



Centennial Coal



Charbon Coal
Environmental Monitoring Data

May 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 report summarises environmental monitoring results for Charbon Colliery for the period of May 2018.

Table 1 – Colliery Information

Colliery Information	
Premises Details	Charbon Colliery
Address	Charbon Rd Charbon NSW 2848
Licensee	Charbon Coal Pty Ltd
EPL no	528
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32415&SYSUID=1&LICID=528

SURFACE WATER QUALITY

The following parameters are monitored at Licenced Discharge Points (LDP) LDP002, LDP003, LDP004, LDP005 and LDP006 daily during discharge in accordance with the requirements of Environmental Protection Licence Number 528 (EPL 528).

Table 2 shows a summary of the monitoring results.

Table 2 –Daily Sampling Results

Data Published:	June 2018	Licensee:	Charbon Coal Pty Ltd			
Data Sampled:	May 2018	Address:	Charbon Rd Charbon NSW 2848			
Data Obtained:	01/06/2018	EPL No.	528			
LDP002						
Date	pH	EC (µS/cm)	Turbidity (NTU)	TSS (mg/L)	Oil & Grease (mg/L)	Compliant
Limit	6.5 - 8.5	Monitor Only	50	50	10	
No Discharge						
LDP003						
Date	pH	EC (µS/cm)	Turbidity (NTU)	TSS (mg/L)	Oil & Grease (mg/L)	Compliant
Limit	6.5 - 8.5	Monitor Only	50	50	10	
No Discharge						

LDP004						
Date	pH	EC (μ S/cm)	Turbidity (NTU)	TSS (mg/L)	Oil & Grease (mg/L)	Compliant
Limit	6.5 - 8.5	Monitor Only	50	50	10	
No Discharge						
LDP005						
Date	pH	EC (μ S/cm)	Turbidity (NTU)	TSS (mg/L)	Oil & Grease (mg/L)	Compliant
Limit	6.5 - 8.5	Monitor Only	50	50	10	
No Discharge						
LDP006						
Date	pH	EC (μ S/cm)	Turbidity (NTU)	TSS (mg/L)	Oil & Grease (mg/L)	Compliant
Limit	6.5 - 8.5	Monitor Only	50	50	10	
No Discharge						

There were no discharges of water from licensed discharge points during the reporting period.

Figures 1 - 5 below show a summary of the surface water monitoring results from January to December 2018 for LDP002, LDP003, LDP004, LDP005 and LDP006.

