

Chain Valley Colliery Monthly Website Report – February 2022

Site:	Chain Valley Colliery
Department:	Technical Services
Report Title:	Monthly Environmental Website Report – February 2022
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Report Date:	09/03/2022
Distribution:	Delta Coal Website

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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) publically 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 February 2022.

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	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&SYSUID=1&LICID=1770

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 2022**

ALS Group - Dust Deposition Report **February 2022**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 24 February 2022)

Monitoring Results

Water – Quality

Water quality results for February 2022 monthly surface water sampling at Chain Valley Colliery, EPA Discharge Point 1 (LDP1) are presented below.

February 2022			
EPL	1770		
Licensee	Great Southern Energy Pty Ltd		
Premises	Chain Valley Colliery		
Date Sampled	16-02-2022		
Date Obtained	18-02-2022		
Sampling Point	LDP1		
Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	<2
Enterococcus	col/100mL	-	440
Faecal Coliforms	CFU/100mL	200	~31
pH	pH	6.5-8.5	7.63
Total Sus. Solids	mg/L	50	<5
Electrical Conductivity	µS/cm	-	23,100
Oil and Grease			<5

Water quality results at the Chain Valley Colliery licensed discharge point were within compliance limits for the month of February 2022.

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Water – Volume

Monthly water volumes discharged from the site are summarised below.

The daily water volumes at EPA Discharge Point 1 (LDP1) during February 2022 did not exceed the EPL 1770 discharge limit.

EPL	1770
Licensee	Great Soutehrn 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)	Unit	LDP 1 Volume
01/01/2022	kL	4804.33
02/01/2022	kL	3202.83
03/01/2022	kL	4184.72
04/01/2022	kL	4525.36
05/01/2022	kL	4756
06/01/2022	kL	4946.42
07/01/2022	kL	5135.9
08/01/2022	kL	6903.86
09/01/2022	kL	6385.48
10/01/2022	kL	8254.41
11/01/2022	kL	9435.61
12/01/2022	kL	9374.69
13/01/2022	kL	7560.71
14/01/2022	kL	8490.57
15/01/2022	kL	7471.75
16/01/2022	kL	7466.19
17/01/2022	kL	7935.59
18/01/2022	kL	7281.13
19/01/2022	kL	7739.92
20/01/2022	kL	6270.96
21/01/2022	kL	7715.51
22/01/2022	kL	5660.06
23/01/2022	kL	3552.19
24/01/2022	kL	4253.06
25/01/2022	kL	3909.26
26/01/2022	kL	8296.54
27/01/2022	kL	7362.61
28/01/2022	kL	10110.6
Average	kL	4572.27
Minimum	kL	1102.83
Maximum	kL	8051.39

For the month of Febraury 2022, there were no exceedances of surface water volumetric discharge limits.

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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 calander) with a roll-over entitlement up to a maximum of 8,886 megalitres.

CVC Groundwater to Surface Totals FY2021-2022		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2021	189.98	189.98
August 2021	164.83	354.82
September 2021	135.72	490.54
October 2021	187.79	678.33
November 2021	173.63	851.96
December 2021	157.59	1,009.55
January 2022	159.53	1,169.08
February 2022	178.73	1,347.81
March 2022		
April 2022		
May 2022		
June 2022		

