

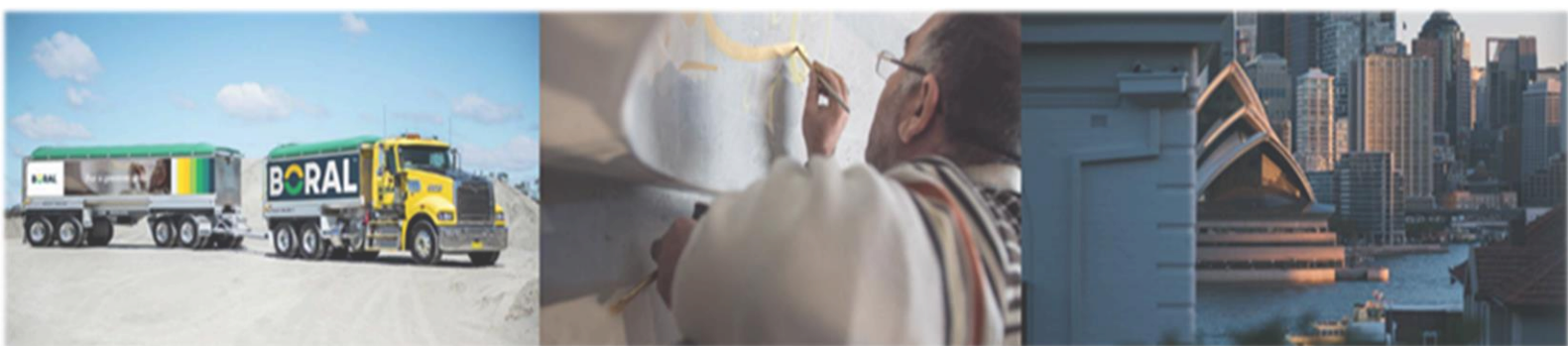


Environmental Monitoring Report

Dunmore Quarry

June 2024

Date Published: June 2024



Dunmore Quarry Environmental Monitoring Report

This monitoring report is to satisfy the requirements of Section 66 (6) of the Protection of the Environment and Operations Act 1997, to make available, within 14 days of request, any monitoring data that relates to pollution under an Environment Protection Licence.

The monitoring of pollutants provided in this report is undertaken as per the requirements of Environment Protection Licence 77 (EPL 77 – Boral Dunmore Quarry)

This report provides environmental monitoring data for Dunmore Quarry for the period November 2019 to November 2023.

| Dunmore Quarry Information | |
|----------------------------|---|
| Premise Details | Boral – Dunmore Quarry |
| Address | Princes Highway, Dunmore NSW, 2529 |
| Licensee | Boral Resources (NSW) PTY LTD |
| EPL N ^o | 77 |
| EPL Location | https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=77&id=77&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued |

Monitoring data in this report relates to the monitoring undertaken in the reporting period for Blasting.

Dunmore Quarry Environmental Monitoring Report

Blasting

Blast monitoring is conducted as per condition L4 of EPL 77. The blasting monitoring results for the reporting period is summarised below.

Sample Period: November 2023
Licensee: Dunmore Quarry
Licensee Address: Princes Hwy, Dunmore NSW 2529
EPL No: 77

Qualifications related to noise:

- * The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time
- * The overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over each reporting period
- * Ground vibration peak particle vector from the blasting operations at the premises must not exceed 10mm/sec at any time
- * Ground vibration peak particle vector from the blasting operations at the premises must not exceed 5mm/sec for more than 5% of the total number of blasts over each reporting period
- * Blast monitoring overpressure and ground vibration is currently measured at the Benny Property. Prior to the 20th of February 2018 blast monitoring had been undertaken at the MacParland Residence.
- * **A reading denoted as “No Trigger” means that the recorded value was below the measuring sensitivity of the instrument and therefore deemed compliant with limits.**

| Monitoring Location | Blast Date | Results Received | Time | Ground Vibration (mm/s) | Overpressure (dB) | Compliant | Comments |
|---------------------|-------------|------------------|------|-------------------------|-------------------|-----------|---|
| Benny Residence | 13-Jun-2024 | 15-Jun-24 | 1356 | 0.26 | 87.6 | Y | Instrument set to a sensitivity of 88.0dbL for Overpressure and 0mm/s for Vibration |

