



Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6163/2018/1
Applicant	Hanson Construction Materials Pty Ltd
ACN	009 679 734
File Number	DER2018/001178
Premises	Hanson Oldbury Sand Quarry Legal description - Lot 6 on Diagram 47557, Lot 300 on Diagram 75682 and Lot 301 of Diagram 75682 Banksia and Boomerang Roads, OLDBURY, WA 6121
Date of Report	6 October 2021
Status of Report	Final

Lauren Edmands
MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES

Delegated Officer under section 20 of the *Environmental Protection Act 1986*

Table of Contents

1. Definitions of terms and acronyms	3
2. Decision summary	4
3. Purpose and scope of assessment	4
4. Overview of Premises	4
4.1 Operational aspects	4
4.2 Infrastructure	5
4.3 Exclusions to the Premises	8
5. Legislative context	8
5.1 Regulatory framework	8
6. Modelling and monitoring data	8
6.1 Noise modelling and ambient monitoring	8
6.1.1 Background Noise	9
6.1.2 Construction Noise	9
6.1.3 Operational Noise	10
6.1.4 Noise Technical Advice	13
6.2 Hydrology modelling and groundwater monitoring	13
6.3 Dust Monitoring	16
7. Applicant controls	17
8. Location and siting	18
8.1 Siting context	18
8.2 Residential and sensitive premises	18
8.3 Specified ecosystems	19
8.4 Groundwater and water sources	20
8.5 Meteorology	20
8.5.1 Wind direction and strength	20
9. Risk assessment	21
9.1 Risk Assessment – construction	22
9.2 Risk Assessment – operation including time limited operations	23
10. Regulatory controls	25
10.1 Works Approval controls	25
10.1.1 Noise infrastructure and equipment (construction and operational)	25
10.1.2 Dust infrastructure and equipment (operational)	25
10.1.3 Contaminated stormwater (operational)	26
11. Consultation	26
11.1 Public consultation	26

11.2 Applicant's comments	29
12. Conclusion	30
Appendix 1: Applicant's comments on drafts	31
Appendix 2: Key documents	42

1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
Applicant	Hanson Construction Materials Pty Ltd
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AHD	Australian Height Datum
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
Department	means the department responsible for the administration of Part V, Division 3 of the EP Act.
DGL	Dangerous Good Licence
DWER	Department of Water and Environmental Regulation
EIL	Extractive Industries Licence
EMP	means an Environmental Management Plan prepared by the Applicant
EP Act	<i>Environmental Protection Act 1986 (WA)</i>
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
IF	means Influencing Factor
LGA	meaning Lloyd George Acoustics
Minister	the Minister responsible for the EP Act and associated regulations
MS	means Ministerial Statement
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Licence
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
RL	means Relative Level measured in metres
TEOM	means a Tapered Element Oscillating Microbalance being a fixed site environmental particle mass monitor
UDR	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)</i>

2. Decision summary

This Decision Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the Premises. As a result of this assessment, Works Approval W6163/2018/1 has been granted. A period of time limited operations has been approved under this works approval for a timeframe of 180 days. On-going operation of the premises will require a licence.

3. Purpose and scope of assessment

A Works Approval application was submitted by Hanson Construction Material Pty Ltd (Applicant) under section 57 of the *Environmental Protection Act 1986* (EP Act), to construct and operate a mobile screening plant at Lot 6 Banksia Road, Lot 300 and Lot 301 Boomerang Roads, Oldbury WA 6121 in the Shire of Serpentine-Jarrahdale.

The Applicant proposes to screen up to 250,000 tonnes of sand per annual period to supply resource industry demands for an estimated eight to ten years. The premises has a commercial sand volume of approximately two million tonnes. The sand screening process is designed to produce highly specialised made to order sand products for construction and fill sand. The Applicant has requested a production and design capacity of 250,000 tonnes per annual period to meet market expectations.

The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DER 2017) are outlined in Works Approval W6163/2018/1.

4. Overview of Premises

4.1 Operational aspects

The Applicant produces building and construction materials through extracting, processing, and supplying sands for pre-mixed concrete, concrete products and as construction in-fill.

The premises has a total extractive footprint of 15.2 hectares (ha) at the proposed site which includes areas of disturbance for mining and site infrastructure. Figure 1 outlines the location of the property. The approved Extractive Industry Licence (EIL), granted by the Shire of Serpentine-Jarrahdale, proposes to mine the extractive footprint in six (6) stages as outlined in Figure 2. The six stages identified will limit the 'open' excavation area and seek a certified Geotechnical Engineer to verify all sand faces, non-operational stockpiles and bund walls are safe and stable in the short to long term.

The EIL granted on 24 March 2014 governs the sand extractions activities at the premises; refer to section 4.3 below, authorises the six stages to be completed in 3 distinct phases of development. Phase 1 includes stages 1 and 2, Phase 2 includes stage 3 and Phase 3 includes stage 4, 5 and 6 depicted in Figure 2. The three individual Phases of development are assessed in this report.

The mobile screening plant employed at the premises will mechanically sort sand material after excavation to remove organic matter and oversized material. The screening plant does not require permanent fixing to the ground. The plant equipment will be positioned on a stable compacted pad at least 2 meters above the water table and on the floor of the extraction pit. There will be no construction apart from plant placement. The mobile screening plant will be moved between areas as required during operations and positioned in the precise locations indicated by the orange stars identified in Figure 2 demarcated within Phase 1, 2 and 3.

Water will not be used in the screening process but may be used to reduce dust lift-off during operations such as trafficable areas and material stockpiles for example. A materials conveyor will accompany the screening plant to stockpile the sand. A front-end loader will be employed

to excavate the sand and to feed the screening plant. No crushing of material is proposed.

Final sand product will be removed from site as required by haul trucks and transport off site to market. The screening plant will initially be positioned in Stage 1, Phase 1 of Figure 2. Operational hours are from 7:00am to 5:00pm Monday to Saturday inclusive except on public holidays.

4.2 Infrastructure

The screening facility infrastructure, as it relates to Category 12, is detailed in Table 2.

Table 2: Infrastructure

Infrastructure – Category 12	
Screening of sand	
1	Mobile Screen -Terex Finlay 883 mobile screening plant (or equivalent) (600 tonnes per hour)
Directly related activities	
Extraction of sand and stockpiling of screened (market) sand	
1.	Front end loader (Komatsu WA600 Front End Loader [FEL] or equivalent)
2.	Stockpiling conveyor for temporary storage of sand prior to transport to market

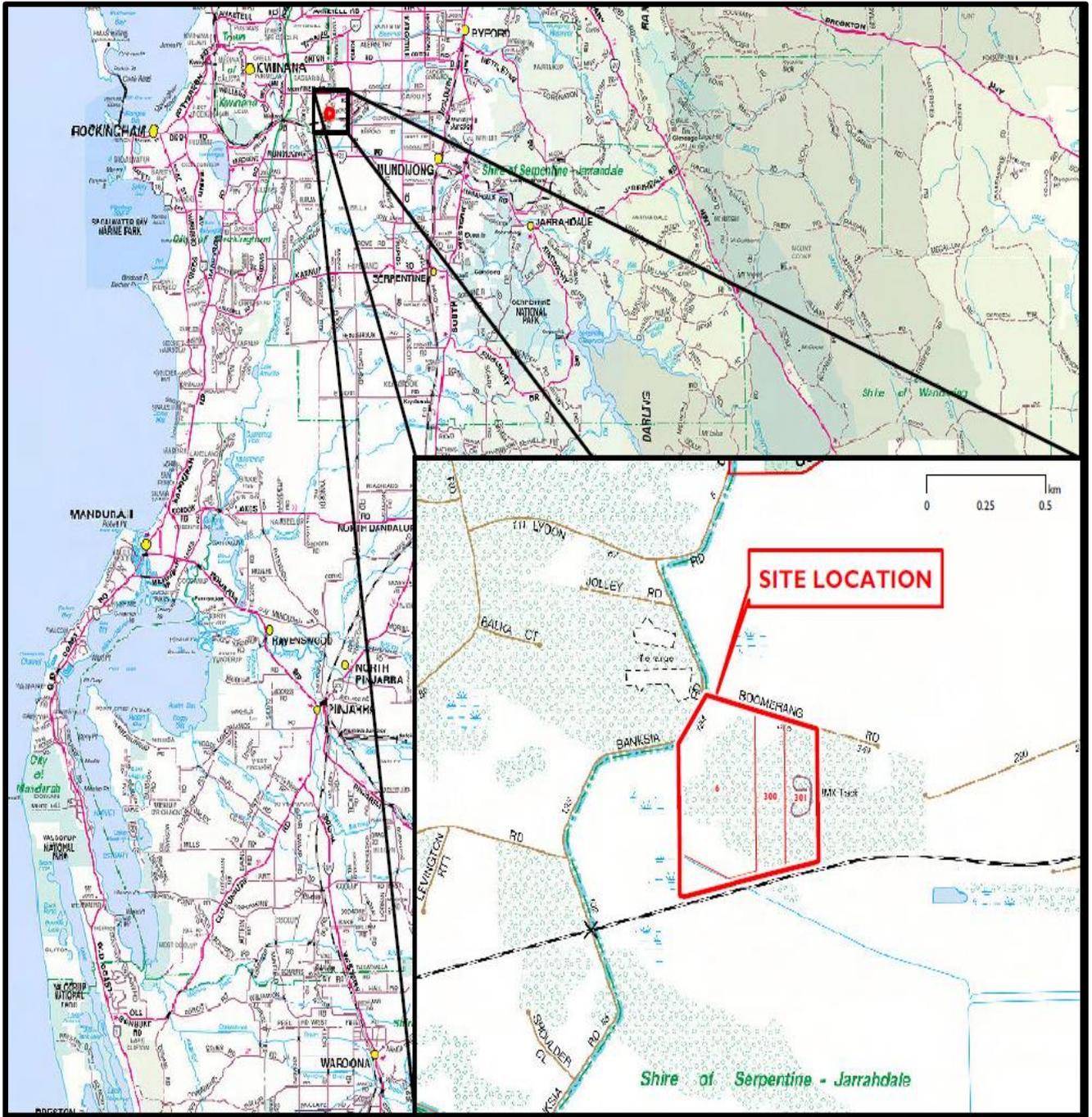


Figure 1: Premises location in the Shire of Serpentine – Jarrahdale.

