

## June 2023 Quarterly Activity Report

The following is a summary of the activities conducted by VRX Silica Limited (**VRX or Company**) during the June 2023 quarter at its silica sand projects at Arrowsmith North, Arrowsmith Central, Arrowsmith Brand (located 270 km north of Perth), Muchea (located 50 km from Perth) and Boyatup (located 100 km east of Esperance), all situated in Western Australia.

### VRX Silica Sand Resources

VRX is a Western Australian based pure-play silica sand exploration and development company with five high-value, advanced, very long-term silica sand projects in Western Australia, a Tier 1 mining region.

The Company has multi-decade scale contiguous sand deposits on granted Mining Leases with secure tenure and a combined +1.4Bn tonne Mineral Resource<sup>1</sup> of 99.6% to 99.9% SiO<sub>2</sub> grade silica sand.

The Company and its management team is based in Western Australia, as are its five large scale, high-grade and low impurity silica sand projects. Each project can be run independently and supply high-grade silica sand to many diverse markets.



Figure 1: VRX Projects Locations

<sup>1</sup> See table on page 8

For personal use only

## Applications of Silica Sand

Silica sand is the most-used commodity on the planet after air and water. It is the main ingredient in all types of **glassmaking**, including specialty solar panel and high-tech glass. The glass manufacturing industry demand is increasing at a rate of 5-6% per year, or about 8-10 million tonnes pa. Around 47% of the world's glass is manufactured in Asia.

Silica sand is an essential component of the **foundry** and casting industries. The largest foundry industry is in Korea where it dominates the industry particularly for large marine components.

Silica sand is also the main ingredient in concrete.

Silica sand is a finite resource that is rapidly being exhausted and the Asia-Pacific region is currently experiencing **increasing demand** at a time of a **global supply shortfall**.

## Major Advance In Arrowsmith North Environmental Approvals Process

In June 2023 VRX announced that the Environmental Review Document (**ERD**) for Arrowsmith North had been accepted by the Department of Water and Environmental Regulation (**DWER**) for publication and a four-week Public Environmental Review (**PER**).

The PER process commenced on 19 June 2023 for a four week period and included a requirement for VRX to respond to all comments received. This PER and response process are the final steps before the Environmental Protection Authority of Western Australia (**EPA**) prepares an assessment report including recommendations to the Western Australian Environment Minister on whether the proposal should be approved.

Environmental approval for Arrowsmith North is crucial and linked to VRX's ability to secure other necessary approvals for mining. The PER milestone therefore is a significant step in Arrowsmith North's approvals process.

VRX has proposed a unique method for rehabilitation of the mined area that provides for the best possible outcome for regeneration of native vegetation.

The ERD seeks approval for a development area that has the potential to underpin a project lasting up to 30 years, underscoring the enormous economic contribution that could flow to the Irwin Shire in particular and Western Australia more broadly.

VRX has previously received confirmation from the Commonwealth Department of Climate Change, Energy, the Environment and Water for an accredited assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**). Accredited assessment means the Commonwealth can rely on environmental assessments undertaken by the EPA for the purpose of its approval decisions under the EPBC Act on proposals that may have a significant impact on a matter of national environmental significance.

VRX has conducted extensive environmental studies on its silica sand projects over a number of seasons since 2017 in anticipation of requirements of the State and Commonwealth environmental regulatory authorities to undertake approvals assessments. These surveys commenced shortly after the tenements were acquired and the number and extent of these surveys have expanded following further consultation with these authorities. The Company has initially concentrated on gaining approval for development of Arrowsmith North.

The Arrowsmith North proposal was referred to the EPA for assessment under Part IV, Section 38 of the *Environmental Protection Act 1986* (WA) (**EP Act**) in March 2021. The referral was reviewed and in May 2021 the EPA determined that the Proposal would be assessed at a 'Public Environmental Review' or PER level, with a requirement for a four-week public review period.

The Company submitted an Environmental Scoping Document (**ESD**) to the EPA for assessment in September 2021. The ESD was approved in March 2022.

In May 2022 VRX lodged with the EPA the first-draft ERD for the proposal. The ERD is a document required under the PER process. The ERD was prepared according to the EPA's Administrative Procedures Manual and other guidance documents and amendments. The ERD is a comprehensive summary of the proposal's environmental setting, the physical elements of the proposed mine and infrastructure, operational elements, the extent of impacts on the environment and the proposed rehabilitation and closure plan. VRX received a number of requests for further information and provided a final ERD to DWER in May 2023, which was accepted by DWER on 8 June 2023.

The final ERD, which comprises a 341 page summary and 32 appendices detailing a comprehensive environmental impact description of the proposal, was published by the EPA for a four-week PER period, commencing on 19 June 2023.

An important feature of the proposal is the implementation of progressive rehabilitation using the unique Vegetation Direct Transfer (**VDT**) method, which is estimated to result in the best restoration of the vegetation and habitats within the mine area.

The VDT methodology can be viewed at:

<https://vrxsilica.com.au/miningandrehabilitationmethodology/>

Following completion of the four-week PER period, DWER will compile public submissions for the Company to review. The Company will then prepare a response to public submissions for consideration by the EPA.

Importantly this stage of the environmental approvals process for Arrowsmith North will establish the credentials for the use of VDT in Kwongan Heath, which is the vegetation encountered at Arrowsmith North and also for the grasses and sedges within Banksia Woodland at our other projects.

The ERD and further information on the proposal is available on the EPA website at:

<https://www.epa.wa.gov.au/proposals/arrowsmith-north-silica-sand-project>

A copy of the ERD is also available on the VRX website at:

<https://vrxsilica.com.au/arrowsmith-north-erd-documents/>

### **Arrowsmith Brand Mineral Resource Estimate**

In May 2023, VRX announced an extension of its known JORC 2012 compliant Resources at Arrowsmith area with a new Resource at its new Arrowsmith Brand Silica Sand Project, located 270km north of Perth.

The new Resource is contiguous and south of Arrowsmith North and bounded to the south by the Brand Highway road reserve.

The combined Resources at Arrowsmith now provide a future pipeline of additional production utilising some of the infrastructure to be developed at Arrowsmith North.

Whilst development of Arrowsmith Brand is not a current priority, extended timelines are now commonplace for mining approvals and this project has the potential to expand production to meet ever increasing demand for silica sand products.

