



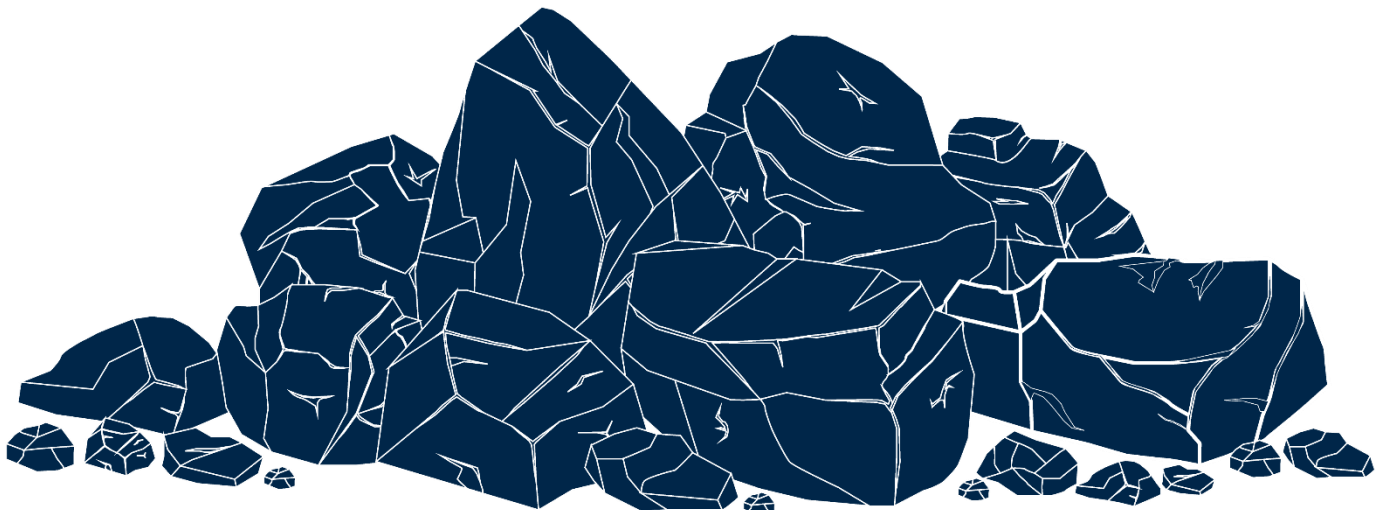
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Karuah Hard Rock Quarry

Environmental Monitoring Report

September 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 September 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
DDG 1	6	South-West of Karuah Hard Rock Quarry	54 Mill Hill Close, Karuah NSW 2324
DDG 2	7	South-West of Karuah Hard Rock Quarry	64 Mill Hill Close, Karuah NSW 2324
DDG 3	8	South-West of Karuah Hard Rock Quarry	Lot 251 DP1092111, Karuah NSW 2324
DDG 4	9	East of Karuah Hard Rock Quarry	21 Halloran Road, North Arm Cove NSW 2324

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

Table 7 *Deposited dust monitoring results.*

Reporting Period	Start Date	End Date	Days	DDG 1 (EPL ID 2) EPL ID 6	DDG 2 (EPL ID 3) EPL ID 7	DDG 3 (EPL ID 4) EPL ID 8	DDG 4 (EPL ID 5) EPL ID 9
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)
Feb-25	31/01/2025	03/03/2025	31	(1.2)	(0.9)	(1.1)	(1.2)
Mar-25	03/03/2025	03/04/2025	31	(0.7)	(1.0)	(1.4)	
	04/03/2025	03/04/2025	30				(1.1)
Apr-25	03/04/2025	05/05/2025	32	1.2	3.2	0.4	(1.0)
May-25	05/05/2025	03/06/2025	29	2.0	3.9	0.2	(0.3)
Jun-25	03/06/2025	01/07/2025	28	2.9	1.0	0.6	0.4
Jul-25	01/07/2025	01/08/2025	31	10.1*	0.5	0.4	0.2
Aug-25	01/08/2025	01/09/2025	31	0.9	2.3	0.5	0.8
Sep-25	01/09/2025	01/10/2025	30	1.7	1.3	1.0	0.7
Progressive Annual Average				2.3	1.6	0.9	1.4

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: Recorded anomalous exceedances which were 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 two blasts undertaken within the Reporting Period, which were observed to be within compliance limits.

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)
02/09/2025	12:54	South Highwall	106.5	2.57
29/09/2025	12:30	South Highwall	109.4	1.45

*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.

No discharge events occurred during the Reporting Period, as summarised by **Table 10**.

