



Manning Colliery Monthly Website Report

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Department:	Technical Services
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Report

Mannering Colliery Monthly Environmental Report

Summary

Environmental monitoring results are presented in this report for monitoring undertaken in September 2019.

Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates the Mannering Colliery, an underground coal mine at the southern end of Lake Macquarie.

Mannering Colliery operates under the following regulatory instruments;

-) Section 66(6) of the *Protection of the Environment Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publically available;
-) Condition 7 & 10, Schedule 5, of Project Approval 06_0311 (as modified) to provide details of monitoring results and environmental performance;
-) An Environment Protection Licence (EPL 191) issued under the *Protection of the Environment Operations Act 1997*; and
-) A Water Access Licence (WAL40461), Aquifer for 450 unit shares (megalitres).

This report provides environmental monitoring data from Mannering Colliery for the period 1 to 30 September 2019.

Details of the Mannering Colliery EPL 191 are provided below.

Mannering Colliery Information	
Premises name	Mannering Colliery
Address	Ruttleys Road, Doyalson, NSW, 2262
Licensee	Great Southern Energy Pty Ltd
EPL #	191
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50781&SYSUID=1&LICID=191

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

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Scope

This report presents the results from the various environmental monitoring programs undertaken for Mannering Colliery. Results are presented monthly with annual data, averages and trends in data also shown where relevant.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Project Approval) to assess compliance.

Monitoring results presented include:

-) Water – quality;
-) Water – volume;
-) Air Quality; and
-) 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 – kilolitre;

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

ML – megalitre;

mg/L – milligrams per litre;

TSS – total suspended solids;

µg/L – micrograms per litre; and

µS/cm – microSiemens per centimetre.

References

Project Approval 06_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 1 April 2019)

Steel River Testing - Dust Deposition Report **September 2019**

Steel River Testing- Water Analysis Report **September 2019**

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Monitoring Results

Water – Quality

Weekly water quality results are presented below. Monitoring of these parameters reverted to weekly as per EPL PRP requirements.

September 2019			
EPL	191		
Licensee	Delta Coal Pty Ltd		
Premises	Mannering Colliery		
Period	01-Sep-19	to	30-Sep-19
Location	LDP001 (EPA ID # 1)		
Date sampled	Weekly		
Date reported	Refer report date		
Monitoring requirement	Weekly		
pH limit	6.5 - 8.5		
TSS limit (mg/L)	50		
Oil and grease limit (mg/L)	10		
Exceedance (Yes/No)	Yes		
Water Quality Results			
Date	pH	TSS (mg/L)	Oil and grease (mg/L)
Sunday, 1 September 2019			
Monday, 2 September 2019			
Tuesday, 3 September 2019			
Wednesday, 4 September 2019	7.7	<1	<5
Thursday, 5 September 2019			
Friday, 6 September 2019			
Saturday, 7 September 2019			
Sunday, 8 September 2019			
Monday, 9 September 2019			
Tuesday, 10 September 2019			
Wednesday, 11 September 2019	7.8	2	<5
Thursday, 12 September 2019			
Friday, 13 September 2019			
Saturday, 14 September 2019			
Sunday, 15 September 2019			
Monday, 16 September 2019			
Tuesday, 17 September 2019			
Wednesday, 18 September 2019	7.9	104	<5
Thursday, 19 September 2019			
Friday, 20 September 2019			
Saturday, 21 September 2019			
Sunday, 22 September 2019			
Monday, 23 September 2019			
Tuesday, 24 September 2019			
Wednesday, 25 September 2019	7.9	2	<5
Thursday, 26 September 2019			
Friday, 27 September 2019			
Saturday, 28 September 2019			
Sunday, 29 September 2019			
Monday, 30 September 2019			
Average	7.8	36.0	<5
Minimum	7.7	<1	<5
Maximum	7.9	104.0	<5

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There was one exceedance of water quality criteria during the month. This exceedance was due a recorded result of TSS level of 104 mg/L on 18 September 2019. This sample was taken during a rainfall event totalling 83.4 mm between 17 and 19 September. Of that, 78.2 mm fell prior to sampling.

The sediment dams at Mannering Colliery were being managed to maximise storage volumes prior to the rainfall event commencing on 17 September 2019. Attempts were made to reduce the likelihood of uncontrolled discharge by implementing a controlled discharge on the day prior to the TSS exceedance being recorded (17 September 2019) after the rain commenced. However, this did not provide enough capacity in the system for the follow up rainfall.

