Perpetual RESOURCES LIMITED

Exceptional Metallurgical Test Results Position Beharra as a Premier Quality Silica Sand Product from the Mid-West Region

ASX RELEASE

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ASX: PEC

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Highlights

- ***Bulk sample metallurgical testing confirms Beharra as the Mid-West region's highest quality (lowest impurity) silica sand product.***
- ***Beharra testing confirms three distinct products;***
  - ***Beharra Special AFS #27: 99.7% SiO_2, 235ppm Fe_2O_3 and 1,405ppm Al_2O_3***
  - ***Beharra Special AFS #46: 99.6% SiO_2, 280ppm Fe_2O_3 and 1,825ppm Al_2O_3***
  - ***Beharra Premium AFS #44: 99.6% SiO_2, 276ppm Fe_2O_3 and 1,789ppm Al_2O_3***
- ***Results determine that Beharra may operate a simplified flow sheet as compared to previous expectations, with likely positive benefits to capital and operating costs.***
- ***Test work results provide strong confidence in Beharra as a high quality and long-life silica sand project.***
- ***Product enhancement opportunity investigations underway on discrete white sand feed material***
- ***End user interest anticipated to be very strong in response to these standout metallurgical results.***

Perpetual Resources Limited (**ASX: PEC**, "PEC" or "the Company") is pleased to announce the exceptional results of its 2,000kg bulk sample metallurgical testing program, which was commenced in August 2020. Perpetual's Managing Director, Mr Robert Benussi provided the following commentary, "*These results demonstrate that, based on publicly available* *information, the Beharra silica sand project can produce a high- quality final silica sand product in the Mid-West Region of Western Australia. The comprehensive metallurgical test work program was executed using full size commercial or genuinely scalable equipment. This provided a genuine representation of a production scenario where the run-of-mine feed at Beharra is a mix of white and yellow sand intervals. We are currently testing a workflow that may demonstrate further product optimisation via the processing of* ***selectively mined white sand horizons****. These results also provide a strong catalyst to further advance our existing and potential future offtake negotiations. To have achieved impurity levels for our lowest impurity product that are, based on publicly available information, significantly lower than the levels of those of nearby deposits, clearly demonstrates the superior quality of the Beharra project and bodes well for the market's acceptance of the higher quality Beharra product. As we rapidly close in on the delivery of the Beharra PFS our confidence in the bankability of Beharra continues to increase".*

The initial metallurgical testing of the Beharra silica sand (please see ASX Announcement dated 24th February 2020), demonstrated results from a 178kg bulk sample that was comprised of 9 auger drill hole samples from interval depths of 0.5m to 2.0m. These initial scoping results were aimed only at providing an indication of overall metallurgical outcomes to guide further exploration and project appraisal.

The follow-up 2,000kg bulk sample testing program, undertaken by renowned mineral sands testing business IHC Robbins (IHC) at their laboratory in Brisbane, emulated results that can be expected using the run of mine material in relation to the process recoveries and expected product qualities.

The bulk sample comprised of sand samples from each 1m interval from all air-core holes, drilled in March 2020 to the south of Mt Adams Road, in the area which falls within the previously announced Mineral Resource Estimate (ASX announcement 22 July 2020). The drill holes utilised in the bulk sample are marked in Figure 1 below, identified as the green "Aircore Drill Collar" locations to the south of Mt Adams Road (no auger holes were utilised in this bulk sampling program).

