



Centennial Coal



CENTENNIAL MYUNA

Environmental Monitoring Data

July 2018



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Table 1. Acronyms

Term / Acronym	Definition
<LOR	Less than Limit of Reporting.
µg/L	Micrograms per litre. A microgram is one millionth of a gram.
µs/cm	Micro Siemens per centimetre
µg/m ³	Micrograms per cubic metre
DG	Dust Gauge
EC	Electrical Conductivity
EPL	Environmental Protection Licence
kL	Kilolitres (one thousand litres)
LDPA	Licensed Discharge Point A in EPL 366
LDPB	Licensed Discharge Point B in EPL 366
mg/L	Milligrams per litre. A milligram is one thousandth of a gram.
ML	Megalitres (one million litres)
O&G	Oil and Grease
pH	A figure expressing the acidity or alkalinity of a solution on a logarithmic scale on which 7 is neutral, lower values are more acidic and higher values more alkaline.
PM ₁₀	Concentrations of particulate matter less than 10 micrometres in size.
POELA Act	Protection of the Environment Legislation Amendment Act 2011
TSP	Total Suspended Particulates
TSS	Total Suspended Solids

1. INTRODUCTION

This report summarises environmental monitoring results for Myuna Colliery for the period of July 2018.

This report is prepared to satisfy the requirements under the Protection of the Environment Legislation Amendment Act 2011 (POELA Act) to publish or make pollution monitoring data available to members of the public.

This report also satisfies Schedule 5 Condition 8 of Project Approval 10_0080 to provide regular reporting of the environmental performance of the project on its website.

The monitoring information included in this report is:

- Surface Water Quality
- Water Volume
- Air Quality Monitoring
- Quarterly Manganese Monitoring
- Quarterly Noise Monitoring
- Complaints
- Incidents
- Weather

Table 2. Colliery Information

Colliery Information	
Premises Details	Myuna Colliery
Address	14 Summerhill Drive Wangi Wangi, NSW, 2267
Licensee	Centennial Myuna
EPL	366
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=62621&SYSUID=1&LICID=366

2. SURFACE WATER QUALITY

Myuna Colliery has two Licenced Discharge Points (LDP) for discharging water from site. Licenced Discharge Points LDP A and LDP B are sampled daily during discharge in accordance with the requirements of Environmental Protection Licence (EPL) 366. These samples are analysed for pH, Total Suspended Solids (TSS mg/L) and Oil and Grease (mg/L).

Table 3 provides a summary of the monitoring results for LDP B and Figures 1 to 3 provide a graphical representation of the monitoring results. There were no discharges from LDP A during the reporting period.

Table 3. LDP B Monitoring Results

Published:	08/08/2018						
Sampled:	01/07/2018 - 31/07/2018						
Obtained:	08/08/2018						
Pollutant	Units of measure	Samples Required By Licence	Samples Taken	Minimum Value	Maximum Value	100 Percentile Limit	Exceedance (Y/N)
Oil & Grease	mg/L	31	31	LOR	LOR	10	N
pH	pH	31	31	7.4	7.7	6.5-8.5	N
Total Suspended Solids	mg/L	31	31	1	10	50	N

