



Application for Licence Amendment

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

Licence Number	L9018/2016/1
Licence Holder	Doral Mineral Sands Pty Ltd
ACN	096 342 451
File Number	DER2016/002360-1
Premises	Yoongarillup Mineral Sands Mine 1231 Sues Road YOONGARILLUP WA 6507 Legal description – Part of tenements M70/458 and M70/459, within Lots 1870, 1872, 1873 & 1874 on Plan 201690 and Lots 101 & 102 on Diagram 98906, as depicted in Schedule 1.
Date of Report	26 March 2021
Decision	Revised licence granted

A/MANAGER, RESOURCE INDUSTRIES REGULATORY SERVICES

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

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1. Decision summary

Licence L9018/2016/1 is held by Doral Mineral Sands Pty Ltd (Licence Holder) for the Yoongarillup Mineral Sands Mine (the Premises), located at 1231 Sues Road, Yoongarillup. This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L9018/2016/1 has been granted.

The Revised Licence issued as a result of this amendment supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department 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 17 November 2020, the applicant submitted an application for an amendment to licence L9018/2016/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The existing licence is for a heavy mineral sands mine, located near Busselton, on the southern Swan Coastal Plain, approximately 250 km south of Perth. It is mostly located on cleared farming land, but also extended into the adjoining State Forest, which has been revegetated. A number of farm houses are located around the mine site, including eight within 1 km of mine pits.

Active mining has been completed, and rehabilitation earthworks are ongoing at the premises. DWER considers that mineral sands mining for the purposes of Part V Division 3 of is not complete until the mined voids achieve the landform state defined in the approved Mine Closure Plan (DWER 2018).

The changes requested are mostly to remove conditions now redundant, for the following reasons:

- Construction, active mining, processing and mine dewatering have ceased on the premises;
- Much of the containment infrastructure associated with the above has been removed;
- The area west of Sues Road has been rehabilitated mostly to farmland, with the small section of state forest replanted; and
- No night time mining ever occurred at Yoongarillup, and rehabilitation activities will remain within daytime hours as defined in the *Environmental Protection (Noise) Regulations 1997* (7am-7pm, and not before 9am on Sundays and Public Holidays)

The previously assessed category 8 production capacity of 1,500,000 tonnes or more per year (incorrectly stated on existing licence as 7,000,000) will remain, although annual fees will reflect the fact that the site is not currently producing. There is no other category on the licence. Dewatering (now ceased) was an assessed activity for this premises, but did not trigger the category 6 threshold of 50,000 tonnes per year.

3. Risk assessment

As no new activities are proposed as part of this assessment, a formal risk assessment has not been carried out in accordance with *Guidance Statement: Risk Assessments* (DER 2017). The key receptors are residences shown in Figure 1.

Where the Delegated Officer considers that the conditions are truly redundant for the reasons outlined in section 2.2, they have been deleted as requested and this is considered to be an administrative change. No further assessment or discussion is required. This applies to the bulk of changes in this amendment.

The premises description in the licence has been updated to reflect the current stage of mining. It is noted that DWER considers that mineral sands mining for the purposes of Part V Division 3 of is not complete until the mined voids achieve the landform state defined in the approved Mine Closure Plan. This position statement is taken from the 'Industry Regulation fact sheet - Mineral sands mining or processing' (DWER 2018).

Requested changes that require further consideration are discussed in section 3.1.

