



Report

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Report - March 2017
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Distribution:	Chain Valley Colliery website

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Introduction

LakeCoal Pty Ltd (LakeCoal) operates the Chain Valley Colliery, an underground coal mine at the southern end of Lake Macquarie.

Chain Valley Colliery operates under the following regulatory instruments;

- A Development Consent, SSD-5465 (as modified) issued under the Environmental Planning and Assessment Act, 1979.
- An Environment Protection Licence (1770) issued under the Protection of the Environment Operations Act, 1997.
- A groundwater bore licence (20BL173107) issued under the Water Act, 1912.

The above development consent/approval and licences require various monitoring and reporting to be undertaken by LakeCoal for Chain Valley Colliery.

This report provides environmental monitoring data from Chain Valley Colliery for the period 1 March 2017 to 31 March 2017.

Details of the Chain Valley Colliery EPL 1770 are provided below.

Chain Valley Colliery Information	
Premises name	Chain Valley Colliery
Address	Construction Road, Chain Valley Bay, NSW, 2259
Licensee	LakeCoal Pty Ltd
EPL #	1770
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&SYSUID=1&LICID=1770

The overall purpose of this report is to keep stakeholders informed of the environmental monitoring results at Chain Valley Colliery and maintain a transparent and accountable reporting system.

Scope

This report presents the results from the various environmental monitoring programs undertaken for Chain Valley Colliery.

Results in this report are typically only a single month of data, which is due to a legislative requirement introduced by the *Protection of the Environment Legislation Amendment Act 2011*, which requires publishing data publically within 14 days. As LakeCoal is required to undertake monitoring on a monthly basis, each report generally cover a single month of environmental monitoring data.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Development Consent) to determine compliance.

Monitoring results presented include;

- Water – quality
- Water – volume
- Depositional dust
- Operational noise
- Weather data

Definitions

dB– decibels

dB(A) – noise level measurement units are decibels (dB). The A-weighting scale is used to approximate human perception of noise

g/m²/month – grams per square metre per month

kL– kilolitres

L_{Aeq}–the average A-weighted noise energy (in dB) for a measurement period

mg/L – milligrams per litre

µg/L – micrograms per litre

µS/cm – microSiemens per centimetre

References

ALS Group - Monthly Water Monitoring Results March 2017 - Work Order ES1703364)

ALS Water - Report of Analysis (WN100575)

Steel River Testing - Dust Deposition Report March 2017 (Report 13029-0)

Development Consent SSD-5465 (as modified)

Environment Protection Licence 1770 (Licence version date: 8 June 2016)

Monitoring Results

Water – Quality

March 2017			
EPL	1770		
Licensee	LakeCoal Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	22-Mar-17		
Date Obtained	29-Mar-17		
Date Reported	Refer report date		
Sampling Point	1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	0
Enterococci	col/100mL	-	360
Faecal Coliforms	CFU/100mL	200	120
pH	pH	6.5-8.5	7.54
Total Sus. Solids	mg/L	50	<5

There was no exceedance of water quality criteria during the month.

Water – Volume

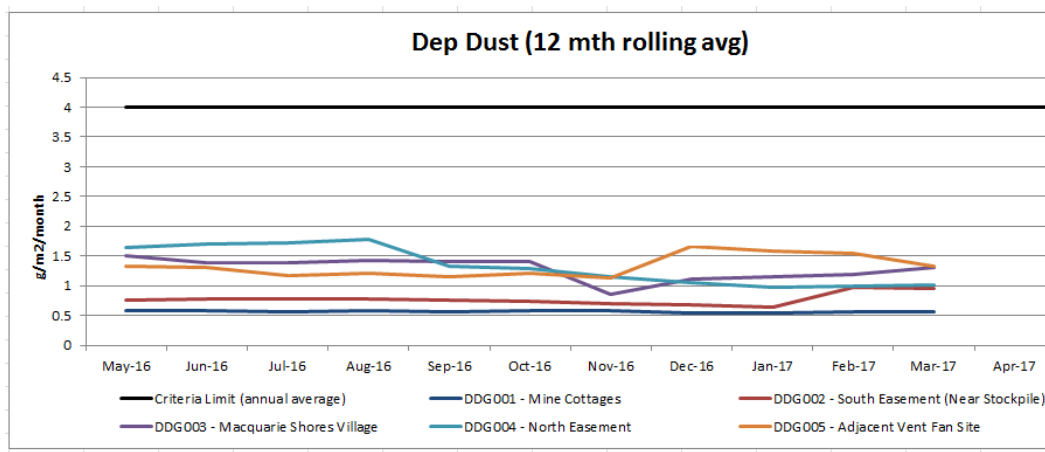
March 2017	
EPL	1770
Licensee	LakeCoal Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	12161 kilolitres per day
Sampling Point	1

