



Application for Licence

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

Licence Number	L9342/2022/1
Applicant	Doral Mineral Sands Pty Ltd
ACN	096 342 451
File number	DER2022/000142
Premises	Yalyalup Mineral Sands Mine South of Princefield Road; West of Ludlow-Hithegreen Road; North of Yalyalup road; and East of Wonnerup South Road YALYALUP WA Legal description – Tenement M70/1400 and as described in Schedule 2 of the issued licence.
Date of report	08 March 2023
Decision	Licence granted

**A/MANAGER, INDUSTRY REGULATION
REGULATORY SERVICES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary and overview of premises	1
2.2.1 Overview of operations	1
2.3 Other key approvals	3
2.3.1 Part IV of the EP Act	3
3. Risk assessment	3
3.1 Source-pathways and receptors	3
3.1.1 Emissions and controls	3
3.1.2 Receptors	8
3.2 Risk ratings	11
3.3 Detailed risk assessment for dust emissions during operations	15
3.3.1 Suitability of proposed dust monitoring program	15
3.3.2 Depositional dust	16
3.4 Detailed risk assessment for noise emissions during operations	17
3.4.1 Results of Monitoring during Time Limited Operations	17
3.4.2 Noise Plant Controls	18
3.4.3 Noise Monitoring Conditions	18
3.5 Detailed risk assessment for seepage of process water from drop out dam, process water dam and deposited tailings, leading to mounding of waterlogging and consequent damage to vegetation	18
3.6 Detailed risk assessment for seepage of process water from drop out dam, process water dam and deposited tailings, leading to groundwater contamination	19
3.6.1 Suitability of proposed monitoring of ambient groundwater	19
3.7 Detailed risk assessment for direct discharge adversely impacting the water quality in the Lower Sabina River, and Vasse-Wonnerup wetland system	20
3.7.1 Suitability of proposed monitoring for discharged process water	20
4. Consultation	23
5. Conclusion	23
References	23
Appendix 1: Summary of submission from residential stakeholders	24
Appendix 2: Summary of applicant’s comments on risk assessment and draft conditions	27
Appendix 2: Application validation summary	28
Table 1: Proposed applicant controls	4

Table 2: Sensitive human and environmental receptors and distance from prescribed activity .8
Table 3: Risk assessment of potential emissions and discharges from the premises during operation..... 12
Table 4: Consultation23

Figure 1: Distance to sensitive receptors..... 10

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises. As a result of this assessment, licence L9342/2022/1 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 14 June 2022 the applicant submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act).

The application was for a licence relating mineral sands mining and processing (prescribed premises categories 6 and 8) at the premises. The premises is located approximately 11 km south-east of Busselton.

The premises relates to the assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L9342/2022/1. 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 licence L9342/2022/1.

2.2.1 Overview of operations

The site includes the development of mine pits and associated infrastructure, wet concentration processing plant, solar evaporation ponds, groundwater abstraction and water management infrastructure and process water dam. Approximately 12 million tonnes of ore are proposed to be extracted to produce 410,000 of heavy mineral concentrate (HMC).

The mine is proposed to operate 24 hours a day, 7 days a week, however during evening and nighttime periods (7pm-7am) all mining activities at the pits will cease and only ore processing at the Feed Preparation plant and wet Concentrator plants will remain in operation.

A Works Approval relating to the proposal (W6558/2021/1) was granted by the Department on 7 October 2021. W6559/2021/1 provided approval for construction and time limited operations for the site.

An Environmental Compliance Report was submitted by the applicant on 10 June 2022. The site was generally deemed to be compliant with conditions of W6558/2021/1.

An extension to time limited operations was granted on 8 October 2022, to enable for assessment of the licence application following the negotiation of amenity agreement with two outstanding neighbouring properties. The negotiation of an amenity agreement with 193 (Lot 758) and 115 (Lot 843) Yalyalup Road, Abba River was required to allow the applicant to operate in close proximity to the receptors, with noise and dust compliance issues identified during time limited operations.

Amenity agreements have now been signed between Doral and all nearby residential receptors within 1000 metres of premises boundary.

Mineral sands mining and Feed Preparation plant (oversize removal)

There are two types of ore identified at Yalyalup, for which different mining methods are proposed. In both cases, the first step is stripping and stockpiling of topsoil and (where present) subsoil. Overburden (where present) is then stripped and stockpiled for future use or backfilled into mined voids.

The shallow 1-4m 'windblown ore' reserves will be mined using a front-end loader and fed into the mobile in-pit hopper. The ore will be screened and slurried using a mobile in-pit mining / screening unit and pumped to the trommel at the Feed Preparation plant (Feed Prep) for removal of material greater than 3 mm.

The deeper ore areas will be mined using a traditional excavator and truck combinations (dayshift only) and trucked to a central stockpile at the Feed Prep plant and processed in campaigns as required and during the evening and night periods when mining does not occur.

Mineral Sands Processing - Wet Concentrator Plant (WCP)

From the Feed Prep plant, the ore will be pumped through pipes to the WCP. It is anticipated the WCP will operate at a nominal throughput rate of 400 tonnes per hour (TPH) to produce approximately 410,000 tonnes of HMC over the life of mining the operation. Processing of ore results in three streams of material - HMC, clay fines and sand tails. The three streams are then dealt with as follows:

- HMC are stockpiled on limestone pad(s) and stored on-site until transport to Doral's Picton dry processing plant for further processing;
- Sand tails are hydraulically returned into pit voids (including as co-disposal); and
- Clay fines are directed to the thickening circuit (thickener), where flocculent agglomerates clay fines, producing clay tails. The clay tails are either hydraulically co-disposed with sand tails into pit voids or directed to solar evaporation ponds (SEPs) to allow settlement and drying for future disposal into mine voids.

Available water will be decanted from the SEPs and tails voids and fed back to the process water dam for use as process water.

Dewatering to allow for mining of ore

Pits will be mined on a slight incline from the deepest point and then moving up-gradient. Pit water will accumulate within a sump at the deepest point on the pit floor. Mine pit dewater is pumped from the sump to the process water dam (PWD), via the drop-out dam (DOD) for reuse

Water management

An unlined mine void will become the DOD, which will act as the central water point to receive all runoff from operational areas, tailings return water (from mine voids and solar evaporation ponds) and dewater from the site. It will act as a settling pond to settle out suspended solids from water prior to it entering the adjacent PWD, also a mine void

The PWD supplies all process water for the wet concentrator plant and for dust control. Where the above sources are exhausted, the licence holder anticipates supplementing with bore water from the Yarragadee aquifer (authorized under GWL206605 and GWL202591).

The site water balance indicates that at times during winter, significant rainfall events are likely to fill all water storages (primarily the DOD and PWD) to capacity. When this occurs, the licence holder proposes to discharge off-site to the 'licence discharge point' in the northeast corner of the premises, as shown in Schedule 1, Figure 2 of the licence (L9342/2022/1). The water discharged would be a mixture of mine dewater, tails return and collected rainfall. Discharge volumes will be measured by a V-notch flow metering gauge. Discharged water will move through the on-site drainage network into the Princefield Road drain flowing west into Woddidup Creek/drain, before reaching the Lower Sabina River northwest of the mine.

