



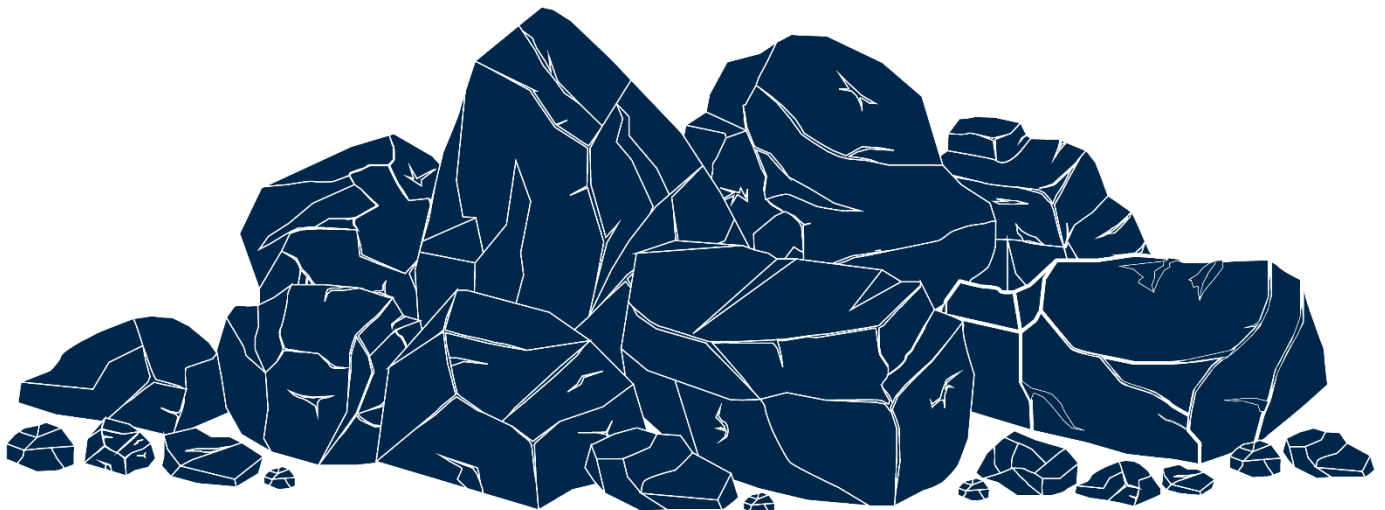
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Karuah Hard Rock Quarry

Environmental Monitoring Report

January 2025



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1.0 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 (EPA, 2013). This report summarises the required monitoring data under Environmental Protection Licence 11569 (the EPL) and Development Consent for the Karuah Hard Rock Quarry (the Quarry) as summarised by **Table 1** and **Table 2** respectively.

Table 1 Summary of Environment Protection Licence, EPL 11569

EPL Number:	EPL 11569
Licensee’s Name:	Hunter Quarries Pty Ltd
Licensee’s Address:	Karuah Hard Rock Quarry PO Box 3284, Thornton NSW 2322 Corner of Andesite Road and The Branch Lane, Karuah NSW 2324.
Link to Full Licence on the EPA website:	EPL 11569

Table 2 Summary of Project Approval, DA 265-10-2004

Project Approval:	DA 265-10-2004
Applicant:	Hunter Quarries Pty Ltd
Consent Authority:	Minister for Infrastructure, Planning and Natural Resources
Link to Full Project Approval on the NSW Planning website:	Development Consent DA 265-10-2004

A summary of the environmental monitoring data for the January 2025 reporting period (the Reporting Period) is covered in this report. Tables throughout this report provide key monitoring information from the EPL and the Consent, including:

- location of monitoring;
- pollutant;
- unit of measurement; and
- monitoring frequency required.

Monitoring locations are illustrated by the site plan provided by **Appendix 1**.

2.0 Air Quality Monitoring

Dust emissions generated by the Quarry operation must not cause additional exceedances of ambient air quality criterion outlined in Schedule 3, Condition 13 of the Consent and summarised by **Table 3**, **Table 4** and **Table 5**.

Deposited dust monitoring is undertaken at the locations listed in **Table 6**, in accordance with the Approved Methods of Sampling and Analysis of Air Pollutants in NSW (EPA, 2022).

Table 3 Long-term Assessment Criteria for Deposited Dust (DA 265-10-2004).

