Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6963/2024/1
Applicant	VRX Silica Ltd
CAN	142 014 873
File number	APP-0026164
Premises	Arrowsmith North Silica Sand Project Brand Highway, Arrowsmith Western Australia Legal description Lot 70/1389 As defined by the premises maps attached to the issued works approval
Date of report	01 September 2025
Decision	Works approval granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval 6963/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

On 26 July 2023, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction, commissioning and time-limited operations of a silica sand processing plant, processing (mechanical upgrading and gravity separation) of 1 million tonnes per annum (mtpa) of silica sand for the first three years, increasing to 2 mtpa thereafter at the premises. The premises is approximately 14 km south-east of Mount Adams and 15 km north-west of Arrowsmith Western Australia.

The premises relates to the Category 5 and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6963/2024/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6963/2024/1.

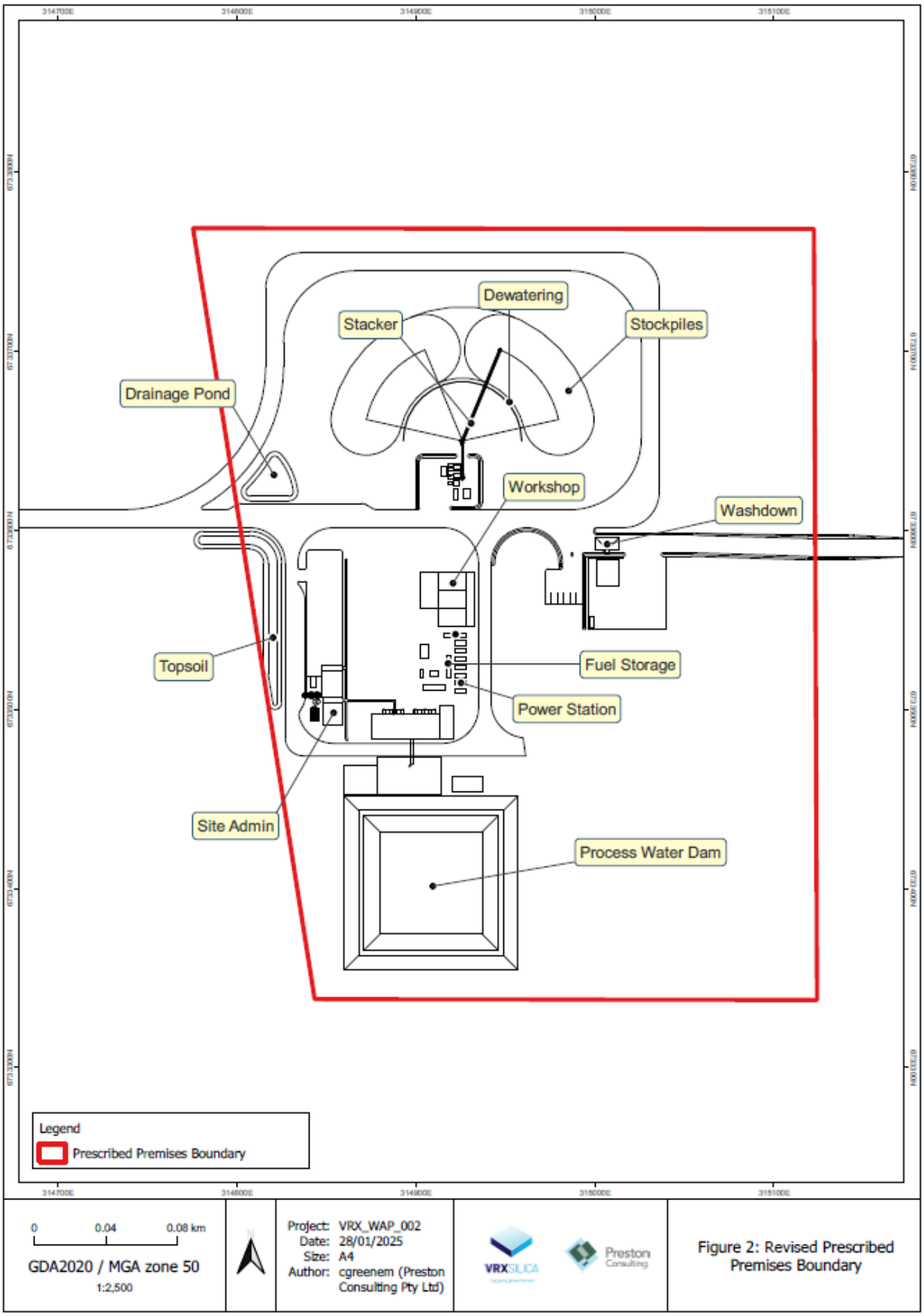

Figure 1: Proposed layout of Arrowsmith silica sand processing facility

2.2.1 Construction

MINE FEED PLANT

Mined sand is processed through a mine feed plant (MFP) (Figure 2) that is separate to the processing plant.

The MFP is comprised of a hopper, conveyor and trommel screen. Dry silica sand extracted from the mine face will be tipped across a dump hopper with static grizzly bars to remove oversize rocks and large organic material. The bin will meter feed out to a feed conveyor which will transfer feed to the mouth of a rotating trommel screen. The trommel screen will act to wash the sand and slurry the sand feed and remove +2 mm oversize sand, rocks and organic material.

Undersize material from the trommel screen will gravitate to a bin and will be pumped to the processing plant via a slurry transfer system.

