



Chain Valley Colliery Monthly Website Report – February 2024

Site:	Chain Valley Colliery
Department:	Technical Services
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Summary

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

Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) 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:

- Section 66(6) of the *Protection of the Environment Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publicly available;
- Development Consent SSD-5465 (as modified), issued under the *Environmental Planning and Assessment Act 1979* to provide details of monitoring results and environmental performance;
- An Environment Protection Licence (EPL 1770) issued under the *Protection of the Environment Operations Act 1997*; and
- A Water Access Licence (WAL41508), Aquifer (Sydney Basin – North Coast Groundwater Source) for 4,443 unit shares (megalitres).

The above development consent and licences require various monitoring and reporting requirements to be undertaken by Delta Coal for Chain Valley Colliery.

This report provides environmental monitoring data from Chain Valley Colliery for the month of February 2024.

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	Great Southern Energy Pty Ltd
EPL #	1770
EPL location	EPL 1770 – October 2023

The overall purpose of this monthly 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 are presented monthly with annual data and averages.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Development Consent) to assess compliance. Monitoring results presented in this report include:

- Water – quality;
- Water – volume;
- Air Quality – Depositional Dust
- Air Quality – PM₁₀
- Air Quality – PM_{2.5}; and
- Meteorological data.

Definitions

g/m²/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.

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References

ALS Group - Monthly Water Monitoring Results **February 2024**

ALS Group - Dust Deposition Report **February 2024**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 24 October 2023)

Monitoring Results

Water – Quality

Water quality results for February 2024 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

February 2024			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	27-02-2024		
Date Obtained	06-03-2024		
Sampling Point	LDP 1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	140
Faecal Coliforms	CFU/100mL	200	280
pH	pH	6.5-8.5	7.66
Total Sus. Solids (TSS)	mg/L	50	11
Electrical Conductivity	µS/cm	-	30800

There was one exceedance of water quality limits at CVC LDP 1. The Faecal Coliform limit was exceeded in the LDP 1 sample taken 27/02/2024. The non-compliance has been reported to the NSW EPA and NSW Department of Planning and Environment (DPE).

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Water – Volume

Monthly water volumes discharged from the site are summarised below. There was no exceedance of volumetric discharge recorded at CVC for the period of February 2024.

EPL	1770
Licensee	Great Southern Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	12,161 kilolitres per day
Sampling Point	1

Date (24 hour period)	LDP 1 Volume (kL)	Rainfall (mm)
01/02/2024	5712	0.2
02/02/2024	4924	4.4
03/02/2024	4946	0
04/02/2024	4289	0
05/02/2024	5415	0
06/02/2024	6065	4.8
07/02/2024	4851	5.2
08/02/2024	5864	0
09/02/2024	6025	1.4
10/02/2024	6332	8.4
11/02/2024	5979	0
12/02/2024	4789	0
13/02/2024	4349	0
14/02/2024	4661	3.6
15/02/2024	5134	11.2
16/02/2024	5889	35.2
17/02/2024	5300	0
18/02/2024	5176	0
19/02/2024	6091	26.4
20/02/2024	5290	27
21/02/2024	2459	0.6
22/02/2024	2637	0
23/02/2024	8328	9.4
24/02/2024	6225	5.2
25/02/2024	7457	0
26/02/2024	6027	0
27/02/2024	7913	5.2
28/02/2024	6910	0.2
29/02/2024	4094	15
Average	5487	6
Minimum	2459	0
Maximum	8328	35

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Water – Groundwater Discharge

Groundwater discharged from underground workings to the CVC sedimentation ponds within the surface operational area has been detailed below. Chain Valley Colliery operates Water Access License (WAL 41508) permitting the extraction of 4,443 megalitres per water year (financial year calendar) with a roll-over entitlement up to a maximum of 8,886 megalitres.