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
LDP1 – Sediment Dam 2						
-	-	-	-	-	-	-
Sediment Basin 4						
-	-	-	-	-	-	-

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: September 2025

Date	Day	Temperature @ 2m			Temperature @ 10m			Winds			Solar Radiation		Rain ² mm
		Max ¹ °C	Min ¹ °C	Ave ¹ °C	Max ¹ °C	Min ¹ °C	Ave ¹ °C	Max Gust ¹ km/h	Ave Speed ¹ km/h	Dir Ave ¹ deg	Max ¹ W/m ²	Ave ¹ W/m ²	
1	Mon	20.2	5.2	11.1	18.9	6.2	11.5	20.1	15.2	218	609.2	168.9	0.0
2	Tue	21.3	5.8	12.1	19.3	7.1	12.1	20.1	13.5	180	693.3	151.1	0.0
3	Wed	22.4	6.2	13.2	19.6	7.2	13.7	21.3	15.4	199	801.7	135.9	0.2
4	Thu	21.9	6.5	12.5	20.4	7.4	13.0	29.6	19.5	235	632.3	175.7	0.0
5	Fri	24.4	6.3	13.8	23.2	7.0	14.5	22.5	15.6	229	719.9	167.3	0.0
6	Sat	22.0	7.5	14.8	19.6	8.1	14.7	33.1	22.0	147	841.7	161.9	0.0
7	Sun	21.5	8.1	14.5	20.0	9.5	14.8	23.7	14.9	168	857.4	161.2	0.0
8	Mon	25.4	10.8	16.9	24.0	12.0	17.1	20.1	14.8	200	662.5	173.3	0.0
9	Tue	28.6	13.5	18.6	27.4	14.6	19.7	30.8	16.3	226	725.7	139.0	0.0
10	Wed	23.4	15.0	18.0	22.4	15.2	18.1	11.8	7.6	233	461.7	60.5	18.0
11	Thu	22.6	9.9	15.6	21.2	10.0	15.6	52.1	30.3	200	728.2	86.2	7.2
12	Fri	15.0	5.8	10.4	14.7	6.4	10.9	46.1	25.3	226	436.6	59.0	11.4
13	Sat	21.7	5.9	12.5	19.5	6.5	12.4	16.6	11.5	202	744.9	187.7	0.0
14	Sun	23.1	7.6	14.1	20.5	8.6	14.5	21.3	12.8	194	825.7	180.0	0.0
15	Mon	25.3	8.1	15.4	24.1	8.8	15.7	18.9	14.8	224	723.3	196.3	0.0
16	Tue	27.5	10.4	17.4	26.2	11.9	18.2	29.6	17.3	204	708.3	199.3	0.0
17	Wed	27.2	12.6	18.8	26.5	14.5	20.0	23.7	16.9	195	799.9	175.1	0.0
18	Thu	28.5	10.1	19.2	27.4	11.5	19.2	29.6	18.4	181	776.7	188.2	0.0
19	Fri	23.7	9.7	16.5	21.3	10.3	16.5	23.7	16.1	193	732.4	204.6	0.0
20	Sat	26.7	13.8	18.5	25.4	13.8	18.2	21.3	15.4	207	706.7	192.8	2.4
21	Sun	24.7	5.5	15.3	23.6	6.3	16.1	46.1	27.2	240	852.4	186.5	0.2
22	Mon	23.6	7.3	14.2	22.1	8.4	14.8	28.4	17.1	209	734.9	210.9	0.0
23	Tue	24.2	9.2	15.1	22.5	9.3	14.6	36.7	24.6	181	856.7	192.2	28.4
24	Wed	19.3	5.1	11.4	17.1	5.5	11.2	26.0	17.3	207	792.5	205.5	0.0
25	Thu	25.0	9.5	15.7	24.0	10.7	16.2	28.4	17.1	220	786.8	214.4	0.0
26	Fri	25.6	9.4	16.4	24.6	10.9	17.3	27.2	15.7	220	762.5	209.0	0.0
27	Sat	27.7	11.0	17.8	26.9	13.4	19.1	36.7	19.6	226	710.8	170.1	0.0
28	Sun	26.0	11.5	17.2	24.9	13.7	18.1	16.6	11.3	228	645.8	122.1	0.0
29	Mon	30.2	16.3	20.7	28.4	16.7	20.5	27.2	20.9	154	750.8	189.0	2.2
30	Tue	24.6	12.6	17.5	22.3	13.5	17.4	23.7	15.7	158	855.0	197.1	0.4
Ave or Total		24.1	9.2	15.5	22.6	10.2	15.9	27.1	17.3	203.4	731.2	168.7	70.4
High		30.2	16.3	20.7	28.4	16.7	20.5	52.1	30.3		857.4	214.4	28.4
Low		15.0	5.1	10.4	14.7	5.5	10.9	11.8	7.6		436.6	59.0	
Notes: 1. Values are for the 24 hour period from 9am to 9am next day.												No. rain days >1mm:	6
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	12,215
Feb-25	794	26,011
Mar-25	745	23,981
Apr-25	329	10,524
May-25	576	20,295
Jun-25	1,126	39,666
Jul-25	569	19,637
Aug-25	316	11,005
Sep-25	843	27,642
Progressive Annual Total	5,650	190,976

8.0 Reporting

8.1 Reportable Environmental Incidents

During the Reporting Period, no reportable environmental incidents occurred at the Quarry.

