MVV Environment Medworth Limited

MEDWORTH EFW AIR QUALITY MONITORING

Quarterly Report - September to December 2025

FEBRUARY 2026

OFFICIAL

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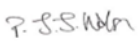
Signature				
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CONTENTS

1 INTRODUCTION

1.1 BACKGROUND

MVV Environment Medworth Limited (the Developer) has secured a Development Consent Order to construct, operate and maintain an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on Algores Way, Wisbech, Cambridgeshire. Together with associated Grid Connection, CHP Connection, Access Improvements, Water Connections, Temporary Construction Compound, and an acoustic fence, these works are the Authorised Development. The Development is referred to as Medworth EfW in this document.

WSP UK Limited was commissioned to prepare a Local Air Quality Monitoring Strategy (LAQMS) in consultation with Fenland District Council (FDC) and the Borough Council of King's Lynn and West Norfolk (BCKLWN) Environmental Health Officers.

This document is the first quarterly report detailing the air quality monitoring implemented as part of the LAQMS. The report covers quarter four of 2025 and includes additional data for September from the Thomas Clarkson Academy reference AQMS and diffusion tubes due to their installation at the end of August and start of September 2025.

1.2 OBJECTIVES

- The results will be used to quantify air quality conditions at the site during the development and for four years following the commissioning of the Medworth EfW CHP facility.
- The results will be compared to UK Air Quality Strategy Objectives. These are shown in Table 1-1.
- If SO_2 levels exceed 50% of the 24-hour mean objective levels of (62.5 µg/m^3) more than 10 times over a continuous 3-month period, SO_2 diffusion tube monitoring will be implemented.
- The results will be used to provide information about changes in air quality over time, with reference to activities taking place on site.

Table 1-1 - UK Air Quality Strategy Objectives

Pollutant	Objective/ Target Value	Measured as	Notes
PM_{10}	50 µg/m^3	24-hour mean	Not to be exceeded more than 35 times a year
	40 µg/m^3	Annual mean	Limit value not to be exceeded
$PM_{2.5}$	20 µg/m^3	Annual mean	Limit value not to be exceeded
NO_2	200µg/m^3	1-hour mean	Not to be exceeded more than 18 times a year
	40µg/m^3	Annual mean	Limit value not to be exceeded
SO_2	266 µg/m^3	15 min mean	Not to be exceeded more than 35 times a year
	350 µg/m^3	1-hour mean	Not to be exceeded more than 24 times a year
	125 µg/m^3	24-hour mean	Not to be exceeded more than 3 times a year

2 METHODOLOGY

The Air Quality monitoring for Medworth EfW is comprised of three sampling approaches:

1) A continuous Air Quality Monitoring Station (AQMS) equipped with reference standard analysers recording NO, NO_x, NO_2, SO_2 concentrations, a reference equivalent particulate monitor recording both PM_{10}, and $PM_{2.5}$ concentrations and a meteorological (MET) station recording wind speed and direction.

2) A continuous indicative sensor (Zephyr) measuring NO_2, PM_{10}, and $PM_{2.5}$.

3) Diffusion tubes collecting monthly NO_2 concentrations.

2.1 LOCATIONS

Figures 2-1 and 2-2 show the monitoring locations. The blue hashed area is an indicative location for the Medworth EfW facility and temporary site compound. The orange dots indicate the diffusion tube locations. The red diamonds indicate the continuous monitoring locations.