During extreme rainfall events, excess water may be discharged from intermediate sumps to one of the four “Emergency Discharge Points”, shown in Schedule 1, Figure 2 of the licence (L9342/2022/1). The discharged water will be connected to the existing drain network shown in that Figure. Emergency Discharge points will be enacted by pump as a last resort only, so pump flow data will enable records of discharge volume.

All runoff from upstream will be diverted around mining operations and discharged to a downstream water course. Bunding and drainage have been installed to ensure up-gradient stormwater does not flow into the mining area. A Surface Water Management Plan has been developed for the premises.

2.3 Other key approvals

2.3.1 Part IV of the EP Act

Ministerial Statement 1168 (MS 1168) was issued on 17th May 2021. This included approval for some clearing of native vegetation, and management and outcomes-based conditions for the protection of flora and fauna, including Threatened Ecological Communities. MS 1168 also contains conditions relating to managing the potential for acid sulfate soils, including the requirement to develop an Acid Sulfate Soils Management Plan. Dust and noise are not regulated under MS 1168.

3. 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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 1 below,

Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Operation			
Dust	Mining and earthworks, vehicle movements, lift-off from stockpiles or unsealed areas, processing of ore	Air / windborne pathway	<ul style="list-style-type: none"> • Real time dust monitoring for TSP and PM₁₀ • Minimising disturbed area at any given time • Staff training • Stripping operations to be suspended under particularly high wind conditions, if management controls are inadequate • Use of water carts on high traffic and haulage areas • Spreading stockpiles, noise control bunds and pond embankments with fine clay solution or PVA sealant • Minimising the number and size of stockpiles, by the direct use of overburden as backfill and the direct replacement of topsoil wherever possible; • Encouraging vegetative cover on stockpiles, especially the topsoil stockpiles. Many of these vegetative species generate from stored seed. • Spraying HMC stockpiles at the mine with water if they dry to the extent dust generation occurs. HMC stockpiles generally have a moisture content of between 5-9% • Co-disposal of sand tails and clay tails into pit backfill areas. This homogenous mixing increases the average particle size and reduces the potential for dust generation • No mining or stockpiles within 300m of a residence occupied by a member of the public, without an amenity agreement. • Amenity agreements are also in place with nearby residential receptors
Noise and Vibration		Air / windborne pathway	<ul style="list-style-type: none"> • Use the quietest equipment reasonably available; • Install silencers where practicable to reduce exhaust noise of machines; • Ensure that no overburden fleet or ore fleet operate simultaneously in the same mining block at any one time; • Restrict the operation of machinery, particularly the operation of bulldozers, relative to worst case weather conditions on Sundays and Public holidays to minimise potential noise impacts; • Restrict the operation of ancillary machinery (water cart and grader) to operate during daytime only; • Conduct noise monitoring and calculation of sound power for all machines as they

Emission	Sources	Potential pathways	Proposed controls
			<p>arrive to site for evaluation of suitability with regards to the noise model;</p> <ul style="list-style-type: none"> • Establish preventative maintenance schedules for all vehicles, fixed plant and mobile equipment to maintain performance and therefore low noise emission; • Use broad band reversing (squawkers) as opposed to reversing beepers; • Educate employees and contractors on the importance and requirements for noise management prior to commencing work on the mine, as part of the site induction process; • Monitoring of noise emissions at the boundary and/or at potentially affected residents where available to assist with noise management and neighbour relations; • Amenity agreements confirmed with adjacent landowners; • Maintain ongoing effective dialogue with nearby residents to ensure noise impacts are communicated to Doral to allow for rapid resolution; • Continue to implement an effective public comment and complaint communication system to ensure all concerns are received, recorded and acted upon. • Maintain 6m L-shaped bund and a 6m ore stockpile at the Feed Prep area; • Feed prep floor to remain 2m below the natural ground surface; • Modify the in-pit mining unit / screener including the change from diesel powered to electric plus a silencer on the exhaust outlet; • Silence the pit generator; • Insulate or partly enclose the apron feeder, scalping and double-deck screens; • Locate the concentrator and Feed Prep plant as far as reasonably possible to any of the most affected residences; • Install noise insulating drapes as a minimum at the ground level of the concentrator; • Undertake noise monitoring and reporting of results in accordance with the <i>Environmental Protection (Noise) Regulations 1997</i> to ensure noise emissions are below the assigned levels; • Install a noise monitoring location with real-time data transmission at the furthest extent of operations, closest to noise sensitive receptors. • Reduced dozer activity before 9am on weekends, or with northerly winds; • Limited truck movements on Sunday; • Sound suppression matting over scalping screen; • Single loader operational at night-time; • In hopper vibrators now manual use and only operate at 2 minutes at a time. • Amenity agreements are also in place with some neighbours.

Emission	Sources	Potential pathways	Proposed controls
Potentially contaminated surface water runoff	Incident rainfall on disturbed areas	Direct runoff	<ul style="list-style-type: none"> Process water dam (PWD) specifications ensures water capacity is maintained at 80% capacity to allow capture of stormwater during rainfall events. Diversion of clean water around the mine disturbance areas. Return diverted flows to the original catchment downstream of infrastructure. All stormwater from contaminated areas directed to the drop out dam to settle out particulates and for use in the process. Discharged only after high rainfall (addressed below under 'process water'). Dewatering effluent monitored for water quality parameters (within PWD) and may be treated to maintain acceptable pH. Discharge water will be monitored for chemical quality parameters. Implementation of Ground Water Licensing Operation Strategy (Attachment 8C). Implementation of Surface Water Management Plan
Ore or tailings	Spill from pipeline during transport	Direct discharge	<ul style="list-style-type: none"> Daily visual inspections Pumps and pipelines controlled by CITECT systems management and fitted with alarms and trend analysis Pipelines located in bunded corridors Pipelines within mining area
Sand and clay tailings; and tails water	Direct discharge to mine voids	Seepage to groundwater	<ul style="list-style-type: none"> Acid sulfate soil management plan (prepared and approved in accordance with Ministerial Statement 1168) Tailings water will be recovered from low points in the mine voids and returned to the drop out dam for reuse. Hydrocarbon Management Procedure to minimise the risk of hydrocarbon contamination in the process water.
	Seepage or overtopping of solar evaporation ponds (SEPs)	Seepage to groundwater, or overtopping to surface water	<ul style="list-style-type: none"> SEPs construct as per Geotechnical Design Report (provided), and in accordance with Tailings Storage Facilities in Western Australia – code of practice (DMP, 2013) Maintain minimum 500mm freeboard. Groundwater monitoring in accordance with the Groundwater operating strategy (GWOS) associated with the licence to take water under the <i>Rights in Water and Irrigation Act 1914</i>.
Process water	Seepage or overtopping of process water dam (PWD) or drop-out dam (DOD)	Seepage to groundwater or direct discharge from overtopping	<ul style="list-style-type: none"> PWD and DOD constructed in mine voids Designed to withstand 1:100yr 72hr rainfall event. Maintain 500mm freeboard. Daily visual inspection. Groundwater and process water quality monitored in accordance with the GWOS Discharge water quality will be monitored, and volume calculated

