maximum depth of 2 m. • Three samples were collected from each hole being surface to 0.5 m, 0.5–1.0 m, and 1.0–2.0 m. The top metre of the hole was split into 2 samples to allow a separate sample of the top 0.5 m that contains organic matter associated with native ground cover. If sand mining operations were to be carried out, this top 0.5 m would be stockpiled for future rehabilitation, so at this time treating it separately is appropriate. • The shallow auger program was carried out to obtain representative sand samples to a maximum depth of 2 m for the reasons as described in the Company release of 12 February 2019.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• A total of 40 air-core drillholes were completed for an average depth of 12.7 m, with the deepest hole ending at 20 m. • Air-core drilling was undertaken using a track mounted Hitachi hydraulic top drive rig coupled to a 130 cfm/100 psi compressor. A 76 mm air-core bit was fitted to 70 mm twin tube rod string. All holes were drilled vertically. • Auger drilling consisted of a manually hand operated 75 mm diameter sand auger (Dormer Sand Auger) with PVC casing utilised to reduce contamination potential as the auger is withdrawn from the hole. The auger was driven about 300 mm then retracted and the sample was placed in a UV resistant plastic bag and this continued until the sample interval was completed. The sample was labelled with the drillhole number and sample interval, then placed in a second plastic bag and sealed and removed from site for logging and sample preparation.
Drill sample recovery	• *Method of recording and assessing core and*	• For aircore, each sample bag was weighed to determine the actual sample recovery, which

Criteria	JORC Code explanation	Commentary
	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.*	resulted in an average sample weight of approximately 7.5 kg/m of sample. • Air-core sampling was typically terminated on reaching the water table which occurred around 10–12 m below surface level. • The cyclone was cleaned regularly to ensure maximum and representative recovery. • For auger sampling, each sample bag was weighed to determine the actual sample recovery, which resulted in an average sample weight of 7.5 kg/m of sample. • The type of sand auger used provided a clean sample with less possibility of contamination compared to a flight auger.
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.*	• The samples have been sufficiently logged including estimates of grain size, sorting and texture, and colour. Particular attention has been taken to ensure a more scientific and less subjective approach to colour has been adopted because colour (white to grey shades, and pale yellow shades) is one of the targeting features. • Chip tray samples for each hole were photographed.
Subsampling 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 subsampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Air-core samples were transported to Welshpool in Perth and locked in a secure storage shed. • Further check logging was undertaken, and representative subsamples were taken for duplicate analysis. Subsampling was carried out by spearing the samples selected and collecting approximately 400 g of sample. The duplicates have been utilised at the rate of 1:20. • Blanks were generated from a publicly available washed sand product and taken by spearing a 20-bulk sample and collecting approximately 400 g of sample. The blanks have been utilised at the rate of 1:20. • The prepared subsamples (duplicates and blanks) plus all the bulk drill samples were submitted to Nagrom Metallurgical Analytical Laboratories located in Kelmscott in Western Perth for drying, further splitting, and pulverisation in a zircon bowl. A subsample of 100 g with a P90 -75 µm particle size was utilised for analysis. • Auger samples were submitted to Intertek Laboratory in Maddington for drying, splitting, pulverisation in a zircon bowl. A subsample of 200 g with a 75 µm particle size is utilised for analysis. • Allowance was made for duplication by drilling a twin auger hole located within 1 m of each other. Three twin holes were drilled representing 8% duplicate sample. • The sample preparation methods are considered industry standard for silica sands. Records were kept describing whether the samples were submitted wet or dry. • The laboratory sample size taken is appropriate