Figure 2-1 - Overview of All Monitoring Locations

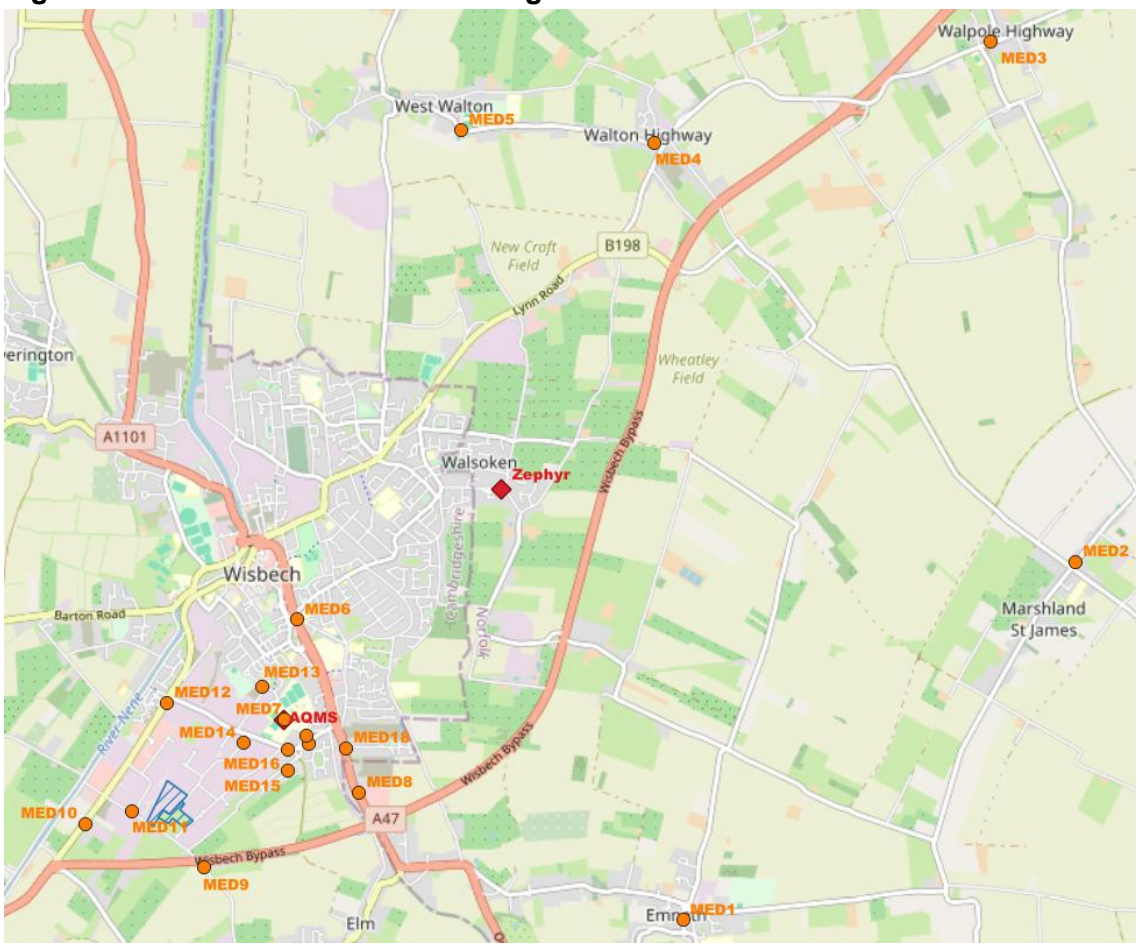
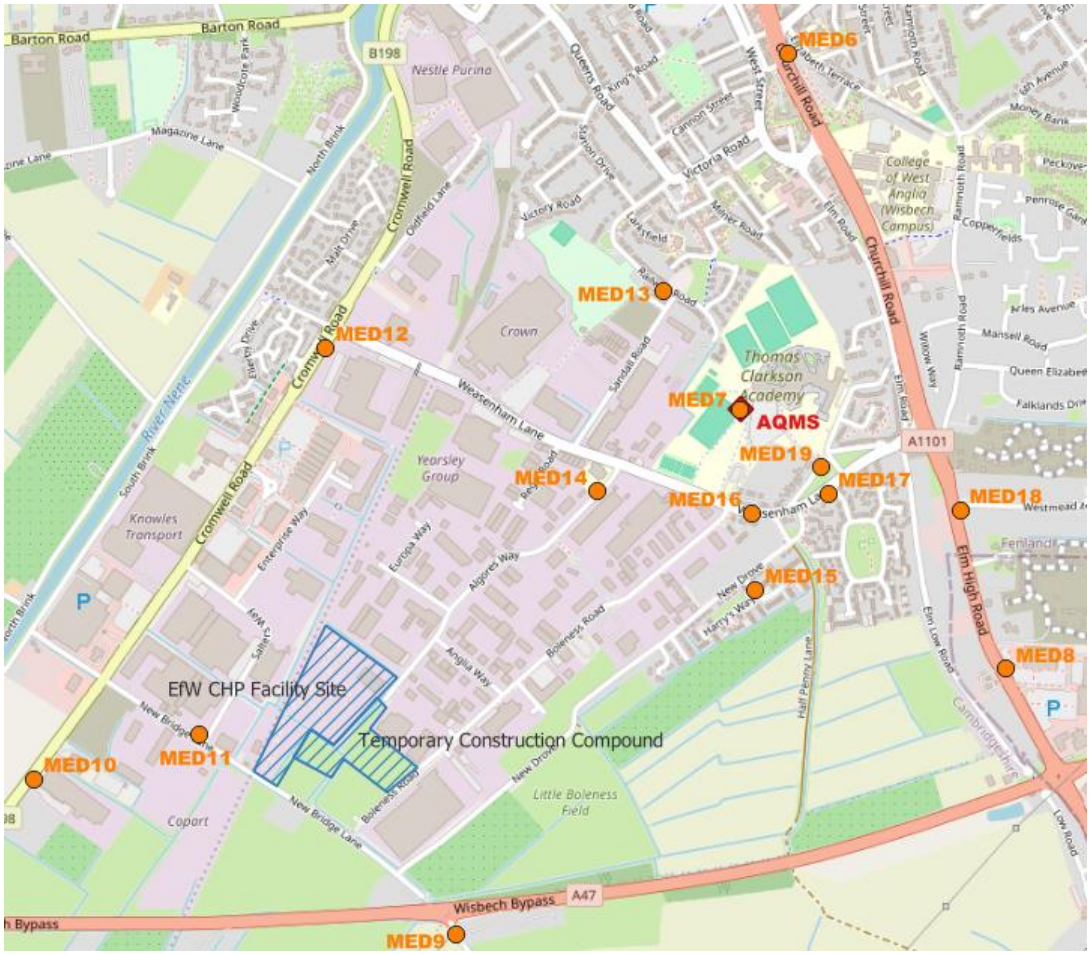


Figure 2-2 - Monitoring Locations near site and school



The AQMS is located within the grounds of Thomas Clarkson Academy. The Zephyr is located on a lamppost on Chapnall Road, Wisbech, and diffusion tube monitoring locations are summarised in Table 2-1 below.

Table 2-1 – Diffusion tube locations

Sample ID	Location	X	Y	Height (cm)	Distance from kerb (cm)
MED1	Emneth	549508	307148	223	156
MED2	Marshland St James	552416	309962	220	110
MED3	Walpole Highway	551647	313899	220	455
MED4	Walton Highway	549102	313046	227	180
MED5	West Walton	547629	313103	240	103
MED6	Churchill Rd	546494	309343	230	160

MED7	AQMS, Thomas Clarkson Academy	546415	308582	210	NA
MED8	Elm High Road	547003	308038	210	315
MED9	A47	545836	307433	210	125
MED10	Cromwell Road, South	544921	307739	214	150
MED11	New Bridge Lane	545273	307845	220	224
MED12	Cromwell Road, North	545519	308681	220	130
MED13	Railway Road	546242	308825	220	150
MED14	Algores Way	546111	308392	210	160
MED16	Weasenham Lane	546446	308354	220	145
MED15	Harry's Way	546457	308190	220	80
MED17	Heron Road	546610	308401	215	170
MED18	Westmead Ave	546897	308362	220	340
MED19	Corporation Road	546593	308458	222	135

2.2 REFERENCE AIR QUALITY MONITORING STATION

The AQMS was installed by Cura Terrae (formerly Enviro Technology Services Ltd) on 27th August 2025 and commissioning was completed on 1st September 2025, with WSP in attendance at both visits. Within the cabin are the following instruments:

- Teledyne-API MODEL N200 NO-NO2-NOx Gas Analyser
- Teledyne-API MODEL N100 UV SO2 Gas Analyser
- Palas - FIDAS 200 Particulate Monitor

The FIDAS simultaneously measures PM_1, $PM_{2.5}$, PM_4, PM_{10}, total suspended particles (TSP), temperature, pressure and relative humidity. Outside the housing is a WS500-UMB and IADS Extended Wind Speed and Direction sensor.

