



Maxwell Infrastructure
Environmental Monitoring Data
Quarter 2 2018

1. Introduction

Maxwell Infrastructure (formerly Drayton Mine) is owned by Malabar Coal. This report has been compiled to present environmental monitoring data for Maxwell Infrastructure in accordance with Schedule 5, Condition 11 (b) and (c) of Project Approval 06_0202.

This report covers the reporting period of April to June 2018. Summaries of historic environmental monitoring data (prior to 2018) can be found in the Annual Environmental Management Reports located on the Malabar Coal website.

2. Monitoring Results

Depositional dust monitoring results are provided in Table 1.

High volume air sampler monitoring results are provided in Table 2.

Continuous TEOM PM₁₀ monitoring results are provided in Figure 1.

Surface water quality monitoring results are provided in Table 3.

Noise monitoring results are provided in Table 4, 5 and 6.

Table 1: Depositional dust monitoring results for Quarter 2.

Air Quality Monitoring – Depositional Dust					
Gauge	Insoluble Solids Result (g/m ² /month)			Annual Mean (YTD) (g/m ² /month)	Annual Mean Limit (g/m ² /month)
	April	May	June		
2197	2.2	2.2	1.4	2.3	4.0
2230	1.9	1.8	1.2	2.2	4.0
2157	1.0	1.5	1.3	2.4	4.0
2208	1.7	1.7	1.1	2.0	4.0
2247	1.7	1.9	1.9	2.5	4.0
2235	1.6	1.6	1.3	2.3	4.0
2175	1.7	1.8	1.2	2.0	4.0
2130	1.3	2.3	1.1	2.3	4.0

Table 2: Total suspended particulates – High volume air sampler (HVAS) results for Quarter 2.

Air Quality Monitoring – Total Suspended Particulates (TSP)			
Date	TSP Result	Annual Mean (12 month Rolling Average)	Annual Mean Limit
1 Apr 18	66	62.4	90 (12 month rolling average)
7 Apr 18	65	62.7	
13 Apr 18	246	66.1	
19 Apr 18	62	66.3	
25 Apr 18	71	66.9	
1 May 18	52	67.3	
7 May 18	119	68.1	
13 May 18	103	68.9	
19 May 18	103	70.0	
25 May 18	80	70.9	
31 May 18	42	71.0	
6 Jun 18	23	70.9	
12 Jun 18	26	70.6	
18 Jun 18	63	70.9	
24 Jun 18	26	71.2	
30 Jun 18	33	71.4	