Attempts by the mine were also made to dilute discharge through ensuring underground pump operations were maintained. However, the total rate of water discharged from the dams during this event was in excess of any fix that may have been possible through mixing of underground and surface waters. The dams ultimately spilled over, with this evident in the LDP1 discharge flow rate.

The EPA was notified immediately after receiving laboratory results confirming that a TSS exceedance had occurred on 18 September 2019. The EPA and DPIE Compliance were notified on immediately on receipt of results.

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Monthly water quality results, primarily metals, are presented below.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		LDP001
		Client sampling date / time		18-Sep-2019 12:35
Compound	CAS Number	LOR	Unit	ES1930141-001
				Result
EA010P: Conductivity by PC Titrator				
Electrical Conductivity @ 25°C	----	1	µS/cm	8100
ED040F: Dissolved Major Anions				
Sulfur as S	63705-05-5	1	mg/L	38
Silicon as SiO ₂	14464-46-1	0.1	mg/L	6.2
ED093T: Total Major Cations				
Calcium	7440-70-2	1	mg/L	37
Magnesium	7439-95-4	1	mg/L	33
Potassium	7440-09-7	1	mg/L	9
EG020F: Dissolved Metals by ICP-MS				
Aluminium	7429-90-5	10	µg/L	<10
Arsenic	7440-38-2	1	µg/L	<1
Beryllium	7440-41-7	1	µg/L	<1
Cadmium	7440-43-9	0.1	µg/L	<0.1
Chromium	7440-47-3	1	µg/L	<1
Cobalt	7440-48-4	1	µg/L	<1
Copper	7440-50-8	1	µg/L	<1
Lead	7439-92-1	1	µg/L	<1
Manganese	7439-96-5	1	µg/L	6
Molybdenum	7439-98-7	1	µg/L	5
Nickel	7440-02-0	1	µg/L	<1
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	9
EG020T: Total Metals by ICP-MS				
Aluminium	7429-90-5	10	µg/L	2560
Antimony	7440-36-0	1	µg/L	4
Arsenic	7440-38-2	1	µg/L	1
Beryllium	7440-41-7	1	µg/L	<1
Barium	7440-39-3	1	µg/L	108
Cadmium	7440-43-9	0.1	µg/L	<0.1
Chromium	7440-47-3	1	µg/L	1
Cobalt	7440-48-4	1	µg/L	<1
Copper	7440-50-8	1	µg/L	1
EG020T: Total Metals by ICP-MS - Continued				
Lead	7439-92-1	1	µg/L	5
Lithium	7439-93-2	1	µg/L	71
Molybdenum	7439-98-7	1	µg/L	6
Nickel	7440-02-0	1	µg/L	1
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
Tin	7440-31-5	1	µg/L	<1
Titanium	7440-32-6	10	µg/L	10
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	21
Boron	7440-42-8	50	µg/L	80
Iron	7439-89-6	50	µg/L	900
EG035F: Dissolved Mercury by FIMS				
Mercury	7439-97-6	0.1	µg/L	<0.1
EG035T: Total Recoverable Mercury by FIMS				
Mercury	7439-97-6	0.1	µg/L	<0.1
EK055G: Ammonia as N by Discrete Analyser				
Ammonia as N	7664-41-7	0.01	mg/L	0.06
EK067G: Total Phosphorus as P by Discrete Analyser				
Total Phosphorus as P	----	0.01	mg/L	0.02

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Water – Volume

September 2019		
EPL	191	
Licensee	LakeCoal Pty Ltd	
Premises	Mannering Colliery	
Date Sampled	Daily	
Date Reported	Refer report date	
Discharge volume limit	4000 kilolitres per day	
Sampling Point	LDP001 (EPA ID # 1)	

Day	Unit	Volume
01/09/2019	kL	232
02/09/2019	kL	1121
03/09/2019	kL	1610
04/09/2019	kL	1487
05/09/2019	kL	0
06/09/2019	kL	1278
07/09/2019	kL	1465
08/09/2019	kL	0
09/09/2019	kL	1264
10/09/2019	kL	1077
11/09/2019	kL	1200
12/09/2019	kL	534
13/09/2019	kL	478
14/09/2019	kL	0
15/09/2019	kL	279
16/09/2019	kL	0
17/09/2019	kL	1359
18/09/2019	kL	2605
19/09/2019	kL	1401
20/09/2019	kL	6
21/09/2019	kL	180
22/09/2019	kL	1598
23/09/2019	kL	1361
24/09/2019	kL	2231
25/09/2019	kL	244
26/09/2019	kL	1266
27/09/2019	kL	861
28/09/2019		0
29/09/2019	kL	480
30/09/2019	kL	1850