A photo of the Thomas Clarkson School AQMS is shown in Figure 2-3. Additional photos are included in Appendix A.

Figure 2-3 - Thomas Clarkson School reference Air Quality Monitoring Site

2.2.1 REFERENCE AQMS QA/QC PROCEDURES

The site provides continuous, near real-time, reference standard measurements of NO, NO_x, NO_2, SO_2 and reference equivalent measurements of PM_{10} and $PM_{2.5.}$ Raw data from the reference AQMS was collected and hosted by Envitech Europe on their website https://envitech-europe.net/. Data access details have been shared with the client and the local authorities.

Local Site Operator (LSO) duties for the AQMS were undertaken monthly by Cura Terrae. This included inspecting and checking all instruments. The AQMS gaseous analysers (e.g. NO, NO_x, NO_2, SO_2) were span checked against a certified cylinder of known concentration and zero checks and filter changes were carried out. The results of these checks were reported to WSP. The FIDAS was checked for Zero Air and flow checked. All instruments will be serviced six-monthly by Cura Terrae. There was no service carried out during the current reporting period.

All data was validated and ratified by WSP according to the requirements of Defra's Local Air Quality Management Technical Guidance 2022 (LAQM TG22)[1] and followed the principles used in Defra's UK Automatic Urban and Rural Network (AURN)[2]. WSP checked the data daily for errors, screened all data weekly and provided a weekly summary of data capture and site issues to MVV. Site and instrument issues were referred to Envitech and Cura Terrae for investigation. The data was

[1] https://laqm.defra.gov.uk/wp-content/uploads/2021/03/LAQM-TG22-May-25-v2.1.pdf
[2] https://uk-air.defra.gov.uk/networks/network-info?view=aurn

reviewed in detail at the end of the quarter to consider the measurements and calibration results over a longer time period.

WSP downloaded 15-minute mean NOx, NO, NO_2 and SO_2 data from the Envitech website in units of µg/m^3. The data was converted into parts per billion (ppb) using the conversion factors provided in LAQM TG22. Calibration results were applied to the measurements for scaling purposes. NOx measurements were scaled using span checks against an NO cylinder. The calibration results were applied separately to the 15-minute NOx and NO measurements and the 15-minute NO_2 concentrations were calculated by subtracting the 15-minute NO readings from the 15-minute NOx readings. All three NOx species (NOx, NO and NO_2) were then converted back to µg/m^3 using the Defra conversion factors. The baseline for each pollutant was adjusted by observing trends in the lowest concentration of the ambient data prior to statistical calculations and plotting.

This report includes the results calculated from the ratified data for all pollutants measured at the reference AQMS.

2.3 DIFFUSION TUBE MONITORING

Diffusion tubes using 50% triethanolamine (TEA) in acetone are supplied and analysed by a UKAS accredited Testing laboratory, SOCOTEC (certificate number 1252), who currently supply and analyse tubes for both FDC and BCKLWN. On 27th August 2025, 19 diffusion tubes were deployed in the locations described in Table 2-1. Photos of the diffusion tube monitoring locations are contained in Appendix A.

The tubes were changed monthly within 2 days of the dates recommended in the Defra diffusion tube calendar, except for the first visit which was scheduled earlier to coincide with a visit for the AQMS installation. The exposure dates for each month are shown in Table 2-2.

Table 2-2 - Diffusion tube exposure dates

Month	Start	End
Sep-2025	27/08/2025	30/09/2025
Oct-2025	30/09/2025	05/11/2025
Nov-2025	05/11/2025	05/12/2025
Dec-2025	05/12/2025	07/01/2026

2.3.1 DIFFUSION TUBE QA/QC PROCEDURES

A time-weighted period mean was calculated for the reporting period to account for differences in the diffusion tube exposure dates compared with the Defra diffusion tube calendar.

Diffusion tubes may under or over-read when compared to reference measurement methods. To account for this, the most recent national bias correction factor for the SOCOTEC 50% TEA in acetone method provided by Defra, was applied to the monthly and period mean NO_2 concentrations for all locations. This gives a result which is representative of NO_2 concentrations at each location

for the measurement period which can be compared to other locations and air quality objectives. The latest bias correction factor at the time of reporting was for 2024.

2.4 INDICATIVE AIR QUALITY MONITORING

A Zephyr indicative sensor, supplied by Earthsense, was installed at Chapnall Road on 30th September 2025. The sensor was installed on a lamppost by Balfour Beatty Living Places at a height of 3 m and 1.4 m from the kerb. The Zephyr provides near real-time measurements of NO_2, PM_{10}, and $PM_{2.5}$, enabling comparison with short-term AQS objectives. Particulate measurements from this instrument have been certified as indicative standard through the UK Environment Agency's MCERTS Scheme[3]. A photo of the Chapnall Road Zephyr is shown in Figure 2-4. An additional photo is shown in Appendix A.

Figure 2-4 - Chapnall Road Zephyr indicative air quality monitor

2.4.1 INDICATIVE MONITOR QA/QC PROCEDURES

WSP checked the data from the Zephyr indicative daily for errors and more detailed weekly screening checks were carried out. Information on data capture and site issues was included in the weekly summary to MVV. The data was reviewed at the end of the quarter to consider the results over a longer time period.

[3] https://www.csagroup.org/en-gb/services/mcerts/mcerts-product-certification/mcerts-certified-products/mcerts-certified-products-indicative-ambient-particulate-monitors/

3 RESULTS

3.1 THOMAS CLARKSON ACADEMY REFERENCE AQMS

The dates and results of the calibration checks by Cura Terrae between 1st September and 31st December 2025 are shown in in Table 3-1 and Table 3-2 below.

