15 August 2019

ASX ANNOUNCEMENT

Arrowsmith Central Mineral Resource Estimate Upgrade

Highlights:

- ***Arrowsmith Central total Mineral Resource estimate increased to 76.5 Mt @ 96.8% SiO_2***
- ***Mineral Resource estimate includes 28.2 Mt @ 96.6% SiO_2 of Indicated Resource***
- ***Increase of 273% on the maiden Mineral Resource estimate***
- ***Ore Reserve estimate and BFS underway***
- ***Total Indicated and Inferred Mineral Resources across all three Projects in excess of 1 billion tonnes***

VRX Silica Limited (**VRX Silica** or **Company**) (ASX: VRX) is pleased to announce the results of a drill program completed at the Arrowsmith Central Silica Sand Project (**Arrowsmith Central**), located 270km north of Perth, WA.

The drill program was undertaken during March 2019 enabling a new Mineral Resource to be estimated following receipt of analytical results.

The Mineral Resource estimate (**MRE**) for Arrowsmith Central has been upgraded to an Indicated Mineral Resource of 28.2 Mt @ 96.6% SiO_2 in addition to an Inferred Mineral Resource of 48.3 Mt @ 96.9% SiO_2 for a total MRE of 76.5 Mt @ 96.8% SiO_2. All Mineral Resources are reported in accordance with the JORC Code 2012 (see Table 1).

VRX Silica Managing Director Bruce Maluish said: *"The Arrowsmith Central Silica Sand Project is ideally positioned for a unique logistics solution with the Project traversed by the Eneabba to Geraldton rail line with a direct connection to the Geraldton Port."*

"This Mineral Resource estimation will now allow the Company to finalise estimates of Ore Reserves which will support the impending BFS," said Maluish.

The Indicated Mineral Resource is predominately within the Mining Lease application area for Arrowsmith Central and the Company expects that the majority of the Indicated Mineral Resource will convert to Probable Reserves and a long-life mining project.

Maluish continued, "This Mineral Resource is complementary to our Arrowsmith North Silica Sand Project and adds not only to our total inventory but will also produce alternative products for the glassmaking and foundry industries in Asia."

ASX: VRX

Capital Structure

Shares on Issue: 404 million

Top 20: 47%

Unlisted Options: 72 million

Corporate Directory

Paul Boyatzis
Non-Executive Chairman

Bruce Maluish
Managing Director

Peter Pawlowitsch
Non-Executive Director

John Geary
Company Secretary

Company Projects

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

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

Boyatup Silica Sand Project, 100km east of Esperance, WA.

Warrawanda HPQ Project south of Newman, WA.

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

The Company is actively assessing other silica sand projects in Australia.

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Work is ongoing to complete the process for the Mining Lease Applications and Environmental Approvals at both the Arrowsmith North and Arrowsmith Central Silica Sand Projects.

Total Indicated and Inferred Resources at the Company's three Silica Sand Projects is now in excess of 1 billion tonnes. See below in Table 1.

Table 1: Total Silica Sand Resource Inventory

Arrowsmith North Silica Sand (CSA Global - July 2019)

Classification	Domain	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	TiO_2%	LOI%
Indicated and Inferred	White Sand	313	98.7	0.54	0.15	0.18	0.24
Indicated and Inferred	Yellow Sand	458	97.6	1.08	0.40	0.17	0.52
Indicated and Inferred	**All Sand**	**771**	**98.0**	**0.86**	**0.30**	**0.17**	**0.41**

Muchea Silica Sand (VRX - June 2019)

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	TiO_2%	LOI%
Indicated	29	99.6	0.09	0.03	0.07	0.22
Inferred	172	99.6	0.05	0.02	0.1	0.23
Indicated + Inferred	**208**	**99.6**	**0.06**	**0.02**	**0.1**	**0.23**

Arrowsmith Central Silica Sand (CSA Global - August 2019)

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	TiO_2%	LOI%
Indicated	28.2	96.6	1.7	0.4	0.2	0.7
Inferred	48.3	96.9	1.5	0.4	0.2	0.7
Total	**76.5**	**96.8**	**1.5**	**0.4**	**0.2**	**0.7**

All project areas Silica Sand

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	TiO_2%	LOI%
Indicated + Inferred	**1,056**	**98.2**	**0.75**	**0.25**	**0.16**	**0.40**

Detailed Information

The information in this document refers to the Arrowsmith Central silica sand project, which is located north of Eneabba, 270km north of Perth in Western Australia (see Figure 1).

