MALABAR

Maxwell Underground Coal Mine

and

Drayton Rail Loop and Antiene Rail Spur

Environmental Monitoring Data as required by EPL 1323

and

Noise Monitoring Data as required by Development Consents for SSD 9526 and DA 106-04-00

June 2026

1 INTRODUCTION

The Maxwell Underground Coal Mine is owned by Maxwell Ventures (Management) Pty Limited. This report has been compiled to present environmental monitoring data for the Maxwell Underground Coal Mine Environment Protection Licence 1323. This report complies with Section 66(6) of the *Protection of the Environment Operations Act 1997*.

This report also provides the noise monitoring requirements of Development Consent 9526 for the Maxwell Underground Coal Mine Project and Development Consent DA 106-04-00 for the Maxwell Rail Loop and Antiene Rail Spur.

A summary of the Licence details is provided in **Table 1**.

Table 1. A summary of licence and report details

Environment Protection Licence Number	1323
Licensee Details	Maxwell Ventures (Management) Pty Limited Private Mail Bag 9 Muswellbrook NSW 2333
Premises	Maxwell Underground Coal Mine Thomas Mitchell Drive Muswellbrook NSW 2333
Link to the EPA Register	http://app.epa.nsw.gov.au/prpoeoapp/
Reporting Month	June 2026
Date of Publication	31 July 2026
Version	1
Correction Log	-

2 MONITORING RESULTS

Air quality monitoring results are provided in **Table 2**.

Blast monitoring results are provided in **Table 3.**

Noise monitoring results are provided in **Table 4** to **Table 14**.

A map of the monitoring locations is provided in **Appendix 1**.

Table 2. Air quality monitoring results for the reporting period

EPA identification no.	Sampling point	Sampling period start date	Sampling period finished date	Unit of measure	Averaging period	Monitoring frequency	Minimum value	Mean value	Median value	Maximum value
8	ES-01	01/06/2026	30/06/2026	micrograms per cubic metre	5 minutes	Continuous	0	15	14	73
9	ES-02	01/06/2026	30/06/2026	micrograms per cubic metre	1 minute	Continuous	1	11	9	50
10	ES-03	01/06/2026	30/06/2026	micrograms per cubic metre	1 minute	Continuous	0	9	7	88
11	ES-04	01/06/2026	30/06/2026	micrograms per cubic metre	5 minutes	Continuous	0	6	5	60

Sites ES-01 and ES-04 have a Met One E-Sampler device; sites ES-02 and ES-03 have a Palas AQ-Guard Smart device. A summary of data capture during the reporting period is as follows:

1. ES-01: 98% data capture. Outage on 1/6/26 was reported to EPA under condition R1.4. Due to consecutive days of cloudy weather (and heavy rain) the voltage from the solar-powered battery dropped below the threshold required to operate the monitoring device; the battery was replaced 1/6. Note that on 27/7/26, lithium-ion batteries (replacing lead-acid batteries), a new solar charge controller and a new larger solar panel were installed at ES-01, providing significantly extra capacity in the event of low solar input.
2. ES-02: 100% data capture.
3. ES-03: 97% data capture. Outage on 7/6/26 was reported to EPA under condition R1.4. Data loss suspected to be due to the modem disconnecting from the internet, possibly due to reduced power due to low solar input; the monitoring device required a restart. In this situation, it is not possible for the monitoring database to retrospectively access the data held on the monitoring device.
4. ES-04: 100% data capture.

Table 3. Blast monitoring results for the reporting period

EPA identification no.	Sampling point	Time and Date of blast	Date data obtained	Monitored variable	Unit of measure	Averaging period	Measured value*	100 percentile limit for all blasts during each reporting period	95 percentile limit for all blasts during reporting period	Exceedance (yes/no)	Observations
13	Monitoring location BM1 (Antiene)	No blast during the reporting period	-	Airblast overpressure	dB (Lin Peak)	Instantaneous	-	120	115	-	-
14	Monitoring location BM2 (Plashett)						-			-	-
15	Monitoring location BM3 (Bowfield)						-			-	-
13	Monitoring location BM1 (Antiene)			Ground vibration peak particle velocity	mm/second	Instantaneous	-	10	5	-	-
14	Monitoring location BM2 (Plashett)						-			-	-
15	Monitoring location BM3 (Bowfield)						-			-	-

* The measured value presented is the maximum measured value 15 minutes prior to and 15 minutes after the blast. Whilst the blast monitor measures continuously, measured levels were either very low or did not exceed background levels, and hence no specific measurements can be attributed to the blast. The reporting period for the EPL is 1 May to 30 April each year.