Pollutant	Averaging Period	Maximum Increase in Deposited Dust Level ¹	Maximum Total Deposited Dust Level ¹
Deposited Dust	Annual	2 g/m ² /month	4 g/m ² /month

¹ Deposited dust is assessed as insoluble solids as defined by AS 3580.10.1-2003.

Table 4 Long-term Assessment Criteria for Particulate Matter (DA 265-10-2004).

Pollutant	Averaging Period	Criterion
Total Suspended Particulates	Annual	90 µg/m ³
Particulate Matter < 10 µm (PM10)	Annual	30 µg/m ³

Table 5 Short-term Assessment Criteria for Particulate Matter (DA 265-10-2004).

Pollutant	Averaging Period	Criterion
Particulate Matter < 10 µm (PM10)	24-hour	50 µg/m ³

Table 6 Air Quality Monitoring Locations (EPL 11569).

Site Monitoring Point ID	EPL Monitoring Point ID	Location	Address	Coordinates
DDG 1	2	South-West of Karuah Hard Rock Quarry	54 Mill Hill Close, Karuah NSW 2324	32°38'04''S 151°59'58''E
DDG 2	3	South-West of Karuah Hard Rock Quarry	64 Mill Hill Close, Karuah NSW 2324	32°38'02''S 152°00'09''E
DDG 3	4	South-West of Karuah Hard Rock Quarry	Lot 251 DP1092111, Karuah NSW 2324	32°37'57''S 151°59'41''E
DDG 4	5	East of Karuah Hard Rock Quarry	21 Halloran Road, North Arm Cove NSW 2324	32° 37' 30.87"S 152°01'10.18"E

Deposited dust results for the 12-months prior-to and including January 2025 are summarised by **Table 7**.

Table 7 *Deposited dust monitoring results.*

Reporting Period	Start Date	End Date	Days	DDG 1 EPL ID 2	DDG 2 EPL ID 3	DDG 3 EPL ID 4	DDG 4 EPL ID 5
Feb-24	25/01/2024	26/02/2024	32	1.1	0.8	1.3	1.3
Mar-24	26/02/2024	28/03/2024	31	0.8	0.9	1.8	0.6
Apr-24	28/03/2024	29/04/2024	32	0.9	0.4	0.5	0.8
May-24	29/04/2024	29/05/2024	30	0.5	0.3	0.2	0.4
Jun-24	29/05/2024	28/06/2024	30	0.7	0.5	0.5	0.7
Jul-24	28/06/2024	30/07/2024	32	1.1	0.8	0.6	0.9
Aug-24	30/07/2024	30/08/2024	31	0.7	0.5	0.7	0.9
Sep-24	30/08/2024	30/09/2024	31	2.2	1.2	1.3	1.2
Oct-24	30/09/2024	31/10/2024	31	1.0	0.7	0.7	5.1*
Nov-24	31/10/2024	29/11/2024	29	1.4	1.1	1.1	1.7
Dec-24	29/11/2024	30/12/2024	29	0.6	1.4	1.3	3.1
Jan-25	30/12/2024	31/01/2025	32	3.8	1.7	1.9	1.3
Progressive Annual Average				1.2	0.9	1.0	1.5

Monitoring results for the Reporting Period at the four DDG monitoring sites are within the long-term annual deposited dust limit of 4 g/m²/month.

**Note: an anomalous exceedance was recorded at DDG4 during the October 2024 Reporting Period which was subsequently reported to the NSW Department of Planning, Housing & Infrastructure (NSW Planning), the NSW EPA and surrounding landholders in accordance with the relevant conditions of the Consent and EPL.*

3.0 Blast Monitoring

Blast monitoring is undertaken for all blasts at the Quarry at the nearest residential location to ensure that air blast overpressure and ground vibration remain within the compliance limits, as summarised by **Table 8**; with the monitoring results summarised by **Table 9**.

There were no blasts undertaken within the Reporting Period.

Table 8 Blasting Airblast Overpressure and Ground Vibration Criteria (DA 265-10-2004 & EPL 11569).

Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)	Allowable Exceedance
Private Residence B	120	10	0%
	115	5	5% over 12-month reporting period.

Table 9 Blasting Monitoring Results.

Date	Time	Location	Airblast Overpressure (dB(L))	Ground Vibration (mm/s)
–	–	–	–	–

*Not triggered = n/t
 Ground Vibration < 0.5 mm/s
 Overpressure < 108 dB(L)

4.0 Noise Monitoring

Noise monitoring is undertaken in accordance with the EPL and NSW Planning approved Environmental Management Strategy & Monitoring Program (EMS&MP), which requires attended and unattended noise monitoring to be conducted on a 6-monthly basis.