Air Quality - Depositional Dust

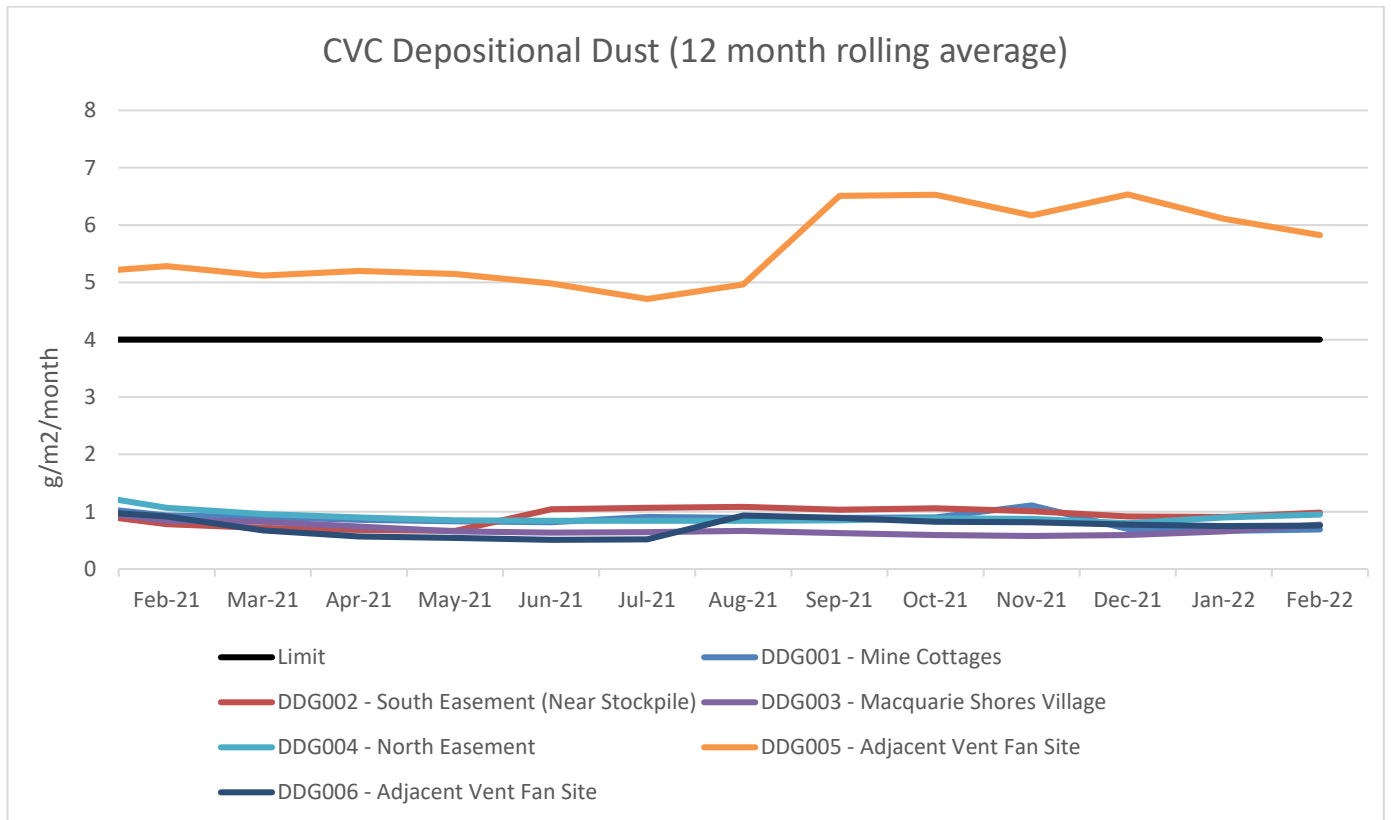
Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the development consent, CVC Air Quality Management Plan and relevant Australian Standards.

February 2022	
EPL	1770
Limit	4g/m ² /month / Annum
Sampling Date	07/01/2022 to 07/02/2022
Site	Insoluble Matter (g/m2/month)
DDG001	0.7
DDG002	1.6
DDG003	1.9
DDG004	1.2
DDG005	1.4
DDG006 (proposed DDG005 Replacement)	0.4
Notes: For site locations refer to Chain Valley Colliery Air Quality Management Plan.	

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A 12 month rolling average of depositional dust concentrations has been presented below. Dust Guages DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery. DDG005 was intended to represent the CVC ventilation fan site, however has been frequently contaminated by factors outside of mine operations (bird droppings, insects, land maintenance activities and vegetation). Subsequently, DDG006 was installed in a location considered more representative of the CVC vent fan site. Delta Coal currently have a submission with the DPIE to amend the Chain Valley Colliery Air Quality Management Plan to replace location DDG005 with DDG006.