The silica sand at Arrowsmith Brand is similar to Arrowsmith North, with testwork to-date from samples within this Resource has indicated similar products can be produced. Following the production of the preliminary estimate at Arrowsmith Brand, VRX has lodged an application for a Mining Lease.

The Arrowsmith Brand Mining Lease Application M 70/1418 has an area of 1,994 Ha and predominately within Exploration Licence E70/5027, partially within E70/5109 and is contiguous with the granted Arrowsmith North Mining Lease M70/1389, Figure 2 below. The Mining Lease was granted subsequent to the end of the quarter on 18 July 2023.

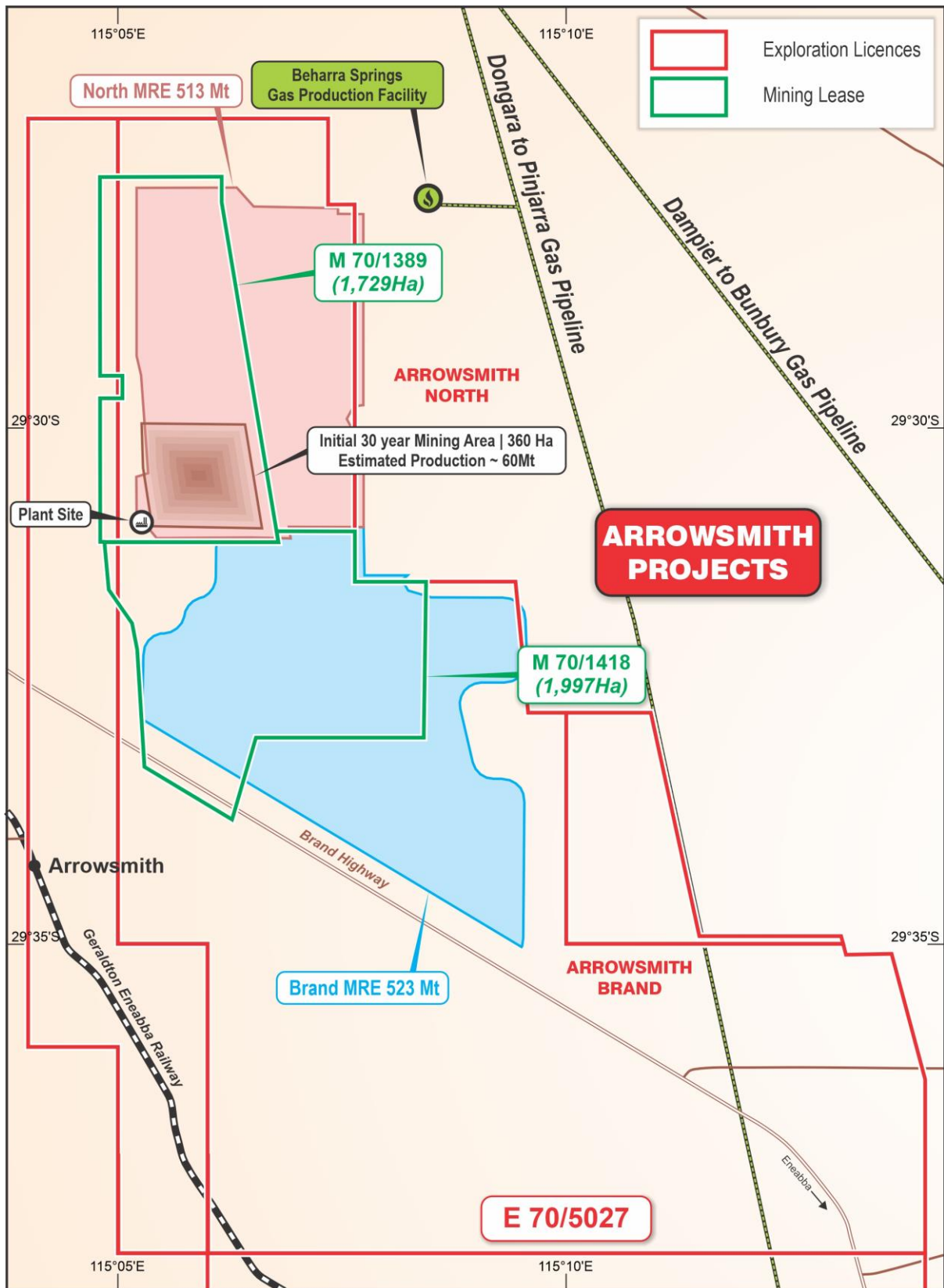


Figure 2: Arrowsmith Brand Silica Sand Project Location

For personal use only

### Detailed Information

An opportunity to generate an additional silica sand project focused on an area of the Arrowsmith North mineral resource area that is not in the near-term development pipeline. By splitting Arrowsmith North at the southern boundary of the granted mining lease M70/1389, see Figure 2, Arrowsmith Brand was established.

Arrowsmith Brand contains a subset of the previously reported Arrowsmith North mineral resource estimate (**MRE**)<sup>2</sup>, also Figure 2. Table 1 shows the prior Arrowsmith North MRE split between the new Arrowsmith Brand and the Arrowsmith North.

### Arrowsmith North - Mineral Resource

11 November 2022 Estimate

Classification	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Measured	10	95.9	1.9	0.7	0.3	0.7
Indicated	237	97.7	1.00	0.40	0.20	0.50
Inferred	521	98.2	0.80	0.30	0.20	0.40
<b>Total</b>	<b>768</b>	<b>98.0</b>	<b>0.90</b>	<b>0.30</b>	<b>0.20</b>	<b>0.40</b>

### Arrowsmith North Mineral Resource in Arrowsmith Brand Project

Classification	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Inferred	255	98.0	0.91	0.31	0.17	0.44
<b>Total</b>	<b>255</b>	<b>98.0</b>	<b>0.91</b>	<b>0.31</b>	<b>0.17</b>	<b>0.44</b>

### Arrowsmith North Mineral Resource Ex Arrowsmith Brand Project

Classification	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Measured	10	95.9	1.9	0.7	0.3	0.7
Indicated	237	97.7	1.0	0.4	0.2	0.5
Inferred	266	98.4	0.7	0.3	0.2	0.4
<b>Total</b>	<b>513</b>	<b>98.0</b>	<b>0.9</b>	<b>0.3</b>	<b>0.2</b>	<b>0.4</b>

Table 1: Prior Arrowsmith North MRE apportioned to Brand Mineral Resource

In December 2022, VRX completed a vacuum drilling program at Arrowsmith North extending into Arrowsmith Brand, see Figure 3. A total of 68 holes for 786m were drilled on M70/1389 to gain material for future metallurgical testwork within the proposed Arrowsmith North mining area. These holes infill the existing 50m spaced grade control drilling which was used to

<sup>2</sup> ASX announcement 11 November 2022, "Arrowsmith North Mineral Resource and Ore Reserve Update".

estimate the measured resource and proven reserve<sup>1</sup>. These samples will not materially change these estimates and have not been assayed.

