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# Mannering Colliery Monthly Website Report – October 2024

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<b>Site:</b>	Mannering Colliery
<b>Department:</b>	Technical Services
<b>Report Title:</b>	Monthly Environmental Report – October 2024
<b>Report Date:</b>	13 <sup>th</sup> November 2024
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# Monthly Website Report

Manning Colliery Monthly Environmental Report – October 2024

## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of October 2024.

## Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates 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 Environmental Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publicly available;
- Condition 10 & 13, Schedule 5, of Project Approval 06\_0311 (as modified) to provide details of monitoring results and environmental performance;
- An Environment Protection Licence (EPL 191) issued under the *Protection of the Environment Operations Act 1997*; and
- A Water Access Licence (WAL40461), Aquifer (Sydney Basin – North Coast Groundwater Source) for 450-unit shares (megalitres).

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	<a href="#">EPL 0191 - 16 June 2023</a>

The overall purpose of this monthly 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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## Scope

This report presents the results from the various environmental monitoring programs undertaken for Manning Colliery. Results are presented monthly with annual data, averages and trends in data also shown where relevant.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Project Approval) to assess compliance.

Monitoring results presented 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.

## References

Project Approval MP06\_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 16 June 2023)

ALS - Dust Deposition Report **October 2024**

ALS – MC Water Analysis Reports **October 2024**

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## Monitoring Results

### Water – Quality

Weekly water quality results for discharge point LDP001 are presented below.

October 2024				
<b>EPL</b>	191			
<b>Licensee</b>	Great Southern Energy Pty Ltd			
<b>Premises</b>	Manning Colliery			
<b>Location</b>	LDP001 (EPA ID # 1)			
<b>Sample Frequency</b>	Weekly			
<b>pH limit</b>	6.5 - 8.5			
<b>TSS limit (mg/L)</b>	50			
<b>Oil and grease limit (mg/L)</b>	10			
Water Quality Results				
Date	pH	TSS (mg/L)	Oil and grease (mg/L)	Electrical Conductivity (µS/cm)
3/10/2024	7.72	11	<5	26100
08/10/2024	7.87	19	<5	20900
17/10/2024	7.75	<5	<5	25300
22/10/2024	7.88	5	<5	26800
29/10/2024	7.85	6	<5	19900
<b>Average</b>	7.81	8.7	<5	23800

There were no exceedances of water quality criteria in October 2024 at Manning Colliery.

Monthly water quality results, primarily metals and metalloids, at LDP001 are presented below.

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Sub-Matrix: WATER (Matrix: WATER)		Sample ID		LDP001
			Sampling date / time	29-Oct-2024 10:05
Compound	CAS Number	LOR	Unit	EN2413758-001 Result
<b>EA045: Turbidity</b>				
Turbidity	---	0.1	NTU	2.4
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	111
Silicon as SiO2	14464-46-1	0.1	mg/L	9.8
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1000	µg/L	200000
Magnesium	7439-95-4	1000	µg/L	204000
Potassium	7440-09-7	1000	µg/L	27000
<b>EG020F: Dissolved Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	<10
Arsenic	7440-38-2	1	µg/L	2
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	<1
Manganese	7439-96-5	1	µg/L	67
Molybdenum	7439-98-7	1	µg/L	8
Nickel	7440-02-0	1	µg/L	2
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	41
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	10	µg/L	40
Antimony	7440-36-0	1	µg/L	<1
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Arsenic	7440-38-2	1	µg/L	2
Beryllium	7440-41-7	1	µg/L	<1
Barium	7440-39-3	1	µg/L	204
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	<1
Lithium	7439-93-2	1	µg/L	473
Molybdenum	7439-98-7	1	µg/L	8
Nickel	7440-02-0	1	µg/L	2
Selenium	7782-49-2	10	µg/L	<10
Silver	7440-22-4	1	µg/L	<1
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	26
Boron	7440-42-8	50	µg/L	320
Iron	7439-89-6	50	µg/L	60
<b>EG035F: Dissolved Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EG035T: Total Recoverable Mercury by FIMS</b>				
Mercury	7439-97-6	0.1	µg/L	<0.1
<b>EK055G: Ammonia as N by Discrete Analyser</b>				
Ammonia as N	7664-41-7	0.01	mg/L	0.44
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	---	0.01	mg/L	0.04

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### Water – Volume

Monthly water volumes discharged via MC's LDP1 during October 2024 at Mannering Colliery are summarised below.

