

# General Terms of Approval - Issued

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Notice No: 1606156

The General Manager  
Narrabri Shire Council  
PO Box 261  
NARRABRI NSW 2390

Attention: Ms Michelle Henry

Notice Number      1606156  
Date                    24-Feb-2021

Johnstone  
Concrete and  
Landscape  
Supplies Pty Ltd  
ABN 43 151 205  
882 ACN 151 205  
882

## **Issued pursuant to Section 4.46 Environmental Planning and Assessment Act 1979**

Dear Ms Henry,

### **RE: DEVELOPMENT APPLICATION 2020/85 – INTENSIFICATION OF EXTRACTIVE INDUSTRY (WAVE HILL QUARRY EXPANSION)**

I refer to the development application and accompanying information provided for Wave Hill Quarry (DA2020/85) received by the Environment Protection Authority (EPA) on 3 August 2020 and additional information on 21 January and 8 February 2021.

The EPA has reviewed the information provided and has determined that it is able to issue general terms of approval for the proposal, subject to a number of conditions. The applicant will need to make a separate application to the EPA to incorporate these conditions into existing Environment Protection Licence (EPL) No. 20139.

The general terms of approval for this proposal are provided at **Attachment A**. If the Joint Regional Planning Panel (JRPP) grants development consent for this proposal, these conditions should be incorporated into the consent. Mandatory environment protection licence conditions are also provided for your information at **Attachment B**.

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The general terms of approval include conditions of existing EPL No. 20139 for context. New or altered conditions are marked with an asterix (\*).

## Air Quality Impact Assessment

The EPA has reviewed the additional information provided by the proponent and considers that while there are some residual assessment deficiencies, additional exceedances of the EPA's impact assessment criteria are not predicted and any assessment deficiencies can be resolved through conditions of approval.

The assessment includes cumulative impacts from the proposed operation increase, background levels and the approved activities at the Boral Quarry. Results from a contemporaneous assessment presented in the revised Air Quality Impact Assessment (AQIA) show that there are no predicted additional exceedances of the 24-hr PM10 and PM2.5 EPA impact assessment criteria.

The predicted cumulative annual PM2.5 impacts are above the EPA impact assessment criteria. However, it is noted that the adopted background is already above the criteria. It is also noted that the predicted annual PM2.5 increment (from both the proposed operations and approved activities at the Boral quarry) at the identified receptors (R1, R2, R3) range between 0.1 – 0.3  $\mu\text{g}/\text{m}^3$ , which are less than 4% of the impact assessment criterion.

The revised Air Quality Impact Assessment (AQIA) has;

- Adequately addressed the issues on the meteorological parameters adopted for modelling and assessment of air quality impacts;
- Adequately addressed some of the issues on the request for further information on the parameters, assumption and estimations of emissions in the impact assessment
- Partially addressed some of the issues around assessment of potential impacts associated with proposed blasting operations.

The assessment deficiencies identified within the revised AQIA can be resolved through the recommended conditions of approval included in Attachment A. These include, but are not limited to;

- No more than 500,000 tonnes per annum (tpa) of material can be extracted and processed at the site;
- The maximum daily number of truck movements must not exceed 72 trucks movements (total in and out of the premises);
- A condition for the installation, ongoing operation and maintenance of a meteorological weather station;
- Prior to the commencement of activities at an increased capacity the applicant must prepare a Blast Management Plan that, as a minimum, includes appropriate blast management practices and the analysis of representative meteorological data to identify sub-optimal dispersion conditions during which blasting should not be undertaken;
- The Blast Management Plan must be implemented once the activities at an increased capacity commence.

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- The applicant must develop and implement an air quality management plan prior to the commencement of project operations. As a minimum, the air quality management plan must include the following parts:
  - i. Objectives and targets;
  - ii. Risk assessment;
  - iii. Proactive and reactive mitigation measures of all significant, and potentially significant, emissions sources
  - iv. Key performance indicator(s);
  - v. Monitoring method(s);
  - vi. Location, frequency and duration of monitoring;
  - vii. Record keeping;
  - viii. Response mechanisms and contingency measures,
  - ix. System and performance review for continuous improvement
  - x. Compliance reporting.

Detailed comments on the revised AQIA can be found at **Attachment C**.

## Noise Impact Assessment

The EPA has reviewed the revised Noise Impact Assessment (NIA) prepared by Advitech (Ref. J0191228 F21586, Revision 1, dated 18 January 2021). It is considered that the revised NIA satisfactorily addresses the EPA's comments and recommended noise conditions are included at Attachment A.

The EPA notes that the applicant has adopted the minimum background noise levels, and hence the most stringent noise criteria, available under the Noise Policy for Industry (NPfI).