Table 3-1 – NOx and NO Calibration results from LSO visits from September to December 2025

Date	NOX Zero check (ppb)	NO Zero check (ppb)	NOX Span check (ppb)	NO Span check (ppb)	Cylinder concentration NOX (ppb)	Cylinder concentration NO (ppb)
01/09/2025	0.0	0.0	430.2	428.1	428	428
13/10/2025	0.0	0.0	430.1	428.2	428	428
11/11/2025	2.1	2.2	453.2	451.0	428	428
04/12/2025	2.5	2.5	440.6	449.9	428	428

Table 3-2 – SO_2 calibration results from LSO visits from September to December 2025

Date	Zero calibration (ppb)	Span calibration (ppb)	Cylinder concentration (ppb)
01/09/2025	0.0	462.0	462
13/10/2025	0.0	462.1	462
11/11/2025	0.3	457.8	462
04/12/2025	0.6	456.6	462

3.1.1 DATA CAPTURE

Table 3-2 summarises the monthly data capture rates for each pollutant from 1st September to 31st December 2025. Data capture for the full period is also shown. In future reports, this will be a quarterly data capture result but, in this report, it covers a four-month period for the AQMS due to the installation date on 1st September. Data capture was calculated by first aggregating the 15-minute data to hourly means, with a minimum of three 15-minute mean readings required for a valid hourly mean. The monthly data capture and data capture for September to December was then calculated from the hourly means.

Table 3-3 - Data capture for Thomas Clarkson Reference AQMS from 1st September to 31st December 2025

	September 2025	October 2025	November 2025	December 2025	September-December 2025
NO_2 Data Capture (%)	98.1	98.4	99.7	97.2	98.3
SO_2 Data Capture (%)	98.1	98.5	99.6	99.7	98.9
PM_{10} Data Capture (%)	98.1	88.3	91.2	100.0	94.4
$PM_{2.5}$ Data Capture (%)	98.1	88.3	91.2	100.0	94.4

Data capture at the Thomas Clarkson AQMS from September to December 2025 was good with over 90% data capture for all pollutants for the full period. Short interruptions occurred due to routine LSO checks and maintenance. Longer interruptions are detailed in Table 3-4.

Table 3-4 - Instrument issues at Thomas Clarkson Reference AQMS during September to December 2025

Pollutant	Dates affected	Instrument issue	Action and outcome
NOx, SO_2	28/10/2025 08:45 to 28/10/2025 18:00	Suspected temporary power interruption	Data resumed without intervention
PM_{10}, $PM_{2.5}$	28/10/2025 08:45 to 03/11/2025 14:00	Loss of communication likely caused by suspected power interruption	WSP contacted Cura Terrae on 30/10/2025. An engineer attended on 03/11/2025. The FIDAS instrument was found in the wrong communication mode. Once corrected, data resumed.

3.1.2 MEAN CONCENTRATIONS

Monthly mean concentrations and the mean concentration for each pollutant for the period 1st September to 31st December 2025 measured at the Thomas Clarkson reference AQMS are shown in Table 3-5, below.

Table 3-5 - Monthly mean pollutant concentrations and means for the full reporting period for Thomas Clarkson Reference AQMS from 1st September to 31st December 2025

	September 2025	October 2025	November 2025	December 2025	September-December 2025
NO_2 mean (µg/m³)	7.8	10.1	10.6	9.8	9.6
SO_2 mean (µg/m³)	0.7	0.8	0.8	0.7	0.7
PM_{10} mean (µg/m³)	10.1	11.6	9.4	11.3	10.6
$PM_{2.5}$ mean (µg/m³)	5.1	7.5	6.2	7.8	6.6

The mean concentrations for the period 1st September to 31st December 2025 are compared to the annual mean objectives in Table 3-6 below.

Table 3-6 - Mean pollutant concentrations for Thomas Clarkson Reference AQMS from 1st September to 31st December 2025 with annual mean objective concentrations for comparison

	Mean Concentration September to December 2025 (µg/m³)	Annual Mean Objective (µg/m³)
NO_2 mean	9.6	40
PM_{10} mean	10.6	40
$PM_{2.5}$ mean (µg/m³)	6.6	20

The mean concentrations for NO_2, PM_{10} and $PM_{2.5}$ at the Thomas Clarkson Academy were all below the annual mean objective concentrations for the period 1st September to 31st December 2025.

3.1.3 SHORT TERM AIR QUALITY OBJECTIVES

Exceedances of the 15-minute mean, hourly mean and 24-hour mean Air Quality Strategy objective thresholds for NO_2, SO_2, and PM_{10} at the Thomas Clarkson Reference AQMS during September to

December 2025 are shown in Table 3-7, below, along with exceedances of the threshold for implementation of SO_2 diffusion tube monitoring.

Table 3-7 – Exceedances of the 15-minute, hourly and 24-hour mean AQS objective thresholds and the threshold for implementation of SO_2 diffusion tube monitoring, at Thomas Clarkson Reference AQMS from 1st September to 31st December 2025

	September 2025	October 2025	November 2025	December 2025	September-December 2025
NO_2					
1-hour mean >200 µg/m^3 - not to be exceeded more than 18 times per year	0	0	0	0	0
SO_2					
15 min mean > 266 µg/m^3 – not to be exceeded more than 35 times per year	0	0	0	0	0
1-hour mean > 350 µg/m^3 – not to be exceeded more than 24 times per year	0	0	0	0	0
24-hour mean > 125 µg/m^3– not to be exceeded more than 3 times per year	0	0	0	0	0
24-hour mean > 62.5 µg/m^3 – 10 times exceedances in a 3-month period will trigger the requirement for SO_2 diffusion tube monitoring	0	0	0	0	0
PM_{10}					
24-hour mean > 50 µg/m^3 – not to be exceeded more than 35 times per year	0	0	0	0	0

There were no exceedances of any of the short-term objective thresholds for any pollutant during the period 1st September to 31st December 2025. The 24-hour mean SO_2 concentration did not exceed 50% of the objective threshold so there is currently no requirement for SO_2 diffusion tube monitoring to be implemented.

The maximum concentrations measured during September to December 2025 relating to each of the short-term objectives are shown in Table 3-8, below.