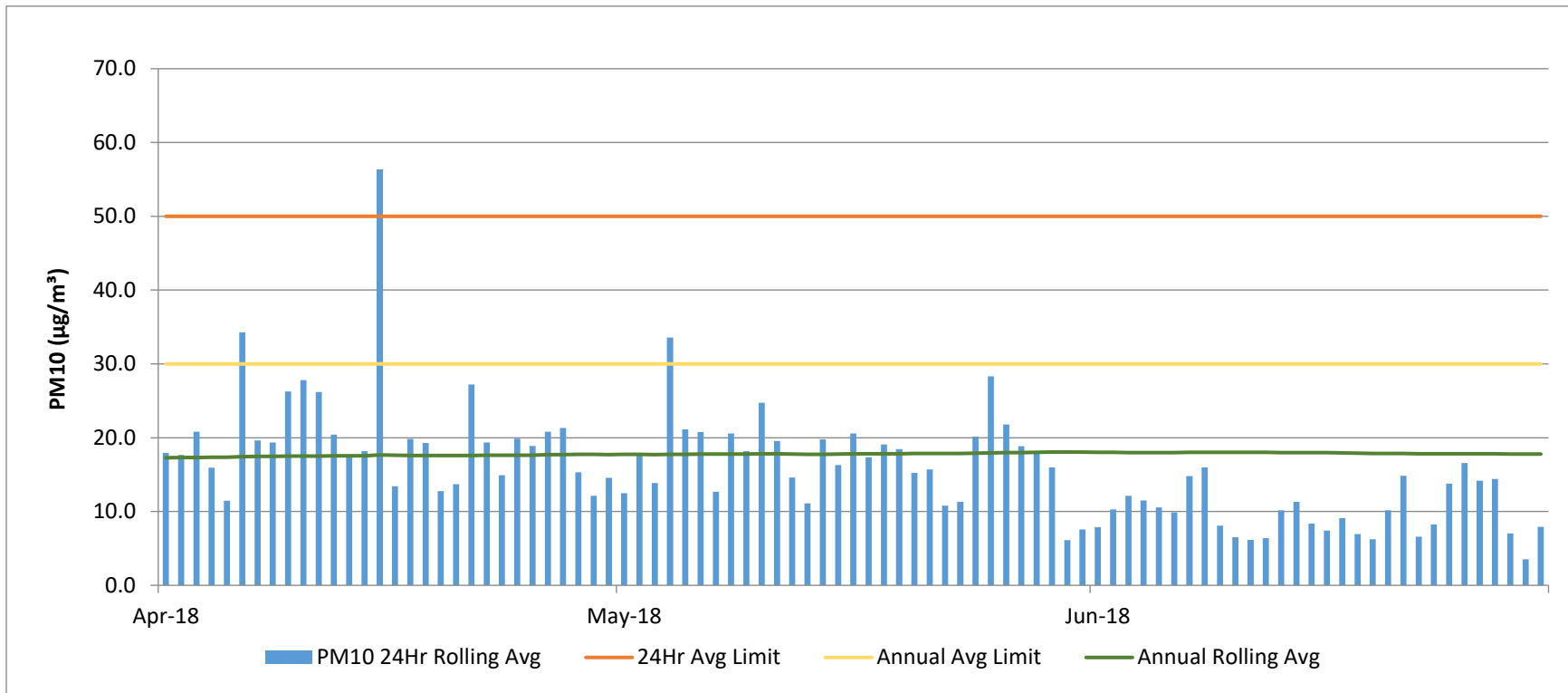


Figure 1: TEOM PM₁₀ monitoring results for Quarter 2.

Notes:

An elevated 24-hour average PM₁₀ result (56.4 µg/m³) was recorded on 15 April 2018. This monitor is located to the north east of the site. Wind direction during the 24-hour period was predominantly from the north west with the monitor located downwind of the site for less than 1 per cent of the day. The UHAQMN also recorded elevated readings at Muswellbrook (66.1 µg/m³), Singleton (72.1 µg/m³) and Maison Dieu (70.3 µg/m³) indicating a regional dust event.

Table 3: Surface water quality monitoring results for Quarter 2.