Criteria	JORC Code explanation	Commentary
		for the sand being targeted.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• All the air-core samples prepared by Nagrom were then analysed at the same facility. The assay method for multi-element analysis consisted of prepared samples fused in a lithium borate flux with lithium nitrate additive then analysed by x-ray fluorescence (XRF) (test method XRF001). Loss on ignition (LOI) was also carried out on each sample out at 1,000°C (test method TGA002). • Auger samples were submitted to the Intertek Laboratory in Maddington, Perth, Western Australia. The assay method for multi-element analysis consisted of four-acid digest including hydrofluoric, nitric, perchloric and hydrochloric acids in Teflon beakers with inductively coupled plasma (ICP)-optical (atomic) emission spectrometry finish. Silica is reported by difference. • Inter-laboratory checking was carried out by submitting 28 prepared representative pulps (umpire samples) to the Intertek Laboratory located in Maddington. The samples were analysed by two methods, XRF (test method FB1/XRF20) and ICP-optical (atomic) emission spectrometry (test method 4ABSi/OE901). Samples for ICP analysis consisted of a four-acid digest including hydrofluoric, nitric, perchloric and hydrochloric acids in Teflon beakers. Silica is reported by difference. • The same 28 samples analysed by Intertek were also analysed by ICP at Nagrom's laboratory. For analysis of Al_2O_3 and SiO_2 the samples were fused with sodium peroxide and digested in dilute hydrochloric acid and then analysed by ICP (test method ICP005). All other elements were determined by ICP after dissolution in an acid mixture (test method ICP003). • Final analyses of the air-core samples were carried out at Intertek's laboratory using four-acid digest followed by ICP determination. The samples used consisted of pulps that were prepared by Nagrom. • The extensive analysis by different laboratories and different methods are industry standard procedures and methods producing high level of confidence on the results produced. The ICP method is considered industry standard for reporting sand grades. • No geophysical tools were utilised for the process.
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.*	• There were no twin air-core holes. • Twin holes were completed for three out of the 38 auger holes. • All drilling and sampling procedures were monitored on site by an independent geologist on a hole-by-hole basis. • All primary information was initially captured in a written log on site by a geologist, data entered,

Criteria	JORC Code explanation	Commentary
		imported then validated and stored in a geological database. • Additional check logging was carried by an independent geologist in Perth prior to samples being submitted to Nagrom for analysis. • No adjustments to assay data have been performed. • External review of umpire samples reported by Intertek was carried out.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• The position of the air-core hole locations was determined by a Trimble R6 RTK GPS in RTK mode. The survey was carried out by Heyhoe Surveys from Geraldton. Accuracy of 0.05 m relative to SSM Dongara 49. • The position of the auger hole locations was determined by a GPS model Garmin GPS Map 64s with an accuracy of 5 m. • The CRS used was GDA94/MGA Zone 50 (ex SSM DON49). • The topography at the project site currently under exploration is flat to gentle undulating terrain. Site survey (Heyhoe Surveys) have produced a ± 50 cm DTM across the entire project area.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• The air-core drillholes were spaced on an approximate 350–600 m (east west) x 480 m along strike (north-south) grid. • The auger drill holes were spaced on an approximate 400m (east-west) x 800 m (north-south) grid. • The adopted spacing at this time is sufficient based on the geological continuity of the sand formation being tested, and sufficient to be applied in a resource estimation. • No sample compositing of holes has been applied.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The orientation utilised for the air-core drilling campaign represents the entire strike length of the aeolian dune within the initial prospective target area and as such is not expected to introduce any particular bias.
Sample security	• *The measures taken to ensure sample security.*	• All samples have been bagged and removed from site and are under the care of the contract senior geologist and field sampling supervisor. • Air-core samples initially stored a secure facility in Welshpool where sample reconciliation was undertaken before delivery to Nagrom Laboratory. • Air-core samples were delivered to Nagrom in Kelmscott. The laboratory carried out a sample reconciliation which was audited against the sample submission sheet. • Auger samples were delivered to Intertek Maddington. The laboratory provided a sample

Criteria	JORC Code explanation	Commentary
		reconciliation report which was audited against the sample submission sheet.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Guidance was provided by an independent consultant, Andrew Scogings, on sampling lengths and hole spacings and carried out a site visit to inspect the drilling and sampling operations.