An additional 49 holes for 656m were drilled on existing tracks to the south in what is now known as the Arrowsmith Brand Project. These holes infill and extend the prior reported MRE for Arrowsmith North. Drilling intersected high quality silica sand which has been assayed and modelled and has resulted in a MRE for Arrowsmith Brand.

For personal use only

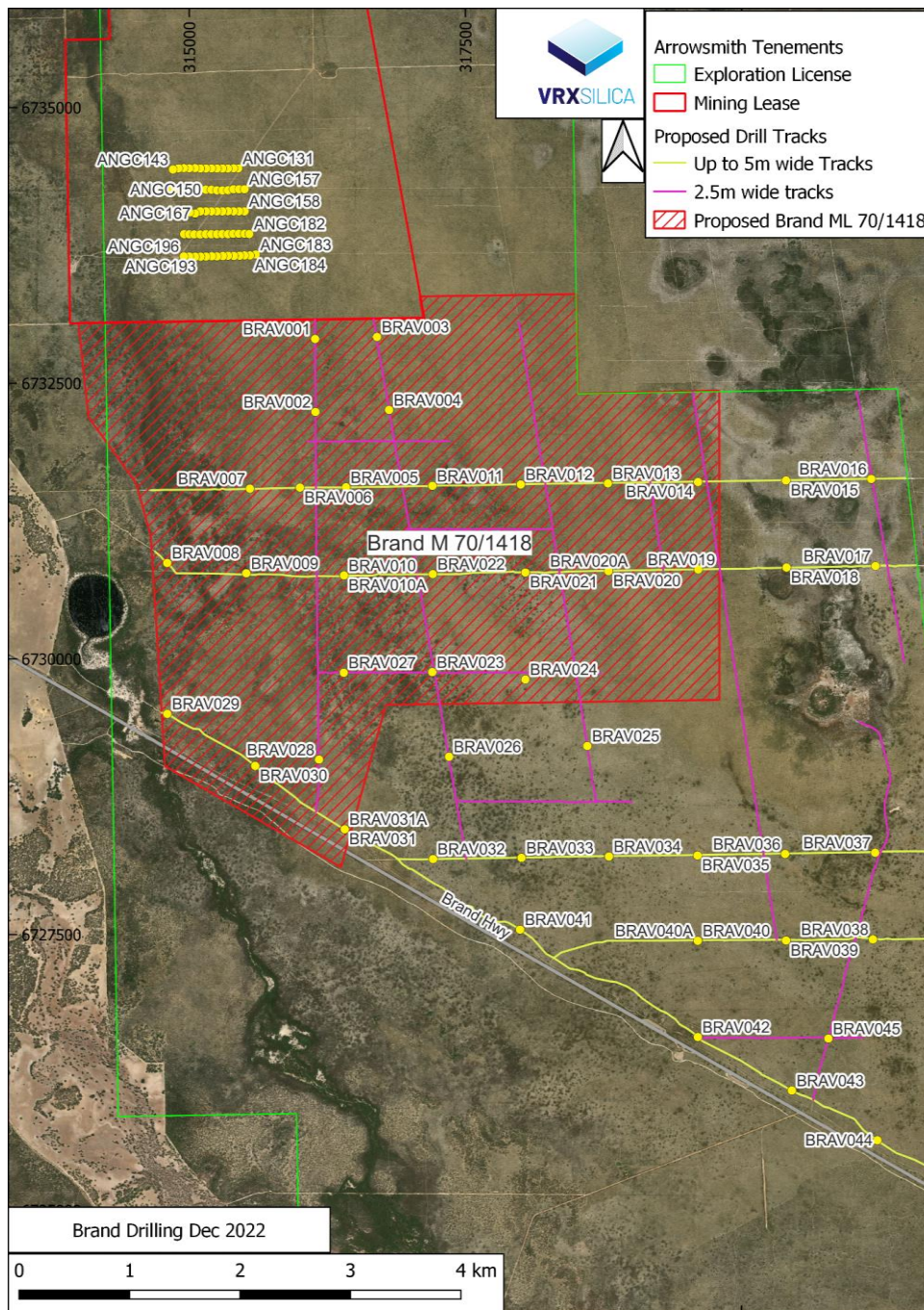


Figure 3 – December 2022 Drill hole locations.

The Arrowsmith Brand MRE is reported in accordance with the JORC Code 2012 Edition. Drilling was completed generally on an 800m x 800m drill hole grid and defines a band of

homogeneous yellow sand overlying white sand. Drilling encountered zones of clay rich fine sand which was excluded from the MRE. The potential silica sand products from Arrowsmith Brand are expected to be suitable for industries such as flat, automobile and container glass manufacturing and foundry casting.

The Arrowsmith Brand MRE is shown in Table 2.

#### Arrowsmith Brand Mineral Resource Estimate – as at 09/05/2023

Classification	Zone	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Inferred	White	144	98.4	0.8	0.2	0.2	0.4
	Yellow	379	96.9	1.6	0.5	0.2	0.7
	Total	523	97.3	1.4	0.4	0.2	0.6
Increase over Prior Estimate		268	Million Tonnes				

*\*Note: Interpreted mineralisation is above a basal layer of clay and/or limestone. Depletion zones include the upper 0.3 m excluded for rehabilitation purposes. Only areas with a minimum sand depth of 1m were included. Differences may occur due to rounding. **Prior estimate is summarised in Table 1.***

Table 2: Arrowsmith Brand Mineral Resource

#### Future Work

In August 2022, VRX lodged a mining lease application over 1,995 Ha, details Table 3 see Figure 2. The mining lease was granted on 18 July 2023. VRX expects to advance the project using the well-known process that has been followed at its other silica sand projects currently being developed. These activities include: environmental surveys, further metallurgical testwork, marketing studies and mine planning studies, which will inform scoping and pre-feasibility studies.