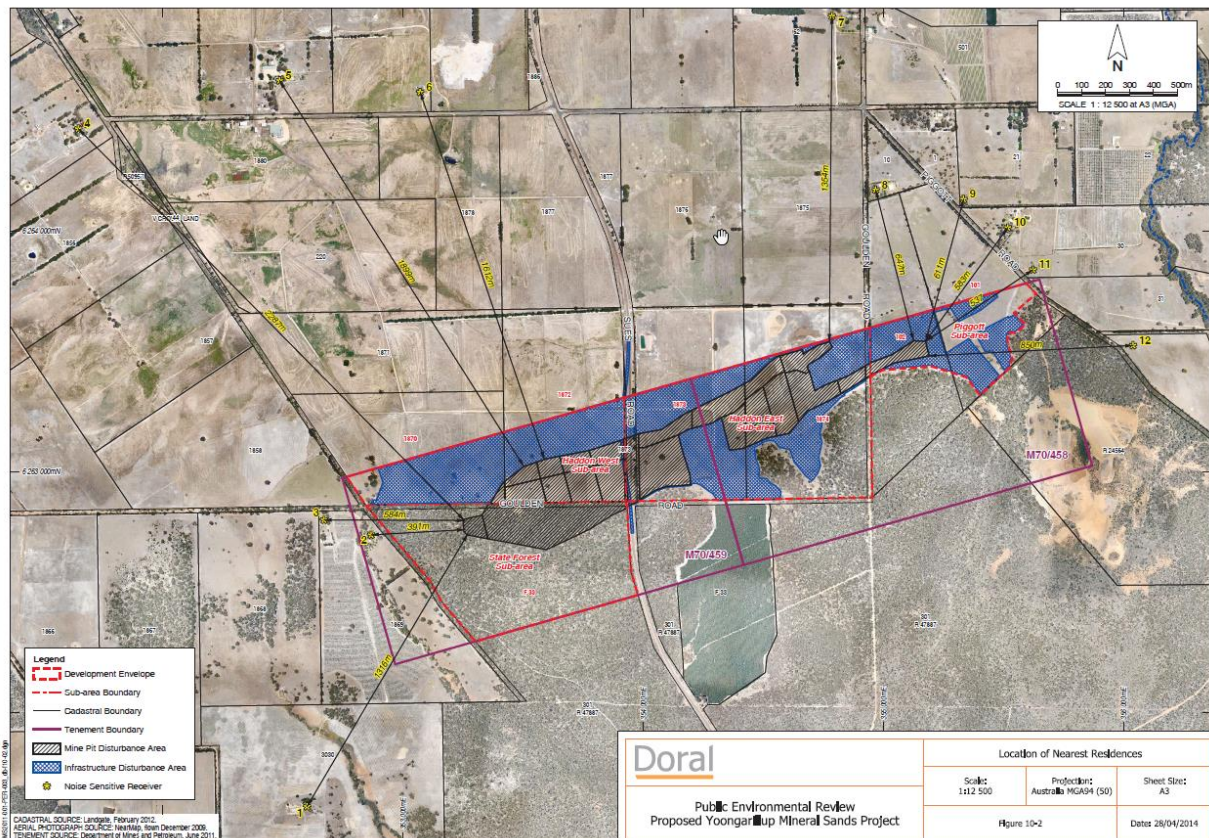


Figure 1: Distance to residential receptors

3.1 Discussion of changes to L9018/2016/1 considered non-administrative

3.1.1 Infrastructure inspections (previously condition 1.1.5; now 1.1.2)

Most of the infrastructure in Table 1.2.3 specified in L9018/2016/1 has been decommissioned. The only remaining infrastructure is the drop-out pond. The Delegated Officer considers that since it is an authorised discharge point that automatically overflows when full, and has existing monitoring requirements in this licence, a monthly visual integrity assessment is sufficient.

3.1.2 Emission points to surface water (condition 2.2.1)

Table 2.2.1 in L9018/2016/1 is modified to reflect the changed situation due to the cessation of mining:

- The source is now only surface runoff;
- The origin of water discharged to W1 is updated. The Delegated Officer considers that this does not materially change the environmental risk; and
- W2 on the western end of the operation is no longer required, as this area is fully rehabilitated to pasture and native vegetation.

3.1.3 Sound controls relating to night mining (condition 2.5.1)

Licence holder requested removal of controls related to night mining, as it has never occurred at Yoongarillup and there are no plans to start. The Delegated Officer considers that this is reasonable, but has added a stipulation that no earthmoving may occur outside the hours of 0700 – 1900 hours Monday to Saturday, and 0900-1900 hours on Sunday and public holidays to remove the necessity of these controls.