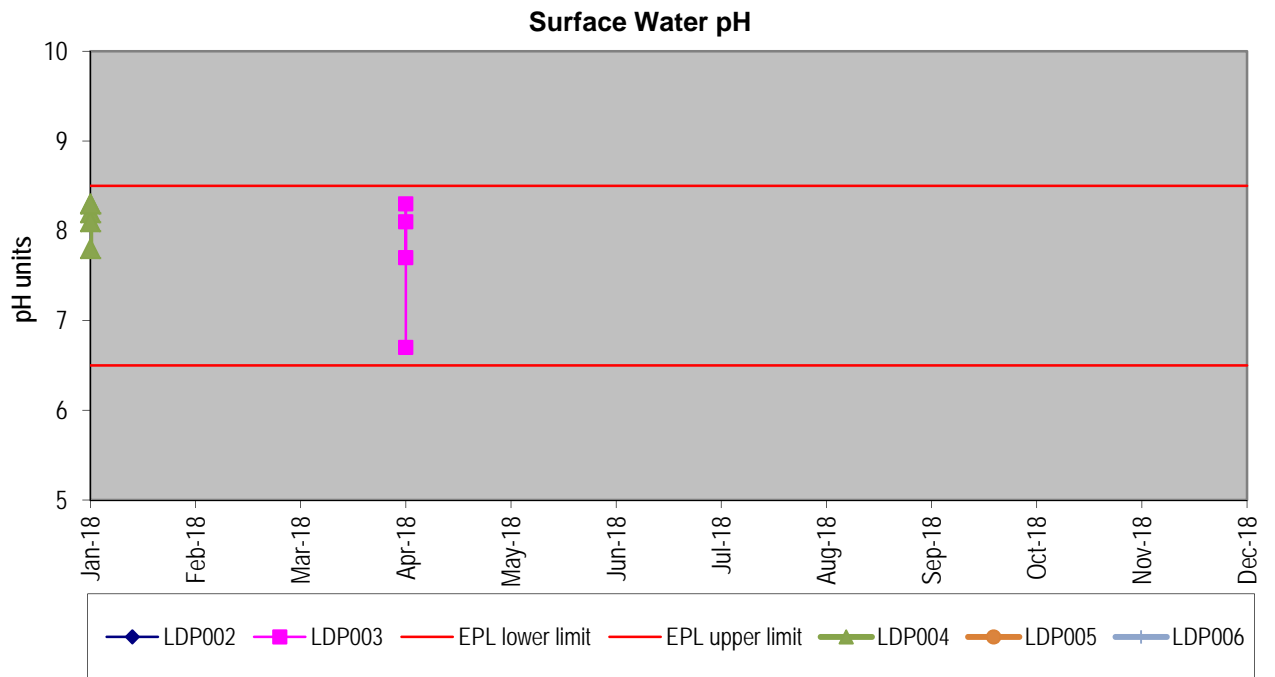


Figure 1 – Surface Water pH Results

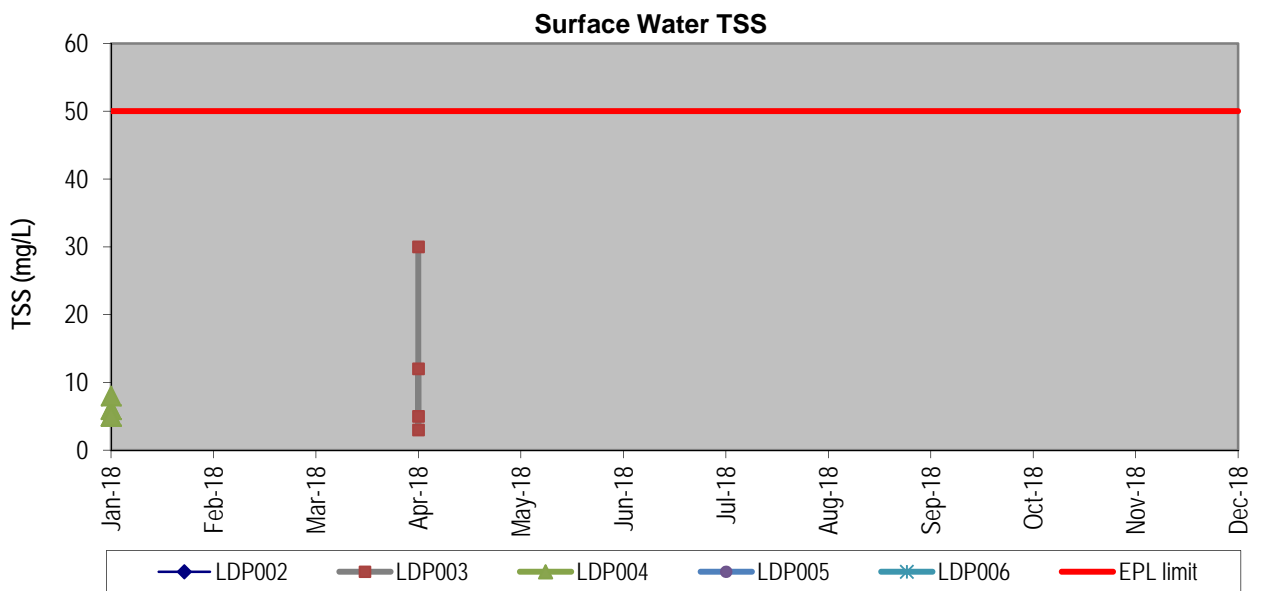


Figure 2 – Surface Water Total Suspended Solids (TSS) Results

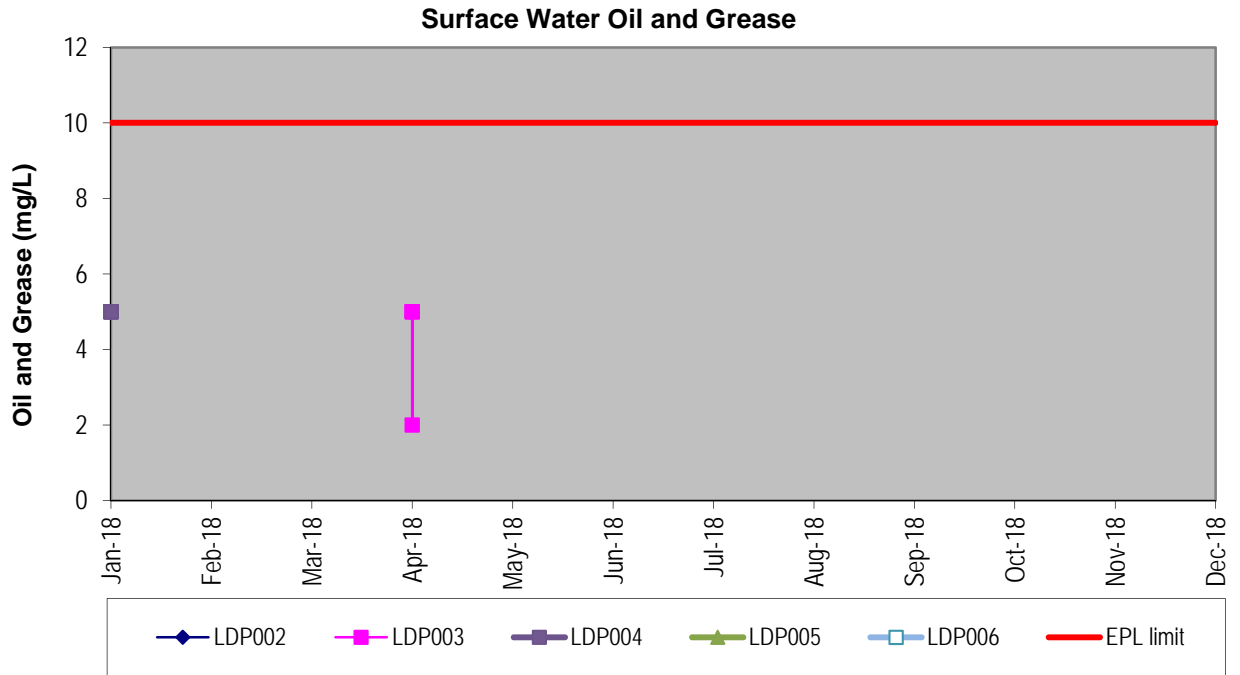


Figure 3 – Surface Water Oil & Grease Results

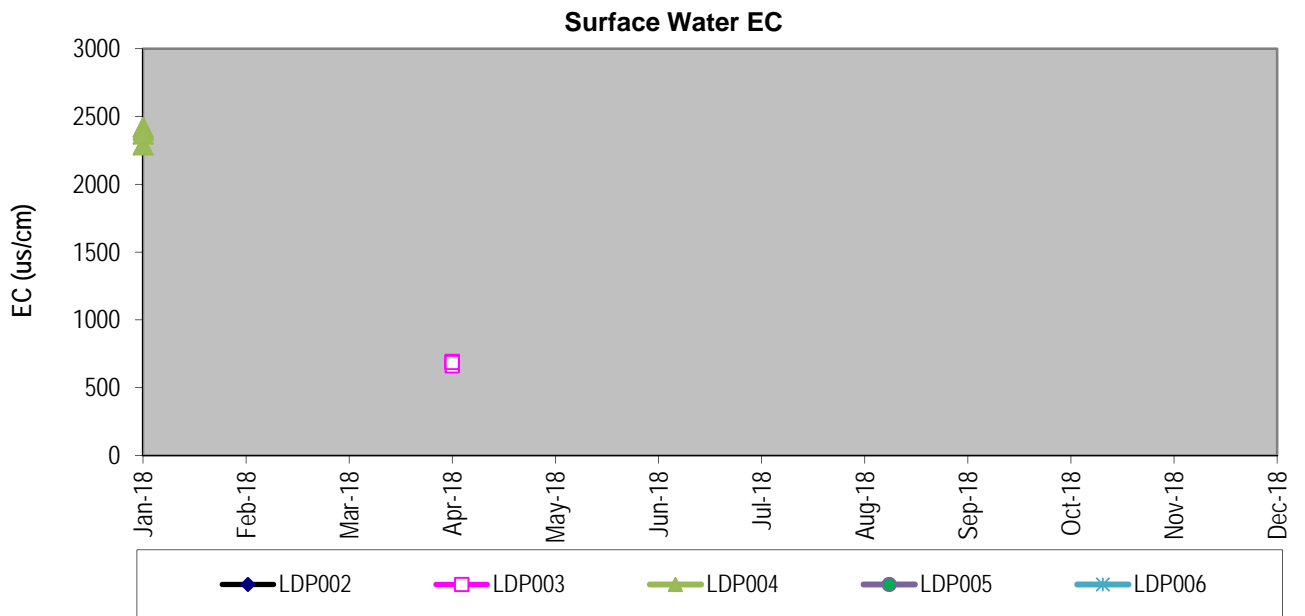


Figure 4 – Surface Water Electrical Conductivity (EC) Results

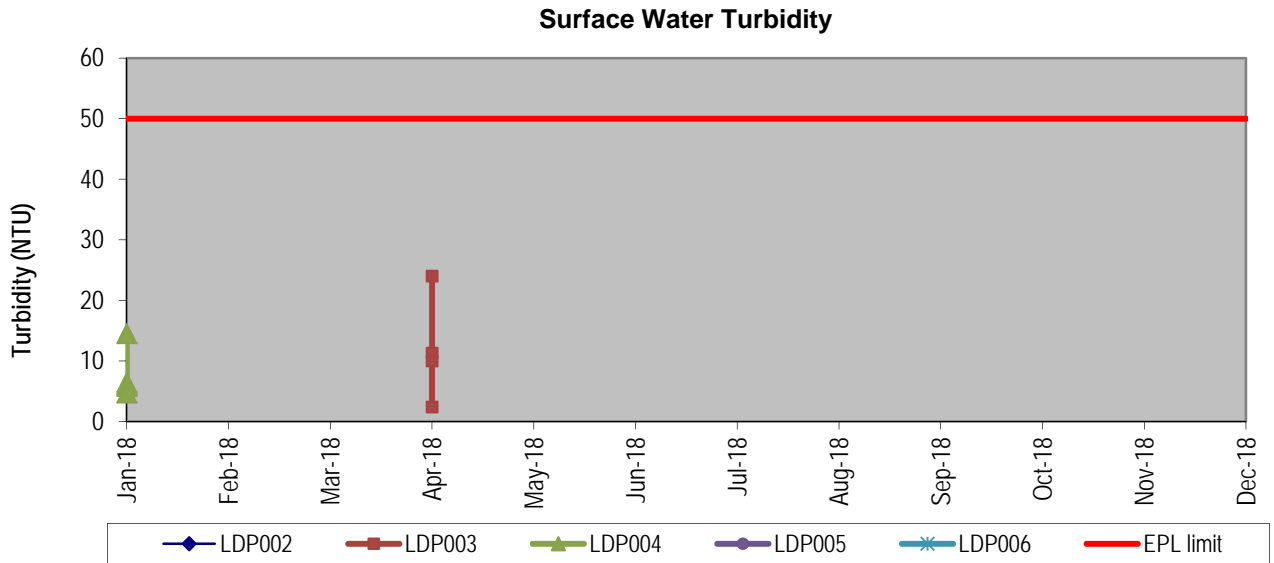


Figure 5 – Surface Water Turbidity Results

WATER VOLUME

The volume of water discharged off site is measured through licensed discharge points (LDPs). EPL 528 sets limits on the maximum volume of water to be discharged for a given period. There were no discharges of water from licensed discharge points during the reporting period.

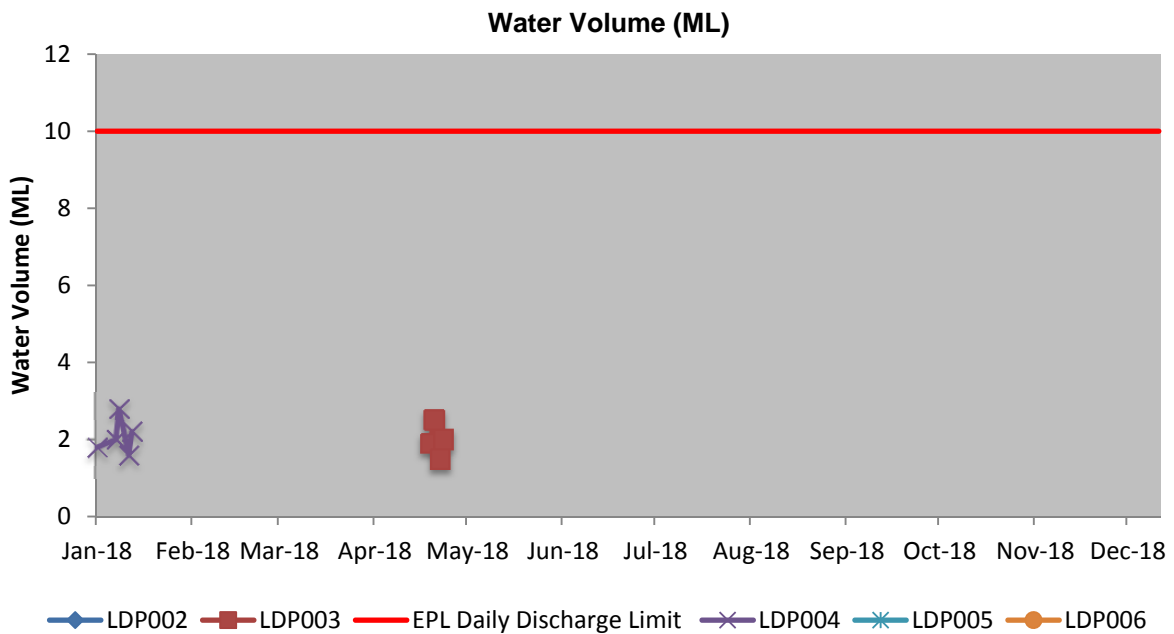


Figure 6 – Discharged Water Volume (ML) 2018

AIR QUALITY MONITORING

The air quality monitoring results for the reporting period are summarised in Table 3, Table 4 and Table 5 below.

Depositional Dust

Depositional dust (g/m²/mth) results (insoluble solids) for the reporting period are shown in Table 3. Monthly depositional dust (g/m²/mth) results for January to December 2018 are shown graphically in Figure 7.

Table 3 – Depositional Dust

Colliery Name	Dust Gauge No	Date Sampled	Insoluble Solids ^{1,2}
Charbon	DM - South	10/04/2018 - 08/05/2018	1.3
Charbon	DM - West	10/04/2018 - 08/05/2018	0.6
Charbon	Nioka	10/04/2018 - 08/05/2018	0.7
Charbon	Pit Top	10/04/2018 - 08/05/2018	0.7
Charbon	DM – C ³	10/04/2018 - 08/05/2018	1.4
Charbon	DM – HL ⁴	10/04/2018 - 08/05/2018	-

DM – Dust Gauge

1. Annual Average Limit (4 g/m²/mth)
2. Maximum increase in deposited dust level (2 g/m²/mth) (annual average limit)
3. Negotiated agreements with the owners of land where these DDGs are located were entered into in 2013, which included removing limits for depositional dust.
4. No access to dust gauge. Landowners could not be reached.