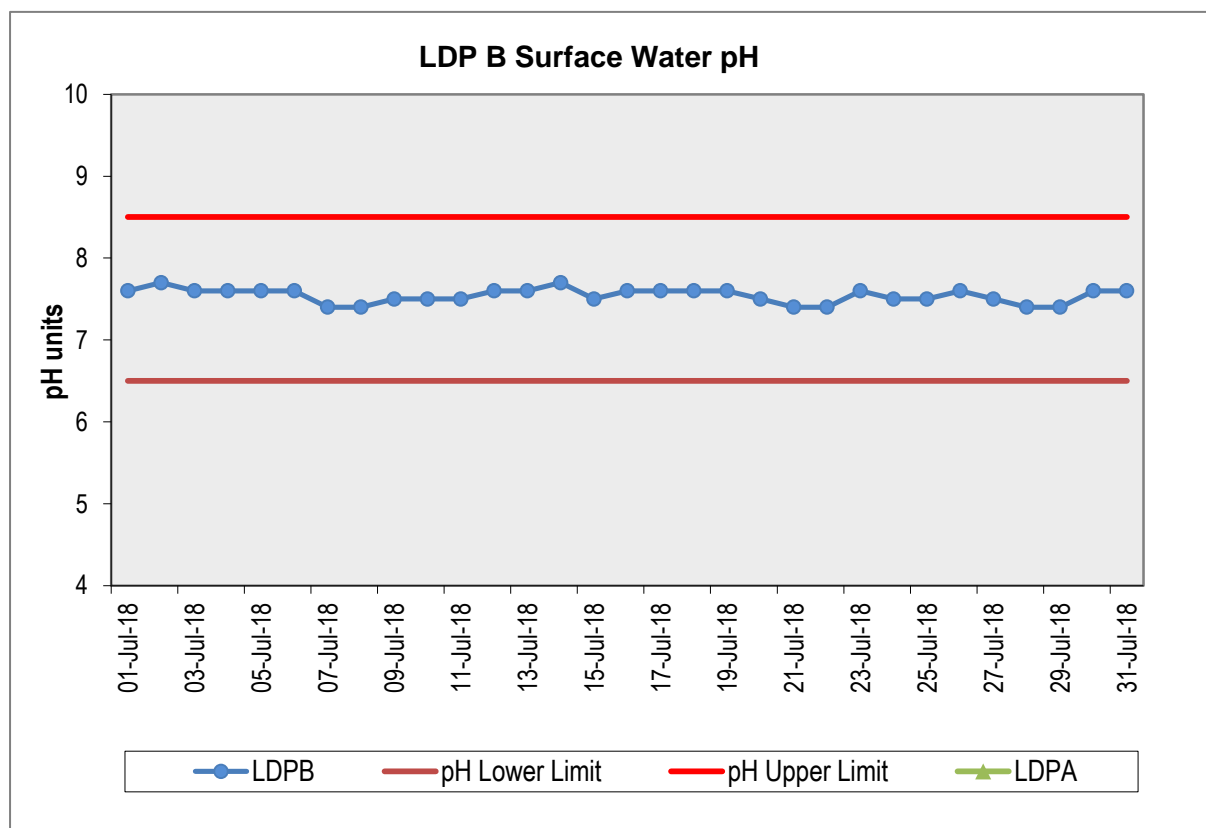


Figure 1. Surface Water pH Results

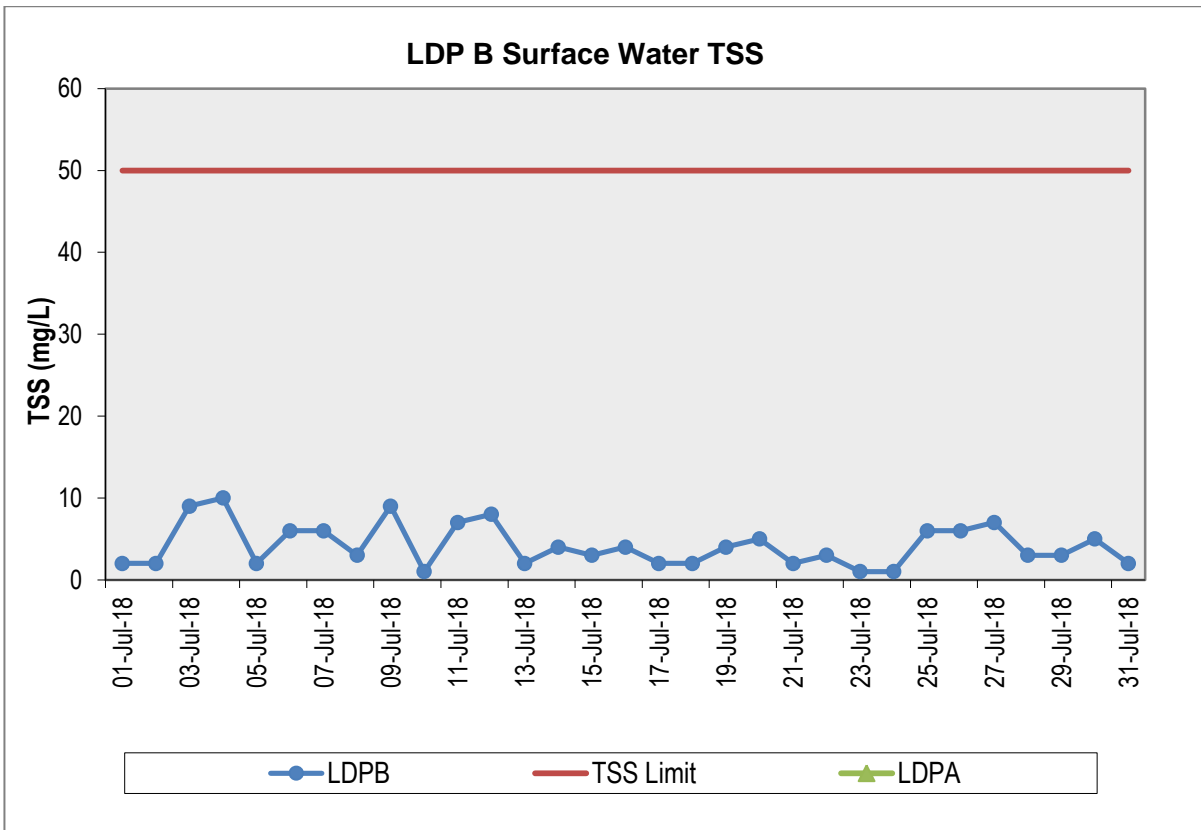


Figure 2. Surface Water TSS Results

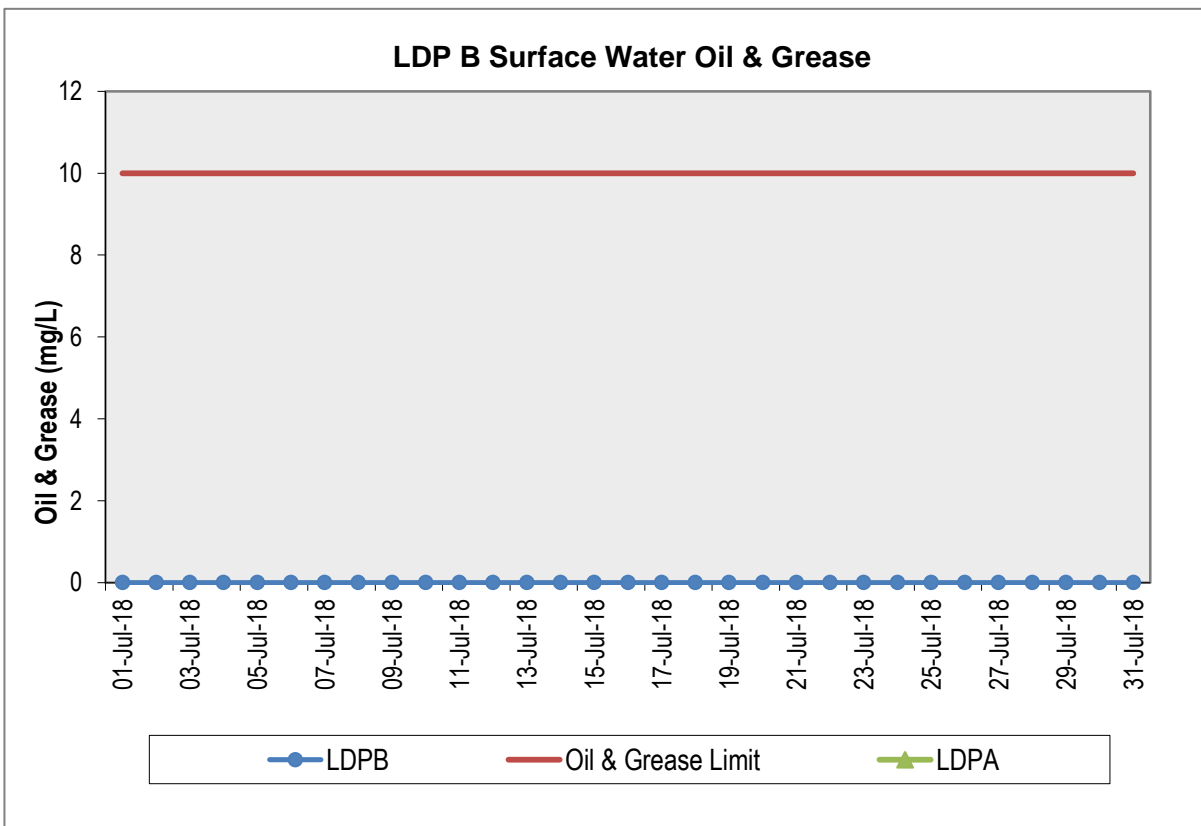


Figure 3. Surface Water Oils and Grease Results

There were no exceedances of the EPL 366 limits for pH (6.5-8.5), TSS (50mg/L) and Oil and Grease (10 mg/L) during July 2018.

3. WATER VOLUME

Water volume discharged off site is measured through licenced discharge point B (LDP B). EPL 366 sets a limit on the maximum volume of water to be discharged per day through LDP B. The daily volume limit for LDP B is 13000 kL.

Table 4 provides a summary of total water volume discharged during the reporting period.

Table 4. Monthly Discharge Summary

Published:	08/08/2018							
Sampled:	1/07/2018 – 31/07/2018							
