



Centennial Coal



CENTENNIAL Clarence

Environmental Monitoring Data

February 2018



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INTRODUCTION

This monitoring report is 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 document also satisfies conditions 13 (Air Quality Impact Assessment Criteria) and 15 (Noise Impact Assessment Criteria) under Schedule 3 of Development Consent 504-00 and summarises environmental monitoring results for Clarence Colliery for the period of 1 December 2017 to 31 December 2017 (herein referred to as the reporting period).

Table 1 – Colliery Information

Colliery Information	
Premises Details	Clarence Colliery
Address	Off Bells Line of Road, Newnes Junction NSW 2790
Licensee	Clarence Colliery
EPL no	726
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32776&SYSUID=1&LICID=726

SURFACE WATER QUALITY

The following parameters are monitored monthly during discharge at Licensed Discharge Point 2 (LDP002), Licensed Discharge Point 3 (LDP003) and Licensed Discharge Point 4 (LDP004) in accordance with the requirements of Environmental Protection License 726 (EPL 726). Licensed Discharge Point 1 (LDP001) is no longer used by Clarence Colliery.

LDP002 discharges treated mine water from the Clarence water treatment plant and treated surface water. LDP003 and LDP004 provide emergency discharge during periods of sustained heavy rainfall. There were no discharges from LDP003 and LDP004 during the reporting period.

Water quality results are tabulated in Table 2.

Table 2 – Water Quality

Data Published:	15/3/2018	Licensee:	Clarence Colliery Pty Ltd		
Data Sampled:	28/2/2018	Address:	Off Bells Line Road Newnes Junction 2790		
Data Obtained:	13/3/2018	EPL No.	726		
LDP002					
Analyte	Unit	Limit	28/2/2018	Compliant	
Arsenic (Filtered)	mg/L	0.013	<0.001	Yes	
Boron (Filtered)	mg/L	0.1	<0.05	Yes	
Cadmium (Filtered)	mg/L	0.0002	<0.0001	Yes	
Chloride	mg/L	25	4	Yes	
Chromium (Filtered)	mg/L	0.001	<0.001	Yes	
Cobalt (Filtered)	mg/L	0.0025	<0.001	Yes	
Copper (Filtered)	mg/L	0.0014	<0.001	Yes	
Iron (Filtered)	mg/L	0.3	<0.05	Yes	
Fluoride (Total)	mg/L	1	<0.1	Yes	
Lead (Filtered)	mg/L	0.0034	<0.001	Yes	
Lithium (Filtered)	mg/L	0.1	0.018	Yes	
Manganese (Filtered)	mg/L	0.5	0.039	Yes	
Mercury (Filtered)	mg/L	0.00006	<0.00004	Yes	
Nickel (Filtered)	mg/L	0.011	0.014	no	
Nitrogen (Total)	mg/L	0.25	<0.1	Yes	
Oil & Grease	mg/L	10	<5	Yes	
pH	pH Units	6-8.5	8.4	Yes	
Phosphorous (Total)	mg/L	0.02	<0.01	Yes	
Selenium (Total)	mg/L	0.005	<0.0002	Yes	
Silver (Filtered)	mg/L	0.00005	<0.00001	Yes	
Sulphur Sulphate (Total)	mg/L	250	112	Yes	
TSS	mg/L	30	7	Yes	
Zinc (Filtered)	mg/L	0.008	0.006	Yes	
Electrical Conductivity	µS/cm	Monitor Only	300	Yes	
LDP003					
Analyte	Unit	Date	Limit	Result	Compliant
No Discharge					
LDP004					
Analyte	Unit	Date	Limit	Result	Compliant
No Discharge					
Point 9					
Analyte	Unit	Limit	28/2/2018	Compliant	
Arsenic (Filtered)	mg/L	Monitor Only	<0.001	Yes	
Boron (Filtered)	mg/L	Monitor Only	<0.05	Yes	
Cadmium (Filtered)	mg/L	Monitor Only	<0.0001	Yes	
Chloride	mg/L	Monitor Only	4	Yes	
Chromium (Filtered)	mg/L	Monitor Only	<0.001	Yes	
Cobalt (Filtered)	mg/L	Monitor	0.005	Yes	

