



Licence

Environmental Protection Act 1986, Part V

Licensee: **Holcim (Australia) Pty Ltd**

Licence: **L8986/2016/1**

Registered office: 18 Brodie Hall Drive
 BENTLEY WA 6102

ACN: 87 099 732 297

Premises address: Jandabup Sand Quarry
 360 Hawkins Road
 JANDABUP WA 6077
 Being tenements M70/1248 and M70/1250, as depicted in Schedule 1.

Issue date: Thursday, 01 September 2016

Commencement date: Monday, 05 September 2016

Expiry date: Monday, 14 February 2033

Prescribed premises category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
12	Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or otherwise separated.	50,000 tonnes or more per year	1,000,000 tonnes per annual period

Conditions

This Licence is subject to the conditions set out in the attached pages.

Date signed: 29 August 2016

.....
 Tim Gentle
 Manager – Licensing (Resource Industries)
 Officer delegated under section 20
 of the *Environmental Protection Act 1986*



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Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitor and audit compliance with works approvals and licence conditions, takes enforcement action as appropriate and develop and implement licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.



Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non-payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

The premises is a sand quarry located in Jandabup north of Perth, approximately 8 km north east of the City of Wanneroo. The quarry is located on mining tenement and surrounded by 32 residential and semi-rural properties, a water treatment plant, poultry farm and two existing sand quarries. Thirteen (13) residential receptors are located greater than 300 metres away from the proposed quarry and the remaining 19 residential receptors are within 1 km radius of the tenement boundaries. The site falls within the Gnangara Pine plantation which has been harvested and is on the Gnangara Mound within the Gnangara Underground Water Pollution Control Area and is a Priority 1 Public Drinking Water Source Area (PDWSA).

Formerly a pine plantation, the quarry proposed 5 stages over 19 years involving the extraction of 25 million tonnes (Mt) of sand with an average extraction rate of 1,500 tonnes per day to maximum of 3,000 tonnes per day. As the quarry is situated on mining tenement it does not require planning approval from the Shire of Wanneroo; the primary approval is therefore under the *Mining Act 1978*. The life of the quarry is approximately 25 years at a nominal extraction rate of 1 million tonnes per annum. The principle emissions and discharges from operations are noise and fugitive dust and the contamination of stormwater.

This Licence is the successor to Works Approval W5938/2015/1.

The licences and works approvals issued for the Premises since 9 June 2016 are:

Instrument log		
Instrument	Issued	Description
W5938/2015/1	9/6/2016	New Works Approval issued to Holcim to construct the Premises.
L8986/2016/1	5/9/2016	New licence issued to Holcim to operate the Jandabup Premises.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION



Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

‘**Act**’ means the *Environmental Protection Act 1986*;

‘**annual period**’ means the inclusive period from 1 January until 31 December in the same year;

‘**AS 3580.1.1**’ means the Australian Standard AS 3580.1.1 *Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment*;

‘**AS 3580.9.8**’ means the Australian Standard AS 3580.9.8 *Methods for sampling and analysis of ambient air - Determination of suspended particulate matter – PM₁₀ continuous direct mass method using tapered element oscillating microbalance analyser*;

‘**averaging period**’ means the time over which a limit is measured or a monitoring result is obtained;

‘**CEO**’ means Chief Executive Officer of the Department of Environment Regulation;

‘**CEO**’ for the purpose of correspondence means;
Chief Executive Officer
Department administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au;

‘**Environmental Management Plan**’ means the document titled “Environmental Management Plan Holcim Sand Quarry Jandabup – Tenement M70/1248 and M70/1250”, prepared by Holcim (Australia) Pty Ltd and dated 29 May 2016, as submitted to the CEO and includes periodic revision of the document approved by the CEO;

‘**Licence**’ means this Licence numbered L8986/2016/1 and issued under the Act;

‘**Licensee**’ means the person or organisation named as Licensee on page 1 of the Licence;

‘**NATA**’ means the National Association of Testing Authorities, Australia;

‘**NATA accredited**’ means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

‘**PM₁₀**’ means particles with an aerodynamic diameter of less or equal to 10 µm;

‘**Premises**’ means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

‘**Schedule 1**’ means Schedule 1 of this Licence unless otherwise stated;

‘**Schedule 2**’ means Schedule 2 of this Licence unless otherwise stated; and

‘**µg/m³**’ means micrograms per cubic metre.



- 1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.
- 1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

2 Emissions

2.1 General

- 2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Fugitive emissions

- 2.2.1 The Licensee shall not cause or allow the concentration of PM₁₀ from operations to exceed 90 µg/m³ (24-hour average) at the monitoring point reference AQ2 (as depicted in the map of monitoring locations in Schedule 1).
- 2.2.2 The Licensee is exempt from compliance with Condition 2.2.1 if in the case of an event in Table 2.2.1 the corresponding management action is taken.