EPL	191
Licensee	Great Southern Energy Pty Ltd
Premises	Mannering Colliery
Date Sampled	Daily
Discharge volume limit	4000 kilolitres per day
Sampling Point	LDP001 (EPA ID # 1)

Date (24 hour period)	LDP 1 Volume (kL/day)	Rainfall (mm)
01/10/2024	1129.27	0
02/10/2024	1163.36	1.2
03/10/2024	1065.50	0.2
04/10/2024	1248.61	0
05/10/2024	1221.29	0
06/10/2024	1256.00	0
07/10/2024	1011.86	0
08/10/2024	876.79	2.2
09/10/2024	1323.06	1.2
10/10/2024	896.98	0.2
11/10/2024	1525.09	0
12/10/2024	1611.59	0.6
13/10/2024	1523.88	8.2
14/10/2024	1519.85	11.2
15/10/2024	1495.19	4
16/10/2024	1342.41	0
17/10/2024	1212.09	0
18/10/2024	450.51	1.8
19/10/2024	711.10	0.2
20/10/2024	727.13	1.4
21/10/2024	1136.48	0
22/10/2024	987.75	0.4
23/10/2024	1288.14	0
24/10/2024	1277.98	10.8
25/10/2024	1581.93	28.2
26/10/2024	1421.88	0
27/10/2024	405.78	0
28/10/2024	890.05	0.6
29/10/2024	1334.98	0
30/10/2024	1326.56	0
31/10/2024	1254.24	2.6

Average	1168.30 kL/day	2.42 mm/day
Maximum	1611.59 kL/day	28.20 mm/day

Volumetric discharge remained below the daily limit of 4,000 kL per day.

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### Water – Groundwater Discharge

Groundwater discharged from underground workings to the MCs surface retention Dams has been detailed below. Manning Colliery operates Water Access License 40461 permitting the extraction of 450 megalitres per financial year and reports annual use to the Water NSW, Water Accounting System (iWAS).

MC Groundwater Pumped to Surface Totals FY2024-2025		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2024	14	14
August 2024	25	39
September 2024	20	59
October 2024	26	85

### Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

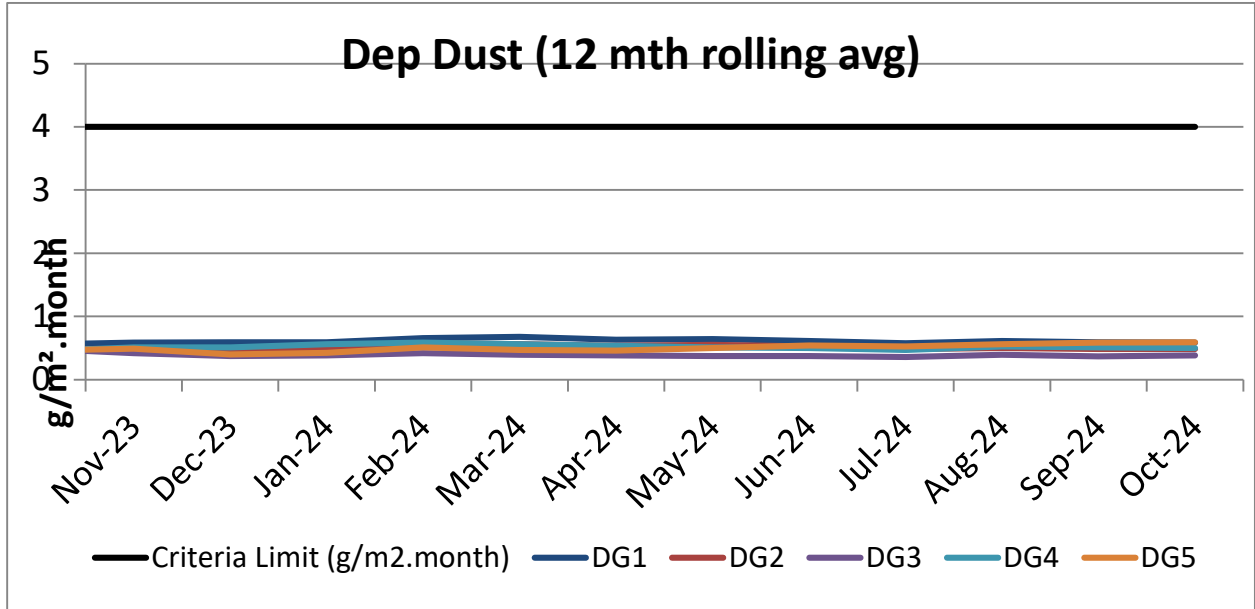
October 2024		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	02/09/2024 – 02/10/2024	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.5</b>
4	DG2	<b>0.4</b>
5	DG3	<b>0.6</b>
6	DG4	<b>0.4</b>
7	DG5	<b>0.4</b>
<b>Notes:</b>	Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.	



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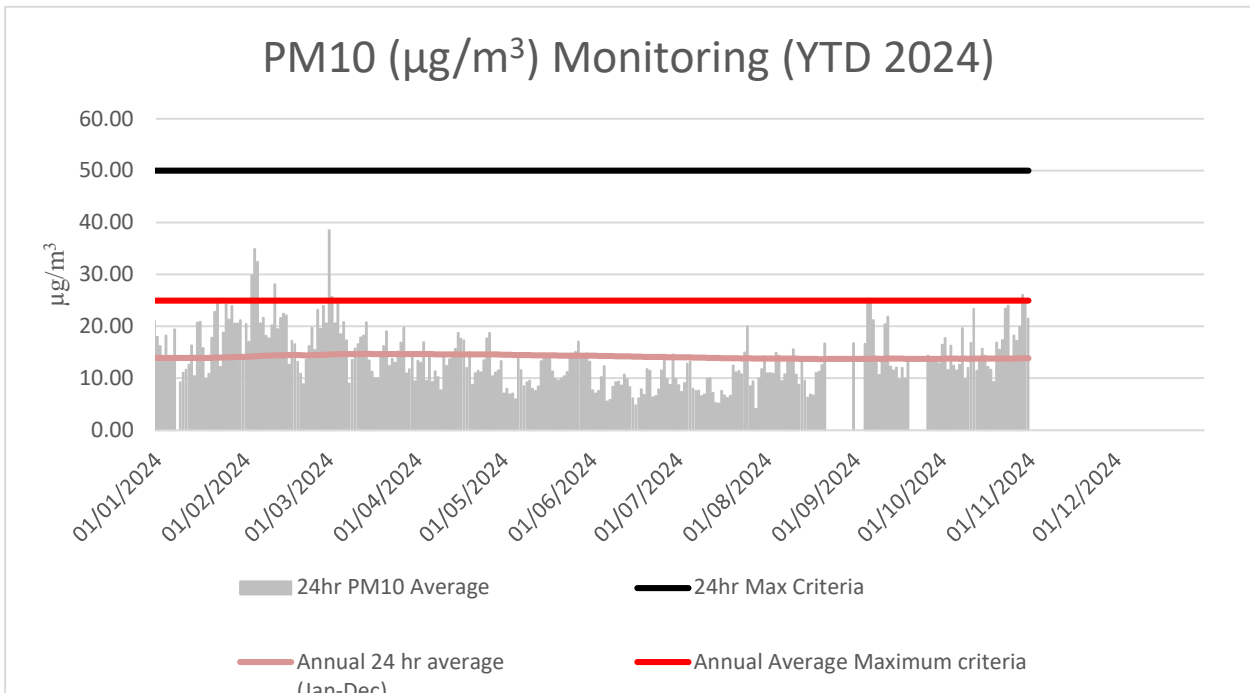
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A 12-month rolling average of depositional dust concentrations has been presented below. Manning Colliery’s dust gauges are located around the perimeter of the Manning Colliery site boundary.



