



Chain Valley Colliery Monthly Website Report – January 2023

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – January 2023
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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;
- Conditions 8 & 11, Schedule 6, of 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 January 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	EPL 1770 10 August 2022

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 **January 2023**

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

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 10 August 2022)

Monitoring Results

Water – Quality

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

January 2023			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	11-01-2023		
Date Obtained	17-01-2023		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	27
Faecal Coliforms	CFU/100mL	200	60
pH	pH	6.5-8.5	7.75
Total Sus. Solids (TSS)	mg/L	50	<5
Electrical Conductivity	µS/cm	-	33,700

There were no exceedances of water quality criteria recorded in the reporting period (January 2023).

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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 January 2023.

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)
01/01/2023	7048.02	0
02/01/2023	6055.98	0
03/01/2023	5137.96	0
04/01/2023	2355.31	5.8
05/01/2023	4169.66	15.4
06/01/2023	7628.05	22.2
07/01/2023	7548.93	4
08/01/2023	8422.62	0.2
09/01/2023	6608.19	0
10/01/2023	7280.52	0
11/01/2023	6653.04	0
12/01/2023	6585.22	0
13/01/2023	6966.04	0
14/01/2023	5744.24	0
15/01/2023	7761.71	0
16/01/2023	5592.4	0
17/01/2023	6568.04	0.2
18/01/2023	7167.42	2.4
19/01/2023	3556.22	11.2
20/01/2023	7208.13	3
21/01/2023	4762.38	1.8
22/01/2023	6368.68	7.2
23/01/2023	6472.27	0.2
24/01/2023	5583.47	1.2
25/01/2023	8672.91	0.2
26/01/2023	3727.43	7
27/01/2023	5897.45	0
28/01/2023	7805.02	0
29/01/2023	6491.49	4.6
30/01/2023	8119.38	24.8
31/01/2023	8432	0.4
Average	6400	3.6
Minimum	2355	0
Maximum	8673	24.8

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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 FY2022-2023		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2022	225	225
August 2022	204	429
September 2022	222	651
October 2022	220	872
November 2022	223	1,095
December 2022	215	1,310
January 2023	206	1,516
February 2023		
March 2023		
April 2023		
May 2023		
June 2023		

