



Chain Valley Colliery Monthly Website Report – March 2024

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Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of March 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 March 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 **March 2024**

ALS Group - Dust Deposition Report **March 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 March 2024 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

March 2024			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	20-03-2024		
Date Obtained	27-03-2024		
Sampling Point	LDP 1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	6
Faecal Coliforms	CFU/100mL	200	40
pH	pH	6.5-8.5	7.64
Total Sus. Solids (TSS)	mg/L	50	14
Electrical Conductivity	µS/cm	-	32400

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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 March 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)
01/03/2024	4480	0
02/03/2024	4642	0.4
03/03/2024	4135	0.2
04/03/2024	3804	0.2
05/03/2024	4024	0
06/03/2024	3366	0
07/03/2024	2055	0
08/03/2024	3675	0.2
09/03/2024	6006	0
10/03/2024	2678	0
11/03/2024	6480	0
12/03/2024	5652	0
13/03/2024	8549	0
14/03/2024	6162	3.8
15/03/2024	5814	4.4
16/03/2024	5753	0.4
17/03/2024	3506	6.8
18/03/2024	3904	0
19/03/2024	3172	0
20/03/2024	5319	1.4
21/03/2024	3533	0
22/03/2024	3464	0.6
23/03/2024	2471	0
24/03/2024	5108	0.2
25/03/2024	6222	0
26/03/2024	3099	0
27/03/2024	2963	0
28/03/2024	6039	0
29/03/2024	6005	0
30/03/2024	6050	0
31/03/2024	6172	0

Average	4655	1
Minimum	2055	0
Maximum	8549	7

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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	174	1762
April 2024		
May 2024		
June 2024		

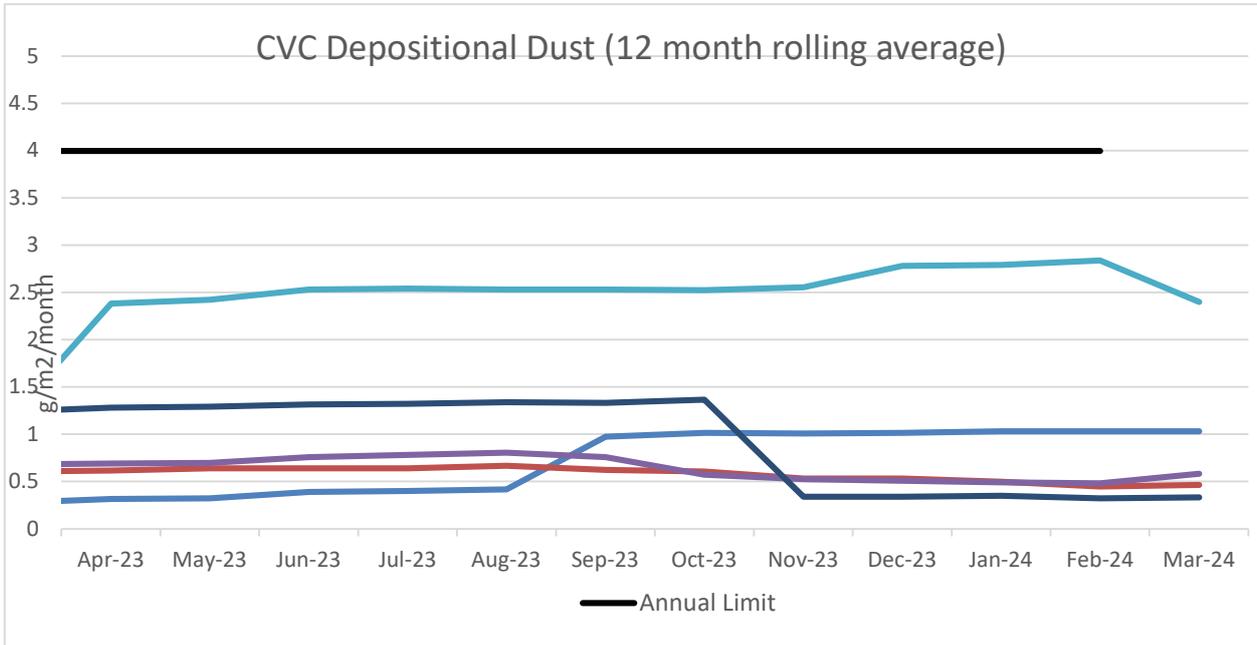
Air Quality - Depositional Dust

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.

