



## **Karuah Hard Rock Quarry**

### **Summary of Environmental Monitoring Data**



**For the Period: October 2016**

## 1. Introduction

This report has been completed to meet the requirements of Section 66(6) of the *Protection of the Environment Operations Act 1997* and the NSW Environmental Protection Authority's (EPA) *Requirements for Publishing Pollution Monitoring Data* (October 2013). This report summarises the required monitoring data under Environmental Protection Licence (EPL) 11569 for the Karuah Hard Rock Quarry (Karuah Quarry). This report also includes some monitoring requirements under Development Consent (DA 265-10-2004).

A summary of the environmental monitoring data for October 2016 is covered in this report.

A summary of the licence information is provided in the tables in the report.

**Table 1 – Licence Information**

<b>Environmental Protection Licence Number</b>	11569
<b>Licensee's Name</b>	Hunter Quarries Pty Ltd
<b>Licensee's Address</b>	Licensee Postal Address: PO Box 3284 Thornton NSW 2322.  Premises Address: Karuah Quarry, Corner of Andesite Road and The Branch Lane, Karuah NSW 2324.
<b>Link to Full Licence on the EPA Website</b>	<a href="#">EPL 11569</a>

## 2. Dust Monitoring Results

There are no specific dust criteria listed in the EPL, but the following dust criteria (**Table 2**) are listed in Schedule 3 Condition 14 of DA 265-10-2004.

**Table 2 - DA 265-10-2004 Dust Deposition Criteria for the Karuah Quarry**

<b>Averaging Period</b>	<b>Maximum Increase in Deposited Dust Level<sup>1</sup></b>	<b>Maximum Total Deposited Dust Level<sup>1</sup></b>
Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month

**Note <sup>1</sup>:** Dust is assessed as insoluble solids as defined by AS 3580.10.1-2003.

SLR Consulting Australia Pty Ltd (SLR) undertakes depositional dust monitoring at Karuah Quarry. Monitoring is completed at the locations listed in **Table 3** below.

**Table 3 – Air Quality Monitoring Locations for the Karuah Quarry**

<b>Site ID</b>	<b>Location</b>	<b>Address</b>	<b>GPS Coordinates</b>
South (DDG 1)	South of the Karuah Quarry	5760 Pacific Hwy, Karuah NSW 2324	32°38'04"S 151°59'58"E
South-East (DDG 2)	South of the Karuah Quarry	5770 Pacific Hwy, Karuah NSW 2324	32°38'02"S 152°00'09"E
South-West (DDG 3)	South-West of the Karuah Quarry	DP 1024341, Karuah	32°37'57"S 151°59'41"E
East (DDG 4)	East of the Karuah	21 Halloran Rd	32° 37' 30.87"S

Site ID	Location	Address	GPS Coordinates
	Quarry	North Arm Cove NSW 2324	152°01'10.18"E

**Appendix 1** Illustrates the air quality monitoring locations at Karuah Quarry.

Air quality monitoring was undertaken during the period 28 September 2016 to 26 October 2016 at the locations detailed in **Table 4**. Depositional dust gauge (g/m<sup>2</sup>/month) results for this month and the year to date are shown in **Table 4**.

**Table 4 – Insoluble Solids (g/m<sup>2</sup>/month) for the Year to Date**

EPL		11569		
Date Sampled		26 October 2016		
Date	DDG 1	DDG 2	DDG 3	DDG 4
21/8/2013 to 18/9/2013	1.2	0.9	0.7	0.4
18/9/2013 to 17/10/2013	1.9	1.4	1.5	2.1
17/10/2013 to 18/11/2013	0.5	1.8	0.7	9.5
18/11/2013 to 16/12/2013	1.1	0.7	2.6	1.6
16/12/2013 to 13/1/2014	1.2	0.7	0.7	1.7
13/1/2014 to 14/2/2014	1.4	0.9	1.2	1.7
14/2/2014 to 18/3/2014	1.0	1.2	1.4	1.2
18/3/2014 to 16/4/2014	0.7	0.4	0.3	1.3
16/4/2014 to 15/5/2014	1.8	0.5	1.1	1.2
15/5/2014 to 1/7/2014	1.1	0.6	0.4	0.3
1/7/2014 to 31/7/2014	0.5	0.5	0.5	0.5
31/7/2014 to 29/8/2014	1.2	0.9	0.5	0.5
29/8/2014 to 25/9/2014	0.6	0.6	0.5	7.1
25/9/2014 to 24/10/2014	1.2	1.0	0.8	0.6
24/10/2014 to 22/11/2014	1.3	1.2	1.1	1.1
22/11/2014 to 22/12/2014	2.2	2.2	0.5	2.9
22/12/2014 to 20/1/2015	0.9	1.2	0.7	0.6
20/1/2015 to 17/2/2015	0.6	0.7	0.1	1.1
17/2/2015 to 18/3/2015	0.8	2.5	0.6	1.2
18/3/2015 to 15/4/2015	1.0	3.0	0.8	1.1
15/4/2015 to 14/5/2015	1.7	3.7	1.1	1.2
14/5/2015 to 12/6/2015	0.3	1.0	0.4	0.8
12/6/2015 to 10/7/2015	0.5	0.3	0.2	0.3
10/7/2015 to 7/8/2015	1.6	0.9	0.7	0.7
7/8/2015 to 7/9/2015	1.4	0.4	0.6	2.1
7/9/2015 to 8/10/2015	0.8	0.4	0.3	0.3
8/10/2015 to 6/11/2015	1.3	1.2	0.6	0.5
6/11/2015 to 8/12/2015	2.1	0.8	2.8	4.1
8/12/2015 to 8/1/2016	6.4	0.9	0.6	1.2
8/1/2016 to 8/2/2016	1.4	0.9	1.1	1.2
8/2/2016 to 3/3/2016	4.0	0.7	0.6	0.9
3/3/2016 to 4/4/2016	3.1	0.3	1.0	2.0
4/4/2016 to 6/5/2016	1.5	1.1	0.4	3.2
6/5/2016 to 3/6/2016	1.0	0.9	0.7	0.4
3/6/2016 to 4/7/2016	0.4	1.6	0.5	0.3