The applicant has committed to maintaining a stockpile bund of minimum height 5 metres along the south-eastern edge of the crushing pad. This will be maintained so as to block line of sight to Receiver R2 ('Brenowen' – 1092 Wave Hill Road) at all times when the crushing plant is in use. This measure should be included as a condition of any approval, if given.

The applicant has also committed to orienting the drill rig such that the noisiest part of the machine is oriented away from Receiver R2 when in use. If this is not possible, all plant involved in fixed quarry operations will not operate while drilling is underway. The applicant will also endeavour to progress drilling operations in a direction to increase the distance to Receiver R2, and schedule concurrent drilling and quarrying operations to occur during less sensitive, noisier times of the day. These measures should also be included as conditions of any approval, if given.

The EPA also notes that the applicant has indicated that the NIA reference to 24 hour operations has been included for emergency provisions and is referenced in the existing operating hours for the quarry. The applicant must seek EPA approval before proposing to move to 24 hour operation under these provisions.

These general terms of approval relate to the development as proposed in the documents and information currently provided to the EPA. In the event that the development is modified either by the applicant prior to the granting of consent or as a result of the conditions proposed to be attached to the consent, it will be

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necessary to consult with the EPA about the changes before the consent is issued. This will enable the EPA to determine whether its general terms of approval need to be modified in light of the changes.

If you have any questions, or wish to discuss this matter further please contact Daniel Stokes on 6773 7000.

Yours sincerely

A handwritten signature in black ink, appearing to be 'D. Stokes', with a long horizontal stroke extending to the right.

.....  
**Daniel Stokes**  
**Senior Operations Officer**  
**Regional West - Armidale**  
(by Delegation)

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## Attachment A - General Terms of Approval for DA2020/85 - Wave Hill Quarry Expansion

The condition numbering below aligns with the existing Environment Protection Licence (EPL) no. 20139. Should consent be granted, the existing conditions on EPL 20139 remain in force and applicable to the activities carried out at the premises.

### Administrative conditions

**Note:** Mandatory conditions for all general terms of approval

#### ***A1. What the licence authorises and regulates***

**A1.1** The licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of the licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

<b><i>Scheduled Activity</i></b>	<b><i>Fee Based Activity</i></b>	<b><i>Scale</i></b>
Crushing, grinding or separating	Crushing, grinding or separating	>100000 - 500000 T annual processing capacity
Extractive activities	Land-based extractive activity	>100000 - 500000 T annual processing capacity

#### ***A2. Premises or plant to which this licence applies***

**A2.1** The licence applies to the following premises:

##### ***Premises Details***

Wave Hill Quarry

Wave Hill Road

Narrabri

NSW 2390

Lot 77 DP754937, Lot 89 DP821255

#### ***A3. Information supplied to the EPA***

**A3.1** Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of the licence.

In this condition the reference to "the licence application" includes a reference to:

(a) the applications for any licences (including former pollution control approvals) which the licence replaces under the *Protection of the Environment Operations (Savings and Transitional) Regulation 1998*; and

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(b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of the licence.

**\*A3.2** Except as expressly provided by these general terms of approval, works and activities must be carried out in accordance with the proposal contained in:

- the development application DA2020/85 submitted to Narrabri Shire Council on 3 August 2020;
- any environmental impact statement relating to the development 'Wave Hill Quarry, Environmental Impact Statement, Johnstone Concrete and Landscape Supplies Pty Ltd, 173 Old Gunnedah Road, Narrabri NSW 2390', prepared by SMK Consultants, Document ID: 1783446, dated 4 June 2020; and
- all additional documents supplied to the EPA in relation to the development, including but not limited to;
  - 'Wave Hill Quarry, Air Quality Impact Assessment, Johnstone Concrete and Landscaping Supplies Pty Ltd', prepared by Advitech Environmental, dated 5 January 2021;
  - 'Noise Impact Assessment, Wave Hill Quarry, Johnstone Concrete and Landscaping Supplies Pty Ltd', prepared by Advitech Environmental, dated 18 January 2021.

## A4. Fit and Proper Person

**\*A4.1** The applicant must, in the opinion of the EPA, be a fit and proper person to hold a licence under the *Protection of the Environment Operations Act 1997*, having regard to the matters in s.83 of that Act.

## Discharges to Air and Water and Applications to Land

### P1. Location of monitoring/discharge points and areas

**P1.1** The following points referred to in the table are identified in the licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

#### Air

<b>EPA identification no.</b>	<b>Type of Monitoring Point</b>	<b>Type of Discharge Point</b>	<b>Location Description</b>
3	Ambient air quality monitoring		Location adjacent to the "Glen Aston" residence identified in aerial photograph provided by licensee and received by the EPA on 20 August 2020 (DOC20/692734).
4	Ambient air quality monitoring		Location adjacent to the "Brenowen" residence identified in aerial photograph provided by licensee and received by the EPA on 17 September 2014 (DOC14/123097-03).
5	Ambient air quality monitoring		Location adjacent to the "Wave Hill" residence identified in aerial photograph provided by licensee and received by the EPA on 17 September 2014 (DOC14/123097-03).