Date (24 hour period)	Unit	Volume
01/03/2017	kL	4602
02/03/2017	kL	6899
03/03/2017	kL	3692
04/03/2017	kL	4653
05/03/2017	kL	2591
06/03/2017	kL	4424
07/03/2017	kL	6713
08/03/2017	kL	5846
09/03/2017	kL	6661
10/03/2017	kL	6874
11/03/2017	kL	6817
12/03/2017	kL	6802
13/03/2017	kL	6992
14/03/2017	kL	7928
15/03/2017	kL	3499
16/03/2017	kL	2644
17/03/2017	kL	5191
18/03/2017	kL	5449
19/03/2017	kL	4339
20/03/2017	kL	6281
21/03/2017	kL	6522
22/03/2017	kL	6532
23/03/2017	kL	6702
24/03/2017	kL	6805
25/03/2017	kL	6554
26/03/2017	kL	6585
27/03/2017	kL	6392
28/03/2017	kL	6083
29/03/2017	kL	6351
30/03/2017	kL	7091
31/03/2017	kL	3915

There were no exceedances of the volumetric limits at the Licenced Discharge Point during the month.

Depositional Dust

March 2017		
Sampling Date	12/02/2017 to	12/03/2017
Site	Insoluble Matter (g/m²/month)	
DDG001	0.6	
DDG002	0.3	
DDG003	1.8	
DDG004	1.6	
DDG005	-	
Notes:		
- For site locations refer to Air Quality Management Plan		



Operational Noise

Noise monitoring was undertaken during the month. No exceedances were recorded. The next round of monitoring is scheduled for June 2017.

CVC Monthly Environmental Report

Table 4.2: $L_{Aeq,15minute}$ GENERATED BY CVC AGAINST IMPACT ASSESSMENT CRITERIA – QUARTER 1 2017

Location	Date and Time	Wind Speed (m/s)	VTG (%/C per 100m) ¹	L_{Aeq} Criterion dB	Criterion Applies? ²	CVC L_{Aeq} dB ^{3,4,5}	Exceedance ^{4,5}
Day							
ATN001	13/03/2017 12:10	1.3	-2	35	Yes	IA	Nil
ATN001	13/03/2017 12:33	1.6	-2	35	Yes	IA	Nil
ATN001	13/03/2017 12:59	1.7	-1.8	35	Yes	IA	Nil
ATN001	13/03/2017 13:20	2.1	-2	35	Yes	IA	Nil
ATN001	13/03/2017 13:40	3.2	-2	35	No	IA	NA
ATN001	13/03/2017 13:57	3.3	-2	35	No	IA	NA
ATN002	15/03/2017 10:36	3.4	-2	49	No	38	NA
ATN002	15/03/2017 10:53	3	-2	49	Yes	38	Nil
ATN002	15/03/2017 11:09	2.8	-2	49	Yes	38	Nil
ATN002	15/03/2017 11:26	3.1	-2	49	No	38	NA
ATN002	15/03/2017 11:56	1.7	-2	49	Yes	38	Nil
ATN002	15/03/2017 12:16	7	-2	49	No	39	NA
ATN003	14/03/2017 15:24	2.8	-2	36	Yes	IA	Nil
ATN003	14/03/2017 15:42	2.2	-2	36	Yes	IA	Nil
ATN003	14/03/2017 16:00	1.6	-2	36	Yes	IA	Nil
ATN003	14/03/2017 16:18	1.4	-2	36	Yes	IA	Nil
ATN003	14/03/2017 16:35	1.1	-2	36	Yes	IA	Nil
ATN003	14/03/2017 17:02	2	-2	36	Yes	IA	Nil
ATN004	14/03/2017 14:53	3.3	-2	35	No	<25	NA
ATN005	14/03/2017 14:01	2.4	-2	46	Yes	IA	Nil
ATN006	13/03/2017 14:52	4.2	-2	37	No	<25	NA
ATN006	13/03/2017 15:08	2.8	-2	37	Yes	<25	Nil
ATN006	13/03/2017 15:26	2.3	-2	37	Yes	<25	Nil
ATN006	13/03/2017 15:43	3	-2	37	Yes	<25	Nil
ATN006	13/03/2017 16:00	3.8	-2	37	No	<25	NA
ATN006	13/03/2017 16:18	3.5	-2	37	No	<25	NA
ATN007	14/03/2017 11:47	2	-2	46	Yes	44	Nil
ATN007	14/03/2017 12:03	2.1	-2	46	Yes	44	Nil
ATN007	14/03/2017 12:31	1.4	-2	46	Yes	44	Nil
ATN007	14/03/2017 12:52	2.4	-2	46	Yes	44	Nil
ATN007	14/03/2017 13:08	2.6	-2	46	Yes	44	Nil
ATN007	14/03/2017 13:23	2.8	-2	46	Yes	44	Nil
R13	15/03/2017 08:15	1.2	-2	43	Yes	<25	Nil