Obtained:	08/08/2018							
Discharge Point	Unit of Measure	Frequency Required by Licence	Frequency Measured	Minimum 24 hr Value	Mean 24 hr Value	Maximum 24 hr Value	100 Percentile Limit	Exceedance (Y/N)
LDP B Daily Volume	kL	Continuous	Continuous	2230	5978	10008	13000	N

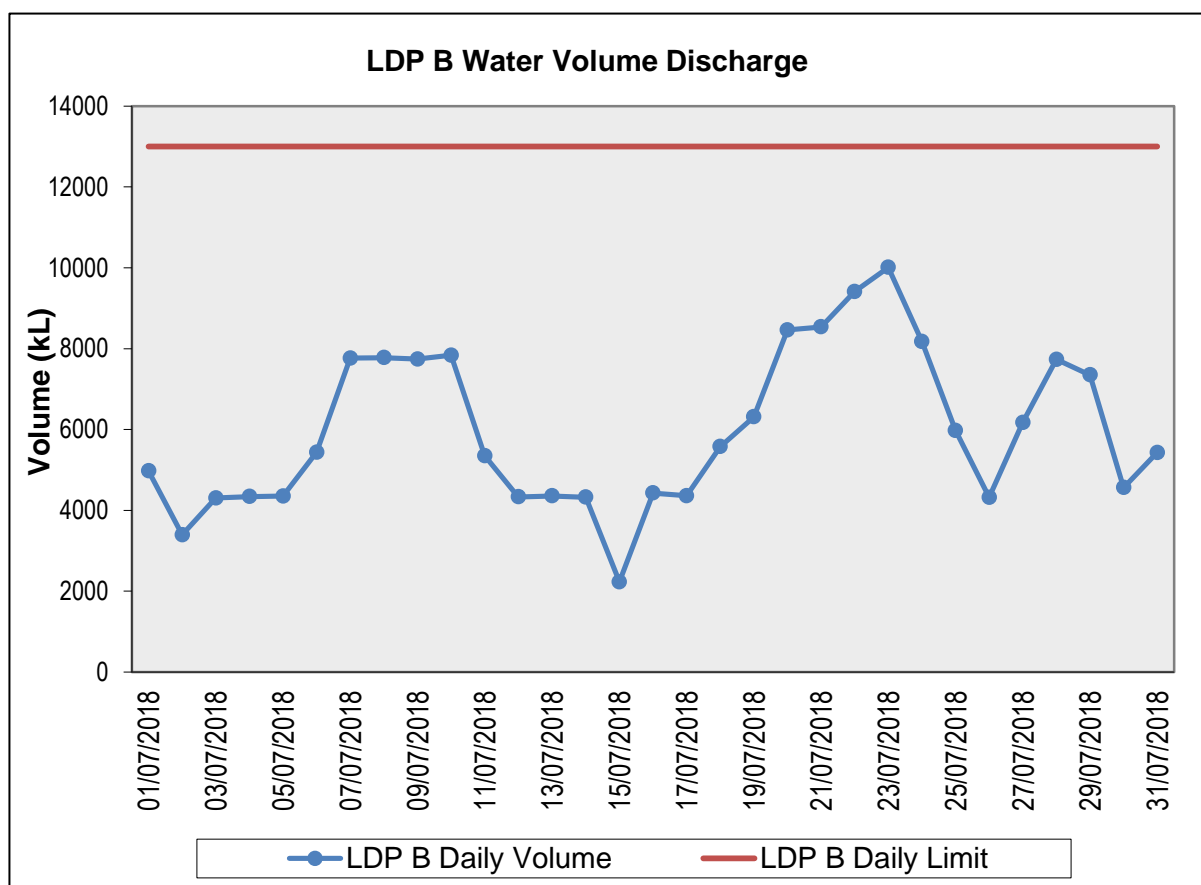


Figure 4. LDP B Discharge Water Volume

There were no exceedances of the daily volume limit during the reporting period. The total discharge from LDP B during the reporting period was approximately 185.33 ML.

4. AIR QUALITY MONITORING

The air quality monitoring results for the reporting period are summarised below.

4.1 Depositional Dust

Depositional dust ($\text{g}/\text{m}^2/\text{mth}$) results (insoluble solids) for the previous 12 months are shown in Table 5.