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Historical Data

| Monitoring Location | Blast Date | Results Received | Time | Ground Vibration (mm/s) | Overpressure (dBL) | Compliant | Comments |
|---------------------|-------------|------------------|------|-------------------------|--------------------|-----------|----------|
| Benny Residence | 30-May-2024 | 15-Jun-24 | 1356 | 0.23 | 97.3 | Y | |
| Benny Residence | 9-May-2024 | 11-May-24 | 1509 | 0.47 | 102.4 | Y | |
| Benny Residence | 15-Apr-2024 | 11-May-24 | 1349 | 0.05 | 88.1 | Y | |
| Benny Residence | 20-Mar-2024 | 09-Apr-24 | 1258 | 0.30 | 103.1 | Y | |
| Benny Residence | 22-Feb-2024 | 10-Mar-24 | 1227 | 0.25 | 99.8 | Y | |
| Benny Residence | 08-Feb-2024 | 11-Feb-24 | 1559 | 0.31 | 105.2 | Y | |
| Benny Residence | 25-Jan-2024 | 11-Feb-24 | 1204 | 0.30 | 97.6 | Y | |
| Benny Residence | 12-Jan-2024 | 11-Feb-24 | 1538 | 0.35 | 105.0 | Y | |
| Benny Residence | 08-Dec-2023 | 10-Jan-24 | 1304 | No Trigger | No Trigger | Y | |
| Benny Residence | 17-Nov-2023 | 10-Jan-24 | 1315 | No Trigger | No Trigger | Y | |
| Benny Residence | 03-Nov-23 | 10-Jan-24 | 1346 | 0.17 | 97.1 | Y | |
| Benny Residence | 20-Oct-23 | 1-Nov-23 | 1347 | 0.68 | 108.9 | Y | |
| Benny Residence | 29-Sep-23 | 1-Nov-23 | 1552 | 0.32 | 93.3 | Y | |
| Benny Residence | 22-Sep-23 | 1-Nov-23 | 1334 | 0.45 | 99.7 | Y | |
| Benny Residence | 15-Sep-23 | 1-Nov-23 | 1340 | 0.17 | 93.3 | Y | |
| Benny Residence | 1-Sep-23 | 1-Nov-23 | 1334 | 0.17 | 105.4 | Y | |
| Benny Residence | 1-Sep-23 | 1-Nov-23 | 1316 | 0.13 | 110.3 | Y | |
| Benny Residence | 25-Aug-23 | 1-Nov-23 | 1228 | 0.70 | 100.1 | Y | |
| Benny Residence | 18-Aug-23 | 1-Nov-23 | 1432 | 0.83 | 107.0 | Y | |
| Benny Residence | 11-Aug-23 | 1-Nov-23 | 0957 | 0.18 | 102.9 | Y | |
| Benny Residence | 28-Jul-23 | 7-Aug-23 | 1223 | 0.55 | 99.7 | Y | |
| Benny Residence | 21-Jul-23 | 7-Aug-23 | 1400 | 0.05 | 104.2 | Y | |
| Benny Residence | 14-Jul-23 | 7-Aug-23 | 1239 | 0.05 | 95.0 | Y | |
| Benny Residence | 10-Jul-23 | 7-Aug-23 | 1502 | 0.05 | 98.0 | Y | |
| Benny Residence | 23-June-23 | 3-July-23 | 1257 | 1.27 | 108.0 | Y | |
| Benny Residence | 16-June-23 | 3-July-23 | 1437 | 0.18 | 95.8 | Y | |
| Benny Residence | 16-June-23 | 3-July-23 | 1421 | 0.45 | 99.0 | Y | |
| Benny Residence | 9-June-23 | 3-July-23 | 1437 | 0.38 | 108.1 | Y | |
| Benny Residence | 31-May-23 | 6-June-23 | 1242 | 0.57 | 96.6 | Y | |
| Benny Residence | 26-May-23 | 6-June-23 | 1320 | 1.05 | 104.3 | Y | |
| Benny Residence | 24-May-23 | 6-June-23 | 1319 | No Trigger | 97.3 | Y | |
| Benny Residence | 19-May-23 | 6-June-23 | 1559 | 0.31 | 91.0 | Y | |
| Benny Residence | 12-May-23 | 6-June-23 | 1235 | 0.44 | 98.6 | Y | |
| Benny Residence | 05-May-23 | 6-June-23 | 1307 | No Trigger | 92.9 | Y | |
| Benny Residence | 28-Apr-2023 | 3-May-23 | 1300 | 0.09 | 103.0 | Y | |
| Benny Residence | 14-Apr-2023 | 3-May-23 | 1426 | 0.62 | 105.6 | Y | |
| Benny Residence | 20-Mar-2023 | 3-Apr-23 | 1323 | 0.63 | 104.6 | Y | |
| Benny Residence | 9-Mar-2023 | 3-Apr-23 | 1501 | 1.16 | 103.6 | Y | |
| Benny Residence | 20-Feb-2023 | 1-Mar-23 | 1525 | 1.06 | 108.0 | Y | |
| Benny Residence | 25-Jan-2023 | 14-Feb-23 | 1418 | 0.45 | 108.5 | Y | |
| Benny Residence | 11-Jan-2023 | 14-Feb-23 | 1214 | 0.45 | 109.6 | Y | |
| Benny Residence | 30-Nov-2022 | 12-Dec-22 | 1351 | No Trigger | No Trigger | Y | |
| Benny Residence | 14-Nov-2022 | 12-Dec-22 | 1515 | No Trigger | No Trigger | Y | |
| Benny Residence | 19-Oct-2022 | 11-Nov-22 | 1410 | No Trigger | No Trigger | Y | |
| Benny Residence | 10-Oct-2022 | 14-Oct-22 | 1626 | No Trigger | No Trigger | Y | |
| Benny Residence | 19-Sep-2022 | 14-Oct-22 | 1453 | No Trigger | No Trigger | Y | |
| Benny Residence | 31-Aug-2022 | 14-Oct-22 | 1600 | No Trigger | No Trigger | Y | |
| Benny Residence | 17-Aug-2022 | 14-Oct-22 | 1552 | No Trigger | No Trigger | Y | |
| Benny Residence | 1-Aug-2022 | 14-Oct-22 | 1512 | No Trigger | No Trigger | Y | |
| Benny Residence | 20-Jul-2022 | 30-Aug-22 | 1511 | 0.508 | 98.8 | Y | |
| Benny Residence | 29-Jun-2022 | 13-Jul-2022 | 1255 | No Trigger | No Trigger | Y | |
| Benny Residence | 22-Jun-2022 | 13-Jul-2022 | 1252 | No Trigger | No Trigger | Y | |