CVC Groundwater to Surface Totals FY2023-2024		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2023	200	200
August 2023	212	412
September 2023	197	610
October 2023	205	815
November 2023	197	1013
December 2023	207	1220
January 2024	196	1416
February 2024	171	1588
March 2024		
April 2024		
May 2024		
June 2024		

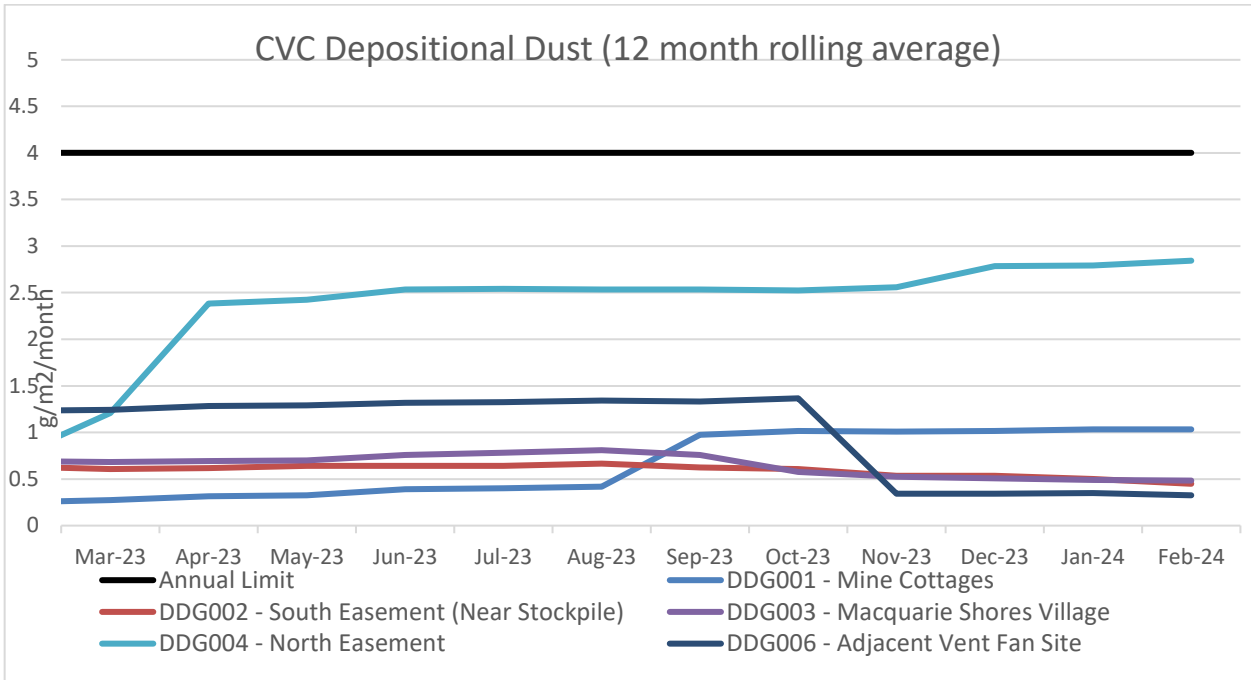
Air Quality - Depositional Dust

Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, Delta Coal Air Quality and Greenhouse Gas Management Plan, and relevant Australian Standards.

February 2024	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	02/01/2024 – 02/02/2024
Site	Insoluble Matter (g/m²/month)
DDG001	0.2
DDG002	0.2
DDG003	0.4
DDG004	1.5
DDG006	0.1
Notes: For site locations refer to the Delta Coal Air Quality and Greenhouse Gas Management Plan.	