Tenement	Holder	Application date	Grant Date	Area (Ha)
M 70/1418	Ventnor Mining Pty Ltd	01/08/2022	18/07/2023	1,994

Table 3: Arrowsmith Brand tenement details

## VRX Silica Limited – Summary of Silica Sand Mineral Resources and Ore Reserves

### Mineral Resources - as at 09/05/2023

Project	Classification	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Muchea	Indicated	29	99.6	0.1	0.0	0.1	0.2
	Inferred	179	99.6	0.1	0.0	0.1	0.2
	<b>Total</b>	<b>208</b>	<b>99.6</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>
Arrowsmith North	Measured	10	95.9	1.9	0.7	0.3	0.7
	Indicated	237	97.7	1.0	0.4	0.2	0.5
	Inferred	266	98.4	0.7	0.3	0.2	0.4
	<b>Total</b>	<b>513</b>	<b>98.0</b>	<b>0.9</b>	<b>0.3</b>	<b>0.2</b>	<b>0.4</b>
Arrowsmith Brand	Inferred	523	97.3	1.4	0.4	0.2	0.6
	<b>Total</b>	<b>523</b>	<b>97.3</b>	<b>1.4</b>	<b>0.4</b>	<b>0.2</b>	<b>0.6</b>
Arrowsmith Central	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
	<b>Total</b>	<b>76.5</b>	<b>96.8</b>	<b>1.5</b>	<b>0.4</b>	<b>0.2</b>	<b>0.7</b>
Boyatup	Inferred	60	67.8	0.8	0.2	0.1	0.9
	<b>Total</b>	<b>60</b>	<b>67.8</b>	<b>0.8</b>	<b>0.2</b>	<b>0.1</b>	<b>0.9</b>

Table 4: Total Mineral Resource 1,381 Million Tonnes

For personal use only



### Ore Reserves

Project	Classification	Product	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %	
Muchea	Probable	F80	10.2	99.9	0.02	0.008	0.03	0.1	
		F80C	4.25						
		F150	4.25	99.8	0.07	0.015	0.035	0.1	
<b>Muchea Ore Reserve</b>			<b>18.7</b>	<b>Million Tonnes</b>					
Arrowsmith North	Proved	AFS20	0.8	99.5	0.25	0.07	0.05	0.1	
		AFS35	3.9	99.5	0.5	0.06	0.05	0.1	
		AFS55	2.7	99.2	0.5	0.1	0.05	0.1	
		Local	1.8						
	<b>Proved Ore Reserve</b>			<b>9.2</b>	<b>Million Tonnes</b>				
	Probable	AFS20	24.2	99.5	0.25	0.07	0.05	0.1	
		AFS35	102.5	99.5	0.5	0.06	0.05	0.1	
		AFS55	51.1	99.2	0.5	0.1	0.05	0.1	
Local		34.1							
<b>Probable Ore Reserve</b>			<b>212</b>	<b>Million Tonnes</b>					
<b>Arrowsmith North Ore Reserve</b>			<b>221</b>	<b>Million Tonnes</b>					
Arrowsmith Central	Probable	CF400	4.2	99.6	0.25	0.04	0.03	0.1	
		C20	8.4						
		C40	4.2						
		High TiO <sub>2</sub>	2.2			<1%	2%		
<b>Arrowsmith Central Ore Reserve</b>			<b>18.9</b>	<b>Million Tonnes</b>					

Table 5: Total Ore Reserve 259 Million Tonnes

For personal use only

## VRX Completes Engineering on Arrowsmith North Processing Plant

In May 2023 VRX announced it has completed all material engineering work for construction of a 2 million tonne per year silica sand processing plant at Arrowsmith North.

The detailed design phase of the project is largely complete. Remaining minor areas/items will be easily and efficiently detail designed during the execution phase of the project, without affecting the execution schedule.

This phase of engineering has been based on a comprehensive metallurgical testwork program and peer reviewed process circuit design and testing.

The design incorporates some innovative processing techniques which allows flexibility for the Company to produce multiple products subject to market requirements for foundry and glassmaking silica sand.

This stage of the project follows an extensive testing program that VRX has conducted over the last few years with its metallurgical consultants. The Company has developed a number of unique processes to produce the most valuable, high yield and high-quality silica sand products possible.

This design work by the engineering team at ProjX, will allow a very long production future at Arrowsmith North with low emissions and carbon footprint.

### *Detailed Design*

The following areas/items are detail designed, peer reviewed and ready to progress to execution:

- Site and plant layout drawings.
- The attritioning/flotation building (structural, mechanical, and concrete packages).
- The product area (structural, mechanical, and concrete packages).
- Rejects cyclone stacker.
- Civil works for the plant & product area.
- Civil works for the southern access road.
- Civil works for the Brand Highway interface. (Note that this has been fully approved by Main Roads WA).
- Concrete has been detail designed.
- Electrical reticulation design and single line diagrams.
- Process Flow Diagrams (PFDs).
- Piping & Instrumentation Diagrams (PIDs).
- Circuit mass balance.
- Water management
- Mechanical Equipment List (MEL).
- Fabrication drawings verified.
- 3D design model.

The functional control philosophy document is currently being developed.

The following areas/items are concept designed only and will be detail designed or completed during the execution phase of the project:

- The mine plant area, including the feed hopper, transfer conveyors, trommel and other associated equipment such as water tank & pump skids, pipe systems etc. This area is all concept designed but is essentially comprised of vendor equipment linked together. The trommel is sourced and refurbished, and the other vendor equipment has been tendered and the preferred vendor selected. Finalisation of this area and design of ancillary items will be completed during the execution phase.
- Non-Process Infrastructure (NPI) will be designed/selected during the execution phase but have been included in site layout drawings. This includes items such as the following:
  - Admin, crib, toilet buildings etc and associated water and wastewater system.
  - Fire and raw water services.
  - Workshop, stores, laydown, etc.
  - Vehicle wash bays.