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| Monitoring Location | Blast Date | Results Received | Time | Ground Vibration (mm/s) | Overpressure (dBL) | Compliant | Comments |
|---------------------|-------------|------------------|-------|-------------------------|--------------------|-----------|---|
| Benny Residence | 20-May-2022 | 13-Jul-2022 | 1217 | No Trigger | No Trigger | Y | |
| Benny Residence | 16-May-2022 | 13-Jul-2022 | 1520 | No Trigger | No Trigger | Y | |
| Benny Residence | 4-May-2022 | 13-Jul-2022 | 1437 | No Trigger | No Trigger | Y | |
| Benny Residence | 31-Mar2022 | 13-Jul-2022 | 1305 | No Trigger | No Trigger | Y | |
| Benny Residence | 21-Feb-22 | 15-Mar-22 | 11:06 | No Trigger | No Trigger | Y | |
| Benny Residence | 22-Dec-22 | 22-Dec-22 | 13:16 | No Trigger | No Trigger | Y | |
| Benny Residence | 01-Dec-21 | 01-Dec-21 | 14:41 | No Trigger | No Trigger | Y | |
| Benny Residence | 17-Nov-21 | 17-Nov-21 | 14:09 | No Trigger | No Trigger | Y | |
| Benny Residence | 22-Oct-21 | 22-Oct-21 | 12:11 | No Trigger | No Trigger | Y | |
| Benny Residence | 20-Sept-21 | 20-Sept-21 | 12:03 | No Trigger | No Trigger | Y | |
| Benny Residence | 01-Sept-21 | 01-Sept-21 | 13:29 | No Trigger | No Trigger | Y | |
| Benny Residence | 09-Aug-21 | 09-Aug-21 | 13:04 | No Trigger | No Trigger | Y | |
| Benny Residence | 03-Jun-21 | 03-Jun-21 | 15:05 | 0.60 | 101.9 | Y | |
| Benny Residence | 09-Jun-21 | 09-Jun-21 | 15:01 | 0.80 | 99.5 | Y | |
| Benny Residence | 10-May-21 | 10-May-21 | 13:49 | No Trigger | No Trigger | Y | |
| Benny Residence | 19-May-21 | 19-May-21 | 12:43 | No Trigger | No Trigger | Y | |
| Benny Residence | 14-Apr-21 | 14-Apr-21 | 13:49 | No Trigger | No Trigger | Y | |
| Benny Residence | 21-Apr-21 | 21-Apr-21 | 12:46 | 0.70 | 95.9 | Y | |
| Benny Residence | 10-Mar-21 | 10-Mar-21 | 14:29 | 1.30 | 109.9 | Y | |
| Benny Residence | 29-Mar-21 | 29-Mar-21 | 15:07 | 1.10 | 101.0 | Y | |
| Benny Residence | 03-Feb-21 | 03-Feb-21 | 3:09 | 0.80 | 102.8 | Y | |
| Benny Residence | 10-Feb-21 | 10-Feb-21 | 13:50 | 0.80 | 102.8 | Y | |
| Benny Residence | 17-Feb-21 | 17-Feb-21 | 13:10 | 0.70 | 100.0 | Y | |
| Benny Residence | 24-Feb-21 | 24-Feb-21 | 9:52 | No Trigger | No Trigger | Y | |
| Benny Residence | 29-Jan-21 | 29-Jan-21 | 12:59 | No Trigger | No Trigger | Y | |
| Benny Residence | 20-Jan-21 | 20-Jan-21 | 12:48 | No Trigger | No Trigger | Y | |
| Benny Residence | 13-Jan-21 | 13-Jan-21 | 12:59 | 0.50 | 102.8 | Y | |
| Benny Residence | 09-Dec-20 | 09-Dec-20 | 14:32 | 0.70 | 98.8 | Y | |
| Benny Residence | 25-Nov-20 | 25-Nov-20 | 12:45 | No Trigger | 106.7 | Y | |
| Benny Residence | 18-Nov-20 | 18-Nov-20 | 14:48 | 0.80 | 106.5 | Y | |
| Benny Residence | 04-Nov-20 | 04-Nov-20 | 12:23 | No Trigger | 101.0 | Y | |
| Benny Residence | 28-Oct-20 | 28-Oct-20 | 14:40 | 0.50 | 103.5 | Y | |
| Benny Residence | 21-Oct-20 | 21-Oct-20 | 14:59 | 3.60 | 103.0 | Y | |
| Benny Residence | 14-Oct-20 | 14-Oct-20 | 12:10 | 2.00 | 109.3 | Y | |
| Benny Residence | 28-Sep-20 | 28-Sep-20 | 14:32 | 1.00 | 101.0 | Y | |
| Benny Residence | 23-Sep-20 | 23-Sep-20 | 12:33 | 0.50 | 100.0 | Y | |
| Benny Residence | 16-Sep-20 | 16-Sep-20 | 12:15 | 0.60 | 105.5 | Y | |
| Benny Residence | 09-Sep-20 | 09-Sep-20 | 14:26 | 0.90 | 101.9 | Y | |
| Benny Residence | 02-Sep-20 | 02-Sep-20 | 12:09 | 0.30 | 103.8 | Y | |
| Benny Residence | 31-Aug-20 | 31-Aug-20 | 12:12 | 1.80 | No Trigger | Y | |
| Benny Residence | 26-Aug-20 | 26-Aug-20 | 14:28 | No Trigger | No Trigger | Y | |
| Benny Residence | 12-Aug-20 | 12-Aug-20 | 13:12 | 0.10 | 101.2 | Y | |
| Benny Residence | 05-Aug-20 | 05-Aug-20 | 14:43 | 3.10 | 100.8 | Y | |
| Benny Residence | 24/07/2020 | 24/07/2020 | 12:24 | 2.20 | 106.4 | Y | |
| Benny Residence | 20/07/2020 | 20/07/2020 | 15:03 | 0.60 | 102.8 | Y | |
| Benny Residence | 13/07/2020 | 13/07/2020 | 13:12 | 2.20 | 102.3 | Y | |
| Benny Residence | 8/07/2020 | 8/07/2020 | 13:08 | 1.45 | 101 | Y | |
| Benny Residence | 1/07/2020 | 1/07/2020 | 13:11 | No Trigger | 102.3 | Y | |
| Benny Residence | 24/06/20 | 24/06/2020 | 13:29 | No Trigger | No Trigger | Y | |
| Benny Residence | 15/06/2020 | 15/06/2020 | 14:26 | 5.83 | 106.6 | Y | The seed wave from the site law was inputted into a regression analysis via |