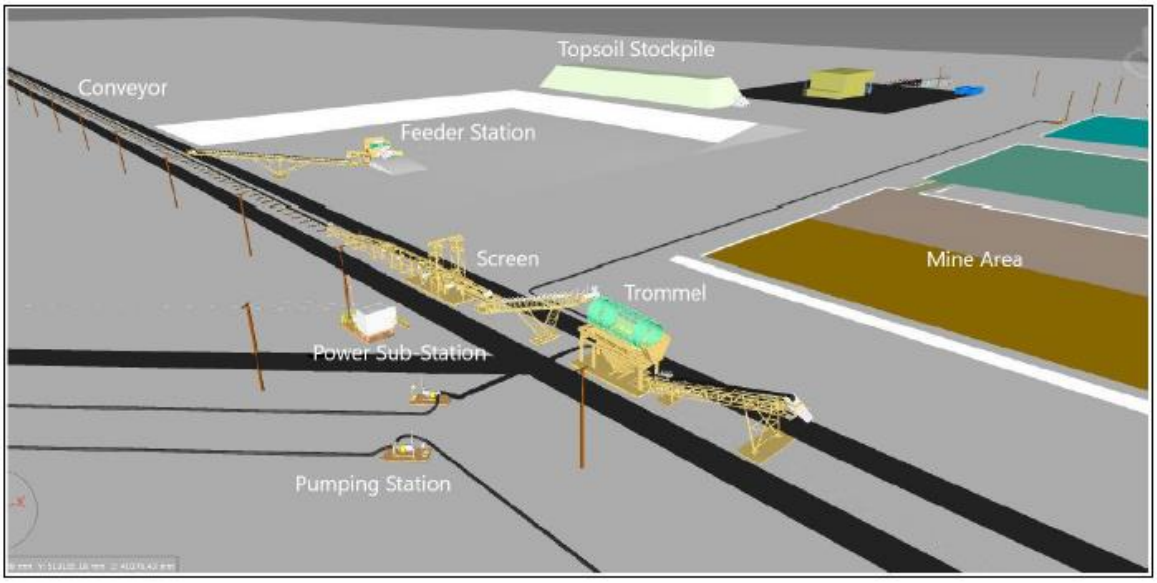

Figure 2: General arrangement of the MFP

SAND SLURRY PIPELINE

Sand slurry will be piped to the processing plant via a surface pipeline. The pipeline is manufactured from polyethylene and has a diameter of 280 mm. The pipeline will transfer approximately 8 m^3 of sand slurry (of 30% solids) per minute.

The pipeline will be fitted with sensors and an alarm system with automatic shutdown in case of a burst or damaged pipe. The sensors measure flow rates at the start and finish of the pipeline, and differences in the flow rates will trigger a shutdown of the system.

The applicant states that shutdown of the system would occur within 1 minute of a leak being detected, and a complete rupture of the pipeline could result in a maximum spill of 8 m^3 of sand slurry (2.4 m^3 of solids). The pipeline will be installed in a v-trench approximately 300 mm deep that will have the capacity to hold a complete rupture of the pipeline.

Spills are expected to be localised within the trench. The applicant believes that, due to the infiltration rates for surrounding soils being high, it is anticipated the slurry will dry quickly. Any spilled material will be recovered.

PROCESSING PLANT

Mined sand is pumped as a slurry to the processing plant (Figure 3) located in the southwest corner of the prescribed premises. The sand is upgraded to a commercial grade using flotation and screening separation.

A simplified sand processing flow chart was provided by the applicant (Figure 4).

Commercial grade sand is pumped to a dewatering screen for drying, and clean moist (3% moisture) product is stockpiled adjacent to the processing plant using a radial stacker conveyor in preparation for export.

Reject material (slimes) will report to a thickener tank with flocculant addition to create a single plant tail. The thickener will utilise a pressure sensor activated underflow pump which will deposit densified tails into a dewatered tailings stack. The tails will be stockpiled and then be taken offsite for sale in the local market.