#### *Equipment*

The following major equipment has been tendered, selected as preferred and therefore used in the detailed design:

- Cyclone cluster
- Attritioners
- Hydrofloat separators
- Classifiers
- Conditioning tank
- Thickener
- Transformers
- Ring main unit
- MCC/switchrooms
- Product dewatering screens
- Feed hopper and conveyors (preferred vendor yet to be selected)
- Slurry pumps (preferred vendor yet to be selected)
- Water pumps
- Air compressors

The following minor equipment is yet to be officially tendered:

- Bore pumpset.
- Transportable buildings.
- Samplers.
- Pipe supply.
- Fabricated steelwork, chutes, etc.

Several items of secondhand process equipment have been purchased and refurbished:

- A second hand feed trommel was purchased, refurbished, and is now in storage in a Bunbury fabrication contractor's premises. This machine is the primary screening machine at the mine plant.
- A vibrating screen (Schenck vibrating banana screen) was purchased, refurbished, and is now in storage at a Bunbury workshop. This machine is the final product sizing screen.

#### *Project Execution Schedule*

The most recent execution schedule uses the following key milestones prior to the decision to commence construction:

- Finalise finance and establish commencement date.
- Site access date to construct the northern access road.
- Approval to place orders for major long lead equipment.
- Site access date for plant construction.

#### *Project Cost Estimate*

The baseline project cost estimate, determined at a preliminary level in 2019, was \$28.3M (including ~\$6M contingency). The cost estimate will be updated during 2023 as key equipment has been re-tendered. The cost estimate will be refined and updated prior to the decision to commence construction.

#### *Major Equipment Procurement*

VRX has prepared a summary of the major long lead time equipment that will be procured and has recently refreshed the quotations for most of these items. Some equipment has not been retendered for some time and will require retendering closer to the execution phase. Timing for procurement is subject to the EPA approvals process.

When evaluating tenders VRX uses a Tender Evaluation (TEV) process to summarise the tender submissions and to essentially land on the preferred tender.

#### *Short Term Ongoing Works*

VRX intends to carry on with the following development tasks.

- Rearrange the execution cost estimate to show costs by area rather than by task, for inclusion in the data room for DD by financiers. This is a short-term priority.
- Evaluate recent retendering of key major equipment and follow up on other equipment that has not been retendered recently.
- Continuously update a summary of lead times for major equipment suppliers to carry out the detailed design of their equipment, in order to reduce their equipment lead times.
- Continue to refine the execution cost estimate in light of recent retendered equipment and other information.
- Refine the execution schedule estimate in light of recent retendered equipment and other information.
- Produce a manning histogram for the execution phase and investigate accommodation planning as necessary.
- Review the Operating & Control Philosophy.
- Liaise with the power provider to assist with the development of the preferred power option



Figure 5: Feed Trommel



Figure 6: Schenk vibrating banana screen

For personal use only



### Strategic Research Initiative With UNSW

In June 2023 VRX announced a new partnership agreement with the School of Photovoltaic and Renewable Energy Engineering ([SPREE](#)) of the University of New South Wales (**UNSW**), on a strategic research project investigating the market potential for a local, low carbon, solar panel glass recycling program in Australia. .

The pilot phase of this work received funding from the Australian Renewable Energy Agency ([ARENA](#)), carried out through the Australian Centre for Advanced Photovoltaics (ACAP) at UNSW. ACAP is now able to take this work to its next phase with the support of a highly credentialed industry partner specialising in the sustainability of the material critical to solar panel production – silica sand, which is becoming increasingly scarce.

To advance the sector’s sustainability, the project will perform a techno-economic analysis of a proposed closed-loop photovoltaic (**PV**) glass industry in Australia, built on recycling the glass component of solar panels once they reach their end-of-life. A necessary condition for this industry will be the recreation of a local, low-iron, flat glass manufacturing industry, where solar panel cover glass could be returned as cullet (crushed glass).

Specifically, the agreement aims to support modelling of possible low-iron glass recycling and manufacturing pathways in Australia, with activities potentially located near Muchea.

VRX is pleased to collaborate with the University of New South Wales and the Australian Renewable Energy Agency in this initiative to investigate the potential recycling of components of solar panels.

This part of the life cycle of a solar panel is insufficiently studied but is increasingly required to complete the cycle for the use of solar panels.

#### *How Solar Panel Glass Recycling Could Work in Australia*

The silica sand at Muchea, in particular, has very low iron content, making it highly suitable for use in manufacturing solar panel glass. Existing rail access increases the feasibility of the low-carbon transport of sand to ports for export, or to a nearby future glass factory. It is also suitable for the transport of cullet from all over Australia to a potential new glass factory.

Basic methods have already been established for separating PV cover glass from other module materials, with some already in use in Australia, or with orders having been placed for equipment to do so.

VRX will share data with ACAP researchers on its Muchea deposit, including all related to progress made towards the development of the deposit, the requirements for sand, cullet and other input materials for low-iron glass manufacture in Western Australia, and information about global sand availability and value, as well as broader industry insights on the glass manufacturing sector.

UNSW will provide information on PV glass recovery activities in Australia and elsewhere, including projected glass demand for the global PV industry and the results of techno-economic modelling.

The project term is two years commencing 1 July 2023. There is no cash funding obligation on VRX.

## Extension of Xodus MOU

In June 2023 agreed a six month extension of its non-binding memorandum of understanding (MOU) with Xodus Group Pty Ltd (Xodus) to 31 December 2023. First announced in March 2022, the MOU seeks to explore the future supply of renewable hydrogen to the Company's silica sand projects as well as to potential, nearby glass-manufacturing facilities to enable the production of net-zero glass.

Xodus, a global energy consultancy, specialises in the integration of environmental science, engineering and management to provide holistic support and services in energy transition. An Xodus-led consortium is developing Project MercurHy for the industrial-scale production of hydrogen gas using renewable energy in the Mid West region of Western Australia.

The MOU with Xodus establishes a platform for strategic confidential communication and future co-operation between the parties. It contemplates the sharing of information with a view to a future offtake of between 9,000 tonnes to 11,000 tonnes of hydrogen per annum, which is adequate to supply a substantial glass-making facility.

## Corporate

During the quarter under review the Company issued 7,200,000 options under its Employee Incentive Scheme. The options were issued on 30 May 2023, have an exercise price of 15c and an expiry date of 31 December 2026. The options will remain unlisted and no funds were raised from their issue.

