



# Chain Valley Colliery Monthly Website Report – December 2023

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<b>Site:</b>	Chain Valley Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Website Report – December 2023
<b>Report Date:</b>	14 <sup>th</sup> January 2024
<b>Distribution:</b>	Delta Coal Website

# Monthly Website Report

CVC Monthly Environmental Report – December 2023

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## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of December 2023.

## 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 December 2023.

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	<a href="#">EPL 1770 – October 2023</a>

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 – 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.

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## References

ALS Group - Monthly Water Monitoring Results **December 2023**

ALS Group - Dust Deposition Report **December 2023**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 5 June 2023)

## Monitoring Results

### Water – Quality

Water quality results for December 2023 monthly surface water sampling at Chain Valley Colliery, Licensed Discharge Point (LDP 1) are presented below.

December 2023			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	5-12-2023		
Date Obtained	15-12-2023		
Sampling Point	LDP 1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	34
Faecal Coliforms	CFU/100mL	200	16
pH	pH	6.5-8.5	7.72
Total Sus. Solids (TSS)	mg/L	50	9
Electrical Conductivity	µS/cm	-	30800

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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 December 2023.

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

<b>Date (24 hour period)</b>	<b>LDP 1 Volume (kL)</b>	<b>Rainfall (mm)</b>
01/12/2023	4402	0
02/12/2023	6263	3.8
03/12/2023	6627	0
04/12/2023	6604	0
05/12/2023	4712	0
06/12/2023	5949	0
07/12/2023	5856	0
08/12/2023	5343	0
09/12/2023	7025	0
10/12/2023	5005	3
11/12/2023	6051	0
12/12/2023	5015	0
13/12/2023	4564	0
14/12/2023	5461	0
15/12/2023	4758	0
16/12/2023	6058	0
17/12/2023	6207	0
18/12/2023	6258	0
19/12/2023	7581	4.2
20/12/2023	8702	30
21/12/2023	6846	4.4
22/12/2023	5688	0
23/12/2023	6753	0
24/12/2023	7789	12.4
25/12/2023	6712	1.2
26/12/2023	5850	1.8
27/12/2023	6823	2.4
28/12/2023	6389	0.2
29/12/2023	6120	0
30/12/2023	7290	2
31/12/2023	6406	2.2

Average	6165	2
Minimum	4402	0
Maximum	8702	30

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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		
February 2024		
March 2024		
April 2024		
May 2024		
June 2024		

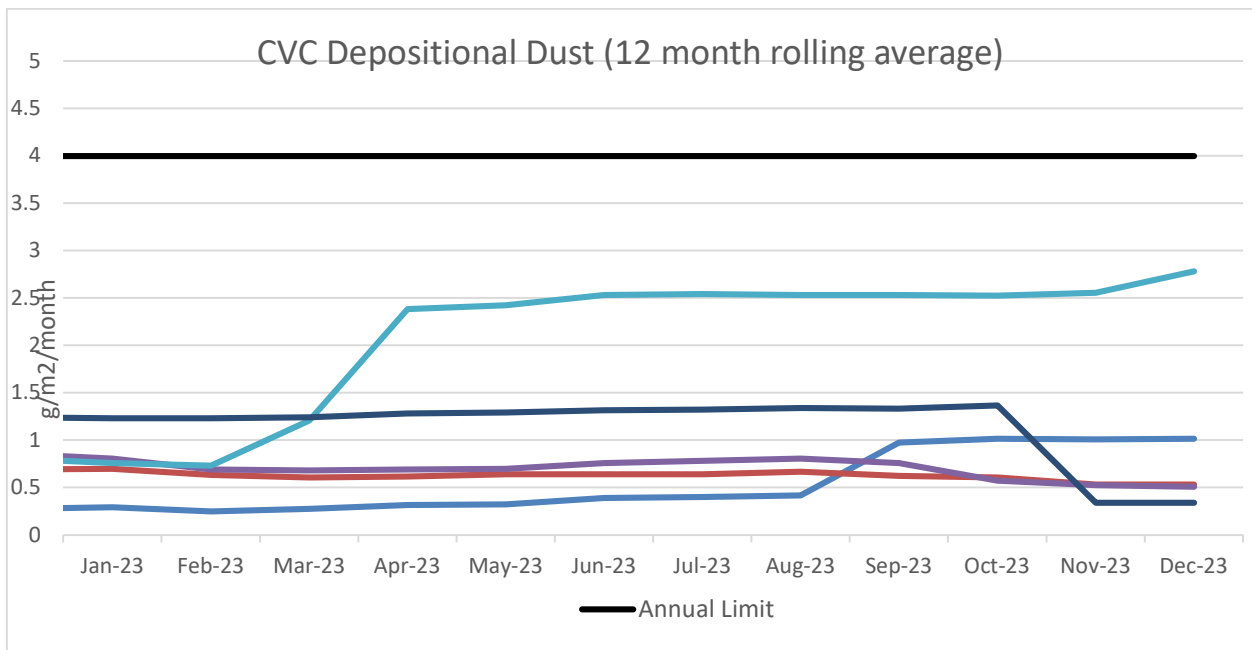
### Air Quality - Depositional Dust

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.