Table 2.2.1: Management actions		
Monitoring point reference	Event	Management action
AQ2	Exceedance of the limit specified in Condition 2.2.1	Undertake an investigation including collection of evidence to demonstrate that the exceedance is not attributed to operations on the Premises.

- 2.2.3 The Licensee shall ensure fugitive emissions are managed in accordance with the parts of the document specified in Table 2.2.2.

Table 2.2.2: Management plans		
Management plan reference	Parts	Date of document
Environmental Management Plan	<ul style="list-style-type: none"> • Section 2.11 – Noise • Section 2.11.1 Management Strategies • Section 2.12 – Dust • Section 2.12.1 Management Strategies • Section 3.1.2 Dust Monitoring • Section 3.1.3 Noise Monitoring • 	May 2016

3 Monitoring

3.1 General monitoring

- 3.1.1 The Licensee shall ensure that:
 - (a) all noise measurements are carried out in accordance with Part 3 (as applicable) of the *Environmental Protection (Noise) Regulations 1997*; and
 - (b) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.
- 3.1.2 The Licensee shall ensure that monthly monitoring is undertaken at least 15 days apart.



3.1.3 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

3.1.4 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

3.2 Ambient environmental quality monitoring

3.2.1 The Licensee shall undertake the monitoring in accordance with the documents, or parts of documents, specified in Table 3.2.1 and record and investigate results that do not comply with Regulation 7 of the *Environmental Protection (Noise) Regulations 1997*.

Table 3.2.1: Monitoring of ambient noise levels

Management plan reference	Parts	Date of document
Environmental Management Plan	Section 3.1.3 – Noise Monitoring	29 May 2016

3.2.2 The Licensee shall undertake the monitoring in Table 3.2.2 according to the specifications in that table.

Table 3.2.2: Monitoring of ambient air quality

Monitoring point reference	Parameter	Units	Frequency	Averaging period	Method
AQ1 ² – AQ2	PM ₁₀	µg/m ³	Continuous ¹ , whilst operating in Stages 1 and 2.	24 hours	AS 3580.9.8

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

Note 2: Portable monitor to initially be located adjacent to TEOM at administration building prior to summer period (November 2016)

4 Information

4.1 Records

4.1.1 All information and records required by the Licence shall:

- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters.

4.1.2 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

4.1.3 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting



4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by 1 March in each year. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table	Parameter	Format or form¹
-	Summary of any failure or malfunction of any pollution control equipment or any incidents that have occurred during the annual period and any action taken	None specified
-	Monthly production throughput for the annual period for Premises category (category 12)	
Table 3.2.1	Monitoring of ambient noise levels	
Table 3.2.2	Monitoring of ambient air quality	
4.1.3	Compliance	AACR
4.1.4	Complaints summary	None specified
2.1.1-	Summary of any limit exceedances specified in the Licence during the annual period.	
3.1.4	Calibration reports completed during the annual period.	

4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day.	N1
		Part B: As soon as practicable	
3.1.4	Calibration report	As soon as practicable	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act.