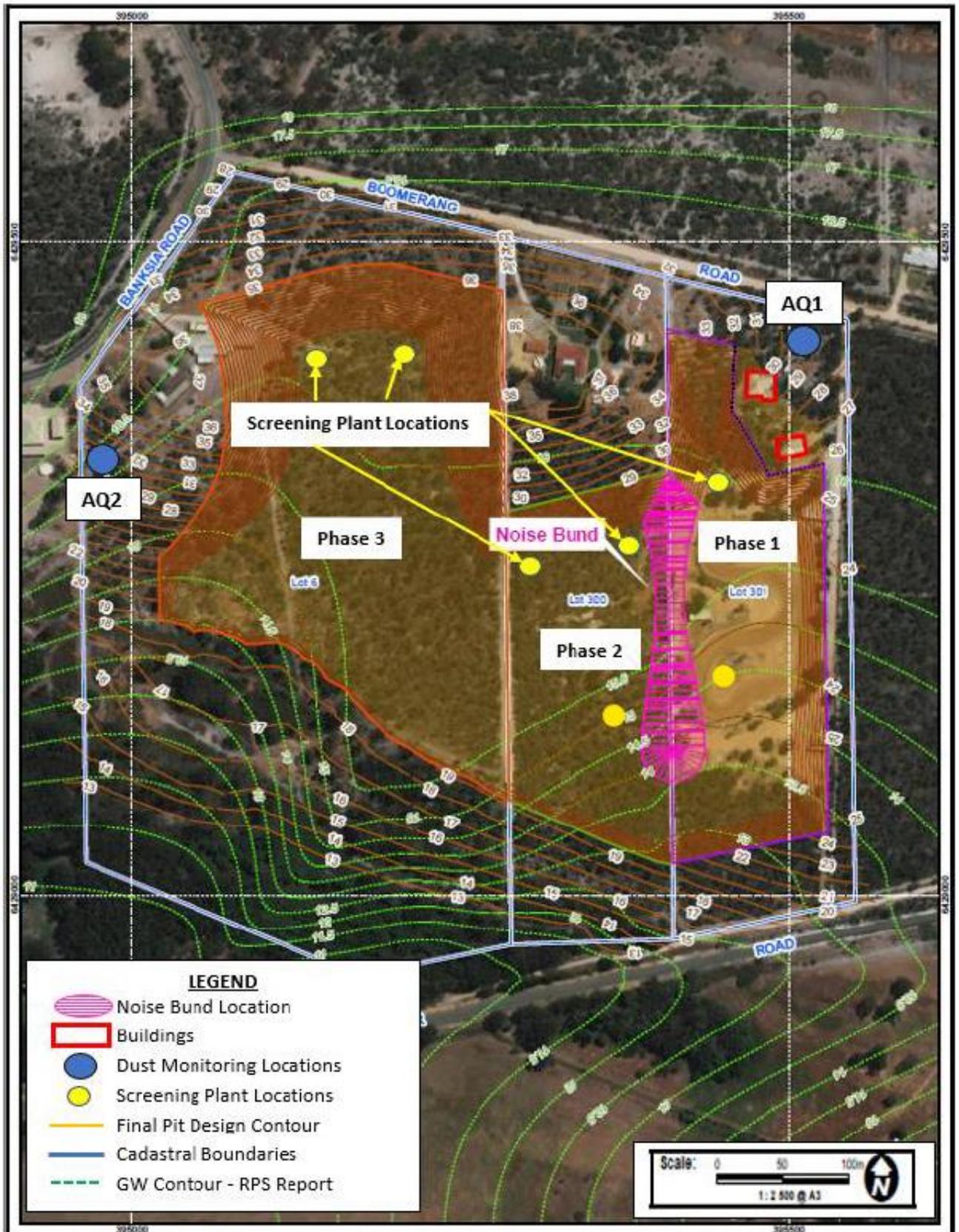


Figure 2: Extractive footprint – Staged Screening operations, including plant location identified by yellow dots, labelled Phases 1 to 3.

4.3 Exclusions to the Premises

The extraction of the sand (Extractive activity) is not a prescribed activity listed under Schedule 1 of the EP Regulations and is therefore not a prescribed activity regulated under the EP Act. Extraction is regulated by the respective Local Government Authority and the applicant has a valid approval under the *Planning and Development Act 2005*. Please refer to Table 3 below.

The storage of 5000 litres of diesel at the premises is not a prescribed activity as it does not meet the requirements of Category 73 and therefore is not regulated under the EP Act. Emissions from the storage of hydrocarbon will not be assessed under this works approval but the *Environmental Protection (Unauthorised Discharge Regulations) 2004* will apply in this instance and will regulate this activity.

5. Legislative context

Table 3: Relevant approvals and tenure

Legislation	Number	Subsidiary	Approval
<i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i>	EPBC2010/5622 Comply with clearing permit and implement Hydrology Assessment and Monitoring Plan and Restoration Plan	Hanson Construction Materials Pty Ltd	Granted on 8 December 2017 to expire on 7 August 2034
<i>Planning and Development Act 2005 (WA)</i>	OCM152/03/14 OCM195/06/14 State Administrative Tribunal (SAT) Order DR389 of 2013	Landowners and Hanson Construction Materials Pty Ltd	24 March 2014 15 March 2016 24 December 2014
<i>Environmental Protection Act 1986 (WA)</i> Native vegetation clearing permit	CPS 4935/02 Grants the clearing of 11.6Ha of vegetation.	Hanson Construction Materials Pty Ltd	Approved 29/01/2019 – Expires 07/08/2034

5.1 Regulatory framework

In completing the assessment documented in this Decision 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>.

6. Modelling and monitoring data

6.1 Noise modelling and ambient monitoring

An acoustic assessment was submitted by the Applicant on 29 April 2020. The most recent report titled *Environmental Noise Assessment, Sand Extraction Pit, Lots 300 & 301 Boomerang Road & Lot 6 Banksia Road, Oldbury* – reference 9061279-01BA dated 21 February 2020, was prepared by Lloyd George Acoustics (LGA) consultants and is referred to as “LGA Noise Report”. This report supersedes the previous acoustics assessments provided with the application. As well, the Applicant prepared a report titled *Background Noise Survey*,

#391 Boomerang Road, Oldbury – reference 20075607-01 dated 03 August 2020 and is referred to as “LGA Background Noise Report”.

6.1.1 Background Noise

LGA Background Noise Report described the noise monitoring undertaken between the 17 and 24 of July 2020 to characterise the background noise occurring at the proposed sand quarry. A noise logger was located on the north side of the property at #391 Boomerang Road, approximately 35 metres from the edge of Boomerang Road. A secondary noise recording system was also setup at this location for testing purposes. Figure 3 below indicates the approximate location of the noise monitoring equipment.



Figure 3 – Ambient noise monitoring location.

The results from this survey indicated that the ambient noise environment has been affected by local noise sources such as roosters and machinery noises. Without those local extraneous noise sources present, background noise levels during the proposed hours of operation of the sand quarry were generally in the range between 25dB(A) to 35dB(A).

The background noise levels contained mostly mid to high frequency noise therefore, low frequency noise emitted from mobile machinery and equipment proposed in this project are unlikely to be masked by the background noise, such that tonal characteristics are likely to be audible above background noise. Therefore, the 5dB(A) adjustment for tonality is included in the noise compliance assessment completed in the LGA Noise Report.

6.1.2 Construction Noise

Construction phase of the Category 12 screening plant will involve the mobilisation of the plant onto site. Prior to operation of the category 12 infrastructure, excavation of material to reach the desired quarry floor depth (on which the plant will need to be placed to comply with the assigned noise levels in the *Environmental protection (Noise) Regulations 1997* (Noise regulations)) will need to occur before the plant can be operated.

It is unclear how noise emissions during this phase of the project will be managed. The removal of topsoil and vegetation prior to excavation of the quarry for each phase is considered ‘construction works’ under regulation 13 of the Noise Regulations. This work may generate noise exceeding the assigned noise levels as specified in the Noise Regulations. As a result, the Applicant is required to develop a Construction Noise Management Plan (CNMP), which needs to demonstrate how construction works will be managed to comply with regulation 13 of the Noise Regulations.

Removal of the overburden and excavation of the pit to +18m RL is considered operation of the extraction activity, which is regulated by the Local Government Authority. Compliance with assigned levels stipulated in the Noise Regulations is still required during excavation activities.

A CNMP will be required through the works approval that:

- Details all noise sources and/or proposed noise controls,
- Demonstrates how the quietest reasonably available equipment and mobile plant are used for the construction. Implements a noise monitoring program during construction and the initial phases of operation,
- Updates the existing Environmental Management Plan (EMP) to include the new noise controls, barrier designs, noise sources and monitoring program and management controls including hours of operation.
- Responds and investigates any complaints received by the Applicant over the construction period.

6.1.3 Operational Noise

The LGA Noise Report indicates that noise from screening operations can be managed to comply with the assigned noise levels, as specified by the Noise Regulations, at all neighbouring residences when the screening plant and excavator are operated on the quarry floor at +18.0 metres RL. The quarry working faces will vary in depth from +4 to +12 metres from quarry floor to the existing natural ground level which will provide sufficient controls to prevent noise impacts to nearby receptors.

The quarry floor will start from the southeast corner of the site working towards the northwest corner. Three phases have been assessed. These being:

- Phase 1 - Quarry face commences in the southeast corner.
- Phase 2 - Quarry face moves to middle of site; and
- Phase 3 - Quarry face moves to the northwest of site as depicted in Figure 2

During the initial phase of the operations (Phase 1), the operations are close to the eastern face of the quarry to provide a sufficient barrier effect to ensure compliance with the Noise Regulations during the operating times of 7:00 a.m. to 5:00 p.m. Monday to Saturday.

During Phase 2, the Applicant has decided to retain most of the Phase 1 western pit face, which effectively creates a noise bund between Phase 1 and Phase 2 as shown in Figure 2 above. The bund will be a natural sand ridge at the corresponding land contour including its existing vegetation and has been considered as a control in this assessment, referred to as the "Noise Bund".

As the quarry moves into the final phase (Phase 3), the initial stages of Phase 3 are likely to result in some (2 dB) exceedance of the Noise Regulations however as the plant moves north, the barrier effect from the pit walls is enhanced and compliance is then achieved fairly quickly.

The modelling in the LGA Noise Report has been considered for the precise positions where the screening plant and equipment will be positioned on the quarry floor during the three phases of operation. The location of the screening plant will therefore be considered in this assessment as a regulatory control.

Table 4 provides the allowable noise levels received at surrounding sensitive noise receptors as prescribed in the Noise Regulations. Regulations 7 and 8 stipulate maximum allowable external noise levels determined by calculating an influencing factor (IF), which is then added to the base levels shown in Table 4.

Table 4: Assigned Noise levels as per the Noise Regulations

Premises receiving noise	Time of day	Assigned Level (dB) (IF means Influencing Factor)		
		L _A 10	L _A 1	L _A max
Noise sensitive premises	0700 – 1900 hours Monday to Saturday (Day)	45 + IF	55 + IF	65 + IF
	0900 – 1900 hours Sunday and Public Holidays (Sunday / Public Holiday Day Period)	40 + IF	50 + IF	65 + IF
	1900 – 2200 hours all days (Evening)	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays (Night)	35 + IF	45 + IF	55 + IF
Industrial and Utility Premises	All hours	65	80	90

As there are no major or secondary roads, or commercial/industrial land uses adjacent to the noise sensitive premises surrounding the proposed quarry, IF has been calculated as 0 dB(A). Therefore, the base levels shown in Table 4 are used as assigned noise levels.

Noise from the mobile plants used for this proposed project is considered tonal, which is unlikely to be masked by the background noise, as indicated in the LGA Background Noise Report. Therefore, a +5 dB(A) adjustment is needed. The assigned noise levels used in this report are the base levels minus 5 dB(A).

The location of the closest sensitive receptors is provided as yellow dots numbered 1 to 9 and with predicted modelled results shown in Table 5 below. The Phase 2 noise limit line including noise bund is depicted by the blue 40dB line in Figure 4 below.

Table 5 below provides the LGA modelled results during each Phase of operations for the 9 residences including the 5dB tonality adjustment. The limit of 40dB has been set for the Applicant to demonstrate compliance. Without the noise bund proposed between Phase 1 and Phase 2 operations, the modelling clearly indicates as exceedance of noise received by sensitive receptors during Phase 2 operations.