Table 3-8 - Maximum concentrations relating to the short-term objective thresholds from 1st September to 31st December 2025

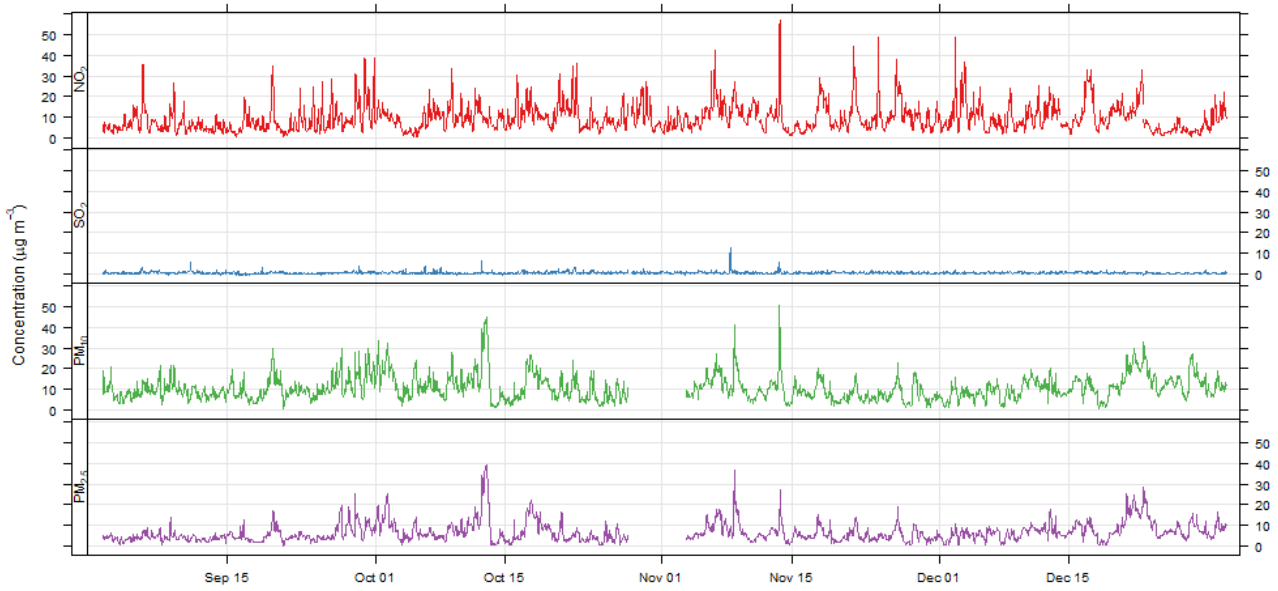
	September 2025	October 2025	November 2025	December 2025	September-December 2025
NO_2					
Max 1-hour mean (µg/m^3) 200 µg/m^3 - not to be exceeded more than 18 times per year	38.8	35.9	56.8	48.7	56.8
SO_2					
Max 15 min mean (µg/m^3). 266 µg/m^3 – not to be exceeded more than 35 times per year	7.1	11.0	19.5	5.5	19.5
Max 1-hour mean (µg/m^3) 350 µg/m^3 – not to be exceeded more than 24 times per year	5.9	6.5	12.6	2.2	12.6
Max 24-hour mean (µg/m^3) 125 µg/m^3– not to be exceeded more than 3 times per year	1.3	1.3	2.1	0.9	2.1
PM_{10}					
Max 24-hour mean > 50 µg/m^3 – not to be exceeded more than 35 times per year	19.7	25.0	18.2	22.3	25.0

The maximum short-term mean concentrations were well below the short-term objective thresholds for all pollutants and time periods.

3.1.4 POLLUTANT PLOTS

Plots of the ratified hourly pollutant concentrations measured at the Thomas Clarkson Academy for the period 1st September to 31st December 2025 are shown in Figure 3-1, below.

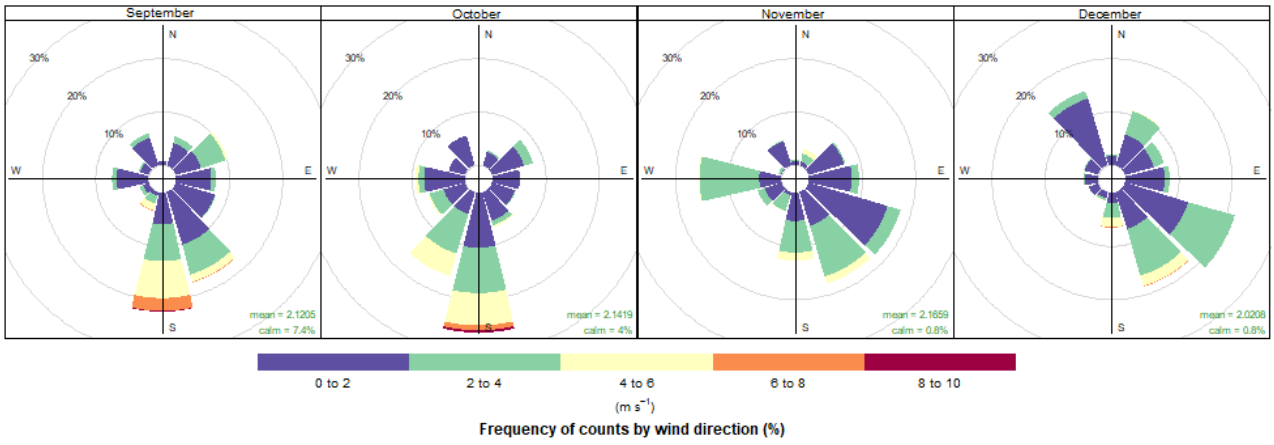
Figure 3-1 - Plots of hourly pollutant concentrations



3.1.5 METEOROLOGICAL DATA

Figure 3-2 shows monthly wind roses of the wind speed and direction data measured by the meteorological mast at the Thomas Clarkson Academy for September to December 2025.

Figure 3-2 – Monthly wind roses of wind speed and direction data measured at the Thomas Clarkson Academy for September to December 2025

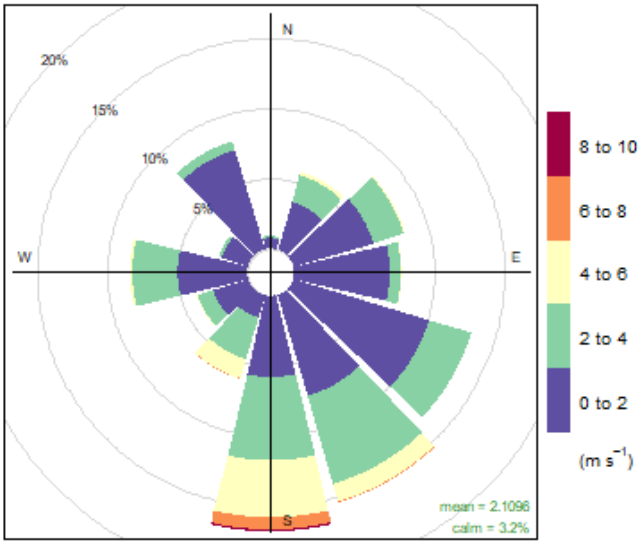


During September and October, winds were predominantly from the south with wind speeds up to 8-10 m/s. During November, there was more variation in wind direction with the most common directions from the west and south-east, with lower wind speeds, up to 4-6 m/s. In December wind

was predominantly from the south-east with some contribution from the north-west. Wind speeds were up to 6-8 m/s.