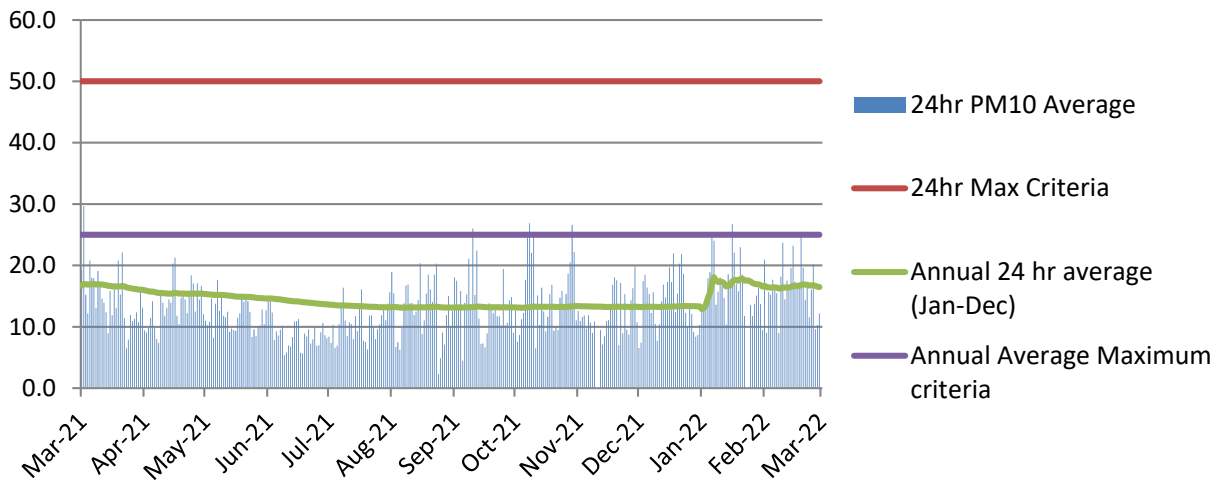
Air Quality – PM₁₀

The 24hr PM₁₀ average from Delta Coal's Tapered Element Oscillating Microbalance (TEOM) is presented below for the year to date.

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Chain Valley Colliery - 2022 TEOM PM10 (ug/m³)



Annual 24hr PM₁₀ average maximum criteria for February 2022 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 **100%** for the month of February 2022.