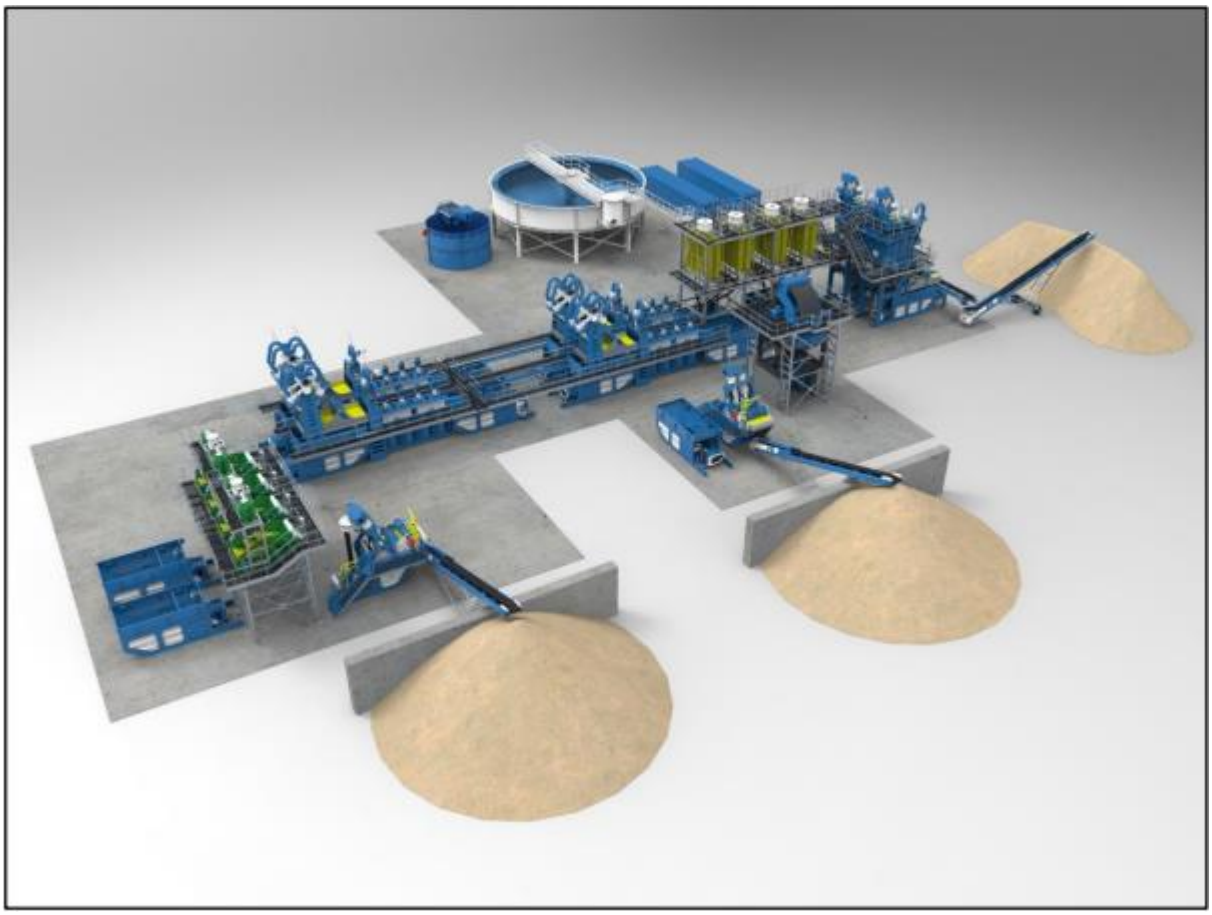

Figure 3: Process plant indicative layout

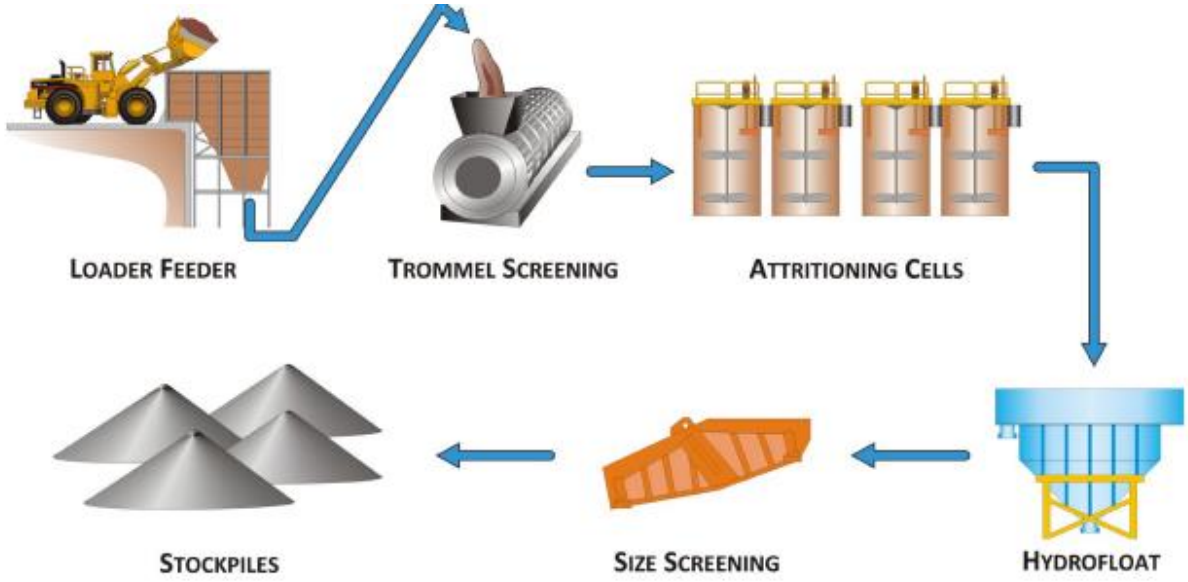

Figure 4: Silica sand processing flow chart – supplied by applicant

PONDS

The application includes the construction and operation of a process water pond and drainage pond. The process water pond will contain approximately 15,000 m^3 of groundwater abstracted from the Yarragadee aquifer.

A steady supply of water is required to enable processing (washing and upgrading) of mined silica sand. The process water pond will be located in the southwest corner of the PPB. The pond will be a lined (HDPE liner with a nominal thickness of 1.5 mm) and bunded excavation with associated supporting infrastructure including process circuit pump, plumbing and, water level monitoring and management.

The pond will be bunded using material excavated during construction and a 1 m freeboard will be maintained automatically using level sensors connected by telemetry to the water supply pump.

The project also includes the construction of a drainage pond near the western edge of the prescribed premises boundary. The purpose of the drainage pond is to manage surface water flows from the stockpile area in extreme rainfall events. The stockpile area will have a general grade towards the drainage pond. The applicant believes it is highly unlikely that this drain will be required as the soils within the project area are comprised of deep sands with very high permeability, however design for a drainage pond has been included as a contingency for surface water flows.

2.2.2 Commissioning

Commissioning activities for the prescribed activities include:

- Verification and testing: the locations and specifications of installed infrastructures are checked for compliance with detailed design plans. Components are energised in isolation for inspection and testing purposes.
- Dry Commissioning: equipment is run ‘dry’ (no Product in the circuit) to ensure proper function. Motors and ancillary equipment such as sensors and lighting are run; and
- Wet Commissioning: equipment is run ‘wet’ (Product is added to the circuit and stacked in the product storage area to ensure proper function under operational conditions.

The applicant states that an environmental compliance report will be submitted to DWER following the completion of construction, which will initiate the commissioning phase. An environmental commissioning report will be submitted to DWER once both dry and wet commissioning is finalised, and this will trigger commencement of time limited operation stage (TLO).

Each commissioning activity (verification and testing, dry and wet commissioning) is predicted to take 1 month.

2.2.3 Time limited operations

The applicant proposes a TLO period of 180 calendar days to enable the project's operational activities to commence until a Part V licence is approved by DWER.