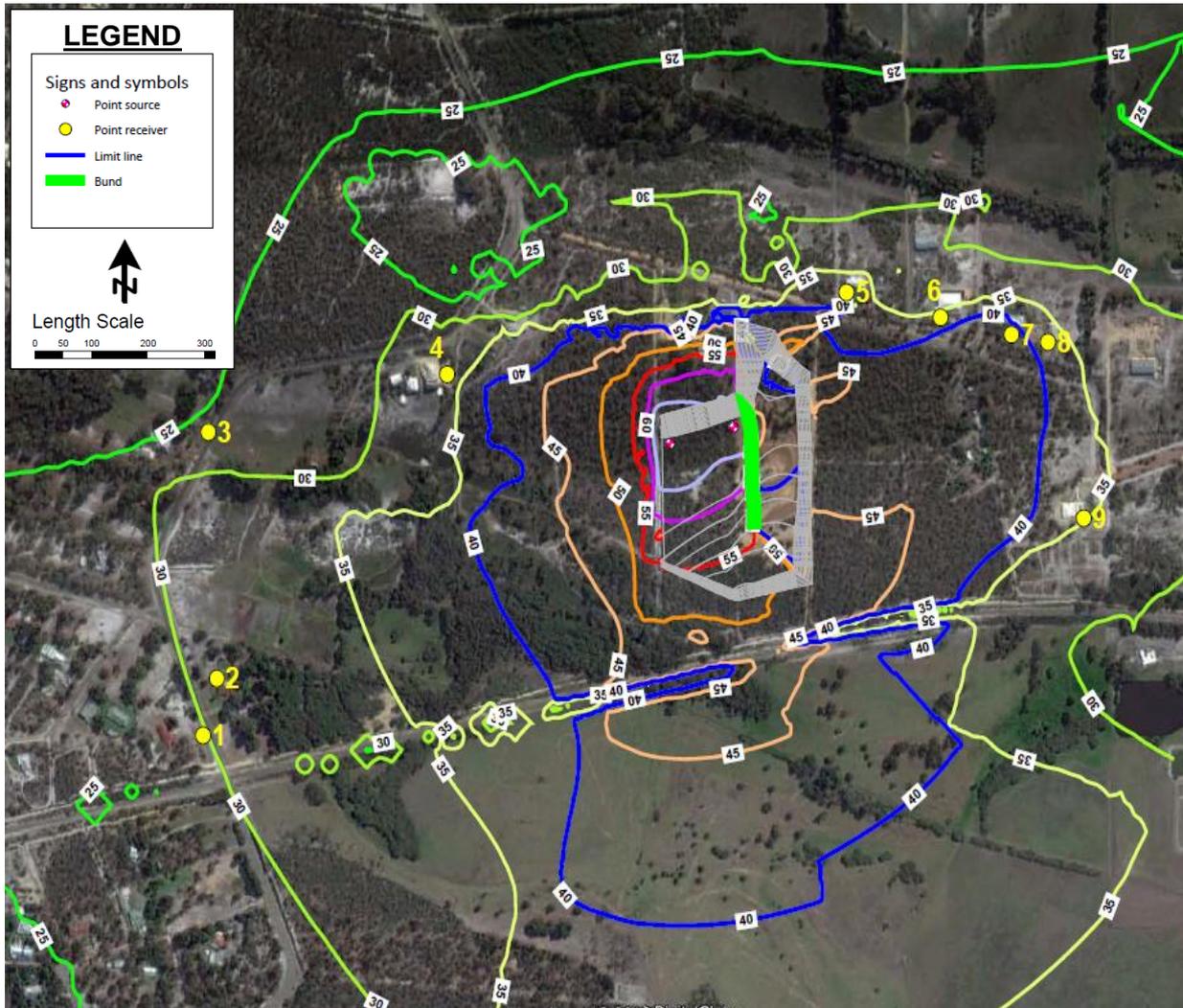


Figure 4: Location of noise sensitive receptors and noise contours

Table 5: Predicted modelling results for each Phases of Operations.

Sensitive Receptor Reference as per Figure 5.	Phase 1 Operations (dB)	Phase 2 Operations (dB)	Phase 2 Operations with Noise Bund (dB)	Phase 3 Operations (dB)
		Without noise bund	Existing sand ridge noise bund	
1	<25	29	30	30
2	<25	28	31	<25
3	<25	27	27	<25
4	<25	35	34	35
5	38	40	38	29
6	35	46	38	25
7	33	43	40	<25
8	32	42	38	<25
9	34	41	35	<25

When the project moves into the final stage (Phase 3), the operation will be progressing from south to north. It has been predicted by LGA that during the initial stages of Phase 3, noise emissions may marginally comply with the assigned noise level at the closest residence (4) to

the west. However, noise compliance will be quickly and readily achieved when the screening plant is located behind the quarry working face.

The Applicant's EMP will need to be reviewed to address operational requirements proposed by the LGA Noise Report. These requirements include the specification of daily operations times in line with other approvals, monitoring during initial operations and description of construction techniques and operations to ensure screening plant is located precisely in the locations depicted by the model and indicated by Figure 2 being the pit floor with the working face to act as a noise mitigation control. The EMP will include noise monitoring during initial construction and operation to confirm the model predictions.

6.1.4 Noise Technical Advice

Compliance with the assigned noise levels has been demonstrated by the LGA Noise Report for all three operation phases, with the proposed noise bund and operation schedules. However, as the existing ambient noise level has been assessed relatively low, when compared with the assigned noise levels, noise from the proposed operation may still have noticeable impact on the neighbouring residences. In summary, the compliance with the assigned noise levels has been demonstrated by the Applicant for all three operation phases, with the proposed noise bund and precise screening plant locations on the pit floor (at +18m RL) and limited operational working hours Monday to Saturday.

Key finding:

The Delegated Officer has reviewed the information regarding Noise emissions and has found:

1. *All noise generated by the proposed operations must comply with the Environmental Protection (Noise) Regulations 1997.*
2. *Noise emissions have been modelled for screening operations at the premises and include machinery such as the screening plant, materials conveyor, front end loader and haulage truck/s.*
3. *Noise emissions from construction activities are also regulated by the Noise Regulations.*
4. *Initial construction to achieve pit floor levels shall be described in a Construction Noise Management Plan required as a regulatory control for this assessment.*
5. *The natural sand ridge noise bund between Phase 1 and Phase 2 is also a regulatory control for the purpose of the noise risk assessment.*
6. *The LGA Noise Report indicates noise from the proposed screening plant operations will comply with the assigned noise levels given the noise bund (existing sand ridge) proposed, machinery and equipment used and the day-time hours of operation.*
7. *Noise monitoring will be required as described in the Environmental Management Plan during the initial operational stages of the project to confirm LGA Noise Report predictions.*

6.2 Hydrology modelling and groundwater monitoring

Since March 2012, the Applicant has undertaken numerous studies and assessments of groundwater and surface water to estimate the potential impacts this proposal would have upon on the hydrology of the wetland to the south (Figure 5). This wetland, referred to as the "Lot 120 Wetland", has characteristics of "Tumulus Springs" as defined in Assemblages of Organic Mound (Tumulus) Springs of the Swan Coastal Plain Interim Recovery Plan (CALM

2006) and is classified as a Threatened Ecological Community (TEC). Therefore, the Lot 120 Wetland is recognised as a sensitive environmental receptor in this Report.

As the hydrology aspects of this proposal are already regulated by other decision-making authorities, there is no requirement for further regulation by this Department. The hydrological findings are described in the “key findings” table below:

Key finding:

The Delegated Officer has reviewed the information regarding Hydrology and groundwater and found:

1. *The Commonwealth and Local Authority has conditioned hydrology requirements under their regulatory responsibilities.*
2. *The commonwealth approval under the EPBC Act 1999 requires the applicant to maintain the depth of extraction during sand mining to a minimum buffer of 2 meters of sand/soil above the known groundwater level (+16 m RL).*
3. *The above requirement will not be duplicated in the works approval.*

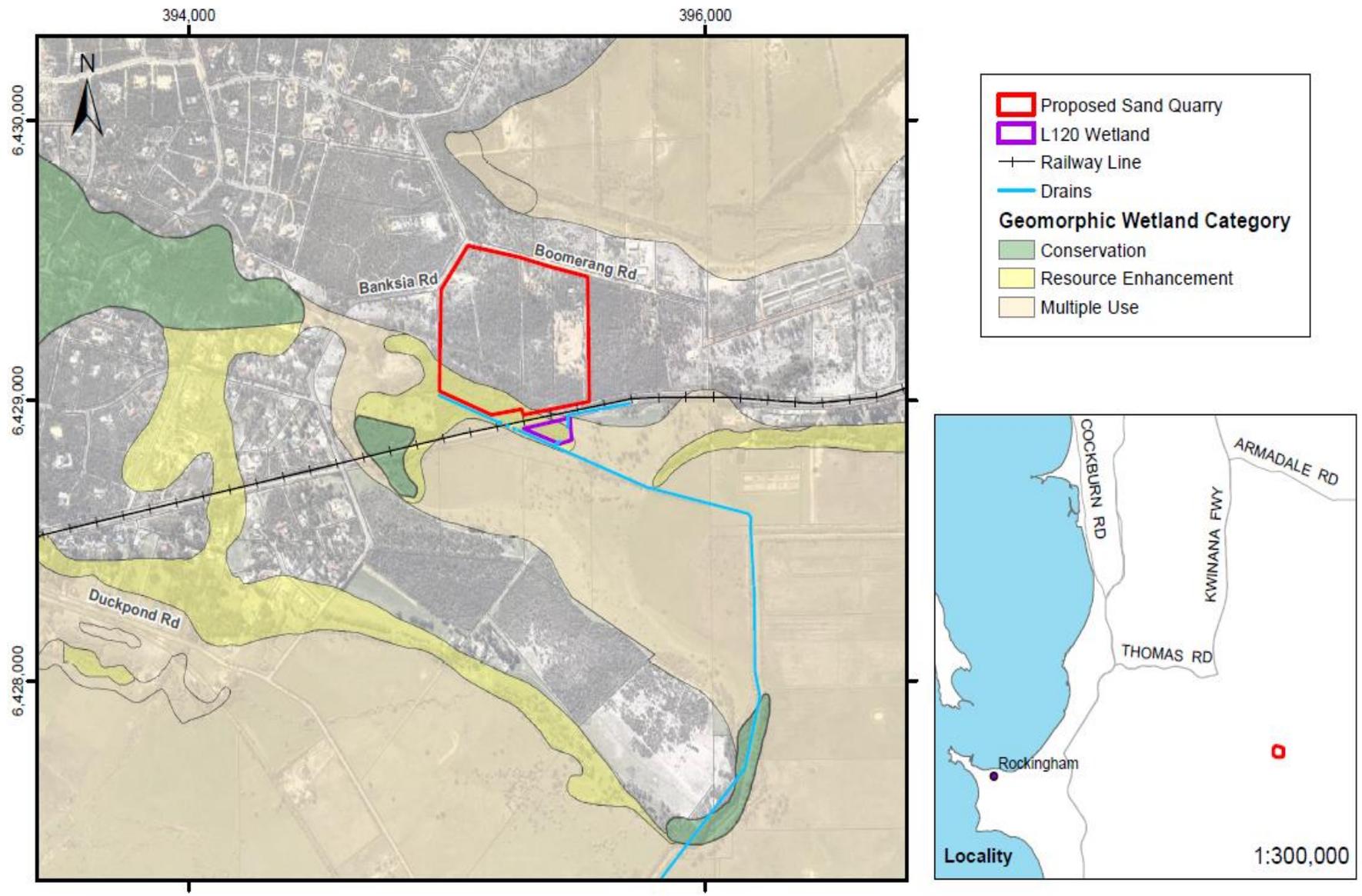


Figure 5: Locality and Wetland Mapping

6.3 Dust Monitoring

The EMP prepared for the Applicant and dated March 2014 was reviewed. An addendum to this plan has been requested as a regulatory control in the Works Approval. The dust management controls identified in the EMP are summarised below:

- Committed to complete a Dust Monitoring program:
- Avoid, restrict, and suppress dust lift-off caused by traffic on unsealed roads including reduced speed limits:
- Reduce dust lift-off from operational areas, including locating stockpile away from boundaries of the premises, suppression of stockpiles, wind fencing along boundaries, use of water carts, vegetation and ground cover establishment, surface treatments, minimise disturbed area and cease operations until conditions improve.
- All dust complaints logged and managed in-line with complaints procedure.
- Dust monitoring initially proposed for three months with fixed location dust monitors and daily visual; inspection of potential dust generating sources, including trafficable routes, maintenance of all quarry machinery and plant.
- Reporting required the responsible manager ensuring the compliant register and complaints investigation reports, along with the dust monitoring including methods, instrumentation recorded concentrations and data analysis is prepared and available.