## Events Subsequent to the End of the Quarter

### *\$2 million Investment Attraction Fund Grant*

On 18 July 2023 VRX announced it had received confirmation from the Western Australian State Government that the Company's grant application for \$2 million in matched funding under the Investment Attraction Fund (IAF) has been approved with a Financial Assistance Agreement (FAA) for the grant executed that day.

The IAF is part of the State Government's Diversify WA initiative, a collaboration between government, industry and the community supporting the WA Government's focus on creating secure, quality jobs, growing and diversifying the economy and attracting new investment.

The grant under the IAF is being awarded on a matched funding, dollar for dollar basis, whereby the IAF will provide a financial contribution to VRX up to \$2m.

The project proposed by VRX will investigate the potential to develop a high purity quartz (or HPQ) flour manufacturing process and pilot plant in Western Australia, which if successful will lead to the development of a larger commercial plant for large scale processing.

VRX intends to develop a High Purity Quartz flour manufacturing process to meet a standard of 99.999% SiO<sub>2</sub> (5N) purity. This involves the establishment of a new lower purity quartz resource to be beneficiated in quality, allowing a new manufacturing process tailored to beneficiating the purity of Western Australia quartz and finally the establishment of the high purity quartz flour manufacturing plant and the associated supply chains.

The key objective of this project is to commercialise the manufacturing process of High Purity Quartz flour within Western Australia. This will involve sourcing and beneficiating the purity of lower quality quartz through primarily mechanical and possibly chemical processes. The

establishment of a process and purity standard has the potential to lead to a manufacturing facility, commercial partners and a supply chain for the critical minerals.

The three main objectives for the project are:

- To determine the key elements that would lead to the successful commercialisation of a manufacturing process to beneficiate the quality of the lower purity quartz (99.9% SiO<sub>2</sub>) to a higher silica grade.
- To complete a pre-feasibility study that would determine the grade of quartz and processing method that could feasibly be manufactured from its existing feedstocks with a target of reaching 99.999% SiO<sub>2</sub> purity quartz flour.
- To establish a full-scale manufacturing plant to process the resource into high purity quartz flour utilising the work from the previous objectives, testwork and marketing carried out as a backbone to support the future work to be carried out.

The HPQ market is one of growing demand but with a relatively small supplier base.

Initially, VRX will investigate the potential for the coarse material that will be produced from Muchea. Recent pilot plant work completed on a 2.2 tonne bulk sample of Muchea sand indicated that a portion of project ore may meet the specification required.

Whilst the goal is to achieve the high-quality required, by raising its high-grade silica sand resource from Muchea to at least “4 nines” (ie. 99.99% SiO<sub>2</sub> purity) it would still allow a wide range of high demand large-value products to be made. This includes use as a feed material for several industries and downstream products including paint fillers, fibre glass, water purity media, and silica flour for the production of LCDs and silica gels.

#### *Arrowsmith Brand Mining Lease*

On 19 July 2023 VRX announced the grant of a Mining Lease (M70/1418) at Arrowsmith Brand. Details of the project and the tenement are set out above.

#### *Geothermal Exploration Permit*

On 28 July 2023 VRX announced it had been granted Geothermal Exploration Permit (GEP) GEP 44 consisting of 8 blocks at Dandaragan, 145km north of Perth, Western Australia. Geothermal technology has the potential to produce long term dispatchable renewable energy for the Mid-West region, including the Arrowsmith Silica Sand Projects, as well as green hydrogen for the manufacture of glass.

The Dandaragan GEP area includes the Walyering gas field currently under development by EP447 Joint Venture between Strike Energy 55% and Talon Energy 45%. The grant presents an opportunity to work with these companies to use extensive historical and current data to explore for potential geothermal power options.

The grant follows the acreage release nomination VRX lodged in December 2021 and subsequent GEP application in April 2022 with DMIRS. The Company is actively engaging with potential partners with the relevant industry experience and capability for the development of this project.

GEP 44 has been denoted as the Dandaragan Geothermal Project. Figure 7 shows the location and Table 6 provides details of the GEP.