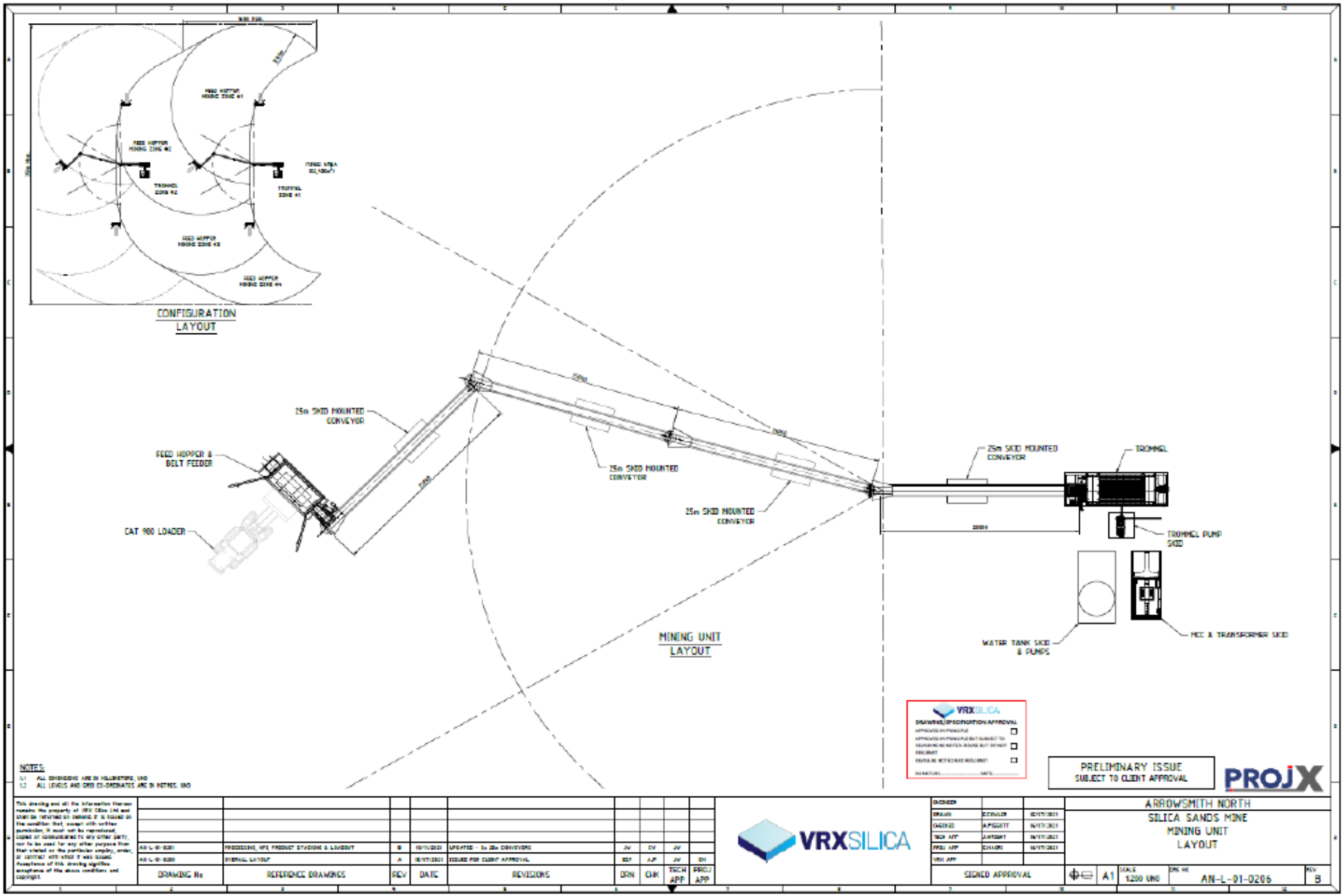

Figure 5: Silica sand mining unit and mine feed plant layout

3. Legislative context

3.1 Mining Act 1978

The Department of Mines, Petroleum and Exploration (DMPE) (formerly the Department of Energy, Mines, Industry Regulation, and Safety (DEMIRS)) advised that a Mining Proposal (MP ID 121158) has been received from Ventnor Mining Pty Ltd (a wholly owned subsidiary of VRX Silica Ltd) for tenements M 70/1389 and L 70/208.

The MP is for the sequential block mining of silica sand, development of a mine feed plant, mobile surface conveyor, pipeline, processing plant, stockpiles, freshwater supply bore, access corridor, laydown, administration, water storage and associated infrastructure including gas fired power station, communications equipment, offices, workshop, and additional laydown areas.

DMPE have stated that the MP is aligned with the information provided in the correspondence from DWER. DMPE approved MP ID 121158 on 6 August 2025.

3.2 Part IV of the EP Act

The project was referred under Section 38 of the EP Act on 17 March 2021. The EPA released its decision to assess the project as a Public Environmental Review (s. 40(2) (b) and s. 40(4)) on 18 May 2021. The applicant prepared an Environmental Scoping Document (ESD) which was formally approved by the EPA on 15 March 2022.

An Environmental Review Document (ERD) was submitted to the EPA for assessment and approved for public review by the EPA on 8 June 2023. The public review period was set for 19 June 2023 to 16 July 2023.

The assessment report (1778) was prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA) and was published for consultation on the EPA website on 7 January 2025. The comment period ended on 30 January 2025.

Ministerial Statement (MS) 1252 was signed by the Minister for the Environment and published on 28 August 2025.

3.3 *Environmental Protection and Biodiversity Conservation Act 1999*

The project was assessed as an 'accredited assessment' under Part IV of the EP Act. Section 87 of the *Environment Protection and Biodiversity Conservation Act 1999* makes provisions for the EPA to undertake this accredited assessment of the potential impacts to Matters of National Environmental Significance on behalf of Department of Climate Change, Energy, the Environment and Water (DCCEEW).

4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Noise management

The applicant state that the silica sand processing plant will be in operation 24-hours a day and is therefore expected to produce noise emissions.

The processing plant circuit includes trommel screening, attritioning cells, classifier, spiral separation, gravity separation, size screening, drying and stacking. A series of pumps, drive motors, sprayers and conveyors will operate to support the process circuit.

There is no crushing, grinding or percussive processing proposed so noise from the processing plant is expected to be primarily from the operation of pumps, drive motors, sprayers and conveyors. The project will be powered by an on-site power station comprised of several natural gas fired electrical generators to produce up to 3.5 MW.

The applicant has supplied known noise levels for equipment that is used on the prescribed premises.

Table 1: Noise source levels – supplied by applicant

Source of noise	Noise level (dB(A))
Cat D7 Dozer	112
Cat D9/D8 Dozer	110
Komatsu PC700 Excavator	108
Komatsu PC1250 Excavator	110
Haul trucks	117
Watercart	106
Cat 16M grader	102
Cat 657G Scraper	113
Cat 980/966 loader	108
Feed Process Plant (FPP)	106
Wet Concentrator Plant (WCP)	113
Genset 1750 KVA Insulated Enclosure with Acoustic Louvres (equivalent to 85 dB(A) at 1 m)	92
HMC Truck Volvo FH16 Prime Mover Triple Wagon 60 km/h	108

EPA Guidance Statement No. 3 (EPA, 2005) provides advice on the use of generic separation distances (buffers) between industrial and sensitive land uses. The generic separation distances are a tool to assist in the determination of suitable distances between industry and sensitive land uses where industry may have the potential to affect the amenity of a sensitive land use.

Where the separation between the industrial and sensitive land uses is greater than the generic distance, there will not usually be a need to carry out site-specific technical analyses to determine the likely area of amenity impacts due to emissions from the industry.

These generic separation distances are also referenced in the Guideline for Dust Emission, released as a draft for external consultation by DWER in July 2021 (DWER, 2021).

Under the separation distances guidance (EPA, 2005), the silica sand project is best described as an ‘extractive industry – sand and limestone extraction’, involving no grinding or milling works. The corresponding generic buffer distance that is recommended is between 300 to 500 m, depending on size. The closest sensitive receptor to the mining operations and processing plant

is the residence to the southwest (Receptor 4), located 3,300 m away and the residence to the northwest (Receptor 1), located 3,200 m away.

Based on the above, the department does not consider that modelling of the project noise emissions and assessment of the potential impact on sensitive receptors is required.

4.2 Groundwater

The applicant engaged HydroConcept to conduct a hydrological feasibility assessment on the project tenement boundaries and surrounds (HydroConcept, 2019). According to the HydroConcept report there are two aquifers present beneath the project; the relatively thin superficial formations, which are underlain by a major regional aquifer within the Yarragadee Formation.