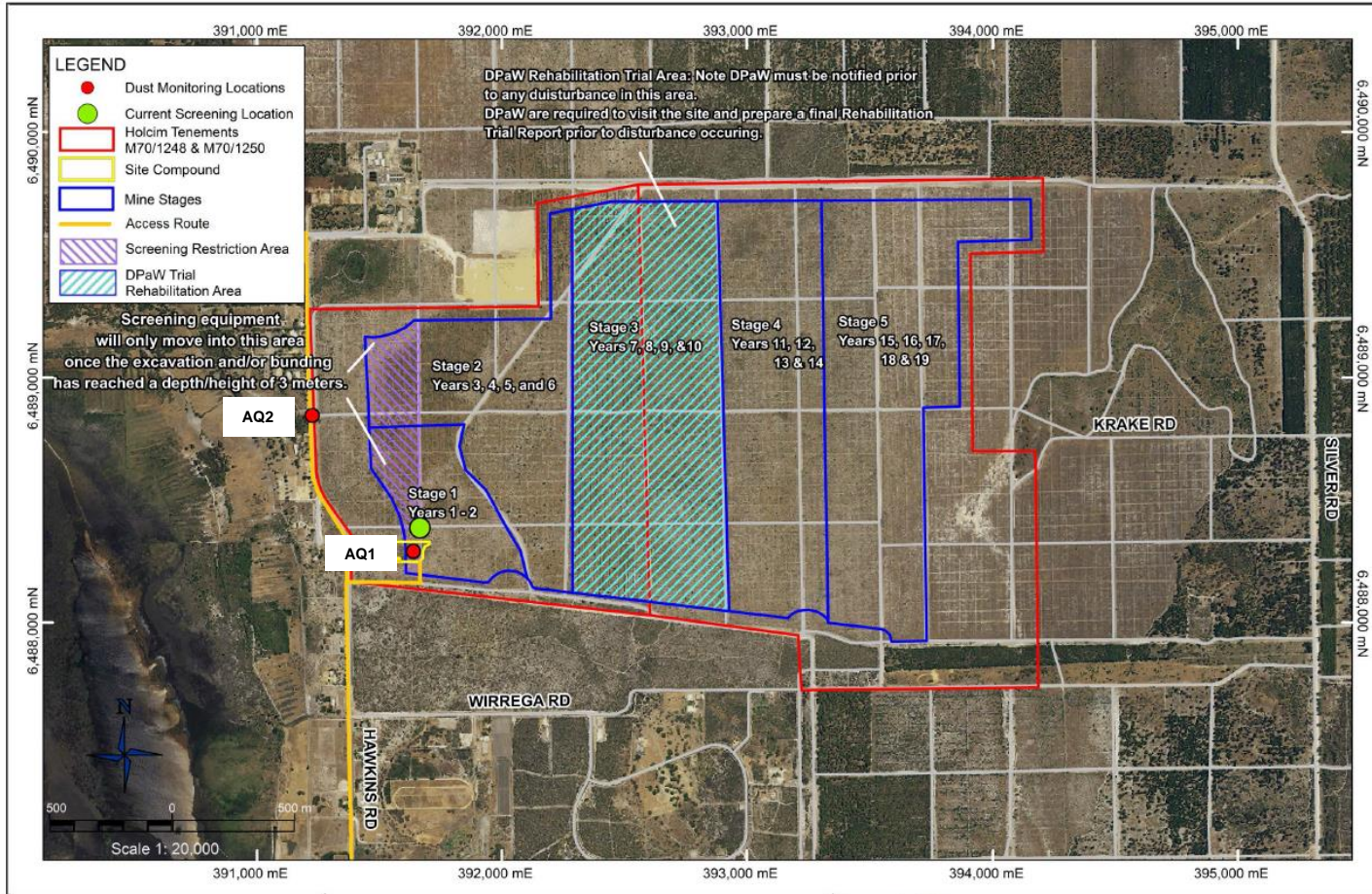
Note 2: Forms are in Schedule 2.



Schedule 1: Maps

Premises map and map of monitoring locations

The Premises is shown in the map below. The red line depicts the Premises boundary. The location of the monitoring points listed in Table 3.2.2 are shown below.





Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A LICENCE DETAILS

Licence Number: L8986/2016/1	Licence File Number: DER2016/001471
Company Name: Holcim (Austalia) Pty Ltd Trading as: Holcim	ABN: 099 732 297
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes Please proceed to Section C

No Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:



SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
<input type="checkbox"/> Yes	<input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____
<input type="checkbox"/> No	
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) must only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

SIGNATURE: _____

NAME:
(printed) _____

NAME:
(printed) _____

POSITION: _____

POSITION: _____

DATE: ____/____/____

DATE: ____/____/____

SEAL (if signing under seal)



Licence: L8986/2016/1
Form: N1

Licensee: Holcim (Australia) Pty Ltd
Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.
Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Position	
Signature on behalf of Holcim (Australia) Pty Ltd	
Date	



Decision Document

Environmental Protection Act 1986, Part V

Licensee: **Holcim (Australia) Pty Ltd**

Works Approval: **L8986/2016/1**

Registered office: 18 Brodie Hall Drive
BENTLEY WA 6102

ACN: 87 099 732 297

Premises address: Jandabup Sand Quarry
Mining Lease M70/1248 and M70/1250
360 Hawkins Road, JANDABUP WA 6077,

Issue date: Thursday, 01 September 2016

Commencement date: Monday, 05 September 2016

Expiry date: Monday, 14 February 2033

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Neville Welsh
Senior Licensing Officer

Decision Document authorised by: Tim Gentle
Manager Licensing – Resources Industries



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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.



2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/>	New Licence <input checked="" type="checkbox"/>
	Licence amendment <input type="checkbox"/>	Works Approval amendment <input type="checkbox"/>
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	12: Screening, etc. of material	1,000,000 tonnes per annual period
Application verified	Date: 26 July 2016	
Application fee paid	Date: 26 July 2016	
Works Approval has been complied with	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/>
Compliance Certificate received	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/> N/A <input type="checkbox"/> 18 August 2016
Commercial-in-confidence claim	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/> Not assessed – Public Advice <input checked="" type="checkbox"/>	
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	Ministerial statement No: EPA Report No:	
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	Department of Water consulted Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	



3 Executive summary of proposal and assessment

Holcim (Australia) Pty Ltd proposes to develop a sand quarry on tenements M70/1248 and M70/1250, located in Jandabup north of Perth, approximately 8 km north east from the City of Wanneroo. The site falls within the Gnangara Pine Plantation, which has been progressively harvested since 2003 until the current time. The site is now cleared of pine trees. The project site is on the Gnangara Mound within the Gnangara Underground Water Pollution Control Area and is a Priority 1 Public Drinking Water Source Protection Area (PDWSPA). The proposal would have a project life of approximately 25 years with a total disturbance footprint of 357.8 hectares (ha). The development envelope for the maximum limit of excavation for the proposal is bounded by Hawkins Road, Wirrega Road, Silver Road and Amarante Road in the City of Wanneroo.