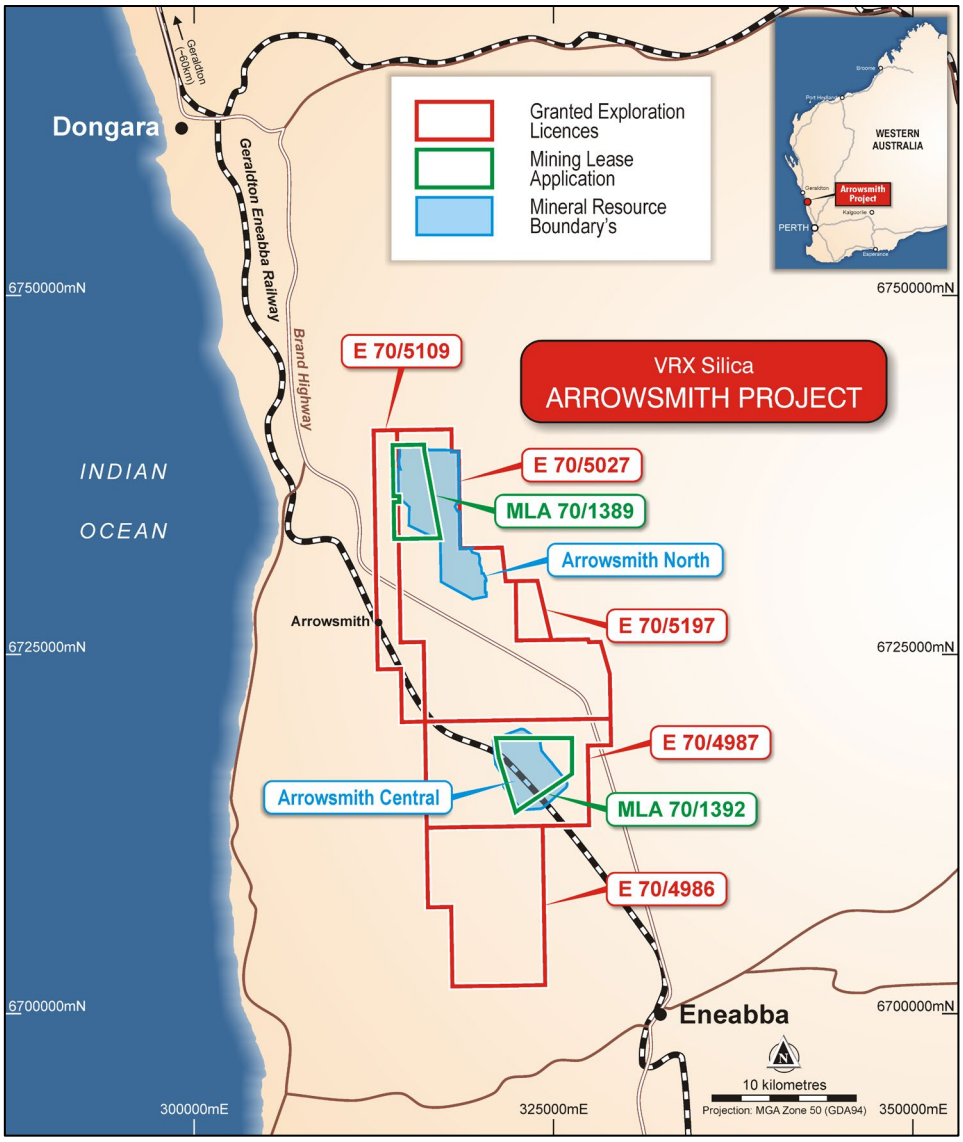

Figure 1: Arrowsmith Project Location

VRX Silica has previously reported a maiden MRE for Arrowsmith Central.[1]

During March 2019, VRX Silica commenced an aircore drill program over the area previously only tested by shallow hand auger drilling.[2] The results of that program for Arrowsmith Central are now available and have been used to update the MRE for the Arrowsmith Central Project and to declare a maiden Indicated Mineral Resource. The estimation of an Indicated Mineral Resource will allow for an Ore Reserve to be estimated once a feasibility study is completed.

[1]ASX announcement of 13 December 2019, "Arrowsmith Central Maiden Mineral Resource".
[2]ASX announcement of 13 March 2019, "*Drilling at Muchea and Arrowsmith Silica Sand Projects*".

The August 2019 MRE has estimated an **Indicated Mineral Resource** of **28.2 Mt @ 96.6% SiO_2** in addition to an **Inferred Mineral Resource** of **48.3 Mt @ 96.9% SiO_2** for a **Total MRE** of **76.5 Mt @ 96.8% SiO_2**, an overall increase of **273% on the maiden estimate** (see Tables 2 and 3).

Table 2: Arrowsmith Central Silica Sand Mineral Resource Estimate as at July 2019

Classification	Million Tonnes	SiO_2%	Al_2O_3%	Fe_2O_3%	TiO_2%	LOI%
Indicated	28.2	96.6	1.7	0.4	0.2	0.7
Inferred	48.3	96.9	1.5	0.4	0.2	0.7
Indicated + Inferred	**76.5**	**96.8**	**1.5**	**0.4**	**0.2**	**0.7**

** Note: Interpreted silica sand layer is domained above a basal surface wireframe defined based on the drill sampling depths. A depletion zone, consisting of the upper 0.5 m, is reserved for rehabilitation purposes and is not estimated or reported. Differences may occur due to rounding*

Table 3: Tonnage Comparison with Prior estimate

Classification	Maiden MRE (Mt)	Updated MRE (Mt)	Difference
Indicated		28.2	
Inferred	28.0	48.3	173%
Indicated + Inferred	**28.0**	**76.5**	**273%**

The MRE is wholly within granted tenement E70/4987 which is 100% owned by the Company. This MRE update is based on the results of the most recent drilling, with the initial hand auger drilling being used to assist in the model estimation. The modelled extents are further limited to within the VRX Silica nominated Arrowsmith Central target area and based on the geologically logged drill data and with reference to the publicly available soil mapping data (see Figure 3).

Based on the soil mapping data the entire Arrowsmith Central target area is underlain by a single mixed silica sand material unit, which consists of dominant pale deep sands with interspersed yellow sands. The MRE has been estimated to the bottom of the potentially mineable sand layer with the top half metre of topsoil having been discounted in the MRE as it will be used for rehabilitation. Figure 2 below is a representative section through the MRE showing the modelled layer and Figure 3 shows the drill coverage over the tenements with the underlying sand types shown.

