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# Mannering Colliery Monthly Website Report – June 2025

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<b>Site:</b>	Mannering Colliery
<b>Department:</b>	Health Safety and Environment
<b>Report Title:</b>	Monthly Environmental Report – June 2025
<b>Report Date:</b>	8 <sup>th</sup> July 2025
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# Monthly Website Report

Mannering Colliery Monthly Environmental Report – June 2025

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## Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of June 2025.

## Introduction

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

Mannering 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;
- 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 Mannering Colliery EPL 191 are provided below.

Mannering Colliery Information	
Premises name	Mannering Colliery
Address	Ruttleys Road, Doyalson, NSW, 2262
Licensee	Great Southern Energy Pty Ltd
EPL #	191
EPL location	<a href="#">EPL 0191 - 9 April 2025</a>

The overall purpose of this monthly report is to keep stakeholders informed of the environmental monitoring results at Mannering 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 Mannering 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: 9 April 2025)

ALS - Dust Deposition Report **June 2025**

ALS – MC Water Analysis Reports **June 2025**

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## Monitoring Results

### Water – Quality

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

June 2025				
EPL	191			
Licensee	Great Southern Energy Pty Ltd			
Premises	Mannering Colliery			
Location	LDP001 (EPA ID # 1)			
Sample Frequency	Weekly			
pH limit	6.5 - 8.5			
TSS limit (mg/L)	50			
Oil and grease limit (mg/L)	10			
Water Quality Results				
Date	pH	TSS (mg/L)	Oil and grease (mg/L)	Electrical Conductivity (µS/cm)
3/06/2025	7.80	<5	<5	11000
11/06/2025	7.74	6	<5	21300
18/06/2025	7.76	19	<5	27900
24/06/2025	7.76	30	<5	27700
Average	7.77	14	<5	21975

There were no exceedances of water quality criteria in June 2025 at Mannering 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		11-Jun-2025 08:35
Compound	CAS Number	LOR	Unit	ES2517596-001
				Result
<b>ED040F: Dissolved Major Anions</b>				
Sulfur as S	63705-05-5	1	mg/L	111
Silicon as SiO <sub>2</sub>	14464-46-1	0.1	mg/L	10.6
<b>ED093T: Total Major Cations</b>				
Calcium	7440-70-2	1	mg/L	243
Magnesium	7439-95-4	1	mg/L	220
Potassium	7440-09-7	1	mg/L	32
<b>EG020F: Dissolved Metals by ICP-MS</b>				
Aluminium	7429-90-5	0.01	mg/L	<0.01
Arsenic	7440-38-2	0.001	mg/L	0.002
Beryllium	7440-41-7	0.001	mg/L	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001
Manganese	7439-96-5	0.001	mg/L	0.147
Molybdenum	7439-98-7	0.001	mg/L	0.006
Nickel	7440-02-0	0.001	mg/L	<0.001
Selenium	7782-49-2	0.01	mg/L	<0.01
Silver	7440-22-4	0.001	mg/L	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01
Zinc	7440-66-6	0.005	mg/L	0.011
<b>EG020T: Total Metals by ICP-MS</b>				
Aluminium	7429-90-5	0.01	mg/L	0.01
Antimony	7440-36-0	0.001	mg/L	<0.001
Arsenic	7440-38-2	0.001	mg/L	0.002
Beryllium	7440-41-7	0.001	mg/L	<0.001
<b>EG020T: Total Metals by ICP-MS - Continued</b>				
Barium	7440-39-3	0.001	mg/L	0.202
Cadmium	7440-43-9	0.0001	mg/L	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001
Copper	7440-50-8	0.001	mg/L	0.003
Lead	7439-92-1	0.001	mg/L	<0.001
Lithium	7439-93-2	0.001	mg/L	0.526
Molybdenum	7439-98-7	0.001	mg/L	0.008
Nickel	7440-02-0	0.001	mg/L	0.002
Selenium	7782-49-2	0.01	mg/L	<0.01
Silver	7440-22-4	0.001	mg/L	<0.001
Tin	7440-31-5	0.001	mg/L	<0.001
Titanium	7440-32-6	0.01	mg/L	<0.01
Vanadium	7440-62-2	0.01	mg/L	<0.01
Zinc	7440-66-6	0.005	mg/L	0.019
Boron	7440-42-8	0.05	mg/L	0.34
Iron	7439-89-6	0.05	mg/L	0.11
<b>EG035F: Dissolved Mercury by FIMS</b>				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
<b>EG035T: Total Recoverable Mercury by FIMS</b>				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
<b>EK055G: Ammonia as N by Discrete Analyser</b>				
Ammonia as N	7664-41-7	0.01	mg/L	0.56
<b>EK067G: Total Phosphorus as P by Discrete Analyser</b>				
Total Phosphorus as P	----	0.01	mg/L	0.03