A wind rose for the full period, 1st September to 31st December 2025 is shown in Figure 3-3.

Figure 3-3 - Wind rose showing wind speed and direction data measured at the Thomas Clarkson Academy for the period 1st September to 31st December 2025.



The most frequent wind direction for the full period was from the south, with speeds up to 8-10 m/s. South-easterly winds also occurred frequently, with speeds up to 6-8 m/s.

3.2 DIFFUSION TUBES

Monthly NO_2 diffusion tube concentrations measured at locations in and around Wisbech from September to December 2025 are shown in Table 3-9. These have been adjusted with the most recent national bias correction factor for the SOCOTEC 50% TEA in acetone method. The latest bias correction factor at the time of reporting was for 2024 and the factor was **0.78**. Full monthly NO_2 diffusion tube laboratory results provided by SOCOTEC, including blank tubes, are included in Appendix B.

Table 3-9 – NO_2 concentrations in and around Wisbech, measured by diffusion tube, from September to December 2025. The results have been adjusted using the latest bias correction factor for the SOCOTEC 50% TEA in acetone method. The tube co-located with the Thomas Clarkson Academy reference AQMS is shown in bold.

Site ID	Location	September 2025	October 2025	November 2025	December 2025
MED1	Emneth	6.8	10.1	12.6	11.0
MED2	Marshland St James	8.2	10.4	13.1	11.5
MED3	Walpole Highway	7.8	8.4	10.8	11.2

MED4	Walton Highway	8.3	10.0	13.7	11.9
MED5	West Walton	7.0	7.3	12.6	10.5
MED6	Churchill Road	21.4	22.0	31.5	24.6
MED7	**Thomas Clarkson**	**8.6**	**10.3**	**missing**	**11.6**
MED8	Elm High Road	16.5	18.6	17.3	16.9
MED9	A47	missing	Invalid result	8.0	8.7
MED10	Cromwell Road S	18.5	20.6	21.9	21.9
MED11	New Bridge Lane	8.2	10.6	7.3	12.6
MED12	Cromwell Road N	23.4	27.1	28.2	29.9
MED13	Railway Road	11.5	15.1	16.9	11.7
MED14	Algores Way	12.1	10.8	15.6	14.3
MED15	Harry's Way	9.0	10.2	10.5	11.0
MED16	Weasenham Lane	14.0	18.2	21.2	16.9
MED17	Heron Road	12.4	16.7	15.9	15.6
MED18	Westmeade Avenue	15.4	missing	missing	12.4
MED19	Corporation Road	8.1	11.9	12.6	11.0

The data capture, the unadjusted time-weighted period mean and the bias corrected time-weighted mean for the period September to December 2025 for each location are shown in Table 3-10. Data capture was calculated by dividing the number of sampled days for each location by the total number of days in the full period.

Table 3-10 - Data capture, time-weighted mean and bias corrected mean for each diffusion tube location for the period September to December 2025. The tube co-located with the Thomas Clarkson Academy reference AQMS is shown in bold.

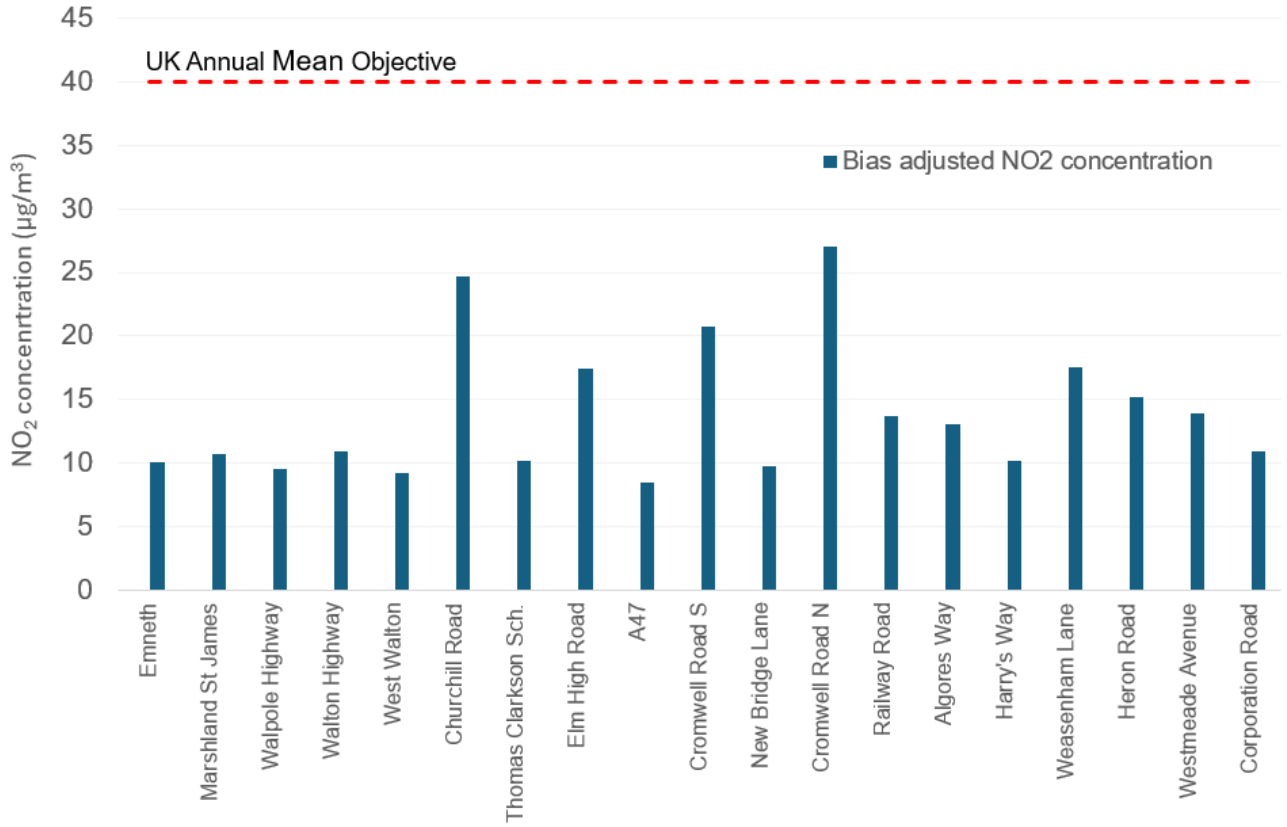
Site ID	Location	Data capture (%)	Time-weighted period mean, not bias corrected	Bias Corrected period mean (µg/m^3)
MED1	Emneth	100	12.9	10.1
MED2	Marshland St James	100	13.7	10.7
MED3	Walpole Highway	100	12.2	9.5