Table 4. Noise monitoring results (dB(A)) for 23 June 2026 compared to the noise criteria in EPL1323 and Development Consent SSD 9526

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)			Evening ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A1\ (1\ minute)}$)			Exceedance (yes/no)	Observations
		Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]		
16	NM1	50[2]	65	NA	46[2]	54	34	41	52	36	52	72	40	No	Project audible
17	NM2	49[2]	40	NA	45[2]	42	28	45[2]	40	37	57[2]	52	40	No	Project audible
18	NM3	45[2]	55	NA	40[2]	56	NA	40[2]	41	NA	57[2]	68	NA	No	Project inaudible
-	NM4	40	70	NA	35	64	NA	35	58	NA	52	77	NA	No	Project inaudible
Additional Information															
Date of Final Report	30 June 2026														
Weather Conditions	Wind speed 0.7 – 2.7 m/s. No rain during monitoring.														
Notes	Measured noise sources included traffic, birds, frogs, trains, roadworks, and MU operational noise. The Maxwell Underground Coal Mine Project was inaudible at NM3 and NM4 at all locations and times, however was audible at NM1 and NM2 during various times throughout the day, evening and night-time periods. 1. NA - MU was inaudible or not quantifiable (i.e <20dB(A)) 2. MET conditions outside those specified in Condition L4.3 of EPL, applicable noise limit is noise limit specified in Condition L4.1 plus 5 dB.														

Table 5. Noise monitoring results (dB(A)) for 24 June 2026 compared to the noise criteria in EPL1323 and Development Consent SSD 9526

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)			Evening ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A1\ (1\ minute)}$)			Exceedance (yes/no)	Observations
		Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]		
16	NM1	50[2]	68	NA	46[2]	52	28	46[2]	49	28	57[2]	72	32	No	Project audible
17	NM2	49[2]	47	NA	45[2]	40	26	40	39	32	52	56	34	No	Project audible
18	NM3	45[2]	55	NA	40[2]	58	NA	40[2]	41	NA	57[2]	59	NA	No	Project inaudible
-	NM4	40	68	NA	35	67	NA	35	32	NA	52	39	NA	No	Project inaudible

Additional Information	
Date of Final Report	30 June 2026
Weather Conditions	Wind speed 0.7 – 1.6 m/s. No rain during monitoring.
Notes	Measured noise sources included traffic, birds, frogs, trains, industrial noise, roadworks, and MU operational noise. The Maxwell Underground Coal Mine Project was inaudible at NM3 and NM4 at all locations and times, however was audible at NM1 and NM2 during various times throughout the day, evening and night-time periods. 1. NA - MU was inaudible or not quantifiable (i.e <20dB(A)) 2. MET conditions outside those specified in Condition L4.3 of EPL, applicable noise limit is noise limit specified in Condition L4.1 plus 5 dB.

Table 6. Noise monitoring results (dB(A)) for 25 June 2026 compared to the noise criteria in EPL1323 and Development Consent SSD 9526

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)			Evening ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A\ eq\ (15\ minute)}$)			Night ($L_{A1\ (1\ minute)}$)			Exceedance (yes/no)	Observations
		Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]	Criteria	Noise Level, Total	Noise Level, MU[1]		
16	NM1	50[2]	57	NA	46[2]	58	NA	46[2]	54	NA	57[2]	77	NA	No	Project audible
17	NM2	49[2]	41	34	45[2]	38	NA	45[2]	41	36	57[2]	64	41	No	Project audible
18	NM3	45[2]	55	NA	40[2]	56	NA	40[2]	44	NA	57[2]	63	NA	No	Project inaudible
-	NM4	40	69	NA	35	64	NA	35	62	NA	52	79	NA	No	Project inaudible

Additional Information	
Date of Final Report	30 June 2026
Weather Conditions	Wind speed 0.5 – 6.6 m/s. No rain during monitoring.
Notes	Measured noise sources included traffic, birds, frogs, trains, roadworks, and MU operational noise. The Maxwell Underground Coal Mine Project was inaudible at NM3 and NM4 at all locations and times, however was audible at NM1 and NM2 during various times throughout the day, evening and night-time periods. 1. NA - MU was inaudible or not quantifiable (i.e <20dB(A)) 2. MET conditions outside those specified in Condition L4.3 of EPL, applicable noise limit is noise limit specified in Condition L4.1 plus 5 dB.

Low frequency analysis

The results above in **Table 4 to Table 6** show that the operational and sleep disturbance noise criteria were not exceeded at any location during the reporting period.

Maxwell Underground noise emissions were audible and quantifiable at monitoring locations NM1 and NM2 throughout various monitoring periods during the reporting period. Where Maxwell Underground noise emissions were inaudible, this has been quantified as either 10 dB below the recorded LAmin or <20 dB(A), whichever is the greater.

The Maxwell Underground Mine Noise and Blasting Management Plan details the methodology for assessing the impact of measured low-frequency noise to determine whether a +5 dB "modifying correction factor" is to be added to the measured level and reported.

The correction applies to the mine noise component only. There are many sources of low frequency noise in the acoustic environment of each receiver area (including noise from road and rail traffic). In many cases the C minus A level is greater than 15 due to these other noise sources. In most instances the screening criteria will be the one third octave analysis. The NPI quantitative assessment of noise from Maxwell Underground can only be conducted where the noise was clearly definable, which is at a level typically greater than 30 dB(A) or when there are no other significant sources. Due to this, a low-frequency assessment was able to be conducted for the MU noise measured at NM1 and NM2 across the three consecutive days, during the evening and night-time period. Where low-frequency analysis was possible, the results are presented below in **Table 7** to **Table 11** and show no exceedance of the low-frequency criteria.