Site	Month	pH	EC (µS/cm)	TDS (mg/L)	TSS (mg/L)	Bicarbonate (CaCO3) (mg/L)	Sulphate (SO4) (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
Antiene Dam (2221)	Apr	2.67	5,420	5,260	14	<1	3,160	462	366	320	353	21
	May	2.65	6,220	5,920	46	<1	3,370	504	446	418	466	34
	Jun	2.97	5,480	4,760	11	<1	2,270	561	346	312	394	58
	Average	3.22	5,898	5,285	52	1	3,235	472	385	352	401	40
Access Rd Dam* (2081)	Apr	8.00	7,420	7,560	7	105	4,140	998	526	569	723	76
	May	8.07	8,390	8,320	<5	110	4,160	929	594	724	900	91
	Jun	8.28	8,300	8,040	<5	121	4,140	965	553	604	754	76
	Average	7.90	8,043	7,780	7	98	4,055	953	524	614	786	80
DC2 Dam* (2109)	Apr	7.64	4,500	3,440	<5	159	1,300	892	112	167	709	9
	May	7.62	5,980	3,680	<5	210	1,690	946	144	238	984	13
	Jun	7.11	6,870	5,080	<5	212	2,160	1,130	140	250	1,040	11
	Average	7.34	4,842	3,440	14	134	1,371	824	114	182	750	10
Rail Loop Dam* (2114)	Apr	8.10	2,140	1,730	10	137	802	268	124	107	225	10
	May	8.11	2,650	1,990	<5	162	876	285	151	147	306	13
	Jun	8.38	2,820	2,030	<5	160	863	328	130	136	287	10
	Average	7.91	2,603	2,027	10	112	932	302	137	139	271	13
Far East Tip* (1895)	Apr	8.51	7,240	6,000	9	555	2,680	1,120	50	439	1,200	30
	May	8.33	8,310	6,630	<5	718	2,690	1,020	61	516	1,400	35
	Jun	8.47	8,190	6,520	<5	678	2,890	1,100	62	469	1,270	30
	Average	8.68	7,953	6,210	7	517	2,722	1,081	46	474	1,290	32
Savoy Dam* (1609)	Apr	8.80	9,470	8,800	<5	21	5,920	1,260	777	851	914	121
	May	8.66	11,200	12,000	<5	32	5,910	1,170	823	986	1,050	134
	Jun	8.90	11,000	11,800	25	44	5,970	1,260	807	909	982	124
	Average	8.75	10,528	10,767	9	34	5,660	1,212	775	897	970	127
SW 13*	Apr	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
	May	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
	Jun	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
	Average	8.01	7,110	5,927	5	217	3,757	725	527	534	643	58

Site	Month	pH	EC ($\mu\text{S/cm}$)	TDS (mg/L)	TSS (mg/L)	Bicarbonate (CaCO ₃) (mg/L)	Sulphate (SO ₄) (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
Industrial Dam* (1969)	Apr	7.93	5,620	4,500	<5	119	2,920	776	356	403	570	50
	May	8.01	6,460	5,820	12	130	3,030	713	402	481	664	56
	Jun	8.20	6,240	5,600	72	125	3,060	747	345	415	582	48
	Average	8.12	6,203	5,487	24	122	3,017	745	369	436	614	52
OPC Dam*	Apr	8.34	5,800	5,840	11	126	3,130	780	388	445	565	53
	May	7.68	8,440	8,330	18	152	3,810	916	542	682	853	82
	Jun	8.78	6,160	5,550	52	108	3,070	716	357	423	545	53
	Average	8.21	4,978	4,642	18	113	2,321	574	308	365	467	44
V Notch*	Apr	7.99	12,600	12,600	<5	420	5,570	2,570	575	590	2,340	22
	May	7.76	15,200	14,400	<5	428	5,630	2,480	621	704	2,690	22
	Jun	7.89	11,300	10,000	<5	342	4,520	1,570	498	474	1,770	18
	Average	7.92	12,197	10,948	6	321	4,773	2,000	470	529	2,070	24

Note:

- Maxwell Infrastructure is a closed water management system with all water maintained on-site for use in dust suppression and mining activities.
- Average is the mean result for 2018 (Jan – Jun 2018).
- * indicates mine water storage.
- SW13 not sampled due to access restrictions (n/s)

Table 4. Noise monitoring results for April 2018.