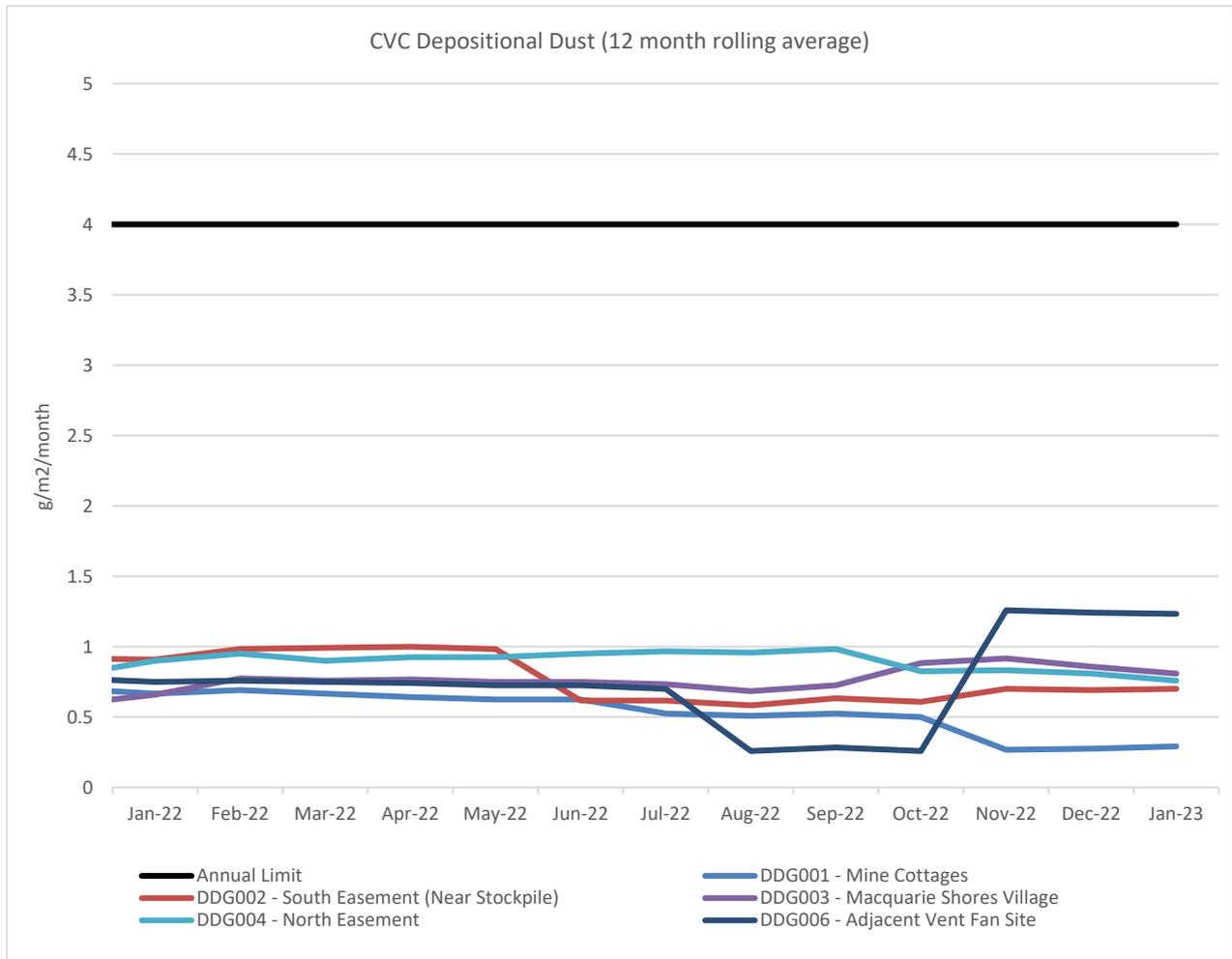
Air Quality - Depositional Dust

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.

January 2023	
EPL	1770
Limit	4g/m ² /month / Annum 2g/m ² /month increase from previous result
Sampling Date	05/12/2022 – 04/01/2023
Site	Insoluble Matter (g/m²/month)
DDG001	0.3
DDG002	0.5
DDG003	0.6
DDG004	0.9
DDG006	0.1
Notes: For site locations refer to the Delta Coal Air Quality and Greenhouse Gas Management Plan.	

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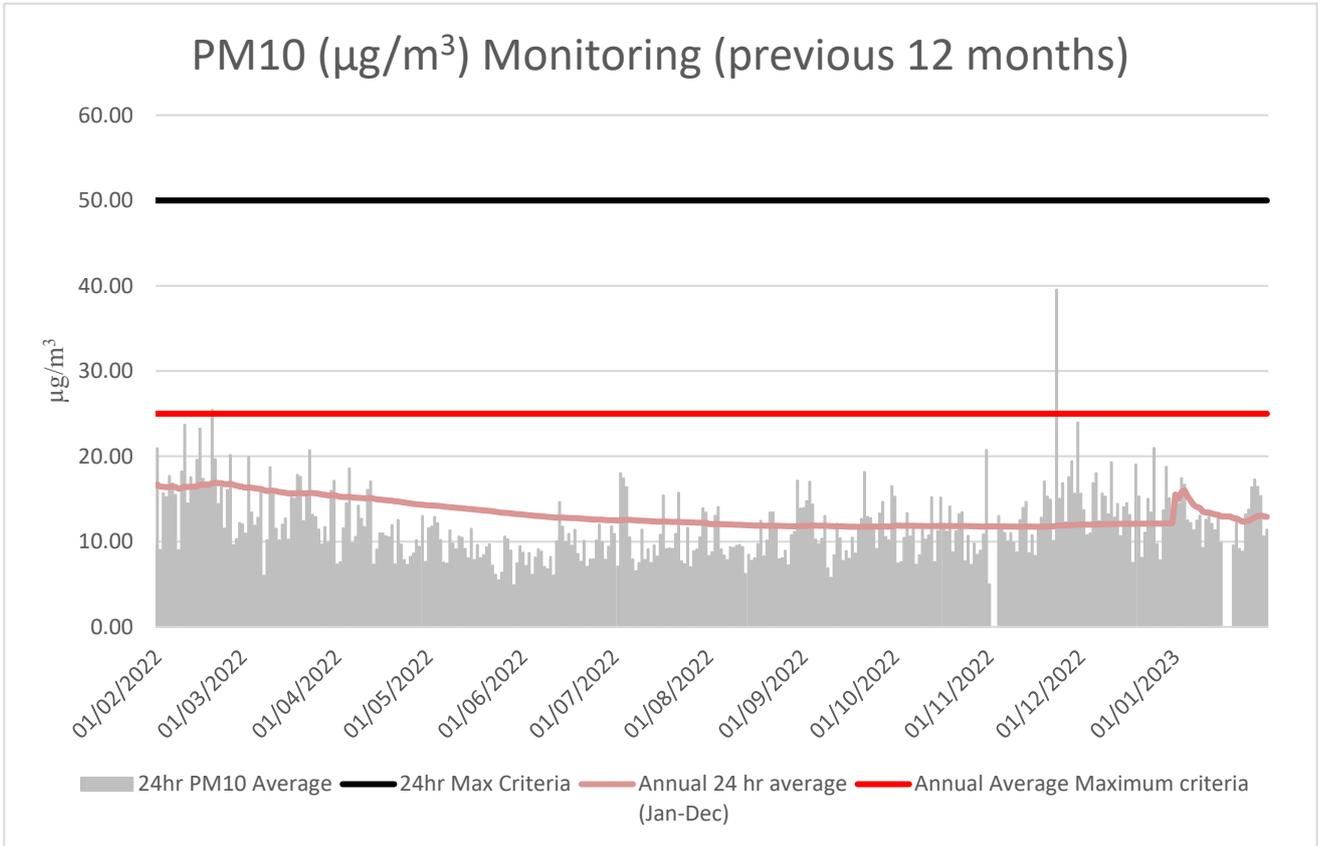
A 12-month rolling average of depositional dust concentrations has been presented below. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery and DDG006 is positioned in a location representative of the Chain Valley Colliery ventilation fan site 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 January 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 **91.6%** for the month of January 2023.