3.1.4 Table 2.6.3 - Removal of GQ17, and relabelling trigger values as reporting triggers

Due to the removal of Tables 2.6.1-2.6.2 in L9018/2016/1, previous Table 2.6.3 has been renumbered as 2.6.1.

The Licence Holder has requested removal of groundwater monitoring bore GQ17 on the basis that:

- It is on the western side of the mine, and everything west of Sues Rd has been completely rehabilitated;
- No dewatering was ever required west of Sues Road;
- Standing water levels are consistent with pre-mining levels; and
- There is rarely enough groundwater to sample.

The Delegated Officer has confirmed that GQ17 is nearly 1km west of Sues Rd, and Figure 2 confirms that the standing water level at GQ17 shows an annual trend consistent with pre-mining levels. The Delegated Officer considers that GQ17 may reasonably be removed from all conditions of the licence.

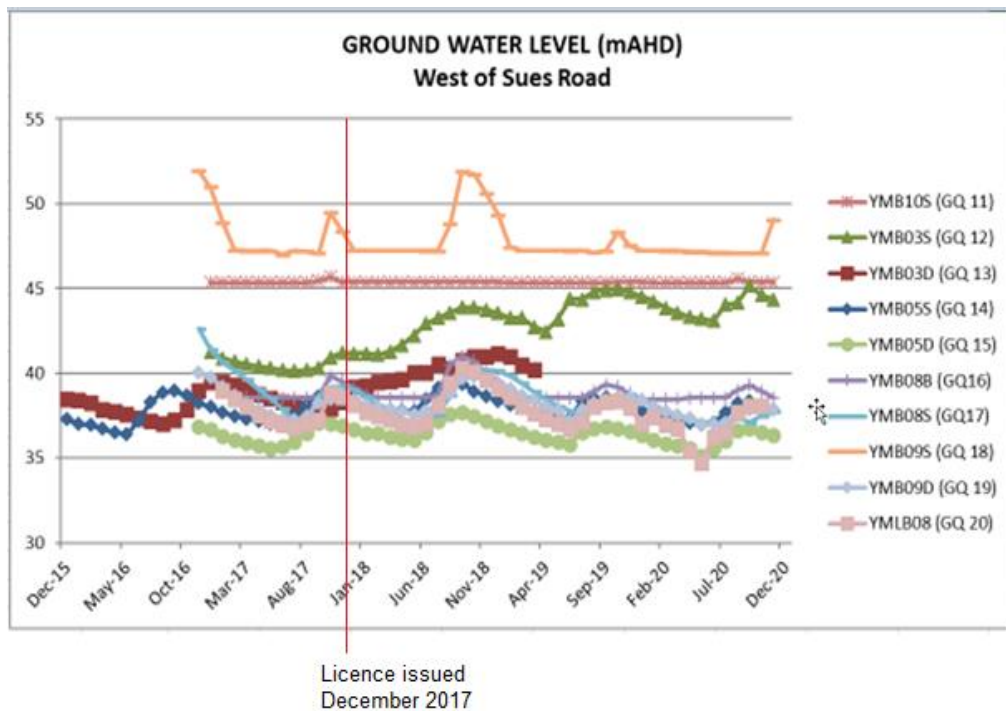


Figure 2: Groundwater levels at Yoongarillup monitoring bores west of Sues Road

The Delegated Officer notes that the former Table 2.6.3 was labelled 'Groundwater monitoring trigger values'. Given that there is no longer active dewatering occurring, it is not clear what action would be triggered if the stated parameters were exceeded. The Delegated Officer has renamed this table 'Groundwater monitoring reporting triggers', and updated Table 4.3.1 to require reporting of any exceedance of a trigger in Table 2.6.3. It is unlikely that these levels would be exceeded at this point in the operation, so this table is retained purely as a precaution, to flag a response if an issue was to develop.

3.1.5 Changes to point source emissions to surface water

The purpose of condition 3.2.1 (including Table 3.2.1) in L9018/2016/1 is to require monitoring of point source emissions to surface water. The Licence Holder has advised that due to changing infrastructure, the process water pond has been removed. The main point where collected runoff will be discharged in winter 2021 will still be W1 (notation changed for consistency with condition 2.2.1), now comprising pumped surplus water from the drop out pond and the office sump, shown in Figure 1.