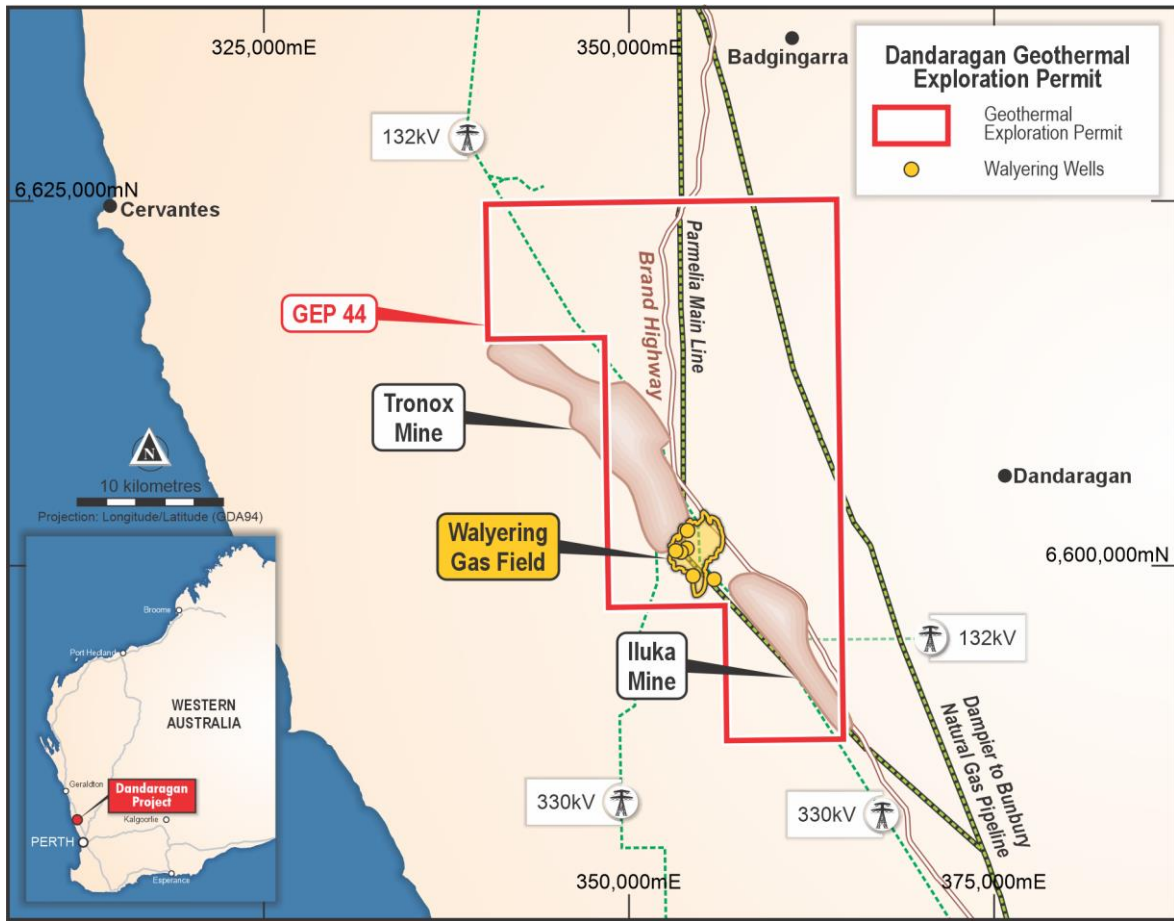


Figure 7: Dandaragan Geothermal Exploration Permit Location

GEP	Holders	Grant Date	Term	5' Blocks
GEP 44	VRX Silica Ltd	27 July 2023	Six (6) years	8

Table 6: VRX Silica Geothermal Exploration Permit

## ASX Listing Rule 5.3 Disclosures

### Details of mining exploration activities:

Payments for exploration & evaluation under operating activities of \$67K related mainly to tenement rents.

Payments for exploration & evaluation under investing activities of \$504K consists mainly of environmental referral fees and environmental surveys and approvals costs.

### Details of tenement activities:

During the quarter, the following tenements were applied for:

- Exploration Licence E70/6501
- Exploration Licence E70/6502
- Exploration Licence E70/6503
- Exploration Licence E70/6504
- Exploration Licence E70/6505

*Details of related party payments:*

The aggregate amount of payments to related parties and their associates of \$139K represents directors' fees and salaries paid during the quarter.

There were no substantive mining production and development activities during the quarter.

## Combined +1.4Bn tonne Mineral Resource

### Mineral Resources - as at 09/05/2023

Project	Classification	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %
Muchea	Indicated	29	99.6	0.1	0.0	0.1	0.2
	Inferred	179	99.6	0.1	0.0	0.1	0.2
	<b>Total</b>	<b>208</b>	<b>99.6</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>
Arrowsmith North	Measured	10	95.9	1.9	0.7	0.3	0.7
	Indicated	237	97.7	1.0	0.4	0.2	0.5
	Inferred	266	98.4	0.7	0.3	0.2	0.4
	<b>Total</b>	<b>513</b>	<b>98.0</b>	<b>0.9</b>	<b>0.3</b>	<b>0.2</b>	<b>0.4</b>
Arrowsmith Brand	Inferred	523	97.3	1.4	0.4	0.2	0.6
	<b>Total</b>	<b>523</b>	<b>97.3</b>	<b>1.4</b>	<b>0.4</b>	<b>0.2</b>	<b>0.6</b>
Arrowsmith Central	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
	<b>Total</b>	<b>76.5</b>	<b>96.8</b>	<b>1.5</b>	<b>0.4</b>	<b>0.2</b>	<b>0.7</b>
Boyatup	Inferred	60	67.8	0.8	0.2	0.1	0.9
	<b>Total</b>	<b>60</b>	<b>67.8</b>	<b>0.8</b>	<b>0.2</b>	<b>0.1</b>	<b>0.9</b>

**Total Mineral Resource 1,381 Million Tonnes**

### Ore Reserves - as at 09/05/2023

Project	Classification	Product	Mt	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %	
Muchea	Probable	F80	10.2	99.9	0.02	0.008	0.03	0.1	
		F80C	4.25						
		F150	4.25	99.8	0.07	0.015	0.035	0.1	
<b>Muchea Ore Reserve</b>			<b>18.7</b>	<b>Million Tonnes</b>					
Arrowsmith North	Proved	AFS20	0.8	99.5	0.25	0.07	0.05	0.1	
		AFS35	3.9	99.5	0.5	0.06	0.05	0.1	
		AFS55	2.7	99.2	0.5	0.1	0.05	0.1	
		Local	1.8						
	<b>Proved Ore Reserve</b>			<b>9.2</b>	<b>Million Tonnes</b>				
	Probable	AFS20	24.2	99.5	0.25	0.07	0.05	0.1	
		AFS35	102.5	99.5	0.5	0.06	0.05	0.1	
		AFS55	51.1	99.2	0.5	0.1	0.05	0.1	
Local		34.1							
<b>Probable Ore Reserve</b>			<b>212</b>	<b>Million Tonnes</b>					
<b>Arrowsmith North Ore Reserve</b>			<b>221</b>	<b>Million Tonnes</b>					
Arrowsmith Central	Probable	CF400	4.2	99.6	0.25	0.04	0.03	0.1	
		C20	8.4						
		C40	4.2						
		High TiO <sub>2</sub>	2.2			<1%	2%		
<b>Arrowsmith Central Ore Reserve</b>			<b>18.9</b>	<b>Million Tonnes</b>					
<b>Total Ore Reserve</b>			<b>259</b>	<b>Million Tonnes</b>					

### **Material Assumptions for Reserve and Resource Reporting**

The information in this document that relates to the estimation and reporting of the Mineral Resource and Ore Reserves for the Company's silica sands projects is extracted from releases to ASX on 28 August 2019 and 11 November 2022 (Arrowsmith North), 17 September 2019 (Arrowsmith Central), 9 May 2023 (Arrowsmith Brand), 18 October 2019 (Muchea) and Boyatup (18 August 2022). The Company confirms that it is not aware of any new information or data that materially affects the information included in this document and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

This quarterly activities report has been approved for release by the Managing Director.

