



Monthly Website Report

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|----------------------|---|
| Site: | Manning Colliery |
| Department: | Technical Services |
| Report Title: | Monthly Environmental Website Report - August 2019 |
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| Report Date: | 4/09/19 |
| Distribution: | Delta Coal website |

Monthly Website Report

Mannering Colliery Monthly Environmental Report

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Manning Colliery Monthly Environmental Report

Summary

Monitoring was undertaken in August 2019.

Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates the Manning Colliery, an underground coal mine at the southern end of Lake Macquarie.

Manning 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 publically available and;
- Condition 7 & 10, schedule 5, of Development Approval 06_0311 (as modified) to provide details of monitoring results and environmental performance.
- An Environment Protection Licence (191) issued under the Protection of the Environment Operations Act, 1997.
- A Water Access Licence 20AL217059 (WAL40461), Aquifer (450 megalitres)

This report provides environmental monitoring data from Manning Colliery for the period 1 August to 31 August 2019.

Details of the Manning Colliery EPL 191 are provided below.

| Manning Colliery Information | |
|------------------------------|---|
| Premises name | Manning Colliery |
| Address | Ruttleys Road, Doyalson, NSW, 2262 |
| Licensee | Great Southern Energy Pty Ltd |
| EPL # | 191 |
| EPL location | http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50781&SYSUID=1&LICID=191 |

The overall purpose of this report is to keep stakeholders informed of the environmental monitoring results at Manning Colliery and maintain a transparent and accountable reporting system.

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Mannering Colliery Monthly Environmental Report

Scope

This report presents the results from the various environmental monitoring programs undertaken for Mannering Colliery. Results are presented for each specific month and annual data, averages and trends in data are shown to where relevant.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Development Consent) to determine compliance.

Monitoring results presented include;

- Water – quality
- Water – volume
- Air Quality; and
- Weather data

Definitions

dB– decibels

dB(A) – noise level measurement units are decibels (dB). The A-weighting scale is used to approximate human perception of noise

g/m²/month – grams per square metre per month

kL– kilolitres

L_{Aeq}–the average A-weighted noise energy (in dB) for a measurement period

mg/L – milligrams per litre

µg/L – micrograms per litre

µS/cm – microSiemens per centimetre

References

Project Approval 06_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 1 April 2019)

Steel River Testing - Dust Deposition Report **August 2019**

Steel River Testing- Water Analysis Report **August 2019**

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Mannering Colliery Monthly Environmental Report

Monitoring Results

Water – Quality

Water Quality Results (reverted to weekly as per EPL
PRP requirements)

| August 2019 | | | |
|-----------------------------|---------------------|---------------|--------------------------|
| EPL | 191 | | |
| Licensee | LakeCoal Pty Ltd | | |
| Premises | Mannering Colliery | | |
| Period | 01-Aug-19 | to | 31-Aug-19 |
| Location | LDP001 (EPA ID # 1) | | |
| Date sampled | Weekly | | |
| Date reported | Refer report date | | |
| Monitoring requirement | Weekly | | |
| pH limit | 6.5 - 8.5 | | |
| TSS limit (mg/L) | 50 | | |
| Oil and grease limit (mg/L) | 10 | | |
| Exceedance (Yes/No) | No | | |
| Water Quality Results | | | |
| Date | pH | TSS (mg/L) | Oil and grease (mg/L) |
| Thursday, 1 August 2019 | | | |
| Friday, 2 August 2019 | | | |
| Saturday, 3 August 2019 | | | |
| Sunday, 4 August 2019 | | | |
| Monday, 5 August 2019 | | | |
| Tuesday, 6 August 2019 | | | |
| Wednesday, 7 August 2019 | 7.6 | 6 | <5 |
| Thursday, 8 August 2019 | | | |
| Friday, 9 August 2019 | | | |
| Saturday, 10 August 2019 | | | |
| Sunday, 11 August 2019 | | | |
| Monday, 12 August 2019 | | | |
| Tuesday, 13 August 2019 | | | |
| Wednesday, 14 August 2019 | 7.8 | 3 | <5 |
| Thursday, 15 August 2019 | | | |
| Friday, 16 August 2019 | | | |
| Saturday, 17 August 2019 | | | |
| Sunday, 18 August 2019 | | | |
| Monday, 19 August 2019 | | | |
| Tuesday, 20 August 2019 | 7.8 | 12 | <5 |
| Wednesday, 21 August 2019 | | | |
| Thursday, 22 August 2019 | | | |
| Friday, 23 August 2019 | | | |
| Saturday, 24 August 2019 | | | |
| Sunday, 25 August 2019 | | | |
| Monday, 26 August 2019 | | | |
| Tuesday, 27 August 2019 | 7.7 | 1 | <5 |
| Wednesday, 28 August 2019 | | | |
| Thursday, 29 August 2019 | | | |
| Friday, 30 August 2019 | | | |
| Saturday, 31 August 2019 | | | |
| | | | |
| | | | |
| Average | 7.7 | 5.5 | <5 |
| Minimum | 7.6 | 1.0 | <5 |
| Maximum | 7.8 | 12.0 | <5 |