Average	kL	2605
Minimum	kL	0
Maximum	kL	916

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

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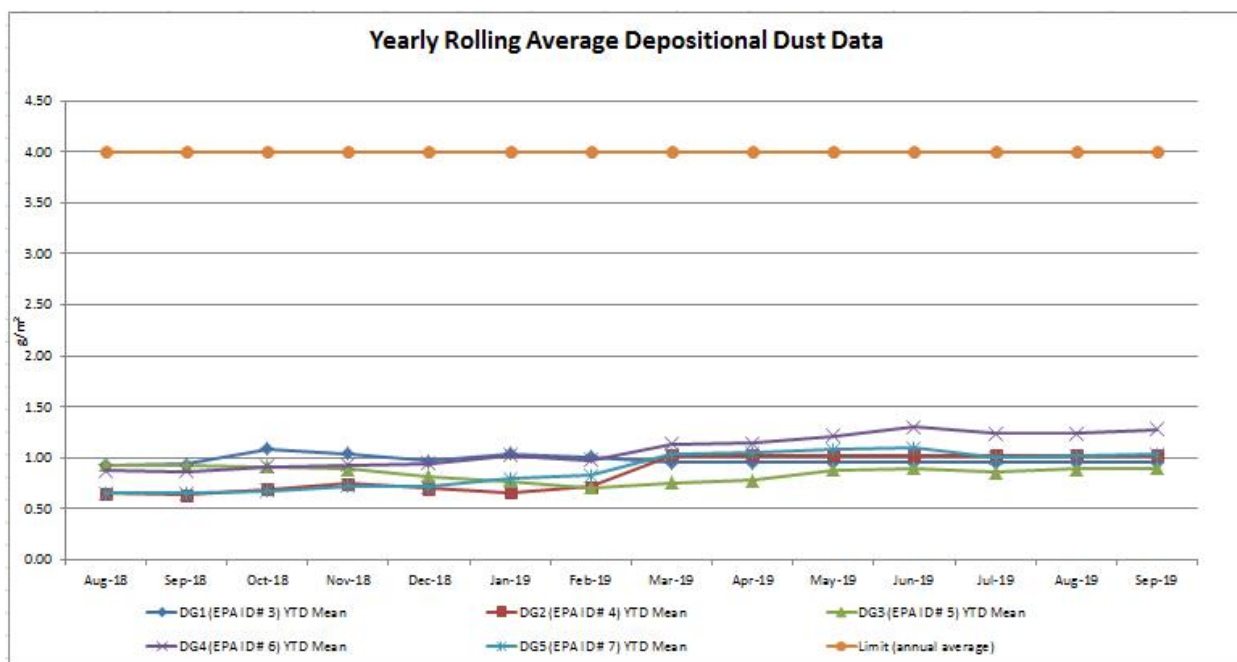
Air Quality

Monthly depositional dust results are shown below.

September 2019			
EPL	191		
Limit	4g/m ² /month		
Sampling Date	07/08/2019 to	06/09/2019	
Site	Insoluble Matter (g/m ² /month)		
DDG001	1.1		
DDG002	1.1		
DDG003	1.0		
DDG004	0.3		
DDG005	0.8		
Notes:			

There were no exceedances of the annual average air quality limits during the reporting period.

Rolling annual average depositional dust results



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Weather Data

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

Monthly Weather Data			
2019			
EPL	191		
Licensee	LakeCoal Pty Ltd		
Premises	Mannering Colliery		
Location	W1 (on-site weather station)		
Date published	Refer report date		
Date sampled	Daily		
Date obtained			
Month	Total Rainfall/Month mm	Min Temp	Max Temp
Jan-19	60.6	18.6	39.6
Feb-19	88.6	22.7	37.4
Mar-19	204	10.1	37.1
Apr-19	73.2	8.3	32.8
May-19	11.0	3.9	26.3
Jun-19	158.8	3.9	25.0
Jul-19	47.2	4.0	23.3
Aug-19	194.0	2.0	25.4
Sep-19	92	5.5	29.6
Oct-19			
Nov-19			
Dec-19			