December 2023	
<b>EPL</b>	1770
<b>Limit</b>	4g/m <sup>2</sup> /month / Annum 2g/m <sup>2</sup> /month increase from previous result
<b>Sampling Date</b>	01/11/2023 - 01/12/2023
Site	Insoluble Matter (g/m2/month)
DDG001	0.5
DDG002	0.5
DDG003	0.7
DDG004	3.5
DDG006	0.2
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.

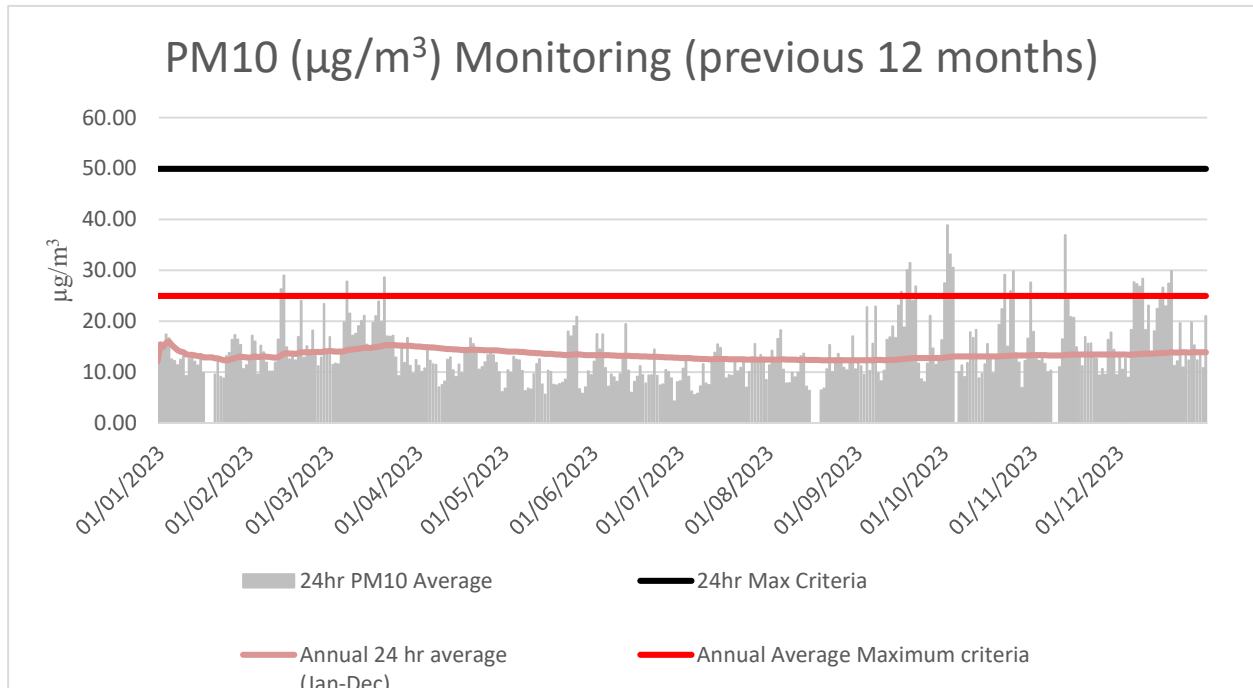
There was an exceedance to the maximum total increase in deposited dust level (increase greater than 2 g/m<sup>2</sup>/month) at DDG004 for the sampling period. The monthly depositional dust level increased from 1.2 g/m<sup>2</sup>/month to 3.5 g/m<sup>2</sup>/month. The 12-month rolling average result remains below the annual limit of 4g/m<sup>2</sup> /month.

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## 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 Mannering Park Sewage Treatment Plant, is presented below for the previous 12 months.



Annual 24hr PM<sub>10</sub> average maximum criteria for December 2023 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 97.4% for the month of December 2023.