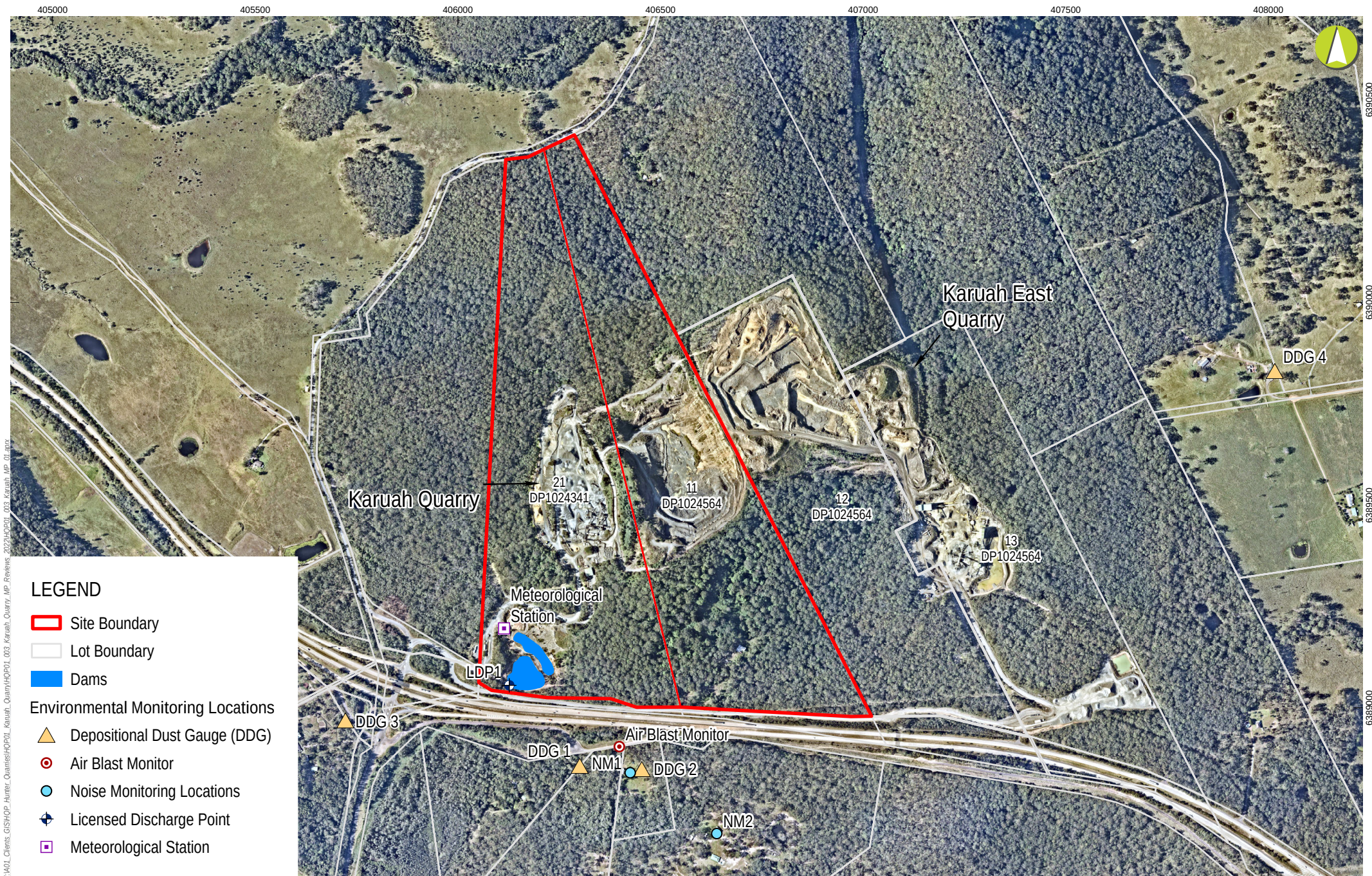
8.2 Reportable Non-Compliances

During the Reporting Period, no reportable non-compliances occurred 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



LEGEND

- Site Boundary
- Lot Boundary
- Dams

Environmental Monitoring Locations

- ▲ Depositional Dust Gauge (DDG)
- Air Blast Monitor
- Noise Monitoring Locations
- ⊕ Licensed Discharge Point
- Meteorological Station