The water table within the superficial aquifer falls from 50 - 60 m AHD about the eastern margin of the coastal plain to sea-level at the coast. The water table under the project ranges from 10 – 20 m AHD, or more than 15 m below current ground level.

Groundwater salinity within the superficial aquifer is generally brackish at less than 1,000 mg/L total dissolved solids (TDS) about its eastern margin, increasing toward the coast where it becomes saline. Beneath the prescribed premises boundary, the groundwater salinity is approximately 1,000 – 1,700 mg/L TDS.

Process and dust suppression water will be sourced from a groundwater bore (located outside the prescribed premises boundary) that will target the Yarragadee aquifer at a rate of 0.9 GL/year. Potable water will be required for personnel, which will be trucked to the site.

4.3 Source-pathways and receptors

4.3.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 2 below. Table 2 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 2: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	• Clearing and earthworks; • Construction of settling ponds; and • Construction of processing plant.	Air / windborne pathway	• Only areas required to be cleared for the construction activities will be cleared. • Cleared areas will only remain cleared for the duration required to undertake the construction activities. • Cleared areas that are no longer required for construction will be respread with topsoil, treated with a dust suppressant or rehabilitated. • Dust suppressants including water will be applied to disturbed, active construction areas by water trucks/sprayers if fugitive dust is observed and persistent.

Emission	Sources	Potential pathways	Proposed controls
Noise	• Vehicle movement. • Settling pond construction; and • Construction of processing plant. • Generators	Air / windborne pathway	• Gas generators will have the option to be fitted with noise attenuating mufflers. No other specific controls have been provided by the applicant. The department notes that noise from the project is unlikely to have an impact on the nearest receptor which is 3.3 km away.
Commissioning and Operation (including Time-limited operations)			
Dust	• Sand stockpiles. • Product stockpiles, and • Screening plant.	Air / windborne pathway	• Water will be applied to any roads or cleared areas that pose a dust risk. • The mine feed has a natural moisture component of 2 - 2.5% water which will suppress dust emissions. • The conveyor transfer points will be enclosed to contain dust. Fine mist water sprays may be employed at the transfer points if required for further dust management. • Conveyors to be fitted with dome-shaped covers.
Noise	• Vehicle movement. • Operation of mine feed plant and processing plant, along with associated infrastructure such as gas generators.	Air / windborne pathway	• Gas generators will have the option to be fitted with noise attenuating mufflers. No other specific controls have been provided by the applicant. The department notes that noise from the project is unlikely to have an impact on the nearest receptor which is 3.3 km away.
Abstracted groundwater	Process water pond	Overtopping of pond	• 15,000 m^3 capacity, bunded using material excavated during construction. • 1 m freeboard will be maintained automatically using level sensors connect by telemetry to the water supply pump.
		Seepage through walls / base of ponds.	• The pond will be lined with a HDPE liner with a nominal thickness of 1.5 mm. • The pond will be bunded using material excavated during construction

Emission	Sources	Potential pathways	Proposed controls
Sediment laden stormwater	Drainage pond	Overtopping of pond	• Constructed only as a contingency for extreme rainfall events. Sediment laden stormwater is unlikely to be discharged from the project area. The soils of the project area are comprised almost entirely of sand (~97%) and therefore have a high infiltration rate.
Hydrocarbon spills / contaminated stormwater	Storage of hydrocarbons	Direct discharge to land	• Spill kits will be located at designated points throughout the site • Any spills will be controlled, contained and cleaned up in accordance with a Spill Management Procedure • Hydrocarbons and chemicals will be stored within suitably bunded areas
Discharge of sand slurry	Mine feed surface pipeline	Direct discharge to land	• The pipeline is manufactured from polyethylene and has a diameter of 280 mm. The pipeline will transfer approximately 8 m^3 of sand slurry (30% solids) per minute. • The pipeline will be fitted with sensors and an alarm system with automatic shutdown in case of a burst or damaged pipe. • The pipeline is proposed to be housed in a 'V' trench approximately 300 mm deep that will have the capacity to hold a complete rupture of the pipeline
Reject material (slimes) dewatered with flocculant and stockpiled.	Thickener tank with flocculant and stockpile of reject material.	Overland runoff	• Washed silica sand will report to a single thickener tank where non-toxic flocculant is added to separate the clay fraction from the sand, this process will produce a thickener reject (slimes). • Slimes will report to a cyclone stacker which will dewater and stack the material in the stockpile area. • The slimes will then be taken offsite for sale in the local market as soil conditioner. • Small quantities of thickener reject will be produced. This material will be stored in tanks and will be transported offsite.

4.3.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may

be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Table 3: Human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Residential premises (receptor 1)	3.2 km west of the mining operation and processing plant
Residential premises (receptor 4)	3.3 km south-west of the mining operation and processing plant
Environmental receptors	**Distance from prescribed activity**
Threatened ecological community (coastal sands, dominated by *Acacia rostellifera*, *Eucalyptus oraria* and *Eucalyptus obtusiflora*)	4.67 km west of the prescribed premises boundary
Beharra Springs Nature Reserve (Crown Reserve 14736)	5.3 km south-east of the PPB
Beekeepers Nature Reserve (R24496)	7 km west
Yardanogo Nature Reserve (R 36203)	Immediately north of the premises boundary
Environmentally Sensitive Area	Arrowsmith Lake Area - immediately south of the premises boundary
Groundwater	The water table under the project area ranges from 10 – 20 m AHD, or more than 15 m below current ground level. Groundwater salinity within the superficial aquifer is generally fresh at less than 1,000 mg/L Total Dissolved Solids (TDS) about its eastern margin, increasing toward the coast where it becomes saline. Beneath the prescribed premises boundary, the groundwater salinity is approximately 1,000 – 1,700 mg/L TDS.
Surface water - Arrowsmith Lake	2.15 km south of the premises boundary. The Arrowsmith Lake Area was registered as a natural place in the Register of the National Estate in March 1978 under the *Australian Heritage Council Act 2003*.
Threatened fauna / flora	No threatened flora listed under the EPBC Act or BC Act were recorded in the survey areas. Eleven priority flora taxa were recorded within the survey areas, one of which, *Hopkinsia anoectocolea* (Priority 3) was recorded only within the southern alignment of the Access Survey Area. Eight species were recorded only within the Mine Survey Area. Two species, *Banksia elegans* and *Stawellia dimorphantha* were recorded in both the Mine Survey Area and Access Survey Area. One Threatened fauna species (Carnaby's Cockatoo; *Zanda*