		Only		
Copper (Filtered)	mg/L	Monitor Only	<0.001	Yes
Iron (Filtered)	mg/L	Monitor Only	<0.05	Yes
Fluoride (Total)	mg/L	Monitor Only	<0.1	Yes
Lead (Filtered)	mg/L	Monitor Only	<0.001	Yes
Lithium (Filtered)	mg/L	Monitor Only	0.016	Yes
Manganese (Filtered)	mg/L	Monitor Only	0.056	Yes
Mercury (Filtered)	mg/L	Monitor Only	<0.00004	Yes
Nickel (Filtered)	mg/L	Monitor Only	0.035	Yes
Nitrogen (Total)	mg/L	Monitor Only	<0.1	Yes
Oil & Grease	mg/L	Monitor Only	5	Yes
pH	pH Units	Monitor Only	8.1	Yes
Phosphorous (Total)	mg/L	Monitor Only	<0.01	Yes
Selenium (total)	mg/L	Monitor Only	0.0003	Yes
Silver (Filtered)	mg/L	Monitor Only	<0.00001	Yes
Sulphur Sulphate (Total)	mg/L	Monitor Only	100	Yes
TSS	mg/L	Monitor Only	<5	Yes
Zinc (Filtered)	mg/L	Monitor Only	0.050	Yes
Electrical Conductivity	µS/cm	Monitor Only	312	Yes

Figure 1 below depicts 12 monthly pH results at LDP002, as well as the upper and lower concentration limits.

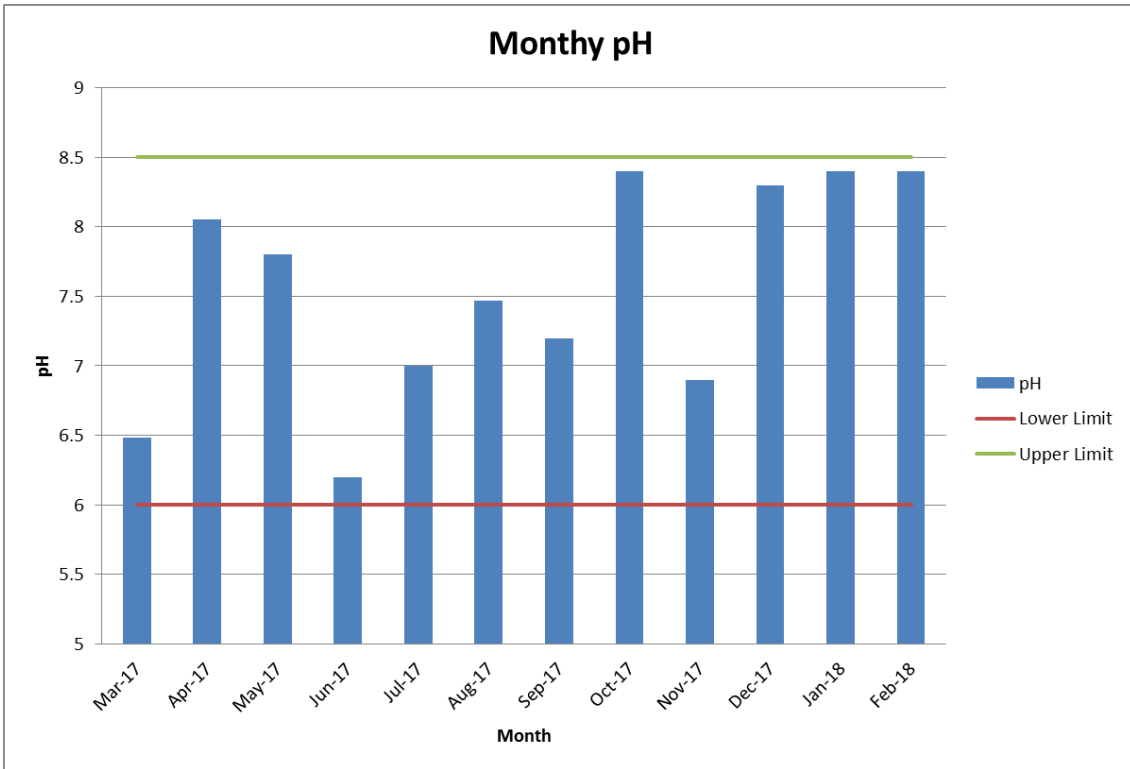


Figure 1 - LDP002 Monthly pH

WATER VOLUME

Water volume discharged off site at LDP002 is measured in accordance with EPL 726. EPL 726 limits the maximum volume of water discharged from LDP002 to 25,000 kL/day. This limit may be exceeded when there is greater than 10mm of rainfall within a 24 hour period. A total of 468329 kL of water was discharged from LDP002 during the reporting period.

A summary of total water volume discharged, including maximum daily discharge for the month, is provided in Table 3.

