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# Mannering Colliery Monthly Website Report – July 2024

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<b>Site:</b>	Mannering Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Report – July 2024
<b>Report Date:</b>	13 August 2024
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## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of July 2024.

## Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates 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 Environmental Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publicly available;
- Condition 10 & 13, 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 (Sydney Basin – North Coast Groundwater Source) for 450-unit shares (megalitres).

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="#">EPL 0191 - 16 June 2023</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.

### 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 – Depositional Dust
- Air Quality – PM<sub>10</sub>
- Air Quality – PM<sub>2.5</sub>; and
- Meteorological 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 MP06\_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 16 June 2023)

ALS - Dust Deposition Report **July 2024**

ALS – MC Water Analysis Reports **July 2024**

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## Monitoring Results

Water – Quality

Weekly water quality results for discharge point LDP001 are presented below.

July 2024				
<b>EPL</b>	191			
<b>Licensee</b>	Great Southern Energy Pty Ltd			
<b>Premises</b>	Manning Colliery			
<b>Location</b>	LDP001 (EPA ID # 1)			
<b>Sample Frequency</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			
Water Quality Results				
Date	pH	TSS (mg/L)	Oil and grease (mg/L)	Electrical Conductivity (µS/cm)
5/07/2024	7.75	15	<5	23600
10/07/2024	7.77	9	<5	27500
16/07/2024	7.73	13	<5	27500
23/07/2024	7.05	7	<5	12500
30/07/2024	8.25	6	<5	8480
<b>Average</b>	7.71	10	<5	19916

There were no exceedances of water quality criteria in July 2024 at Manning Colliery.

Monthly water quality results, primarily metals and metalloids, at LDP001 are presented below.

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Sub-Matrix: WATER (Matrix: WATER)		Sample ID		LDP001
			Sampling date / time	10-Jul-2024 09:05
Compound	CAS Number	LOR	Unit	EN2406671-001 Result
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	139
Silicon as SiO2	14464-46-1	0.1	mg/L	12.6
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	319
Magnesium	7439-95-4	1	mg/L	381
Potassium	7440-09-7	1	mg/L	43
<b>EG020F: Dissolved Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<100
Arsenic	7440-38-2	1	µg/L	<10
Beryllium	7440-41-7	1	µg/L	<10
Cadmium	7440-43-9	0.1	µg/L	<1.0
Chromium	7440-47-3	1	µg/L	<10
Cobalt	7440-48-4	1	µg/L	<10
Copper	7440-50-8	1	µg/L	<10
Lead	7439-92-1	1	µg/L	<10
Manganese	7439-96-5	1	µg/L	58
Molybdenum	7439-98-7	1	µg/L	<10
Nickel	7440-02-0	1	µg/L	<10
Selenium	7782-49-2	10	µg/L	<100
Silver	7440-22-4	1	µg/L	<10
Vanadium	7440-62-2	10	µg/L	<100
Zinc	7440-66-6	5	µg/L	<50
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<100
Antimony	7440-36-0	1	µg/L	<10
Arsenic	7440-38-2	1	µg/L	<10
Beryllium	7440-41-7	1	µg/L	<10
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Barium	7440-39-3	1	µg/L	221
Cadmium	7440-43-9	0.1	µg/L	<1.0
Chromium	7440-47-3	1	µg/L	<10
Cobalt	7440-48-4	1	µg/L	<10
Copper	7440-50-8	1	µg/L	<10
Lead	7439-92-1	1	µg/L	<10
Lithium	7439-93-2	1	µg/L	769
Molybdenum	7439-98-7	1	µg/L	<10
Nickel	7440-02-0	1	µg/L	<10
Selenium	7782-49-2	10	µg/L	<100
Silver	7440-22-4	1	µg/L	<10
Tin	7440-31-5	1	µg/L	<10
Titanium	7440-32-6	10	µg/L	<100
Vanadium	7440-62-2	10	µg/L	<100
Zinc	7440-66-6	5	µg/L	<52
Boron	7440-42-8	50	µg/L	500
Iron	7439-89-6	50	µg/L	<100
<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	7664-41-7	0.01	mg/L	1.00
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	---	0.01	mg/L	0.02

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### Water – Volume

Monthly water volumes discharged via MC's LDP1 during June 2024 at Mannering Colliery are summarised below.