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**P1.2** The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

**P1.3** The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

<b>Water and Land</b>			
<b>EPA identification no.</b>	<b>Type of Monitoring Point</b>	<b>Type of Discharge Point</b>	<b>Location Description</b>
1	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Overflow from sediment basin identified in map titled "Wave Hill Quarry Over Flow Monitoring Point" received by the EPA on 17 October 2014 (DOC14/123097-07).

## **P1.4** Weather monitoring

The following point(s) in the table are identified in this licence for the purpose of the monitoring of weather parameters at the point.

<b>EPA Identification Number</b>	<b>Type of Monitoring Point</b>	<b>Description of Location</b>
W1	Weather Analysis	Weather station located on the premises

## **Limit conditions**

### **L1. Pollution of waters**

**L1.1** Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the *Protection of the Environment Operations Act 1997*.

### **L2. Concentration limits**

**L2.1** For each monitoring/ discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentrations limits specified for that pollutant in the table.

**L2.2** Where a pH quality limit is specified in the Table, the specified percentage of samples must be within the specified ranges.

**L2.3** To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.

**L2.4** Water and/or Land Concentration Limits



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**POINT 1****Water and Land**

<b>Pollutant</b>	<b>Units of measure</b>	<b>50 Percentile concentration limit</b>	<b>90 Percentile concentration limit</b>	<b>3DGM concentration limit</b>	<b>100 Percentile concentration limit</b>
Oil and Grease	milligrams per litre	-	-	-	10
pH	pH	-	-	-	6.5 - 8.5
Total suspended solids	milligrams per litre	-	-	-	50

**L2.5** The Total Suspended Solids concentration limits specified in the table above may be exceeded for water discharged from the sediment basins provided that:

- (a) the discharge occurs solely as a result of rainfall measured at the premises that exceeds 38.4 millimetres over any consecutive 5 day period immediately prior to the discharge occurring; and
- (b) all practical measures have been implemented to dewater all sediment dams within 5 days of rainfall such that they have sufficient capacity to store run off from a 38.4 millimetre, 5 day rainfall event.

Note: 38.4 mm equates to the 5 day 90%ile rainfall depth for Gunnedah sources from Table 6.3a Managing Urban Stormwater: Soils and Construction Volume 1: 4th edition, March 2004.

**L3. Waste**

**\*L3.1** The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*.

**L3.2** This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence under the *Protection of the Environment Operations Act 1997*.

**L4. Noise limits**

**\*L4.1** Noise generated at the premises must not exceed the noise limits at the times and locations in the table below.

<b>Location</b>	<b>Noise Limits in dB(A)</b>			
	<b>Day</b>	<b>Evening</b>	<b>Night</b>	<b>Night</b>
	<b>L<sub>Aeq</sub>(15 minute)</b>	<b>L<sub>Aeq</sub>(15 minute)</b>	<b>L<sub>Aeq</sub>(15 minute)</b>	<b>L<sub>AFmax</sub></b>
<b>Any residential receiver</b>	40	35	35	52

**L4.2** For the purposes of condition L4.1:



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(a) Day means the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays.

(b) Evening means the period from 6pm to 10pm.

(c) Night means the period from 10pm to 7am Monday to Saturday and the period from 10pm to 8am Sunday and public holidays.

## \*L4.3 Noise-enhancing meteorological conditions

(a) The noise limits set out in condition L4.1 apply under the following meteorological conditions:

<b>Assessment Period</b>	<b>Meteorological Conditions</b>
<b>Day</b>	Stability Categories A, B, C and D with wind speeds up to and including 3m/s at 10m above ground level.
<b>Evening</b>	Stability Categories A, B, C and D with wind speeds up to and including 3m/s at 10m above ground level.
<b>Night</b>	Stability Categories A, B, C and D with wind speeds up to and including 3m/s at 10m above ground level; or Stability category E and F with wind speeds up to and including 2m/s at 10m above ground level.

(b) For those meteorological conditions not referred to in condition L4.3(a), the noise limits that apply are the noise limits in condition L4.1 plus 5dB.

## \*L4.4 For the purposes of condition L4.3:

(a) The meteorological conditions are to be determined from meteorological data obtained from the meteorological weather station identified as EPA Monitoring Point W1

(b) Stability category shall be determined using the following method from Fact Sheet D of the *Noise Policy for Industry* (NSW EPA, 2017):

(i) Use of sigma-theta data (section D1.4).