	latirostris) has been confirmed in the general area. Carnaby's Cockatoo may forage on proteaceous and myrtaceous vegetation in the project area and roost in large trees near watercourses outside of the prescribed premises boundary. Foraging and roosting by Carnaby's Cockatoos have been confirmed adjacent to the Survey Area and vegetation of the project area has been identified as moderate to high value foraging habitat for this species. Breeding nearby is also a possibility but is unconfirmed. Overall, Carnaby's Cockatoo is likely to be present in the region for much of the year with the Survey Area representing foraging habitat used by non-breeding birds. There is no roosting or breeding habitat in the development envelope and no regular surface (drinking) water.
Aboriginal sites and Heritage places:	
NATGAS 137	3.43 km south-east of the premises boundary
ENEABBA West	7.23 km west of the premises boundary
Arrowsmith River	3.64 km south of the premises boundary
Native title – Yamatji Nation	Within premises boundary

4.4 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 4.3. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 4.3), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

Works approval W6963/2024/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 4 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. Category 5 silica sand processing activities. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 4: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Placement of screening, processing and associated equipment including vehicle movements. Construction of stormwater bunds and drainage and process water ponds.	Dust	Air / windborne pathway causing impacts to health and amenity	Residences 3.2 km south-west of the premises boundary.	*Refer to Section 4.1*	C = Minor L = Rare **Low Risk**	Y	Condition 1 - Design and construction / installation requirements	The Delegated Officer notes that there is about 3 km between the Category 5 activities and nearest sensitive receptor. It is unlikely dust emissions will be of significant environmental risk.
	Hydrocarbon / chemicals	Direct discharges to land causing contamination of soils, vegetation	Groundwater. Soils and vegetation.	Refer to Section 4.1	C = Minor L = Possible **Medium Risk**	Y	**Condition 1** - Design and construction / installation requirements	The applicant states that hydrocarbon and chemicals will be stored in adequately bunded areas, but the Delegated Officer considers that specific conditions, in-line with similar Category 5 approvals are required to protect the identified receptors. Therefore, specific conditions have been added to the works approval, requiring adequate containment as per Australian Standards.
Commissioning								
Commissioning of silica sand processing plan	Dust	Air / windborne pathway causing impacts to health and amenity	Residences 3.2 km south-west of the premises boundary. Arrowsmith River & Lake 2 km south of the premises boundary.	Refer to Section 4.1	C = Minor L = Rare **Low Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 5 - Environmental commissioning requirements Condition 10 - Infrastructure and equipment	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
							requirements during time limited operations	
	Sand slurry discharge from pipeline failure	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Arrowsmith River & Lake 2 km south of the premises boundary.	Refer to Section 4.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 5 - Environmental commissioning requirements Condition 10 - Infrastructure and equipment requirements during time limited operations	The applicant has proposed controls to prevent sand slurry emissions from occurring from pipeline failure. These controls have been included in works approval W6963/2024/1
Operation **(including time-limited-operations operations)**								
Operation of screening plant and mine feed plant	Dust	Air / windborne pathway causing impacts to health and amenity	Residences 3.2 km south-west of the premises boundary. Arrowsmith River & Lake 2 km south of the premises boundary.	Refer to Section 4.1	C = Minor L = Rare **Low Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 10 - Infrastructure and equipment requirements during time limited operations Condition 12 – Compliance reporting (dust controls)	N/A
	Noise	Air / windborne pathway causing impacts to health and amenity	Residences 3.2 km south-west of the premises	Refer to Section 4.1	C = Minor L = Rare **Low Risk**	N/A	N/A	Nearest sensitive human receptor is over 3 km away. The Delegated Officer believes that there is adequate separation distance to mitigate

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
			boundary					noise emissions from the premises.
	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Arrowsmith River & Lake 2 km south of the premises boundary. Native vegetation	Refer to Section 4.1	C = Possible L = Slight **Low Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 10 - Infrastructure and equipment requirements during time limited operations Condition 12 – Compliance reporting (stormwater controls)	The nearest sensitive receptor is Arrowsmith River and Lake, 2 km south of the premises boundary. With the high infiltration rate across the site, the Delegated Officer does not believe there is a pathway to surface water sources. On-site stormwater management has been proposed by the applicant and included as conditions within the works approval.
	Hydrocarbon / chemicals	Direct discharges to land causing contamination of soils, vegetation	Groundwater. Soils and vegetation.	Refer to Section 4.1	C = Minor L = Possible **Medium Risk**	Y	**Condition 1** - Design and construction / installation requirements Condition 12 – Compliance reporting (chemical storage controls)	The applicant states that hydrocarbon and chemicals will be stored in adequately bunded areas, but specific conditions, in-line with similar Category 5 approvals have been added to the works approval, requiring adequate containment as per Australian Standards.
Mine feed plant	Sand slurry discharge from pipeline failure	Overland runoff potentially causing ecosystem disturbance.	Native vegetation Groundwater	Refer to Section 4.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 10 - Infrastructure and equipment requirements during time limited operations	Depth to groundwater is approximately 15 metres below ground level. The sand slurry pipeline is to be fitted with sensors and alarm systems with automatic shutdown. Pipeline will be installed within V-trenches capable to holding spilled material prior to automatic shut-off and the Delegated Officer believe this will be adequate to manage

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								environmental risk.
Thickener tank with flocculant	Reject material (dried slimes) stockpiled on ROM	Overland runoff and leachate potentially causing ecosystem disturbance.	Native vegetation	Refer to Section 4.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 1 - Design and construction / installation requirements Condition 10 - Infrastructure and equipment requirements during time limited operations Condition 12 – Compliance reporting (chemical storage controls)	Reject dried slimes will be stockpiled and removed from the prescribed premises. Proposed dust controls will be employed to manage this potential emission, and conditions have been included in the works approval.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