Depositional dust gauge (DDG) monitoring data indicated that dust deposition results for May 2018 ranged from 0.6 g/m²/mth to 1.4 g/m²/mth. EPL 528 does not include a license limit for depositional dust; however, a maximum total deposited dust level of 4 g/m²/mth and a maximum increase in deposited dust level (2 g/m²/mth) is set by conditions included in Charbon's Project Approval. The depositional dust levels complied with the limits prescribed in the Project Approval during the reporting period.

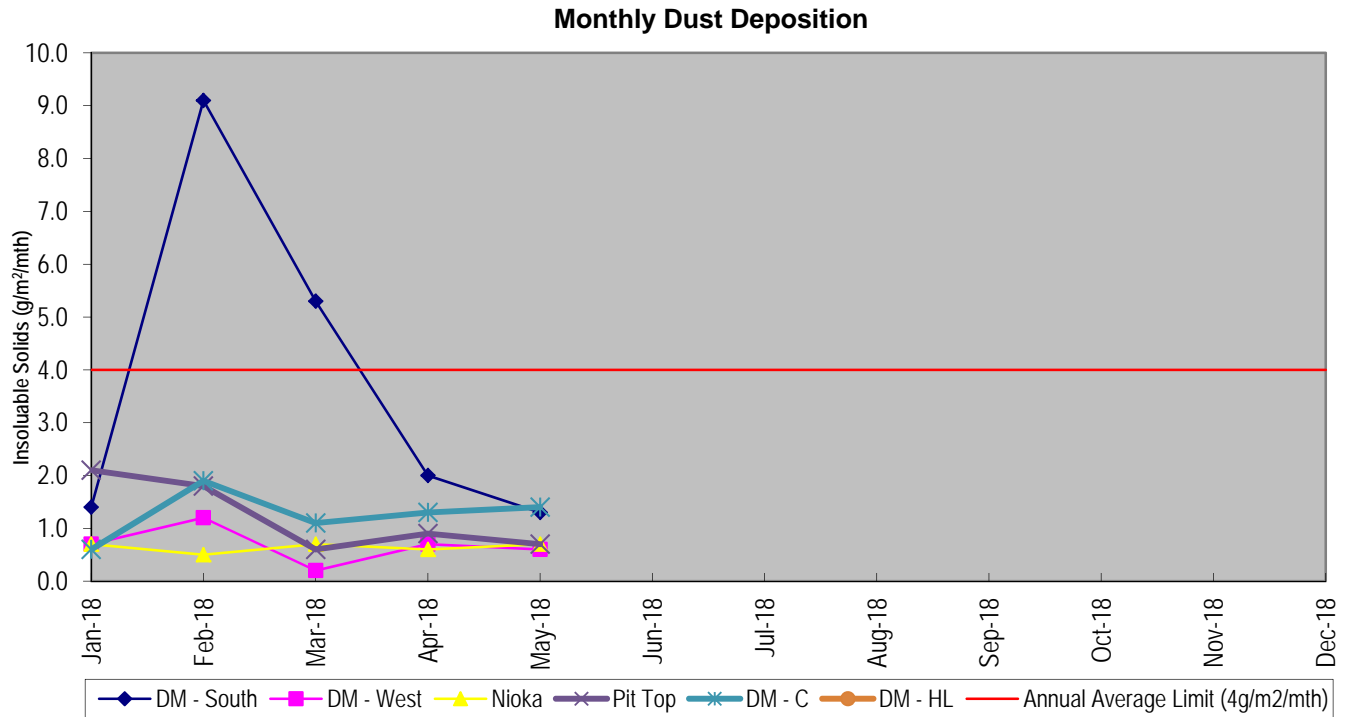


Figure 7 – Monthly Depositional Dust 2018

High Volume Air Sampling (HVAS)

High volume air samplers monitored Particulate Matter (PM) concentrations (less than 10 micrometres in size) and Total Suspended Particulates (TSP) during the reporting period. A summary of monitoring results is provided in Table 4 and Table 5 and shown graphically in Figure 8 and Figure 9, below.

Table 4 – HVAS TSP Nioka

Data Published:	June 2018					Licensee:	Charbon Coal Pty Ltd					
Data Sampled:	January – May 2018					Address:	Charbon Rd Charbon NSW 2848					
Data Obtained:	06/06/2018					EPL No.	528					
Date	01/01/2018	07/01/2018	13/01/2018	19/01/2018	25/01/2018	31/01/2018	06/02/2018	12/02/2018	18/02/2018	24/02/2018	02/03/2018	
TSP (ug/m ³) 24 hr concentration	*	36.6	35.8	26.6	28.6	16.9	16.4	34.2	57.9	21.1	20.2	
Annual Average TSP Limit (90ug/m ³)	90	90	90	90	90	90	90	90	90	90	90	
Date	08/03/2018	14/03/2018	20/03/2018	26/03/2018	01/04/2018	07/04/2018	13/04/2018	19/04/2018	25/04/2018	01/05/2018	07/05/2018	
TSP (ug/m ³) 24 hr concentration	11.3	25.5	54.9	18.2	29.7	29.4	45.8	17.8	31.1	10.2	21.4	
Annual Average TSP Limit (90ug/m ³)	90	90	90	90	90	90	90	90	90	90	90	

Date	13/05/2018	19/05/2018	25/05/2018	31/05/2018						
TSP (ug/m ³) 24 hr concentration	7.5	12.8	18.2	8.4						
Annual Average TSP Limit (90ug/m ³)	90	90	90	90						

*Power supply to units is intermittent and run times and flow could not be determined.