3.1.6 Changes to monitoring bores

Figure 4 shows the location of the existing Yoongarillup groundwater monitoring bores. The Delegated Officer has verified and agrees that monitoring is no longer required at the bores shown in Table 1, for the reasons shown in Table 1. Monitoring to the east of Sues Road will continue due to ongoing rehabilitation works and recent dewatering. GQ12 will also require ongoing monitoring due to variability in monitoring results for some analytes.

Table 1: Consideration of monitoring bores to be removed

Bore number(s)	Justification for removal
QG1	At least 700m from any mining – no mining occurred east of Goulden Rd.
GQ13	Consumed by mining (allowed for in existing condition 3.4.1)
GQ9-11, 14-20	The monitoring bores listed are all west of Sues Rd, in the area that has been fully rehabilitated. Monitoring data has been provided and the bores listed showed no trends of concern during the operational mining and dewatering (only the other side of Sues Rd) phases. Ongoing monitoring in this post-rehabilitation phase is therefore not justified.

3.1.7 Changes to air quality (dust) monitoring

Removal of air quality monitoring point AQ4

The Western side of Sues Road has been fully rehabilitated to farmland and replanted with native vegetation. AQ4 is about 1km west of Sues Road, and therefore is not a useful air quality monitoring point for current rehabilitation activities. Given that DWER has no record of dust complaints from Yoongarillup, and the site has an existing dust management plan, it is considered that the existing monitoring points AQ1-AQ3 are sufficient. AQ4 will be removed from Table 3.4.2 and 3.5.1 in L9018/2016/1.

Removal of PM₁₀ monitoring

The Licence Holder has requested the removal of PM₁₀ monitoring from the licence (Table 3.4.2). DWER has no record of dust complaints from Yoongarillup, and review of all Annual Reports submitted up to and including 2020 showed no community complaints regarding dust.

The majority of dust generated during the development and operation of mineral sands mines is coarse particulate matter, being comprised of unprocessed mineral oxide particles. PM₁₀ is unlikely to be a major component of total dust.

Yoongarillup annual reports include graphs of PM₁₀ using 15 minute averages. These show only rare spikes above 50 µg/m³, which is the standard for a 24 hour averaging period in the National Environment Protection (Ambient Air Quality) Measure (NEPM). The Delegated Officer therefore considers it **Rare** that concentrations of PM₁₀ will exceed the 24 hour standard specified in the NEPM, and that fine particulates pose a **Minor** risk to residential receptors. The site's existing dust management plan is well established and will continue to be implemented. The Delegated Officer therefore considers that continuing PM₁₀ monitoring is not justified given the **Low** risk to residential receptors.

DWER internal technical advice states that a 1 in 6-day sampling regime is generally recommended as a minimum for TSP. However the Delegated Officer considers that given the lack of dust issues to date, it is not reasonable to increase the monitoring frequency at this stage of operations.

Relocate AQ2 closer to sensitive receptor

The Delegated Officer considers that moving the monitoring point closer to the sensitive receptor (shown in Figure 1 of the revised licence) is not inappropriate, however this requires a reassessment of the air quality limits in Table 3.4.2 in L9018/2016/1.

The limit for TSP comes from the *Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992*. Previously, the limit for area B (industrial) of 260 µg/m³ was applied due to the distance from receptors. DWER internal advice confirms that the relevant limit for TSP at a residential receptor would be the limit for Area C, which is 150 µg/m³. Figure 1 shows the location of the nearest residential receptors.

Based on this advice, the Delegated Officer considers that the TSP limit for both the new AQ2 and existing AQ1, being in close proximity to premises, should be changed to 150 µg/m³. AQ3 is not in close proximity to receptors so the existing limit is still appropriate.