## \*L4.5 To assess compliance:

(a) with the LAeq(15 minutes) or the L<sub>A</sub>max noise limits in condition L4.1 and L4.3, the noise measurement equipment must be located:

(i) approximately on the property boundary, where any residence is situated 30 metres or less from the property boundary closest to premises; or where applicable,

(ii) in an area within 30 metres of a residence façade, but not closer than 3 metres where any residence on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable,

(iii) in an area within 50 metres of the boundary of a National Park or Nature Reserve,

(iv) at any other location identified in condition L4.1

(b) with the LAeq(15 minutes) or the L<sub>A</sub>max noise limits in condition L4.1 and L4.3, the noise measurement equipment must be located:

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- (i) at the reasonably most affected point at a location where there is no residence at the location; or,
- (ii) at the reasonably most affected point within an area at a location prescribed by condition L4.5 (a).

**\*L4.6** A non-compliance of conditions L4.1 and L4.3 will still occur where noise generated from the premises is measured in excess of the noise limit at a point other than the reasonably most affected point at the locations referred to in condition L4.5 (a) or L4.5 (b).

**\*NOTE to L4.5 and L4.6:** The reasonably most affected point is a point at a location or within an area at a location experiencing or expected to experience the highest sound pressure level from the premises.

**\*L4.7** For the purpose of determining the noise generated from the premises, the modifying factor corrections in Table C1 in Fact Sheet C of the *Noise Policy for Industry* (NSW EPA, 2017) may be applied, if appropriate, to the noise measurements by the noise monitoring equipment.

**\*L4.8** Noise measurements must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.

## ***L5 Blasting limits***

**\*L5.1** The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

**\*L5.2** The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

**\*L5.3** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

**\*L5.4** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

**\*L5.5** Blasting at the premises may only take place between 9:00am- 3:00pm Monday to Saturday. Blasting is not permitted on public holidays.

**\*L5.6** Blasting outside of the hours specified in L5.5 can only take place with the written approval of the EPA.

**\*L5.7** The airblast overpressure and ground vibration levels in conditions L5.1 to L5.4 do not apply at noise sensitive locations that are owned by the licensee or subject to a private agreement, relating to airblast overpressure and ground vibration levels, between the licensee and land owner.

**\*L5.8** Blasting at the premises is limited to 1 blast on each day in which blasting is permitted.

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**\*L5.9** To determine compliance with Conditions L5.1 to L5.4:

(a) Airblast overpressure and ground vibration levels must be measured and electronically recorded in accordance with the ANZECC guidelines for all production blasts carried out in or on the premises; and

(b) The written record must include:

(i) the time and date of each blast;

(ii) the station(s) at which the noise was measured;

(iii) the ground vibration for each blast;

(iv) the airblast overpressure for each blast;

(v) evidence that during the past 12 month period, a calibration check had been carried out on each blast monitor to ensure accuracy of the reported data; and

(vi) the waveform for the ground vibration and overpressure for each blast that exceeds a ground vibration of 5mm/sec (peak particle velocity) or an airblast overpressure of 115dB(L).

(c) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard 2187.2 of 2006.

## ***L6 Hours of operation***

**L6.1** Activities at the premises may only be carried out at the times specified in the table below:

<b><i>Activity</i></b>	<b><i>Monday to Friday</i></b>	<b><i>Saturday</i></b>	<b><i>Sunday</i></b>	<b><i>Public Holidays</i></b>
Dispatch of trucks to haul aggregate or arrival of trucks delivering products	7.00am to 6.00pm	7.00am to 5.30pm	Nil	Nil
Arrival and loading of trucks to haul aggregate	6.30am to 5.30pm	7.00am to 5.30pm	Nil	Nil
Light vehicle traffic associated with employees or light service vehicles entering or leaving the site	24 hours a day	24 hours a day	24 hours a day	24 hours a day
Maintenance of plant and equipment including workshop activity, repairs/alterations to processing equipment and unloaded test runs	6.00am to 10.00pm	7.00am to 5.00pm	7.00am to 5.00pm	7.00am to 5.00pm
Crushing and	7.00am to 6.00pm	7.00am to 6.00pm	Nil	Nil

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## screening operations

Stockpiling operations	6.00am to 6.00pm	7.00am to 6.00pm	Nil	Nil
Drilling	<p>9.00am to 3.00pm until Nil Nil Nil Nil</p> <p>the licensee has demonstrated compliance with the noise limits established at condition L4 in accordance with the requirements of condition U1.</p> <p>Once the licensee has demonstrated compliance with the noise limits to the satisfaction of the EPA, and the EPA has provided the licensee with written notification that it is satisfied with the noise mitigation validation assessment report required by condition U1.2, drilling may occur between 7:00am and 5:00pm.</p>			
Rock hammering	9.00am to 3.00pm	Nil	Nil	Nil
Exceptional circumstances – all crushing, loading and product haulage activities within and from the site to enable manufacture and delivery to high priority RMS or Shire Projects only. Haulage outside normal operating hours is to be limited to four (4) trucks only	24 hours with written notification and approval from Narrabri Shire Council and the Environment Protection Authority	24 hours with written notification and approval from Narrabri Shire Council and the Environment Protection Authority	24 hours with written notification and approval from Narrabri Shire Council and the Environment Protection Authority	Nil

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**L6.2** This condition does not apply to the delivery of material outside the hours of operation permitted by condition L6.1, if that delivery is required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances, prior notification must be provided to the EPA and affected residents as soon as possible, or within a reasonable period in the case of emergency.