Upon review of the EMP strategies it was determined that the dust monitoring program will require PM₁₀ size fraction as the parameter used for assessing human health impacts from the operations.

Fugitive dust measurements will require a Tapered Element Oscillating Microbalance (TEOM) monitor measuring PM₁₀ to be installed, calibrated and operated to Australian Standard. TEOM monitoring shall be conducted continuously during the 180 days' time limited operations period approved under this works approval. Dust monitoring will be required for a minimum of 12-month period for each phase of the quarry operation to capture hot dry weather and periods of strong winds. The operational licence will include dust monitoring to ensure at least 12 months of monitoring is carried out for each phase of operation.

The proposed monitoring will be measured from two locations indicated in Figure 2 at the locations depicted as AQ1 and AQ2. It is proposed that during the first twelve months of operation in Phase 1 of the pit, dust will be measured from AQ1. During the first twelve months of operation in Phase 2 of the pit, dust will be monitored from AQ1 and AQ2. Finally, during first twelve months of operation in phase 3 of the pit, monitoring will occur from point AQ2. This is based upon the prevailing winds direction and strength according to Bureau of Meteorology (BOM) Jandakot wind roses data described in section 8.6.1. Following each twelve months period of dust monitoring, the collected data will be reviewed and adjustment to the management practices refined if required. The first six months of monitoring required will be conditioned under this works approval with ongoing monitoring for a minimum of an addition six months conditioned under the operational licence.

Depending on what the monitoring data collected during time limited operations indicates, it may be necessary to require ambient air monitoring for compositional analysis (using a high volume sampler configured for PM₁₀). The need for this type of dust monitoring will be considered during the licence application assessment stage.

The Delegated Officer has identified the need for dust controls from the screening activities which have been considered below in Section 1, Risk Assessment. The dust monitoring findings are described in the "key findings" table below:

Key finding:

The Delegated Officer has reviewed the information regarding dust emissions and monitoring and found:

1. *There are no dust controls on the screening plant identified in the EMP. Operational dust controls have been reviewed and will be considered as regulatory controls in this assessment of risk events.*
2. *Dust monitoring program should include PM₁₀ for twelve (12) month period at points AQ1 in Phase 1 (Stages 1 and 2), AQ1 & AQ2 in Phase 2 (Stages 3 & 4) and AQ2 during Phase 3 (Stages 5 & 6) operations. An initial requirement for dust monitoring to occur for 180 days during time limited operations under the works approval will be required. Ongoing monitoring for the full 12-month period for each operational phase will be conditioned under the licence.*
3. *Metrological monitoring for wind speed and wind direction is also required.*
4. *TEOM must be installed prior to screening operations commencing plus calibrated and operated to Australian Standards.*

7. Applicant controls

Table 6: Applicant's proposed controls.

Emission (as identified above)	Source	Proposed controls
Dust	Screening of material, vehicle movements, lift-off from stockpiles and/or stored product, earthworks etc.	<ul style="list-style-type: none"> • Programming work so that large sections of bare area are not exposed at any one time, less than 2ha to be open/un-rehabilitated. • Use of water carts and sprinkler systems on stockpiles. Water carts will have a capacity of 15000 liters. • Limiting traffic to haul roads and reduced speed limits in trafficable areas. • Ensure haul roads are well maintained and watered down to mitigate dust. • All trucks loads be covered before leaving the site. • Use of 1.8m high minimum dust screens on some boundary fences. • Use of mulches and ground covers to stabilize open areas. • Maintaining machinery in accordance with manufacturers specifications. • Replacing old machinery when no longer operating efficiently. • Stopping dust generating activities where preventative measures are not effective, during periods of unfavorable weather such as high wind speed. • Complete dust monitoring as per the EMP commitments. • A dust complaint reporting and investigation system to be implemented.
Noise	Screening of material	<ul style="list-style-type: none"> • Restriction of noise generating activities to 7am – 5pm Monday to Saturday (excluding public holidays). • Regular maintenance of plant and machinery (logbooks and service records to be kept). • Identified noisy equipment to be removed or discontinue its use until repaired. • Use broad band reversing “quackers” (a mixed frequency alarm). • If wind conditions increase noise travel in the direction of the nearest residences, cease noise generating activities until weather

Emission (as identified above)	Source	Proposed controls
		<p>conditions improve.</p> <ul style="list-style-type: none"> • Education of employees and contractors incorporated into site inductions to raise awareness of noise management measures. • Complete noise monitoring as per the EMP commitments. • A noise complaint reporting and investigation system will be implemented.
Contaminated Stormwater	Screening plant	<ul style="list-style-type: none"> • Monitoring of groundwater and Wetland 120 is covered by the Hydrology Assessment Management Plan (HAMP) conditioned in Commonwealth (EPBC Act 1999) and Local Authority (extractive industry licence) approvals. • Suitably maintained spill kits located near screening plant and staff trained in their use. • Maintain a 2 meters vertical separation between screening plant and groundwater level (conditioned within Commonwealth approval). • Divert clean stormwater away from the Screening plant. • A water complaint reporting and investigation system will be implemented.

8. Location and siting

8.1 Siting context

The premises at Lot 6, 300 and 301 Boomerang Road, Oldbury, is located approximately 36km south of the Perth central business district. The land is predominantly used for semi-rural lifestyle and residential activities including small orchard, gardens, stock water and a private motorcycle track. Contiguous to this property are located special rural zoned properties that contain residence located east, north, and west of the primary activity. A rail reserve borders the southern boundary which contains a drainage reserve managed by Water Corporation. The Premises is bordered by Boomerang Road to the north and Banksia Road to the west as shown in Figure 1 and 2.

8.2 Residential and sensitive premises

The distances to residential sensitive receptors are detailed in Table 7. Figure 4 illustrates the receptors location in relation to the proposed project property as described in Table 7 column 2 below.

Table 7: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
<p>Residential Premises</p> <p>Annual climate summary statistics indicate:</p> <ul style="list-style-type: none"> • 9am prevailing wind direction is from the east; and • 3pm prevailing wind direction is from south-west. <p>Dwellings referenced R3 & R4 are located west of premises and within the annual 9am prevailing wind direction.</p> <p>Dwellings referenced R5, R6, & R7 located north east of premises are within the annual 3pm prevailing wind direction.</p>	<ul style="list-style-type: none"> • R1 located 624m south west of Phase 3 working face. • R2 located 505m south west of Phase 3 working face. • R3 located 485m west of Phase 3 working face. • R4 located 120m west of Phase 3 working face. • R5 located 110m north east of Phase 1 working face. • R6 located 217m east of Phase 1 working face. • R7 located 320m east of Phase 1 working face. • R8 located 392m east of Phase 1 working face.

Sensitive Land Uses	Distance from Prescribed Activity
	<ul style="list-style-type: none"> R9 located 410m east of Phase 1 working face. See Figure 4 for location of receptors (R1 to R9).

8.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted because of activities at, or emissions and discharges from, the premises. The distances to specified ecosystems are shown in Table 8. Table 8 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

Table 8: Environmental values

Specified ecosystems	Distance from the Premises
Contaminated Sites	Lot 53 on plan 43098 being Crown Reserve 24784 immediately west and opposite side of Banksia Road to this premises – investigation required.
<u>Geomorphic wetland</u> Unknown – Sump land – Banksia Road Unknown – Palusplain Wetland L120 – Tumulus Springs	Within southern boundary of Lot 6 and minor section of south western boundary of Lot 300. Located directly south east of premises boundary on other side of railway reserve. See Figure 5.
Bush Forever: Regional open space or proposed regional open space	Banksia Nature Reserve (R28167) is 810m north from the Premises.
Threatened Ecological Communities and Priority Ecological Communities	Banksia dominated woodlands of the Swan Coastal Plain; IBRA Region, Priority 3, endangered are located within the premises. Communities of Tumulus Springs (organic Mound Spring of Swan Coastal plain – within Premises southern boundary near the railway reserve. See Figure 5.
Biological component	Distance from the premises
Threatened/Priority Fauna	<i>Isoodon fusciventer</i> (southwester brown bandicoot) - 1.2km north and 2km north west of northern premises boundary <i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo) – 415m west of premises boundary in Banksia Nature Reserve.
Threatened/ Priority Flora	Two species located between 800 and 950 metres west of the Premises boundary in Banksia Nature Reserve.

8.4 Groundwater and water sources

Table 9: Groundwater and water sources

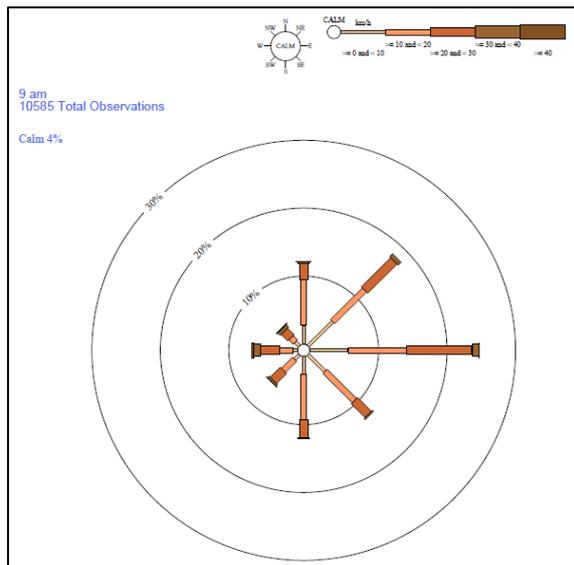
Groundwater and water sources	Distance from premises	Environmental value
<i>Rights in Water and Irrigation Act 1914 – Groundwater</i>	Premises is within the Serpentine Groundwater Area	Groundwater for drinking water supply and agricultural uses
Water Pollution Control Areas	Premises is 2.9km south of from Jandakot Underground Water Pollution Control Area	Drinking Water quality protection.
Watercourses - canal	Canal within southern section of lot 6 and lot 300 of premises downgradient of screening plant operations.	Civil works to drain stormwater towards wetland L120.
Watercourse - minor	1.6 km east constructed to divert stormwater and located down gradient of screening plant operations.	Aesthetic – drains agriculture pasture areas.
Hydrography WA 250K surface water bodies	1.31km west of western premises boundary located up hydraulic gradient of screening plant operations.	N/A
Groundwater	<p>Depth to groundwater encountered at approximately 12m AHD (based on information within works approval W6163/2018/1 supporting information).</p> <p>Groundwater flow direction is south beneath screening operations then east once intercepted by drainage system.</p> <p>Landowner has applied for a Groundwater Licence with an annual entitlement of 16,600kL/yr to supplement the sand mining operation.</p> <p>GWL159258- 90m upgradient from eastern premises boundary.</p> <p>GWL160664 – 362m upgradient from north east premises boundary.</p> <p>Numerous bores located west on special residential properties greater than 1 km of premises boundary (based on available GIS dataset –WIN Groundwater Sites).</p>	Water is used for domestic, stock watering, pasture irrigation and agricultural use.

