



# Mannering Colliery Monthly Website Report

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<b>Site:</b>	<b>Mannering Colliery</b>
<b>Department:</b>	<b>Technical Services</b>
<b>Report Title:</b>	<b>Monthly Environmental Website Report - April 2020</b>
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# Report

## Manning Colliery Monthly Environmental Report

### Summary

Environmental monitoring results are presented in this report for monitoring undertaken during April 2020.

### Introduction

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

Manning 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 Aquifer (Sydney Basin – North Coast Groundwater Source) for 450 unit shares (megalitres).

This report provides environmental monitoring data from Manning Colliery for the period 1 to 30 April 2020.

Details of the Manning Colliery EPL 191 are provided below.

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

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

# Report

## Manning Colliery Monthly Environmental Report

### Scope

This report presents the results from the various environmental monitoring programs undertaken for Manning 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

g/m<sup>2</sup>/month – grams per square metre per month;

kL – kilolitre;

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: 25 November 2019)

Steel River Testing - Dust Deposition Report **April 2020**

Steel River Testing - Water Analysis Report **April 2020**

ALS – Water Analysis Report **April 2020**

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## Manningering Colliery Monthly Environmental Report

### Monitoring Results

#### Water – Quality

Weekly water quality results for discharge point LDP001 are presented below. Monitoring of these parameters have reverted to weekly as per EPL PRP requirements.

April 2020			
<b>EPL</b>	191		
<b>Licensee</b>	Great Southern Energy Pty Ltd		
<b>Premises</b>	Manningering Colliery		
<b>Period</b>	01-Apr-20	to	30-Apr-20
<b>Location</b>	LDP001 (EPA ID # 1)		
<b>Date sampled</b>	Weekly		
<b>Date reported</b>	Refer report date		
<b>Monitoring requirement</b>	Weekly		
<b>pH limit</b>	6.5 - 8.5		
<b>TSS limit (mg/L)</b>	50		
<b>Oil and grease limit (mg/L)</b>	10		
<b>Exceedance (Yes/No)</b>	No		
Water Quality Results			
Date	pH	(mg/L)	(mg/L)
Wednesday, 1 April 2020			
Thursday, 2 April 2020			
Friday, 3 April 2020			
Saturday, 4 April 2020			
Sunday, 5 April 2020			
Monday, 6 April 2020	7.6	6	<5
Tuesday, 7 April 2020			
Wednesday, 8 April 2020			
Thursday, 9 April 2020			
Friday, 10 April 2020			
Saturday, 11 April 2020			
Sunday, 12 April 2020			
Monday, 13 April 2020			
Tuesday, 14 April 2020			
Wednesday, 15 April 2020			
Thursday, 16 April 2020	7.8	2	<5
Friday, 17 April 2020			
Saturday, 18 April 2020			
Sunday, 19 April 2020			
Monday, 20 April 2020			
Tuesday, 21 April 2020	7.7	2	<5
Wednesday, 22 April 2020			
Thursday, 23 April 2020			
Friday, 24 April 2020			
Saturday, 25 April 2020			
Sunday, 26 April 2020			
Monday, 27 April 2020			
Tuesday, 28 April 2020	7.8	3	<5
Wednesday, 29 April 2020			
Thursday, 30 April 2020			
<b>Average</b>	7.7	3.3	<5
<b>Minimum</b>	7.6	2.0	<5
<b>Maximum</b>	7.8	6.0	<5

The water quality criteria during the reporting period were below the relevant discharge limits.

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## Manning Colliery Monthly Environmental Report

Monthly water quality results, primarily metals, at LDP001 are presented below for April 2020.

### Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		LDP001
Client sampling date / time			21-Apr-2020 02:10	
Compound	CAS Number	LOQ	Unit	ES2013463-001
				Result
<b>EA010P: Conductivity by PC Titrator</b>				
Electrical Conductivity @ 25°C	---	1	µS/cm	28100
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	83705-05-5	1	mg/L	143
Silicon as SiO2	14464-46-1	0.1	mg/L	13.4
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	230
Magnesium	7439-95-4	1	mg/L	334
Potassium	7440-09-7	1	mg/L	41
<b>EG020F: Dissolved Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<10
Arsenic	7440-39-2	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	84
Molybdenum	7439-98-7	1	µg/L	6
Nickel	7440-02-0	1	µg/L	4
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-72-4	1	µg/L	<1
Vanadium	7440-62-2	10	µg/L	<10
Zinc	7440-66-6	5	µg/L	6
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<10
Antimony	7440-36-0	1	µg/L	<1
Arsenic	7440-39-2	1	µg/L	1
Beryllium	7440-41-7	1	µg/L	<1
Barium	7440-39-3	1	µg/L	234
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
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Lead	7439-92-1	1	µg/L	<1
Lithium	7439-93-2	1	µg/L	650
Molybdenum	7439-98-7	1	µg/L	8
Nickel	7440-02-0	1	µg/L	5
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-72-4	1	µg/L	6
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	<5
Boron	7440-42-0	50	µg/L	490
Iron	7439-89-6	50	µg/L	80
<b>EG035F: Dissolved Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EG035T: Total Recoverable Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EK055G: Ammonia as N by Discrete Analyser</b>				
Ammonia as N	7864-41-7	0.01	mg/L	1.47
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	---	0.01	mg/L	0.40

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## Manning Colliery Monthly Environmental Report

### Water – Volume

Monthly water volumes at Manning Colliery are summarised below.