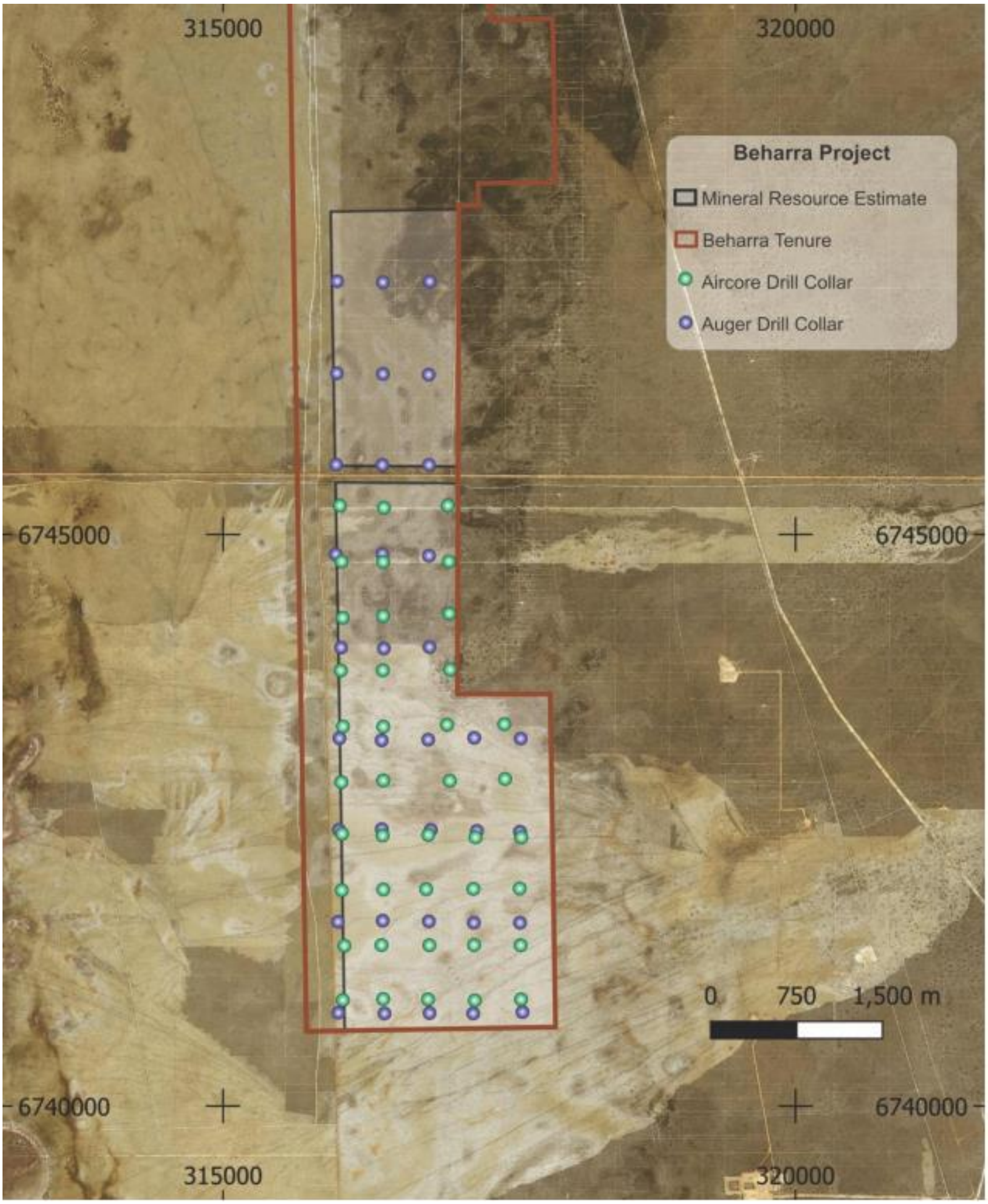
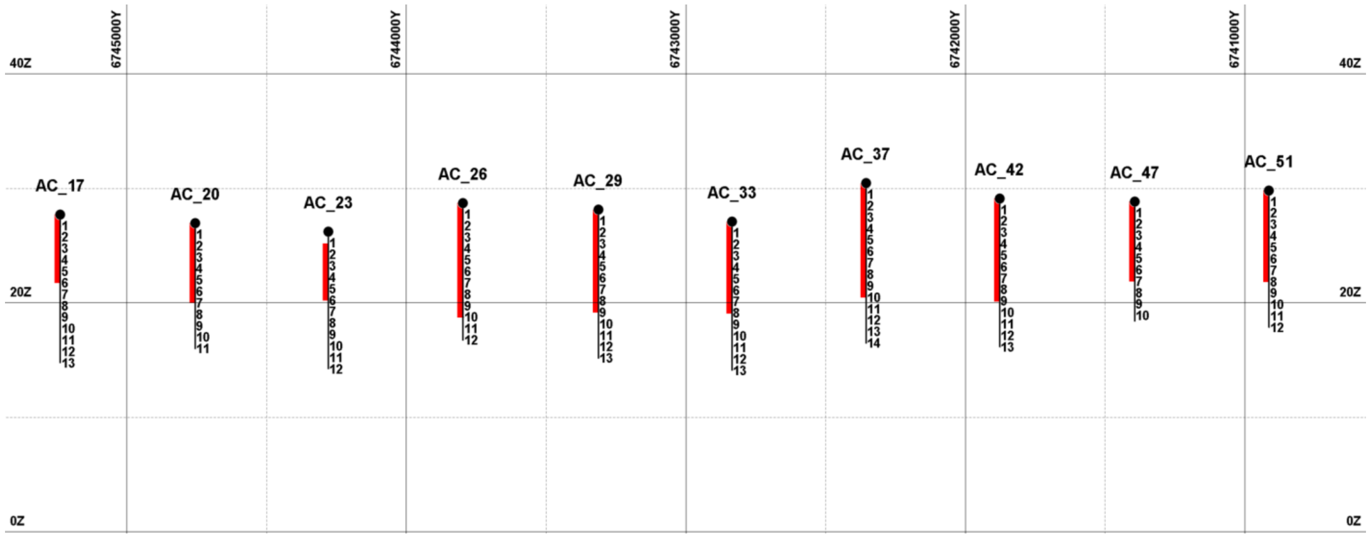