**L6.3** The hours of operation specified in conditions L6.1 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.

## ***L7 Other limit conditions***

**\*L7.1** No more than 500,000 tonnes per annum (tpa) of material can be extracted and processed at the premises.

**\*L7.2** The maximum daily number of truck movements must not exceed 72 trucks movements (total in and out of the premises).

## ***Operating conditions***

### ***O3. Dust***

**O3.1** All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

**\*O3.2** The premises must be maintained in a manner that prevents and minimises the emission of dust from the premises.

**\*O3.3** Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during material inspection, loading and unloading.

**\*O3.4** All internal unsealed haul roads must be watered to minimise or prevent dust emissions.

**\*O3.5** All crushing and screening plant must be fitted with a wet suppression system to prevent or minimise dust emissions during operation

**\*O3.6** The wet suppression system referred to in condition O3.5 must be utilised when undertaking screening and crushing activities.

### ***O4. Other operating conditions***

**\*O4.1** Prior to the commencement of activities at an increased capacity, the applicant must prepare a Blast Management Plan that, as a minimum, includes appropriate blast management practices and the analysis of representative meteorological data to identify sub-optimal dispersion conditions during which blasting should not be undertaken. The Blast Management Plan must also demonstrate that blasting at the premises will comply with the conditions set out in L5. The Blast Management Plan must include details about:

- Compliance standards;

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- Mitigation measures;
- Measures to ensure compliance with licence limits;
- Measures to protect underground utilities (eg: rising mains, subsurface telecommunication and electric cables) and livestock nearby
- Measures to ensure no damage by flyrock to people, property, livestock and powerlines.
- Remedial and reporting action plan;
- Monitoring methods and program;
- Monitoring program for flyrock distribution;
- Notification of procedures for neighbours prior to detonation of each blast.

**\*O4.2** The Blast Management Plan must be implemented once the activities at an increased capacity commence.

**\*O4.3** Prior to the commencement of activities at an increased capacity, the applicant must develop and implement an air quality management plan. As a minimum, the air quality management plan must include the following parts:

- Objectives and targets;
- Risk assessment;
- Proactive and reactive mitigation measures of all significant, and potentially significant, emissions sources
- Key performance indicator(s);
- Monitoring method(s);
- Location, frequency and duration of monitoring;
- Record keeping;
- Response mechanisms and contingency measures,
- System and performance review for continuous improvement
- Compliance reporting.

**\*O4.4** A stockpile bund of minimum height 5 metres must be maintained along the south-eastern edge of the crushing pad. The stockpile bund must be maintained so as to block line of sight to Receiver R2 ('Brenowen' – 1092 Wave Hill Road) at all times when the crushing plant is in use.

**\*O4.5** While in operation, the drill rig must be oriented so that the noisiest part of the machine is oriented away from Receiver R2 ('Brenowen' – 1092 Wave Hill Road). If this is not possible, all plant involved in fixed quarry operations must not operate while drilling is underway.

**\*O4.6** Drilling operations must progress in a direction to increase the distance to Receiver R2 ('Brenowen' – 1092 Wave Hill Road)

**\*O4.7** Any concurrent drilling and quarrying operations must be scheduled to occur during less sensitive, noisier times of the day.

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## Monitoring and recording conditions

### M1 Monitoring records

**\*M1.1** The results of any monitoring required to be conducted by the EPA's general terms of approval, or a licence under the *Protection of the Environment Operations Act 1997*, in relation to the development or in order to comply with the load calculation protocol must be recorded and retained as set out in conditions M1.2 and M1.3.

**M1.2** All records required to be kept by the licence must be:

- (a) in a legible form, or in a form that can readily be reduced to a legible form;
- (b) kept for at least 4 years after the monitoring or event to which they relate took place; and
- (c) produced in a legible form to any authorised officer of the EPA who asks to see them.

**M1.3** The following records must be kept in respect of any samples required to be collected:

- (a) the date(s) on which the sample was taken;
- (b) the time(s) at which the sample was collected;
- (c) the point at which the sample was taken; and
- (d) the name of the person who collected the sample.