M70/1248 and M70/1250 are located beside rural residential and rural properties, including properties with uncleared vegetation, market gardens, horse adjustment, vineyards and the adjoining Wanneroo Water Treatment Plant and Diamond Poultry Farm. There are two existing sand quarries located on neighbouring tenements to this proposal. There are 13 individual properties identified in the immediate vicinity greater than 300 metres from the proposed quarry. See figure 2 below. Nineteen (19) other sensitive residential receptors are within a 1 km radius of the projects lease boundary.

The proposal will comprise 5 stages (Figure 1) over 19 years involving the extraction of 25 million tonnes (Mt) of sand over 25 years, with an average daily extraction rate of 1,500 tonnes per day (maximum 3,000 tonnes per day). A “McCloskey” mobile screening plant will be used to produce construction grade and paving grade sand. The plant is mobile and will move sequentially with the mining stages and will be located on the floor and near to the working face of the quarry. The screen has a design capacity of 300 tonnes per hour (tph). An estimated 60% of extracted sand will require screening.

The principal emissions and discharges associated with the screening operations are fugitive dust and noise emissions, particularly as Stage 1 and 2 when the quarrying operations will be close to receptors. Noise and dust will be managed in accordance with operational strategies identified in the sites Environmental Management Plan that was updated and submitted to DER as required by the conditions of the Works Approval. The management for fugitive emissions by the proponent is guided by the general provisions of the *Environmental Protection Act 1986*. The proponent has undertaken an acoustics assessment at the nearest sensitive receptors and considered cumulative noise from two neighbouring sand extraction operations. It concluded that the proposal would comply with the *Environmental Protection (Noise) Regulations 1997* at the nearest sensitive receptor and the proponent committed to maintain a screening restriction area that maintains a 300m buffer from noise sensitive receptors. Also a 200m revegetation buffer will be maintained between the excavated areas and all residents Holcim is aware of its obligation to comply with the *Environmental Protection (Noise) Regulations 1997* and the general provisions of the Act when operating.

As the quarry is situated on mining tenement it is exempt from planning approval under the City of Wanneroo Town Planning Scheme, the primary approval is therefore under the *Mining Act 1978*. The tenement conditions for M70/1248 & M70/1250 commenced on 15 February 2012 and expire on 14 February 2033 also the term of this licence. The conditions of tenement were provided with the supporting document to the Licence application. As the proposal is located within the Priority 1 Gnangara Mound Public Drinking Water Source area, the Department of Mines and Petroleum (DMP) will regulate to ensure the groundwater is protected to the requirements of the Department of Water (DoW).

This is a Licence assessment to facilitate the Stage 1 to 5 development of the Jandabup Sand Quarry.



Figure 1: Location of Premises depicted by red boundary line.