EPL	191
Licensee	Great Southern Energy Pty Ltd
Premises	Mannering Colliery
Date Sampled	Daily
Discharge volume limit	4000 kilolitres per day
Sampling Point	LDP001 (EPA ID # 1)

Date (24 hour period)	LDP 1 Volume (kL/day)	Rainfall (mm)
01/07/2024	1489.37	11.8
02/07/2024	2232.54	21.6
03/07/2024	1296.58	11.4
04/07/2024	1259.74	0.6
05/07/2024	1509.96	5.8
06/07/2024	1474.33	5.6
07/07/2024	1214.32	3
08/07/2024	1172.61	2.6
09/07/2024	1414.64	7.6
10/07/2024	1256.55	0.4
11/07/2024	710.33	0
12/07/2024	1042.32	0
13/07/2024	891.32	0
14/07/2024	1068.67	0
15/07/2024	1077.35	0
16/07/2024	619.03	0
17/07/2024	0	0.2
18/07/2024	0	0.2
19/07/2024	0	0
20/07/2024	0	0
21/07/2024	0	0
22/07/2024	0	0
23/07/2024	0	0
24/07/2024	0	0
25/07/2024	0	0
26/07/2024	194.92	5
27/07/2024	231.92	11.2
28/07/2024	285.59	0.2
29/07/2024	28	0.2
30/07/2024	66.01	0.4
31/07/2024	659.71	0

Average	683.7 kL/day	2.8 mm/day
Maximum	2,232.5 kL/day	21.6 mm/day

Volumetric discharge remained below the daily limit of 4,000 kL per day.

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### Water – Groundwater Discharge

Groundwater discharged from underground workings to the MCs surface retention Dams has been detailed below. Manning Colliery operates Water Access License 40461 permitting the extraction of 450 megalitres per financial year and reports annual use to the Water NSW, Water Accounting System (iWAS).

MC Groundwater Pumped to Surface Totals FY2024-2025		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2024	14	14

### Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

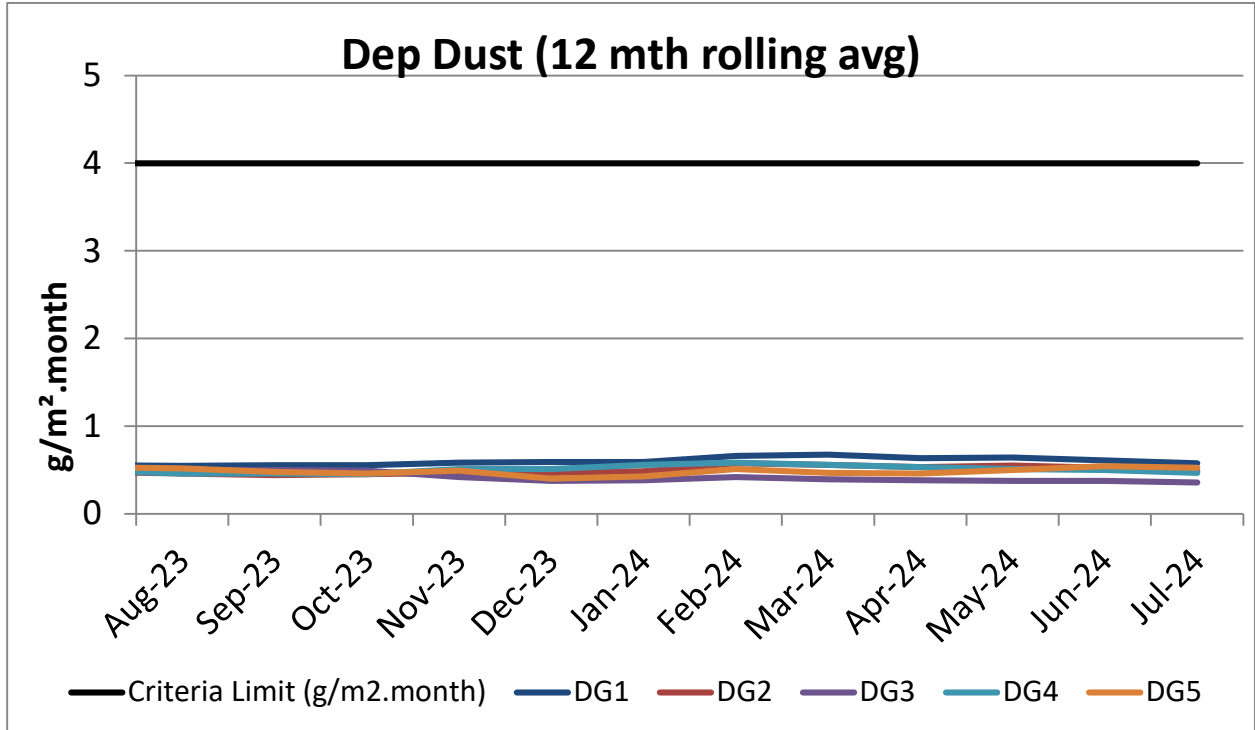
July 2024		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	03/06/2024 – 04/07/2024	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.1</b>
4	DG2	<b>0.1</b>
5	DG3	<b>0.1</b>
6	DG4	<b>0.2</b>
7	DG5	<b>0.3</b>
<b>Notes:</b>	Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.	