JORC Table 1 – Section 2: Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• E 70/5221 comprises an effective land area of 56.8 km^2 and was granted on 13 June 2019. A 1% royalty applies to all minerals sold from the Licence. • Anticipating transfer of Title to Perpetual Resources in August 2020. • The southern section of the licence area which is the current focus of exploration is covered by Crown Land. The licence area north of the Crown land is Freehold/Leasehold land. • No impediments on a licence to operate at time of reporting.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Past exploration by others targeting heavy mineral sands. Refer to ASX release dated 6 February 2019, historical exploration.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Unconsolidated Quaternary coastal sediments, part of the Perth Basin. Aeolian quartz sand dunes overlying Pleistocene limestones and paleo-coastline.
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 drillholes:* – easting and northing of the drillhole collar – elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar – dip and azimuth of the hole – downhole 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.*	• The Drillhole information can be found in ASX release dated 1 April 2020 and Appendix 2 Table 10.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	• .Aggregation methods include a lower cut-off grade and results above average weighted. • Intercepts can include one assay less than the bottom cut-off

Criteria	JORC Code explanation	Commentary
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
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 drillhole angle is known, its nature should be reported.* • *If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').*	• All holes were drilled vertical and widths are therefore true.
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 drillhole collar locations and appropriate sectional views.*	• Refer to figures incorporated in the body of the 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.*	• Refer to Table 11 for all selected silica dioxide and other selected oxides assay results
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.*	• Groundwater was intersected in all holes that exceeded 10 m depth. Water table generally occurred between 10 m and 12 m. • Average in-situ density (dry) determined to be 1.64 t/m^3 from six sites. Density locations were hand excavated to 0.4 m deep. The Instrument used was an Instrotek model Explorer. Tests were performed by Western Geotechnical & Laboratory Services. • Particle size distribution was carried out on eight representative samples. Tests were undertaken by Western Geotechnical & Laboratory Services. • Previous metallurgical testwork was undertaken by Nagrom to establish possible process methods to provide a beneficiated product. Refer to ASX releases of 30 January 2020 and 24 February 2020. • Petrological examination by Paul Ashley undertaken and reported on 18 February 2020.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• With completion of the Mineral Resource estimate, the Company will carry out further metallurgical testwork and a feasibility study. Extension of the air-core drilling to the north of Mount Adams Road is being considered.

JORC Table 1 – Section 3: Estimation and Reporting of Mineral Resources

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.*	• Selected checks by Snowden of drillhole data against original assay certificates were completed with no errors identified. • Statistical checks completed to ensure all assays fall within acceptable limits. • Checks on overlapping or duplicate intervals completed. • Checks were completed on all samples which fell below analytical detection limits to ensure samples were assigned zero grades in resource estimation.
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.*	• The Competent Person, Andrew Scogings, visited the site during the air-core drilling program in March 2020.
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.*	• Snowden believes the local geology is well understood as a result of work undertaken by Perpetual and other companies working in the region. • Surfaces of the sand layers were interpreted based on a combination of geochemistry and the geological logging. Each layer was treated as a hard boundary for resource modelling. • Alternative interpretations of the mineralisation are unlikely to significantly change the overall volume of the layers in terms of the reported classified material.
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.*	• The deposit has an extent of approximately 7.1 km north-south x 1.9 km east-west in the south and 1.2 km east-west in the north. • The deposit is restricted by tenement boundaries and the Yardanogo Nature Reserve in the west. • The deposit is open outside of these limits.
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 (e.g. 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.*	• Ordinary kriging estimation using a parent cell size of 200 mE x 240 mN x 4 mRL to estimate for SiO_2, Al_2O_3, TiO_2, Fe_2O_3 and LOI. • Sample selection honoured geological domains which were developed considering the vertical chemical and geological trends of the profile. Five layers were modelled: 1 Yellow, 2 White Upper, 3 White Lower, 4 Grey Pod and 5 Grey. • Statistical analysis by domain was completed. Top cuts were applied to some elements in some layers where appropriate to control sporadic extreme values during estimation; however, no top cut was applied for SiO_2. • Variography was completed for SiO_2. Due to the low number of samples for individual layers, data was combined for variogram modelling. • Validation of block estimates included visual and statistical checks, both global and local. Checks were completed against original and de-clustered drillhole samples. The validations show that while smoothed, the block estimates reproduce the trends observed in the drillhole data.