Table 5. Depositional Dust Results

Published:	08/08/2018											
Sampled:	18/07/2018 - 19/07/2018											
Obtained:	08/08/2018											
Unit of Measure: $\text{g}/\text{m}^2/\text{mth}$												
Location	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
DG1	1.2	1.7	0.7	1.0	2.5	1.5	2.0	0.8	0.8	0.6	1.5	1.5
DG2	0.7	0.8	0.7	1.1	0.6	0.6	0.9	0.9	0.5	0.8	0.8	0.4
DG3	0.7	1.7	2.4	1.2	1.7	1.2	0.9	0.5	0.5	0.6	0.7	0.3
DG4	1.0	1.0	0.9	1.4	1.5	0.8	1.8	2.3	3.3 c	0.6	0.1	0.3

DG – Dust Gauge

c – Contaminated

A graphical representation of depositional dust monitoring data is shown in Figure 5.

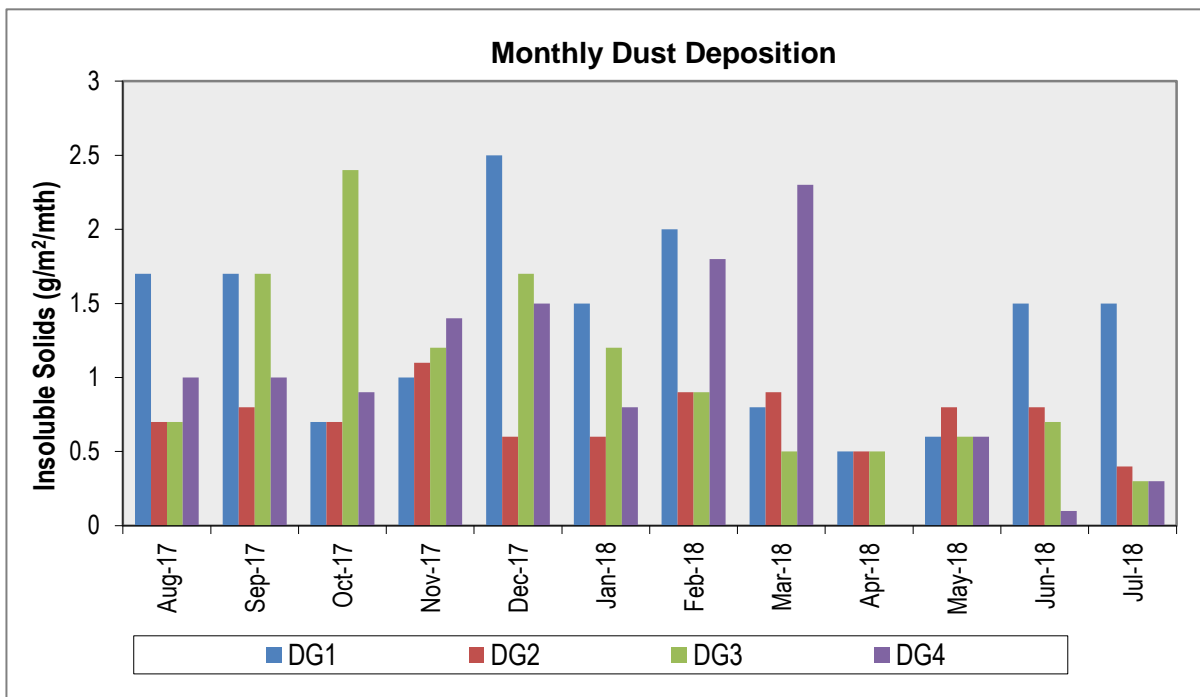


Figure 5. Monthly Dust Deposition Gauge Results

At times the dust deposition gauge can be heavily contaminated with material not associated with deposited dust. In these situations, the visual analysis from the field staff indicates that the samples were contaminated with bird droppings, insects and vegetation.

As such, there is no way or approved method of separating the actual deposited dust from the contamination. The result for that month is not representative of true dust deposition at the site and is excluded from annual averaging.

The Myuna Colliery Project Approval 10_0080 contains criteria for a maximum total deposited dust annual average of 4 g/m²/month. EPL 366 does not contain limit criteria for depositional dust.

The rolling annual averages for each of the dust gauges are shown in Table 6 and Figure 6 below. All rolling annual averages were below the 4 g/m²/month criteria.

Table 6. Depositional Dust Rolling Average

Published:	08/08/2018											
Sampled:	18/06/2018 - 19/07/2018											
Obtained:	08/08/2018											
Unit of Measure:	g/m ² /mth											
Location	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
DG1	1.3	1.2	1.2	1.2	1.4	1.5	1.4	1.2	1.2	1.2	1.3	1.3
DG2	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.7	0.7	0.8	0.7
DG3	0.7	0.5	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.0	1.1	1.0
DG4	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.2	1.1	1.1
Annual Average Limit	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