There were no exceedances of water quality criteria during the month.

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Water – Quality

Analytical Results

| Sub-Matrix: WATER (Matrix: WATER) | | Client sample ID | | LDP001 |
|---|------------|-----------------------------|-------|-------------------|
| | | Client sampling date / time | | 20-Aug-2019 13:50 |
| Compound | CAS Number | LOR | Unit | Result |
| EA010P: Conductivity by PC Titrator | | | | |
| Electrical Conductivity @ 25°C | ---- | 1 | µS/cm | 25100 |
| ED040F: Dissolved Major Anions | | | | |
| Sulfur as S | 63705-05-5 | 1 | mg/L | 146 |
| Silicon as SiO ₂ | 14464-46-1 | 0.1 | mg/L | 12.8 |
| ED093T: Total Major Cations | | | | |
| Calcium | 7440-70-2 | 1 | mg/L | 244 |
| Magnesium | 7439-95-4 | 1 | mg/L | 321 |
| Potassium | 7440-09-7 | 1 | mg/L | 41 |
| EG020F: Dissolved Metals by ICP-MS | | | | |
| Aluminium | 7429-90-5 | 10 | µg/L | <10 |
| Arsenic | 7440-38-2 | 1 | µg/L | <1 |
| Beryllium | 7440-41-7 | 1 | µg/L | <1 |
| Cadmium | 7440-43-9 | 0.1 | µg/L | <0.1 |
| Chromium | 7440-47-3 | 1 | µg/L | <1 |
| Cobalt | 7440-48-4 | 1 | µg/L | <1 |
| Copper | 7440-50-8 | 1 | µg/L | <1 |
| Lead | 7439-92-1 | 1 | µg/L | 2 |
| Manganese | 7439-96-5 | 1 | µg/L | 36 |
| Molybdenum | 7439-98-7 | 1 | µg/L | 8 |
| Nickel | 7440-02-0 | 1 | µg/L | 4 |
| Selenium | 7782-49-2 | 10 | µg/L | <10 |
| Silver | 7440-22-4 | 1 | µg/L | <1 |
| Vanadium | 7440-62-2 | 10 | µg/L | <10 |
| Zinc | 7440-66-6 | 5 | µg/L | 8 |
| EG020T: Total Metals by ICP-MS | | | | |
| Aluminium | 7429-90-5 | 10 | µg/L | <10 |
| Antimony | 7440-36-0 | 1 | µg/L | <1 |
| Arsenic | 7440-38-2 | 1 | µg/L | 1 |
| Beryllium | 7440-41-7 | 1 | µg/L | <1 |
| Barium | 7440-39-3 | 1 | µg/L | 233 |
| Cadmium | 7440-43-9 | 0.1 | µg/L | <0.1 |
| Chromium | 7440-47-3 | 1 | µg/L | <1 |
| Cobalt | 7440-48-4 | 1 | µg/L | <1 |
| Copper | 7440-50-8 | 1 | µg/L | <1 |
| EG020T: Total Metals by ICP-MS - Continued | | | | |
| Lead | 7439-92-1 | 1 | µg/L | 3 |
| Lithium | 7439-93-2 | 1 | µg/L | 657 |
| Molybdenum | 7439-98-7 | 1 | µg/L | 8 |
| Nickel | 7440-02-0 | 1 | µg/L | 5 |
| Selenium | 7782-49-2 | 10 | µg/L | <10 |
| Silver | 7440-22-4 | 1 | µg/L | 2 |
| Tin | 7440-31-5 | 1 | µg/L | <1 |
| Titanium | 7440-32-6 | 10 | µg/L | <10 |
| Vanadium | 7440-62-2 | 10 | µg/L | <10 |
| Zinc | 7440-66-6 | 5 | µg/L | 13 |
| Boron | 7440-42-8 | 50 | µg/L | 410 |
| Iron | 7439-89-6 | 50 | µg/L | 60 |
| EG035F: Dissolved Mercury by FIMS | | | | |
| Mercury | 7439-97-6 | 0.1 | µg/L | <0.1 |
| EG035T: Total Recoverable Mercury by FIMS | | | | |
| Mercury | 7439-97-6 | 0.1 | µg/L | <0.1 |
| EK055G: Ammonia as N by Discrete Analyser | | | | |
| Ammonia as N | 7664-41-7 | 0.01 | mg/L | 0.80 |
| EK067G: Total Phosphorus as P by Discrete Analyser | | | | |
| Total Phosphorus as P | ---- | 0.01 | mg/L | <0.05 |