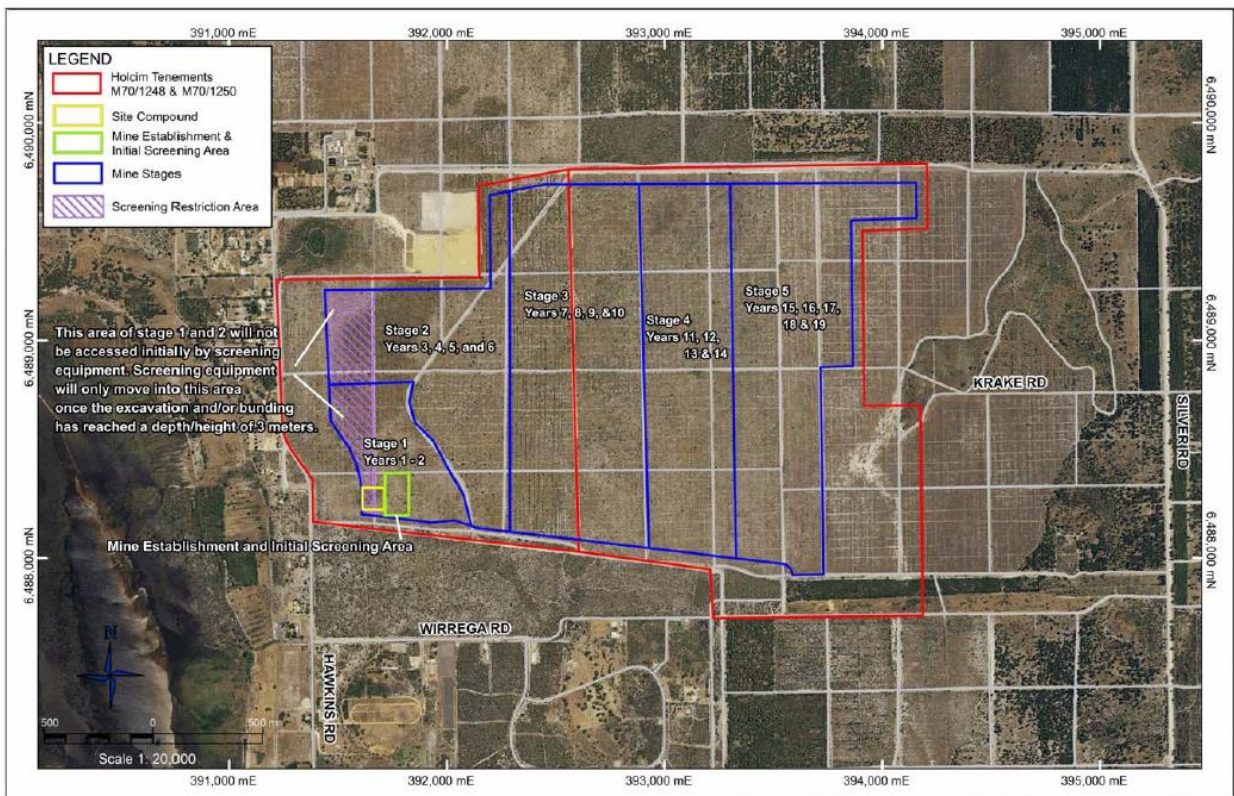
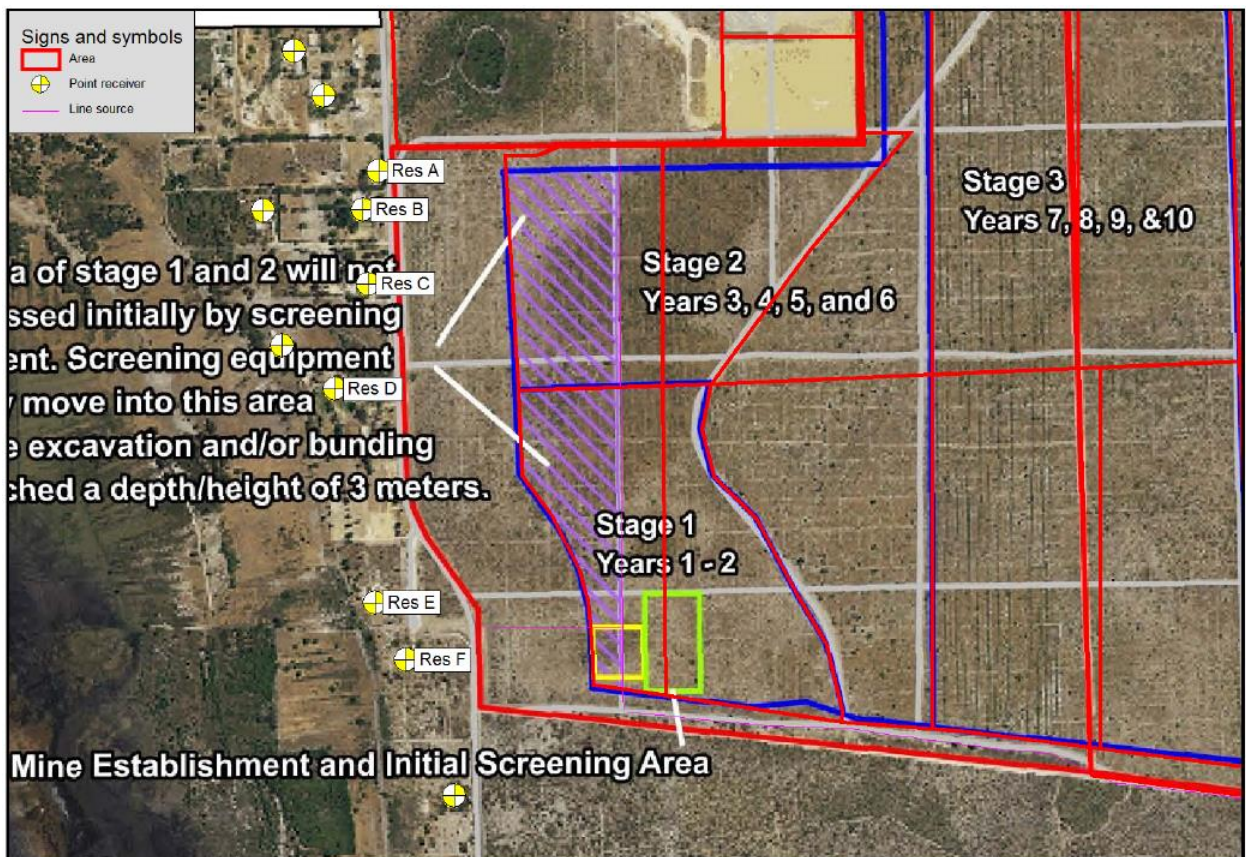