Table 3 – Discharge Summary for LDP002-LDP004

Date Published	15/3/2018	Licensee	Clarence Colliery				
Date Sampled	February 2018	Address	Off Bells Line of Road, Newnes Junction				
Date Obtained	7/3/2018	EPL No.	726				
Discharge Point	Unit of Measure	Monitoring Frequency Required by Licence	No. of Measurements	Min. Value	Daily Average	Max Value	Licence Exceedance (YES/NO)
LDP002 - Treated Mine Water and Surface Water Discharge	kl	Continuous	28	1750.28	9159.22	15397.57	NO
LDP003 – Emergency Discharge Only	kl	Estimate During Discharge	0	n/a	n/a	n/a	NO
LDP004 – Emergency Discharge Only	kl	Estimate During Discharge	0	n/a	n/a	n/a	NO

Figure 2 below depicts the monthly discharges at LDP002.

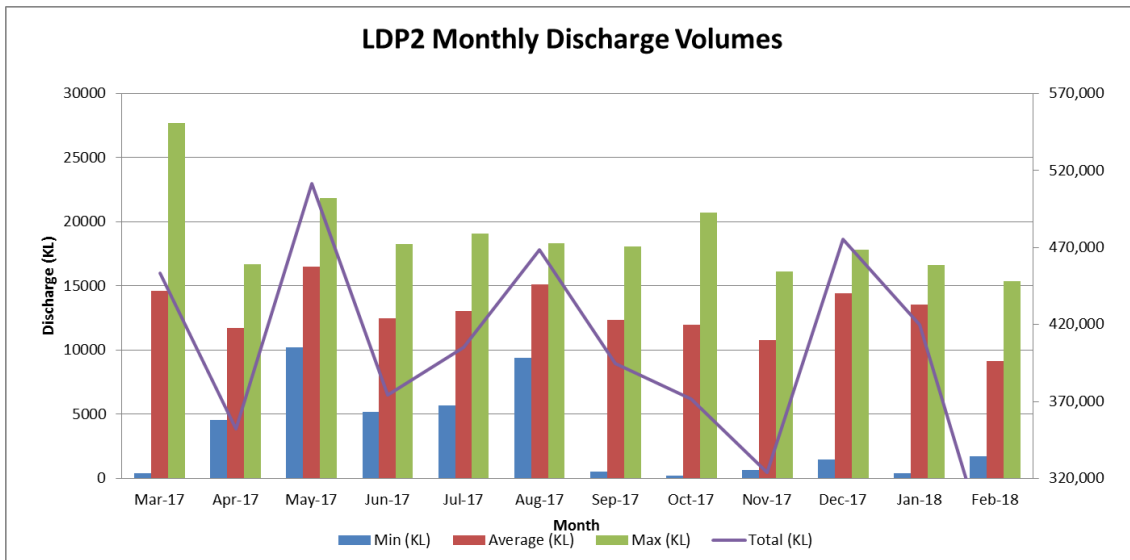


Figure 2 – LDP2 Monthly Discharge Volumes

AIR QUALITY MONITORING

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

Depositional Dust

Depositional dust (g/m²/mth) results (insoluble solids) for the reporting period are shown in Table 4. The average year to date is below the maximum allowable annual average dust level of 4g/m²/mth in accordance with Schedule 3 Condition 13 of Development Consent DA504-00.

At the time of report preparation the February Dust results were not available and will be reported in the next report. Historic Results have been included for completeness.

Table 4 – Depositional Dust

Date Published	15/3/2018	Licensee	Clarence Colliery	
Date Sampled	12/12/2017→8/1/2018	Address	Off Bells Line of Road, Newnes Junction	
Date Obtained	8/2/2018	EPL No.	726	
Dust Gauge	Unit of measure	Days Exposed	Insoluble Solids	Annual Average Limit
DG1	g/m ² /month	27	1.0	4
DG2	g/m ² /month	27	2.2	4
DG3	g/m ² /month	27	0.9	4

*BD indicates below detection

Figures 3, 4 and 5 depict the monthly depositional dust gauge results, the annual depositional dust gauge average and the rolling 12 month depositional dust gauge average respectively.