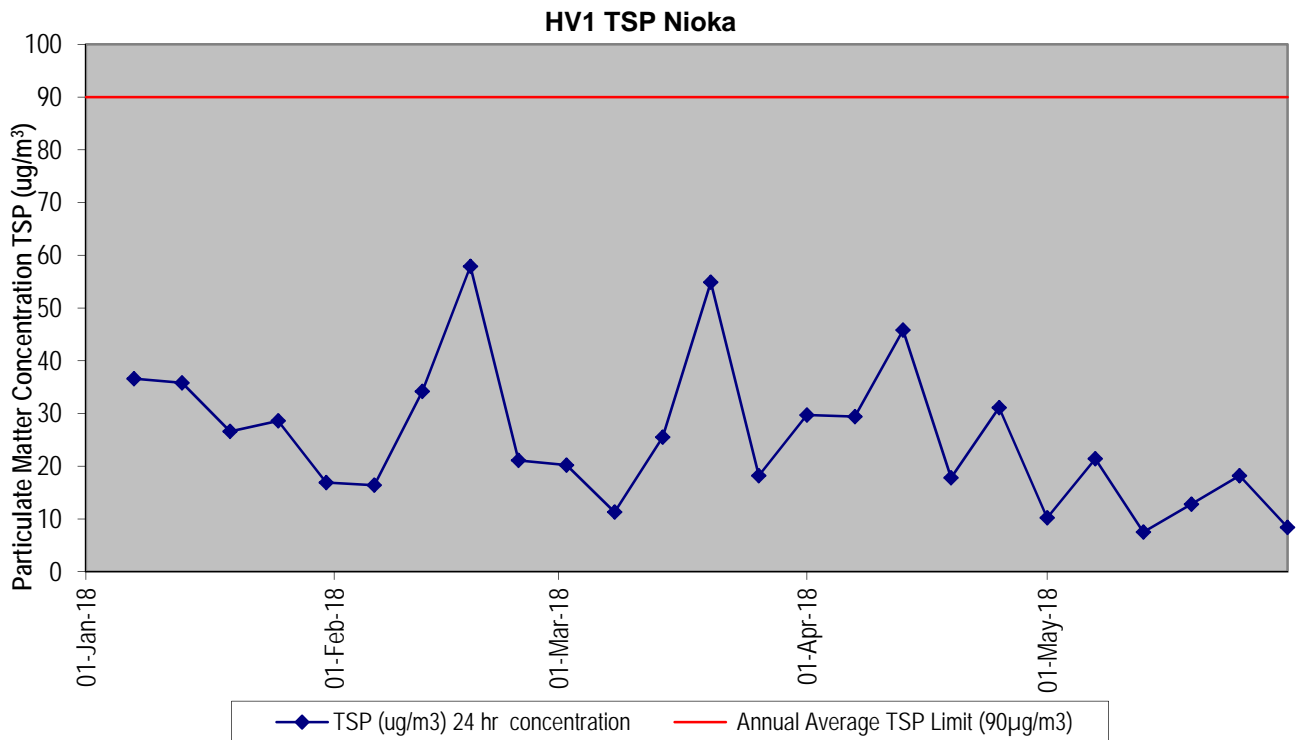


Figure 8 – HVAS TSP Nioka

Table 5 – HVAS PM10 Nioka

Data Published:	June 2018					Licensee:	Charbon Coal Pty Ltd					
Data Sampled:	January – May 2018					Address:	Charbon Rd Charbon NSW 2848					
Data Obtained:	06/06/2018					EPL No.	528					
Date	01/01/2018	07/01/2018	13/01/2018	19/01/2018	25/01/2018	31/01/2018	06/02/2018	12/02/2018	18/02/2018	24/02/2018	02/03/2018	
PM10 (ug/m ³) 24 hr concentration	13.7	17.0	18.9	16.6	22.6	10.8	10.1	20.2	40.2	20.6	14.3	
24 hr PM10 limit	50	50	50	50	50	50	50	50	50	50	50	
12 month average PM10 limit	30	30	30	30	30	30	30	30	30	30	30	

Date	08/03/2018	14/03/2018	20/03/2018	26/03/2018	01/04/2018	07/04/2018	13/04/2018	19/04/2018	25/04/2018	01/05/2018	07/05/2018
PM10 (ug/m ³) 24 hr concentration	7.4	15.4	28.2	11.6	17.5	20.6	19.3	10.7	23.8	7.6	10.3
24 hr PM10 limit	50	50	50	50	50	50	50	50	50	50	50
12 month average PM10 limit	30	30	30	30	30	30	30	30	30	30	30
Date	13/05/2018	19/05/2018	25/05/2018	31/05/2018							
PM10 (ug/m ³) 24 hr concentration	4.8	5.7	13.7	5.2							
24 hr PM10 limit	50	50	50	50							
12 month average PM10 limit	30	30	30	30							

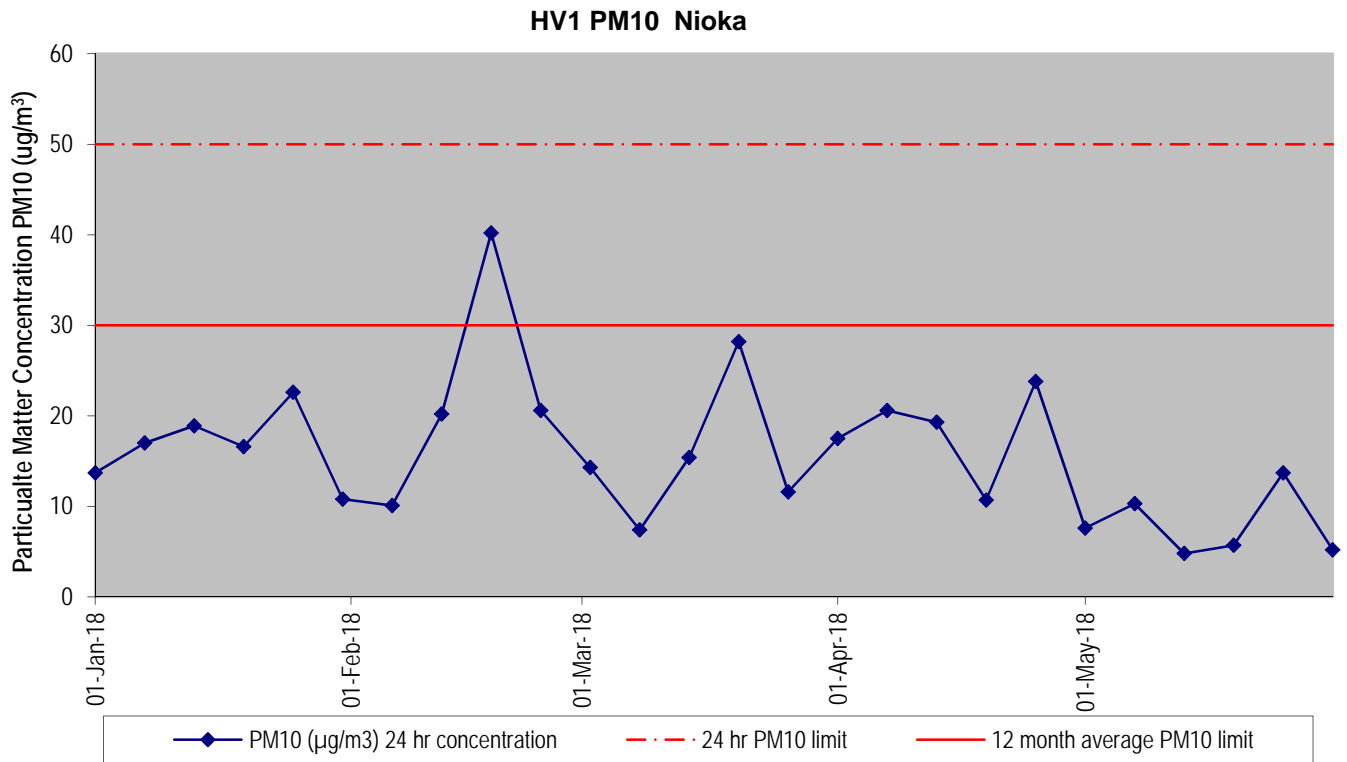


Figure 9 – HVAS PM10 Nioka

In accordance with Condition 19 of Schedule 3 in Project Approval 08_0211, TSP have an annual average limit of 90 $\mu\text{g}/\text{m}^3$, whilst particulate matter less than PM_{10} have a 24 hour limit of 50 $\mu\text{g}/\text{m}^3$ and an annual average limit of 30 $\mu\text{g}/\text{m}^3$.