L9342/2022/1

Emission	Sources	Potential pathways	Proposed controls
	Discharge off site following high rainfall (mixed process water/tails return/stormwater)	Direct discharge (via Licence or Emergency discharge points) to roadside drain on Princefield drain prior to flowing into Lower Sabina River.	Volume of maximum modelled discharge, represents ~1.44% increase to annual flows of Lower Sabina River.
Acid or metalliferous discharge	Resulting from the oxidation of Potentially acid sulfate soils (PASS) due to excavation and dewatering	Run off to surface water or seepage to groundwater	Implement the ASS Management Plan required by Ministerial Statement 1168 Condition 9.
Light emissions	Safety and operational lighting	Direct emissions	<ul style="list-style-type: none"> • Light associated with night-time mobile plant activities will occur below ground level, where a front-end loader will deliver ore to the in-pit hopper. • Light towers used to ensure safe night operation for fixed plant will be aligned to minimise impacts of neighbours, public and forested areas. • Controls detailed in Australian Standard AS 428-1997 Control of Obtrusive Effects of outdoor lighting will be utilised to reduce potential effects from artificial lighting • Lyle Road light concern rectified by providing neighbour with seedlings to create visual barrier • Ludlow Hithergreen Rd rectified by turning unnecessary lights off on workshop at night and lowering light angles • Yalyalup Rd rectified by lowering light towers in pit at night and turning off loader flashing light as the loader is the only operational machine at night so the light is not required for safety purposes.

3.1.2 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 2 and Figure 1 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 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
<p>Residential receptors</p> <p>Note 1: The houses immediately to the north and the northeast of the premises will be tenanted only by employees or contractors of the applicant, and so are excluded as receptors for this assessment.</p> <p>Note 2: The closest receptors are along Yalyalup Road, to the south of the Premises. It is expected that some of these will be purchased by Doral and used to accommodate employees and contractors. In that event they will cease to be receptors.</p> <p>Note 3: Amenity agreements signed by all residential receptors within 1 km of site boundary.</p>	<p>Many residential receptors identified within buffer of 1km from site. Receptors shown in Figure 1 below.</p>
Environmental receptors	Distance from prescribed activity
<p>Underlying groundwater</p>	<p>Busselton-Capel groundwater area (general description- not site specific):</p> <p>The Superficial Aquifer forms an unconfined aquifer beneath the Swan coastal plain, with a thin saturated thickness of < 5 m. The Superficial formation collectively includes the Tamala Limestone, Bassendean Sand, Guildford formation and Yoganup formation.</p> <p>Monitoring in 2020 indicated that depth to groundwater on site is approximately 0-4.7 metres below ground level.</p>
<p>Threatened and/or priority fauna</p> <ul style="list-style-type: none"> Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) <i>Isoodor fusciventer</i> (Quenda) 	<p>Within premises boundary – Protected under Part IV of EP Act (MS 1168).</p>
<p>Threatened and/or priority flora</p> <ul style="list-style-type: none"> <i>Calothamnus quadrifidus</i> subsp. <i>teretifolius</i> 	<p>Various. From within the premises to within 600m of the boundary. Protected under Part IV of EP Act (MS 1168).</p>

<ul style="list-style-type: none"> • Chamelaucium sp. S coastal plain (R.D.Royce 4872) • Hakea oldfieldii • Banksia nivea subsp. uliginosa • Verticordia plumosa var. vassensis <p>Banksia squarrosa subsp. argillacea</p>	
Aboriginal and other heritage sites	Within premises - Section 18 consent has been provided under the <i>Aboriginal Heritage Act</i> .
Lower Sabina River	1km to the west of premises, and downstream.
Abba River	Approximately 750m from premises boundary
Vasse-Wonnerup Ramsar wetland	4.6km northwest, downstream of premises boundary

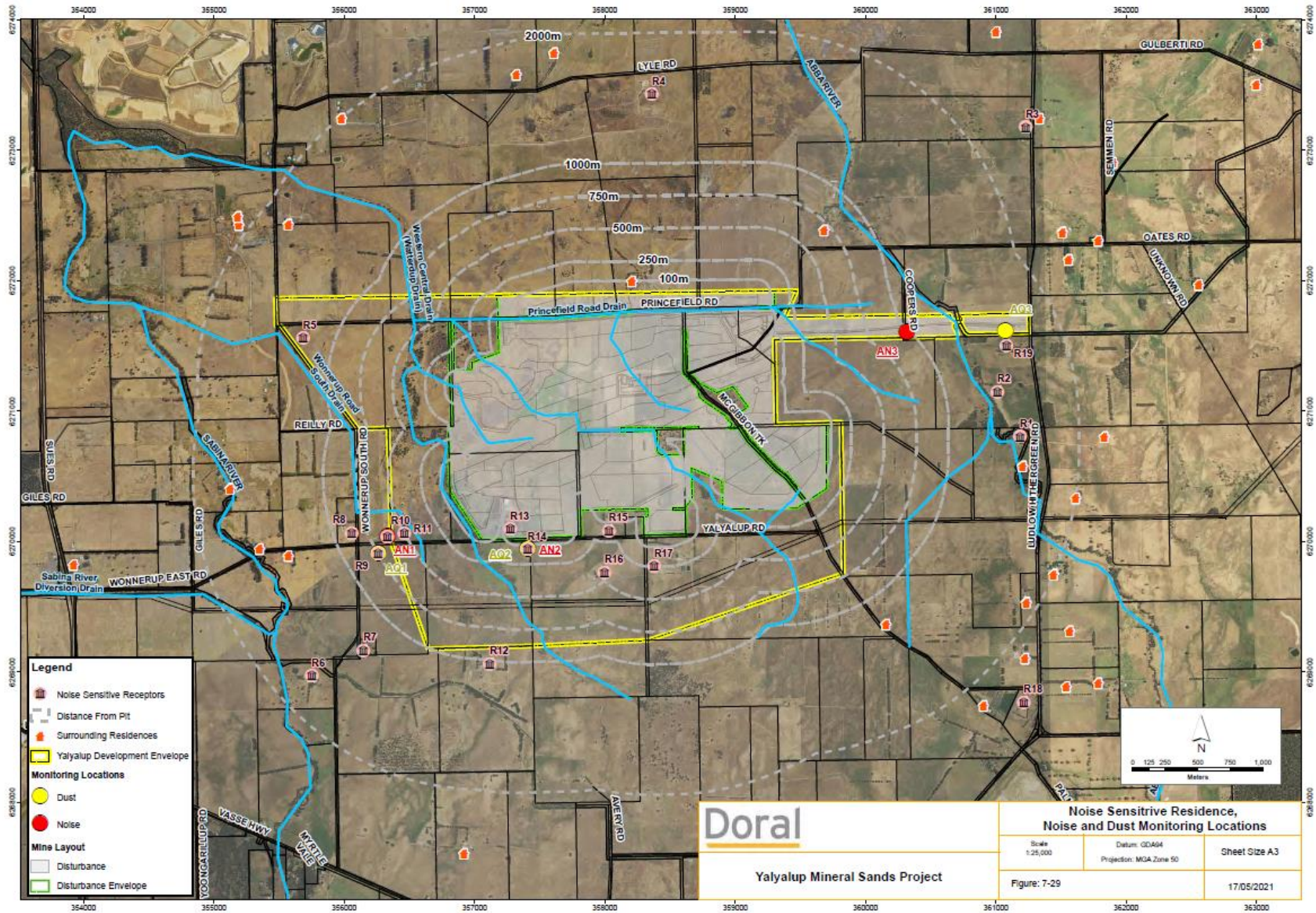


Figure 1: Distance to sensitive receptors

L9342/2022/1

IR-T13 Decision report template (short) v3.0 (May 2021)

3.2 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 3.1. 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 3.1), 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 licence 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 3.