### M2. Requirement to monitor concentration of pollutants discharged

**M2.1** For each monitoring/ discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

#### M2.2 Air Monitoring Requirements

##### POINT 3,4,5

##### Air

<b>Pollutant</b>	<b>Units of measure</b>	<b>Frequency</b>	<b>Sampling Method</b>
Particulates - Deposited Matter	grams per square metre per month	Once a month (min. of 4 weeks)	AM-19
PM10	micrograms per cubic metre	Special Frequency 1	AM-18

#### M2.3 Water and/ or Land Monitoring Requirements

##### POINT 1

##### Water and Land

<b>Pollutant</b>	<b>Units of measure</b>	<b>Frequency</b>	<b>Sampling Method</b>
Oil and Grease	milligrams per litre	Special Frequency 2	Representative sample
pH	pH	Special Frequency 2	Representative sample
Total suspended solids	milligrams per litre	Special Frequency 2	Representative sample



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Note: For the purpose of this condition, Special Frequency 1 means sampling as required from time to time in writing by the EPA.

Note: For the purposes of this condition, 'Special Frequency 2' means as soon as practicable after overflow commences and in any case not more than 12 hours after any overflow commencing and prior to any controlled discharge from the sedimentation basins to demonstrate compliance with the concentration limits defined at condition L2.

Note: The frequency of monitoring and the pollutant/s to be monitored may be varied by the EPA once the variability of the water quality is established.

## M3. Testing methods - concentration limits

**M3.1** Monitoring for the concentration of a pollutant emitted to the air required to be conducted by the licence must be done in accordance with:

(a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or

(b) if no such requirement is imposed by or under the Act, any methodology which a condition of the licence requires to be used for that testing; or

(c) if no such requirement is imposed by or under the Act or by a condition of the licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

**M3.2** Subject to any express provision to the contrary in the licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

## M4. Weather monitoring

**\*M4.1** The meteorological weather station identified as EPA monitoring point W1 must be maintained so as to be capable of continuously monitoring the parameters specified in condition M4.3

**\*M4.2** For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns

**\*M4.3** Weather Monitoring Requirements

POINT W1

*Weather*

<b>Parameter</b>	<b>Units of measure</b>	<b>Frequency</b>	<b>Averaging Period</b>	<b>Sampling Method</b>
Air temperature @ 2 metres	degrees Celsius	Continuous	1 hour	AM-4
Air temperature @10 metres	degrees Celsius	Continuous	1 hour	AM-4

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Wind direction @10 metres	Degrees	Continuous	15 minute	AM-2 & AM-4
Wind speed @10 metres	m/s (metres per second)	Continuous	15 minute	AM-2 & AM-4
Sigma theta @ 10 metres	Degrees	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative humidity	% (Percentage)	Continuous	1 hour	AM-4
Solar Radiation	Watts per square metre	Continuous	15 minute	AM-4
Additional requirements - Siting				AM-1, AM-4 and Special Method 2

**\*Note:** The weather monitoring instrumentation installed and operated at the premises must be have a stall speed or lower limit of measure for measuring wind speed less than 0.2 m/s.

**\*M4.4** For the purposes of this condition, Special Method 2 means that the applicant must install a permanent meteorological weather monitoring station and logger at the premises. The location of the site chosen for the station and details of equipment, measurement and maintenance/service procedures and schedules to be installed and maintained must be submitted in writing to the EPA and approved in writing by the EPA before any sampling or analysis is carried out.

**\*M4.5** The applicant must maintain and calibrate the meteorological monitoring station in accordance with the reference test methods and manufacturer's specifications. Records of the calibration and maintenance must be made available to EPA upon request.

**\*M4.6** The applicant must develop and implement a quality assurance/quality control procedure for the data collected from the meteorological monitoring station. Outcomes from the procedure must be made available to EPA upon request

## M5. Noise monitoring

**\*M5.1** Attended noise monitoring must be undertaken in accordance with Condition L4.5 and must:

- (a) occur at the 'Glen Aston', 'Brenowen' and 'Wave Hill' property residences or alternative location, as approved in writing, by the EPA
- (b) occur annually in a reporting period at times when operations at the quarry are representative of usual operations, and when drilling is occurring at the premises; and
- (c) occur during each day, evening and night period as defined in the *Noise Policy for Industry* for a minimum of:
  - 1.5 hours during the day;
  - 30 minutes during the evening; and
  - 1 hour during the night.

**Note:** The frequency of monitoring may be varied by the EPA once the variability of the noise impact is established.

**Note:** If the operating hours for the premises are changed to allow drilling to occur from 7:00 am to 5:00 pm Monday to Friday the EPA will require quarterly noise monitoring to be undertaken.

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## ***Reporting conditions***

### ***R4. Noise Monitoring Report***

**\*R4.1** A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the annual monitoring. The assessment must be prepared by a competent person and include:

- (a) an assessment of compliance with noise limits presented in Condition L4.1 and L4.3; and
- (b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L4.1 and L4.3.