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5. Consultation

Table 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 10 September 2024, and in the West Australian on 16 September 2024	None received	N/A
Local Government Authority – Shire of Irwin advised of proposal on 20 September 2024	None	N/A
Department of Mines, Petroleum and Energy (DMPE) (formerly the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)) advised of proposal 20 September 2024	DMPE (then DEMIRS) replied on 25 September 2024 stating / advising that DMPE had received a Mining Proposal (MP) from Ventnor Mining Pty Ltd (a wholly owned subsidiary of VRX Silica Ltd) (MP ID 121158) on tenements M 70/1389 and L 70/208. The MP is for the sequential block mining of silica sand, development of a mine feed plant, mobile surface conveyor, pipeline, processing plant, stockpiles, freshwater supply bore, access corridor, laydown, administration, water storage and associated infrastructure including gas fired power station, communications equipment, offices, workshop, and additional laydown areas. A brief review of the MP indicates it is aligned with the information provided in the correspondence from DWER. The proposal is currently under assessment pending final Part IV approval and publication of the Ministerial Statement. The mining proposal was approved 6 August 2025 and Ministerial Statement was signed and published 28 August 2025.	The mining proposal 121158 was approved 6 August 2025 and Ministerial Statement 1252 was signed and published 28 August 2025.
Yamatji Southern Regional Corporation (YSRC) advised of proposal on 20 September 2024	YSRC replied on 3 October 2024. Several concerns were highlighted. Impacts on Local Fauna and Flora YSRC are concerned by the clearing of pristine native vegetation and	Clearing of native vegetation within the prescribed premises has been assessed under Part IV. No clearing was proposed under the Part V works approval application and

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	operational activities at the prescribed premises. Impacts from noise, dust, air emissions, contaminated stormwater, and leaks or spillages of hydrocarbons or chemicals from vehicles pose direct and indirect threats to key local species, such as Carnaby's black cockatoo and Malleefowl, and their habitat.	clearing is not authorised under works approval. Dust, noise, contaminated stormwater, and hydrocarbon leaks or spills were identified as potential emissions or discharges from the proposed Category 5 activities. These potential emissions, along with proposed controls are detailed in Section 4.3.1. The department has added conditions within works approval W6963/2024/1 to manage the risk to the environment.
	<u>Impacts on Water</u> YSRC are concerned by potential impacts to surface waters such as Arrowsmith River and Arrowsmith Lake, as well as the potential contamination of groundwater from hydrocarbon or chemical spills, due to the high infiltration characteristics of the activity area's sandy soils. Key concerns include alteration to surface water regimes within the mining areas, potential contamination from hydrocarbon or chemical spills, sedimentation, as well as impacts where the southern and western options of the project's access and processing development envelope intersect the Arrowsmith River. YSRC are concerned about the potential for harmful substances to enter waterways, impacting both the environment and traditional food sources. YSRC urge the Department to conduct thorough assessments and provide assurances that surface and groundwater will not be compromised by the proposed activities.	Arrowsmith River and Arrowsmith Lake were both identified as sensitive receptors (Table 3 and Table 4), and contaminated stormwater, and hydrocarbon leaks or spills were identified as potential emissions or discharges (Section 4.3.1.) The Delegated Officer believes that controls within the works approval will be adequate to manage risk during the construction and time limited operation phases. The Delegated Officer notes that the Access and Processing Development Envelope is outside of the Category 5 prescribed premises boundary as assessed and approved by DWER.
	<u>Aboriginal Cultural Heritage Concerns</u> The proximity of the proposed activities to nearby Aboriginal heritage sites raise significant cultural concerns. The mining operations pose a direct threat to sacred sites and cultural landscapes, which hold deep spiritual, cultural and historical value. Their degradation would result in a profound loss for community and hinder	The Delegated Officer notes that the nearby site of Aboriginal Cultural significance has been recorded in Table 3. Emissions and discharges have been assessed and controls added to the works approval to protect the closest site (Arrowsmith Lake). The Delegated Officer notes that most sites are between 3.5 and 7 km from the proposed

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	the transmission of traditional knowledge to future generations.
	
	Nearby sites of Aboriginal Cultural significance include (Figure 2):
	
	• Registered Site – Place ID 30068 – Arrowsmith River – Mythological, Water Source, 5 km south of the premises boundary
	
	• Other Heritage Places
	
	  ○ Place ID 5217 – Natgas 137 – Artefact / Scatter, 3.5 km south-east of the premises boundary.
	
	  ○ Place ID 5574 – Cliff Head – Skeletal Material / Burial, 7 km west of the premises boundary.
	
	  ○ Place ID 15297 – Eneabba West – Ceremonial / Fish Trap / Camp / Water Source, 7 km west of the premises boundary.
	
	Additionally, several other heritage places are located within proximity to the Prescribed Premise Boundary (PPB) including Arrowsmith Lake (3 km southwest), noted as common place of mythological and spiritual significance and one of the few permanent water bodies in the wider area, as well as Mungenooka Springs and Arramall Cave (9.5 km and 5 km northwest, respectively).
	
	YSRC is concerned by the assertion, "No heritage sites will be impacted by the Project", written on page 42 of the proponent's Category 5 Works Approval Supporting Document, despite also stating "The development envelopes have not been fully surveyed; some sites may be present." on page 173 their Supplementary Report.
	
	YSRC would request the proponent to consider whether their previous heritage survey efforts are sufficient and would recommend further consultation with YSRC's heritage team.
	
	YSRC note the proponent's commitments to develop an Aboriginal Cultural Heritage Management Plan (ACHMP), and an Indigenous Ranger program (page 174 of the Supplementary Report). However, YSRC have yet to be engaged by the proponent to collaborate on such commitments. Furthermore, YSRC is concerned by the prospect of unavoidable impacts to the Arrowsmith
		Category 5 activity and it is unlikely an emission pathway exists.
		
		All known sites of Aboriginal Cultural significance are noted by the department, and the applicant has responsibilities under the *Aboriginal Heritage Act 1972* as administered by the Department of Planning, Lands, and Heritage to ensure Aboriginal cultural sites are identified and protected.
		
		The department cannot direct stakeholder engagement between the applicant and YSRC but has included YSRC's comments on the works approval application in its entirety and encourages ongoing consultation between the parties.