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Location	Date and Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	L _{Aeq} Criterion dB	Criterion Applies? ²	CVC L _{Aeq} dB ^{3,4,5}	Exceedance ^{4,5}
R13	15/03/2017 08:32	0.6	-2	43	Yes	<25	Nil
R13	15/03/2017 08:51	2.1	-2	43	Yes	<25	Nil
R13	15/03/2017 09:35	0.6	-2	43	Yes	<25	Nil
R13	15/03/2017 09:53	2.2	-2	43	Yes	<25	Nil
R13	15/03/2017 10:10	2.7	-2	43	Yes	<25	Nil
Evening							
ATN001	13/03/2017 18:00	2.7	3	35	Yes	IA	Nil
ATN001	13/03/2017 18:15	4.9	-1	35	No	IA	NA
ATN002	13/03/2017 19:55	4.5	-1	49	No	IA	NA
ATN002	13/03/2017 20:10	4	-1	49	No	IA	NA
ATN003	13/03/2017 18:59	2.9	3	36	Yes	IA	Nil
ATN003	13/03/2017 19:14	4.8	-1	36	No	IA	NA
ATN004	14/03/2017 18:00	0.8	3	35	Yes	IA	Nil
ATN005	14/03/2017 19:08	2.8	3	35	Yes	IA	Nil
ATN006	14/03/2017 19:31	1.4	3	37	Yes	IA	Nil
ATN006	14/03/2017 19:48	1.2	3	37	Yes	IA	Nil
ATN007	14/03/2017 20:18	0.5	3	46	Yes	43	Nil
ATN007	14/03/2017 20:35	0.8	3	46	Yes	43	Nil
R13	13/03/2017 20:29	3.4	-1	43	No	IA	NA
R13	13/03/2017 20:46	3.4	0.5	43	No	IA	NA
Night							
ATN001	21/03/2017 00:45	1.8	0.5	35	Yes	IA	Nil
ATN001	21/03/2017 01:00	2.2	0.5	35	Yes	IA	Nil
ATN001	21/03/2017 01:15	1.1	3	35	Yes	IA	Nil
ATN001	21/03/2017 01:30	1.3	0.5	35	Yes	IA	Nil
ATN002	21/03/2017 03:02	1.4	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:17	1.2	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:32	1.8	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:47	1.7	3	49	Yes	IA	Nil
ATN003	21/03/2017 01:56	1.2	0.5	36	Yes	IA	Nil
ATN003	21/03/2017 02:11	1.2	3	36	Yes	IA	Nil
ATN003	21/03/2017 02:27	1.4	3	36	Yes	IA	Nil
ATN003	21/03/2017 02:42	1.5	3	36	Yes	IA	Nil
ATN004	21/03/2017 00:13	1.5	3	35	Yes	IA	Nil
ATN005	15/03/2017 22:52	2.7	3	35	Yes	IA	Nil