Noise Monitoring									
Sampling point	Period	Noise Limits LA eq (15 minutes)				Noise Limits LA1 (1 minute)		Exceedance (yes/no)	Observations
		Evening Criteria	Noise Level	Night Criteria	Noise Level	Night Criteria	Noise Level		
12	15 mins	35	IA	39	IA	47	IA	No	
13	15 mins	35	IA	36	IA	45	IA	No	
14	15 mins	35	IA	37	IA	47	IA	No	
16*	15 mins	35	IA	38	IA	47	IA	No	
17	15 mins	35	IA	38	IA	47	IA	No	
18	15 mins	35	IA	40	IA	47	IA	No	
19	15 mins	35	IA	41	IA	47	IA	No	
20	15 mins	35	IA	41	IA	45	IA	No	
21	15 mins	36	IA	41	IA	45	IA	No	
22	15 mins	36	IA	42	IA	45	IA	No	
23	15 mins	37	IA	40	IA	47	IA	No	
25*	15 mins	37	IA	41	IA	47	IA	No	
26	15 mins	36	IA	35	IA	47	IA	No	
27	15 mins	36	IA	36	IA	47	IA	No	
28	15 mins	37	IA	37	IA	47	IA	No	
29	15 mins	37	IA	38	IA	47	IA	No	
31	15 mins	37	IA	39	IA	47	IA	No	
32	15 mins	37	IA	42	IA	47	IA	No	
33	15 mins	38	IA	36	IA	45	IA	No	
34	15 mins	38	IA	38	IA	45	IA	No	
35*	15 mins	38	IA	38	IA	45	IA	No	
37	15 mins	39	IA	38	IA	45	IA	No	
42*	15 mins	40	IA	39	IA	45	IA	No	
61*	15 mins	40	IA	39	IA	45	IA	No	
69	15 mins	39	IA	39	IA	47	IA	No	

70	15 mins	40	IA	39	IA	47	IA	No	
71	15 mins	41	IA	39	IA	47	IA	No	
72*	15 mins	35	IA	35	IA	47	IA	No	
75*	15 mins	35	IA	35	IA	47	IA	No	
76*	15 mins	35	IA	35	IA	47	IA	No	
86	15 mins	35	IA	35	IA	45	IA	No	
All Other Privately- Owned Land	15 mins	35	IA	35	IA	45	IA	No	
Additional Information									
Date of Final Report	27 April 2018								
Date Sampled	11 April 2018								
Weather Conditions	Calm								
Notes	IA – Inaudible *Residences where attended noise monitoring is undertaken. The noise levels at all other locations are determined by noise modelling.								

Table 5. Noise monitoring results for May 2018.

Noise Monitoring									
Sampling point	Period	Noise Limits LA eq (15 minutes)				Noise Limits LA1 (1 minute)		Exceedance (yes/no)	Observations
		Evening Criteria	Noise Level	Night Criteria	Noise Level	Night Criteria	Noise Level		
12	15 mins	35	IA	39	IA	47	IA	No	
13	15 mins	35	IA	36	IA	45	IA	No	
14	15 mins	35	IA	37	IA	47	IA	No	
16*	15 mins	35	IA	38	IA	47	IA	No	
17	15 mins	35	IA	38	IA	47	IA	No	
18	15 mins	35	IA	40	IA	47	IA	No	
19	15 mins	35	IA	41	IA	47	IA	No	
20	15 mins	35	IA	41	IA	45	IA	No	
21	15 mins	36	IA	41	IA	45	IA	No	
22	15 mins	36	IA	42	IA	45	IA	No	
23	15 mins	37	IA	40	IA	47	IA	No	
25*	15 mins	37	IA	41	IA	47	IA	No	
26	15 mins	36	IA	35	IA	47	IA	No	
27	15 mins	36	IA	36	IA	47	IA	No	
28	15 mins	37	IA	37	IA	47	IA	No	
29	15 mins	37	IA	38	IA	47	IA	No	
31	15 mins	37	IA	39	IA	47	IA	No	
32	15 mins	37	IA	42	IA	47	IA	No	
33	15 mins	38	IA	36	IA	45	IA	No	
34	15 mins	38	IA	38	IA	45	IA	No	
35*	15 mins	38	IA	38	IA	45	IA	No	
37	15 mins	39	IA	38	IA	45	IA	No	
42*	15 mins	40	IA	39	IA	45	IA	No	
61*	15 mins	40	IA	39	IA	45	IA	No	
69	15 mins	39	IA	39	IA	47	IA	No	