8.5 Meteorology

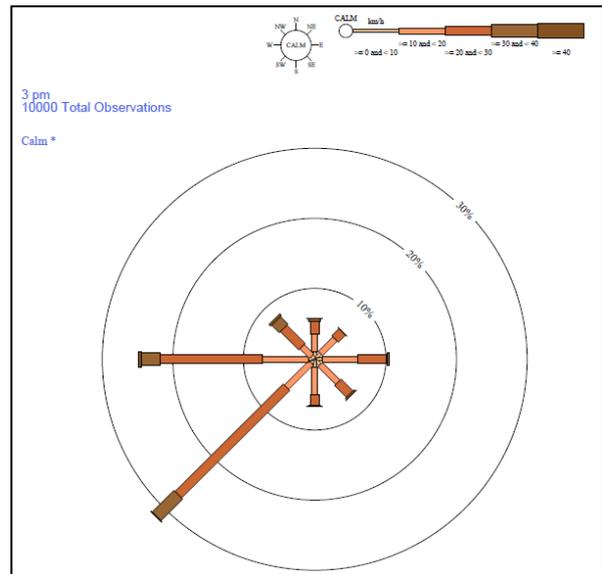
8.5.1 Wind direction and strength

The respective annual 9am and 3pm wind roses using data from the Bureau of Meteorology's Jandakot Airport site number 009172 at elevation of 30m AHD, located approximately 18.5km north of the Premises is represented in Figures 7 and 8 below.

9am prevailing wind direction



3pm prevailing wind direction



Figures 7 and 8: 9am and 3pm Wind rose respectively from 1/02/1989 to 10/08/2020.

Annual climate summary statistics indicate that the 9am prevailing wind direction is from the east; and the 3pm prevailing wind direction is from the south-west. Therefore, sensitive receptors R3 & R4 located west of premises and within the annual 9am prevailing wind direction and R5, R6, & R7 located northeast of premises are within the annual prevailing wind directions.

9. Risk assessment

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table 10 and Table 11 below, consistent with the *Guidance Statement: Risk Assessments*. Risk ratings have been assessed for each key emission source and consider potential source-pathway-receptor linkages.

The mitigation measures / controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction and operation have been assessed separately to allow clear delineation of activity phases.

The works approval that accompanies this report authorises construction and time-limited operations (180 days). A licence is required for long term operation of the premises following the time-limited operational phase authorised under the works approval.

The conditions in the issued Works Approval, as outlined in Tables 10 and 11 below, have been determined in accordance with the *Guidance Statement: Setting Conditions*

9.1 Risk Assessment – construction

Table 10: Identification of emissions, pathway and receptors during construction

Risk Event				Consequence rating*	Likelihood rating*	Risk*	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway, and impact	Applicant controls					
Placement of screener/crusher and associated equipment including machinery movements (reversing beepers). Digging working face to full floor depth prior to screening plant being installed.	Dust	Air/windborne pathway causing impacts to health and amenity of closest human receptors R4 located 120m east of primary activity in the morning prevailing wind direction and human receptor R5 located 110m north east of the primary activity in the afternoon prevailing wind direction.	Please refer to Section 7	Slight	Possible	Low	The minor construction works (equipment placement) are not expected to generate significant dust emissions. Applicant committed to undertake dust monitoring as management control for the project given the closeness of receptors and operations / techniques required to reach full floor depth so screening plant can be positioned.	N/A
	Contaminated Stormwater		Please refer to Section 7	Slight	Unlikely	Low	The frequency of monitoring the groundwater quantity and quality is conditioned in the Commonwealth and Local Authority approvals. No further controls required to monitor impacts on groundwater as oil, grease and fuel emission are unlikely to occur during construction phase and would be minor in volume.	N/A
	Noise		Please refer to Section 7	Minor	Unlikely	Medium	Although the closest human receptors are situated within a prevailing wind direction, the proposed minor works/ placement of equipment coupled with the Applicant's controls, it is expected that receptors will not be significantly impacted by noise emissions given the background ambient noise combined with the projects noise levels. Applicant's noise modelling requires the plant to be installed on the pit floor behind the quarry face at +18m RL to comply with noise regulation requirements. This will be a regulatory control placed on the works approval as part of construction requirements within condition 1. Preparation of a Construction Noise Management Plan will become a regulatory control to ensure Applicant's design, techniques and methods when preparing the pit working face and pit full depth for the mobile screen plant location are constructed in compliance with the Noise Regulations.	Noise Regulations apply to all phases of the project. Condition 1 <u>Condition 9</u>

9.2 Risk Assessment – operation including time limited operations

Table 11: Identification of emissions, pathway, and receptors during operation

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway, and impact	Applicant controls					
Screening activities Unloading, loading and storage of sand material Machinery movements	Dust	Air/windborne pathway causing impacts to health and amenity of closest human receptors R4 located 120m east of primary activity in the morning prevailing wind direction and human receptor R5 located 110m north east of the primary activity in the afternoon prevailing wind direction.	Please refer to Section 7	Moderate	Possible	Medium	The wetting down of dust on roads, restrictions to daily hours of operation, stockpile sizes, property separation distances, dust suppression and dust screens on boundaries are controls that are expected to be sufficient to mitigate dust emissions from the category 12 activities and will be included on the works approval as regulatory controls as described in the Environmental Management Plan including any addendum's to the plan. During time limited operations monitoring of PM ₁₀ at AQ1 and AQ2 will be required for 180 continuous days when operations commence in Phase 1, 2 and 3. As such the monitoring will be included in the works approval as a regulatory control.	Conditions 7, 8 and 11
		Air/windborne pathway causing impacts to threatened ecological communities, fauna, and flora in Banksia Road reserves.		Slight	Possible	Low	Advice provided by DBCA on 26/05/2020 indicates there is no dust sensitive ecological communities therefore impacts are minimal. The Shire of Serpentine-Jarrahdale planning approval conditions are sufficient for management of sensitive flora and fauna associated with the site, therefore no additional regulatory requirements will be included on the works approval, as a means of avoiding regulating duplication.	N/A
		Air/windborne pathway causing impacts to wetland L120 adjacent to the site.		Slight	Possible	Low	Additionally, the Commonwealth Department of Environment and Energy approval includes conditions that are sufficient to regulate the hydrology and groundwater quantity and quality therefore no additional regulatory requirements will be included on the works approval.	N/A
Screening activities Unloading, loading and storage of sand material Machinery movements	Noise	Air/windborne pathway causing impacts to health and amenity of closest human receptors R4 located 120m east of primary activity in the morning prevailing wind direction and human receptor R5 located 110m north east of the primary activity in the afternoon prevailing wind direction.	Please refer to Section 7	Moderate	Possible	Medium	Continuous monitoring of noise to confirm compliance of the <i>Environmental Protection (Noise) Regulations 1997</i> whilst time limited operations are occurring. If compliance cannot be confirmed the activities will be ceased, adjusted, and additional noise mitigations implemented. The monitoring and changes to mitigation controls will be requirements of the works approval as regulatory controls. Noise monitoring required on the works approval and Licence will be implemented as per the Environmental Management Plan and recent Addendum will become regulatory controls. As the closest residential lot is 120m west and 110m north east and within the average annual morning and afternoon prevailing wind direction, a noise monitoring assessment for compliance at the residents during time limited operations will be placed on the works approval as a regulatory control.	Conditions 1, 6, 10 and 12-17

Risk Event				Consequence rating**	Likelihood rating**	Risk**	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway, and impact	Applicant controls					
	Contaminated stormwater	Overland runoff causing impacts to onsite flora, surface water and threatened fauna from the increase of total petroleum hydrocarbons into the environment especially wetland L120.	Please refer to Section 7	Minor	Unlikely	Medium	Overland run-off is unlikely due to permeable local geology, whereby stormwater will directly infiltrate through surface sediments to the shallow aquifer. The risk rating for impacts from overland runoff is medium and therefore the applicants' controls will be conditioned within the works approval for time limited operations.	Condition 6
		Infiltration into groundwater		Minor	unlikely	Medium	The Hydrology and Environmental Management Plan requirements for monitoring of hydrology and groundwater adequately address the trigger levels determined from the groundwater modelling work with sufficient management actions once triggers are exceeded. Additionally, the Commonwealth Department of Environment and Energy approval contains conditions that regulate the hydrology and monitoring of groundwater quantity and quality (especially TPH) therefore no additional regulatory requirements will be included on the works approval regarding impacts to groundwater, as a means of avoiding regulating duplication.	N/A

10. Regulatory controls

10.1 Works Approval controls

10.1.1 Noise infrastructure and equipment (construction and operational)

The works approval will require the screening plant and associated material conveyors and machinery to be equipped with noise suppression based on the Applicant's and consultants proposed controls for noise which include:

- Sound power of the screening plant not to exceed 106dB(A).
- Front-end Loader sound power level not to exceed 110dB(A)
- Haulage Truck sound power level not to exceed 106dB(A)
- Screening plant processing capacity being 600 tonnes per hour
- Screening plant to be located on the pit floor at RL +18metres
- Broad band reversing alarms fitted to all machinery
- Time limited operations to commence for 180 days once the Phase 1 compliance Report has been received and acknowledged by this department.
- Natural sand ridge (Noise Bund) be maintained between Phase 1 and 2 operations
- Monitoring of Noise during time limited operations as committed by the Applicant in the Environmental Management Plan.

Grounds: It was determined that without controls noise levels from the operation were predicted to exceed Noise Regulations. Noise emissions were assessed with Applicant controls and have been assessed as being medium risk. The infrastructure and equipment control will suitably minimize the risk of noise on surrounding residents. The requirements are derived from noise controls proposed by the Applicant in the application and LGA consultants' reports.

10.1.2 Dust infrastructure and equipment (operational)

The following requirements will be specified in the works approval during time limited operations:

- 15kL capacity water cart be used for trafficable area dust suppression and around stockpiles
- Water sprays (from water cart) used to dampen stockpiles as necessary.
- Material stockpiles away from boundaries of the premises.
- Maintain dust screens on some boundary fences.
- Monitoring of Dust for PM₁₀.
- Cease operations when weather conditions are unfavourable.

Grounds: Dust emissions from the screening plant during operations have been assessed as medium risk with Applicants' controls. The use of dedicated infrastructure to contain the specified dust forming materials will suitably minimize the risk of generating airborne dust from the storage and handling of sand material and throughout the production process. The EMP has identified dust monitoring during the initial operations however to ensure dust does not impact human health it is proposed that monitoring for each Phase of operation occur for 12 months (this will be transferred to the licence for ongoing dust monitoring to continue). During time limited operations, for 180 days, monitoring will occur to aid the determination of risk to human health. The 180-day results will be reviewed, and management controls reconsidered for the operational licence. The initial requirements are derived from controls outlined by the Applicant in the initial application and EMP but will be reviewed considering the collected data.

10.1.3 Contaminated stormwater (operational)

The following management controls, infrastructure and equipment should be maintained and operated onsite for contaminated stormwater controls:

- Maintain suitably stocked spill response equipment close to where spills may occur.
- Contain and clean-up spills as soon as they occur.
- All clean stormwater is diverted away from the screening plant and equipment.

Grounds: Contaminated stormwater runoff from the screening plant have been assessed as medium risk with Applicants' controls.

11. Consultation

11.1 Public consultation

The Application was advertised for public comment on the Department's website on 20 and 27 May 2019 with submission closing date of 25 June 2019.

The Shires of Serpentine-Jarrahdale and City of Kwinana made submissions during the advertising period along with fifteen (15) submissions from interested parties located within the Oldbury locality.

Several issues were raised in the submissions have been summarised in Table 13 below. This table identifies the number of submissions each concern was identified. The matters raised in the submissions where summarised and provided as information and a response requested of the Applicant.