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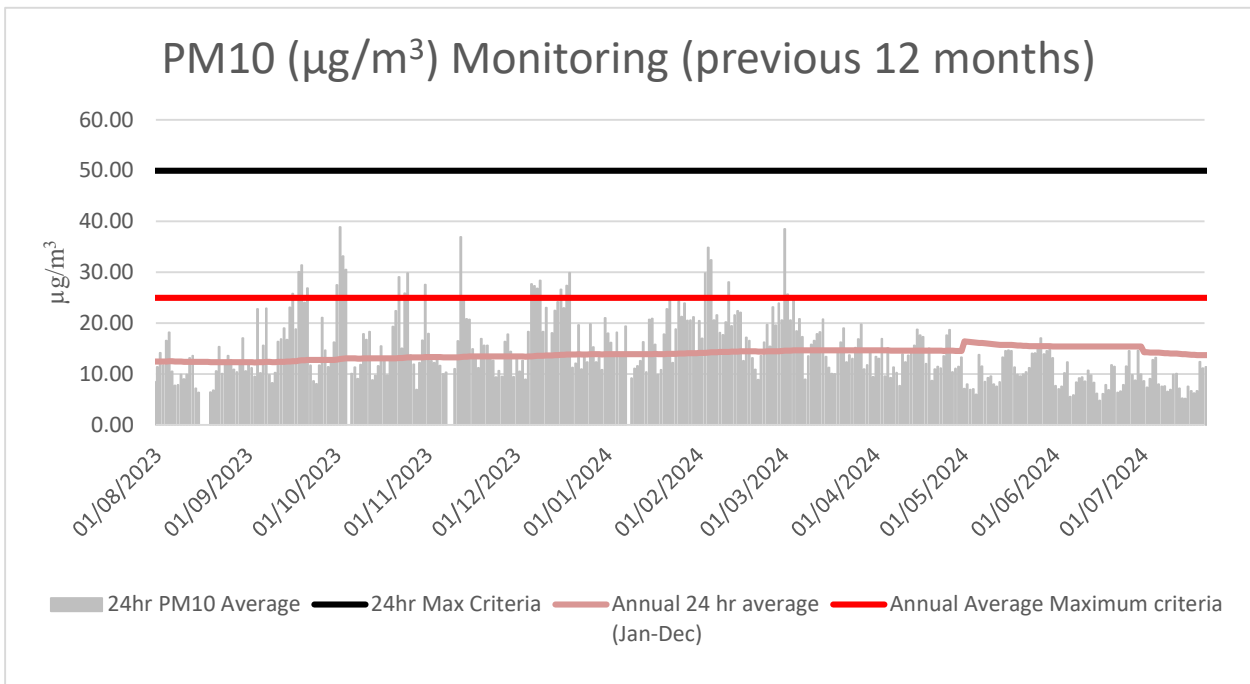
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A 12-month rolling average of depositional dust concentrations has been presented below. Manning Colliery's dust gauges are located around the perimeter of the Manning Colliery site boundary.