Criteria	JORC Code explanation	Commentary
	• *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.*	• All tonnages have been estimated as dry tonnages.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• No cut-off parameters have been applied as the yellow and white sand being reported 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	• *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.*	• It is assumed that the deposit will be mined using conventional open cut mining methods. • No assumptions regarding minimum mining widths and dilution have been made. • No mining has occurred.
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.*	• Eight composites were made of three sand types from the 2020 air-core drill program and tested for particle size distribution at Western Geotechnical in Welshpool during April 2020. The samples were described as light grey white sand, grey clayey sand and yellow sand. The in-situ particle size distribution is fairly consistent irrespective of the type of sand, with approximately 85% of the sand between 0.15 mm and 0.6 mm. • A composite sample weighing 178.6 kg from nine shallow auger holes drilled in 2019 was submitted to Nagrom of Kelmscott, WA for process testwork which was reported in February 2020. The process flowsheet included screening at 1 mm, washing, attritioning, spiral separation, medium intensity magnetic separation, acid leaching and calcination. Gravcon Consultancy PL was commissioned by PEC in June 2020 to review the Nagrom results and the following notes are derived from the Gravcon report. The percentage of SiO2 in the samples increased during the test process while Fe_2O_3, TiO_2, Al2O3 and LOI decreased relative to the head grade. 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 in the light and middlings fractions.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>Magnetic separation indicated that the largest fraction of SiO_2 was in the middlings and non-magnetic fractions. Acid leach tests showed that hydrochloric acid reduced Al_2O_3 and Fe_2O_3. Repeat leaching had minimal impact and the use of sulphuric acid alone or combined with hydrochloric acid had minimal impact. Calcination tests indicated limited improvement to product quality. Examples of SiO_2 and Fe_2O_3 results for each process stage are summarised as:
<table>
<tr><th>Process stage</th><th>SiO_2% (XRF)</th><th>Fe_2O_3% (XRF)</th></tr>
<tr><td>Feed -1mm</td><td>99.037</td><td>0.127</td></tr>
<tr><td>Deslimed +75 micron</td><td>99.297</td><td>0.111</td></tr>
<tr><td>Spiral lights + middlings</td><td>99.594</td><td>0.045</td></tr>
<tr><td>MIMS non-magnetics</td><td>99.647</td><td>0.030</td></tr>
<tr><td>HCl leach</td><td>99.746</td><td>0.009</td></tr>
</table>
The particle size distribution (air-core samples) and process testwork (auger composite sample) indicates that the Beharra deposit may be suitable for the production of silica sand for markets such as glass, ceramics and foundry. However, it is noted that the composite auger sample was from shallow holes less than 2 m depth, that the composite may not be truly representative of the Beharra deposit and that further metallurgical testwork on for example Aircore drill samples is recommended to verify the auger sample results and to provide samples for potential customers in the target markets.</td></tr>
<tr><td>Environmental factors or assumptions</td><td>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.</td><td>It is assumed that no environmental factors exist that could prohibit any potential mining development at the deposit.</td></tr>
<tr><td>Bulk density</td><td>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 (vughs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.
Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</td><td>Six in-situ bulk density measurements were completed by Western Geotechnical and Laboratory Services using a nuclear densometer and reported on 16 April 2020. The sites were sampled in accordance with AS 1289.1.2.1-6.5.1 and tested in accordance with AS 1289.2.1.1. and AS 1289.5.8.1. The results from the six measurements are corrected based on the measured moisture factor. The dry density ranged from 1.57 t/m^3 to 1.68 t/m^3 with an average dry in situ density result of 1.64 t/m^3 which was applied to the estimate.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (i.e. 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.*	• The Mineral Resource was classified based on data quality, sample spacing, grade continuity, geological continuity of the domains and metallurgical/process test results into Inferred material. The grey sands are considered uneconomic at this stage and have been excluded. The reported Mineral Resource does not include any material within the Yardanogo Nature Reserve which occupies a strip approximately 300 m wide on the western side of the tenement and excludes a buffer of 50 m south and north of Mount Adams Road. • The Mineral Resource classification appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Snowden is not aware of any independent reviews of the Mineral Resource estimate. • Snowden's internal review process ensures all work meets quality standards.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The Mineral Resource has been validated both globally and locally against the input sample data. • Given the relatively sparse drilling within the Inferred Resource, estimates are considered to be globally accurate. Closer spaced drilling is required to improve the local confidence of the block estimates. • There is no operating mine at the project, and as such, no production data is available.