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### Water – Volume

Monthly water volumes discharged via MC's LDP1 during June 2025 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)
01/06/2025	1417.59	0
02/06/2025	1584.64	0.2
03/06/2025	1528.93	0
04/06/2025	1310.23	15.8
05/06/2025	1795.17	0.2
06/06/2025	1594.25	0
07/06/2025	1516.2	0
08/06/2025	1561.53	0
09/06/2025	510.17	0
10/06/2025	406.98	0
11/06/2025	1952.15	0
12/06/2025	1309.75	1.6
13/06/2025	1298.44	0
14/06/2025	1126.85	7.2
15/06/2025	1342.77	1.4
16/06/2025	1283.85	0.2
17/06/2025	1408.34	0
18/06/2025	1559.36	0
19/06/2025	2438.15	0.2
20/06/2025	1471.02	0
21/06/2025	1112.84	0.2
22/06/2025	1031.3	0
23/06/2025	1040.97	0.2
24/06/2025	1372.7	0.2
25/06/2025	1136.28	0
26/06/2025	785.04	0
27/06/2025	970.61	0.8
28/06/2025	1154.77	1.2
29/06/2025	1227.79	0.2
30/06/2025	2008.91	6.2

Average	1341.92 kL/day	1.19 mm/day
Maximum	2438.15 kL/day	15.8 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. Mannering 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
November 2024	19	104
December 2024	18	122
January 2025	22	144
February 2025	19	163
March 2025	30	193
April 2025	22	215
May 2025	25	240
June 2025	32	272

### Air Quality – Depositional Dust

Monthly depositional dust results are shown below.