No noise monitoring was undertaken during the Reporting Period.

5.0 Surface Water Monitoring

Water monitoring is undertaken in accordance with the EPL and NSW Planning approved Site Water Management Plan, with daily monitoring of surface water being discharged from the Quarry via the licenced discharge point in accordance with Condition L2 and M2 of the EPL.

There were two discharge events, across 6x days, during the Reporting Period, as summarised by **Table 10**.

The first discharge event consisted of an uncontrolled discharge following two consecutive major rainfall events, whilst the second event consisted of controlled discharges once Sediment Dam 2 had been subject to flocculation reducing the Total Suspended Solids (TSS) to within the compliance limit of 50 mg/L.

Table 10 Discharge Water Monitoring Results.

Date	Oil and Grease	pH	Total Suspended Solids, TSS (mg/L)	Nitrogen (total) (mg/L)	Phosphorus (total) (mg/L)	Discharge Type
LDP 1 – Sediment Dam 2						
19/01/2025	Not Visible	7.1	140	0.6	0.10	Uncontrolled
20/01/2025	Not Visible	7.3	170	0.5	0.10	Controlled
26/01/2025	Not Visible	7.2	27	0.8	<0.05	Controlled
27/01/2025	Not Visible	7.3	36	0.8	<0.05	Controlled
28/01/2025	Not Visible	7.4	44	0.8	<0.05	Controlled
29/01/2025	Not Visible	7.4	33	0.8	<0.05	Controlled
Sediment Basin 4						
19/01/2025	Not Visible	7.2	550	1.2	0.2	Uncontrolled

6.0 Weather Station Monitoring

The Quarry operates and maintains a permanent meteorological monitoring station to record weather parameters including temperature, wind speed and direction, solar radiation and rainfall. **Figure 1** below outlines the weather records for the Reporting Period.