Site ID	Location	Data capture (%)	Time-weighted period mean, not bias corrected	Bias Corrected period mean (µg/m^3)
MED4	Walton Highway	100	13.9	10.9
MED5	West Walton	100	11.8	9.2
MED6	Churchill Road	100	31.6	24.6
MED7	**Thomas Clarkson School**	**77**	**13.0**	**10.2**
MED8	Elm High Road	100	22.3	17.4
MED9	A47	47	10.8	8.4
MED10	Cromwell Road S	100	26.5	20.7
MED11	New Bridge Lane	100	12.5	9.7
MED12	Cromwell Road N	100	34.7	27.1
MED13	Railway Road	100	17.6	13.7
MED14	Algores Way	100	16.8	13.1
MED15	Harry's Way	100	13.0	10.2
MED16	Weasenham Lane	100	22.4	17.5
MED17	Heron Road	100	19.4	15.1
MED18	Westmeade Avenue	50	17.8	13.9
MED19	Corporation Road	100	13.9	10.9

Data capture was good in the majority of cases. There were occasional missing tubes during the period September to December 2025. Should there be repeated occurrences of missing tubes, appropriate mitigations will be considered, depending on the location.

Bias-corrected time-weighted means for each diffusion tube location during the period September to December 2025 are plotted in Figure 3-4 with comparison to the annual mean objective.

Figure 3-4 – Diffusion tube time-weighted mean, bias-corrected, for all diffusion tube locations for the period September to December 2025, compared with the UK annual mean objective.



NO_2 concentrations were well below the annual mean objective at all locations. The highest concentration of 27.1 µg/m^3 during September to December 2025 was measured at location MED12 on Cromwell Road, close to the Weasenham Lane junction. Two other locations measured bias-corrected mean NO_2 concentrations above 20 µg/m^3: MED6 at Churchill Road had a bias-corrected mean of 24.6 µg/m^3 and MED10 at the southern end of Cromwell Road had a bias-corrected mean of 20.7 µg/m^3 for the period September to December 2025.

The bias-corrected mean NO_2 concentration measured by diffusion tube at Thomas Clarkson School was 10.2 µg/m^3 for September to December 2025. This was within 1 µg/m^3 of the mean NO_2 concentration of 9.6 µg/m^3 measured by the reference AQMS. There was no diffusion tube result for November due to a missing tube.

3.3 CHAPNALL ROAD ZEPHYR

3.3.1 DATA CAPTURE

Data capture rates for the Chapnall Road Zephyr are shown in Table 3-11. The instrument was installed on 30th September 2025 so there is no data included for September as there was for the other measurement methods.

Table 3-11 - Data capture for Chapnall Road Zephyr from October to December 2025

	October 2025	November 2025	December 2025	October-December 2025
NO_2 Data Capture (%)	100.0	100.0	100.0	100.0
PM_{10} Data Capture (%)	100.0	100.0	100.0	100.0
$PM_{2.5}$ Data Capture (%)	100.0	100.0	100.0	100.0

Data capture was excellent with no interruptions during the period October to December 2025. Details of instrument issues will be provided in Table 3-12, however, there were no issues to report during the current period.

Table 3-12 - Instrument issues for the Chapnall Road Zephyr during October to December 2025

Pollutant	Dates affected	Instrument issue	Action and outcome
All	N/A	No issues	

3.3.2 MEAN CONCENTRATIONS

Monthly mean concentrations and the mean concentration for each pollutant for the period 1st October to 31st December 2025 measured by the Chapnall Road Zephyr are shown in Table 3-13.

Table 3-13 - Monthly mean pollutant concentrations and means for the full reporting period for Chapnall Road Zephyr from 1st October to 31st December 2025

	October 2025	November 2025	December 2025	October-December 2025
NO_2 mean (µg/m^3)	12.2	13.2	14.2	13.2
PM_{10} mean (µg/m^3)	10.2	8.3	9.2	9.3
$PM_{2.5}$ mean (µg/m^3)	6.4	5.0	5.5	5.7

Table 3-14 - Quarterly mean pollutant concentrations for Chapnall Road Zephyr from 1st October to 31st December 2025 with annual mean objective concentrations for comparison

	Mean Concentration October to December 2025 (µg/m^3)	Annual Mean Objective (µg/m^3)
NO_2 mean	13.2	40
PM_{10} mean	9.3	40
$PM_{2.5}$ mean (µg/m^3)	5.7	20

The mean concentrations for NO_2, PM_{10} and $PM_{2.5}$ measured by the Chapnall Road Zephyr were all below the annual mean objective concentrations for the period October to December 2025.

3.3.3 SHORT TERM OBJECTIVES

Exceedances of the hourly mean and 24-hour mean Air Quality Strategy objective thresholds for NO_2 and PM_{10} are shown in Table 3-15.

Table 3-15 – Exceedances of the hourly and 24-hour mean AQS objective thresholds measured by the Chapnall Road Zephyr from 1st October to 31st December 2025

	October 2025	November 2025	December 2025	October-December 2025
1-hour mean >200 µg/m^3 - not to be exceeded more than 18 times per year	0	0	0	0
24-hour mean > 50 µg/m^3 – not to be exceeded more than 35 times per year	0	0	0	0

There were no exceedances of any of the short-term objective thresholds for NO_2 or PM_{10} during the period 1st October to 31st December 2025.