4/7/2016 to 1/8/2016	1.4	0.7	0.3	0.5
1/8/2016 to 31/8/2016	2.7	3.0	0.8	0.7
31/8/2016 to 28/9/2016	2.1	1.6	0.8	0.8
28/9/2016 to 26/10/2016	<b>0.8</b>	<b>0.6</b>	<b>0.8</b>	<b>0.5</b>
<b>Rolling Annual Average</b>	2.1	1.1	0.8	1.2

Monitoring results indicate that for the period 28 September 2016 to 26 October 2016 the insoluble solid levels recorded at DDG1 to 4 monitoring locations were at or below the project criterion of 4 g/m<sup>2</sup>/month.

### 3. Blast Monitoring Results

The following conditions in EPL 11569 refer to blast management.

*M6.1 The licensee must monitor all blasts carried out in or on the premises at or near the nearest residence or noise sensitive location (such as a school or hospital) that is likely to be most affected by the blast and that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee relating to alternative blasting limits.*

*L4.1 Blasting in or on the premises must only be carried out between 0900 hours and 1500 hours, Monday to Friday. Blasting in or on the premises must not take place on weekends or Public Holidays without the prior approval of the EPA.*

*L4.2 The overpressure level from blasting operations carried out in or on the premises must not:*

- a) exceed 115 dB(L) for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and*
- b) exceed 120 dB(L) at any time at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.*

*L4.3 The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not:*

- a) exceed 5mm/second for more than 5% of the total number of blasts carried out on the premises within the 12 months annual reporting period; and*
- b) exceed 10mm/second at any time at any residence or noise sensitive location (such as a school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative ground vibration level.*

**Table 5** summarises the October 2016 blasting results.

**Table 5: October 2016 Blast Monitoring Results**

Date and time	Overpressure and Vibration	Monitor 1 (Weighbridge)	Monitor 2 (Nearest Resident)
24/10/2016 12:36 pm	Overpressure dB(L)	107.0	109.2
	Vibration(mm/s)	0.59	0.66

The blasting results indicate that the blast that occurred on 24 October 2016 were below the EPL's blasting criteria.

#### 4. Noise Monitoring Results

Schedule 3 Condition 1 of the Development Consent requires Hunter Quarries to ensure noise generated by the development does not exceed criteria outlined in **Table 6** at any residence, or any noise sensitive receptor on privately owned land.

**Table 6 – Development Consent Noise Impact Criteria – Karuah Quarry**

Time Period	Noise Limit (dBA) LAeq(15minute)
Day 7:00am to 6:00pm Monday to Friday 7:00am to 1:00pm Saturday	48
Evening 6:00pm to 10:00pm Monday to Friday	47
At All Other Times	46

**Table 7** illustrates the operator attended and unattended noise monitoring locations at Karuah Quarry.

**Table 7 – Development Consent Noise Impact Criteria – Karuah Quarry**

Noise Monitoring Location	Property Name	Distance from Karuah Quarry
NM1	Lot 3 DP785172 5772 Pacific Hwy, Karuah	317 metres South of the Karuah Quarry
NM2	Lot 2 DP 785172 5760 Pacific Hwy, Karuah	200 metres South of the Karuah Quarry
NM3	Lot 22 DP 1024341	370 metres South West of the Karuah Quarry

Noise monitoring was not required in October 2016, with the most recent monitoring undertaken in May 2016.

#### 5. Surface Water Monitoring Results

Condition L2 of the EPL outlines the requirement to monitor surface water discharges from the Karuah Quarry via the licensed discharge point (LDP001).