Figure 2: location of nearby receptors indicated by labels Res A to Res F





4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	L – no conditions	<p>Normal operation There are no specified general conditions for normal operating conditions.</p> <p>Abnormal operation <u>Emission Description</u> <i>Emission:</i> Contamination of stormwater with hydrocarbons from operational areas. <i>Impact:</i> The discharge of contaminated stormwater into the environment can result in a reduction of fresh groundwater quality and surface water quality. <i>Controls:</i> Hydrocarbons stored on-site for maintenance will be stored in a purpose built “safely store” fuel tank used in sensitive environments. The fuel tank is designed and approved in accordance with AS1657, AS1692 and AS1940 and includes 10,000 litres, steel double skinned, self bunded, with bund pumps and breakway couplings. The tank originated from the Barrow Island Gorgon Project (Class A Nature Reserve) where it operated without incident.</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor. <i>Likelihood:</i> Rare. <i>Risk Rating:</i> Low.</p> <p><u>Regulatory Controls</u> No conditions required on the licence. A Water Management Plan dated 8 March 2016 has been reviewed and assessed by other regulatory agencies (Department of Water and Department of Mines and Petroleum) and conditioned through the approval issued by the Department of Mines and Petroleum.</p>	<p>Application supporting documentation</p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p> <p><i>Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007</i></p>
Premises operation	L1.2.1	<p>Operation No premises operation conditions are required for the licence.</p>	<p>Application supporting documentation</p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Emissions general	L2.1.1	Operation Descriptive limits are set through conditions of the licence and therefore conditions regarding recording and investigation of exceedances of limits are included.	Application supporting documents
Point source emissions to air including monitoring	N/A	Operation There are no point source emissions to air expected or authorised during operation of the quarry. No specified conditions relating to point source emissions to air or the monitoring of these emissions are required on the licence.	Application supporting documents
Point source emissions to surface water including monitoring	N/A	Operation There are no point source emissions to surface water expected or authorised during operation of the quarry. No specified conditions relating to point source emissions to surface water or the monitoring of these emissions are required on the licence.	Application supporting documents
Point source emissions to groundwater including monitoring	N/A	Operation There are no point source emissions to groundwater expected or authorised during operation of the quarry. No specified conditions relating to point source emissions to groundwater or the monitoring of these emissions are required on the licence.	Application supporting documents
Emissions to land including monitoring	N/A	Operation There are no emissions to land expected or authorised during operation of the quarry. No specified conditions relating to emissions to land or the monitoring of these emissions are required on the works approval or licence.	Application documents
Fugitive emissions	L2.2.1 – 2.2.3	Operations DER's assessment and decision making are detailed in Appendix A.	Environmental Management Plan for Holcim Jandabup Sand Quarry.
Odour	N/A	Operation The proposal does not involve odour emissions during operation and therefore no conditions are required in the licence.	N/A
Noise	L2.2.3	Operations	<i>Environmental Protection</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		DER's assessment and decision making are detailed in Appendix B.	<i>(Noise) Regulations 1997</i> Application documents
Monitoring general	N/A	Operation No general monitoring conditions are required on the licence.	N/A
Monitoring of inputs and outputs	N/A	Operation Monitoring of inputs and outputs is not required to manage emissions during screen plant operations. No specified conditions relating to process monitoring are required to be added to the licence.	N/A
Process monitoring	N/A	Operation Process monitoring is not required to adequately manage emissions during screening operations. No specified conditions relating to process monitoring are required to be added to the licence.	N/A
Ambient quality monitoring	L3.2.1 – 3.2.2	Operations Monitoring of ambient noise levels is required to validate assessment predictions and to provide assurance over the effectiveness of site noise management. See Appendix B Monitoring of dust levels is required to provide assurance over the effectiveness of site dust management and demonstrate performance against limits set at the boundary. Continuous monitoring will be undertaken at the Holcim site administration building plus, a mobile monitor will be used during quarrying of stages 1 and 2 and shall be mobile in a westerly line commensurate to the quarry working face. See Appendix A	<i>Environmental Protection (Noise) Regulations 1997</i>
Meteorological monitoring	N/A	Operation The proponent has committed to carrying out meteorological monitoring. (The meteorological monitoring equipment is included as a built-in component of the TEOM monitor which is to be used for dust monitoring).	N/A
Improvements	N/A	Operation No improvements are required.	N/A