For personal use only

## Interests in Mining Tenements (Western Australia)

### *Arrowsmith Project – Silica Sand*

Tenement	Status	Interest at beginning of quarter	Interests relinquished, reduced or lapsed	Interests acquired or increased	Interest at end of quarter
E70/4986	Granted	100%	-	-	100%
E70/4987	Granted	100%	-	-	100%
E70/5027	Granted	100%	-	-	100%
E70/5109	Granted	100%	-	-	100%
E70/5197	Granted	100%	-	-	100%
E70/5817	Granted	100%	-	-	100%
M70/1389	Granted	100%	-	-	100%
M70/1392	Granted	100%	-	-	100%
M70/1418	Application	-	-	-	-
L70/198	Granted	100%	-	-	100%
L70/199	Granted	100%	-	-	100%
L70/202	Granted	100%	-	-	100%
L70/203	Granted	100%	-	-	100%
L70/208	Granted	100%	-	-	100%
L70/229	Application	-	-	-	-
L70/230	Granted	100%	-	-	100%
G70/264	Granted	100%	-	-	100%
G70/265	Granted	100%	-	-	100%
G70/266	Granted	100%	-	-	100%

### *Muchea Project – Silica Sand*

Tenement	Status	Interest at beginning of quarter	Interests relinquished, reduced or lapsed	Interests acquired or increased	Interest at end of quarter
E70/4886	Granted	100%	-	-	100%
E70/5157	Granted	100%	-	-	100%
E70/5548	Granted	100%	-	-	100%
E70/5651	Application	-	-	-	-
M70/1390	Granted	100%	-	-	100%
M70/1414	Application	-	-	-	-
L70/200	Granted	100%	-	-	100%
L70/204	Granted	100%	-	-	100%
L70/205	Application	-	-	-	-
L70/206	Granted	100%	-	-	100%

### *Boyatup Project – Silica Sand*

Tenement	Status	Interest at beginning of quarter	Interests relinquished, reduced or lapsed	Interests acquired or increased	Interest at end of quarter
E69/3560	Granted	100%	-	-	100%
E69/3668	Granted	100%	-	-	100%

### *Dandaragan Project*

Tenement	Status	Interest at beginning of quarter	Interests relinquished, reduced or lapsed	Interests acquired or increased	Interest at end of quarter
E70/6501	Application	-	-	-	-
E70/6502	Application	-	-	-	-
E70/6503	Application	-	-	-	-
E70/6504	Application	-	-	-	-
E70/6505	Application	-	-	-	-

## About VRX Silica Limited

**VRX Silica Limited (ASX: VRX)** is the most advanced pureplay silica sand company listed on the ASX, developing its 100% owned silica sand projects at Arrowsmith (North, Brand and Central), Muchea and Boyatup in Western Australia.

Silica sand is the most used commodity on the planet after air and water. It is the main ingredient in all types of glassmaking, including specialty solar panel and high-tech glass, and foundry casting. It is a finite resource that is running out, with the Asia-Pacific region experiencing an ever-growing supply shortfall that is driving up prices.

Arrowsmith is located 270km north of Perth. Arrowsmith North boasts a minimum 25-year mine life capable of producing more than 2Mt tonnes per year of high-grade (99.7% SiO<sub>2</sub>)\* silica sand for export to the foundry, container glass and flat glass markets in Asia, with permitting well advanced, and will lead production.

Muchea, located 50km north of Perth, is an ultra-high-grade (99.9% SiO<sub>2</sub>)\* silica sand project capable of producing sand required for ultra-clear glass for solar panels and other high-tech glass applications.

Boyatup, located 100km east of Esperance, is under development and capable of producing sand for the glass market.



\*Information relating to grades are extracted from releases to ASX on 28 August 2019 and 11 November 2022 (Arrowsmith North) and 18 October 2019 (Muchea). The company is not aware of any new information or data that materially affects this information.

## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

VRX SILICA LTD

ABN

59 142 014 873

Quarter ended ("current quarter")

30 June 2023

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
<b>1.</b>	<b>Cash flows from operating activities</b>		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(67)	(296)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(300)	(1,097)
	(e) administration and corporate costs	(521)	(1,917)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	24	102
1.5	Interest and other costs of finance paid (on lease liability)	(7)	(22)
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	198
1.8	Other (provide details if material)	-	-
<b>1.9</b>	<b>Net cash from / (used in) operating activities</b>	<b>(871)</b>	<b>(3,032)</b>
<b>2.</b>	<b>Cash flows from investing activities</b>		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(351)	(1,905)
	(d) exploration & evaluation	(504)	(2,633)
	(e) investments	-	(16)
	(f) other non-current assets	-	-

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (bonds refund/deposit)	24	(65)
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(831)</b>	<b>(4,619)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (repayment of lease liability)	(19)	(73)
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>(19)</b>	<b>(73)</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	3,303	9,306
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(871)	(3,032)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(831)	(4,619)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(19)	(73)

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>1,582</b>	<b>1,582</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	1,582	3,303
5.2	Call deposits		
5.3	Bank overdrafts		
5.4	Other (provide details)		
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>1,582</b>	<b>3,303</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1	139
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

*Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.*



## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

<b>7. Financing facilities</b>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 <b>Total financing facilities</b>	-	-
7.5 <b>Unused financing facilities available at quarter end</b>		-
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(871)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(504)
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(1,375)
8.4 Cash and cash equivalents at quarter end (item 4.6)	1,582
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	1,582
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	1.15
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

The entity expects the current level of net operating cash flows to reduce materially for the time being, because:

- Payments for administration and corporate costs (item 1.2(e)) of \$521,000 this quarter included annual insurance premiums of \$106,000; and
- Payments for exploration & evaluation classified as investing activities (item 2.1(d) and item 8.2) of \$504,000 this quarter included non-recurring fees under the Environmental Protection (Cost Recovery) Regulations 2021 of \$339,000.

In addition, the entity was due to receive its R&D tax incentive refund for the year ended 30 June 2022 during the quarter. Subsequent to the end of the quarter in late July 2023, the Company received confirmation that the refund of \$681,000 will be paid on 1 August 2023. Had this refund been received when due during the quarter and included in item 1.7, the estimated quarters of funding available at 30 June 2023 (item 8.7) would be 3.26 quarters.

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

No steps have been taken to raise additional funds at this stage. However, the entity in the ordinary course of its business monitors its cash position and considers sources and timing of potential financing options available to it in light of its cash position and expected expenditure, including equity and debt financing options.

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Yes, based on the above the entity fully expects to be able to continue its operations and meet its business objectives.

*Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.*

### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 31 July 2023

Authorised by: Bruce Maluish, Managing Director  
(Name of body or officer authorising release – see note 4)

**Notes**

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.