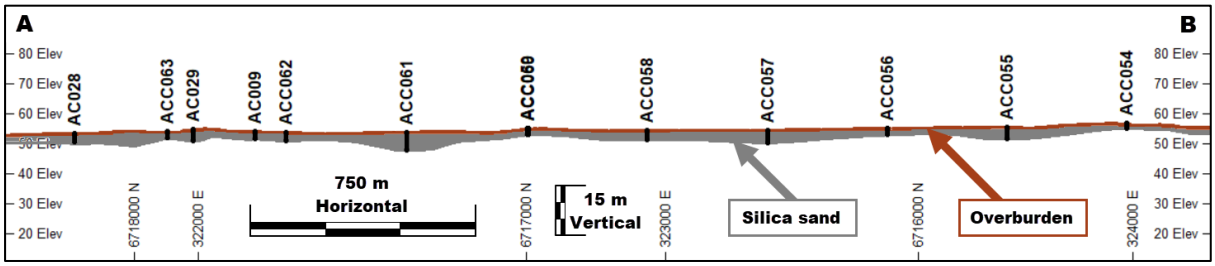

Figure 2: Representative schematic section A – B (See Figure 3), Looking north; 10 times Vertical exaggeration.

Metallurgical testwork completed to-date confirms this updated silica sand model is considered readily amenable to upgrading by conventional washing and screening methods to produce a high-purity silica sand product with high mass recoveries. The high-purity silica sand product specifications are expected to be suitable for the glass making, foundry and ceramics industries.

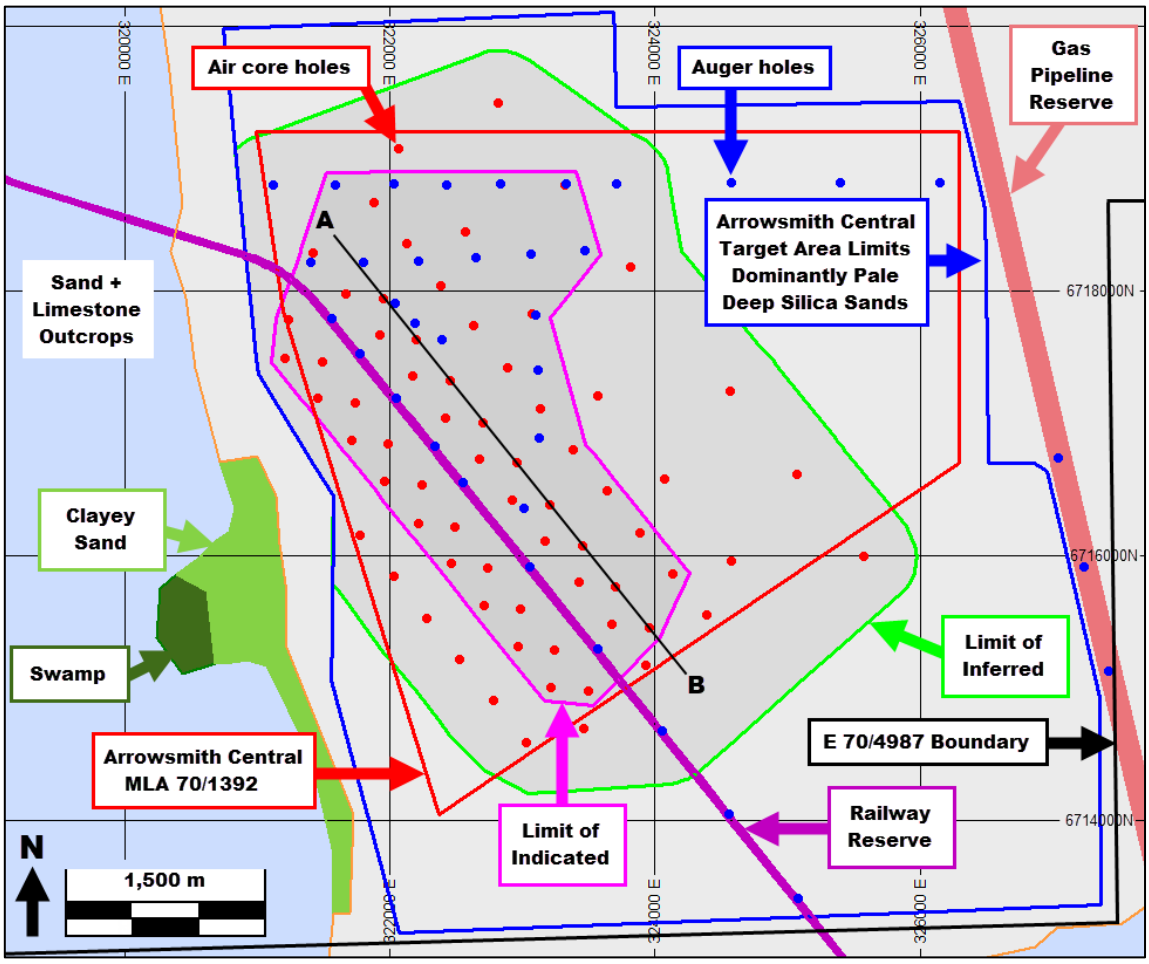

Figure 3: Simplified geology of the Arrowsmith Central Area. Figure 15 section line A – B shown. Tenements as in Figure 1. Auger and AC drill collar locations shown as blue and red points respectively.

The MRE results are shown in Table 22, and a plan showing the resource areas and classification is shown in Figure 2. Summary information is included in this document and JORC Code 2012 Table 1 is included as Appendix 1.