Ambient air quality standards and ambient air quality limits — total suspended particulates				
Item	Area	Standard (µg/m ³)	Limit (µg/m ³)	Averaging period
1	Policy Area	—	1 000	15 minutes
2	Area A	150	260	24 hours
3	Area B	90	260	24 hours
4	Area C	90	150	24 hours

Figure 3: Ambient air quality limits for TSP from the *Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992*, Schedule 2

Removal of PM₁₀ monitoring

The Licence Holder has requested the removal of PM₁₀ monitoring from the licence (Table 3.4.2). DWER has no record of dust complaints from Yoongarillup, and review of all Annual Reports submitted up to and including 2020 showed no community complaints regarding dust.

The majority of dust generated during the development and operation of mineral sands mines is coarse particulate matter, being comprised of unprocessed mineral oxide particles. PM₁₀ is unlikely to be a major component of total dust.

Yoongarillup annual reports include graphs of PM₁₀ using 15 minute averages. These show only rare spikes above 50 µg/m³, which is the standard for a 24 hour averaging period in the National Environment Protection (Ambient Air Quality) Measure (NEPM). The Delegated Officer therefore considers it **Rare** that concentrations of PM₁₀ will exceed the 24 hour standard specified in the NEPM, and that fine particulates pose a **Minor** risk to residential receptors. The site's existing dust management plan is well established and will continue to be implemented. The Delegated Officer therefore considers that continuing PM₁₀ monitoring is not justified given the **Low** risk to residential receptors.

DWER internal technical advice states that a 1 in 6-day sampling regime is generally recommended as a minimum for TSP. However the Delegated Officer considers that given the lack of dust issues to date, it is not reasonable to increase the monitoring frequency at this stage of operations.

3.1.8 Changes to noise monitoring

Removal of noise monitoring points AN1 and AN3

No mining activities ended up occurring east of Goulden Road, so AN1 is at least 700m from active rehab areas. The closest residential receptor is very close to AN2, so AN1 is redundant.

All areas west of Sues Road have been rehabilitated, so AN3 is at least 1km from active

mining areas. There have been no noise complaints since mining was occurring on the western side of Sues Road. The Delegated Officer considers it **Rare** that residents to the west of the mine would receive **Minor** noise impacts. The risk to these residents is therefore **Low**, and no monitoring to the west of the premises is required.

Reduction of noise monitoring at AN2 from continuous to monthly

The Licence Holder proposes to reduce the frequency of noise monitoring, to enable their continuous noise monitor to be relocated to the Licence Holder's new mine site (Yalyalup) to generate background data. There have been no noise complaints since mining was occurring on the western side of Sues Road. Operational noise is reduced now that active mining has ceased as there is less earthmoving equipment on site, no processing plant noise and no mining unit.

The Delegated Officer considers it **Unlikely** that residents to the west of the mine would receive **Minor** noise impacts, as the *Environmental Protection (Noise) Regulations 1997* are likely to be met. The risk to these residents is therefore **Medium**.

The Licence Holder proposes to cease continuous noise monitoring, and move to snapshot monitoring performed once per month, over a 30 minute period using a tripod mounted, handheld noise monitor. The Delegated Officer considers that although this monitoring is not necessarily representative of noise throughout the month, it is a sufficient indication given the level of risk posed at this stage of operations.

The application states that the continuous monitor will be deployed back to Yoongarillup if investigation of a noise issue is required. A note will be added to the condition that continuous monitoring is required to recommence within 7 days, if requested by DWER in response to a noise complaint from a member from the public.

Map of monitoring locations

The location of the monitoring points listed in Tables 3.4.1 – 3.4.3 are shown below.