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



Annual 24hr PM<sub>10</sub> average maximum criteria for October 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 93.4% for the month of October 2024.

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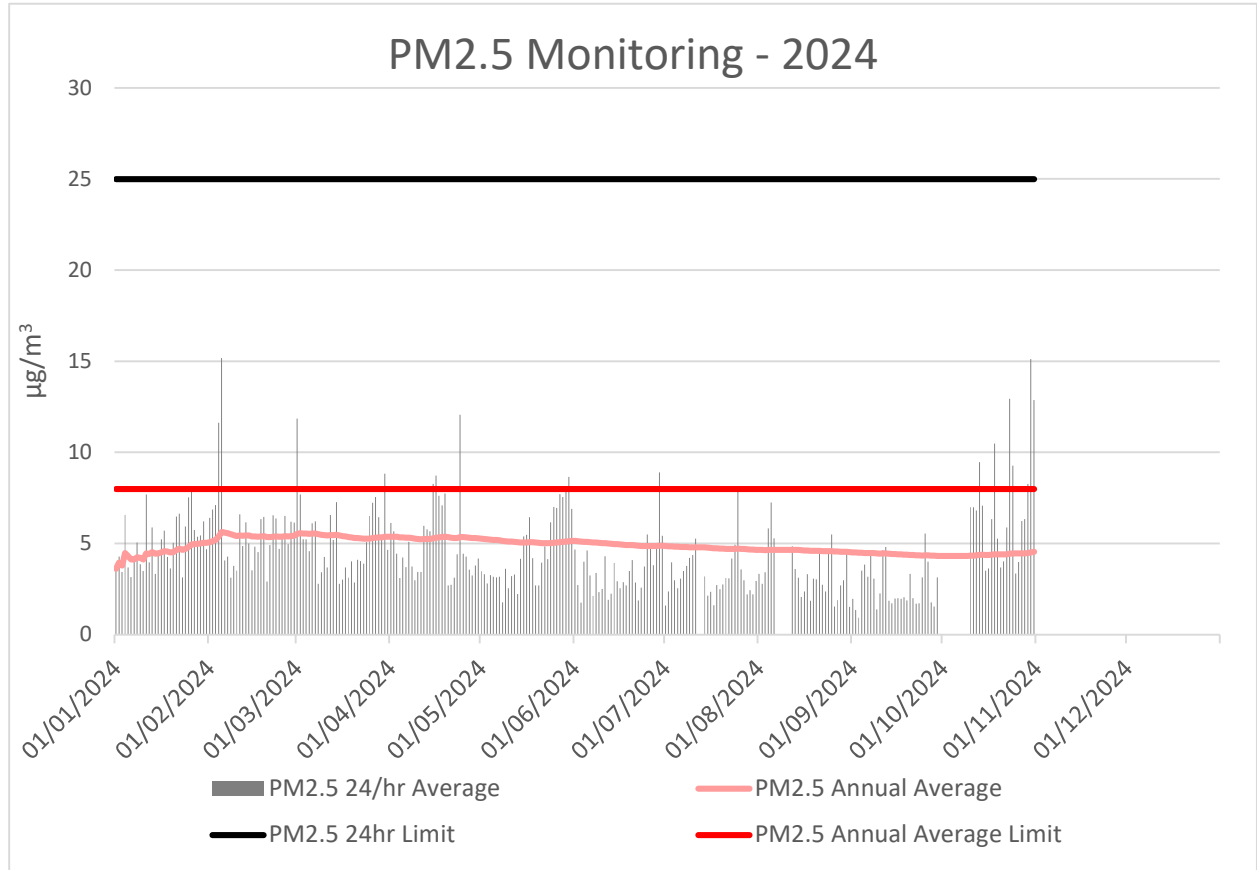
Variable	October	Total	Valid
A/C Temp	99.8%	8928	8913
A1_Scaled	99.8%	8928	8913
Band	99.8%	8928	8913
Bypass Flow	99.8%	8928	8912
Cap Temp	99.8%	8928	8912
Case Temp	99.8%	8928	8912
Config	99.8%	8928	8913
Dew Point	99.8%	8928	8912
Dig-In	99.8%	8928	8913
Dig-Latch	99.8%	8928	8913
ESN	99.8%	8928	8913
Filter Freq	99.8%	8928	8912
Filter Load	99.8%	8928	8912
Humidity	99.8%	8928	8912
MC	99.8%	8928	8913
MC 12Hr	99.8%	8928	8913
MC 1Hr	99.8%	8928	8913
MC 24Hr	99.8%	8928	8913
MC 30min	99.8%	8928	8913
MC 8Hr	99.8%	8928	8913
MC Total	99.8%	8928	8912
Mobile Signal	99.8%	8928	8913
Noise	99.8%	8928	8912
PM10 Flow	99.8%	8928	8912
Pressure	99.8%	8928	8912
Site	0.0%	8928	0
Temperature	99.8%	8928	8912
Tube Temp	99.8%	8928	8912
Vac Pressure	99.8%	8928	8912
Volts	99.8%	8928	8913