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Water – Volume

| August 2019 | |
|------------------------|-------------------------|
| EPL | 191 |
| Licensee | LakeCoal Pty Ltd |
| Premises | Mannering Colliery |
| Date Sampled | Daily |
| Date Reported | Refer report date |
| Discharge volume limit | 4000 kilolitres per day |
| Sampling Point | LDP001 (EPA ID # 1) |

| Day | Unit | Volume |
|------------|------|--------|
| 01/08/2019 | kL | 1253 |
| 02/08/2019 | kL | 0 |
| 03/08/2019 | kL | 384 |
| 04/08/2019 | kL | 1601 |
| 05/08/2019 | kL | 1603 |
| 06/08/2019 | kL | 28 |
| 07/08/2019 | kL | 705 |
| 08/08/2019 | kL | 1054 |
| 09/08/2019 | kL | 1079 |
| 10/08/2019 | kL | 0 |
| 11/08/2019 | kL | 37 |
| 12/08/2019 | kL | 1298 |
| 13/08/2019 | kL | 1309 |
| 14/08/2019 | kL | 1617 |
| 15/08/2019 | kL | 681 |
| 16/08/2019 | kL | 0 |
| 17/08/2019 | kL | 408 |
| 18/08/2019 | kL | 941 |
| 19/08/2019 | kL | 1619 |
| 20/08/2019 | kL | 574 |
| 21/08/2019 | kL | 427 |
| 22/08/2019 | kL | 1375 |
| 23/08/2019 | kL | 0 |
| 24/08/2019 | kL | 1137 |
| 25/08/2019 | kL | 1632 |
| 26/08/2019 | kL | 1591 |
| 27/08/2019 | kL | 598 |
| 28/08/2019 | kL | 732 |
| 29/08/2019 | kL | 1061 |
| 30/08/2019 | kL | 3458 |
| 31/08/2019 | kl | 1227 |

| | | |
|---------|----|------|
| Average | kL | 949 |
| Minimum | kL | 0 |
| Maximum | kL | 3458 |

There were no exceedances of the volumetric limits at the Licenced Discharge Point during the month.

