
Mannering Colliery Monthly Website Report – July 2025

Site:	Mannering Colliery
Department:	Health Safety and Environment
Report Title:	Monthly Environmental Report – July 2025
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Monthly Website Report

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Summary

Environmental monitoring results are presented in this report for monitoring undertaken during the period of July 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	EPL 0191 - 9 April 2025

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 – 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.

References

Project Approval MP06_0311 (as modified)

Environment Protection Licence 191 (Licence version date: 9 April 2025)

ALS - Dust Deposition Report **July 2025**

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

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Monitoring Results

Water – Quality

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

July 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)
30/06/2025	7.72	8	<5	25100
8/07/2025	7.68	8	<5	27100
15/07/2025	7.72	<5	<5	28300
22/07/2025	7.72	10	<5	25200
30/07/2025	7.85	6	<5	2900
Average	7.738	6.9	<5	21720

There were no exceedances of water quality criteria in July 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		22-Jul-2025 09:30
Compound	CAS Number	LOR	Unit	ES2522291-001
				Result
ED040F: Dissolved Major Anions				
Sulfur as S	63705-05-5	1	mg/L	150
Silicon	7440-21-3	0.05	mg/L	4.82
ED093T: Total Major Cations				
Calcium	7440-70-2	1	mg/L	297
Magnesium	7439-95-4	1	mg/L	291
Potassium	7440-09-7	1	mg/L	38
EG020F: Dissolved Metals by ICP-MS				
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
Copper	7440-50-8	0.001	mg/L	0.004
Cobalt	7440-48-4	0.001	mg/L	<0.001
Nickel	7440-02-0	0.001	mg/L	0.003
Lead	7439-92-1	0.001	mg/L	<0.001
Zinc	7440-66-6	0.005	mg/L	0.024
Manganese	7439-96-5	0.001	mg/L	0.013
Molybdenum	7439-98-7	0.001	mg/L	0.004
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
EG020T: Total Metals by ICP-MS				
Aluminium	7429-90-5	0.01	mg/L	0.04
Antimony	7440-36-0	0.001	mg/L	0.001
Arsenic	7440-38-2	0.001	mg/L	0.001
Beryllium	7440-41-7	0.001	mg/L	<0.001
EG020T: Total Metals by ICP-MS - Continued				
Barium	7440-39-3	0.001	mg/L	0.216
Cadmium	7440-43-9	0.0001	mg/L	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001
Copper	7440-50-8	0.001	mg/L	0.023
Cobalt	7440-48-4	0.001	mg/L	<0.001
Nickel	7440-02-0	0.001	mg/L	0.003
Lead	7439-92-1	0.001	mg/L	<0.001
Zinc	7440-66-6	0.005	mg/L	0.031
Lithium	7439-93-2	0.001	mg/L	0.548
Manganese	7439-96-5	0.001	mg/L	0.055
Molybdenum	7439-98-7	0.001	mg/L	0.007
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	0.002
Titanium	7440-32-6	0.01	mg/L	<0.01
Vanadium	7440-62-2	0.01	mg/L	<0.01
Boron	7440-42-8	0.05	mg/L	0.36
Iron	7439-89-6	0.05	mg/L	0.12
EG035F: Dissolved Mercury by FIMS				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
EG035T: Total Recoverable Mercury by FIMS				
Mercury	7439-97-6	0.0001	mg/L	<0.0001
EK055G: Ammonia as N by Discrete Analyser				
Ammonia as N	7664-41-7	0.01	mg/L	0.48
EK067G: Total Phosphorus as P by Discrete Analyser				
Total Phosphorus as P	----	0.01	mg/L	<0.01

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Water – Volume

Monthly water volumes discharged via MC's LDP1 during July 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)
01/07/2025	669.96	31.2
02/07/2025	1552.46	22.2
03/07/2025	1596.19	1
04/07/2025	170.01	0
05/07/2025	1211.56	0
06/07/2025	1238.2	0.4
07/07/2025	1230.29	0
08/07/2025	1299.81	0
09/07/2025	1868.5	0
10/07/2025	1589.17	0
11/07/2025	140.95	0
12/07/2025	0	0
13/07/2025	0	0
14/07/2025	511.93	0
15/07/2025	1122.75	2.6
16/07/2025	899.87	0
17/07/2025	878.65	0
18/07/2025	1193.58	9.6
19/07/2025	1248.15	0
20/07/2025	1148.55	0.2
21/07/2025	701.37	0
22/07/2025	1084.56	0
23/07/2025	320.58	7
24/07/2025	1383.46	0
25/07/2025	1209.87	0
26/07/2025	819.81	3
27/07/2025	822.11	0
28/07/2025	1435.39	0
29/07/2025	718.06	0
30/07/2025	822.9	28.8
31/07/2025	2968.19	26