## Air Quality – PM<sub>10</sub>

The 24hr PM<sub>10</sub> average from Delta Coal's Tapered Element Oscillating Microbalance (TEOM), located at the Manning Park Sewage Treatment Plant, is presented below for the previous 12 months.



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Annual 24hr PM<sub>10</sub> average maximum criteria for June 2024 was below the annual average maximum criteria limit. A summary of data availability for Delta Coal’s TEOM is presented below for the reporting period. Delta Coals TEOM had a data availability of 99.5% for the month of July 2024.

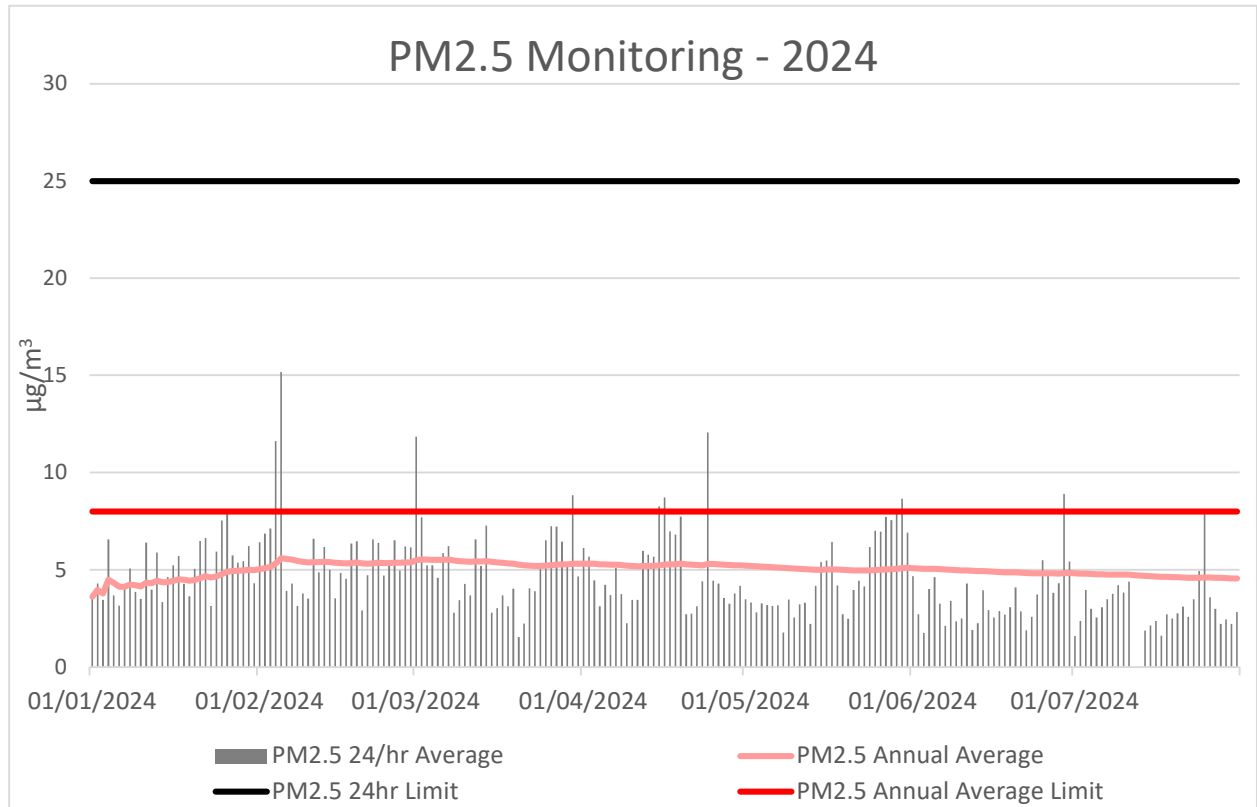
Variable	July	Total	Valid
A/C Temp	99.7%	8928	8905
A1_Scaled	99.7%	8928	8905
Band	99.7%	8928	8905
Bypass Flow	99.7%	8928	8905
Cap Temp	99.7%	8928	8905
Case Temp	99.7%	8928	8905
Config	99.7%	8928	8905
Dew Point	99.7%	8928	8905
Dig-In	99.7%	8928	8905
Dig-Latch	99.7%	8928	8905
ESN	99.7%	8928	8905
Filter Freq	99.7%	8928	8905
Filter Load	99.7%	8928	8905
Humidity	99.7%	8928	8905
MC	99.7%	8928	8905
MC 12Hr	99.7%	8928	8905
MC 1Hr	99.7%	8928	8905
MC 24Hr	99.7%	8928	8905
MC 30min	99.7%	8928	8905
MC 8Hr	99.7%	8928	8905
MC Total	99.7%	8928	8905
Mobile Signal	99.7%	8928	8905
Noise	99.7%	8928	8905
PM10 Flow	99.7%	8928	8905
Pressure	99.7%	8928	8905
Site	0.0%	8928	0
Temperature	99.7%	8928	8905
Tube Temp	99.7%	8928	8905
Vac Pressure	99.7%	8928	8905
Volts	99.7%	8928	8905