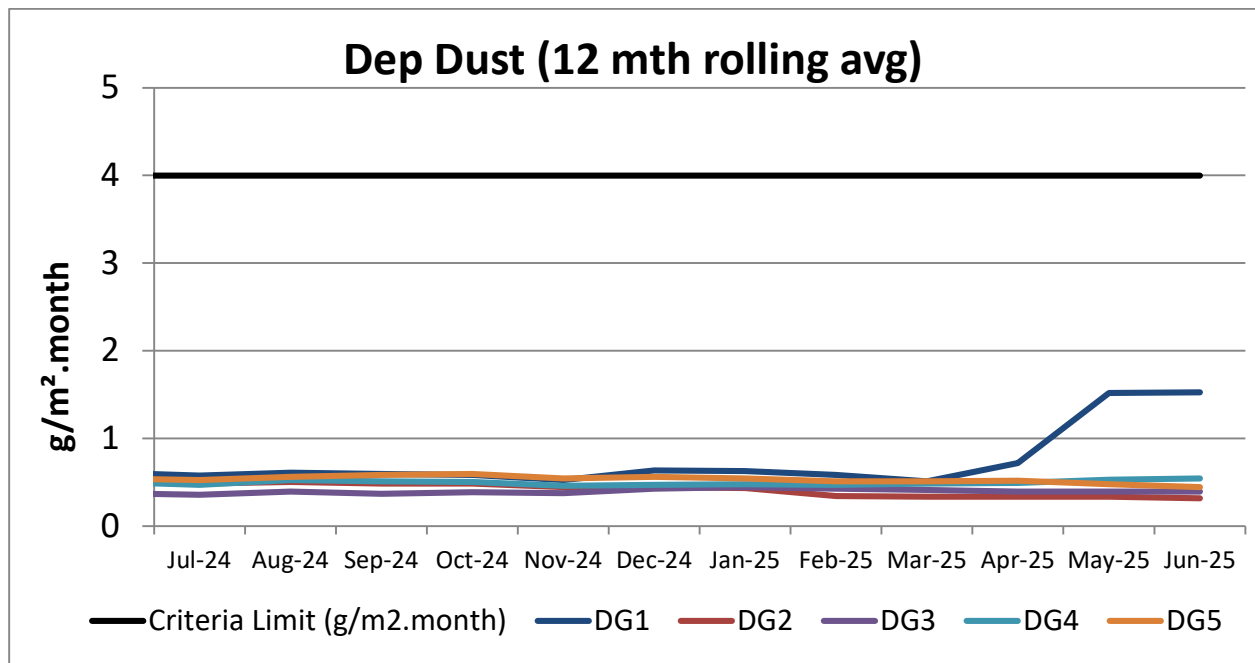
June 2025		
<b>EPL</b>	191	
<b>Limits</b>	Max. total deposited dust level	4g/m <sup>2</sup> /month
	Max. increase in deposited dust level	2g/m <sup>2</sup> /month
<b>Sampling Date</b>	6/05/2025 – 5/06/2025	
EPA ID no.	Site	Insoluble Matter (g/m <sup>2</sup> /month)
3	DG1	<b>0.4</b>
4	DG2	<b>0.1</b>
5	DG3	<b>0.2</b>
6	DG4	<b>22.9</b>
7	DG5	<b>0.2</b>
Notes: Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.		

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



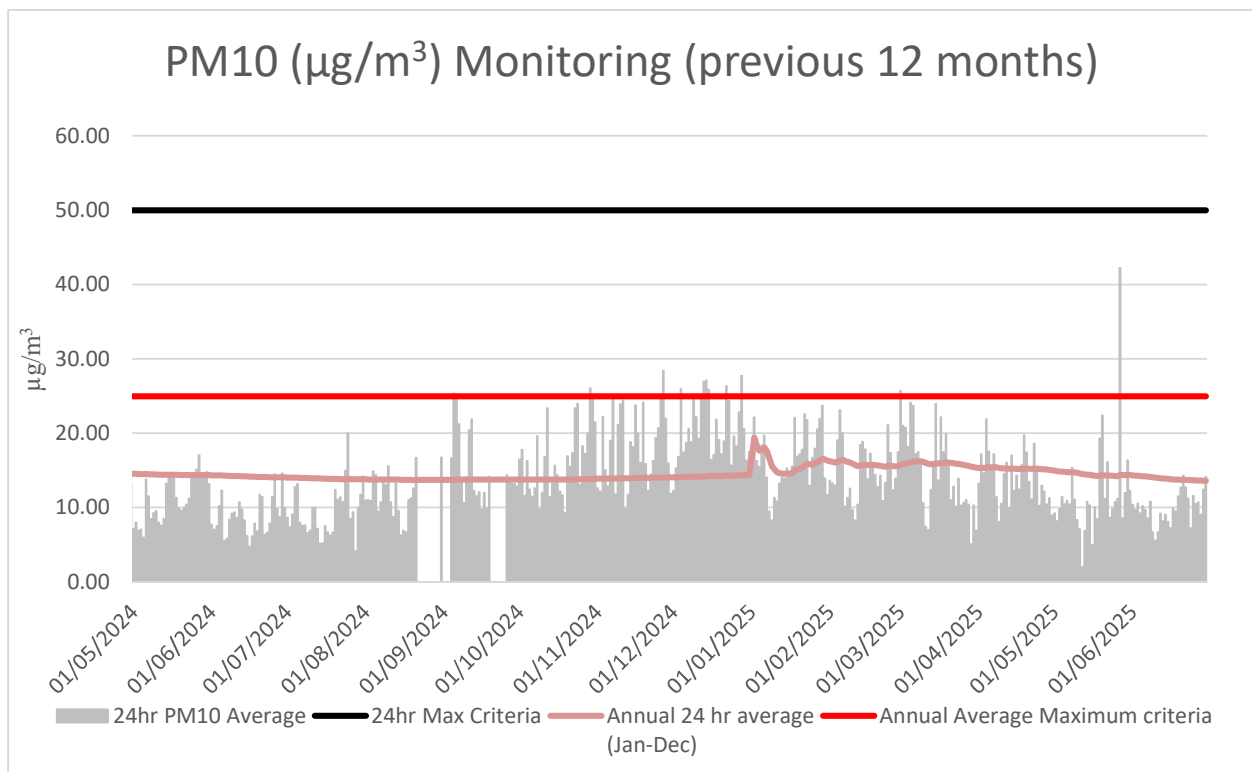
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## Air Quality – PM<sub>10</sub>