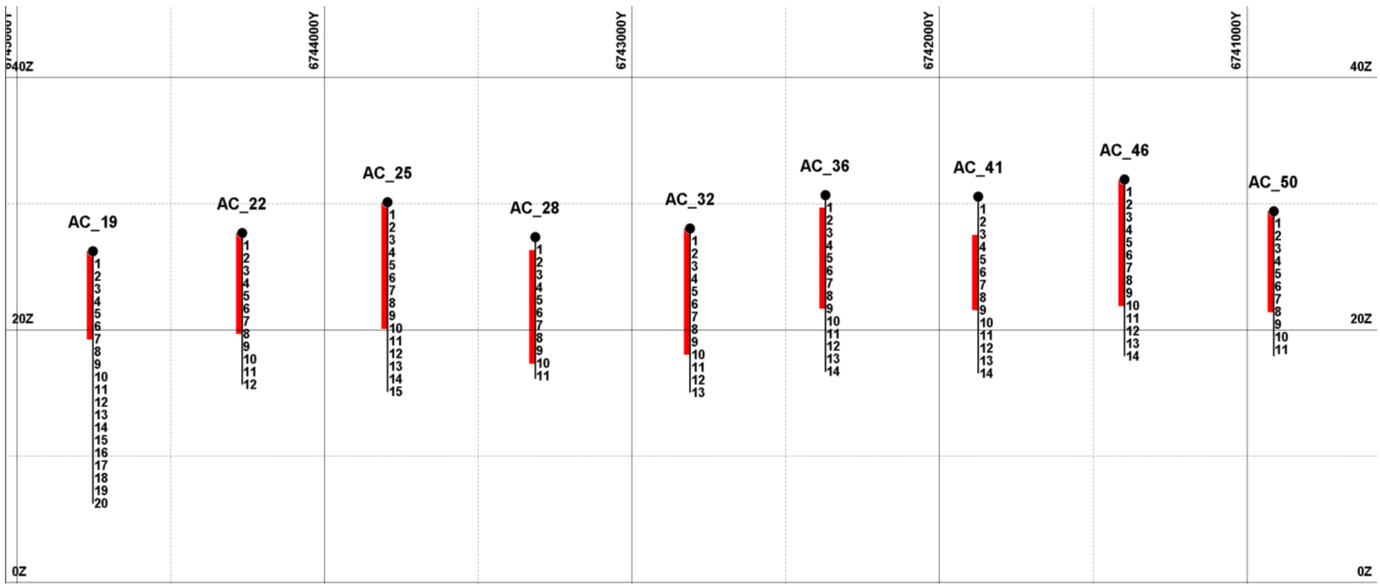
Figure 1 – Location of Beharra Drill Holes Used in Bulk Sampling Program (marked in green)

The bulk sample was composed of approximately 10% yellow sand and 90% white sand, refer Table 1. The samples were selected based on a lower grade cut-off of 98% SiO_2, to a maximum depth of 10 m, being above the water table.

	Yellow sand			White sand		
BHID	From m	To m	Width m	From m	To m	Width m
AC_16	0	3	3	3	9	6
AC_17				0	6	6
AC_18				0	5	5
AC_19				0	7	7
AC_20				0	7	7
AC_21				1	8	7
AC_22				0	8	8
AC_23				1	6	5
AC_24				1	4	3
AC_25	0	4	4	4	10	6
AC_26				0	10	10
AC_27	0	2	2	2	4	2
AC_28				1	10	9
AC_29				0	9	9
AC_30				0	9	9
AC_31				0	9	9
AC_32				0	10	10
AC_33				0	8	8
AC_34				0	3	3
AC_35	0	4	4	4	9	5
AC_36	1	4	3	4	9	5
AC_37	0	3	3	3	10	7
AC_38	0	2	2	2	9	7
AC_39	0	3	3	3	10	7
AC_40				0	6	6
AC_41				3	9	6
AC_42				0	9	9
AC_43				0	7	7
AC_44	0	2	2	2	10	8
AC_45				0	9	9
AC_46	0	4	4	4	10	6
AC_47				0	7	7
AC_48				0	7	7
AC_49				0	5	5
AC_50				0	8	8
AC_51				0	8	8
AC_52	0	2	2	2	9	7
AC_53				0	8	8
AC_54				0	10	10
AC_55				0	8	8
Total intercept widths			**32**			**279**