Licence L9342 that accompanies this decision report authorises emissions associated with the operation of the premises i.e., Category 8 (Mineral sands mining or processing) and Category 6 (Mine Dewatering).

The conditions in the issued licence, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3: Risk assessment of potential emissions and discharges from the premises during operation

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
Operation								
Shallow ore: mining of ore with front end loader and in-pit screening of ore	Dust	Air/windborne pathway causing impacts to health and amenity	Residences	Refer to section 3.1	C = Minor L = Unlikely Medium Risk	Y	Condition 11 – meteorological monitoring Condition 12- ambient dust monitoring Condition 24- dust management controls conditioned	Please refer to section 3.3 for detailed risk assessment
Deep ore: mining with excavator and trucking of ore to feed prep plant Vehicle movements	Noise	Air/windborne pathway causing impacts to health and amenity	Residences	Refer to section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 11 – meteorological monitoring Condition 13 – ambient noise monitoring Condition 23 – noise management controls.	Please refer to section 3.4 for detailed risk assessment
Processing of ore Lift-off from stockpiles or unsealed areas	Potentially contaminate surface water runoff	Incident rainfall on disturbed areas, causing ecosystem damage to waterways after discharge	Waterways	Refer to section 3.1	C = Minor L = Rare Low Risk	Y	N/A	N/A

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
Transport of slurried ore to the feed prep plant via pipeline; transport between the plants and transport of tailings from the concentrator to disposal points	Rupture of pipeline causing slurry or process water discharge to land	Direct discharge leading to smothering of vegetation and/or soil and groundwater contamination	Soil, groundwater.	Refer to section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 1 – Tailings and return water pipelines operation	N/A
Deposition of process water into the drop out dam and process water dam, and tailings to mine voids	Seepage of process water	Seepage to groundwater leading to mounding or waterlogging	Remnant native and planted vegetation	Refer to section 3.1	C = Minor L = Rare Low Risk	Y	N/A	Please refer to section 3.5 for detailed risk assessment
		Seepage to groundwater leading to contamination	Local groundwater – high quality		C = Minor L = Possible Medium Risk	Y	Condition 1 – requirements for operation of solar evaporation ponds Condition 19 & 20 – ambient groundwater monitoring	Please refer to section 3.5 & 3.6 for detailed risk assessment Water is sourced from local runoff and the underlying superficial and Yarragadee aquifers. Flocculent added in concentrator poses no significant environmental risk (MSDS provided). Greatest risk is associated with acidification of groundwater and consequently process water, but this risk is regulated under Ministerial Statement 1168.
		Seepage to groundwater leading to mounding			C = Moderate L = Unlikely Medium Risk	Y	Condition 1 – requirements for operation of solar evaporation ponds	
Deposition of clay tailings to solar evaporation pond (SEP)	Seepage of process water	Seepage to groundwater leading to contamination	Local groundwater – high quality		C = Moderate L = Unlikely Medium Risk	Y	Condition 19 & 20 – ambient groundwater monitoring	
		Seepage to groundwater leading to mounding	Lower Sabina River and its tributaries, ultimately		C = Slight L = Possible Low Risk		Condition 1 – requirements for operation of solar evaporation ponds	Please refer to section 3.5 for detailed risk assessment Seepage from SEPs will be less than mine voids as they

L9342/2022/1

Risk Event					Risk rating C = consequence L = likelihood	Applicant controls sufficient?	Conditions of licence	Justification for additional regulatory controls
Source/Activities	Potential emissions	Potential pathways and impact	Receptors	Applicant controls				
			reporting to the Vasse-Wonnerup wetland system				Condition 19 & 20 – ambient groundwater monitoring	are constructed and compacted facilities. They are also located at least 200m from premises boundary, so off-site impacts are very unlikely.
Dewatering	Disposal of excess mine process water to drains leading to the Lower Sabina River (licence discharge point and emergency discharge points)	Changes to stream flow rates in waterways	Lower Sabina River and its tributaries, ultimately reporting to Vasse-Wonnerup wetland system	Refer to section 3.1	C = Slight L = Possible Low Risk	Y	Condition 9 – measuring rate of discharge off site	Please refer to section 3.7 for detailed risk assessment Monitoring of the PWD under the Groundwater Operating Strategy will allow proactive management to ensure discharge meets licence limits
		Reduction in water quality in waterways			C = Moderate L = Possible Medium Risk	N	Condition 9 – monitoring of discharge off site Condition 17- ambient surface water quality monitoring <u>Condition 3 – off site discharge chemistry limits set in accordance with Works Approval limits</u>	
Night-time operations – Lighting towers and headlights	Light Emissions	Amenity	Residences	Refer to section 3.1	C = Minor L = Possible Medium Risk	Y	Condition 1 – requirements for operation of lights	N/A

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.

3.3 Detailed risk assessment for dust emissions during operations

There is potential for generation of dust from mineral sands mining, screening and associated earthworks, as well as from exposed cleared areas. Dust impacts to vegetation are likely to be minimal given the short-term nature of mineral sands operations and the relatively high local rainfall. Amenity and health impacts to residential receptors may occur as there are a significant number of rural residences within 1km of the Premises (see Figure 1).

During the construction phase of the project, dust was identified by respondents as an issue at site. It is unclear if the comments also apply to time limited operations. A further respondent identified that at the time of consultation for this licence (spring 2022), they had not had adequate time to understand the impact of operations during the summer period.

Amenity agreements have now been signed between Doral and all nearby residential receptors within 1000 metres of premises boundary. There is a possibility that low-level impacts to amenity at some time during operation of the project may occur, however the Delegated Officer considers the applicant's dust controls and the amenity agreements adequately manage this risk.

Health impacts from dust emissions however may still occur due to the close proximity of human receptors, however taking into account the applicant's controls summarised in Table 1, the Delegated Officer considers that public health criteria are likely to be met, therefore the consequence of this risk event is 'Minor' with the likelihood being 'unlikely'. This results in a risk rating of Medium.

The applicant's key dust management commitments have been conditioned in the licence (condition 23), along with dust monitoring for human health and nuisance will be required (condition 12).

3.3.1 Suitability of proposed dust monitoring program

The applicant proposes a dust monitoring program for PM₁₀ (particulate matter 10 micrometres or less in diameter) and Total Suspended Particulates (TSP) for the period 1 October – 31 May each year as shown in Figure 3. The monitoring site locations are shown in Schedule 1, Figure 1 of L9342/2022/1.