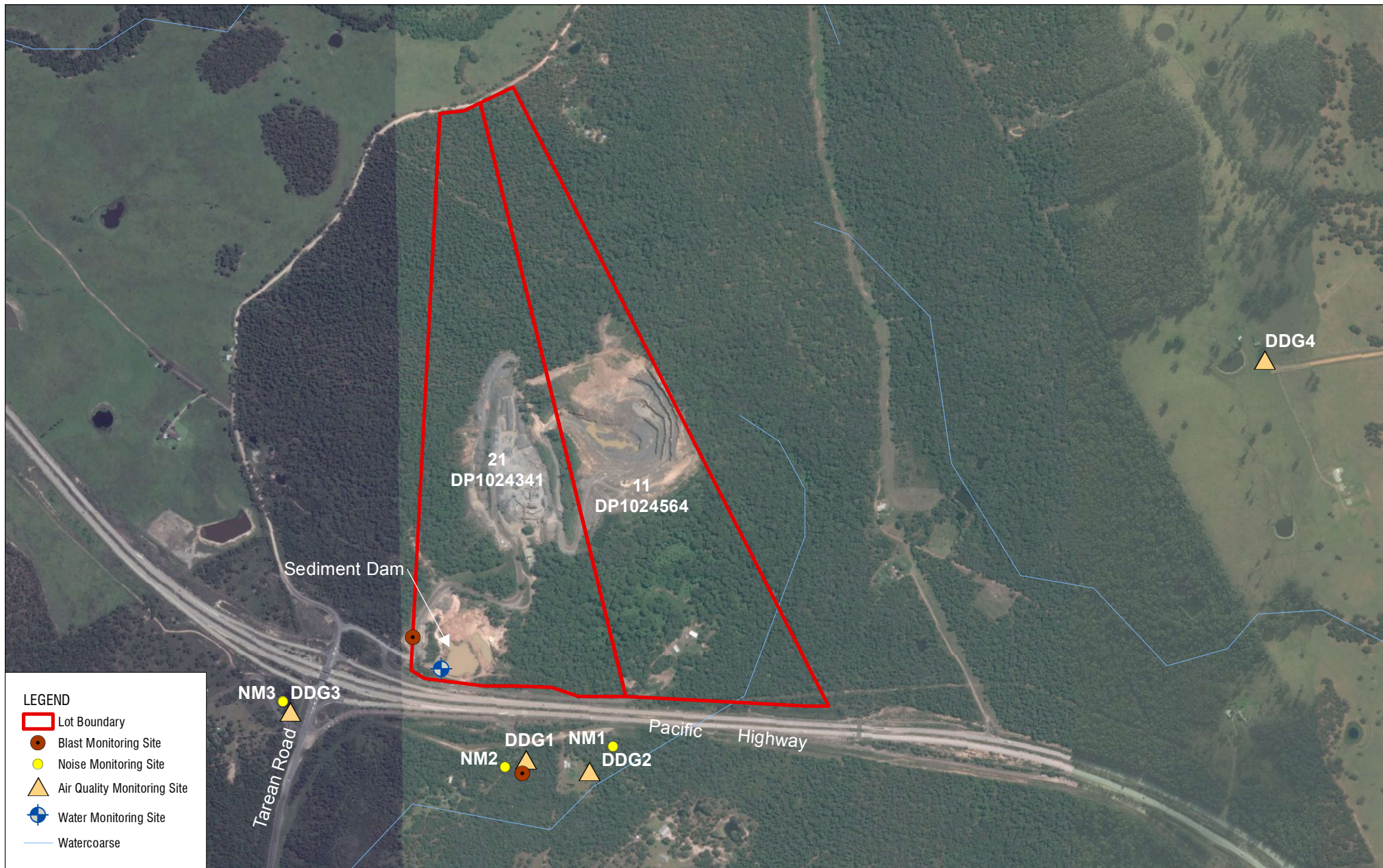
**Table 10** summarises discharge monitoring at Karuah Quarry. There were no surface water discharges in October 2016.

**Table 10 - Surface Water Discharge Monitoring Results**

Sampling Point	Monitoring Frequency	Pollutant	Measurement	EPL Limit
LDP001	During Discharge	pH	<i>No discharge during October 2016</i>	6.5 – 8.5
		TSS		50

## **Appendix 1 – Monitoring Locations**





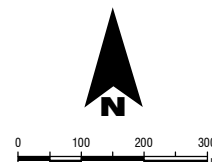
#### LEGEND

- Lot Boundary
- Blast Monitoring Site
- Noise Monitoring Site
- ▲ Air Quality Monitoring Site
- ⊕ Water Monitoring Site
- Watercourse



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Hunter Quarries Pty Ltd

Environmental Services and Support

**Karuah Hard Rock Quarry  
Environmental Monitoring Locations**

FIGURE 1