Table 1 - Two Ton Bulk Sample Composition Based on Intercept Widths





Figures 2 and 3 – Beharra Cross Section N-S Sections (looking east) 316050E and 316400E Showing a Sample of Drill Holes Used in Two Ton Bulk Sampling Program

Note for Figures 2 & 3 above:

- Red = composite samples
- Numbers down holes = metres
- AC series holes drilled March 2020
- Note: 40 x vertical exaggeration

This approach, to utilise a true representative sample, allowed simulation of a simplified run-of-mine feed scenario where both white and yellow sand horizons are processed concurrently, versus a more complex selective mining strategy that would include processing discrete sand horizons or just the white sand only horizons. The test program was designed this way to properly mimic a simplified mining and production scenario and provides the highest confidence yet that results will be repeatable at Beharra for the life of mine operation.

Another key focus of the bulk testing program was to aid in flow sheet design as part of the soon to be delivered Pre-Feasibility Study (PFS) and also to provide potential end users with confirmation of what product quality they could likely expect without the application of any selective mining of processing strategies. The program has also therefore delivered a large quantity of product samples that will be utilised for continued sales and marketing efforts.

Testing Flowsheet

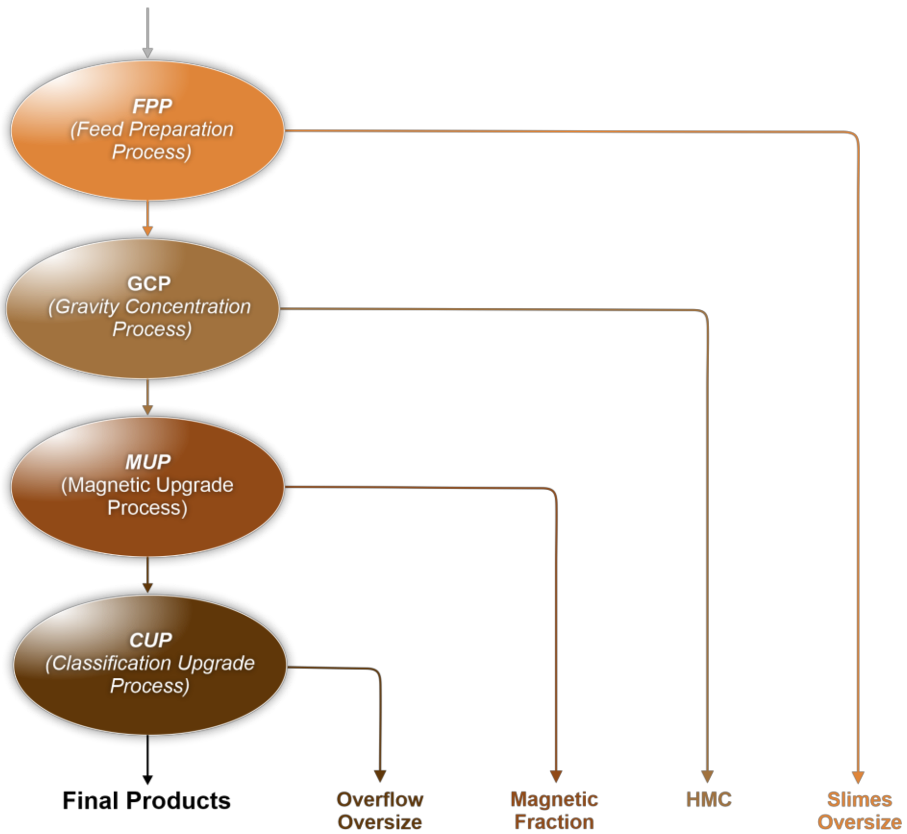
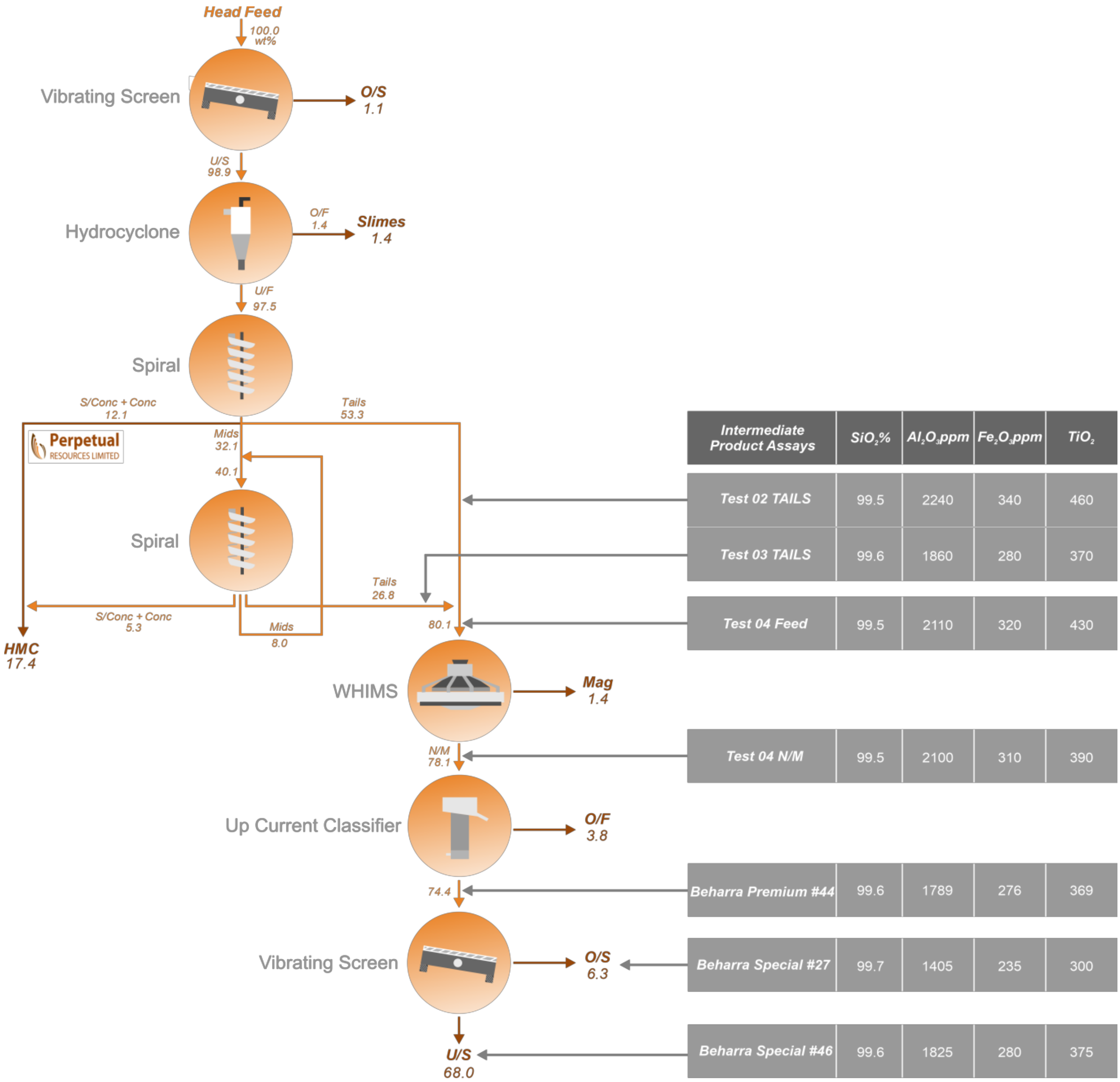


Figure 4 – Overall Test Work Diagram

As shown in Figure 4 above, testing at IHC undertook a sequential feed preparation process, followed by gravity concentration, magnetic upgrading and lastly up-current classification, with intermediate Inductively Coupled Plasma (ICP) assays undertaken at each step to determine that stage's overall effectiveness. Results were then used to optimise a scenario of potential end products, for inclusion in the upcoming PFS. The end results demonstrated a much higher product specification than originally anticipated, as well as a simplified flow sheet that should lead to lower potential up-front capital and operating costs to the benefit to the Beharra project economics.



Intermediate Product Assays	SiO_2%	Al_2O_3ppm	Fe_2O_3ppm	TiO_2
Test 02 TAILS	99.5	2240	340	460
Test 03 TAILS	99.6	1860	280	370
Test 04 Feed	99.5	2110	320	430
Test 04 N/M	99.5	2100	310	390
Beharra Premium #44	99.6	1789	276	369
Beharra Special #27	99.7	1405	235	300
Beharra Special #46	99.6	1825	280	375

Figure 5 – Process Summary Block Flow Diagram

The simplified flow sheet is represented by a detailed process block flow diagram shown in Figure 5 above and is made possible by Beharra's superior metallurgical characteristics.