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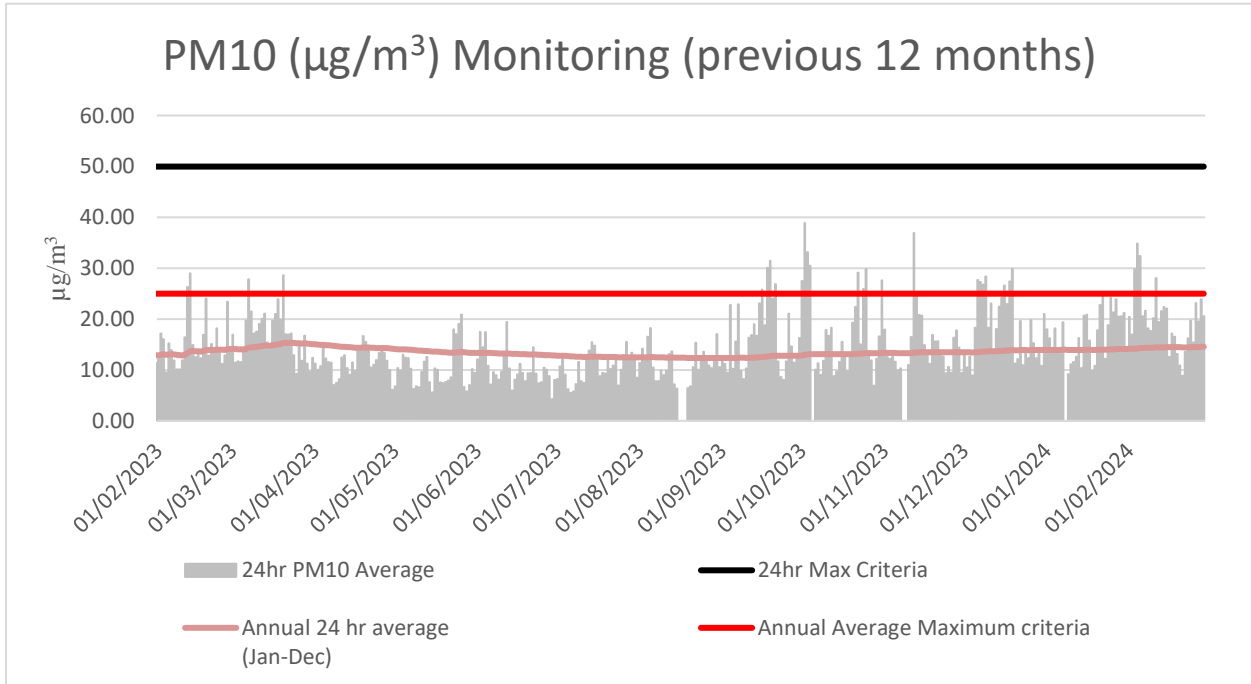
A 12-month rolling average of depositional dust concentrations has been presented below. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery and DDG006 is positioned in a location representative of the Chain Valley Colliery ventilation fan site at Summerland Point.

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Air Quality – PM₁₀

The 24hr PM₁₀ average from Delta Coal’s Tapered Element Oscillating Microbalance (TEOM), located at the Mannering Park Sewage Treatment Plant, is presented below for the previous 12 months.



Annual 24hr PM₁₀ average maximum criteria for February 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 97.6% for the month of February 2024.