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| Monitoring Location | Blast Date | Results Received | Time | Ground Vibration (mm/s) | Overpressure (dBL) | Compliant | Comments |
|---------------------|------------|------------------|-------|-------------------------|--------------------|-----------|--|
| | | | | | | | a Monte Carlo model on SHOTPlus™, used the B value (attenuation) and P-wave established from the site law and calibrated the K value to predict the modelled reading of 5.83 mm/s with a standard deviation of 0.52mm/s. It is expected that over 20 blasts will be undertaken in the reporting period, hence the ground vibration measurement is deemed to be compliant to 95th percentile limits |
| Benny Residence | 27-May-20 | 27-May-20 | 13:49 | 3.50 | 104.8 | Y | |
| Benny Residence | 08-Apr-20 | 08-Apr-20 | 16:02 | 1.55 | 116.3 | Y | It is expected that over 20 blasts will be undertaken in the reporting period, hence the airblast overpressure is deemed to be compliant to 95 th percentile limits |
| Benny Residence | 18-Mar-20 | 18-Mar-20 | 12:40 | 2.55 | 94.2 | Y | |
| Benny Residence | 09-Mar-20 | 09-Mar-20 | 13:45 | 1.71 | 111.4 | Y | |
| Benny Residence | 26/02/2020 | 26/02/2020 | 12:23 | 2.15 | 104.9 | Y | |
| Benny Residence | 19/02/2020 | 19/02/2020 | 12:55 | 1.64 | 97.7 | Y | |
| Benny Residence | 5/02/2020 | 5/02/2020 | 13:21 | 4.25 | 98.2 | Y | The seed wave from the site law was inputted into a regression analysis via a Monte Carlo model on SHOTPlus™, used the B value (attenuation) and P-wave established from the site law and calibrated the K value to predict the modelled reading of 4.25 mm/s with a standard deviation of 0.52mm/s. |
| Benny Residence | 15/01/2020 | 15/01/2020 | 12:22 | 0.89 | 102.5 | Y | |
| Benny Residence | 11/12/2019 | 11/12/2019 | 12:15 | 2.70 | 100.0 | Y | |
| Benny Residence | 04/12/2019 | 04/12/2019 | 12:35 | 3.40 | 108.0 | Y | |
| Benny Residence | 21/11/2019 | 16/10/2019 | 9:22 | 3.52 | 107.7 | Y | |