Table 7. Low-frequency assessment of the mine noise measured at 34 dB(A) at NM1 during the evening period on 23rd June

Low-frequency analysis – NM1 09:30 pm													
Hz/dB(Z)	**One-third octave $L_{Zeq,15min}$ threshold level**												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
NM1, dB(Z)	--	65	59	63	58	52	52	48	46	46	41	38	34
Threshold, dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Exceedance, dB	--	0	0	0	0	0	0	0	0	0	0	0	0

Table 8. Low-frequency assessment of the mine noise measured at 36 dB(A) at NM1 during the night-time period on 23rd June

Low-frequency analysis – NM1 10:00 pm													
Hz/dB(Z)	**One-third octave $L_{Zeq,15min}$ threshold level**												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
NM1, dB(Z)	--	67	59	57	59	52	46	41	42	43	41	34	31
Threshold, dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Exceedance, dB	--	0	0	0	0	0	0	0	0	0	0	0	0

Table 9. Low-frequency assessment of the mine noise measured at 37 dB(A) at NM2 during the night-time period on 23rd June

Low-frequency analysis – NM2 11:32 pm													
Hz/dB(Z)	**One-third octave $L_{Zeq,15min}$ threshold level**												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
NM2, dB(Z)	--	67	59	56	57	52	51	48	45	45	44	39	37
Threshold, dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Exceedance, dB	--	0	0	0	0	0	0	0	0	0	0	0	0

Table 10. Low-frequency assessment of the mine noise measured at 32 dB(A) at NM2 during the night-time period on 24th June

Low-frequency analysis – NM2 11:24 pm													
Hz/dB(Z)	**One-third octave $L_{Zeq,15min}$ threshold level**												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
NM2, dB(Z)	--	70	60	50	49	46	46	45	42	42	40	35	32
Threshold, dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Exceedance, dB	--	0	0	0	0	0	0	0	0	0	0	0	0

Table 11. Low-frequency assessment of the mine noise measured at 36 dB(A) at NM2 during the night-time period on 25th June

Low-frequency analysis – NM2 11:40 pm													
Hz/dB(Z)	**One-third octave $L_{Zeq,15min}$ threshold level**												
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
NM2, dB(Z)	--	70	56	52	49	45	41	42	41	41	37	36	35
Threshold, dB(Z)	92	89	86	77	69	61	54	50	50	48	48	46	44
Exceedance, dB	--	0	0	0	0	0	0	0	0	0	0	0	0

Table 12. Noise monitoring results (dB(A)) for 23 June 2026 compared to the noise criteria in Development Consent DA 106-04-00 for the Maxwell Rail Loop and Antiene Rail Spur

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)		Evening ($L_{A\ eq\ (15\ minute)}$)		Night ($L_{A\ eq\ (15\ minute)}$)		Exceedance (yes/no)
		Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	
16	NM1	40	27	40	31	40	27	No
17	NM2	40	32	40	NA	40	NA	No

NOTES:

1. Maxwell Rail Loop and Antiene Rail Spur noise contribution only
2. NA - Maxwell Rail Loop and Antiene Rail spur was inaudible or not quantifiable (i.e <20dB(A))

Table 13. Noise monitoring results (dB(A)) for 24 June 2026 compared to the noise criteria in Development Consent DA 106-04-00 for the Maxwell Rail Loop and Antiene Rail Spur

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)		Evening ($L_{A\ eq\ (15\ minute)}$)		Night ($L_{A\ eq\ (15\ minute)}$)		Exceedance (yes/no)
		Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	
16	NM1	40	31	40	NA	40	NA	No
17	NM2	40	NA	40	NA	40	NA	No

NOTES:

1. Noise level = Maxwell Rail Loop and Antiene Rail Spur noise contribution only
2. NA - Maxwell Rail Loop and Antiene Rail spur was inaudible or not quantifiable (i.e <20dB(A))

Table 14. Noise monitoring results (dB(A)) for 25 June 2026 compared to the noise criteria in Development Consent DA 106-04-00 for the Maxwell Rail Loop and Antiene Rail Spur

EPA identification no.	Sampling point	Day ($L_{A\ eq\ (15\ minute)}$)		Evening ($L_{A\ eq\ (15\ minute)}$)		Night ($L_{A\ eq\ (15\ minute)}$)		Exceedance (yes/no)
		Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	Criteria	Noise Level[1,2]	
16	NM1	40	24	40	NA	40	NA	No
17	NM2	40	NA	40	NA	40	NA	No

NOTES:

1. Noise level = Maxwell Rail Loop and Antiene Rail Spur noise contribution only
2. NA - Maxwell Rail Loop and Antiene Rail spur was inaudible or not quantifiable (i.e <20dB(A))

APPENDIX 1 – MAP OF MONITORING LOCATIONS