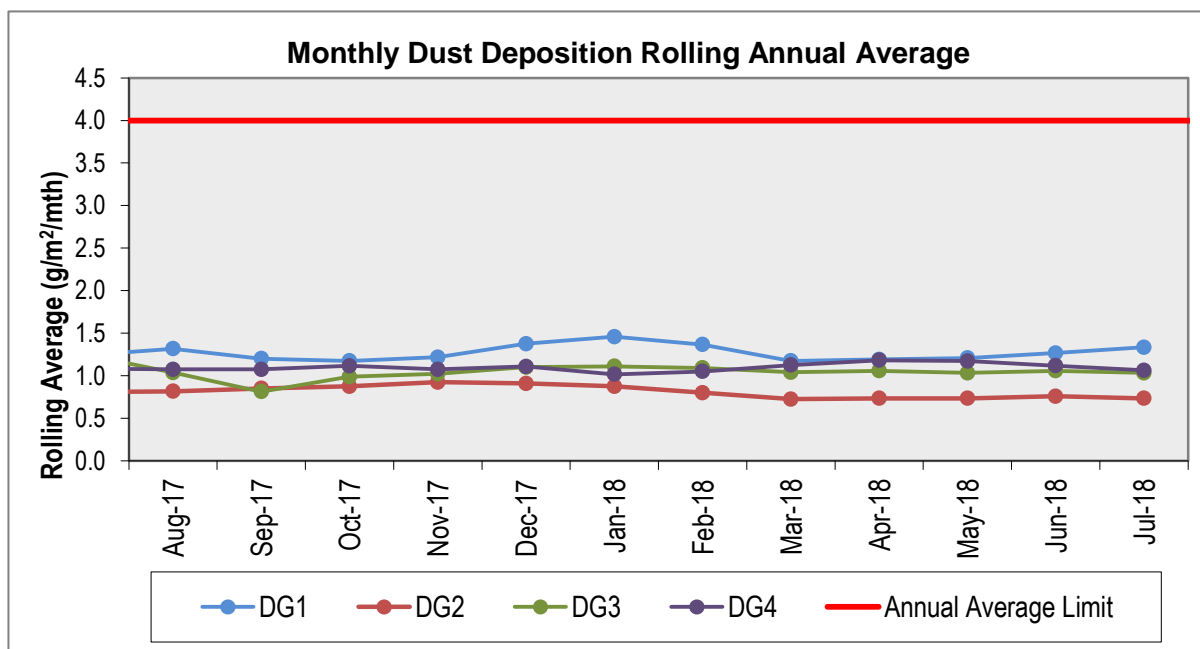


Figure 6. Monthly Dust Deposition Rolling Annual Average

4.2 High Volume Air Sampling (HVAS)

High volume air samplers monitor particulate concentrations in $\mu\text{g}/\text{m}^3$ (less than 10 micrometres in size [PM₁₀] and Total Suspended Particulates [TSP]). The Myuna Colliery Project Approval 10_0080 contains limit criteria for PM₁₀ and TSP. EPL 366 does not contain limit criteria for PM₁₀ or TSP.

A summary of monitoring results for July 2018 is provided in Tables 7 and 8. A summary of the monitoring results for the year to date is provided in Figures 7 and 8. There were no exceedances of the PM₁₀ and TSP criteria.

Table 7. HVAS PM₁₀ Monitoring Results

Published:	08/08/2018			
Sampled:	01/07/2018 - 31/07/2018			
Obtained:	08/08/2018			
Unit of Measure: $\mu\text{g}/\text{m}^3$				
Date	PM ₁₀ 24 hr Concentration	24 hr PM ₁₀ Limit	Annual Average	Annual Average PM ₁₀ Limit
6/07/2018	13	50	12.8	30
12/07/2018	19	50	13.1	30
18/07/2018	41	50	13.6	30
24/07/2018	20	50	13.7	30
30/07/2018	11	50	13.8	30

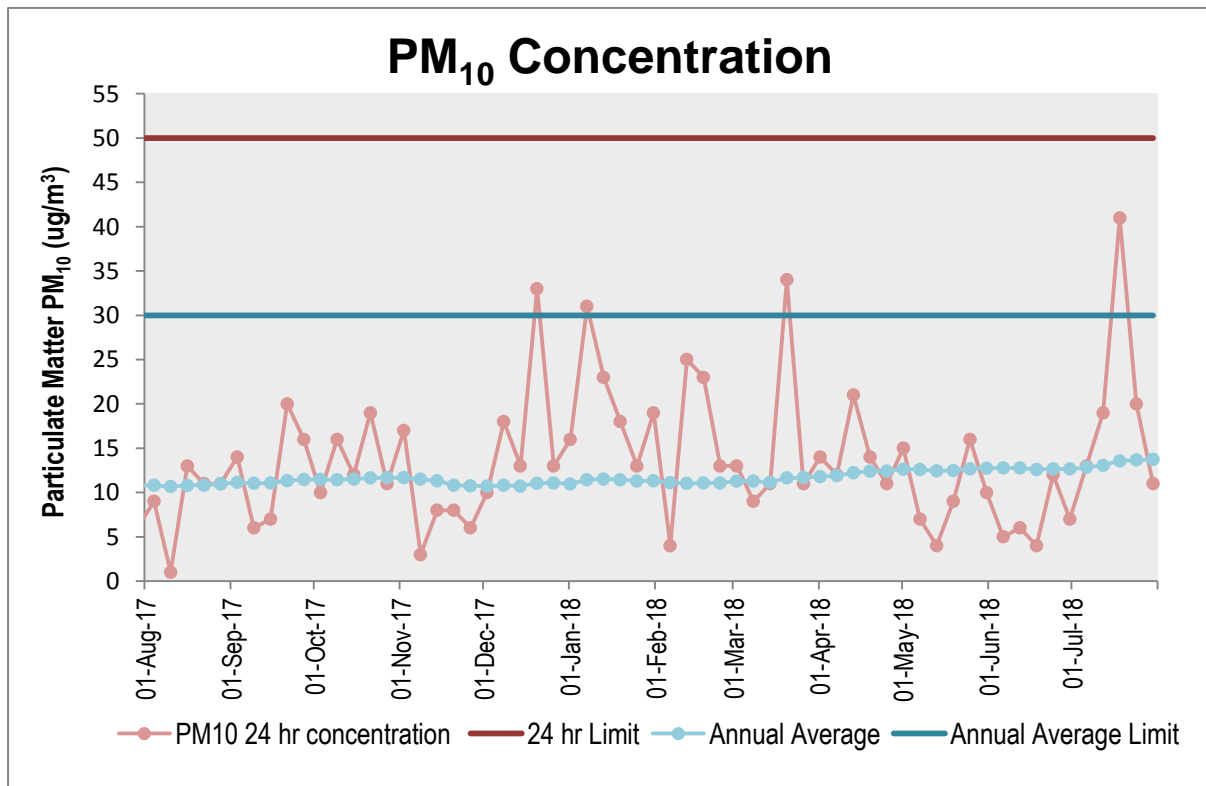


Figure 7. HVAS PM10 Results

Table 8. HVAS TSP Monitoring Results

Published:	08/08/2018		
Sampled:	01/07/2018 - 31/07/2018		
Obtained:	08/08/2018		
Unit of Measure: $\mu\text{g}/\text{m}^3$			
Date	TSP 24 hr Concentration	Annual Average TSP Limit	Annual Average
6/07/2018	39	90	28.1
12/07/2018	45	90	28.4
18/07/2018	83	90	29.4
24/07/2018	41	90	29.6
30/07/2018	29	90	29.7