Table 13: Summary of public submissions

Issue	Number of submissions	Public concerns	DWER response
Noise Assessment	15	Concerns about the age of the Noise assessment submitted with the Application not being relevant for the proposed noise controls such as noise bunds and adequate separation distance from sensitive receptors.	Please see sections 6.1, 9.2 (Table 12) and 10.1.1 for details on noise emissions and DWER's risk assessment.
Noise bunds	15	Concerned that the location of the noise bunds does not align with the planning approval and therefore does not provide community protection from nuisance noise.	Please see sections 6. 1, 9.2 (Table 12) and 10.1.1 for details on noise emissions and DWER's risk assessment.
Noise emissions	15	Concerns with nuisance noise from screening plant and mechanical equipment including truck movement, especially breaking and acceleration on and off Banksia and Boomerang Road.	Please see sections 6. 1, 9.2 (Table 12) and 10.1.1 for details on noise emissions and DWER's risk assessment. The movements of trucks coming into and out of the premises is regulated by the local government authority.
Noise Management	6	The Noise Management Plan is required to address and mitigate noise levels associated with the	Please see sections 6. 1, 9.2 (Table 12) and 10.1.1 for details on noise

Issue	Number of submissions	Public concerns	DWER response
Plan		project but the plan provided does not provide sufficient details to achieve those outcomes.	emissions and DWER's risk assessment.
Noise Monitoring	6	Community want a detailed noise monitoring program to be implemented that protects the community from nuisance noise.	Please see sections 6. 1, 9.2 (Table 11) and 10.1.1 for details on noise emissions and DWER's risk assessment. Condition 10 – requires the works approval holder to carry out an investigation into noise emissions (including monitoring) and to submit a report on this investigation to DWER.
All emissions	9	Community require restrictions be applied by the regulators to ensure public health and welfare of the nearby community is protected.	Noted.
Fugitive Dust emissions	9	The Dust Management plan is required to address and mitigate dust associated with the project. Concerns raised that the health risks associated with the dust particles will need to be addressed in this plan as well as consideration be given to the DWER LiDAR plume mapping studies completed for Mandogalup.	Please see sections 6.3, 9 (Table 10 and 11) and section 10.1.2 for details on dust emissions and DWER's risk assessment.
Dust Monitoring	12	Concerns that dust emission monitoring should include the measurement of dust parameters that address health risk criteria and then reporting the monitoring results to the community.	Please see sections 6.3, 9 (Table 10 and 11) and section 10.1.2 for details on dust emissions and DWER's risk assessment. Condition 11 of the works approval outlines dust monitoring requirements.
Dust and toxic emissions	10	Concerns relate to health impacts from particulate matter on surrounding residents especially dust carcinogens and hydrocarbons.	Please see sections 6.3, 9 (Table 10 and 11) and section 10.1.2 for details on dust emissions and DWER's risk assessment.
Health and wellbeing	12	Residents have raised that their lifestyle and health and wellbeing will be impacted by the sand pit operations.	This is noted and has been considered in DWER's risk assessment of emissions.
Contaminated stormwater	8	Concerns that hydrocarbon contaminated stormwater impacting L120 wetland to the south-east of the proposal.	Please see sections 6.2, 9 (Table 10 and 11) and section 10.1.3 for details on contaminated stormwater runoff and DWER's risk assessment.

Issue	Number of submissions	Public concerns	DWER response
L120 Wetland water quality	8	Concerns of stormwater runoff downhill impacting on groundwater and waterway health.	Please see sections 6.2, 9 (Table 10 and 11) and section 10.1.3 for details on contaminated stormwater runoff and DWER's risk assessment.
Devaluation of property	8	Concerns that the value of their property will be reduced from the location of the sand pit, truck movements and the emissions from the screening plant.	Noted. Impacts to human receptors amenity and health have been considered within DWER'S risk assessment.
Community Engagement during planning approvals process	17	Concerns that the Applicant's lack of community engagement during the development approval processes when required by the SAT approval. Inconsistencies with what is documented versus what was approved raises suspicions and questions about what is occurring at the site. Applicant to establish a community consultative program in conjunction with local community.	DWER has undertaken community consultation in regard to this application. Comments from the community in relation to impacts to the environment and public health have been considered in this decision report. It is outside the scope of the works approval to require ongoing applicant community consultation.
Documented project changes	15	Concerns were raised about increased annual production at pit, expanding operations to property on Banksia Road, clearing approval conditions and EPBC Act approval and operational aspects described in the Application supporting documents.	The information that has been assessed is what has been submitted as part of this works approval application. Conditions on the works approval relate to this information.
Land Uses	12	Concerns relate to the unsuitable location for the proposed sand pit as it lies within a residential and agriculture area. These operations should be in an Industrial estate.	This is not something DWER regulates and is a matter for the local government authority.
Traffic	17	Concerns relate to additional number of trucks on Boomerang and Banksia Road entering the sand quarry. Highlighted that Boomerang Road is a limestone road and not designed as an industrial road to service industrial traffic.	This is not something DWER regulates and is a matter for the local government authority.
Operating Hours	12	The screening plant and sand pit will operate 6 days per week causing disturbance on weekends (Saturdays). Concern that the operational hours did not match the development approval hours.	Operating hours will be from from 7:00am to 5:00 pm Monday to Saturday inclusive except on public holidays". This has been conditioned within the local governments extractive industry's approval – which the applicant must comply

Issue	Number of submissions	Public concerns	DWER response
			with.
Rainwater Tanks and Vegetation	4	Residents have raised concerns relating to dust emissions from the screening plant deposited into rainwater tanks and impacting on human health and vegetation.	Please see sections 6.3, 9 (Table 10 and 11) and section 10.1 for details on dust emissions and DWER's risk assessment.
Flora and fauna	17	Impacts on flora and fauna from spills and dust pollution.	Please see sections 6.3, 9 (Table 10 and 11) and section 10.1 for details on dust emissions and DWER's risk assessment.
Light emission	4	Concern that security lights at night will impact on neighbouring properties.	This is a matter for the local government authority
Impacts on agricultural land	7	Concerns relate to potential impacts on grazing lands and animals from toxic emissions.	Impacts to sensitive receptors has been considered during this assessment.
Inappropriate separation distance	7	Concerns that the EPA 500m to 1000m buffer distance has not been applied, nor could it be applied as numerous properties occur within the buffer area.	Impacts on nearby human receptors have been considered within the risk assessment outlined within this decision report.
Policing of site	8	Concerns that the Applicant is unlikely to manage the site appropriately. Lack of confidence with government agencies in policing and auditing the operations of the site.	Noted.

The concerns relating to land uses, traffic, devaluation of property, community engagement, planning development approval, road usage, separation distance, are concerns that are outside of the Premises boundary and outside of the scope of this Decision Report but may be managed through local government development approval process under the *Planning and Development Act 2005*.

Concerns relating to emissions from the screening plant (primary activity) such as noise, dust and contaminated stormwater were considered during the assessment of the risk event.

11.2 Applicant's comments

The applicant was provided with the draft Decision Report and Works Approval on 30 October 2020. The Applicant submitted correspondence on 23 November 2020 with comments on the draft conditions and decision report. These comments and the department's response are detailed within Appendix 1.

The applicant was provided with a second draft Decision Report and Works Approval on 27 July 2021. The Applicant submitted correspondence on 03 September 2021 with comments on the draft conditions and decision report. These comments and the department's response are also detailed within Appendix 1.

12. Conclusion

This assessment of the risks of activities on the premises has been undertaken with due consideration of factors, including the documents and policies specified in this Decision Report and summarised in Appendix 2.

Based on this assessment, it has been determined that the Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

The works approval authorises construction and time-limited operations (for 180 days) only. A licence is required for long term operation of the premises following the time-limited operational phase authorised under the works approval. The Applicant will be required to submit a licence application for assessment prior to the completion of the time-limited operations phase.

Appendix 1: Applicant's comments on drafts

Condition / Term	Works Approval Holder's comments	DWER Response
Comments received on 23 November 2020.		
Prescribed Premises	The application is for a Category 12, and the draft specifies a Category 70. Please amend the works approval.	Noted by the Delegated Officer and documents amended to reflect category 12 operations.
Design Throughput	The application was to screen between 100,000t – 500,000t per annum (as per your decision report). We request the heading be revised to 'Maximum Production/Annum – up to 500,000t'.	<p>The Delegated Officer noted the initial application dated 12 July 2018 section 4.6 requested design capacity of 250,000 tonnes per annum and Section 4.7 estimated throughput of 150,000 tonnes per annum. The 100,000 t to 500,000 t relates to the capacity range for fees under Category 12. This was mistakenly referenced within the decision report.</p> <p>The assessment has been based on the maximum design capacity outlined within the initial application form dated 12 July 2018. An assessment of emissions and discharges for a maximum design capacity of 500,000 t cannot be done at this late stage as it will involve a complete reassessment.</p> <p>Additional approval will need to be sought under Part V to authorise this increase.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
Works Approval Duration	<p>The works approval duration for time limited operation should be extended to 5 years to allow for the required 12 months of dust monitoring, DWER's assessment of the monitored data and to align with other approvals for this site.</p> <p>Additionally, the Environmental Protection Amendment Bill 2020 has been passed by Parliament and is awaiting assent. When the bill is assented and the relevant sections proclaimed the works approval/licensing framework under Part V of the EP Act will be amended so that a licence will regulate all of the construction, commissioning and operational phases. Given this legislative change it makes sense for the works approval to regulate/authorise the longer term operational phase, rather than only regulating/authorising time limited operations.</p>	<p>The amendments to the EP Act regarding Part V Division 3 (regulation of emissions and discharges) are not yet implemented. The Delegated Officer must operate as per current policy outlined within the <i>Guide to Licencing</i> which allows for time limited operations (TLO) to occur under a works approval for a maximum period of 180 days.</p> <p>After this TLO phase a licence will need to be in effect to allow for ongoing operation. The purpose of the time limited operations phase is to allow the works approval holder to transition to licensed operations. It allows the works approval holder to operate while a licence is applied for and issued for the ongoing operations of the Premises. This approach has been developed to help streamline the approval process for applicants.</p> <p>The Delegated Officer has agreed to extending the TLO phase to the maximum timeframe allowed, which is 180 days.</p>
Figure 2 – screening plant location	<p>Condition 1c – we request an additional screening location be identified on the map for transparency (Figure 2 within the Draft WA & Decision Report). The initial screening location will be within the southernmost corner of Phase 1 as correctly identified within the decision report (Section 6.1.2). During the initial phase of the operations (Phase 1), the operations are close to the eastern face of the pit to provide a sufficient barrier effect to ensure compliance with the Regulations during the operating times of 7.00 a.m. to 5.00 p.m. Monday to Saturday (Excl Public Holidays). This has been modelled in the initial assessment for Rocla as per Figure 4.1 below.</p>	<p>DWER has sought technical advice regarding this request and agrees that this additional screening location can be added to Figure 2 in Schedule 1 of the works approval. Technical advice confirms that this location has been modelled and that noise emissions have been predicted to meet Noise Regulation assigned levels.</p>
Condition 2 Construction Phase	<p>The timeframe for compliance with Condition 2 (being 7- calendar days and potentially requiring third party certification) is very tight and may not be achievable. We are unclear why such a timeframe is required when operations cannot commence under Condition 4 prior to the compliance report being submitted. We request the 7-calendar day timeframe in Condition 2 be removed.</p>	<p>A timeframe has to be specified; however, it can be extended to 30 days. This change has been made to condition 2.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
<p>Condition 2 table 1</p>	<p>Items 2 (noise bund) and 3 (mobile machinery & loader) of Table 1 are related to operational works, are not relevant to the installation of the screening plant and should be deleted.</p>	<p>Item 3 has been removed from Table 1 and placed within Table 2 (condition 6) as they are operational requirements.</p> <p>Item 2 noise bund has also been removed from Table 1 and placed within Table 2 (condition 6) as no construction is required to install this noise bund and its 'installation' more relates to retaining the natural sand ridge between phase 1 and phase 2 of the pit's construction during operation.</p> <p>A requirement restricting the location of the plant to the phase 1 locations depicted in Figure 2 has been placed on the works approval during time limited operations. As time limited operations will only occur for 180 days the additional locations will be regulated under a licence and not this works approval.</p>
<p>Condition 3a & 3c</p>	<p>Condition 3a & 3c are unnecessary given the nature of the construction works authorised. Specifically, third party certification is unnecessary (and provides no regulatory value) when Table 1 item 1 clearly sets out the authorised extent of the mobile screening plant (i.e. maximum sound power level not exceeding 106 dBA and a maximum processing capacity of 600 tonnes/hr).</p> <p>Similarly, unlike large scale/complex industrial processing plants, a set of as constructed plans have no regulatory value when the works approval specifies what specific plant is permitted and in what specific location (and where no commissioning phase, which could result in alterations to the physical plant or its operation, is required).</p> <p>To this extent we note that the legislative power (s. 62(1) of the EP Act) to impose works approval conditions is that such conditions are considered by the CEO "to be necessary or convenient for the purposes of this Act relating to the prevention, control, abatement or mitigation of pollution or environmental harm". The CEO's opinion that the conditions are necessary or convenient must be reasonably held. We do not consider that conditions 3(a) or (c) meet that requirement and we request they be deleted.</p>	<p>The compliance reporting conditions on the works approval are standard conditions placed on all works approvals. The requirement to certify or confirm that the infrastructure has been constructed in accordance with requirements of condition 1 is necessary as the infrastructure details are what the risk assessment is based on.</p> <p>The Delegated Officer has agreed to the removal of the 'as constructed plans' requirement and the necessity for a third-party certification</p>