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Information	L 4.1.1 – 4.1.3 L4.2.1 L4.3.1	Operations No additional reporting conditions are required on the licence other than the standard record keeping, annual reporting and notification requirements.	General Provisions of the <i>Environmental Protection Act 1986</i>
Licence Duration	N/A	The proposal has been assessed as low environmental risk therefore the licence shall be issued for the term of the mining approval being 14 February 2033.	DER guidance Statement – Licence Duration

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
1 August 2016	Application Advertised	No comments received.	
1 August 2016	Application referred to interested parties listed Shire of Wanneroo	No comments received	
26 August 2016	Proponent sent a copy of draft instrument	Minor amendments to wording	Accepted



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High



Appendix A

A McClosky mobile screening plant is proposed follow the quarry extraction areas and produce graded sand... The screening plant has a design capacity of 300 tonnes per hour. It is anticipated that up to 60% of the extracted sand will require screening. On days when screening is required, the plant will operate for up to 10 hours per day.

A1 Fugitive emissions – dust

In addition to screening operations, fugitive dust is likely to be generated from site preparation activities, sand extraction activities, movement of vehicles, and wind erosion of exposed surfaces. There are 32 sensitive receptors (residences) within 1 kilometre of the project. There are 13 residences with a separation distance from initial mining of stage 1 and stage 2 of exactly 300 metres.

Emission Risk Assessment

Emission Description

- Emission:* Fugitive dust may be generated from screening operations, site preparation activities, sand extraction activities, movement of vehicles, and wind erosion of exposed surfaces
- Impact:* Dust generated from screening operations has the potential to impact on the health and amenity of local residents,
- Controls:* Measures to manage and control fugitive dust emissions during operations proposed by the proponent include;
- The use of water carts;
 - Ensuring the 300 m buffer commitment between excavation areas and sensitive receptors is maintained;
 - Positioning of product stockpiles away from site boundaries;
 - Staged, incremental stripping and stabilisation program;
 - Visual daily monitoring to ensure controls are effective;
 - Dust monitoring; and
 - Adherence to dust management measures in the Environmental Management Plan.

Risk Assessment – Normal operation

The consequence of dust emissions crossing the boundary of the Premises is expected to be limited to possible amenity impacts to local residents. The likelihood of this consequence occurring under normal operations is not expected to occur, with a combined risk rating of moderate.

Consequence: Minor.

Likelihood: Unlikely.

Risk Rating: Moderate.

Regulatory Controls

Continuous monitoring of ambient dust levels (PM₁₀) will be a requirement on the licence as a precautionary measure for the protection of human health and to provide assurance over the effectiveness of dust management at the site whilst mining stages 1 and 2 or up to six years. The licence requires continuous monitoring at the licensee's site office and a mobile monitor as the mining operations progress throughout the stages. This is likely to be located directly west of the screen plant when located in stage 1 and 2 of the sand quarry mining face. The monitor locations will target dust emissions under southerly to easterly wind directions, which are the predominant (morning) winds during the summer months.

The licence will reference a PM₁₀ limit of 90 µg/m³ (24 hour average) at the premises boundary. This means an absolute maximum (limit concentration) not to be exceeded at the monitor. Due to the number of external influences on PM₁₀ readings (e.g. smoke from bushfires), DER would not consider it to be a breach of licence conditions where it can be demonstrated that an exceedance is not attributed to operations of this mining activity at the premises.



The data logging equipment shall be configured so that it informs the Site Manager when certain trigger levels are reached resulting in a management response. A two tiered approach of alerts will be undertaken as described in the sites Environmental Management Plan (EMP). A Level 1 alert will occur when a 15 minute average of PM_{10} $150 \mu\text{g}/\text{m}^3$ occurs and an sms is sent to the Site Manager. A Level 2 alert occurs when the daily averaged PM_{10} , to that moment of the day, has exceeded $80 \mu\text{g}/\text{m}^3$ and this is available via web portal for the Site Manager.

Holcim will maintain a monitor at or near the site administration office, for monitoring emissions under south-westerly and easterly winds. This will be a Tapered Element Oscillating Microbalance (TEOM) monitor. This was predominantly determined from baseline studies and DER has determined to formalise the monitoring program at this location in the licence for comparison to data gathered from a mobile monitor that is relocated as the mining progresses. The mobile monitor (Protinus or E-sampler) will initially be located adjacent to the TEOM at the administration building prior to the summer period of interest commencing. The co-location of the two samples will allow for a correlation to be established between the two sampling methodologies. Once the correlation has been established, it will be placed into position on Hawkins Road.

As the McCloskey screening plant follows the working face of the quarry, DER considers it appropriate monitoring be undertaken in the north western section of the premises during these operations. DER requires all dust monitors must meet AS3580 and data gathered will be used for management purposes and reported to DER in the Annual Environmental Reports that is required as a condition of the licence. Licence conditions will also acknowledge the EMP dust monitoring and dust limit at the boundary of the tenement. The monitoring data and calibration reports will also be conditioned to be submitted in the Annual Report.