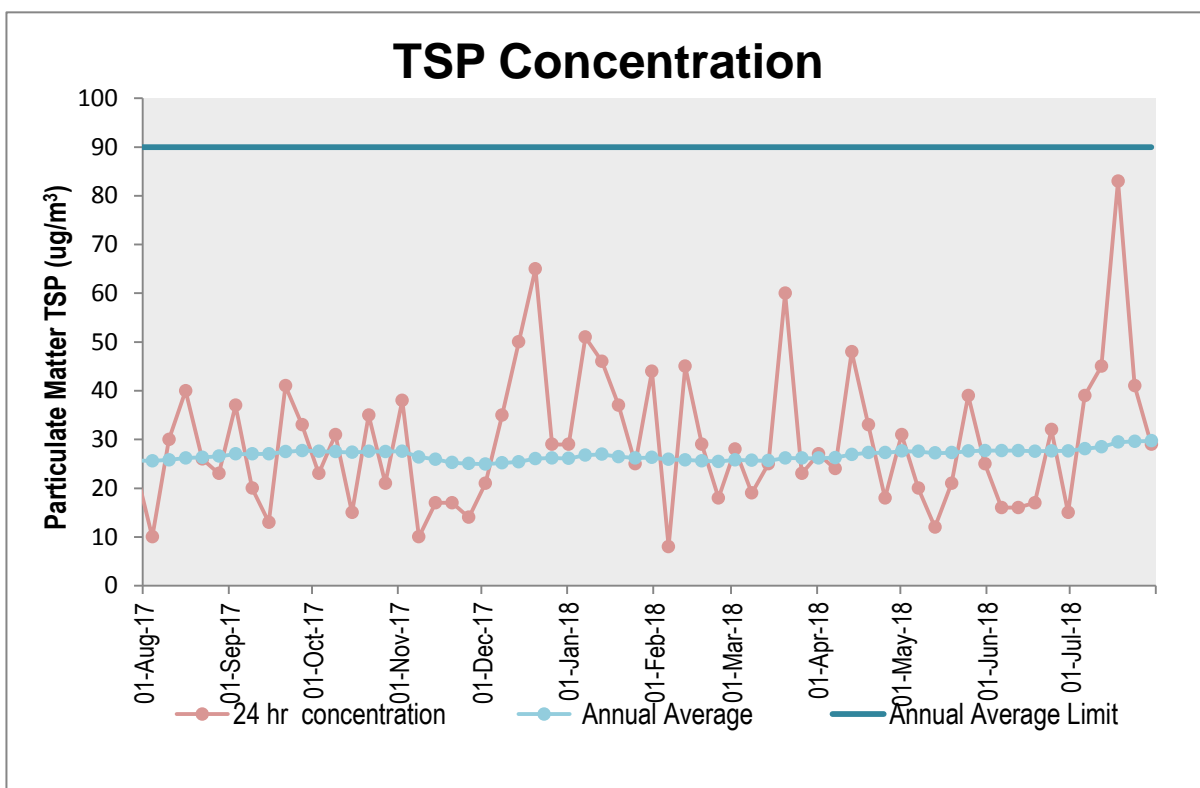


Figure 8. HVAS TSP Results

5. QUARTERLY MANGANESE MONITORING

In accordance with Condition E1 of EPL 366, Myuna Colliery undertakes a quarterly manganese monitoring program in Wangi Bay. The locations of this monitoring are provided in Appendix 3 (Plan MY10950).

The second quarter manganese monitoring sample for 2018 was taken on the 7 June 2018. The results are provided in Table 9.

Manganese monitoring in Wangi Bay has been undertaken since January 2011.

Table 9. Manganese Monitoring

Published:	09/07/2018				
Sampled:	07/06/2018				
Obtained:	15/06/2018				
Location	Unit of Measure	Sep-17	Dec-17	Mar-18	Jun-18
T2-5M(1)	mg/L	0.036	0.016	0.077	0.132
T2-5M(2)	mg/L	0.038	0.016	0.073	0.136
T2-10M(1)	mg/L	0.035	<0.010	0.075	0.125
T2-10M(2)	mg/L	0.031	<0.010	0.003	0.120

6. QUARTERLY NOISE MONITORING

Attended noise monitoring is undertaken quarterly in accordance with the Myuna Colliery EPL 366 and the Project Approval. Noise monitoring is consistent with the OEH Industrial Noise Policy and Australian Standard AS 1055 Acoustics, Description and Management of Environmental Noise. The second quarter noise monitoring for 2018 was undertaken on 7 & 8 June 2018. A summary of the data is provided in Table 10.

Table 10. Summary of Noise Compliance Data

Published:	08/08/2018								
Sampled:	7 & 8/06/2018								
Obtained:	11/07/2018								
Measured Noise Levels dB(A)									
Location	Estimated Myuna LAeq (15 minute) contribution (dBA)			Noise Criteria LAeq (15minute) (dBA)			Compliant		
	Day	Evening	Night	Emergency Day	Evening	Night	Day	Evening	Night
R1	I/A	NM	34	40	35	35	Yes	Yes	Yes
R2	I/A	I/A	32	40	35	35	Yes	Yes	Yes
R3	I/A	I/A	NM	40	35	35	Yes	Yes	Yes
R4	I/A	I/A	I/A	44	40	38	Yes	Yes	Yes
R5	I/A	I/A	NM	44	42	39	Yes	Yes	Yes
R6	I/A	I/A	I/A	44	42	39	Yes	Yes	Yes
R7	I/A	I/A	31	44	42	39	Yes	Yes	Yes
R8	I/A	I/A	I/A	44	42	39	Yes	Yes	Yes
Location	Myuna Colliery LA1(1minute) Contribution		Noise Criteria LA1(1minute)		Compliant				
R1	36		45		Yes				
R2	39		45		Yes				
R3	NM		45		Yes				
R4	I/A		49		Yes				
R5	NM		49		Yes				
R6	I/A		49		Yes				
R7	33		49		Yes				
R8	I/A		49		Yes				

Note: I/A = Inaudible

NM = Not Measurable

Compliance with the noise criteria limit conditions was achieved at all monitoring locations during the day, evening and night time periods.