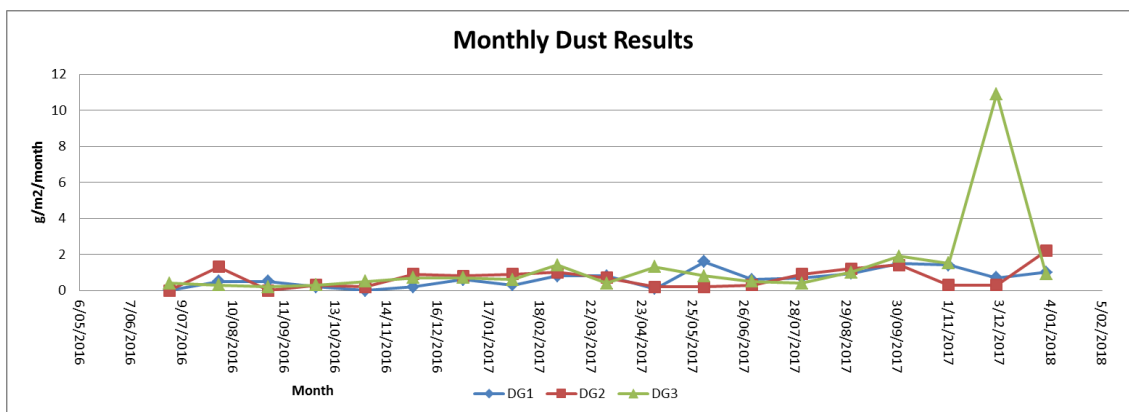


Figure 3 – Monthly Dust Gauge Results

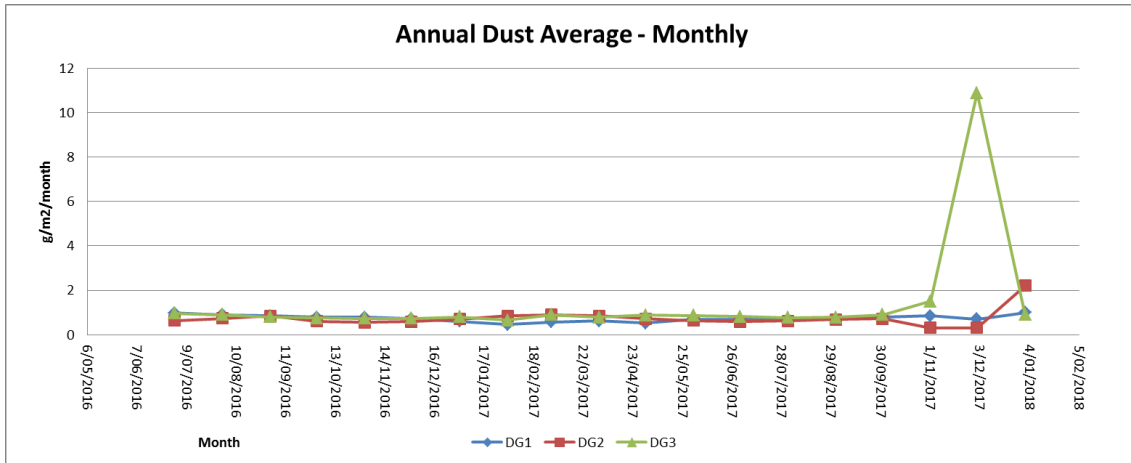


Figure 4 – Annual Dust Gauge Averages – Monthly

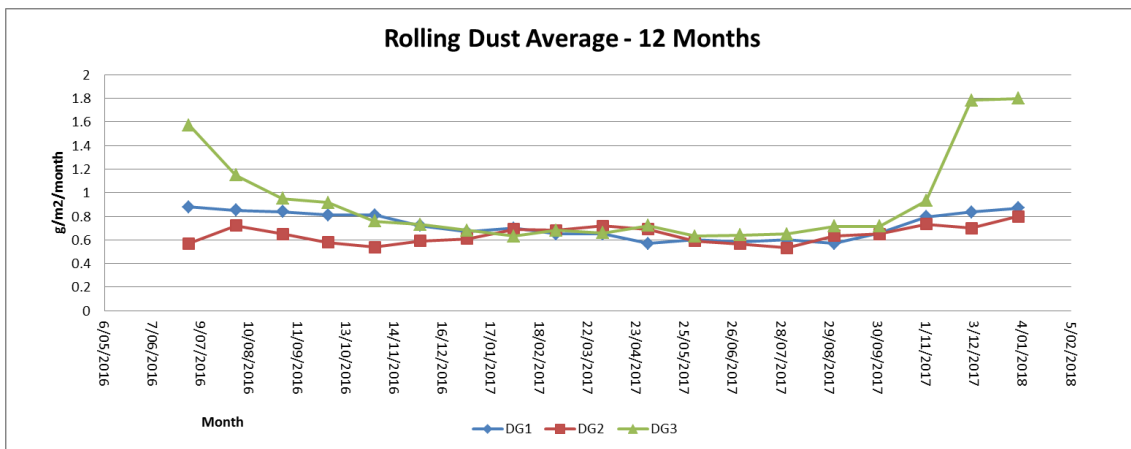


Figure 5 – Rolling 12 Month Dust Gauge Averages

COMPLAINTS

No Complaints were received for the reporting period.