## ***General conditions***

### ***G2 Other general conditions***

**G2.1** The licensee must establish a community environment liaison committee, comprising representatives of the community and the licensee, that will meet at least once every six months. Discussion at the meetings must include implementation of the development consent and other statutory approvals, and provide adequate time for the community to raise matters of concern associated with the environmental impact of the development, with a view to achieving mutually satisfactory solutions.

Note: Where the licensee can demonstrate that community representatives are not participating in community environment liaison committee meetings and that concerns raised at previous committee meetings have been adequately addressed, the EPA may consider reducing the frequency of required committee meetings, or removing this condition from the premises Environment Protection Licence.

## ***Pollution Studies and Reduction Programs***

As per current Environment Protection Licence.

## ***Special Conditions***

As per current Environment Protection Licence.

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## Attachment B – Mandatory Conditions for all EPA licences

### Operating conditions

#### Activities must be carried out in a competent manner

Licensed activities must be carried out in a competent manner.

This includes:

- a. the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b. the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

#### Maintenance of plant and equipment

All plant and equipment installed at the premises or used in connection with the licensed activity:

- a. must be maintained in a proper and efficient condition; and
- b. must be operated in a proper and efficient manner.

### Monitoring and recording conditions

#### Recording of pollution complaints

The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

The record must include details of the following:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by the licensee, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made.

The record must be produced to any authorised officer of the EPA who asks to see them.

#### Telephone complaints line

The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

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The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

This condition does not apply until 3 months after this condition takes effect.

## Reporting conditions

### Annual Return documents

#### ***What documents must an Annual Return contain?***

The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

- a. a Statement of Compliance,
- b. a Monitoring and Complaints Summary,
- c. a Statement of Compliance - Licence Conditions,
- d. a Statement of Compliance - Load based Fee,
- e. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
- f. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
- g. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

#### ***Period covered by Annual Return***

An Annual Return must be prepared in respect of each reporting, except as provided below

*Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.*

Where this licence is transferred from the licensee to a new licensee,

- a. the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b. the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

*Note: An application to transfer a licence must be made in the approved form for this purpose.*

Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on

- a. in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b. in relation to the revocation of the licence – the date from which notice revoking the licence operates.

#### ***Deadline for Annual Return***

The Annual Return for the reporting period must be supplied to the EPA via *eConnect EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

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## ***Licensee must retain copy of Annual Return***

The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

## ***Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary***

Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a. the licence holder; or
- b. by a person approved in writing by the EPA to sign on behalf of the licence holder.

A person who has been given written approval to certify a Statement of Compliance under a licence issued under the *Protection of the Environment Operations Act 1997* is taken to be approved for the purpose of this condition until the date of first review of this licence.

## ***Notification of environmental harm***

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act

Notifications must be made by telephoning the EPA's Environment Line service on 131 555.

The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

## ***Written report***

Where an authorised officer of the EPA suspects on reasonable grounds that:

- a. where this licence applies to premises, an event has occurred at the premises; or
- b. where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

The request may require a report which includes any or all of the following information:

- a. the cause, time and duration of the event;
- b. the type, volume and concentration of every pollutant discharged as a result of the event;
- c. the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and

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- d. the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e. action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f. details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
- g. any other relevant matters.

The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

## General conditions

### Copy of licence kept at the premises or on the vehicle or mobile plant

A copy of this licence must be kept at the premises or on the vehicle or mobile plant to which the licence applies.

The licence must be produced to any authorised officer of the EPA who asks to see it.

The licence must be available for inspection by any employee or agent of the licensee working at the premises or operating the vehicle or mobile plant.



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## Attachment C – Detailed Comments on Revised Air Quality Impact Assessment

The EPA have reviewed:

- *Wave Hill Quarry Air Quality Impact Assessment Johnstone Concrete and Landscaping Supplied Pty Ltd*, prepared by Advitech environmental, dated 5 January 2021 (the revised AQIA).

The following is a summary of the issues previously raised by the EPA accompanied by comments on the additional information reviewed.

### 1. Meteorological parameters adopted for modelling require review

The EPA previously requested the revision of some of the adopted parameters used as input in CALMET. Information provided in the AQIA showed that it was likely that the selected RMAX and R parameters gave a considerable “*high weight*” to the surface and upper air data across the whole domain. This does not properly consider the change in terrain conditions across the modelling domain or between the surface station and the site.

#### **Summary of the additional information provided**

Table 5 in the revised AQIA presents updated RMAX (10 Km) and R (5 Km) parameters.

#### **Comments on additional information**

Information presented in Table 5 in the revised AQIA shows the requested updated parameters as well as an updated CALMET domain.