Condition / Term	Works Approval Holder's comments	DWER Response
<p>Condition 6 Table 2</p>	<p>We request that the "operational pit area" be defined in Item 2, so that the same phrase can be used for Item 3-Water cart and that clarity is provided for Item 4-Operational areas (although item 4 should be narrowed to a bunded area for refuelling/on-site fuel storage).</p> <p>Item 5 should be deleted as the only relevant "Equipment, machinery and vehicles" are addressed in items 1 and 2.</p> <p>Item 6 requires clarification of the infrastructure location so that boundary fencing is not provided on internal boundaries. We request this be amended to 'Located along the Premises or Site Boundary'.</p> <p>Item 7 should address AQ2</p> <p>Further, given the low risk, the reference to "Clean surface water is diverted around operational areas" should be deleted (and the corresponding text in Table 7 and section 10.1.3 of the draft decision report requires revision). This requirement is inconsistent with the draft decision report finding (section 6.2) that "Two metre vertical separation depth for pit floor level to water table at RL +16 metres is a regulatory control for the contaminated stormwater risk events assessed in this report".</p>	<p>Noted, text further explaining what operational pit area means has been added to Item 2 Table 2.</p> <p>Item 2 has also been updated to include operational requirements of other mobile equipment on site. This update removes Item 3 requirements from Table 1 (condition1).</p> <p>Item 3 of Table 2 has been updated to include additional text referring to the operational pit area to be consistent with Item 2</p> <p>Item 4 has been updated to only relate to hydrocarbon or chemical storage areas. Requirements for diverting clean stormwater and containing contaminated stormwater relate to the mobile plant locations and so have been moved to item 1.</p> <p>Item 5 of Table 2 has been deleted as it is replaced by the updated text in Item 2.</p> <p>Item 6 (now Item 5) has been updated to clarify location of dust screens – to be along the entire length of the premises boundary. Item 7 (now Item 6) has been updated to relate to both dust monitors.</p> <p>New row has been added to Table 2 to include the operational requirement to maintain a 'noise bund' between phase 1 and phase 2 operations. This row has been moved from Table 1 (condition1) as it is an operational requirement.</p> <p>The risk for contaminated stormwater runoff impacting offsite flora and surface water has been determined to be 'medium' and not 'low' as per table 12 in the decision report. Therefore, as per DWER policy 'Guideline: Risk Assessments' applicant controls will be conditioned within the works approval. One such control is to ensure clean surface water is diverted around operational areas. Section 6.2 relates more to impacts to groundwater.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
Term definition	The reference to Operations in conditions 4, 6, 12, 16, 18, 19, and 22 and sections 4.2, 6.3, and 10.1 and Tables 7, 8.4, 11 and 12 of the decision report require that Operations be a defined term (within the definition table).	A definition for time limited operations already exists on the works approval and the Delegated Officer considers this sufficient to define what is meant by 'operations'.
Condition 5	Condition 5 should be deleted, as the works approval should authorise/regulate the entire operational life of screening activities (noting the DWER policy position on longer term licence durations - DWER Guidance Statement Licence duration states that "The department has a preference for longer term (20-year) licences under Part V, Division 3 of the EP Act to provide greater certainty to industry, reduce the administrative burden on both industry and the department, and allow DER to focus on areas that deliver a greater environmental protection benefit, including proactive compliance assessment and management, and regulating industry to ensure that contemporary risk-based pollution prevention, control and abatement outcomes are achieved" – and that the guidance statement identifies that account will be taken of the duration of other statutory approvals, such as planning approvals).	<p>DWER policy document 'Guidance statement – Licence duration) relates to licences and not works approvals. The standard duration for a works approval is 5 years.</p> <p>The works approval duration will be 5 years from the date of issue.</p> <p>Operation under a works approval can only occur for a maximum period of 180 days (as per DWERs policy document Guide to Licensing). Ongoing operation of the project can only occur under a separate licence.</p> <p>The purpose of time limited operation conditions is to allow time for a licence to be approved and not for long term operation.</p>
Condition 7	<p>Condition 7 (no visible dust crossing the boundary) should be deleted. This condition is reflective of "back to the future", being a condition that DWER previously abandoned in apparent recognition that mere visible dust was not indicative of environmental harm (including amenity impacts) and has no relationship with the NEPM (air quality) standard particulates.</p> <p>Further, the condition seems unreasonable when actual dust monitoring (including for a 12-month period at the commencement of each of Phases 1 to 3) is required and environmental harm can be assessed more directly against measured readings.</p>	<p>The Delegated Officer can include regulatory controls were required to minimise impacts to the environment and public health. In this case, having two sensitive receptors within two hundred (200) metres of Phase 1 activities and one receptor within one hundred and twenty (120) metres of phase 3 and all within the prevailing wind direction, this control is considered necessary to reduce dust impacts.</p> <p>It is a works approval holder control/commitment within the EMP to stop dust generating activities where preventative measures are not effective especially during unfavourable weather such as high-speed winds. This condition reflects the applicant proposed control.</p>
Condition 8	Condition 8 should be narrowed to better reflect screening activities (as distinct from wider mining operations). It appears that (a), (d), (e) and (g) should be deleted (as relating to mining rather than screening activities) and the stockpiles for wetting down should better relate to screening activities (i.e. dust generation associated with the deposition on the stockpile of screened material).	This condition has been updated to remove requirements d, e and g, as they do not relate to Category 12 operations.

Condition / Term	Works Approval Holder's comments	DWER Response
Condition 9	Condition 9 should be deleted as it does not relate to screening activities.	The Delegated Officers agrees with this comment and has removed this condition from the works approval. The EIL and SAT approval address this requirement and it has therefore not been duplicated in this approval.
Condition 10	<p>Condition 10 should be deleted as operational hours are governed by the local planning approval and is based on screening and mining operations (including on-road haulage).</p> <p>There is nothing with the draft decision report that provides any justification for the restricted hours as proposed. It is also inconsistent with section 4.1 of the draft decision report, which states: <i>"Final sand product will be removed from site as required by haul trucks and transport [sic] off site to market. The screening plant will initially be positioned in Stage 1, Phase 1 of Figure 2. Operational hours are from 7:00am to 5:00 pm Monday to Saturday inclusive except on public holidays"</i>.</p>	The EIL and SAT approval address this requirement and to avoid regulatory duplication, this condition has been removed as a regulatory control from the works approval.
Condition 11 (now condition 9)	Condition 11 should be deleted, as being unnecessary - the draft decision report notes that construction works are not required. Further, the subject matter of the construction management plan appears to be the wall and pit floor profile that occurs through the operational (rather than the construction) phase as part of the mining operations. Additionally, item 1 of Table 1 specifies the pit floor requirement for the screening plant of +18 m RL, and there appears nothing further in this regard to be managed by a construction management plan. If the condition is truly intended to provide the pit wall dimensions for the Noise Bund between Phases 1 and 2 then any Noise Bund requirements should be explicitly set out in a condition (including, if necessary by a schematic plan), rather than attempting indirectly to regulate this through a Construction Management Plan (along with the risk of such a plan encroaching into areas that could not properly be conditioned under s. 62 of the EP Act). We suggest instead that a condition be imposed on Hanson to commit to implementing/complying with the recommendations proposed in the LGA Noise Assessment (Rev B, July 2020).	<p>Noise emissions are regulated by the <i>Environmental Protection (Noise) Regulations 1997</i> which is a subsidiary legislation under the <i>Environmental Protection Act 1986</i>.</p> <p>It is common for cumulative noise emissions from the sand quarry activity and the crushing and screening operations to be assessed together as it's very difficult to separate the two emission sources when it comes to noise emissions.</p> <p>The need for a construction noise management plan (CNMP) has been deemed necessary through consideration of the internal technical noise advice the Delegated Officer as part of this assessment. The applicant should also note that it is a requirement of Regulation 13 of the Noise Regulations to have a CNMP.</p> <p>Section 6.1.2 has been updated to narrow the scope of the CNMP.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
	<p>It also appears that the requirement for the Construction Noise Management Plan may be for compliance with the assigned noise level during mining operations to construct the quarry floor (section 6.1.2 of the draft decision report). However, such excavation works do not form part of the screening prescribed premises activities - we recommend the final paragraph of section 6.1.2 (and included bullets, which include reference to an amended Environmental Management Plan) should be deleted.</p>	
<p>Condition 12 (now condition 10)</p>	<p>Condition 12 (now condition 10) – 7 days to organise an additional noise assessment once screening operations have commenced is a tight timeframe which Hanson may not be able to meet (due to consultant availability). We request the wording of this condition be amended to say 'within 30 days of commencement'.</p> <p>Additionally, we request the wording of Condition 12c to read 'the consultant must provide the report to the works approval holder within 30 days of undertaking the assessment'.</p>	<p>Renumbered to condition 10</p> <p>The timeframe has been changed to 30 days.</p> <p>Wording of Condition 10(c) has been modified.</p>
<p>Condition 13 (now condition 11)</p>	<p>Condition 13 (now condition 11) – Table 3 provides continuous monitoring of TSP and PM10, but should also address what happens if AQ1 or AQ2 malfunction for any period of time (i.e. is screening, but not mining required to cease until the relevant monitor is again functioning).</p>	<p>The Australian Standards provide guidance on continuous monitoring and data record acceptability. This collected data will be required to be reported to DWER by condition 19 and 21.</p>
<p>Condition 18 (now condition 16)</p>	<p>Condition 18 contains an error in that it should refer to condition 6 rather than condition 1.</p>	<p>Condition renumbered to condition 16. Noted and agreed.</p>
<p>Condition 23 (now condition 21)</p>	<p>Condition 23(a) should refer to both conditions 1 and 6.</p>	<p>Condition 23 has been renumbered to be condition 21. 21(a) refers to condition 1 which is correct. 21(b) should refer to condition 6 and not condition 5. This has been updated.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
Condition 26 (now condition 24)	Condition 26 – Hanson is happy to provide the addendum to the EMP – however there is no 'Condition 14 in Table 4'. But there are two Table 3's. We request the wording of this condition be amended to 'the works approval holder must submit to the CEO the addendum to the Environmental management Plan a minimum of 45 days prior to screening operations commencing'.	Noted by the Delegated Officer and condition 26 (renumbered to condition 24) amended to delete 'Condition 14 in Table 4' and reflect the change in timeframes to '30 days prior to screening operations commencing' instead of '30 November 2020'. The second Table 3 has been renumbered to Table 4.
Conditions 25 (renumbered to 23) & 27 (deleted)	As per Condition 11, also Conditions 25 and 27 are duplicative, inconsistent and should be deleted.	Condition 27 has been deleted as it's a duplicate. Condition 25 has been renumbered to condition 23 and retained within licence as condition 9 (old condition 11) has been retained.
Noise (dBA)	Table 2 Item 2 (103 dBA at 12 m) and Table 1 Item 1 (110 dBA) are inconsistent and confusing. The Environmental Noise Assessment Revision B (21 February 2020) provided by Lloyd George Acoustics sets out an overall dBA for Komatsu WA600 FEL of 110 dBA. We request Table 2 – Item 2 be amended to specify 110 dBA for consistency.	Noted by the Delegated Officer and Table 2 of the works approval amended to reflect the sound power level of the Komatsu WA600 FEL as 110 dBA.
Noise (dBA)	Table 1 Item 3 (Haulage Trucks sound power levels not to exceed 106 dBA) – Hanson cannot manage or regulate external contractors vehicles. We request this line within Table 1 Item 3 be deleted.	This requirement has been moved to Table 2. Noted by the Delegated Officer but this is a maximum sound power level for haulage trucks used in the noise modelling and therefore considered a important noise control. This sound power level should not be exceeded by a road worthy vehicle with a standard exhaust system.
Dust Monitor	Hanson currently uses ES-642 dust monitor at other operations as specified by EPA & Ministerial Statements. We propose to use this monitor (brochure and reference photo attached) for the required dust monitoring at Oldbury.	Due to the distance to sensitive receptors the Delegated Officer has determined that it is possible that dust may impact on nearby residences. Therefore, it has been determined that it is necessary to require standard monitors like TEOM to be installed to monitor dust. This requirement may be reconsidered during the licensing stage once initial dust monitoring data has been provided to the department for review.