A summary of complaints received at Clarence Colliery for 2017 is shown in Table 5 below.

Table 5 – Complaints received at Clarence Colliery 2017

Data Published:	15/3/2018	Licensee:	Clarence Colliery	
Data Sampled:	February 2018	Address:	Off Bells Line of Road, Newnes Junction	
Data Obtained:	1/3/2018	EPL No.	726	
Month	Air/Dust	Water	Noise	Other
January 2018	0	0	0	0
February 2018	0	0	0	0

WEATHER

A summary of rainfall and temperature data recorded at the onsite meteorological monitoring station during the reporting period is shown in Table 6.

Table 6 – 12 Month Meteorological Data for Clarence Colliery

Data Published:	15/2/2018	Licensee:	Clarence Colliery	
Data Sampled:	January 2018	Address:	Off Bells Line of Road, Newnes Junction	
Data Obtained:	12/2/2018	EPL No.	726	
Month	Total Rainfall (mm)	Minimum Temperature (°C) @2m	Maximum Temperature (°C) @2m	Average Temperature (°C) @2m
Mar-17	238.6	7.8	27.3	16.2
Apr-17	39.2	3.6	18.9	11.3
May-17	46	-0.5	17.0	9.0
June-17	55.8	-2.2	13.8	6.7
July-2017	0.0	-3.49	18.04	6.2
August 2017	0	-2.52	18.37	6.528
September 2017	3.6	-1.97	10.73	27.95
October 2017	77.2	3.61	13.69	26.07
November 2017	55.2	4.15	13.93	25.88
December 2017	81.0	8.3	32.3	18.8
January 2018	39.4	7.83	36.55	19.98
February 2018	103	7.58	33.88	18.06

Figure 6 below depicts the 12 months worth of weather data recorded at Clarence Colliery.

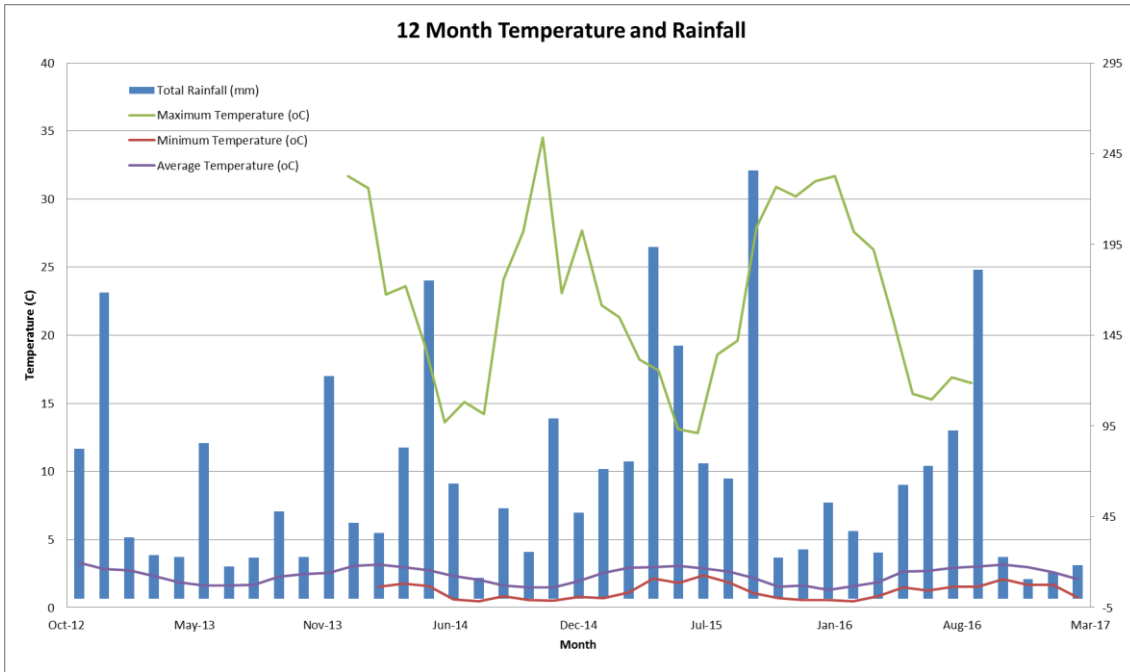


Figure 6 - 12 Month Temperature and Rainfall Data

APPENDIX 1 – PLAN CL1405



Figure 7 – Clarence Colliery Pit Top Monitoring Locations

Centennial Coal Company Limited

P O Box 1000

Toronto NSW 2283

www.centennialcoal.com.au