COMPETENT PERSONS' STATEMENTS

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

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

ASX LISTING RULE 5.8.1 SUMMARY

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

- Silica sand mineralisation at Arrowsmith Central occurs within the coastal regions of the Perth Basin, and the targeted silica sand deposits are the aeolian sand dunes that overlie the Pleistocene limestones and paleo-coastline. (ASX LR 5.8.1 geology &geological interpretation)

- Samples were obtained from hand auger and AC drilling. Quality of drilling/sampling and analysis, as assessed by the Competent Person, is of an acceptable standard for use in a Mineral Resource estimate publicly reported in accordance with the JORC Code. (ASX LR 5.8.1 Sampling & 5.8.1 Drilling)

- Major and trace elements apart from SiO_2 were analysed using a four-acid digest followed by Inductively Coupled Plasma Optical (Atomic) Emission Spectrometry (ICP-OES) analysis at the Intertek Genalysis, Perth laboratory. Loss on Ignition at 1000°C (LOI) was analysed by Thermal Gravimetric Analyser. SiO_2 was back-calculated by subtracting all ICP major and trace elements plus LOI from 100%, as this is the most accurate way of determining SiO_2 content for samples with very high SiO_2. Certain of the ICP results were verified by X-Ray Fluorescence (XRF) analyses. (ASX LR 5.8.1 Analysis)

- The Mineral Resources were estimated above a 3-d wireframe basal surface for the silica sands. This basal surface is nominally limited to the drill hole depths and the modelled extents are limited to within the VRX Silica nominated Arrowsmith Central target area. The surface is based on the geological boundaries defined by logged silica sand from the drill data and with reference to the publicly available soil mapping data. The surface humus layer is typically about 300 mm thick. In consultation with VRX Silica, CSA Global

considered that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes. This overburden surface forms the upper boundary of the estimated Mineral Resource and is depleted from the reported Mineral Resources. The Geraldton to Eneabba railway line and reserve passes through the target area and is depleted from the reported Mineral Resources. (ASX LR 5.8.1 Estimation methodology)

- Grade estimation was completed using ordinary kriging, with an inverse distance weighting to the power of two validation check estimate concurrently completed. (ASX LR 5.8.1 Estimation methodology)

- The Mineral Resource is quoted from all classified blocks above the defined basal surface wireframe for the silica sand layer and below the overburden surface layer. (ASX LR 5.8.1 cut-off grades)

- The Mineral Resource was classified as Indicated and Inferred based on drill hole logging, drill hole sample analytical results, drill spacing, geostatistical analysis, confidence in geological and grade continuity, and metallurgical / process test results. (ASX LR 5.8.1 classification)

- Roughly 25% of the interpreted mineralisation is considered to be extrapolated.

- The JORC Code Clause 49 requires that industrial minerals must be reported "in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals" and that "It may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability." (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)

- Therefore, the likelihood of eventual economic extraction was considered in terms of possible open pit mining, likely product specifications, possible product marketability and potentially favourable logistics and it is concluded that Arrowsmith Central may be classified as an industrial Mineral Resource in terms of Clause 49. (ASX LR 5.8.1 Mining, metallurgy & economic modifying factors)

Testwork and Product Catalogue

VRX Silica has previously announced the results of metallurgical testwork and the development of product catalogues.[3] The testwork completed to-date at the CDE Global, world leading sand testing laboratory in Cookstown, Northern Ireland confirmed that high quality glass and foundry sand could be produced from the Arrowsmith Central Project. This testwork resulted in the generation of a catalogue of products that can be produced from the Arrowsmith Central Project, these are summarised in Tables 4 and 5.

Chemical Composition (%)

Product	Type	SiO_2	Al_2O_3	Fe_2O_3	TiO_2	CaO	MgO	K_2O
Arrowsmith-CF400	Glass	99.6	0.25	0.040	0.030	0.005	0.001	0.050
Arrowsmith-C20	Foundry	99.6	0.25	0.040	0.030	0.005	0.001	0.050
Arrowsmith-C50	Foundry	99.6	0.25	0.040	0.030	0.005	0.001	0.050

Table 4: Arrowsmith Central Product Catalogue – Chemical Composition

[3]ASX announcement of 26 February 2019, "Testwork Update and Product Catalogues".

Particle Size	Sieve Opening – Mesh (µm) Retained									
Product	10 (2000)	20 (850)	30 (600)	40 (425)	50 (300)	70 (212)	100 (150)	140 (106)	200 (75)	AFS No
Arrowsmith-CF400			0.5%	44%	39%	16%	0.5%			
Arrowsmith-C20	6%	22%	30%	38%	3%	0.3%	0.1%	0%		22
Arrowsmith-C50		0%	0.3%	32%	28%	17%	14%	8%	1%	49

Table 5: Arrowsmith Central Product Catalogue – Particle Size

Plant Recoveries

VRX Silica has previously announced the process plant recoveries for each of the Arrowsmith Central products reported in the catalogue. [4]

Product	Industry	Recovery
Arrowsmith - C20	Foundry	34%
Arrowsmith - C50/CF400	Foundry / Glass	34%
High TiO_2	Filter / Bunker	9%

Table 6: Arrowsmith Central Plant Recoveries

Future Work

With the estimation of an Indicated Mineral Resource the Company can now complete a feasibility study and estimate an Ore Reserve for the project. A positive feasibility study will allow for the project to progress through mining approvals, financing and into construction and the commencement of mining operations.

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[4] ASX announcement of 3 May 2019, "High Recovery from Silica Sand Process Plant Design-Amended".

About VRX Silica

VRX Silica Ltd (VRX Silica) (ASX: VRX) has significant silica sand projects in Western Australia.