Residual Risk – Normal operation

With the above regulatory controls imposed through the conditions of licence, the residual risk rating of fugitive dust emissions under normal operating conditions is moderate.

Consequence: Minor.

Likelihood: Unlikely.

Risk Rating: Moderate.

Risk Assessment – Abnormal operation

The likelihood of this consequence occurring under abnormal operating conditions (e.g. unfavourable meteorological conditions, screening plant malfunction, etc.), is possible (could occur), with a combined risk rating of moderate.

Therefore the licence conditions imposed under normal operations will address abnormal operations.

Consequence: Minor.

Likelihood: Possible.

Risk Rating: Moderate.

Reference documents:

Holcim Hawkins Road Sand Quarry Works Approval Supporting document (EnviroWorks Consulting, 9 November 2015)

National Environment Protection Measure for Ambient Air Quality (Air NEPM), National Environment Protection Council (1998)



Appendix B

B1 Noise emissions

Holcim has commissioned a noise assessment (computer noise modelling) at the nearest sensitive receptors (houses). There are 13 noise sensitive premises 300 metres from the quarry working face proposed in stage 1 and stage 2 of the project, and a total of 32 sensitive receptors within 1 kilometre of the proposed quarry. Holcim's noise assessment concluded that the proposed quarry would comply with the *Environmental Protection (Noise) Regulations 1997* even at the nearest sensitive receptors.

The noise assessment includes sound power levels generated from all sources under three likely operational scenarios and included cumulative noise from nearby waste water treatment plant and another sand quarry operation.

Emission Description

Only one screening plant is proposed to be used at the Jandabup project. The sand screening plant will be mobile and will follow the working face within the quarry. It will therefore be below the ground surface which will shield noise from the equipment.

Emission: Noise from quarrying operations.
The noise impact assessment predicted noise levels to be tonal. The sounds power levels when the equipment commences construction and operation (at ground level) is predicted to be equal to or below 44 dB LA10 in the worst case.

Impact: Unless managed appropriately, noise could cause nuisance and a reduced quality of life for people living nearby. Frequency of noise, its intensity, duration, meteorological conditions and distance to receptor, are all factors which may affect the impact noise emissions have upon sensitive receptors.

If on-site operational conditions are followed as per the assumptions made in the noise impact assessment, noise emissions from the quarry will be compliant with the Noise Regulations.

Controls: Assumptions made in the acoustics assessment to ensure compliance with the Noise Regulations include:

- Normal operating hours will be 7:00 am – 7:00 pm Monday to Saturday.
- Constructing a noise bund with a constant pit face of at least 1.5 m as the quarry pit progresses with the extraction;
- Screening operations will not occur in the Western portions of stage 1 until an excavation face and/or noise bund of at least 3 metres is established on the Western edge of the operational area to provide a noise barrier;
- The proponent's commitment to maintain a 300 metre development buffer from noise sensitive premises.
- Maintain plant and equipment in good working order to avoid excessive vibration and engine noise.



Risk Assessment – Normal operation

The quarry operations will be closest to the houses during stage 1 and 2 of the project. Given the use of noise bunds to mitigate noise during stage 1 and 2 then emissions will be compliant with the Noise Regulations.

Consequence: Minor.

Likelihood: Unlikely.

Risk Rating: Moderate.

Risk Assessment – Abnormal operation

The likelihood of nuisance noise emissions occurring under abnormal operating conditions (e.g. unfavourable meteorological conditions) is possible. Under these conditions, noise emissions from the excavation operations may become audible but will still be compliant with the Noise Regulations.

Consequence: Minor.

Likelihood: Possible.

Risk Rating: Moderate.

Regulatory Controls

The proponent has a legislative requirement to comply with the *Environmental Protection (Noise) Regulations 1997* assigned noise levels at all times.

The applicant is required to undertake 5 days (Monday to Friday) of continuous monitoring during the first month of operations. DER considers this monitoring is required to validate Holcim's noise assessment and modelling and to assure that the operation can be carried out in compliance with the Noise Regulations.

Given that noise emissions from the screening plant is the primary consideration for DER, appropriate location for such attended monitoring will be guided by the acoustics assessment

Residual Risk

With the above regulatory controls imposed through the licence, the overall residual risk rating of noise during operation of stage 1 to 5 has been assessed as moderate.

Consequence: Minor.

Likelihood: Possible.

Risk Rating: Moderate.

Reference documents:

Holcim Sand Extraction Operations 360 Hawkins Road, Jandabup Acoustics Assessment April 2016 reference 19686-8-15226 Revision 7 dated 16 May 2016 (Herring Storer Accoustics, 2015)

Environmental Protection (Noise) Regulations 1997 (Noise Regulations)