Table 3.1 Monitoring of ambient air quality					
Monitoring point reference	Parameter	Units	Frequency	Sampling duration	Method
AQ1-AQ3	TSP	ug/m3	3 days per Month ^{1,2}	Continuous logging with 15 minute averages	None Specified
AQ1-AQ3	PM10	ug/m3	3 days per Month ^{1,2}	Continuous logging with 15 minute averages	None Specified

Note 1. During the period 1 October and ending 31 May the following year
 2. During period outside of 3d/mth monitoring to continue at location closest to mining activities

Figure 3: Applicant's proposed dust monitoring program

The timeframe of October to May is considered suitable for this area, as wet winter conditions make dust impacts outside of these months unlikely.

Technical advice from DWERs Air Quality Services branch obtained during assessment of the Works Approval is that dust monitoring should be considered in two parts. Receptor monitoring aims to quantify dust received by (and therefore the likely level of impact to) receptors. Receptor monitoring should be continuous when in close proximity to residences and use standard

methods to allow valid comparison with applicable standards. Boundary monitoring may use non-standard methods, and can be non-continuous to allow flexibility to investigate areas where impacts are most likely. It was advised that even if boundary and receptor monitoring are spatially very close together, the separate functions should be considered separately

For receptor monitoring, PM₁₀ is suitable as an indicator of human health impact. The Delegated Officer considers that given the very close proximity of receptors to premises to the south, near continuous monitoring is required at AQ2. Snapshot monitoring of 3 days per month is acceptable at this stage for AQ1 and AQ3 to give an indication of impacts to receptors to the west and east. It is noted that dust impacts from the haul road are outside the scope of this licence, but still need to be considered by the applicant.

The Delegated Officer considers that in the case of a dust complaint from a nearby resident, additional monitoring may be required. Note 5 in condition 12, Table 7 of the licence provides for this. This applies at existing monitoring points outside their usual period of monitoring, or to the north of the premises. The Delegated Officer notes that southerly winds are common at the premises in summer, but that the nearest residence to the north that is occupied by parties other than an employee or contractor of the applicant, is approximately 1.5km away. Therefore, no regular monitoring is required at this stage.

Wind speed and direction monitoring is also required to assess the likely cause of dust emissions, which enables efficient management decisions to reduce dust.

3.3.2 Depositional dust

During construction and time limited operations dust was identified as a potential emission of concern with several nearby residential properties. Dust issues were considered to include health impacts, and amenity impacts.

Dust deposition monitoring was considered to be the appropriate metric to investigate the potential for amenity issues related to dust generation. Condition 17 of W6558/2021/1 required the applicant to undertake Dust Deposition sampling continuously over a 30-day period each month. In the absence of background data, a target in the works approval for time limited operations, a target of 4g/m² /month was used.

The sampling program was implemented by the applicant but proved problematic for several reasons. The mine is surrounded by active farmland with farm machinery preparing paddocks for cropping and regularly moving cattle through the summer months. The applicant considered that the monitoring required by the department was not practical, with the 30-day monitoring period identifying organic matter in filters not related to mine site. With the duration of monitoring period, it was not possible for the applicant to determine source of dust. For these reasons, the applicant has requested that this condition is removed from the licence.

The department has considered the request in the context of:

- Ongoing requirement for Total Suspended Particle monitoring (TSP), which is the informant to allow Doral to implement management actions for any internal limits they may have for amenity (TSP) impacts.
- The ongoing requirement for PM₁₀ monitoring, which is the appropriate parameter for assessment of health impacts; and
- Amenity agreements with all residential receptors within 1000 metres of the premises.

In consideration of the above, the department has agreed to the request to remove dust deposition monitoring. Instead, the department has conditioned ongoing monitoring for TSP and PM₁₀.

3.4 Detailed risk assessment for noise emissions during operations

Noise is considered by the department to be a key emission, with potential for impact to nearby residents' amenity. Amenity agreements have now been signed between Doral and all nearby residential receptors within 1000 metres of premises boundary.

An Environmental Noise Impact Assessment (ENIA) was provided to accompany the Works Approval application (Acoustic Engineering Solutions, 2021). The ENIA results indicate that the assigned noise levels in the Environmental Protection (Noise) Regulations 1997 (Noise Regulations) were likely to be met for all modelled mining and weather condition scenarios for night-time operations (no active mining) and day-time operations Monday-Saturday. However, given that the assigned noise levels for Sundays and public holidays are lower than weekdays and active mining is proposed, the modelling predicted that exceedances could occur at a number of neighbouring residences during certain operation scenarios and weather conditions.

3.4.1 Results of Monitoring during Time Limited Operations

Monitoring was required under works approval W6558/2021/1 during time limited operations in accordance with **Figure 4**.

MONITORING POINT REFERENCE	PARAMETER	SOUND MEASURING EQUIPMENT	UNITS	SAMPLING DURATION	FREQUENCY
AN1-AN3	L _{A5} 90,30min	Non-directional system	dB	Continuous ¹ logging with 30 minute averages	3 days per Month ^{2,3}
	L _{A5} 10,30min				
	L _{Aeq} (20Hz-500Hz),30min				

Figure 4: Noise Monitoring Schedule

During time limited operations, noise complaints were made by nearby residential receptors. As a result of these complaints, the applicant was required to investigate compliance of site during these periods with the Environmental Protection (Noise) Regulations 1997 (Regulations).

A Noise Assessment Report (NAR) was prepared on 25 October 2022 on behalf of the applicant by Acoustic Engineering Solutions (Acoustic engineering Solutions, 2022). The NAR demonstrated that noise exceedance ranges from 0.7dB to 16dB with an average of 5.8 dB. 56% of the half hour periods observed a range of no exceedance to 7.5dB. The application of +5dB for tonality increases incidents of non-compliance in cases where compliance would have otherwise been achieved.

Results of monitoring during time limited operations indicated that it was difficult for Doral to comply with noise regulations at Lot 758 and 843 Yalyalup Road. During time limited operations, amenity agreements relating to noise, and other site emissions were signed by the occupants of these locations.

During the course of assessment of this licence, an amenity agreement tied to the purchase of the property was negotiated by Doral. DWER have taken this amenity agreement into consideration in preparing this licence and have also conditioned plant controls and ongoing monitoring requirements in the licence.

The Delegated Officer considers that consequence of this risk event is 'Moderate' with the likelihood being 'unlikely' as there are amenity agreement in place plus additional noise

management controls and monitoring will be conditioned on the licence (see 3.4.2 and 3.4.3) This results in a risk rating of Medium.

3.4.2 Noise Plant Controls

To minimise the noise emissions and/or achieve compliance with Regulations DWER has conditioned additional applicant proposed controls which were proposed during time limited operations including:

- Installing sound suppression mufflers on Loaders and Dozers.
- Re-orientated the in-pit hopper for loading.
- Rubber lining chutes.
- Modify mining activities on weekends.
- In-Pit Hopper preferentially scheduled for weekends when ore stockpiles are sufficient.

3.4.3 Noise Monitoring Conditions

The applicant has proposed ongoing noise monitoring and the department has included this requirement as condition 13 of the L9342/2022/1.