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### Air Quality – PM<sub>2.5</sub>

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 October 2024. The 12-month rolling average PM<sub>2.5</sub> value on 31 October was 4.54  $\mu\text{g}/\text{m}^3$ . PM<sub>2.5</sub> data availability in October was 67%. The 2024 year to date PM<sub>2.5</sub> data availability is 92.62%.

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## Weather Data

A summary of weather data recorded by a meteorological monitoring station at the adjacent Manning Colliery is presented below for the year to date. (EPA ID no. 26).

Monthly Weather Data 2024			
Licensee	Great Southern Energy Pty Ltd		
Location	Manning Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	13 November 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
Apr-24	362	13.2	17.9
May-24	263	12.1	16.6
Jun-24	163	3.2	22.1
July-24	88	1.8	22
Aug-24	56.4	4	29.2
Sep-24	85.8	4.4	28.8
Oct-24	75	7.9	30.6

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Variable	October	Total	Valid
Baro (Corrected)	99.9%	2976	2973
10m Temp	99.9%	2976	2973
2m Temp	99.9%	2976	2973
A1	99.9%	2976	2973
A1_Scaled	99.9%	2976	2973
Assumed Temp	99.9%	2976	2973
Barometric	99.9%	2976	2973
Config	99.9%	2976	2973
Daily Evap	99.9%	2976	2973
Daily Rain	99.9%	2976	2973
Delta T	99.9%	2976	2973
Dew Point	99.9%	2976	2973
Dig-In	99.9%	2976	2973
Dig-Latch	99.9%	2976	2973
ESN	99.9%	2976	2973
FDI	99.9%	2976	2973
Heat Index	99.9%	2976	2973
Humidity	99.9%	2976	2973
Mobile Signal	99.9%	2976	2973
Rain	99.9%	2976	2973
Raw Evap	99.9%	2976	2973
S Class	99.9%	2976	2973
Scalar WS	99.9%	2976	2973
Sigma	99.9%	2976	2973
Site	0.0%	2976	0
Solar Radiation	99.9%	2976	2973
Vector WD	99.9%	2976	2973
Vector WS	99.9%	2976	2973
Volts	99.9%	2976	2973
Wind Chill	99.9%	2976	2973
Wind Direction	99.9%	2976	2973
Wind Speed	99.9%	2976	2973
WS Avg	99.9%	2976	2973
WS Gust	99.9%	2976	2973