The Arrowsmith Silica Sand Project, located 270kms north of Perth, comprises five granted exploration licences and two mining lease applications pending. The Muchea Silica Sand Project, located 50kms north of Perth, comprises one granted exploration licence, with one exploration licence and one mining lease application pending. Testwork has confirmed a range of silica sand products which are capable of production at both projects. Feasibility studies for Arrowsmith Central and Arrowsmith North are being compiled.

The Boyatup Silica Sand Project, located 100kms east of Esperance, comprises two adjacent granted exploration licences. Initial indications are that this project will complement both Arrowsmith and Arrowsmith while adding to the silica products VRX Silica will potentially produce. A POW for a drilling program has been approved and the Company is currently arranging an Aboriginal Heritage Survey for a drilling program clearance.

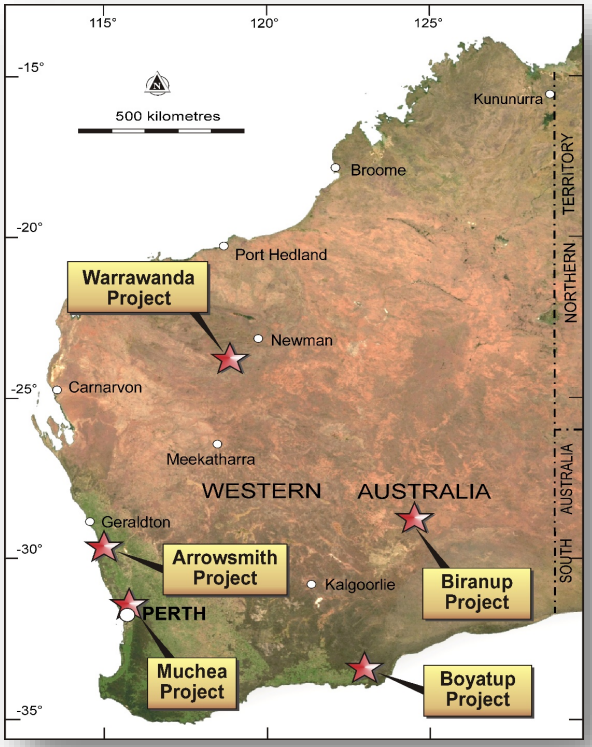
Also, in Western Australia, 40km south of Newman, is VRX Silica's Warrawanda Project, which is prospective for high purity quartz and nickel sulphides. A POW for a drilling program has been approved and the Company has completed an Aboriginal Heritage Survey for a drilling program clearance.

VRX Silica also has granted tenements at its Biranup Project, adjacent to the Tropicana Gold Mine in Western Australia's Goldfields that are prospective for gold and base metals.

Proven Management

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

Project Locations



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Appendix 1 - JORC 2012 Table 1 Report

Section 1 - Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections. Sections 1&2 – VRX, Section 3 – CSA)

Criteria	Commentary
Sampling techniques	Aircore drilling samples are 1m down hole intervals with sand collected from a cyclone mounted rotary cone splitter, ~2-3kg (representing 50% of the drilled sand) was collected. Two sub-samples, A and B, of ~200g were taken from the drill samples. The remainder was retained for metallurgical testwork. Auger drilling samples are 1m down hole intervals with sand collected from a plastic tub which received the full sample, ~8kg, from the hole. The sand was homogenised prior to sub sampling, two sub-samples, A and B, of ~200g were taken from the drill samples. A bulk sample of ~5kg was retained for each 1m interval for metallurgical testwork. The "A" sample was submitted to the Intertek Laboratory in Maddington, Perth for drying, splitting (if required), pulverisation in a zircon bowl and a specialised silica sand 4 Acid digest and ICP analysis. All auger samples were weighed to determine if down hole collapse was occurring, if the samples weights increased significantly the hole was terminated to avoid up hole contamination. The targeted mineralisation is unconsolidated silica sand dunes, the sampling techniques are "industry standard". Due to the visual nature of the material, geological logging of the drill material is the primary method of identifying mineralisation.
Drilling techniques	Vertical NQ sized aircore drilling was completed by a Contract Drilling Company using a Landcruiser mounted Mantis 82 drill rig. A 100mm diameter hand screw auger was used to drill until hole collapse.
Drill sample recovery	Aircore Visual assessment and logging of sample recovery and sample quality. Reaming of hole and clearance of drill string after every 3m drill rod. Sample splitter and cyclone cleaned regularly to prevent sample contamination. No relationship is evident between sample recovery and grade. Hand Auger All material recovered from the hole is collected in a plastic drum and weighed, the weights are used to determine when the hole is collapsing, and drilling is terminated. No relationship is evident between sample recovery and grade.
Logging	Geological logging of drill samples is done by the field geologist with samples retained in chip trays for later interpretation. Logging is captured in an excel spreadsheet, validated and uploaded into an Access database.
Subsampling techniques and sample preparation	Aircore drill samples are rotary split 50:50 into a calico bag resulting in 2-3kg of dry sample, 2 x 200g sub-samples, A and B, are taken from the drill sample. The A sample is submitted to the laboratory and the B sample is retained for repeat analysis and QA/QC purposes. The bulk sample is retained for later metallurgical testwork. Auger drill material, ~8kg, is collected in a plastic tub and homogenised, 2 x 200g sub-samples, A and B, are taken from the drill material. The A sample is submitted to the laboratory and the B sample is retained for repeat analysis and QAQC purposes. A 5kg bulk sample is retained for later metallurgical testwork. The sample size is considered appropriate for the material sampled.