Parameter	Monitoring location	Unit	Frequency	Averaging period
L _{AS} 90, 30min	AN1, AN2, AN3 - as shown in Schedule 1	dB	3 days per month ^{2,3}	Continuous ¹ logging with 30-minute averages
L _{AS} 10, 30min				
L _{Aeq} (20Hz-500Hz), 30min				

Note 1: Availability ≥90% of the measurement intervals on a monthly basis.

Note 2: During period outside of 3d/month continuous monitoring to continue at monitoring point where mining activities most closely approach residential receptors.

Note 3: Continuous monitoring is required to commence within 7 days, if requested by the CEO in response to a noise complaint from a member of the public. To continue until issue is resolved and approval given by the CEO.

3.5 Detailed risk assessment for seepage of process water from drop out dam, process water dam and deposited tailings, leading to mounding of waterlogging and consequent damage to vegetation

Sand and clay/silt tailings from the concentrator will be co-disposed into unlined mine voids. Tailings water will be recovered from low points in the mine voids and returned to the drop out dam for reuse. There will however be some evaporation and some downward seepage of tailings water. The drop out dam and process water dam are also unlined mine voids.

The process water is of generally good initial quality, sourced from local runoff and the underlying superficial (from passive dewatering) and Yarragadee aquifers. The underlying sands are expected to be free draining, although the Guilford formation forms a local aquiclude a few meters below the surface. There is therefore some risk of a locally raised water table leading to increased waterlogging.

Deposition in each area will be localised and short term, and so it is expected that any mounding will be as well. It is therefore unlikely that there will be any significant effects to remnant vegetation due to groundwater mounding leading to waterlogging, and any effects to adjacent pasture will be minimal and short term. The greater risk (outside the scope of this assessment) is that decreased water levels due to dewatering drawdown could impact on groundwater dependent ecosystems. Ministerial statement 1168 provides conditions regulating this. Although acting at different times, deposition of tailings acts to counteract the previous effect of

dewatering drawdown.

The Delegated Officer considers that in Rare circumstances seepage from tailings may lead to groundwater mounding that significantly impacts vegetation. If this were to occur, it is anticipated that impacts would be Minor. Groundwater mounding from tailings water seepage is therefore determined to be a Low risk. No regulatory controls are therefore required.

3.6 Detailed risk assessment for seepage of process water from drop out dam, process water dam and deposited tailings, leading to groundwater contamination

Process water is sourced from rainfall runoff within the operational area, the underlying superficial aquifer (through dewatering) and Yarragadee aquifer (from production bores). The superficial aquifer ranges from fresh (<500mg/L TDS) to brackish (up to 3,000mg/L TDS).

Process water is also recycled through the tails reclaim systems. Recycling may increase salinity but is otherwise not expected to significantly alter the chemistry. The only chemicals added in mineral processing are a flocculent used in the concentrator, and lime used in treating acid sulphate soils in accordance with the the Acid Sulphate Soils Management Plan. A material safety data sheet has been provided for the flocculent, and the Delegated Officer is satisfied that it poses no significant environmental risk. Elevated particulates may be present, though this is minimised through the use of a drop out dam. There is a risk of contamination from spills of hydrocarbons such as fuel or oil from mobile plant or from workshops. Doral has a Hydrocarbon Management Procedure in place which the Delegated Officer considers appropriate to minimise the risk of hydrocarbon contamination in the process water.

An additional risk is acidification or metalliferous components released from acid sulfate soils due to dewatering. The risk of acidification of groundwater is satisfactorily regulated under Part IV of the EP Act. Ministerial Statement 1168 requires the development of an Acid Sulfate Soils Management Plan (ASSMP), which has been reviewed by the department including technical input from the Contaminates Sites Branch. Monitoring of groundwater and dewater is included in this plan.

The management of acid sulfate soils and groundwater will therefore not be considered in this assessment under Part V of the EPA Act. Monitoring conditions and limits will however be required to verify that the chemistry of the process water discharged in tailings does not pose an unacceptable risk to groundwater, and subsequent uses such as direct access by groundwater dependent ecosystems or stock water.

The Delegated Officer considers it Possible that discharge of process water in tailings could result in low level off-site impacts on a local scale, and mid-level on site impacts, resulting in a consequence rating of Moderate. Discharge of process water deposition in tailings is therefore a medium risk.

3.6.1 Suitability of proposed monitoring of ambient groundwater

The applicant proposes to monitor a network of existing groundwater bores for standing water level and water quality. An additional suite of bores is proposed to be monitored for standing water level only. The locations of these bores are shown in the Groundwater Operating Strategy. The Delegated Officer notes that although the full suite is useful for monitoring groundwater drawdown, that is outside the scope of this assessment.

The bores proposed to be monitored for groundwater chemistry will give sufficient groundwater data on standing water level to regulate the risks of groundwater contamination and mounding due to tailings deposition. Hence only monitoring of these bores will be conditioned Within the licence

Monthly monitoring of standing water level and a basic suite of parameters is proposed for all bores, which is appropriate. A more extensive suite including metals and radioactive isotopes

is proposed on a six-monthly basis, at selected monitoring bores. These monitoring bores were selected for proximity to the water dams, which is appropriate as these receive process water on a longer-term basis than individual mine voids.

The dams have been moved slightly north since the selection of these bores, but the Delegated Officer expects that they will provide adequate data to identify any concerning trends. While a frequency of six monthly is appropriate, the Delegated Officer considers that total metals rather than dissolved metals is required.

3.7 Detailed risk assessment for direct discharge adversely impacting the water quality in the Lower Sabina River, and Vasse-Wonnerup wetland system

The site water balance indicates that at times during winter, significant rainfall events are likely to fill all water storages (primarily the DOD and PWD) to capacity. When this occurs, the applicant proposes to discharge off-site to the 'licence discharge point' in the northeast corner or the premises, as shown in Schedule 1, Figure 1 of L9342/2022/1. The water discharged would be a mixture of mine dewater, tails return and collected rainfall. Discharge volumes will be measured by a V-notch flow metering gauge. Discharged water will move through the on-site drainage network into the Princefield Road drain flowing west into Woddidup Creek/drain, before reaching the Lower Sabina River northwest of the mine.

During extreme rainfall events, excess water may be discharged from intermediate sumps to one of the "Emergency Discharge Points", shown in Schedule 1, Figure 2 of L9342/2022/1. The discharged water will be connected to the existing drain network shown in that Figure. Emergency Discharge points will be enacted by pump as a last resort only, so pump flow data will enable records of discharge volume

The discharge of surplus process water has the potential to adversely affect water quality in the Lower Sabina River, and subsequently the Vasse-Wonnerup wetland system.

It is noted though that discharge will only be after significant rains, predominantly during winter. It is therefore likely to contain a high proportion of rainwater and minimal Yarragadee water which is only used where other sources are inadequate.

Discharge point monitoring conditions and limits, and upstream/downstream ambient monitoring will be required to verify that the chemistry of the surplus process water discharged does not pose an unacceptable risk, or significant changes to water chemistry.