The monitoring results for the reporting period were below the limits prescribed in Project Approval 08_0211. Referring to Table 4 and Table 5 and corresponding Figure 8 and Figure 9, there have been no exceedances for the reporting period.

NOISE MONITORING

Noise monitoring is conducted quarterly to measure the ambient noise levels at the focus receptor locations (potentially worst affected) surrounding the mine and coal handling facilities in accordance with Condition 1 of Schedule 3 in Project Approval 08_0211 and the Charbon Coal Pty Ltd Noise Management Plan.

Quarterly noise surveys comprise of operator attended monitoring in 15 minute intervals coinciding with day, evening and night-time periods. Statistical indices recorded include LA_{max}, LA₁, LA₁₀, LA₉₀ and LA_{eq}. The results of noise monitoring conducted on the 26th and 27th of March 2018 can be seen in Tables 6, 7 and 8 and shown graphically in Figures 10, 11 and 12 below. All locations at all times were compliant with the conditions in the Project Approval. The location of the focus receptors is provided in Figure 14 in Appendix 1.

Table 6 – March Daytime Noise Monitoring

Data Published:		May 2018	Licensee:		Charbon Coal Pty Ltd			
Data Sampled:		27/03/18	Address:		Charbon Rd Charbon NSW 2848			
Data Obtained:		10/05/18	EPL No.		528			
Measured Noise Levels dB(A)								
Day	LA _{max}	LA ₁	LA ₁₀	LA ₉₀	LA _{eq}	Estimated Mine Contribution LA _{eq} (15 minute)*	Description of Noise Emissions	Date/Start Time/Weather
Location A	62	49	45	36	42	0	Birds = up to 62 dB Breeze = up to 51 dB	27/03/2018 11:00 W = 2.9m/s Temp = 15°C VTG = -2.0°C/100m
Location L	54	46	40	31	37	0	Birds = up to 40 dB Breeze = up to 53 dB Aircraft = up to 30 dB	27/03/2018 10:37 W = 2.7m/s Temp = 14°C VTG = -2.0°C/100m
Location P	54	44	40	35	38	0	Breeze = up to 50 dB Birds = up to 54 dB Road traffic = up to 42 dB Industrial continuum = up to 33 dB Cows = up to 40 dB	27/03/2018 10:13 W = 3.1m/s Temp = 14°C VTG = -2.0°C/100m
Noise consent limits with units of measure	35							

Day Noise Monitoring, Charbon Colliery, 27/03/2018

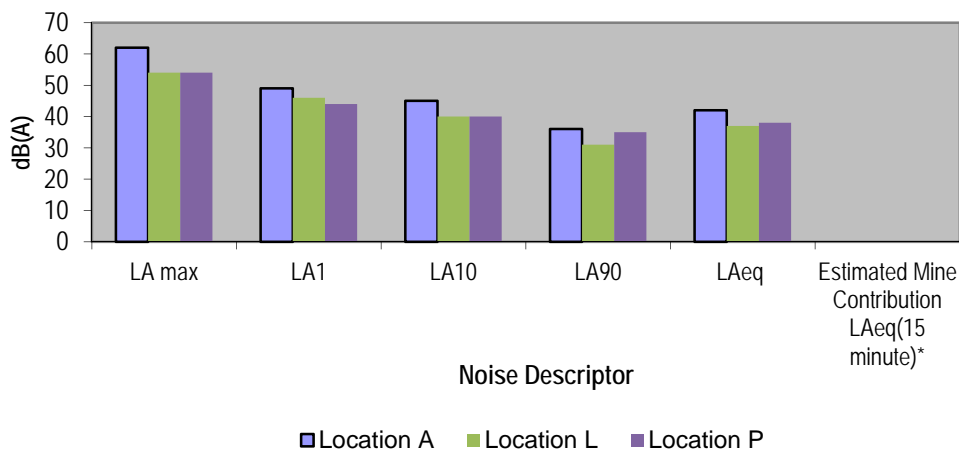


Figure 10 – March Daytime Noise Monitoring

Table 7 – March Evening Noise Monitoring

Data Published:	May 2018	Licensee:	Charbon Coal Pty Ltd					
Data Sampled:	26/03/18	Address:	Charbon Rd Charbon NSW 2848					
Data Obtained:	10/05/18	EPL No.:	528					
Measured Noise Levels dB(A)								
Evening	LA _{max}	LA ₁	LA ₁₀	LA ₉₀	LA _{eq}	Estimated Mine Contribution LA _{eq} (15 minute)*	Description of Noise Emissions	Date/Start Time/Weather
Location A	42	29	23	17	21	0	Cows = up to 42 dB Breeze = less than 25 dB	26/03/2018 21:26 W = 1.0m/s Temp = 12°C VTG = 3.0°C/100m
Location L	51	36	34	18	30	0	Resident's pump = up to 35 dB Birds = up to 44 dB Dogs = up to 51 dB Road traffic = up to 30 dB	26/03/2018 20:57 W = 1.5m/s Temp = 12°C VTG = 0.5°C/100m
Location P	48	45	37	27	34	0	Industrial continuum = up to 47 dB Insects = up to 25 dB Road traffic = up to 48 dB	26/03/2018 20:30 W = 1.6m/s Temp = 12°C VTG = 0.5°C/100m
Noise consent limits with units of measure	35							