Criteria	Commentary
	The 200g samples are submitted to the Intertek Laboratory in Maddington, Intertek use a zircon bowl pulveriser to reduce the particle size to -75µm.
Quality of analytical data and laboratory tests	Samples were submitted for analysis to the Intertek Laboratory in Maddington in Perth WA. The assay methods used by Intertek are as follows: multi-elements are determined by a specialised four-acid digest including Hydrofluoric, Nitric, Perchloric and Hydrochloric acids in Teflon tubes. Analysed by Inductively Coupled Plasma Mass Spectrometry, silica is reported by difference. The assay results have also undergone internal laboratory QAQC, which includes the analysis of standards, blanks, and repeat measurements. The Company has been validating a high-purity silica standard that was created for the Company by OREAS Pty Ltd. This was required as there is no commercial standard available for high purity silica sand. The standard was "round robin" assayed at several laboratory's in Perth prior to the commencement of drilling. The standard was then included in the drill sample submissions to Intertek, in sequence, on a ratio of 1:20. Field duplicate samples were submitted in a ratio of 1:20 and in addition to this Intertek routinely duplicated analysis from the pulverised samples in a ratio of 1:25. The number of QAQC samples therefore represents ~14% of the total assays. A full analysis of all the quality control data has been undertaken. This analysis validates the drill assay dataset and conforms with the guidelines for reporting under the JORC 2012 code.
Verification of sampling and analyses	Significant intersections validated against geological logging. Seven pairs of twin holes were drilled at Arrowsmith Central, with each twin pair collared within 0.5m. Overall the results are considered to be a reasonable result, which reflect the geological variability of the silica sand at Arrowsmith Central.
Location of data points	Auger drill hole locations were measured by hand-held GPS with the expected relative accuracy; GDA94 MGA Zone 51 grid coordinate system is used. Aircore drill holes have been surveyed by RM Surveys using base stations on GOLA SSM DON53, situated in the north east corner of Arrowsmith Central, with the expected relative accuracy compared to the control of 0.05m E, N and RL. Due to RL issues with the SRTM topographical surface the drill collar RL's were transformed to the SRTM surface.
Data spacing and distribution	Initial auger holes were spaced 400-1,000m apart along existing tracks. The aircore drilling in the indicated resource was spaced 400m on either 200m or 400m spaced lines. In the Inferred area holes were spaces 400m to 800m apart, on line spaces 400m to 800m apart. No sample compositing (down hole) has been done.
Orientation of data in relation to geological structure	Sampling is being done on aeolian sand dunes the drill orientation is therefore considered appropriate.
Sample security	All samples are selected onsite under the supervision of VRX Silica Geological staff. Samples are delivered to the Intertek laboratory in Maddington. Intertek receipt received samples against the sample dispatch documents and issued a reconciliation report for every sample batch.
Audits or reviews	There has been no audit or review of sampling techniques and data yet.

Section 2 - Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	All drilling was done on Tenement E70/4987 which are 100% held by Ventnor Mining Pty Ltd a wholly owned subsidiary of VRX Silica Limited. The tenement was granted on 06/04/2018, and all drilling was conducted on Vacant Crown land.
Exploration done by other parties	Minor exploration for mineral sands has been completed by various Companies. No exploration for silica sand has been done.
Geology	Silica sand mineralisation at Arrowsmith Central occurs within the coastal regions of the Perth Basin, and the targeted silica sand deposits are the aeolian sand dunes that overlie the Pleistocene limestones and paleo-coastline.
Drillhole information	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3). Sample and drillhole coordinates are provided in previous market announcements.
Data aggregation methods	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Relationship between mineralisation widths and intercept lengths	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Diagrams	Refer to figures within the main body of this report.
Balanced reporting	Not relevant. Exploration results are not being reported. Mineral Resources are being disclosed (see Section 3).
Other substantive exploration data	Geological observations are consistent with aeolian dune mineralisation. Four, certified, dry *in situ* bulk density measurements were completed by Construction Sciences Pty Ltd using a nuclear densometer. Groundwater was intersected in only a few holes that were drilled deeper deliberately to ascertain the position of the water table. The water table is typically below 15m depth The mineralisation is unconsolidated sand. There are no known deleterious substances at this time.
Further work	With the estimation of an Indicated Mineral Resource the Company can now complete a Feasibility Study and estimate an Ore Reserve for the Project. A positive Feasibility Study will allow for the project to progress through mining approvals, financing and into construction and the commencement of Operations.

Section 3 - Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	Data used in the MRE is sourced from a Microsoft Access database. Relevant tables from the Microsoft Access database are exported to Microsoft Excel format and converted to csv format for import into Datamine Studio 3 software. Validation of the data imported comprises checks for overlapping intervals, missing survey data, missing analytical data, missing lithological data, and missing collars.
Site visits	A site visit by Grant Louw of CSA Global took place on 3 July 2019.