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Location	Date and Time	Wind Speed (m/s)	VTG (%/C per 100m) ¹	L _{Aeq} Criterion dB	Criterion Applies? ²	CVC L _{Aeq} dB ^{3,4,5}	Exceedance ^{4,5}
R13	15/03/2017 08:32	0.6	-2	43	Yes	<25	Nil
R13	15/03/2017 08:51	2.1	-2	43	Yes	<25	Nil
R13	15/03/2017 09:35	0.6	-2	43	Yes	<25	Nil
R13	15/03/2017 09:53	2.2	-2	43	Yes	<25	Nil
R13	15/03/2017 10:10	2.7	-2	43	Yes	<25	Nil
Evening							
ATN001	13/03/2017 18:00	2.7	3	35	Yes	IA	Nil
ATN001	13/03/2017 18:15	4.9	-1	35	No	IA	NA
ATN002	13/03/2017 19:55	4.5	-1	49	No	IA	NA
ATN002	13/03/2017 20:10	4	-1	49	No	IA	NA
ATN003	13/03/2017 18:59	2.9	3	36	Yes	IA	Nil
ATN003	13/03/2017 19:14	4.8	-1	36	No	IA	NA
ATN004	14/03/2017 18:00	0.8	3	35	Yes	IA	Nil
ATN005	14/03/2017 19:08	2.8	3	35	Yes	IA	Nil
ATN006	14/03/2017 19:31	1.4	3	37	Yes	IA	Nil
ATN006	14/03/2017 19:48	1.2	3	37	Yes	IA	Nil
ATN007	14/03/2017 20:18	0.5	3	46	Yes	43	Nil
ATN007	14/03/2017 20:35	0.8	3	46	Yes	43	Nil
R13	13/03/2017 20:29	3.4	-1	43	No	IA	NA
R13	13/03/2017 20:46	3.4	0.5	43	No	IA	NA
Night							
ATN001	21/03/2017 00:45	1.8	0.5	35	Yes	IA	Nil
ATN001	21/03/2017 01:00	2.2	0.5	35	Yes	IA	Nil
ATN001	21/03/2017 01:15	1.1	3	35	Yes	IA	Nil
ATN001	21/03/2017 01:30	1.3	0.5	35	Yes	IA	Nil
ATN002	21/03/2017 03:02	1.4	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:17	1.2	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:32	1.8	3	49	Yes	IA	Nil
ATN002	21/03/2017 03:47	1.7	3	49	Yes	IA	Nil
ATN003	21/03/2017 01:56	1.2	0.5	36	Yes	IA	Nil
ATN003	21/03/2017 02:11	1.2	3	36	Yes	IA	Nil
ATN003	21/03/2017 02:27	1.4	3	36	Yes	IA	Nil
ATN003	21/03/2017 02:42	1.5	3	36	Yes	IA	Nil
ATN004	21/03/2017 00:13	1.5	3	35	Yes	IA	Nil
ATN005	15/03/2017 22:52	2.7	3	35	Yes	IA	Nil

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Location	Date and Time	Wind Speed (m/s)	VTG (°C per 100m) ¹	L _{Aeq} Criterion dB	Criterion Applies? ²	CVC L _{Aeq} dB ^{3,4,5}	Exceedance ^{4,5}
ATN006	21/03/2017 01:57	1.2	0.5	37	Yes	<30	Nil
ATN006	21/03/2017 02:12	1.2	3	37	Yes	<30	Nil
ATN006	21/03/2017 02:26	1.4	3	37	Yes	1A	Nil
ATN006	21/03/2017 02:42	1.5	3	37	Yes	1A	Nil
ATN007	21/03/2017 03:09	1.3	3	46	Yes	37	Nil
ATN007	21/03/2017 03:24	1.5	3	46	Yes	37	Nil
ATN007	21/03/2017 03:41	2.1	3	46	Yes	36	Nil
ATN007	21/03/2017 03:56	1.8	3	46	Yes	36	Nil
R13	21/03/2017 00:48	1.8	0.5	43	Yes	<30	Nil
R13	21/03/2017 01:03	1.7	3	43	Yes	<30	Nil
R13	21/03/2017 01:18	1.1	3	43	Yes	<30	Nil
R13	21/03/2017 01:33	1.2	0.5	43	Yes	<30	Nil

Notes:

1. Sigma theta data used to calculate Vertical Temperature Gradient (VTG) in accordance with procedures detailed in the INP;
2. Noise emission limits do not apply for winds greater than 3 metres per second (at a height of 10 metres); or temperature inversion conditions greater than 3°C/100m;
3. These are results for Chain Valley Colliery (CVC) in the absence of all other noise sources;
4. Bolded results in red are those greater than the relevant criterion (if applicable); and
5. NA in exceedance column means atmospheric conditions outside conditions specified in the Consent and so criterion is not applicable.

Weather Data

A summary of weather data recorded by an adjacent site meteorological monitoring station at the Colliery is presented below for the year to date.

Monthly Weather Data			
2016/17			
EPL	191		
Licensee	LakeCoal Pty Ltd		
Premises	Manning Colliery		
Location	W1 (on-site weather station)		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	12/03/2017		
Month	Total Rainfall / Month (mm)	Minimum Temperature (°C)	Maximum Temperature (°C)
Feb-16	17.4	16.4	37.7
Mar-16	92.2	14.3	30.1
Apr-16	36.2	12.1	33.5
May-16	46.6	5.3	27.8
Jun-16	248.2	3.4	21.4
Jul-16	73.2	2.5	25
Aug-16	115	4.5	24.3
Sep-16	68	7.4	24.2
Oct-16	61	7.3	33.3
Nov-16	46.8	10.9	35.2
Dec-16	85.2	14.5	38.9
Jan-17	68.6	17.4	40.1
Feb-17	141.2	13.1	39
Mar-17	404	14.5	31.9