Average	1027.64 kL/day	4 mm/day
Maximum	2968.19 kL/day	31 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 FY2025-2026		
Date (month)	GW Discharge (ML/Month)	GW Discharge (Cumulative ML YTD)
July 2025	22	22

Air Quality – Depositional Dust

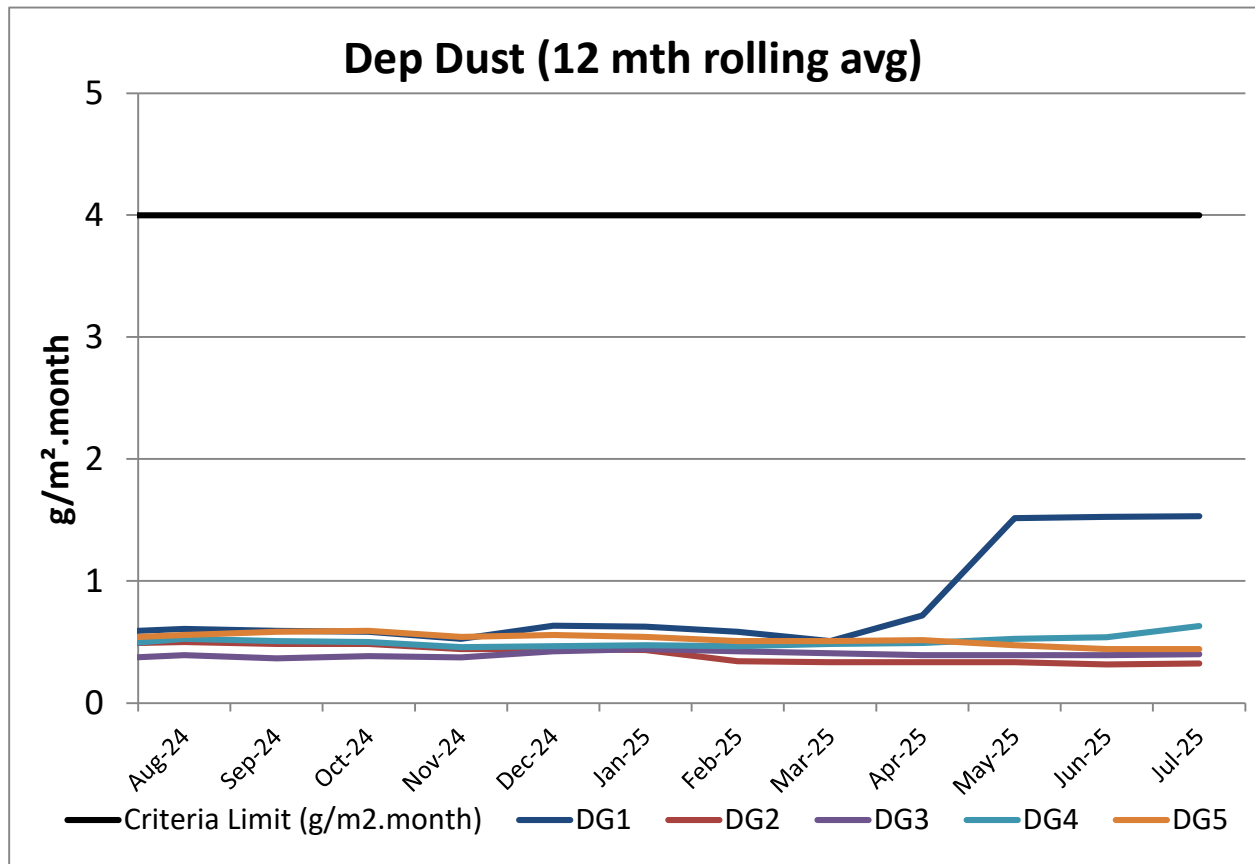
Monthly depositional dust results are shown below.