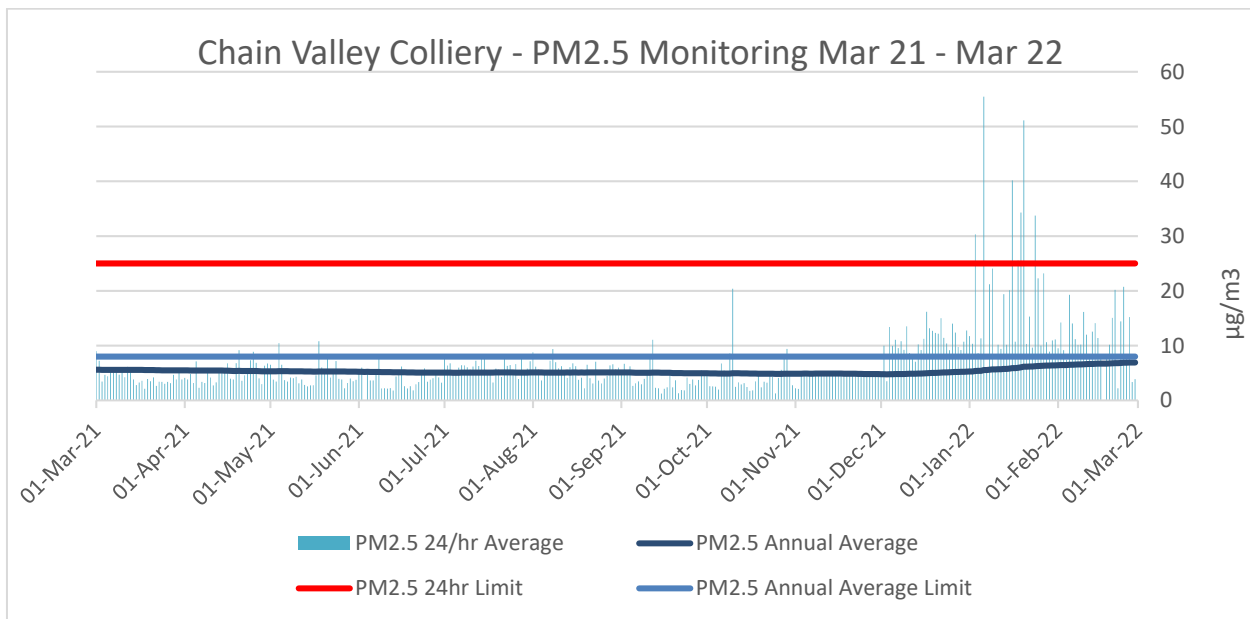
Variable	February	Total	Valid
A/C Temp	100%	8064	8060
A1	100%	8064	8060
A1_Scaled	100%	8064	8060
Bypass Flow	100%	8064	8060
Cap Temp	100%	8064	8060
Case Temp	100%	8064	8060
Config	100%	8064	8060
Dew Point	100%	8064	8060
Dig-In	100%	8064	8060
Dig-Latch	100%	8064	8060
ESN	100%	8064	8060
Filter Freq	100%	8064	8060
Filter Load	100%	8064	8060
Humidity	100%	8064	8060
MC	100%	8064	8060
MC 12Hr	100%	8064	8060
MC 1Hr	100%	8064	8060
MC 24Hr	100%	8064	8060
MC 30min	100%	8064	8060
MC 8Hr	100%	8064	8060
MC Total	100%	8064	8060
Mobile Signal	100%	8064	8060
Noise	100%	8064	8060
PM10 Flow	100%	8064	8060
Pressure	100%	8064	8060
Site	0.0%	8064	0
Temperature	100%	8064	8060
Tube Temp	100%	8064	8060
Vac Pressure	100%	8064	8060
Volts	100%	8064	8060

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.

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There were no exceedances of the PM_{2.5} daily average limit in February 2022. The 12 month rolling average PM_{2.5} value at the 28th February was 6.9 µg/m³. PM_{2.5} data availability for February 2022 was 99.85% and 2022 year to date PM_{2.5} data availability was 99.8%.

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	7 th March 2022		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-22	110.6	15.4	30.5
Feb-22	187.2	14.1	34

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Variable	February	Total	Valid
Baro (Corrected)	100%	2688	2688
10m Temp	100%	2688	2688
2m Temp	100%	2688	2688
A1	100%	2688	2688
A1_Scaled	100%	2688	2688
Assumed Temp	100%	2688	2688
Barometric	100%	2688	2688
Config	100%	2688	2688
Daily Evap	100%	2688	2688
Daily Rain	100%	2688	2688
Delta T	100%	2688	2688
Dew Point	100%	2688	2688
Dig-In	100%	2688	2688
Dig-Latch	100%	2688	2688
ESN	100%	2688	2688
FDI	100%	2688	2688
Heat Index	100%	2688	2688
Humidity	100%	2688	2688
Mobile Signal	100%	2688	2688
Rain	100%	2688	2688
Raw Evap	100%	2688	2688
S Class	100%	2688	2688
Scalar WS	100%	2688	2688
Sigma	100%	2688	2688
Site	0.0%	2688	0
Solar Radiation	100%	2688	2688
Vector WD	100%	2688	2688
Vector WS	100%	2688	2688
Volts	100%	2688	2688
Wind Chill	100%	2688	2688
Wind Direction	100%	2688	2688
Wind Speed	100%	2688	2688
WS Avg	100%	2688	2688
WS Gust	100%	2688	2688