Testing Results, Product Yield & Potential Optimisation

Feed material for the bulk test was comprised of 'white' and 'yellow' horizon material from the Beharra Silica Sand Project resource. Throughout the developed process, a potential primary product was generated, referred to as 'Beharra Premium'.

Beharra Premium then had the option of being classified over a 600µm screen to produce a coarse product and a fine product, referred to as 'Beharra Special #27' and 'Beharra Special #46', respectively.

The overall mass yield to the potential product was calculated at 74.4%, although studies are ongoing which are expected to demonstrate that the currently modelled waste stream will also be suitable, at least in part, for additional silica sand product markets, which are expected to lead to a much-reduced overall yield loss and which should further enhance project economics. Figure 6 below details the achieved final product assays, which were undertaken by ALS Laboratories using the ICP industry standard method, with further positive refinement of these figures expected in upcoming testing programs.

Summary of Final Products	SiO2	Fe2O3	Al2O3	TiO2	LOI	Mass Yield
Beharra Special AFS #46	99.6%	280 ppm	1825 ppm	375 ppm	0.14%	68%
Beharra Premium AFS #44	99.6%	276 ppm	1789 ppm	369 ppm	0.14%	#46 & #27 combined
Beharra Special AFS #27	99.7%	235 ppm	1405 ppm	300 ppm	0.13%	6%

Figure 6 – Summary of Final Beharra End Products

The Beharra Special AFS #46 final product has been confirmed to sit mostly within the particle size range of -600 µm to +125 µm, while the Beharra Special AFS #27 contains material that is +600 µm (noting that the Beharra Premium AFS #44 is a combination of the AFS #46 and AFS #27). These particle size distributions fall within the ranges that generally considered highly favourable for numerous high volume silica sand product markets globally.

Final product specifications also compare favourably to the other Mid-West deposits, which bodes well for market acceptance and ultimate product pricing scenarios.
A photomicrograph of the final product, shown at Figure 7 below, highlights that little to no discrete/liberated contaminant particles remain in the sample and that the quartz grains appear largely free of inclusions, with the contaminants believed to be largely due to the occurrence of some yellow sand grains, which were mostly resistant to attritioning.

This attribute underpins a simplified flow sheet for the Beharra project, demonstrating no need for the high capital and operating costs that are normally needed to operate attritioning stages as part of the broader flow sheet design.