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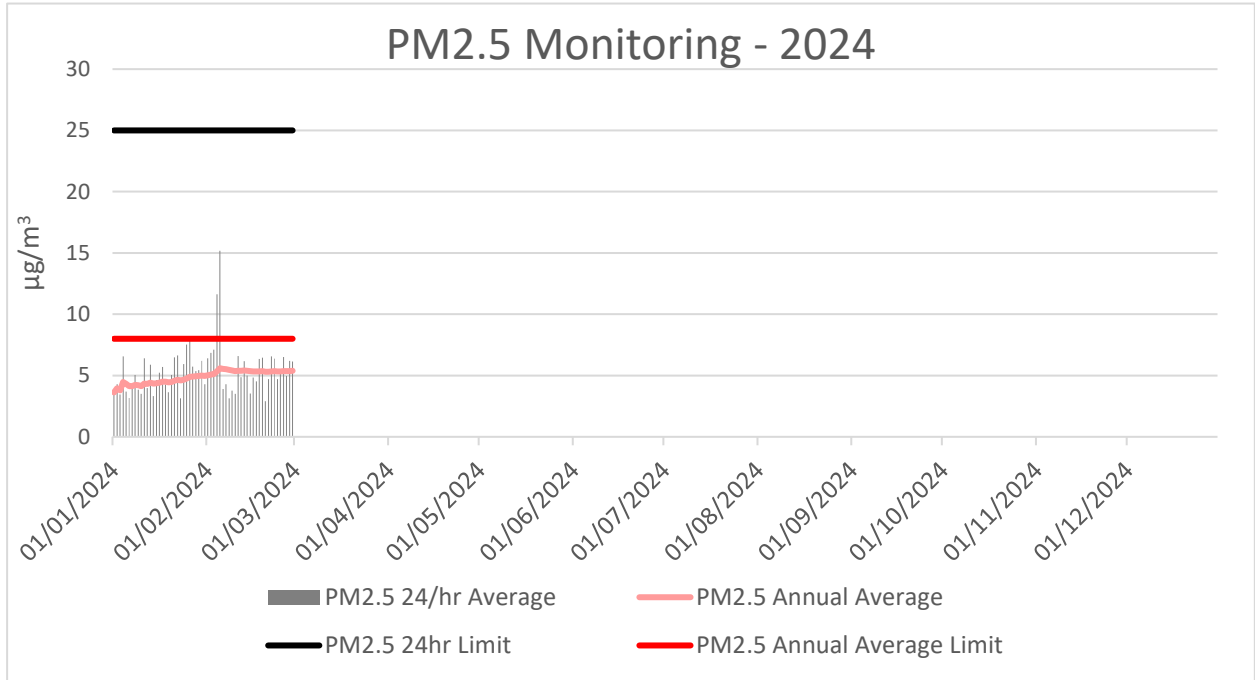
Variable	February	Total	Valid
A/C Temp	100%	8352	8350
A1	100%	8352	8350
A1_Scaled	100%	8352	8350
Bypass Flow	100%	8352	8350
Cap Temp	100%	8352	8350
Case Temp	100%	8352	8350
Config	100%	8352	8350
Dew Point	100%	8352	8350
Dig-In	100%	8352	8350
Dig-Latch	100%	8352	8350
ESN	100%	8352	8350
Filter Freq	100%	8352	8350
Filter Load	100%	8352	8350
Humidity	100%	8352	8350
MC	100%	8352	8350
MC 12Hr	100%	8352	8350
MC 1Hr	100%	8352	8350
MC 24Hr	100%	8352	8350
MC 30min	100%	8352	8350
MC 8Hr	100%	8352	8350
MC Total	100%	8352	8350
Mobile Signal	100%	8352	8350
Noise	100%	8352	8350
PM10 Flow	100%	8352	8350
Pressure	100%	8352	8350
Site	0.0%	8352	0
Temperature	100%	8352	8350
Tube Temp	100%	8352	8350
Vac Pressure	100%	8352	8350
Volts	100%	8352	8350

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Air Quality – PM2.5

Delta Coal utilises PM_{2.5} data obtained from Delta Electricity owned and operated beta attenuation monitor (BAM). The PM_{2.5} monitor is located on Tingley Road, Wyee.



There were no exceedances of the PM_{2.5} daily average limit in February 2024. The 12-month rolling average PM_{2.5} value on 29 February was 5.38 $\mu\text{g}/\text{m}^3$. PM_{2.5} data availability in February was 100%. The 2024 year to date PM_{2.5} data availability is 100%.

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Weather Data

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

Monthly Weather Data 2024			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	7 February 2024		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-24	53.6	13.8	40.9
Feb-24	163	16.4	39

Variable	February	Total	Valid
Baro (Corrected)	99.1%	2784	2758
10m Temp	99.1%	2784	2758
2m Temp	99.1%	2784	2758
A1	99.1%	2784	2758
A1_Scaled	99.1%	2784	2758
Assumed Temp	99.1%	2784	2758
Barometric	99.1%	2784	2758
Config	99.1%	2784	2758
Daily Evap	99.1%	2784	2758
Daily Rain	99.1%	2784	2758
Delta T	99.1%	2784	2758
Dew Point	99.1%	2784	2758
Dig-In	99.1%	2784	2758
Dig-Latch	99.1%	2784	2758
ESN	99.1%	2784	2758
FDI	99.1%	2784	2758
Heat Index	99.1%	2784	2758
Humidity	99.1%	2784	2758
Mobile Signal	99.1%	2784	2758
Rain	99.1%	2784	2758
Raw Evap	99.1%	2784	2758
S Class	99.1%	2784	2758
Scalar WS	99.1%	2784	2758
Sigma	99.1%	2784	2758
Site	0.0%	2784	0
Solar Radiation	99.1%	2784	2758
Vector WD	99.1%	2784	2758
Vector WS	99.1%	2784	2758
Volts	99.1%	2784	2758
Wind Chill	99.1%	2784	2758
Wind Direction	99.1%	2784	2758
Wind Speed	99.1%	2784	2758
WS Avg	99.1%	2784	2758
WS Gust	99.1%	2784	2758