Monthly Weather Summary



Site: Karuah Quarry Complex
 Month: January 2025

Date	Day	Temperature @ 2m			Temperature @ 10m			Winds			Solar Radiation		Rain ² mm
		Max ¹	Min ²	Ave ¹	Max ¹	Min ²	Ave ¹	Max Gust ¹	Ave Speed ¹	Dir Ave ¹	Max ¹	Ave ¹	
		°C	°C	°C	°C	°C	°C	km/h	km/h	deg	W/m ²	W/m ²	
1	Wed	32.1	16.5	24.0	29.0	17.4	23.4	40.2	24.4	129	1107.5	287.6	0.0
2	Thu	36.6	19.1	26.4	33.0	19.7	25.6	28.4	20.2	178	957.5	300.4	0.0
3	Fri	27.8	18.9	21.5	24.8	18.9	21.2	40.2	27.3	111	1205.8	92.1	6.8
4	Sat	25.9	15.1	20.7	24.0	16.0	20.6	24.9	17.0	149	1255.0	151.2	0.0
5	Sun	30.4	14.6	23.2	27.8	15.6	22.6	33.1	24.8	172	1134.2	298.9	0.0
6	Mon	36.6	17.0	25.6	33.7	17.8	25.0	26.0	21.5	160	950.0	312.6	0.0
7	Tue	37.3	21.0	27.7	34.6	20.9	26.8	36.7	22.1	146	938.2	289.1	5.0
8	Wed	21.9	18.8	20.0	21.5	18.8	20.1	36.7	21.1	132	281.6	34.3	60.4
9	Thu	19.2	16.8	18.0	19.0	16.8	18.0	40.2	27.6	168	165.8	23.1	103.8
10	Fri	23.6	16.4	19.2	22.2	16.8	19.3	31.9	17.9	165	559.9	60.4	5.6
11	Sat	28.0	18.1	22.4	26.2	18.3	22.1	28.4	20.5	170	1159.1	193.3	11.0
12	Sun	29.1	17.8	22.8	26.9	18.3	22.6	29.6	21.8	158	1309.9	230.2	0.0
13	Mon	31.3	19.2	24.7	28.7	19.8	24.2	30.8	18.7	206	1147.5	256.3	0.0
14	Tue	32.9	19.2	25.7	30.3	19.6	25.0	29.6	18.6	151	1212.5	276.9	0.0
15	Wed	34.7	20.7	26.3	31.7	20.7	25.6	27.2	15.6	152	1007.4	238.8	0.0
16	Thu	36.4	17.7	25.9	34.2	17.6	25.1	58.0	26.7	183	920.0	268.5	27.2
17	Fri	20.2	15.6	18.2	20.4	15.5	18.5	50.9	30.2	136	350.8	28.2	33.2
18	Sat	21.6	15.4	18.8	21.5	15.2	18.9	58.0	38.2	128	226.7	27.0	91.8
19	Sun	26.2	18.7	21.7	25.0	19.2	21.8	49.7	35.5	98	883.3	147.8	22.4
20	Mon	25.6	12.9	19.2	23.2	13.4	18.8	34.3	23.0	158	1195.0	236.2	0.2
21	Tue	26.1	12.7	18.7	23.3	13.0	18.1	24.9	17.0	183	1159.2	284.4	0.0
22	Wed	29.7	17.0	23.2	26.7	17.7	22.6	29.6	21.7	144	979.9	297.3	0.0
23	Thu	35.4	19.6	25.3	33.8	19.7	24.8	46.1	25.1	141	1243.2	184.9	1.2
24	Fri	25.2	19.5	21.9	23.6	19.4	21.1	23.7	16.9	152	855.8	137.7	0.0
25	Sat	26.6	14.6	20.3	24.1	14.9	19.9	35.5	23.3	166	1039.1	172.0	0.0
26	Sun	27.8	16.6	22.0	25.4	17.0	21.4	28.4	21.1	128	1252.5	256.8	0.0
27	Mon	31.9	22.4	25.8	29.2	22.5	25.1	37.9	28.3	162	1040.7	263.5	0.0
28	Tue	35.4	22.2	27.8	33.5	22.5	27.3	28.4	18.2	195	1215.0	262.4	0.0
29	Wed	40.4	19.9	28.5	39.3	20.5	28.0	49.7	34.7	178	1100.0	238.3	9.2
30	Thu	25.7	20.2	21.9	23.6	20.0	21.4	23.7	17.3	160	894.2	103.5	26.8
31	Fri	28.6	21.2	23.8	26.0	21.0	23.3	15.4	11.1	149	808.3	114.3	6.2
Ave or Total		29.4	17.9	22.9	27.3	18.2	22.5	34.8	22.8	155.1	953.4	195.7	410.8
High		40.4	22.4	28.5	39.3	22.5	28.0	58.0	38.2		1309.9	312.6	103.8
Low		19.2	12.7	18.0	19.0	13.0	18.0	15.4	11.1		165.8	23.1	
Notes: 1. Values are for the 24 hour period from 9am to 9am next day.												No. rain days >1mm:	14
2. Values are for the 24 hours to 9am.													

Figure 1 Weather Records Summary.

7.0 Production Data

Monthly monitoring of sales and truck movements are summarised by **Table 11**.

Table 11 Quarry Production Data.

Month	Truck Movements	Quarry Product Sales (t)
Jan-25	352	12,214.88

8.0 Reporting

8.1 Reportable Environmental Incidents

During the Reporting Period, one reportable environmental incident occurred at the Quarry, including:

- Uncontrolled discharge of sediment-laden water to Yalimbah Creek from Sunday 19 January to Monday 20 January 2025 following the receipt of 174.8 mm of rainfall over four days. This rainfall event exceeded the 95th percentile 5x day rainfall depth of 90.6 mm; which the site's sediment dams are designed to withstand in accordance with Landcom's Blue Book (*Managing Urban Stormwater: Soils and Construction – Volume 2E, Mines and quarries*).

During the event the site's Pollution Incident Response Management Plan (PIRMP) was enacted through reporting to relevant authorities, the KEQPL executive and the local community. Formal incident reports were subsequently submitted to NSW Planning and the NSW EPA.

8.2 Reportable Non-Compliances

During the Reporting Period, no reportable non-compliances were identified at the Quarry.

8.3 Community Complaints

During the Reporting Period, no community complaints were reported to the Quarry.

Appendix 1 – EPL 11569 Monitoring Locations



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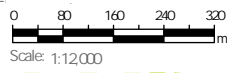
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LEGEND

- Site Boundary
- Lot Boundary
- Dams
- ▲ Depositional Dust Gauge (DDG)
- ⊙ Air Blast Monitor
- Noise Monitoring Locations
- ⊕ Licensed Discharge Point
- ⊞ Meteorological Station



GDA2020 MGA Zone 56
8/03/2024

Karuah Hard Rock Quarry

Environmental Monitoring Report

APPENDIX 1 - Environmental Monitoring Locations

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