July 2025		
EPL	191	
Limits	Max. total deposited dust level	4g/m ² /month
	Max. increase in deposited dust level	2g/m ² /month
Sampling Date	5/06/2025 – 7/07/2025	
EPA ID no.	Site	Insoluble Matter (g/m ² /month)
3	DG1	0.2
4	DG2	0.2
5	DG3	0.2
6	DG4	1.1
7	DG5	0.3
Notes:	Sampling locations provided in Delta Coal Air Quality and Greenhouse Gas Management Plan available on the Delta Coal website.	

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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.

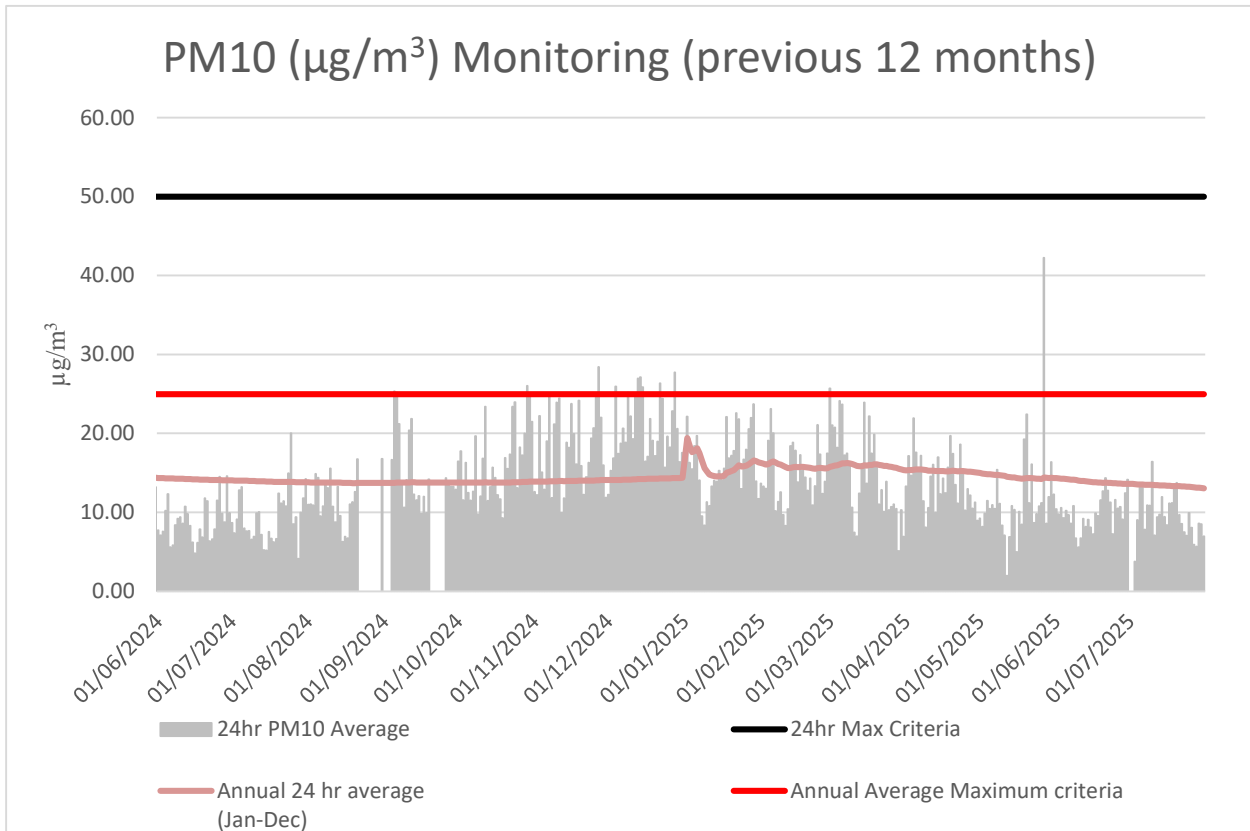


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Air Quality – PM₁₀

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 July 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 99% for the month of July 2025.