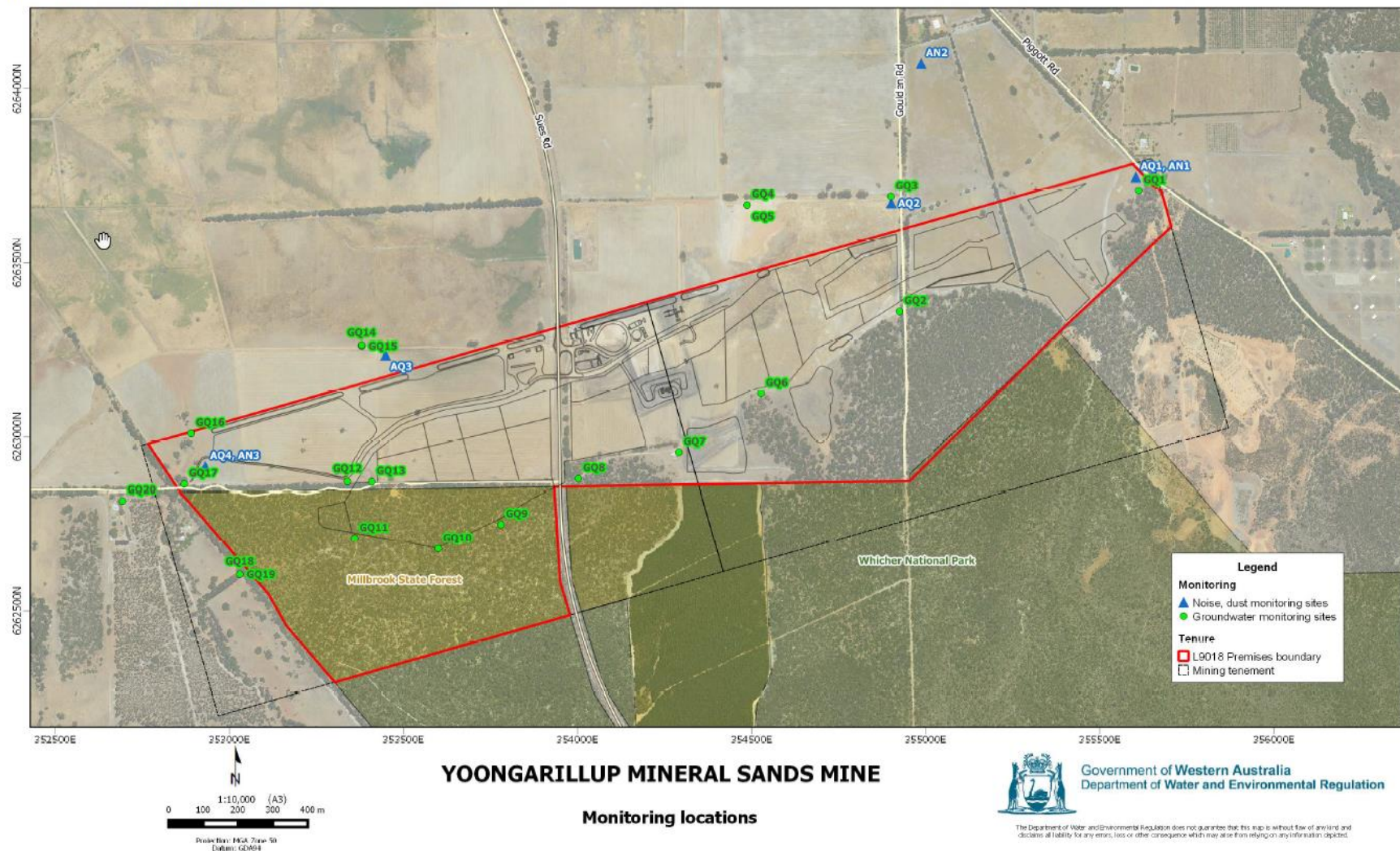


Figure 4: Location of existing Yoongarillup groundwater monitoring bores

Licence: L9018/2016/1

4. Consultation

Table 2 provides a summary of the consultation undertaken by the department.