Criteria	Commentary
	Geology – Mr Louw noted that the Arrowsmith tenements are primarily underlain by unconsolidated white / yellow silica sand, covered by low scrub and very few trees. Topographic relief is low. Drill collars – Mr Louw recorded and verified several marked drill sites using hand-held GPS. Project location – several points such as road intersections were located and plotted in Google Earth™ to verify the tenement location. The CP has visited the VRX sample storage on 17 October 2018 and addressed the following: Sample storage – originals, field duplicates, pulps, standards and chip trays are housed appropriately. Some chip trays were photographed by the CP as a check against Company photographs and geology logs
Geological interpretation	Silica sand mineralisation at Arrowsmith Central occurs within the coastal regions of the Perth Basin, and the targeted silica sand deposits are the aeolian sands that overlie the Pleistocene limestones and paleo-coastline. Within the project area, data obtained from the Department of Agriculture soil mapping shows there are pale deep sands predominating (logged by VRX Silica as white sands) and lesser yellow sands, with some clayey sand, swampy areas and occasional ironstone ridges. The geological modelling was completed based on this soil mapping data in conjunction with the drill logging data. The Mineral Resource is estimated above a 3-d wireframe basal surface for the silica sand. The basal surface is nominally limited to the drill hole depth extents, or in the deeper AC holes. based on the geological and chemical analysis results limiting the upper silica sand layer. The modelled extents are further limited to within the VRX Silica nominated Arrowsmith Central target area, and based on the geologically logged drill data and with reference to the publicly available soil mapping data. The surface humus layer is typically about 300 mm thick. In consultation with VRX Silica, CSA Global decided that the upper 500 mm (overburden) is likely to be reserved for rehabilitation purposes. This overburden surface forms the upper boundary of the estimated Mineral Resource and is depleted from the reported Mineral Resources. The railway reserve with a width of 40 m is also depleted from the Mineral Resources. The modelled silica sand layer is modelled as a single unit due to it being readily amenable to beneficiation as demonstrated by the composite sample testing completed to date. At this stage of resource development it is also not practical to attempt a separation of the various silica sand sub-types. The reported Mineral Resources are constrained to within the part of the project which has a nominal minimum 400 m by 400 m drilling pattern coverage. Assumptions have been made on the horizontal extents of the mineralisation based on the soil mapping data and the spacing and extents of the drilling information. A nominal maximum horizontal extrapolation limit of 400 m past known drill data points has been applied with the material additionally constrained within the VRX Silica nominated target area and by the reporting area limit. Approximately 25% of the modelled mineralisation zones can be considered to be extrapolated. Alternative interpretations based on the currently available data are considered unlikely to have a significant influence on the global MRE. Continuity of geology and grade can be identified and traced between drillholes by visual and geochemical characteristics. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification.
Dimensions	The modelled and classified extents of the modelled silica sand material within the target area are roughly 5.5 km north to south, and on average roughly 3.5 km west to east. The modelled silica sand is roughly horizontal, with low relief. The currently modelled thickness of the sands is on average about 2.5 m, ranging up to roughly 6 m.

Estimation and modelling techniques	Ordinary kriging (OK) was the selected interpolation method, with Inverse distance weighting to the power of two (IDS) used as a check estimate. Grade estimation was carried out at the parent cell scale, with sub-blocks assigned parent block grades for the full extent of modelled silica sand layer. Statistical analysis on the 1 m downhole composited drillhole data to check grade population distributions using histograms, probability plots and summary statistics and the co-efficient of variation, was completed on the modelled silica sand for the estimated grade variables. The checks showed there were some outlier grades in the interpreted sand layer that required top-cutting. Top cuts were applied to Al_2O_3 (7.5%), Fe_2O_3 (2.4%) and LOI (3%) In addition to SiO_2, the grade variables Al_2O_3, Fe_2O_3, K_2O, LOI, and TiO_2 are estimated into the model. A volume block model was constructed in Datamine constrained by the topography, overburden layer, silica sand layer, material depletion zone and target area limiting wireframes. Analysis of the drill spacing shows that the nominal average drill spacing is between 300 m by 300 m up to 400 m by 400 m for the reported area of the modelled silica sand layer. Spatial (variogram) analysis was completed on SiO_2 from the 1 m drill composite samples. The resultant double spherical model variogram parameters were applied to the OK estimate as the primary grade estimation technique. The modelled nugget is 20% with a preferred strike direction of 065° for the major axis having been modelled with a range to the first structure (47%) of 460 m and to the second structure (27%) at 660 m. The semi major axis is modelled towards 335° with ranges of 300 m and 500 m. The minor axis is modelled vertically down with ranges of 2.2 m and 2.5 m. Based primarily on the broader sample spacing a parent block size of 200 m(E) x 200 m(N) x 2 m(RL) or nominally half that average drill spacing, was selected for the model. Sub-cells down to 12.5 m(E) x 12.5 m(N) x 0.25 m(RL) were used to honour the geometric shapes of the modelled mineralisation. The search ellipse orientations were defined as being horizontal based on the overall geometry of the mineralisation and with reference to the variogram modelling study. The search ellipse was doubled for the second search volume and then increased ten-fold for the third search volume to ensure all blocks found sufficient samples to be estimated. The search ellipse dimensions were 660 m (X) x 500 m (Y) x 10 m (RL). A minimum of 15 and a maximum of 24 samples, were used to estimate each parent block. The maximum and minimum were reduced for the second search volume to 12 and 20 samples and in the third search volume to 8 and 16 samples respectively. A maximum number of four samples per drillhole were allowed. Cell discretisation was 3 (E) x 3 (N) x 4 (RL) and no octant-based searching was utilised. Model validation was carried out visually, graphically, and statistically to ensure that the block model grade reasonably represents the drillhole data. Cross sections, long sections and plan views were initially examined visually to ensure that the model grades honour the local composite drillhole grade trends. These visual checks confirm the model reflects the trends of grades in the drillholes. Statistical comparison of the mean drillhole grades with the block model grade shows reasonably similar mean grades. The IDS check estimate shows similar grades to the OK model, adding confidence that the grade estimate has performed well. The model grades and drill grades were then plotted on histograms and probability plots to compare the grade population distributions. This showed reasonably similar distributions with the expected smoothing effect from the estimation taken into account. Swath or trend plots were generated to compare drillhole and block model grades with SiO_2 and the other grade variables' grades compared at 200 m E, 400 m N and 2 m RL intervals. The trend plots demonstrate reasonable spatial correlation between the model estimate and