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	River via a s18 approval and would support the proponent's plan to develop an alternate access route through further consultation with YSRC.	
	<u>Impacts on Yamatji Land Estate</u> The proposed activity may significantly impact future economic development opportunities in the surrounding Yamatji Land Estate (YLE). While the land holds substantial potential for Yamatji social, cultural and/or economic benefit. The adverse effects of noise and dust could deter investment and undermine efforts to promote sustainable development. Furthermore, the visual impacts of increased mining infrastructure, machinery, and altered landscapes pose a threat to the cultural and aesthetic values of Yamatji Land Estate. Preserving the integrity of this land is crucial for the well-being of Yamatji community and future generations, as it is vital for fostering long-term economic growth. The subject land's proximity to Yamatji Land Estate underscores the need for cautious evaluation and ongoing engagement with Yamatji Southern Regional Corporation. Any adverse effects on this estate could undermine its cultural significance, tourism potential, and economic benefits, and the broader implementation of the Yamatji Nation Indigenous Land Use Agreement. It is recommended that VRX Silica and their parent company engage with YSRC to ensure future operations and rehabilitation are undertaken in a culturally sensitive manner. While YSRC recognises the importance of economic development, the corporation remain concerned about the collective impacts of the proposed development on the YLE and surrounding lands. Considering these concerns, YSRC is willing to work collaboratively with DWER and the proponent to address the abovementioned concerns.	Potential emissions and discharges have been assessed, and air or windborne pathways that could cause impacts to health and amenity have been identified (Table 4). Controls that have been deemed appropriate are conditioned within the works approval and the Delegated Officer notes that the applicant is required to report on their compliance to conditions. This includes reporting on any complaints that have been received, including any details that have been taken to investigate and respond to a complaint. The Delegated Officer also encourages any third-party to report any pollution, illegal dumping and other environmental matters to Environment Watch via the DWER website or 1300 784 782.
Yamatji Marlpa Aboriginal Corporation (YMAC) advised of proposal on 20 September 2024	None	N/A

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Applicant was provided with draft documents on 3 January 2025	The applicant responded to the draft instrument on 29 January 2025 Refer to Appendix 1	Refer to Appendix 1

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

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References

1. Environmental Protection Authority (EPA) 2005, *Guidance for the Assessment of Environmental Factors "Separation Distances between Industrial and Sensitive Land Uses" No. 3*, Western Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Joondalup, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Joondalup, Western Australia.
5. Department of Water and Environmental Regulation (DWER) 2021, *Guideline: Dust emissions DRAFT*, Joondalup, Western Australia.
6. HydroConcept Pty Ltd (Hydroconcept) 2019, *Hydrogeological Feasibility Assessment, Arrowsmith Project*. Report prepared for VRX Silica Limited, Not Published. Myaree, Western Australia. 2019.
7. Preston Consulting for VRX Silica 2023, *Arrowsmith North Silica Sand Project Category 5 Works Approval Supporting Document*, East Perth, Western Australia.
8. VRX Silica 2023, *Application form – Works approval for Category 5 Arrowsmith North silica sand mine*, West Perth, Western Australia.

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Appendix 1: Applicant's comments on assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Condition 1, Table 1, Row 1	The works approval application included installation of fine mist water sprays if it is determined that they are required to mitigate the risk of dust generation in addition to covering transfer points. Covering transfer points may be sufficient to mitigate dust risks without the addition of fine mist sprays. The applicant requests that 'if required' is added for alignment with the works approval application and accepted commitments in the decision report.	The Delegated Officer notes that the works approval application and decision report state that fine mist water sprays may be employed at the transfer points if required for further dust management. Requiring the applicant to install fine mist sprays in the works approval was made in error. The Delegated Officer has made the proposed change.
Condition 1, Table 1, Row 2	Suggest removing the word 'type' (conveyor transfer points enclosed type) to remove ambiguity; conveyors are to be enclosed.	The Delegated Officer has made the proposed change.
Condition 1, Table 1, Row 4	Suggest changing the word 'connecting' to 'connected' to ensure clarity.	The Delegated Officer has made the proposed change.
Condition 5, Table 2, Row 4	Suggest that an item number is added to Row 4 to ensure conditions are appropriately referenced throughout the works approval.	The Delegated Officer has made the proposed change.
Condition 5, Table 2, Row 4	Condition related to spills and potentially contaminated rainfall within the hydrocarbon / chemical / flocculant storage areas is ambiguous. Suggested rephrasing to ensure clarity of the intent of the condition.	The proposed wording of the condition, "Contained spills and/or potentially contaminated rainfall should be recovered when needed to ensure optimal availability of bund capacity" is acceptable and the Delegated Officer has made this proposed change.
Condition 9	The applicant requests that time limited operation duration condition include the term "in aggregate" so that if operations are paused during time limited operations phase, the permitted duration is not reduced.	The Delegated Officer does not approve this proposed change. The duration of time limited operation under a works approval are set to between 90 and 180 calendar days to allow for the assessment of the licence application. Commencement and duration of time limited operations is not contingent on ongoing, uninterrupted operation. The department understands that items of infrastructure may be constructed, commissioned and operated in several stages. The completed stages of work

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Condition	Summary of applicant's comment	Department's response
		would enter time limited operations (for no more than 180 days), then transition to operational status, subject to the conditions of a licence. Later stages of works would continue to be constructed, subject to the conditions of the works approval. Following satisfactory completion of the second (or subsequent stages of construction), the applicant may apply to amend the licence to incorporate the second stages of work. The Delegated Officer removed hydrocarbon storage and stormwater management infrastructure as line items under "Environmental commissioning requirements" and "Equipment requirements under time limited operations" to lessen the regulatory burden on the applicant. Reporting for this infrastructure is required when construction is completed but after this it becomes an operational requirement under commissioning and time limited operational stages of the works approval. This allows for the duration and reporting conditions for commissioning and time limited operation to be relevant only to the mine feed plant, processing plant and sand slurry pipeline.
Condition 10, Table 3, Row 4.	Condition related to spills and potentially contaminated rainfall within the hydrocarbon / chemical / flocculant storage areas is ambiguous. Suggested rephrasing to ensure clarity of the intent of the condition.	The proposed wording of the condition, "Contained spills and/or potentially contaminated rainfall should be recovered when needed to ensure optimal availability of bund capacity" is acceptable and the Delegated Officer has made this proposed change.
Figure 3: Proposed layout of Arrowsmith silica sand processing facility	Since submission of the works approval application, the development envelope has been reduced to avoid clusters of significant flora and reduce the extent of clearing. The reduction causes the current Prescribed Premises Boundary (PPB) to lie outside of the development envelope. To ensure consistency with the development envelope and between approvals, VRX requests the PPB be reduced to fit within the development envelope.	The Delegated Officer notes that premises boundary has reduced at the northern part of the project area. There has been no significant change to the prescribed premises boundary to the west, south or east. The assessed sensitive receptors lie to the west, south and east of the project and therefore this proposed change does not impact the assessment of the Category 5 silica sand processing plant. The Delegated Officer has made the proposed change to Figure 3.
Figure 4: Mining layout and proposed sand slurry pipeline	Figure 4 includes proposed sand slurry pipeline, which was requested by the department, and supplied by the applicant.	Figure 4: Mining layout and proposed sand slurry pipeline has been added to the works approval and cross referenced in-text.