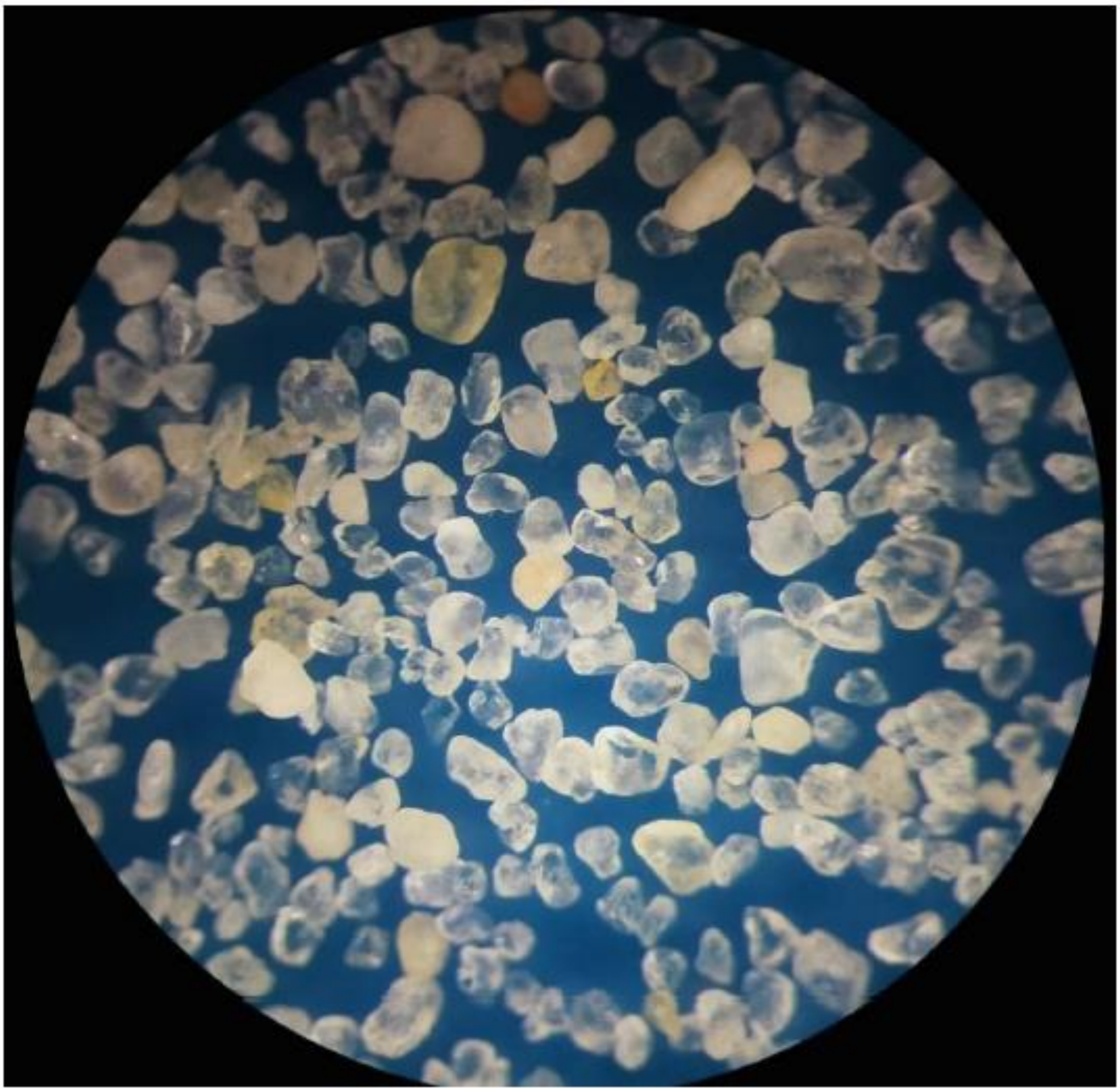


Figure 7 – Final product photomicrograph (field of view = 8.5mm)

There may also be potential to achieve end product specifications from Beharra with even lower levels of the key impurities Fe_2O_3 and Al_2O_3 and Perpetual is currently undertaking additional test work on the discrete white sand horizons to determine whether a selective mining and processing methodology would be beneficial to end product grades and impurities. Outcomes of this testing is expected in coming months.

Furthermore, impurity levels continued to show strong susceptibility to hot acid leaching (HAL) refining methods, which are not anticipated to be undertaken at the Beharra project due to associated environmental, capital and operating costs. It is important to note the effectiveness of HAL on final product though, as this has potential to be undertaken by Perpetual's customers in their own jurisdictions, with a potential joint venture strategy being explored by Perpetual with the aim of undertaking further processing in client's jurisdictions on an economic sharing model.

Product Specifications

The outcomes of this metallurgical program have now allowed the development of detailed product specification and technical sheets for currently proven multiple end products. The Beharra project has so far shown it can potentially deliver three discrete product streams to the Asian markets, with the key differentiator being Fe_2O_3 impurity levels, and secondarily Al_2O_3 impurity levels.

Detailed technical specification sheets can be found on Perpetual's website and will also be released to ASX under separate cover. For more information on the specific attributes of each product, we encourage shareholders and stakeholders to refer directly to the detailed product technical sheets.

It should be noted that the three discrete product streams currently outlined do not represent the full extent of product quality that Beharra may ultimately deliver to end user markets. After completion of the PFS in February 2021, Perpetual will continue to undertake detailed trade off studies with a view to optimise the ultimate output from Beharra to maximise the average revenue per ton that can be achieved.

Perpetual considers the end product outcomes already delineated to be highly supportive of Beharra emerging as an important high grade silica sand project and a pre-eminent project in the Mid-West Region of Western Australia.

With the detailed product technical sheets now confirmed, as well as >500kg of product samples produced (please refer to Figure 8 below), Perpetual looks forward to engaging more deeply with potential customers in its sales and marketing activities in the months ahead. Perpetual expects that sales and marketing arrangements can now be more fully explored and entered into across the entire Asian region, which remains undersupplied for high quality product for the glass and foundry sand markets.

Figure 8 – Images of Beharra End Product Samples for Shipment to Potential Customers

Impact of Metallurgical Testing Results

The results of this metallurgical testing program also form a key input into the Beharra PFS study, which is now in the final stages of documentation and on track for announcement in February 2021. These test results provide further confidence of the potentially large economic value of the Beharra project for Perpetual shareholders and also for the ability to finalise the required regulatory and licensing activities and also funding and development activities for the project throughout 2021 and into the 2022 calendar year.

The Board of Perpetual remain highly encouraged as to the likely economic potential of the Beharra project, based on this outstanding metallurgical testing and also the recent drill results, and look forward to the delivery of multiple value adding milestones in coming months.