Table 2: Consultation

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 23 March 2021.	Refer to Appendix 1	Refer to Appendix 1

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 3 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 3: Summary of licence amendments

Condition no.	Proposed amendments
Throughout	Conditions that are redundant due to the completion of active mining (including dewatering) removed Infrastructure updated and some monitoring points removed – justifications provided in section 3.1

References

1. Department of Environmental Regulation 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
2. Department of Water and Environmental Regulation 2018, *Industry Regulation fact sheet - Mineral sands mining or processing*, Western Australia.
3. National Environment Protection Council 1998, *National Environment Protection (Ambient Air Quality) Measure*.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary Licence Holder's comment	Department's response
Cover	Registered Business Address is: 1 Alumina Rd East Rockingham WA 6168	Noted. ASIC extract provided (A1991783)
Table 1.2.2	Site water on disturbed areas will be directed to a drop out pond and discharged through W1. The final farm dam will collect some site water and will have an overflow point directed to W1. As rehabilitation nears completion the drop out sump and W1 will need to be removed and any dam overflow will make its way to the neighbouring paddock drain which W1 currently discharges to.	<p>Stormwater reporting naturally to the farm dam is not considered an emission and therefore does not need to be referenced in table 1.2.2. Table 2.2.1 updated to include piped overflow from the final farm dam, if required.</p> <p>When rehabilitation is complete and W1 is removed, the area will be returned to paddocks. Water will be collected for use in the farm dam, and any overflow will naturally flow into the existing dam as per pre-mining. This will not be regulated by DWER as a discharge to the environment.</p>
Table 2.2.1	W3 no longer required	Removed
Table 2.3.1	Picton tails will not be blended with WCP tailing as the plant WCP is no longer operational. Please remove this line.	Removed
Table 2.4.1	Relocation of the HMC stockpile to Picton is now complete. Please remove this line.	The line 'Shall maintain moisture content of 5 – 9% during wet stacking of HMC' is removed.
Table 2.5.1	<ul style="list-style-type: none"> Rehabilitation activities are proposed to continue 0700-1900 hours Monday to Saturday. Rehabilitation activities are proposed to continue on 0900-1900 hours on Sunday and public holidays. 	<p>The Licence Holder is requesting authorisation for earthmoving on Sundays and public holidays (PH), during daytime hours as defined in the EP (Noise) Regulations. The assigned noise levels for Sundays and PH are higher than for other days, but lower than night time periods.</p> <p>In the original assessment, only overburden removal was limited to 0700 – 1900 hours Monday to Saturday. Other activities could occur 24/7 but with additional noise control conditions, which have been removed in this amendment.</p> <p>Given that Sunday and PH rehabilitation is not expected to occur regularly, and the rehabilitation fleet is smaller than that used during active mining which did operate on Sundays with no neighbour complaints, The Delegated Officer considers that the EP (Noise) Regulations are likely to be met, and that the risk of noise impacts to human receptors is not significantly increased by authorising rehabilitation earthworks within the specified hours on Sundays.</p>

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY					
Application type					
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L9018/2016/1		
		Relevant works approval number:		N/A	<input checked="" type="checkbox"/>
Date application received		17 November 2020			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Doral Mineral Sands Pty Ltd			
Premises name		Yoongarillup Mineral Sands Mine			
Premises location		M70/458 & M70/459 (areas to be added this amendment only)			
Local Government Authority		City of Busselton			
Application documents					
HPCM file reference number:		DER2016/002360-1~1			
Key application documents (additional to application form):		Proof of holding Mining Leases M70/458 & M70/459 Letter of Authorisation – Craig Bovell Figure showing site layout Table of changes requested and rationale Monitoring data GIS files for premises boundary Copy of existing licence with tracked changes for requested amendments Siting information (provided 18/11/2020)			
Scope of application/assessment					
Summary of proposed activities or changes to existing operations.		Removal of conditions now redundant as mining has ceased. Removal/changes to monitoring in some areas where rehabilitation is complete of mining not to be undertaken.			
Category number/s (activities that cause the premises to become prescribed premises)					
Table 1: Prescribed premises categories					
Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)			
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	1,500,000 tonnes per annual period (This is as assessed, but admin change needed as the licence currently says 7,000,000. This is an error. The throughput applied for and assessed in the original decision report is 1,500,000)	Admin change. Production has ended but assessed design capacity will still be listed as 1,500,000.			

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 type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input 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: 1030 EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Reference No: 2012/6521
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/>
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	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 No clearing is proposed.
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 checked="" type="checkbox"/> No <input type="checkbox"/>	Not relevant to this amendment
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"/>	Name: N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i>)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	