March 2024	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	02/02/2024 – 05/03/2024
Site	Insoluble Matter (g/m²/month)
DDG001	0.4
DDG002	0.6
DDG003	1.5
DDG004	0.9
DDG006	0.5
Notes: For site locations refer to the Delta Coal Air Quality and Greenhouse Gas Management Plan.	

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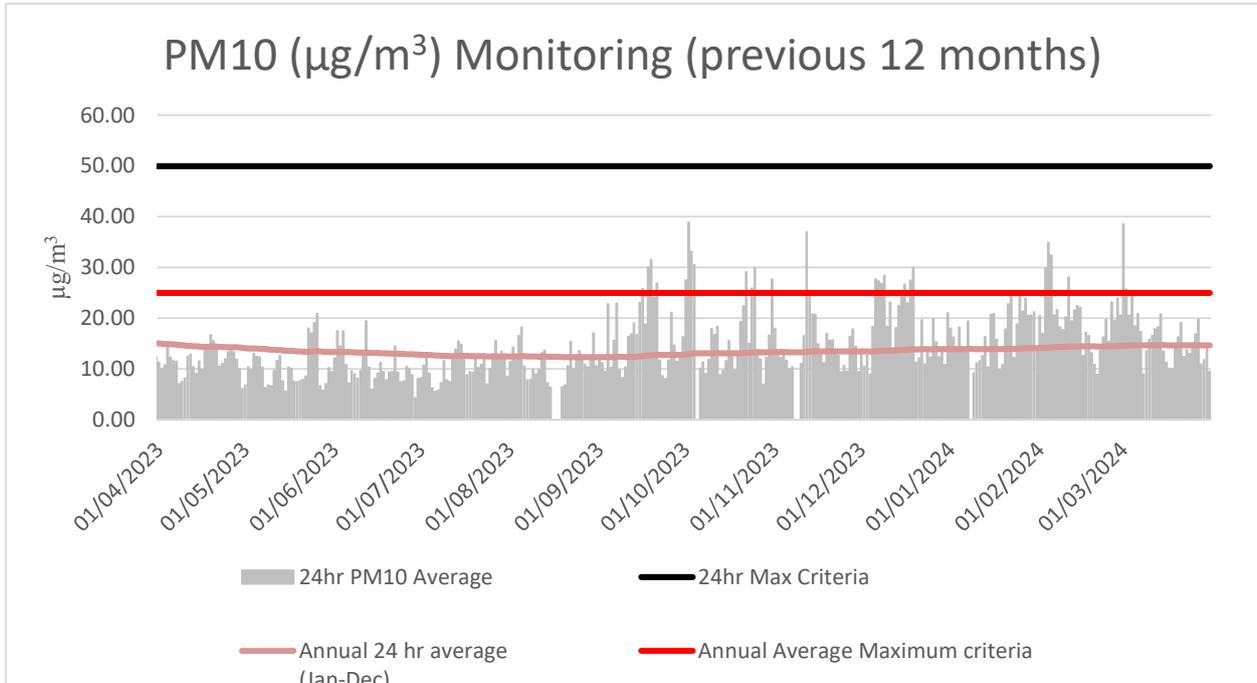
A 12-month rolling average of depositional dust concentrations has been presented below. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery and DDG006 is positioned in a location representative of the Chain Valley Colliery ventilation fan site 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 March 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 97.7% for the month of March 2024.