Based on the measured Myuna Colliery noise contribution, compliance with the relevant sleep disturbance noise criteria was achieved at all noise monitoring locations during the night-time noise monitoring period.

7. COMPLAINTS

No community complaints were received in the reporting period. A graphical summary of the number of complaints for the reporting period and calendar year is shown in Figure 9.

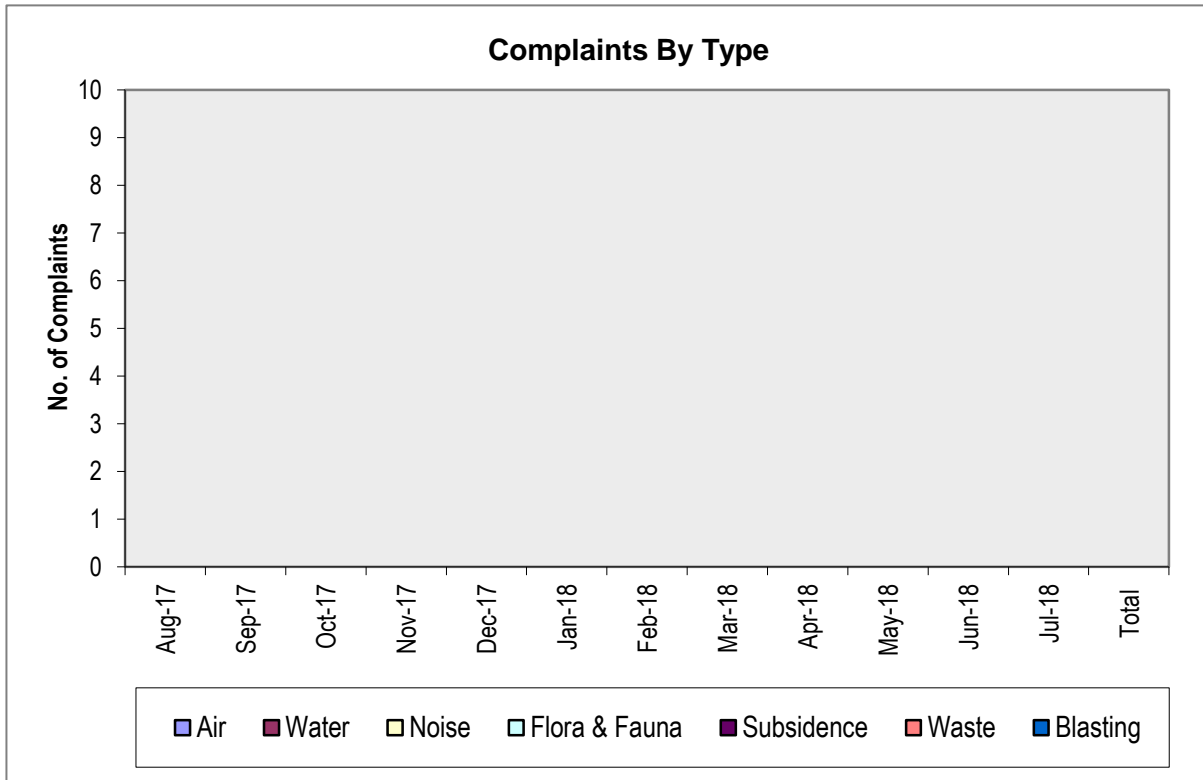


Figure 9. Complaints by Type

8. INCIDENTS

There were no environmental incidents recorded during the reporting period. A graphical summary of the number of incidents per month and totalled for a 12 month rolling period is shown in Figure 10.