Criteria	Commentary
	drillhole grades after consideration of drill coverage, volume variance effects and expected smoothing. No reconciliation data is available as no mining has taken place.
Moisture	Tonnages have been estimated on a dry, *in situ,* basis. The sampled sand material was generally reasonably dry, with data collected from the density testing of four intervals showing an average moisture content of 3.3%.
Cut-off parameters	No cut-off parameters have been applied, as the modelled silica sand appears to be readily amenable to beneficiation to a suitable product specification through relatively simple metallurgical processes as demonstrated by the reported metallurgical testing results.
Mining factors or assumptions	It has been assumed that these deposits will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled. No assumptions regarding minimum mining widths and dilution have been made. No mining has yet taken place.
Metallurgical factors or assumptions	2018 tests: a composite auger sand sample from Arrowsmith Central was tested in Ireland during 2018. The sample was screened at 4mm to remove oversize particles. The remaining material was then subjected to an attrition process followed by spiral and magnetic separation methods. Attrition testing was carried out with a retention period of 5 minutes, with the sample washed after attritioning to remove any liberated fine particles. Spiral testing was then carried out with approximately 80kg of attritioned material, after which the samples then underwent wet magnetic separation to explore the possibility of reducing the magnetic mineral content. Chemical analysis showed a general decrease in the Al_2O_3. Processing, attritioning and washing the material removed the largest fraction of Al_2O_3. The spiral separation process produced samples where the largest fraction of Al_2O_3 was found in the heavy mineral fraction. Magnetic separation resulted in the largest fraction of Al_2O_3 being in the magnetic fraction. The results for Fe_2O_3 follow the same general trend as for Al_2O_3. The percentage fraction of SiO_2 in the samples increased during the test process. Attritioning and washing the material removed fines and silt, which increased the SiO_2 content. The spirals test produced samples where the largest fraction of SiO_2 was found in the light fraction. Magnetic separation indicated that the largest fraction of SiO_2 was in the middling fraction. 2019 tests: raw material remaining from 2018 was removed from storage and was screened at 1 mm to remove oversize material and organics. The sand was then wet screened through a 0.212 mm sieve and PSD test run which showed that the +0.212 mm material contains a minor amount of fines (0.07% passing the 0.212 mm sieve) and in contrast the minus 0.212 mm sample contains a large amount of fines with 17.44% passing the 0.053 mm sieve. Chemical analysis showed that the -0.212 mm fraction contains more Al_2O_3 and Fe_2O_3 than the +0.212 mm fraction, due to higher clay fraction in the finer sample. The 0.212-1 mm fraction was then attritioned for 5 minutes and washed over a 0.063 mm sieve, highlighting that the attrition and washing process removed fine particles, and reduced Al_2O_3, Fe_2O_3 and TiO_2 contents. The 0.212 mm material was then processed in a spirals test unit and three fractions were produced, namely heavy, middling and light. Particle size distribution analysis showed that the heavies contain the highest amount of fines and that the lights contain the lowest amount of fines, probably because fine-grained dense minerals containing Fe and Ti are concentrated with the heavy fraction. This observation was borne out by chemical analysis which showed that Al_2O_3, Fe_2O_3 and TiO_2 are highest in the heavy fraction. These elements are lowest in the middling and light fractions, and lower than the feed material. Magnetic separation results in an increase in SiO_2 and a decrease in Al_2O_3, Fe_2O_3 and TiO_2 in the non-magnetic fraction compared with the feed material.

Criteria	Commentary
	The composite sample tested by CDE in 2019 indicates that a product with AFS ~50 should be achievable and that some coarser AFS ~20 product may also be possible. Most foundry sands fall into the range of ~0.1mm to 0.5mm and they are produced to meet specific size distributions which are commonly described by a number known as the 'AFS number'. The higher the AFS number, the finer the sand. Other foundry sand specifications include roundness and sphericity, clay content (generally <0.5%), moisture and SiO_2 content, which should be attainable with suitably processed Arrowsmith Central silica sand. CSA Global is of the opinion that process testwork on the composite drill sample indicates that the Arrowsmith Central deposit should be suitable for the eventual production of silica sand for glass, ceramics and foundry markets. In addition, project location and logistics support the classification of the Arrowsmith Central deposit as an Indicated and Inferred industrial mineral Mineral Resource in terms of Clause 49 of the JORC Code.
Environmental factors or assumptions	No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be correctly managed as required under the regulatory permitting conditions. VRX has indicated that initial botanical studies are underway, and in the modelling the top 500 mm is reserved for rehabilitation purposes and is depleted from the model and is not reported.
Bulk density	Four, certified, dry *in situ* bulk density measurements were completed by Construction Sciences Pty Ltd using a nuclear densometer. The results from the four measurements are corrected based on the measured moisture factor. The mean dry *in situ* density result of 1.63 t/m^3 is used for all modelled material reported in the MRE.
Classification	Classification of the MRE was carried out accounting for the level of geological understanding of the deposit, quality of samples, density data and drillhole spacing. The MRE has been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. Overall the mineralisation trends are reasonably consistent over the drill sections. The MRE appropriately reflects the view of the Competent Person.
Audits or reviews	Internal audits were completed by CSA Global, which verified the technical inputs, methodology, parameters, and results of the estimate. No external audits have been undertaken.
Discussion of relative accuracy/ confidence	The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012). The Mineral Resource statement relates to global estimates of *in situ* tonnes and grade.