April 2020	
EPL	191
Licensee	LakeCoal Pty Ltd
Premises	Manning Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume	4000 kilolitres per day
Sampling Point	LDP001(EPA ID # 1)

Day	Unit	Volume
01/04/2020	kL	1649
02/04/2020	kL	370
03/04/2020	kL	366
04/04/2020	kL	1411
05/04/2020	kL	1642
06/04/2020	kL	2457
07/04/2020	kL	959
08/04/2020	kL	305
09/04/2020	kL	1271
10/04/2020	kL	574
11/04/2020	kL	80
12/04/2020	kL	523
13/04/2020	kL	3
14/04/2020	kL	378
15/04/2020	kL	750
16/04/2020	kL	883
17/04/2020	kL	315
18/04/2020	kL	0
19/04/2020	kL	301
20/04/2020	kL	823
21/04/2020	kL	1722
22/04/2020	kL	1923
23/04/2020	kL	1201
24/04/2020	kL	192
25/04/2020	kL	204
26/04/2020	kL	443
27/04/2020	kL	1227
28/04/2020	kL	1185
29/04/2020	kL	779
30/04/2020	kL	1204

Average	kL	839
Minimum	kL	0
Maximum	kL	2457

The daily water volumes at LDP001 during April 2020 were below the relevant limit.

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## Manning Colliery Monthly Environmental Report

### Air Quality

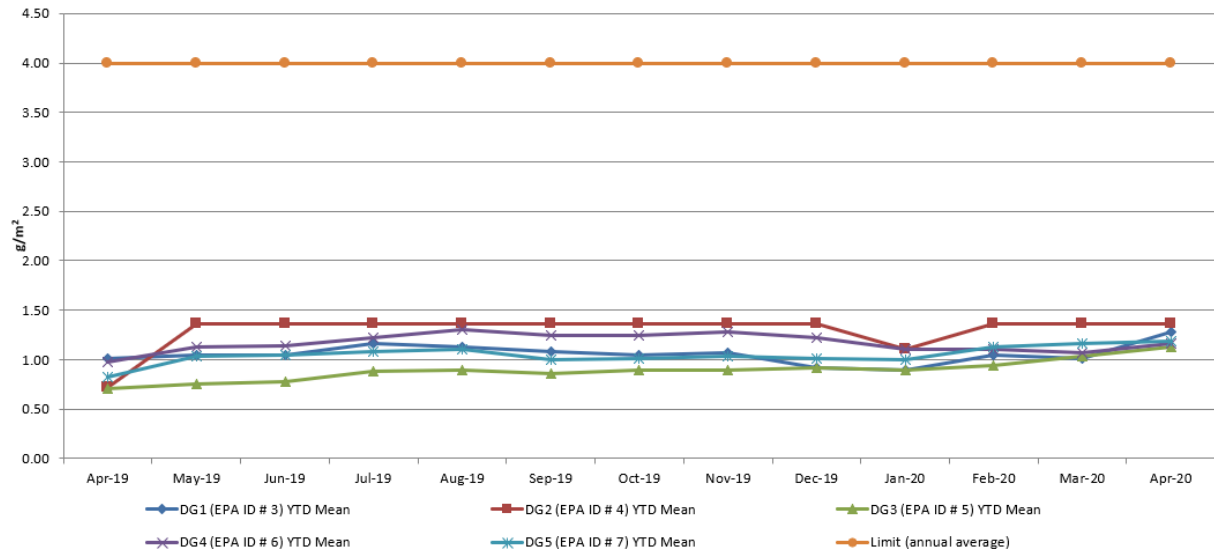
Monthly depositional dust results are shown below.

April 2020			
EPL		191	
Limit		Max. total deposited dust level	4g/m <sup>2</sup> /month
		Max. increase in deposited dust level	2g/m <sup>2</sup> /month
	Sampling Date	09/03/2020	to 09/04/2020
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)	
3	DDG001	0.6	
4	DDG002	1.3	
5	DDG003	0.7	
6	DDG004	1.0	
7	DDG005	1.3	
Notes:			

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

### Rolling annual average depositional dust results

Yearly Rolling Average Depositional Dust Data





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## Manning Colliery Monthly Environmental Report

### Weather Data

A summary of weather data recorded by the meteorological (EPA ID no. 8) monitoring station at Manning Colliery is presented below for the year to date.

Monthly Weather Data			
Licensee	Great Southern Energy Pty Ltd		
Location	Manning Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	05/04/2020		
Month	Total Rainfall/Month mm	Min Temp	Max Temp
Jan-20	28	18	44
Feb-20	350	16	37
Mar-20	159	12	38
Apr-20	46	9	28
May-20			
Jun-20			
Jul-20			
Aug-20			
Sep-20			
Oct-20			
Nov-20			
Dec-20			

A summary of valid data for Manning weather station is presented below for the year to date.

Variable	Jan	Total	Valid	Feb	Total	Valid	Mar	Total	Valid	Apr	Total	Valid
Baro (Corrected)	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
10m Temp	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
24Hr Rain	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
2m Temp	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
A1	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
A1_Scaled	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Barometric	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Config	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
DeltaT	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Dew Point	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Dig-In	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Dig-Latch	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
ESN	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
FDI	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Humidity	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Mobile Signal	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Rain	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Sigma	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Site	0.0%	8928	0	0.0%	8352	0	0.0%	8928	0	0.0%	8640	0
Solar Radiation	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Vector WD	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Vector WS	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Volts	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Wind Direction	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627
Wind Speed	100%	8928	8925	100%	8352	8349	99.9%	8928	8920	99.8%	8640	8627