Evening Noise Monitoring, Charbon Colliery, 26/03/2018

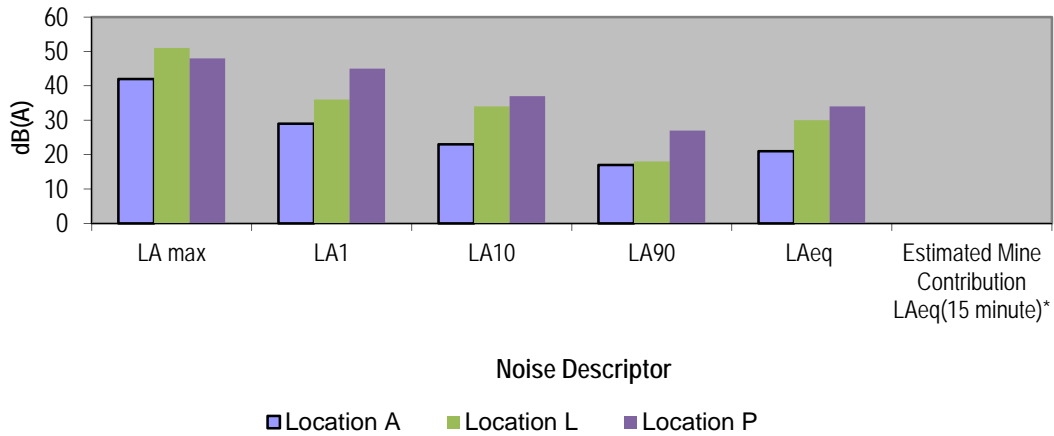


Figure 11 – March Evening Noise Monitoring

Table 8 – March Night Noise Monitoring

Data Published: May 2018 Licensee: Charbon Coal Pty Ltd Data Sampled: 26/03/18 Address: Charbon Rd Charbon NSW 2848 Data Obtained: 10/05/18 EPL No.: 528									
Measured Noise Levels dB(A)									
Night	LA _{max}	LA ₁	LA ₁₀	LA ₉₀	LA _{eq}	Estimated Mine Contribution LA _{eq} (15 minute)*	Description of Noise Emissions	Date/Start Time/Weather	
Location A	55	34	25	17	27	0	Cows = up to 55 dB Breeze = less than 25 dB	26/03/2018 22:00 W = 1.6m/s Temp = 12°C VTG = 3.0°C/100m	
Location L	61	48	28	20	34	0	Dogs = up to 53 dB Breeze = up to 38 dB Cows = up to 35 dB Livestock = up to 61 dB Road traffic = up to 25 dB	26/03/2018 22:23 W = 1.3m/s Temp = 12°C VTG = 3.0°C/100m	
Location P	42	33	29	22	26	0	Industrial continuum = 25 - 33 dB Dogs = up to 41 dB Road traffic = up to 37 dB	26/03/2018 22:45 W = 2.1m/s Temp = 12°C VTG = 3.0°C/100m	
Noise consent limits with units of measure	35								

Night Noise Monitoring, Charbon Colliery, 26/03/2018

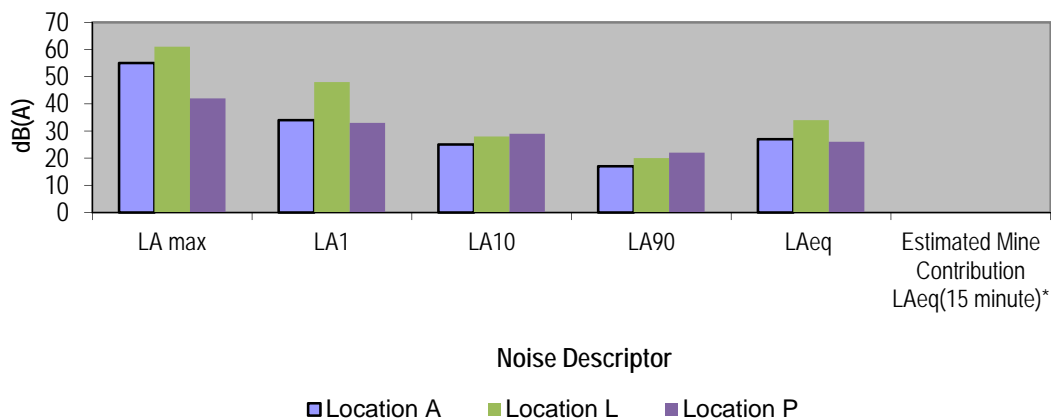


Figure 12 – March Night Noise Monitoring

COMPLAINTS REGISTER

There were no complaints made to Charbon Colliery during the May 2018 reporting period. Table 9 below, shows a summary of the complaints received by Charbon Colliery for 2018. Complaints are also listed on the Complaints Register on the Centennial Coal - Charbon website.

Table 9 – Complaints Register for Charbon Colliery 2018

Data Published:	June 2018					Licensee:	Charbon Coal Pty Ltd						
Data Sampled:	Jan – May 2018					Address:	Charbon Rd Charbon NSW 2848						
Data Obtained:	01/06/2018					EPL No.	528						
	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Annual Total
Air	0	0	0	0	0	-	-	-	-	-	-	-	0
Water	0	0	0	0	0	-	-	-	-	-	-	-	0
Noise	0	0	0	0	0	-	-	-	-	-	-	-	0
Flora & Fauna	0	0	0	0	0	-	-	-	-	-	-	-	0
Subsidence	0	0	0	0	0	-	-	-	-	-	-	-	0
Waste	0	0	0	0	0	-	-	-	-	-	-	-	0
Other	0	0	0	0	0	-	-	-	-	-	-	-	0
													0

WEATHER

A summary of temperature and rainfall data recorded at the on-site meteorological monitoring station during the reporting period is shown in Table 10 below, and graphically in Figure 13.

Table 10 – Meteorological Data for Charbon Colliery

Data Published:	June 2018	Licensee:	Charbon Coal Pty Ltd	
Data Sampled:	Jan – May 2018	Address:	Charbon Rd Charbon NSW 2848	
Data Obtained:	12/06/2018	EPL No.	528	
Month	Total Rainfall (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)	Average Temperature (°C)
Jan-18	39.6	9.7	37.7	22.8
Feb-18	64.8	10.3	35.9	20.6
Mar-18	27.6	5.0	32.9	19.0
Apr-18	24.2	6.8	30.4	16.9
May-18	15.6	0.1	22.2	10.6
Jun-18	-	-	-	-
Jul-18	-	-	-	-
Aug-18	-	-	-	-
Sep-18	-	-	-	-
Oct-18	-	-	-	-
Nov-18	-	-	-	-
Dec-18	-	-	-	-