The Delegated Officer considers it possible that discharge of process water could result in minor level off-site impacts on a local scale, and slight impacts on wider scale, resulting in a consequence rating of Moderate. Discharge of process water is therefore a medium risk.

3.7.1 Suitability of proposed monitoring for discharged process water

Discharge point

In their Groundwater Operating Strategy, the applicant proposes spot sampling as follows:

- field monitoring from each discharge point for pH, Electrical conductivity (EC), total titratable acidity (TTA) and total suspended solids (TSS); on the first day of discharge then 3 times per week; and
- Laboratory testing at each discharge point on the first day of discharge then monthly during discharge. Proposed analysis suit is pH, EC, TSS, TDS, total acidity, total alkalinity, sodium, chloride, sulphate, iron (dissolved), manganese (dissolved) and aluminium (dissolved). If dissolved Al > 1 mg/L then additional analyses are proposed for Zn, Cr, Cu, Mg, Ni, Cd, Se, As, Pb and Hg.

The proposed frequencies are considered suitable. Depending on results in the first 12 months

of operation, consideration could be given to reducing the field sampling to weekly. The Delegated Officer considers that total alkalinity and total dissolved solids should be added to the field monitoring suit.

If total acidity exceeds total alkalinity, weekly laboratory analysis for total metals will also be required. The Delegated Officer considers that while dissolved metals analysis is useful in providing a picture of the water chemistry, a standard total metals suite for discharge to the environment is most appropriate in this context.

Total recoverable hydrocarbons will be added to the laboratory suite, to validate the effectiveness of hydrocarbon management practices.

Discharge limits are set for consistency with similar existing operations.

Ambient surface water

The applicant has been undertaking surface water monitoring at surface water monitoring points denoted YALSW01 to YALSW15. These are shown in Figure 5. This suite of data is valuable for ongoing management of surface water throughout the operation. For the purposes of this licence, the Delegated Officer considers that the critical points for monitoring environmental impact are upstream of the licence discharge point and mining/tails deposition areas, and downstream of these. YALSW03 and YALSW05 are suitable upstream point, with YALSW15 providing upstream background water quality. YALSW11, YALSW12 and YALSW13 are suitable downstream monitoring points. Parameters and limits will be set for consistency with similar operations with similar receptors.

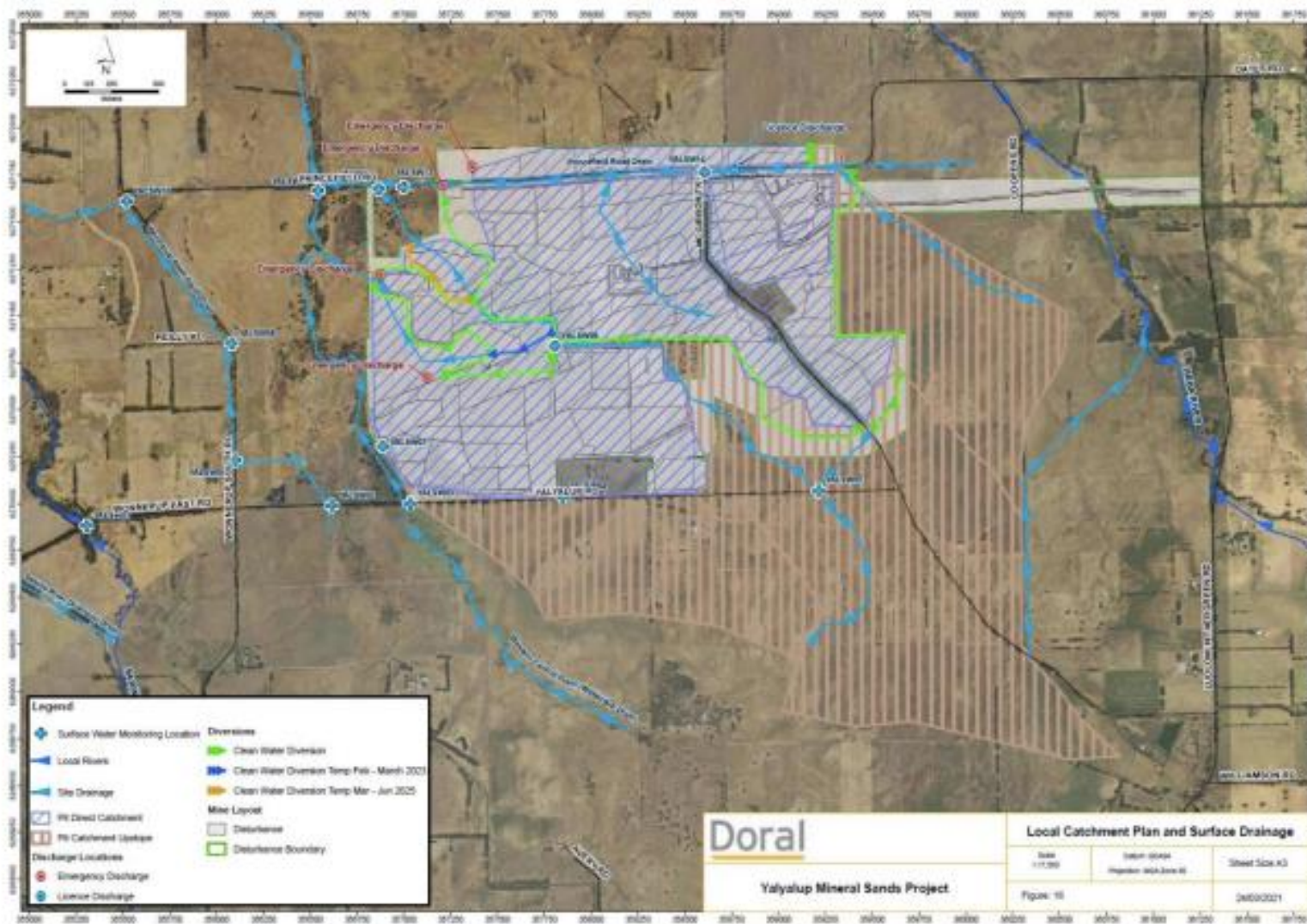


Figure 5: Local surface water flow and existing surface water monitoring points

L9342/2022/1

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Issue	Comments	Department response
Application advertised on the department's website on 9 August 2022.	None received	N/A
Local Government Authority advised of proposal on 9 August 2022.	The City of Busselton did not respond.	NA
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal on 18 August 2022	Comments received on 13 February 2023. The proposed activities at Yalyalup do not trigger the requirement for a Radiation Management Plan to be approved. A radiation plan has been approved for the Picton processing site.	N/A
Residential Stakeholders advised of proposal on 9 August 2022	Comments summarised in Appendix 1.	Comments summarised in Appendix 1.
Applicant was provided with draft documents on 3/3/2023	Comments received on 7/3/2023. Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

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

References

1. Acoustic Engineering Solutions, 2021, *Environmental Noise Impact Assessment*
2. Acoustic Engineering Solutions, 2022, *Noise Assessment Report*
3. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.