Condition / Term	Works Approval Holder's comments	DWER Response
Comments received 3 September 2021 on second draft.		
Condition 8c – Dust Generation	Reword this condition to read 'locate material stockpiles greater than 50 metres from the premises boundary; and'. This avoids any confusion.	Requested change has been accepted.
Condition 8d – Dust Screens	Can the Dept please specify where dust screens should be located. (i.e please see proposed locations below)	This requirement has been removed from this condition.
Condition 6 – Table 2: Item 5 Fencing	This condition specifies dust screening along the entire premises boundary which is impractical for a variety of reasons. There are no close sensitive receptors to the south, and the vegetation buffer is a preferable visual option, as it acts as a natural dust screen whilst also adding to the local amenity. The required conservation covenant to the south also acts as an ecological corridor. This proposed fencing and dust screening would require additional and unnecessary clearing permits, whilst also forming a physical barrier for fauna passing between adjoining lots. Hanson proposes to install fencing along the extraction boundary to 1.8m high as stages are cleared. We have proposed the locations (in red) in the map below and are happy to talk through this in more details if required.	<p>The Delegated Officer has considered this request and accepts the applicant's justification for only requiring dust screens on certain areas of the sand extraction boundary. The additional dust controls on the licence adequately manages the risk from dust emissions. These controls will be reassessed during the licence application assessment.</p> <p>Requirement to maintain dust screens around entire premises boundary has been modified to requiring dust screens around areas of the sand extraction boundary as outlined by the applicant.</p>
Condition 6 – Table 2: Item 1 Infrastructure Location	Hanson propose an additional two screening plant locations as per the additional yellow dots in Phase 1 & 2 below – this will allow for material to be processed as close to the working face as possible (which will act as a noise & visual buffer) reducing potential generated dust, vehicle movements, vehicular noise and subsequent carbon emissions.	<p>DWER has sought technical advice regarding this request (A2046747) and agrees that this additional screening location can be added to Figure 2 in Schedule 1 of the works approval.</p> <p>Figure 2 has been replaced with a new map.</p>
Condition 6 – Table 2: Item 7, 3rd Dot Point (Bund Height)	Delete 3rd dot point as it conflicts with the two previous dot points, is incorrect and should be removed. The Noise bund consists of retaining the existing natural ridgeline which will have remnant vegetation on top.	3 rd dot point has been removed as this was mistakenly left in the draft after the second review.

Condition / Term	Works Approval Holder's comments	DWER Response
Condition 6 - Table 2: Item 2, Vehicle sound power levels and broad band reversing alarms	We suggest a wording change of dot point 2 to read 'Hanson will take reasonable steps / undertake reasonable inquiries in satisfying itself that compliance with the noise regulations are or will be achieved', instead of 'Haulage trucks sound power levels not to exceed 106 decibels'. This condition may not be able to be complied with as Hanson cannot control external haulage vehicles.	<p>This sound power level has been used within the noise modelling reports and this forms the basis of the Dept risk assessment. It is deemed necessary to condition the sound power levels of machinery on site due to the risk of the <i>Environmental Protection (Noise) Regulations 1997</i> assigned levels not being met.</p> <p>This requested change has not been accepted.</p>
Cond 9 & 23 – Noise Construction Management Plan	This Works Approval is for the installation of the screening plant as a prescribed activity, which will be assembled offsite before being brought to the quarry. The noise bund required to adequately dampen noise from the screening plant to nearby sensitive receivers will not be 'built' – the bunding is simply the sand face left as extraction continues around it (as outlined within Condition 6 – Table 2:Item 7). As per Section 4.3 of the Draft decision report – the extraction of sand itself is not a prescribed activity. Therefore Condition 9 & 23 should be deleted.	<p>Noise emissions are regulated by the <i>Environmental Protection (Noise) Regulations 1997</i> which is a subsidiary legislation under the <i>Environmental Protection Act 1986</i>.</p> <p>It is common for cumulative noise emissions from the sand quarry activity and the crushing and screening operations to be assessed together as it's very difficult to separate the two emission sources when it comes to noise emissions.</p> <p>The need for a construction noise management plan (CNMP) has been deemed necessary through consideration of the internal technical noise advice the Delegated Officer as part of this assessment. The applicant should also note that it is a requirement of Regulation 13 of the Noise Regulations to have a CNMP.</p>

Condition / Term	Works Approval Holder's comments	DWER Response
<p>Condition 11: Table 3 - Monitoring of Air Quality (Dust)</p>	<p>Hanson has received feedback from expert consultants and would like some clarity on what is being proposed.</p> <p>There are two methods referenced in Table 3, AS3580.1.1 Guide to siting air monitoring equipment and AS3580.9.11 Determination of suspended particulate matter - PM10 beta attenuation monitors. In the parameter column both TSP and PM10 have been listed, however no Method has been listed for TSP, therefore we are unsure as to which method TSP is to be monitored.</p> <p>In the Frequency column 'Continuous' has been listed as the frequency, the Standard for TSP is AS3580.9.3 Total Particulate matter (TSP) - High Volume Sampler, this is a 24hr avg and however would require a filter change out daily and laboratory analysis during times of operation this would be very onerous and mains power would be required at the monitoring location. Hanson would not be able to install this type of monitor without seeking further permits.</p> <p>Based on Table 3 and the listed requirements as both TSP and PM10, a frequency of continuous, an averaging period of 24hr and only the method listed is for Beta Attenuation Monitors (BAM) - does this mean that monitoring TSP using a BAM would be considered satisfactory? A BAM can be fitted with either a TSP or a PM10 inlet, and would be more autonomous than a High Volume Sampler, however as above only the PM10 measurement would be AS compliant. If this is considered satisfactory is the expectation that both TSP and PM10 are monitored at both locations simultaneously and continuous, ie four (4) monitors?</p>	<p>The reference to AS3580.1.1 <i>Guide to siting air monitoring equipment</i> has been removed from Table 3 as the siting requirements have been adequately addressed within condition 1, table 1, row 2 which requires the dust monitors to be installed in accordance with AS3580.1.1</p> <p>The reference to AS3580.9.11 <i>Determination of suspended particulate matter - PM₁₀ beta attenuation monitors</i> has been removed as this is the wrong standard to be referred to. The correct standard has now been referenced - AS 3580.9.8-2001 - <i>Method for sampling and analysis of ambient air - Determination of suspended particulate matter – PM₁₀ continuous direct mass method using a tapered element oscillating microbalance analyser</i>.</p> <p>The requirement for TSP monitoring has been removed. The need for this type of monitoring will be revisited during assessment of the licence application.</p> <p>It is expected that monitoring is undertaken by a TEOM monitor as required by condition 1 table 1 row 2.</p>
<p>Decision Report 10.1.2 Dust Infrastructure & Equipment</p>	<p>Comment - Point 2 references dust lift off controlled by sprinklers at stockpiles – this has never been put forward as a dust suppression option as there is no water licence for this site.</p>	<p>The reference to sprinklers on stockpiles has been removed from decision report.</p>

Appendix 2: Key documents

Document title	Availability	
Works Approval Application form	DWER record A1705817	
Works Approval form attachments 1A, 1B, 1C, 3, 4A, 4B & 5	DWER record A1705818 to A1705827	
Works Approval Figures 1 to 6	DWER records A1706135 to A1706142	
Appendix 1 – SAT Approval	DWER record A1706113	
Appendix 2 – Clearing Permit	DWER record A1706120	
Appendix 3B – EIL Approval and Conditions	DWER record A1706123	
Appendix 3A – EIL Transfer to Hanson	DWER record A1706122	
Appendix 4 – BPS Environmental Management Plan	DWER record A1706124	
Appendix 5 – Hydrology Management Monitoring Plan	DWER record A1706125	
Appendix 6 – Site Restoration management Plan	DWER record A1706126	
Appendix 7 – Noise Impact Assessment	DWER record A1706127	
Appendix 8 – EPBC Act Approval	DWER record A1706129	
Appendix 9 – Level 1 Flora and Fauna Survey	DWER record A1706130	
Environmental Noise Assessment (ENA) – Reference 9061279-01A	DWER record A1775968	
Submissions and Further information requested on 27/08/2019 - response dated 24/04/2020	DWER record A1912567	
Revised Noise Assessment – Reference 9061279-01B	DWER record A1904626	
Background Noise Survey Boomerang Road, Oldbury – Ref 20075607-01	DWER record A1923667	
Hanson reply to request for further information received on 18 August 2020	DWER record A1924498	
Hanson reply to Schedule 2 submissions	DWER record A1889016	
DBCA response to DWER request for advice of 5 May 2020	DWER record A1897267	
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at www.dwer.wa.gov.au	
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.		
DER, August 2016. <i>Guidance Statement: Licence duration</i> . Department of Environment Regulation, Perth.		
DER, February 2017 <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.		
DER, November 2016 <i>Guidance Statement: Environmental Siting</i> . Department of Environment Regulation, Perth		
DER, May 2016 <i>Guidance Statement: Publication of Annual Audit Compliance Reports</i> . Department of Environment Regulation, Perth		
DWER, June 2019 <i>Industry Regulation Guide to Licensing</i> . Department of Water and Environmental Regulation, Joondalup		
DEC, March 2011 <i>A guideline for managing the impacts of dust and associated contaminants from land development sites, contaminated sites remediation and other related activities</i> . Department of Environment and Conservation, Perth		
EPA, June 2005 <i>Guidance Statement No.3 separation distances between industrial and sensitive land uses</i> . Environmental Protection Authority, Western Australia		accessed at www.epa.wa.gov.au