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Air Quality

Monthly depositional dust results

| August 2019 | |
|---------------|--|
| EPL | 191 |
| Limit | 4g/m ² /month |
| Sampling Date | 08/07/2019 to 13/08/2019 |
| Site | Insoluble Matter (g/m ² /month) |
| DDG001 | 0.5 |
| DDG002 | 2.0 |
| DDG003 | 0.7 |
| DDG004 | 0.4 |
| DDG005 | 0.5 |
| Notes: | |

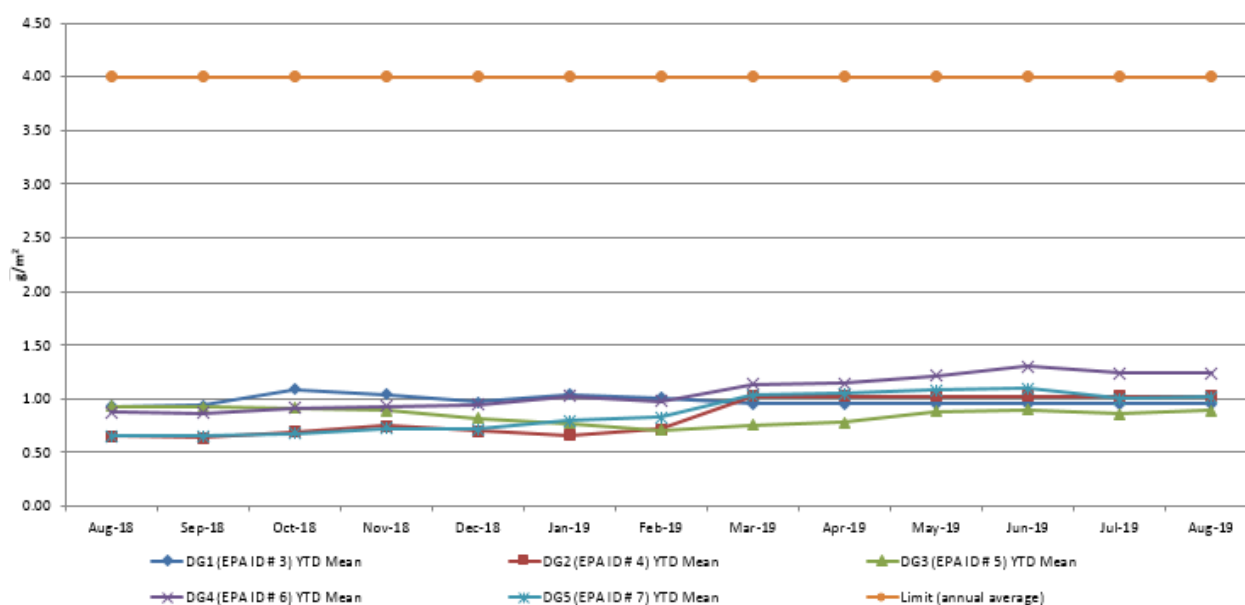
There were no exceedances of the annual average air quality limits during the reporting period.

Operational Noise

Operational noise monitoring as part of the Noise Compliance Report was undertaken in August. There was one exceedance recorded, see incident and complaints register on website.

Rolling annual average depositional dust results

Yearly Rolling Average Depositional Dust Data



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Weather Data

A summary of weather data recorded by an adjacent site meteorological monitoring station at the Colliery is presented below for the year to date.

| Monthly Weather Data | | | |
|----------------------|------------------------------|----------|----------|
| 2019 | | | |
| EPL | 191 | | |
| Licensee | LakeCoal Pty Ltd | | |
| Premises | Manningering Colliery | | |
| Location | W1 (on-site weather station) | | |
| Date published | Refer report date | | |
| Date sampled | Daily | | |
| Date obtained | | | |
| Month | Total Rainfall/Month mm | Min Temp | Max Temp |
| Jan-19 | 60.6 | 18.6 | 39.6 |
| Feb-19 | 88.6 | 22.7 | 37.4 |
| Mar-19 | 204 | 10.1 | 37.1 |
| Apr-19 | 73.2 | 8.3 | 32.8 |
| May-19 | 11.0 | 3.9 | 26.3 |
| Jun-19 | 158.8 | 3.9 | 25.0 |
| Jul-19 | 47.2 | 4.0 | 23.3 |
| Aug-19 | 194.0 | 2.0 | 25.4 |
| Sep-19 | | | |
| Oct-19 | | | |
| Nov-19 | | | |
| Dec-19 | | | |