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### Air Quality – PM2.5

Delta Coal utilises PM<sub>2.5</sub> data obtained from Delta Electricity owned and operated beta attenuation monitor (BAM). The PM<sub>2.5</sub> monitor is located on Tingley Road, Wyee.



There were no exceedances of the PM<sub>2.5</sub> daily average limit in July 2024. The 12-month rolling average PM<sub>2.5</sub> value on 31 July was 4.6  $\mu\text{g}/\text{m}^3$ . PM<sub>2.5</sub> data availability in July was 100%. The 2024 year to date PM<sub>2.5</sub> data availability is 100%.

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## Weather Data

A summary of weather data recorded by a meteorological monitoring station at the adjacent Manning Colliery is presented below for the year to date. (EPA ID no. 26).

Monthly Weather Data 2024			
Licensee	Great Southern Energy Pty Ltd		
Location	Manning Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	13 August 2024		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-24	53.6	13.8	40.9
Feb-24	163	16.4	39
Mar-24	18.6	13.3	33.8
Apr-24	362	13.2	17.9
May-24	263	12.1	16.6
Jun-24	163	3.2	22.1
July-24	88	1.8	22

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Variable	July	Total	Valid
Baro (Corrected)	100%	2976	2975
10m Temp	100%	2976	2975
2m Temp	100%	2976	2975
A1	100%	2976	2975
A1_Scaled	100%	2976	2975
Assumed Temp	100%	2976	2975
Barometric	100%	2976	2975
Config	100%	2976	2975
Daily Evap	100%	2976	2975
Daily Rain	100%	2976	2975
Delta T	100%	2976	2975
Dew Point	100%	2976	2975
Dig-In	100%	2976	2975
Dig-Latch	100%	2976	2975
ESN	100%	2976	2975
FDI	100%	2976	2975
Heat Index	100%	2976	2975
Humidity	100%	2976	2975
Mobile Signal	100%	2976	2975
Rain	100%	2976	2975
Raw Evap	100%	2976	2975
S Class	100%	2976	2975
Scalar WS	100%	2976	2975
Sigma	100%	2976	2975
Site	0.0%	2976	0
Solar Radiation	100%	2976	2975
Vector WD	100%	2976	2975
Vector WS	100%	2976	2975
Volts	100%	2976	2975
Wind Chill	100%	2976	2975
Wind Direction	100%	2976	2975
Wind Speed	100%	2976	2975
WS Avg	100%	2976	2975
WS Gust	100%	2976	2975