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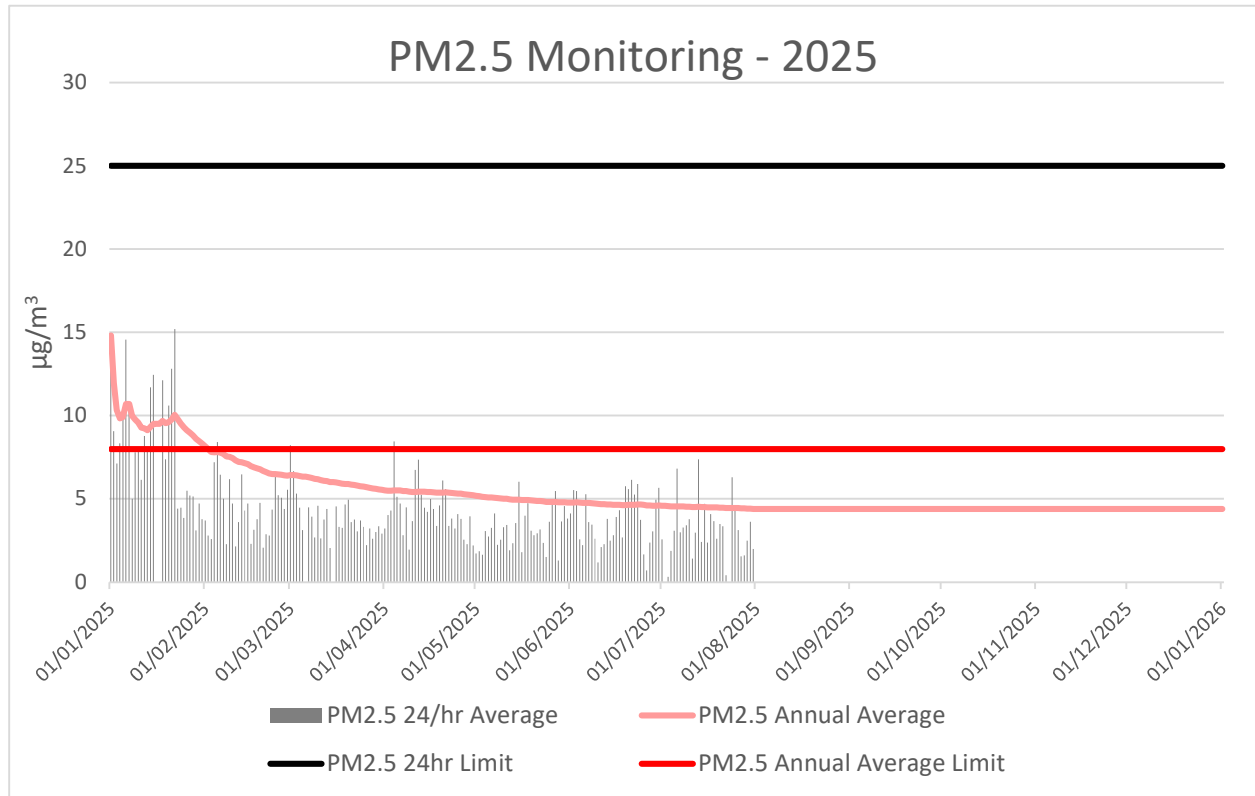
Variable	July	Total	Valid
A/C Temp	96.6%	8928	8628
A1_Scaled	96.7%	8928	8629
Band	96.7%	8928	8629
Bypass Flow	96.6%	8928	8627
Cap Temp	96.6%	8928	8627
Case Temp	96.6%	8928	8627
Config	96.7%	8928	8629
Dew Point	96.6%	8928	8627
Dig-In	96.7%	8928	8629
Dig-Latch	96.7%	8928	8629
ESN	96.7%	8928	8629
Filter Freq	96.6%	8928	8627
Filter Load	96.6%	8928	8627
Humidity	96.6%	8928	8627
MC	96.6%	8928	8627
MC 12Hr	96.6%	8928	8627
MC 1Hr	96.6%	8928	8627
MC 24Hr	96.6%	8928	8627
MC 30min	96.6%	8928	8627
MC 8Hr	96.6%	8928	8627
MC Total	96.6%	8928	8627
Mobile Signal	96.7%	8928	8629
Noise	96.6%	8928	8627
PM10 Flow	96.6%	8928	8627
Pressure	96.6%	8928	8627
Site	0.0%	8928	0
Temperature	96.6%	8928	8627
Tube Temp	96.6%	8928	8627
Vac Pressure	96.6%	8928	8627
Volts	96.7%	8928	8629

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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.



PM_{2.5} daily average limit in July 2025. The 12-month rolling average PM_{2.5} value on 31 July was 4.4 µg/m³. PM_{2.5} data availability in July was 85.5%. The 2025 year to date PM_{2.5} data availability is 92.8%.

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 2025			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	11 July 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
July-25	131	2.1	22.1

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Variable	July	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