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 June 2025 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 June 2025.

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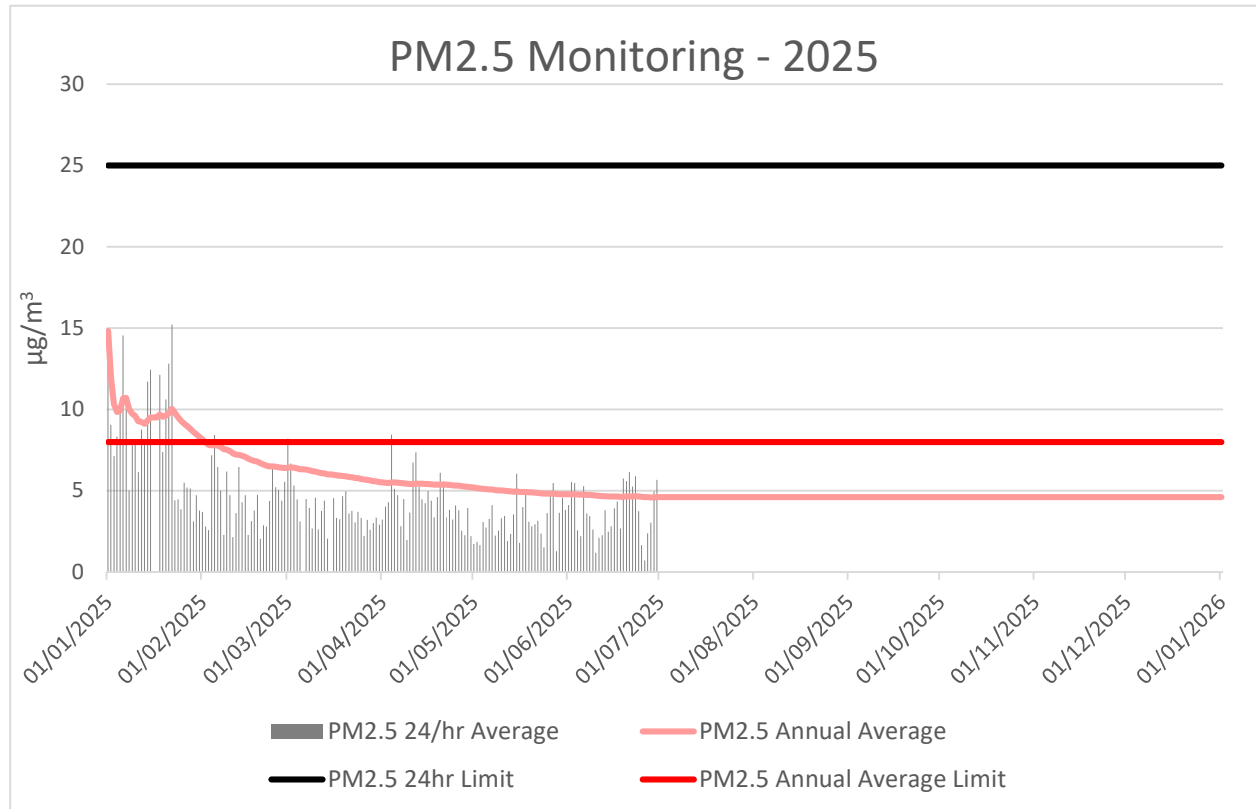
Variable	June	Total	Valid
A/C Temp	99.8%	8640	8622
A1_Scaled	99.8%	8640	8622
Band	99.8%	8640	8622
Bypass Flow	99.8%	8640	8622
Cap Temp	99.8%	8640	8622
Case Temp	99.8%	8640	8622
Config	99.8%	8640	8622
Dew Point	99.8%	8640	8622
Dig-In	99.8%	8640	8622
Dig-Latch	99.8%	8640	8622
ESN	99.8%	8640	8622
Filter Freq	99.8%	8640	8622
Filter Load	99.8%	8640	8622
Humidity	99.8%	8640	8622
MC	99.8%	8640	8622
MC 12Hr	99.8%	8640	8622
MC 1Hr	99.8%	8640	8622
MC 24Hr	99.8%	8640	8622
MC 30min	99.8%	8640	8622
MC 8Hr	99.8%	8640	8622
MC Total	99.8%	8640	8622
Mobile Signal	99.8%	8640	8622
Noise	99.8%	8640	8622
PM10 Flow	99.8%	8640	8622
Pressure	99.8%	8640	8622
Site	0.0%	8640	0
Temperature	99.8%	8640	8622
Tube Temp	99.8%	8640	8622
Vac Pressure	99.8%	8640	8622
Volts	99.8%	8640	8622