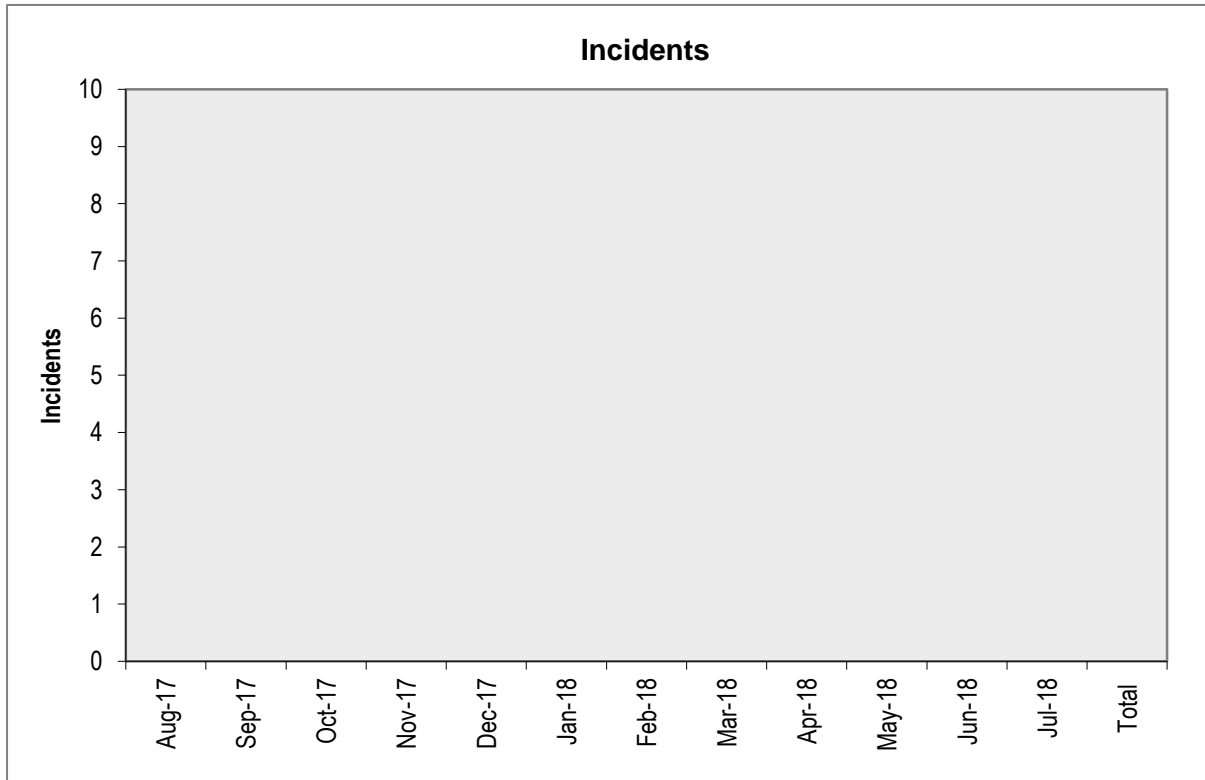


Figure 10. Incidents per Month and Totalled for a 12 Month Rolling Period

9. WEATHER

A monthly summary of rainfall and temperature data recorded at the Myuna Colliery meteorological monitoring station for the previous 12 months is shown in Table 11.

Table 11. Myuna Weather Data

Published:	08/08/2018		
Sampled:	01/07/18 - 31/07/18		
Obtained:	08/08/2018		
Month	Total Rainfall (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)
Aug-17	9.2	3.9	29.5
Sep-17	12.2	3.7	34.2
Oct-17	127.0	8.4	36.7
Nov-17	61.4	10.5	31
Dec-17	45.6	13.9	41.9
Jan-18	15.6	11.9	43.4
Feb-18	142.0	12.3	37.5
Mar-18	74.6	10.3	38.4
Apr-18	49.2	12.1	34.1
May-18	11.4	5.2	27.2
Jun-18	165.0	3.9	20.0
Jul-18	6	0.8	24.5

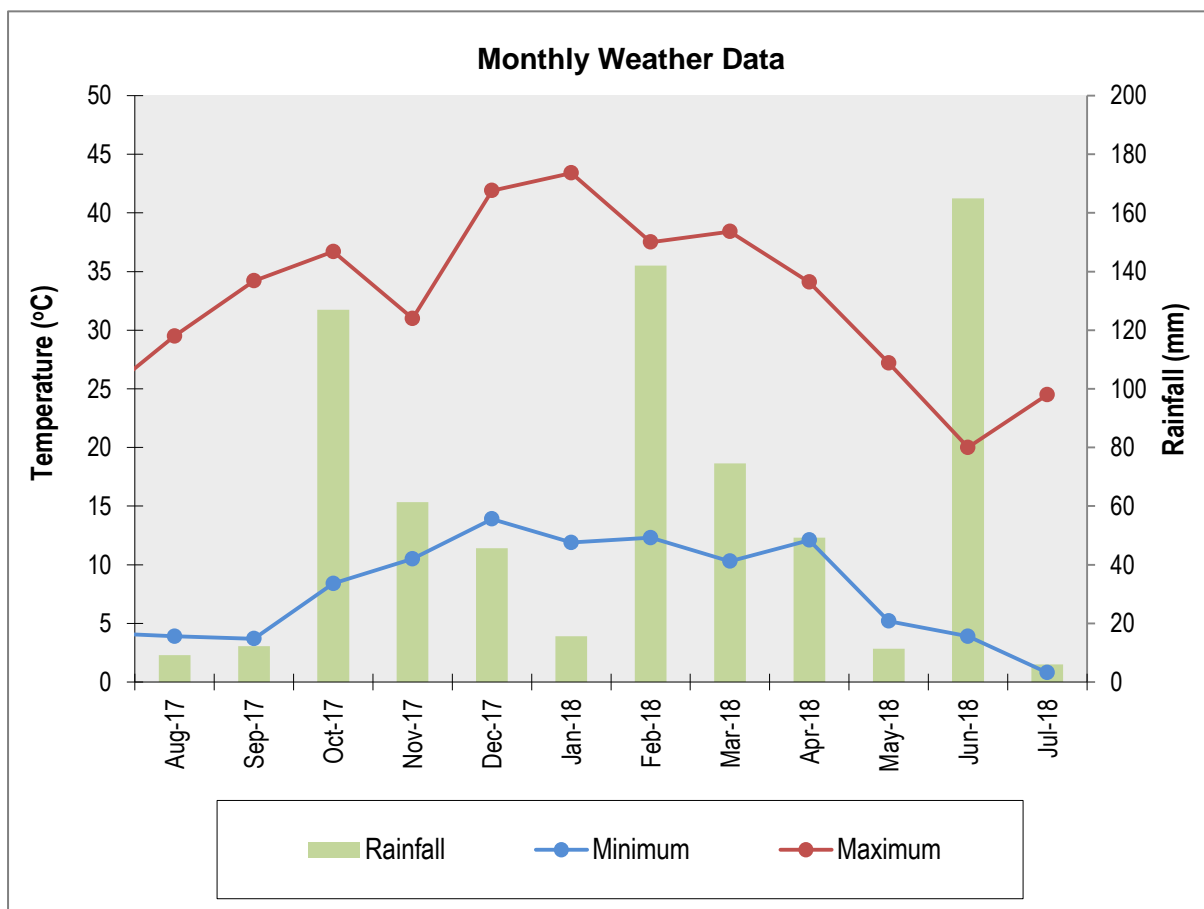


Figure 11. Monthly Weather Data

APPENDIX 1 – PLAN MY11301

APPENDIX 2 – PLAN MY11308

APPENDIX 3 – PLAN MY10950

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