Appendix 1: Summary of submission from residential stakeholders

Submission	Category	Summary of Comment	Department's response
Nearby residential stakeholder	Dewatering	Concern that long-term groundwater extraction will drop water table, impacting existing access to springwater for cattle, as well as vegetation on nearby properties and surrounds.	<p>The stakeholder concerns are outside of the scope of this licence assessment as impacts from groundwater extraction are not regulated under Part V of the EP Act.</p> <p>Similar concerns have been raised during the Environmental Protection Authority's assessment of the project under Part IV of the EP Act. Groundwater modelling and consultation was a requirement of the part IV EPA assessment.</p> <p>During this assessment, the EPA note that there is a potential significant residual impact associated with western ringtail possum habitat as a result of groundwater drawdown. Based on modelling of indirect impact of groundwater drawdown, 1.81 ha of potential western ringtail possum habitat might be impacted by the proposal. The EPA notes that because the western ringtail possum was found in low numbers, a contingency offset would be appropriate.</p>
Nearby residential stakeholder	Discharge	<p>Discharge of water from the project may contain sand tailings, clay fines, overburden and NORM tailings. The surrounding environment is sensitive, with Sabina River, Abba River and RAMSAR listed Wonnerup Estuary all within close proximity.</p> <p>Proposed discharge locations are inadequate.</p>	<p>A discussion and risk assessment on water management on site is provided in section 3.8 of this report.</p> <p>DWER have included conditions on monitoring of discharge volume and water quality in L9342/2022/1.</p>

Submission	Category	Summary of Comment	Department's response
Nearby residential stakeholder	Noise	<p>Stakeholder collected noise monitoring data have indicated regular breaches of the noise regulations. These have been reported Department and Doral.</p> <p>Earthmoving equipment noise is at times excessive, particularly a bulldozer that operates 7am-9am. It is suspected that there may not be an adequate muffler on this</p> <p>A low hum and possible vibration operates intermittently, and is most noticeable at night.</p>	<p>Results of monitoring during time limited operation have identified that there is the potential for some noise amenity issues.</p> <p>DWER understand that Doral has recently purchased the property, and that an amenity agreement has since been signed with all</p> <p>DWER have also conditioned several incremental improvements in site processes in this licence such as:</p> <ul style="list-style-type: none"> - partial enclose the apron feeder and insulation of the scalping screens to assist with noise amenity - reduced dozer activity before 9am on weekends, or with northerly winds to improve site amenity. <p>Ongoing dust and noise monitoring are conditioned in L9342/2022/1.</p>
Nearby residential stakeholder	Dust	<p>Time limited operations and mining have occurred during winter 2022. This hasn't provided useful information on management of dust and suitability of controls.</p>	<p>DWER acknowledge that for nearby residential receptors there is the potential for impacts from dust emissions</p> <p>DWER have undertaken assessment of dust emissions (see section 3.3) and conditioned ongoing monitoring of PM₁₀, TSP and dust management controls.</p>
Nearby residential stakeholder	Light	<p>Lighting towers on top of dirt mounds and loader that feed plant shine light onto nearby residential property.</p> <p>Dump trucks and loaders are driven at hours of the night with high beam lights shine through the house.</p>	<p>The applicant has proposed additional controls to address light pollution and these have been included in condition 1 of L9342/2022/1.</p>
Nearby residential stakeholder	Compensation	<p>The amounts of compensation that Doral has offered is inadequate to manage and mitigate the project impact.</p>	<p>DWER understands that an agreement has since been reached between the stakeholder and applicant.</p> <p>An earlier Works Approval excluded the relevant property from the prescribed premises boundary but since the</p>

Submission	Category	Summary of Comment	Department's response
			property is now owned by applicant, the property has been included in premises boundary as detailed in Schedule 1 of the licence.
	Access to site data	The data from time limited operations has not been shared from Doral. We note that this is a requirement of Section 5 of Ministerial Statement No. 1168.	The requirements of Ministerial Statement 1168 are outside the scope of this assessment.
Nearby residential stakeholder	Noise, dust, vibration	<p>Earthmoving equipment noise is at times excessive, particularly a bulldozer that operates 7am-9am. It is suspected that there may not be an adequate muffler on this. This has been reported with Doral and DWER on several occasions.</p> <p>A low hum and possible vibration operates intermittently, and is most noticeable at night. This sound can be heard both inside and outside the house and is disruptive enough to wake household.</p> <p>Doral have been unwilling to make modifications to work practices and equipment in a timely manner.</p>	<p>DWER acknowledge that for some residential receptors results of monitoring during time limited operation have identified that there is the potential for significant noise amenity issues.</p> <p>DWER understand that Doral has recently purchased the properties, and that an amenity agreement has since been signed with the now tenants of the impacted properties</p> <p>DWER have also conditioned several incremental improvements in site processes in this licence such as:</p> <ul style="list-style-type: none"> - reduced dozer activity before 9am on weekends, or with northerly winds to improve site amenity. <p>The applicant has addressed night time hum and vibrations issues through modification to hopper processes, and these have been conditioned in L9342/2022/1.</p>

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
Condition 1, Table 1	The light towers at the workshop are on Princefield Rd. The concerned receptor was on Lyle Rd. Wording needs to be changed to say Princefield Rd	The Department has corrected licence to reference Princefield road.
General	Various administrative errors identified	Page numbers and duplications corrected for final. Request to remove mention of wind direction (standard deviation) has been denied. This is an approved condition that has been reviewed by air quality experts.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY					
Application type					
Works approval	<input type="checkbox"/>				
Licence	<input checked="" type="checkbox"/>	Relevant works approval number:	W6558/2021/1	None	<input type="checkbox"/>
		Has the works approval been complied with?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
		Environmental Compliance Report submitted?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
		Date Report received:10/6/2022 (DWERDT616543)			
Date application received	14/6/2022. Revised application received 29/7/2022				
Applicant and Premises details					
Applicant name/s (full legal name/s)	Doral Mineral Sands Pty Ltd				
Premises name	Yalyalup Mineral Sand Mine				
Premises location	Defined by applicant as Mining Tenement M70/1400				
Local Government Authority	City of Busselton				
Application documents					
HPCM file reference number:	DWERDT618258 and DWERDT618259				
Key application documents (additional to application form):	Yalyalup Mineral Sands Project Part V Licence Application – Supporting Document				
Scope of application/assessment					
Summary of proposed activities or changes to existing operations.	Operation of new mineral sands mine and processing plant, including mine dewatering infrastructure.				
Category number/s (activities that cause the premises to become prescribed premises)					
Table 1: Prescribed premises categories					
Prescribed premises category and description		Proposed production or design capacity			
Category 8: Mineral sands mining or processing		3,500,000 tonnes per year (Ore throughput capacity)			
Category 6: Mine Dewatering		750,000 tonnes per year dewatering			
Legislative context and other approvals					
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Referral decision No: MS 1168 Managed under Part V <input type="checkbox"/> Assessed under Part IV <input checked="" type="checkbox"/>		

Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: 1168 EPA Report No: 1695
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Reference No: 2017/8094
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input checked="" type="checkbox"/> Expiry: 27/04/2042 Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why? Mining tenure
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A Assessed under Part IV of EP Act
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: GWL206603 and GWL202591
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

<p>Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p><i>Mining Act 1978</i></p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	