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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 June 2025. The 12-month rolling average PM<sub>2.5</sub> value on 30 June was 4.6 µg/m<sup>3</sup>. PM<sub>2.5</sub> data availability in June was 99.6%. The 2025 year to date PM<sub>2.5</sub> data availability is 94.1%.

### 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 2025			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	7 June 2025		
Month	Total Rainfall/Month (mm)	Min Temp	Max Temp
Jan-25	237	11.9	41.3
Feb-25	31	12.5	33.8
Mar-25	138	15.4	36.3
Apr-25	232	11	29.4
May-25	387	7.5	26
Jun-25	37.8	2.8	22.2

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Variable	May	Total	Valid
Baro (Corrected)	95.3%	2976	2835
10m Temp	95.3%	2976	2835
2m Temp	95.3%	2976	2835
A1	95.3%	2976	2835
A1_Scaled	95.3%	2976	2835
Assumed Temp	95.3%	2976	2835
Barometric	95.3%	2976	2835
Config	95.3%	2976	2835
Daily Evap	95.3%	2976	2835
Daily Rain	95.3%	2976	2835
Delta T	95.3%	2976	2835
Dew Point	95.3%	2976	2835
Dig-In	95.3%	2976	2835
Dig-Latch	95.3%	2976	2835
ESN	95.3%	2976	2835
FDI	95.3%	2976	2835
Heat Index	95.3%	2976	2835
Humidity	95.3%	2976	2835
Mobile Signal	95.3%	2976	2835
Rain	95.3%	2976	2835
Raw Evap	95.3%	2976	2835
S Class	95.3%	2976	2835
Scalar WS	95.3%	2976	2835
Sigma	95.3%	2976	2835
Site	0.0%	2976	0
Solar Radiation	95.3%	2976	2835
Vector WD	95.3%	2976	2835
Vector WS	95.3%	2976	2835
Volts	95.3%	2976	2835
Wind Chill	95.3%	2976	2835
Wind Direction	95.3%	2976	2835
Wind Speed	95.3%	2976	2835
WS Avg	95.3%	2976	2835
WS Gust	95.3%	2976	2835