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| Monitoring Location | Blast Date | Results Received | Time | Ground Vibration (mm/s) | Overpressure (dBL) | Compliant | Comments |
|--|--------------------|----------------------------------|--|-------------------------|--------------------|---------------|-------------------------------|
| Benny Residence | 6/11/2019 | 2/10/2019 | 12:17 | 2.93 | 102.4 | Y | |
| Further Historical monitoring data relating to blasting can be found in the associated Annual Reviews for each year. Location of the Dunmore Quarry Annual Reviews can be found at https://www.boral.com.au/locations/boral-dunmore-operations | | | | | | | |
| Blast Monitoring Results - Corrections Log Details of corrections made to published data due to incorrect or misleading data ^{3.7.7} | | | | | | | |
| Date of data (sample date) | Old published data | Correct updated data | Reason for Update/Correction | | | Update Person | Date corrected data published |
| 16/02/2020 | 5.37mm/s | Result correct. Comment added | Comments section updated to inform the regression analysis of the measured value at the Benny Residence. The Benny monitor is located 140m away from the residence. The seed wave from the site law was inputted into a regression analysis via a Monte Carlo model on SHOTPlus™, used the B value (attenuation) and P-wave established from the site law and calibrated the K value to predict the modelled reading of 4.25 mm/s with a standard deviation of 0.52mm/s. | | | BW | 28/08/2020 |

Dunmore Quarry Monitoring Locations.



LEGEND

- | | | | |
|------------------------|----------------------------------|---------------------------------|-----------------------------------|
| Site Boundary | Water Discharge Monitoring Point | Deposited Dust Monitoring Point | Weather Analysis Monitoring Point |
| Blast Monitoring Point | High Volume Air Sampling Point | | |