Whilst it is stated in the revised AQIA that meteorological modelling was done by using Hybrid Mode in CALMET (i.e. combination of surface and prognostic data), it is noted that the Narrabri Automatic Weather Stations (AWS) is located outside the updated CALMET domain. This means, it is likely that CALMET was set up and run in NOOBS Mode.

The EPA advises that this approach is consistent with the *Generic Guidance and Optimum Model Setting for the CALPUFF Modelling System for Inclusion into the “Approved Methods and Assessments of Air Pollutant in NSW, Australia”* and considers this issue has been resolved.

### 2. The calculations and parameters utilised to establish the emissions inventory lack clarity

The EPA requested further information to clarify some of the assumptions made to estimate emission rates and the emissions inventory presented for the proposed activities and approved activities at the Boral quarry. This included presenting all variables used to estimate emission rates as well as providing clarification regarding:

- the adopted control efficiencies;
- how blasting and wind erosion emissions were modelled;
- demonstrate blasting emissions are representative of potential worst-case conditions (i.e. in the case this may align with worse case meteorological conditions during the proposed blasting hours);
- the exclusion of gaseous emissions from blasting; and
- the exclusion of drilling emissions

#### **Summary of the additional information provided**

Updated emissions inventories for the proposal and from the Boral quarry operations are included in Table 6 and Table 7 respectively in the revised AQIA.

Table 16 of the revised AQIA presents a summary of assumptions made to estimate the emission rates from the proposed operations.

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## ***Comments on additional information***

The addendum includes limited additional information to address the following issues previously raised by the EPA:

### **Drilling**

The revised AQIA has accounted for particulate matter emissions associated with drilling activities. It is noted that drilling activities will occur in preparation for blasting.

### **Blasting:**

Table 16 of the revised AQIA presents a summary of assumptions made to estimate emissions from assessed activities, including blasting activities. Based on information provided in this table the modelling is based on assessing blasting emissions as “one blast every Tuesday at 10 am”. The revised AQIA does not include further evaluation of the potential impacts from gaseous pollutants from blasting. The EPA notes that the EIS has advised that blasting occurs approximately two to three times per year, and that the frequency of blasting on site is not predicted to increase, however the blast tonnages will rise.

As raised in the EPA's previous advice and clarified during the teleconference held on 1<sup>st</sup> December 2020, if blasting operations were proposed to be undertaken between 9am-3pm, Monday – Saturday, the assessment needed to include blasting emissions (for both particulate and gaseous pollutants) that cover at least these periods of times. This is in order to demonstrate that no adverse air quality impacts will occur due to blasting activities coinciding with worst case meteorological conditions. As such there is some residual deficiencies in the revised AQIA. However, the EPA considers that residual deficiencies could be resolved through the implementation of a Blast Management Plan which should be informed by:

- Additional assessment of meteorological conditions to prevent impacts associated with blasting operations
- Consideration of the conditions that lead to blast fume (i.e. gaseous pollutant emissions), and prevention of such conditions occurring when undertaking blasting.

This issue is partially addressed. The EPA considers that there are some residual deficiencies in assessment information, however these deficiencies can be resolved through:

- A condition of approval that requires that prior to the commencement of activities at an increased capacity the proponent must prepare a Blasting Management Plan that, as a minimum, includes appropriate blast management practices and the analysis of representative meteorological data to identify sub-optimal dispersion conditions during which blasting should not be undertaken. This Blasting Management Plan must be implemented once the activities at an increased capacity commence.
- A licence condition for the installation, ongoing operation and maintenance of a meteorological weather station.

### **Boral quarry emissions inventory:**

It is noted that the revised AQIA does not include any additional information regarding the parameters or assumptions made to estimate emission rates from the activities undertaken at the Boral quarry. However, the following has been considered:

- The meteorological analysis shows that the majority of the winds blow from the south-east;
- All the identified receptors are located east from the Boral quarry (“up wind” from this operation);
- The approved operations at the Boral quarry are 100,000 tpa;
- It is the EPA's understanding that although the Boral Quarry still holds an EPL, it has not been operational for the last couple of years;
- The assumed maximum daily trucks movements for this operation was 72, which is the same number of trucks movements proposed during peak daily operations based on processing 2,000 tonnes per day. It should be noted that truck movements are often one of the largest sources of dust emissions.

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- The largest predicted 24-PM10 and 24-PM2.5 concentrations at the closest receptor (R1) from the Boral quarry are 3.2  $\mu\text{g}/\text{m}^3$  and 0.59  $\mu\text{g}/\text{m}^3$  respectively;
- Cumulative results (including incremental results from the Boral quarry) show that there are not predicted additional exceedances.

Based on the above the EPA considers that the emissions from the proposal are likely to be more significant than those from the Boral quarry. Therefore, the EPA have recommended conditions of approval to manage residual risks.