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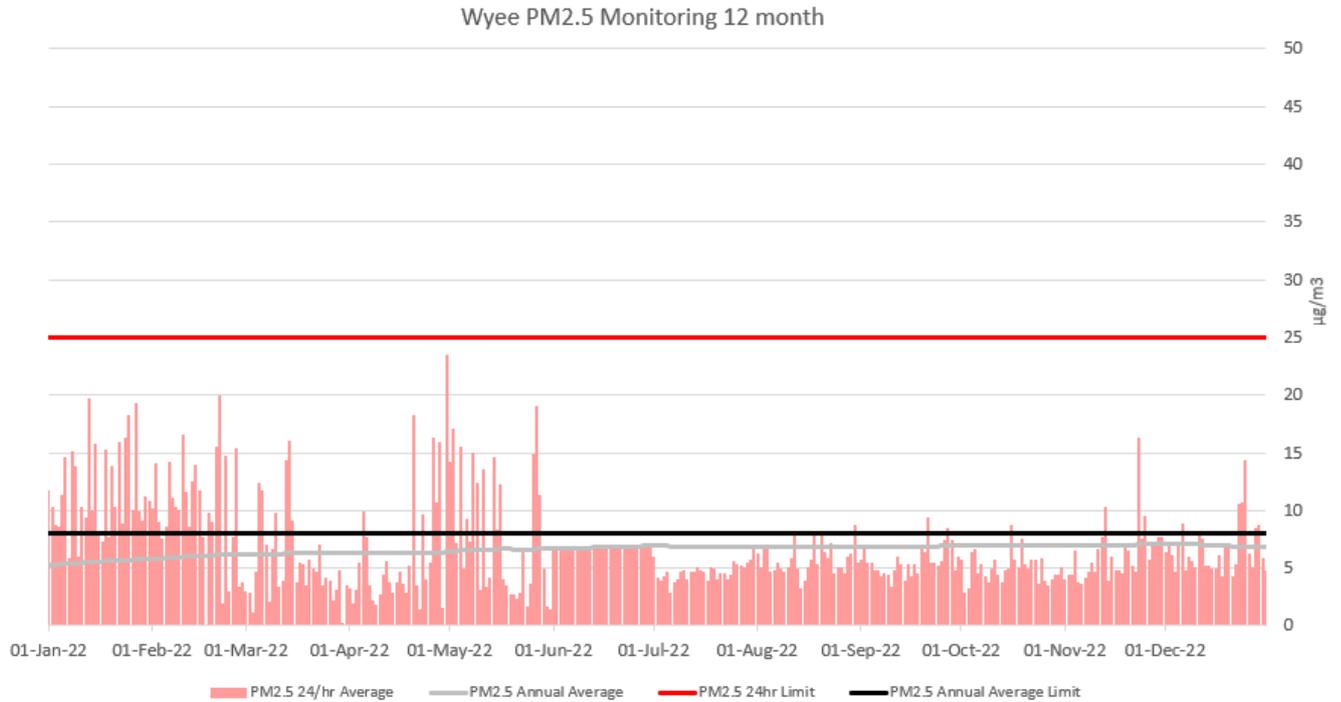
Variable	January	Total	Valid
A/C Temp	91.6%	8928	8174
A1	91.6%	8928	8174
A1_Scaled	91.6%	8928	8174
Bypass Flow	91.6%	8928	8174
Cap Temp	91.6%	8928	8174
Case Temp	91.6%	8928	8174
Config	91.6%	8928	8174
Dew Point	91.6%	8928	8174
Dig-In	91.6%	8928	8174
Dig-Latch	91.6%	8928	8174
ESN	91.6%	8928	8174
Filter Freq	91.6%	8928	8174
Filter Load	91.6%	8928	8174
Humidity	91.6%	8928	8174
MC	91.6%	8928	8174
MC 12Hr	91.6%	8928	8174
MC 1Hr	91.6%	8928	8174
MC 24Hr	91.6%	8928	8174
MC 30min	91.6%	8928	8174
MC 8Hr	91.6%	8928	8174
MC Total	91.6%	8928	8174
Mobile Signal	91.6%	8928	8174
Noise	91.6%	8928	8174
PM10 Flow	91.6%	8928	8174
Pressure	91.6%	8928	8174
Site	0.0%	8928	0
Temperature	91.6%	8928	8174
Tube Temp	91.6%	8928	8174
Vac Pressure	91.6%	8928	8174
Volts	91.6%	8928	8174

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Air Quality – PM_{2.5}

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 December 2022. The 12-month rolling average PM_{2.5} value on 31 December 2022 was 6.8 µg/m³. PM_{2.5} data availability for December 2022 was 100%. The 2022 year to date PM_{2.5} data availability was 92%.

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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 2022			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	31 January 2023		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-23	111.8	14.4	31.7

Variable	January	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