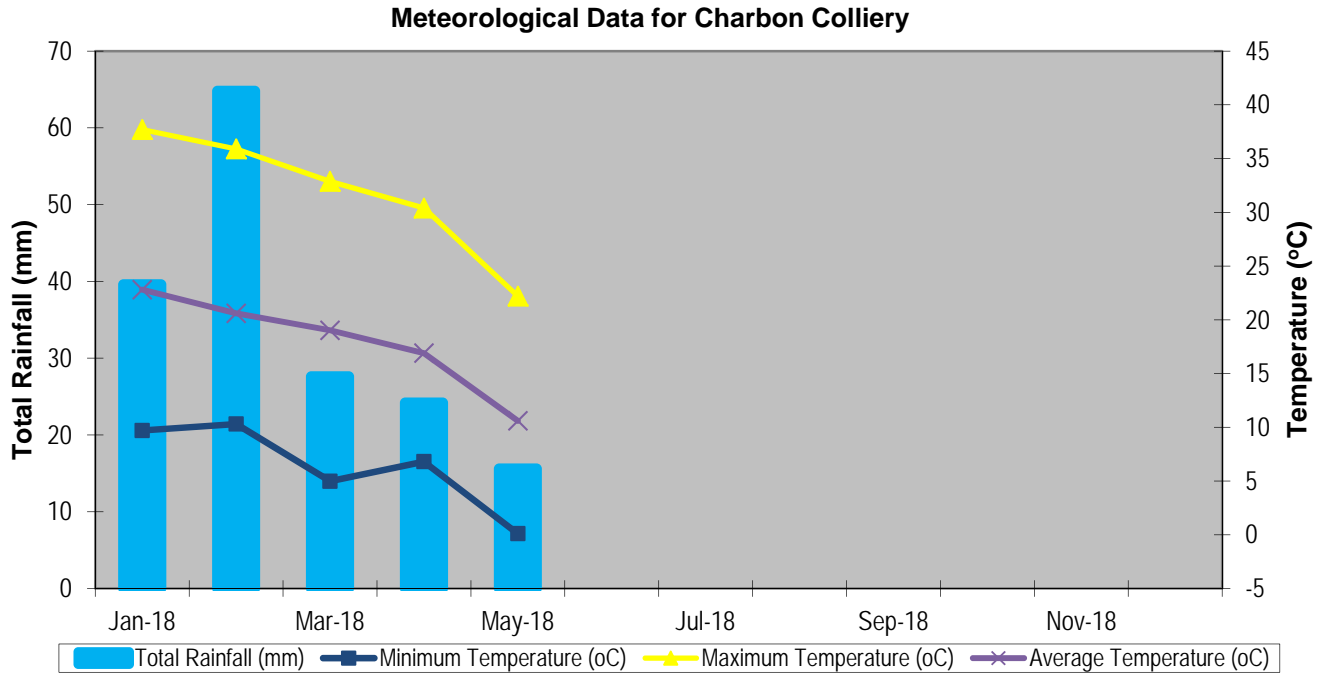
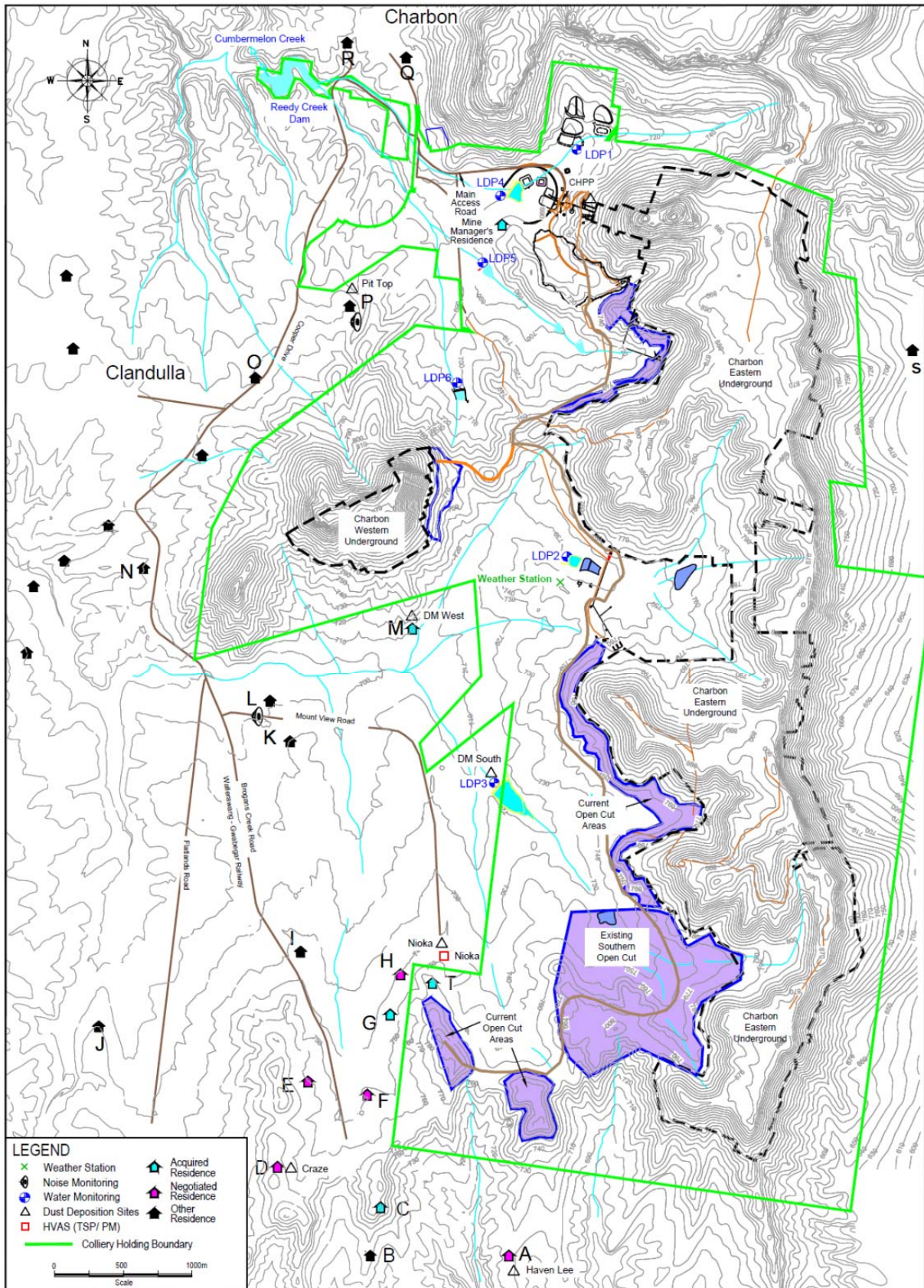


Figure 13 – Charbon Colliery Meteorological Data

APPENDIX 1: CHARBON COLLIERY SENSITIVE RECEIVER AND MONITORING LOCATIONS



To be printed A4

Charbon 2013 AEMR
Sensitive Receiver and Monitoring Locations

Figure 14 – Charbon Colliery Sensitive Receiver and Monitoring Locations

Centennial Coal Company Limited
P O Box 1000
Toronto NSW 2283
www.centennialcoal.com.au