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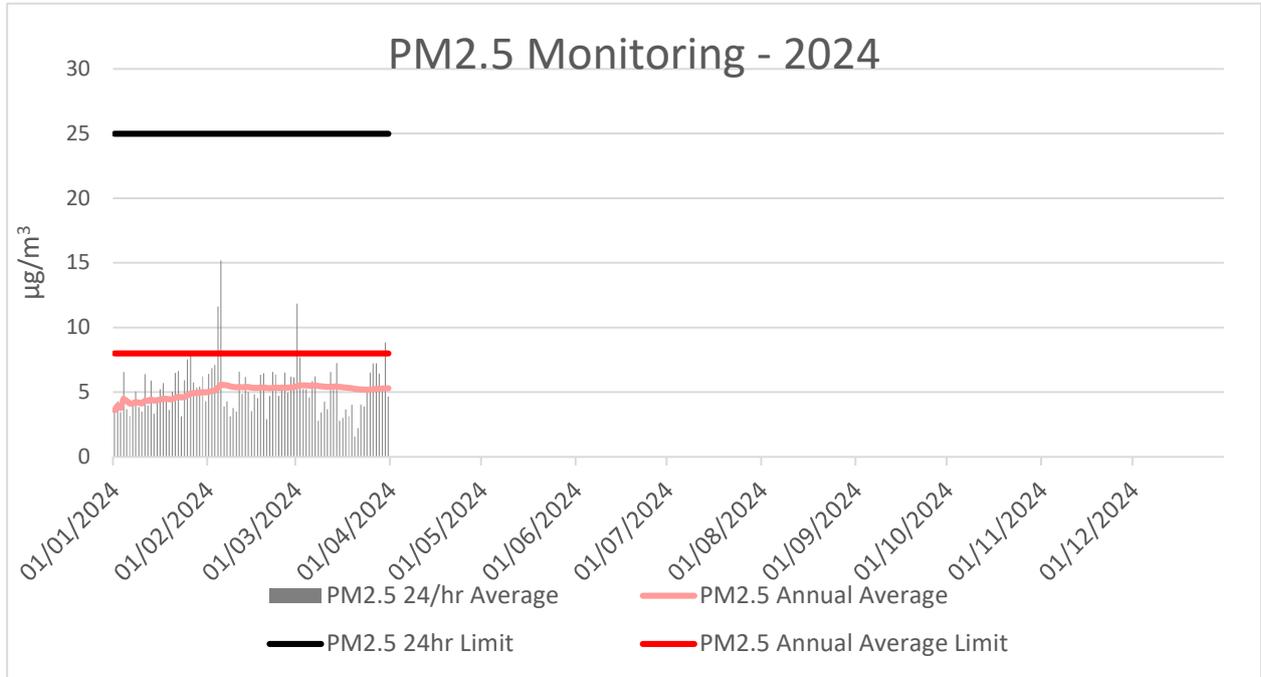
Variable	March	Total	Valid
A/C Temp	100%	8928	8927
A1	100%	8928	8927
A1_Scaled	100%	8928	8927
Bypass Flow	100%	8928	8927
Cap Temp	100%	8928	8927
Case Temp	100%	8928	8927
Config	100%	8928	8927
Dew Point	100%	8928	8927
Dig-In	100%	8928	8927
Dig-Latch	100%	8928	8927
ESN	100%	8928	8927
Filter Freq	100%	8928	8927
Filter Load	100%	8928	8927
Humidity	100%	8928	8927
MC	100%	8928	8927
MC 12Hr	100%	8928	8927
MC 1Hr	100%	8928	8927
MC 24Hr	100%	8928	8927
MC 30min	100%	8928	8927
MC 8Hr	100%	8928	8927
MC Total	100%	8928	8927
Mobile Signal	100%	8928	8927
Noise	100%	8928	8927
PM10 Flow	100%	8928	8927
Pressure	100%	8928	8927
Site	0.0%	8928	0
Temperature	100%	8928	8927
Tube Temp	100%	8928	8927
Vac Pressure	100%	8928	8927
Volts	100%	8928	8927

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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 March 2024. The 12-month rolling average PM_{2.5} value on 31 March was 5.3 $\mu\text{g}/\text{m}^3$. PM_{2.5} data availability in March 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	9 March 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

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