70	15 mins	40	IA	39	IA	47	IA	No	
71	15 mins	41	IA	39	IA	47	IA	No	
72*	15 mins	35	IA	35	IA	47	IA	No	
75*	15 mins	35	IA	35	IA	47	IA	No	
76*	15 mins	35	IA	35	IA	47	IA	No	
86	15 mins	35	IA	35	IA	45	IA	No	
All Other Privately- Owned Land	15 mins	35	IA	35	IA	45	IA	No	
Additional Information									
Date of Final Report	28 May 2018								
Date Sampled	24 May 2018								
Weather Conditions	Light Winds								
Notes	IA – Inaudible *Residences where attended noise monitoring is undertaken. The noise levels at all other locations are determined by noise modelling.								

Table 6. Noise monitoring results for June 2018.

Noise Monitoring											
Sampling point	Period	Noise Limits LA eq (15 minutes)						Noise Limits LA1 (1 minute)		Exceedance (yes/no)	Observations
		Day Criteria	Noise Level	Evening Criteria	Noise Level	Night Criteria	Noise Level	Night Criteria	Noise Level		
12	15 mins	35	IA	35	IA	39	IA	47	IA	No	
13	15 mins	35	IA	35	IA	36	IA	45	IA	No	
14	15 mins	35	IA	35	IA	37	IA	47	IA	No	
16*	15 mins	35	IA	35	IA	38	IA	47	IA	No	
17	15 mins	35	IA	35	IA	38	IA	47	IA	No	
18	15 mins	35	IA	35	IA	40	IA	47	IA	No	
19	15 mins	35	IA	35	IA	41	IA	47	IA	No	
20	15 mins	35	IA	35	IA	41	IA	45	IA	No	
21	15 mins	35	IA	36	IA	41	IA	45	IA	No	
22	15 mins	35	IA	36	IA	42	IA	45	IA	No	
23	15 mins	35	IA	37	IA	40	IA	47	IA	No	
25*	15 mins	35	IA	37	IA	41	IA	47	IA	No	
26	15 mins	36	IA	36	IA	35	IA	47	IA	No	
27	15 mins	36	IA	36	IA	36	IA	47	IA	No	
28	15 mins	36	IA	37	IA	37	IA	47	IA	No	
29	15 mins	36	IA	37	IA	38	IA	47	IA	No	
31	15 mins	36	IA	37	IA	39	IA	47	IA	No	
32	15 mins	36	IA	37	IA	42	IA	47	IA	No	
33	15 mins	37	IA	38	IA	36	IA	45	IA	No	
34	15 mins	38	IA	38	IA	38	IA	45	IA	No	
35*	15 mins	38	IA	38	IA	38	IA	45	IA	No	
37	15 mins	38	IA	39	IA	38	IA	45	IA	No	
42*	15 mins	39	IA	40	IA	39	IA	45	IA	No	
61*	15 mins	39	IA	40	IA	39	IA	45	IA	No	
69	15 mins	40	IA	39	IA	39	IA	47	IA	No	

70	15 mins	40	IA	40	IA	39	IA	47	IA	No	
71	15 mins	41	IA	41	IA	39	IA	47	IA	No	
72*	15 mins	35	IA	35	IA	35	IA	47	IA	No	
75*	15 mins	35	IA	35	IA	35	IA	47	IA	No	
76*	15 mins	35	IA	35	IA	35	IA	47	IA	No	
86	15 mins	35	IA	35	IA	35	IA	45	IA	No	
All Other Privately- Owned Land	15 mins	35	IA	35	IA	35	IA	45	IA	No	
Additional Information											
Date of Final Report	25 July 2018										
Date Sampled	25 June 2018										
Weather Conditions	Light winds										
Notes	IA – Inaudible *Residences where attended noise monitoring is undertaken. The noise levels at all other locations are determined by noise modelling.										