About Perpetual Resources Limited:

Perpetual Resources Limited (Perpetual) is a focussed explorer of silica sands, aiming to produce high purity silica and construction sands for domestic and international markets.

Perpetual's flagship asset, 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 Mt Adams unsealed road providing access to the centre of the tenure.

Mt Adams Road which Intersects the Beharra Tenement

Brand Highway Proximal to Beharra

The port of Geraldton is utilised as a bulk-materials handling facility and is currently utilised for the export of bulk materials, minerals and concentrates. Grains, copper concentrates, zinc concentrates, nickel concentrates, mineral sands, talc, and iron ore are currently being exported from the port. Extensive heavy mineral sands mining occurs to the south of the Project area, lime sands mining to the west and natural gas production to the south of the Project.

The Beharra Project comprises of a single exploration licence, E70/5221, covering an effective land area of 56.8km^2.
Auger and air core drilling has confirmed the presence of extensive, high purity silica sands, with a maiden Mineral Resource Estimate completed in July 2020. A detailed Pre-Feasibility Study for Beharra is now underway with delivery expected in February 2021.

Silica Sands Market

Silica sands have an extensive range of uses including lower purity and grade applications such as construction sand, proppant sand used in well fracturing, and foundry sand. With increasing purity (>99.5% SiO_2) uses includes glass making including clear glass. Uses for purity >99.8% includes semi-conductor fillers, LCD screens, and optical glass.

This announcement has been approved for release by the Board of Perpetual.

Competent Persons Statement

The information in this announcement that relates to Sampling Techniques and Exploration Results 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 & Metallurgy and consultant to Perpetual Resources Ltd. Mr Hastings is also a shareholder of Perpetual Resources Ltd. 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 metallurgical factors and assumptions for the bulk aircore sample have been reviewed and accepted by Mr Arno Kruger. Mr Kruger is a member of the Australasian Institute of Mining and Metallurgy and a full-time employee of IHC Robbins Pty Ltd. Mr Kruger has sufficient experience relevant to the style of mineralisation and type of deposit, and to the activity he undertook to qualify as a Competent Person as defined in the JORC Code, 2012 edition. Mr Kruger consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

References

Perpetual (2020a). Exceptional High Purity Silica Results Achieved from Beharra Beneficiation Testwork. 24th February 2020.

Perpetual (2020b). Maiden Mineral Resource Estimate Beharra Silica Sands Project. ASX announcement 22nd July 2020.

-ENDS-

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Appendix 2: JORC Tables 1 and 2

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. • The samples from the March 2020 drill program were used to make a 2,000kg bulk sample that was used in the metallurgical testwork being reported. • 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.

Criteria	JORC Code explanation	Commentary
		• 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 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.*	• For aircore, each sample bag was weighed to determine the actual sample recovery, which 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.

Criteria	JORC Code explanation	Commentary
		• 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 for the sand being targeted. • Samples for bulk testing were taken from the March 2020 air core holes as described in this report. A total mass of approximately 2,000kg was collected from individual 1m drill samples. Refer to Table 1.
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.

Criteria	JORC Code explanation	Commentary
		• 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, 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.*	• The air-core drillholes were spaced on an approximate 350–600 m (east west) x 480 m along strike (north-south) grid.

Criteria	JORC Code explanation	Commentary
	• *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 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 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.

Criteria	JORC Code explanation	Commentary
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 and results can be found in ASX release dated 1 April 2020 and Appendix 2 Table 10 in a release dated 22 July 2020, "Maiden Mineral Resource Estimate, Beharra Silica Sand Project".
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Aggregation methods included include a lower cut-off grade and results above average weighted. • Intercepts can include one assay less than the bottom cut-off.
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 and in ASX release 22 July 2020.
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 in ASX release dated 22 July 2020 for all selected silica dioxide and other oxide assay results and in Table 1 of this report.

Criteria	JORC Code explanation	Commentary
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. • Additional air core resource drilling was completed in November 2020, refer to ASX release 7 December 2020 for results. • Drill samples from the early 2020 drilling were received into the metallurgical testing laboratory. Samples from 40 nominated drill holes covering four complete traverse lines and complying with the Maiden Mineral Resource estimate were identified and combined to form an ~2.0t bulk sample for the testwork. • Metallurgical methods and results have been reported in this release that indicates strong potential to produce a high purity silica sand. Additional testwork is planned to further investigate and optimise the production of a high quality silica sand.
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 October 2020 third phase of resource drilling a new Mineral Resource Estimate is being prepared. • The metallurgical results in this report will incorporated into a Pre-Feasibility Study that is currently in progress. •