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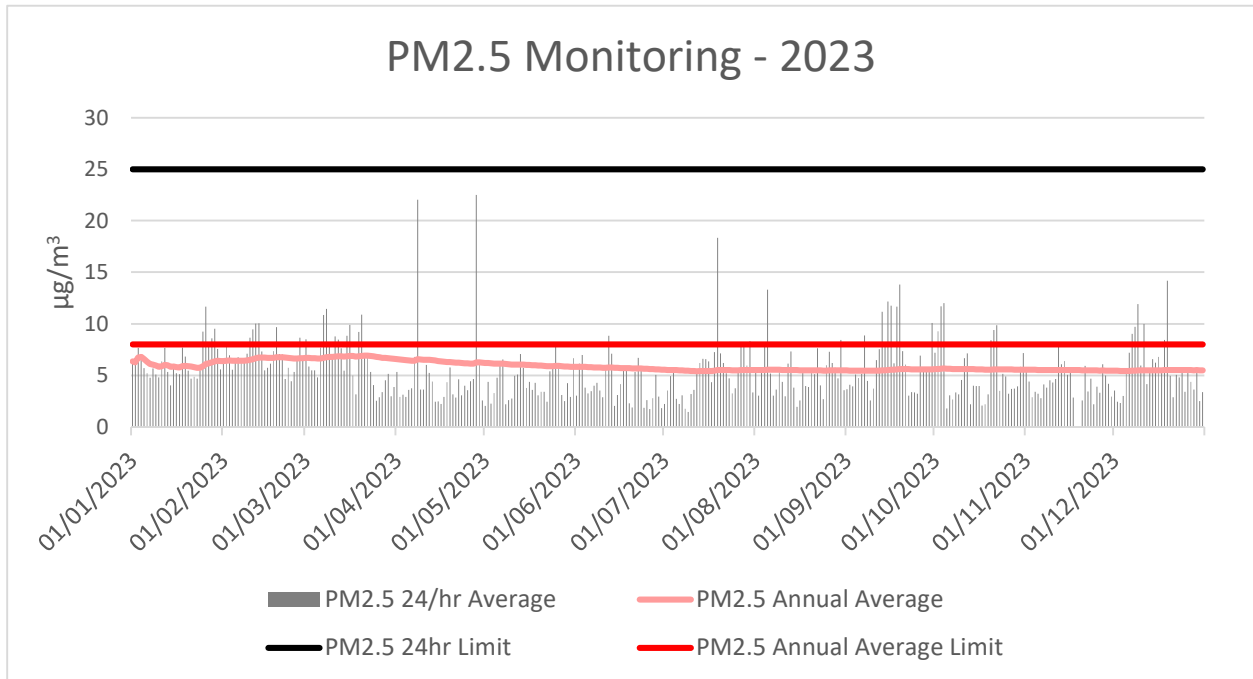
Variable	December	Total	Valid
A/C Temp	100%	8928	8927
A1	100%	8928	8927
A1_Scaled	100%	8928	8927
Bypass Flow	100%	8928	8927
Cap Temp	100%	8928	8927
Case Temp	100%	8928	8927
Config	100%	8928	8927
Dew Point	100%	8928	8927
Dig-In	100%	8928	8927
Dig-Latch	100%	8928	8927
ESN	100%	8928	8927
Filter Freq	100%	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<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 December 2023. The 12-month rolling average PM<sub>2.5</sub> value on 31 December 2023 was 5.48 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability in December 2023 was 100%. The 2023 year to date PM<sub>2.5</sub> data availability is 98.21%.

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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 2023			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	11 January 2024		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-23	112	14.4	31.7
Feb-23	91	12.6	33.2
Mar-23	116	9.4	38.7
Apr-23	96	6.8	26.7
May-23	59.2	2.8	23.9
June-23	8.4	1.6	24.7
July-23	40.2	1.9	25.4
Aug -23	57.8	4.2	27.1
Sept-23	13.4	2.4	34.5
Oct-23	92	6.9	35.2
Nov-23	87.2	11.2	30.2
Dec-23	67.6	14.7	41.4

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Variable	December	Total	Valid
Baro (Corrected)	94.7%	2976	2817
10m Temp	94.7%	2976	2817
2m Temp	94.7%	2976	2817
A1	94.7%	2976	2817
A1_Scaled	94.7%	2976	2817
Assumed Temp	94.7%	2976	2817
Barometric	94.7%	2976	2817
Config	94.7%	2976	2817
Daily Evap	94.7%	2976	2817
Daily Rain	94.7%	2976	2817
Delta T	94.7%	2976	2817
Dew Point	94.7%	2976	2817
Dig-In	94.7%	2976	2817
Dig-Latch	94.7%	2976	2817
ESN	94.7%	2976	2817
FDI	94.7%	2976	2817
Heat Index	94.7%	2976	2817
Humidity	94.7%	2976	2817
Mobile Signal	94.7%	2976	2817
Rain	94.7%	2976	2817
Raw Evap	94.7%	2976	2817
S Class	94.7%	2976	2817
Scalar WS	94.7%	2976	2817
Sigma	94.7%	2976	2817
Site	0.0%	2976	0
Solar Radiation	94.7%	2976	2817
Vector WD	94.7%	2976	2817
Vector WS	94.7%	2976	2817
Volts	94.7%	2976	2817
Wind Chill	94.7%	2976	2817
Wind Direction	94.7%	2976	2817
Wind Speed	94.7%	2976	2817
WS Avg	94.7%	2976	2817
WS Gust	94.7%	2976	2817