The maximum concentrations measured from 1st October to 31st December 2025 are reported in Table 3-16. These should be compared to each of the short-term objectives shown in Table 3-15.

Table 3-16 - Maximum concentrations relating to the short-term objective thresholds from 1st September to 31st December 2025

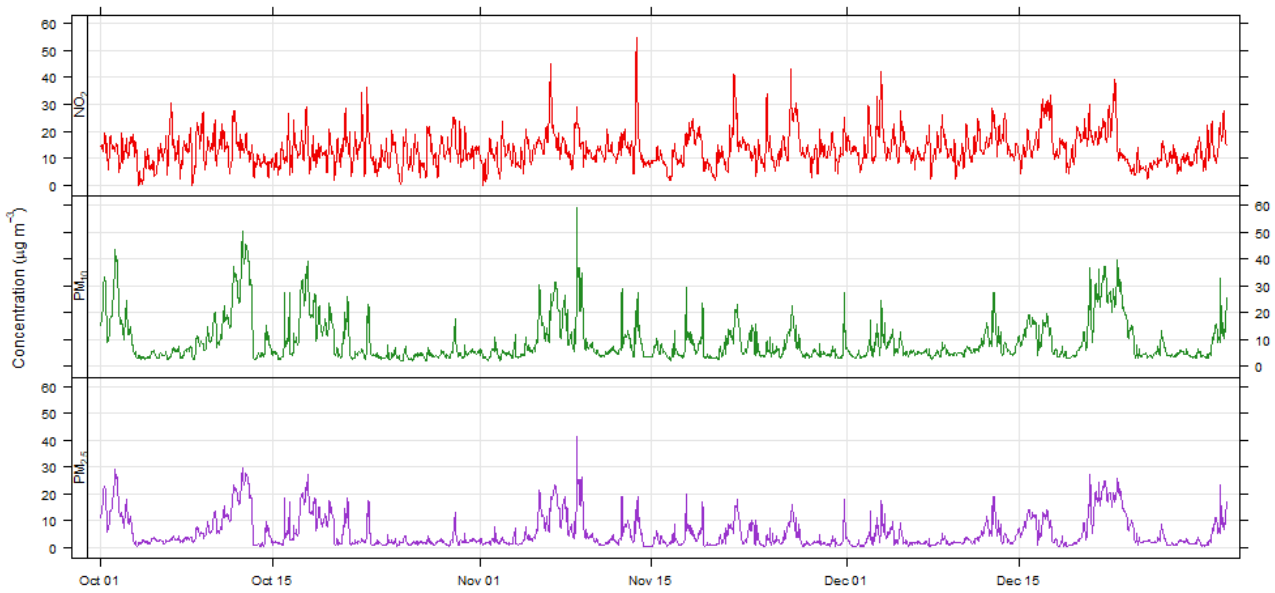
	October 2025	November 2025	December 2025	October-December 2025
NO_2				
Max 1-hour mean (µg/m^3) 200 µg/m^3 - not to be exceeded more than 18 times per year	36.4	54.6	42.4	54.6
PM_{10}				
Max 24-hour mean > 50 µg/m^3 – not to be exceeded more than 35 times per year	36.0	22.0	26.8	36.0

The maximum short-term mean concentrations were well below the short-term objective thresholds for both pollutants and time periods.

3.3.4 POLLUTANT PLOTS

Plots of the hourly pollutant concentrations measured by the Chapnall Road Zephyr for the period 1st October to 31st December 2025 are shown in Figure 3-5.

Figure 3-5 - Time plot of hourly mean Zephyr PM_{10}, $PM_{2.5}$ and NO_2 data for the period 1st October to 31st December 2025



4 SUMMARY

This report details the data collected from 1st September to 31st December 2025 for the agreed LAQMS around the Energy from Waste Combined Heat and Power facility to be constructed and operated by MVV Environment Medworth Limited. This first quarterly report for the LAQMS covers quarter four of 2025 with additional data for September from the Thomas Clarkson Academy reference AQMS and diffusion tubes which were installed in late August to early September.

A summary of air quality network data collected during September to December 2025 is as follows:

- Data capture was 94.4% for PM_{10} and $PM_{2.5}$ and 98.3 for NO_2 and 98.9% for SO_2 at the reference measurement site at the Thomas Clarkson Academy. The missing PM data was due to a communications error on the 28th October, thought to be caused by a power interruption, which was resolved by an engineer visit on 3rd November. A small gap in NO_2 and SO_2 data occurred on 28th October, again thought to be due to a power interruption. Remaining gaps in data related to routine LSO visits and maintenance.
- The mean scaled NO_2 concentration measured by the reference instrument at the AQMS for the period 1st September to 31st December 2025 was 9.6 µg/m^3 with the highest monthly mean concentration of 10.6 µg/m^3 in November 2025. The mean NO_2 concentration for September to December 2025 measured by the diffusion tube located at the AQMS was 10.2 µg/m^3. There was no result for November due to a missing tube. Diffusion tube results were adjusted using the latest, 2024, national bias adjustment factor for the Socotec 50% TEA in acetone method. The monthly diffusion tube measurements agreed well between the reference and diffusion tube measurements giving good confidence in the other diffusion tube results adjusted with the same factor.
- The highest bias adjusted NO_2 concentration for September to December 2025 was 27.1 µg/m^3, measured at MED12 on Cromwell Road close to the Weasenham Lane junction. The diffusion tube at MED6, Churchill Road and at MED10, at the southern end of Cromwell Road also measured over 20 µg/m^3, with bias adjusted concentrations of 24.6 and 20.7 µg/m^3 respectively. However, all diffusion tube locations were below the 40 µg/m^3 annual mean UK Air Quality objective for NO_2 for the period September to December 2025.
- There were no exceedances of the 1 hour mean objective value for NO_2 of 200 µg/m^3 measured at the Thomas Clarkson AQMS, which is not to be exceeded more than 18 times per year.
- SO_2 concentrations at the Thomas Clarkson Academy were low, with a mean scaled concentration of 0.7 µg/m^3 for the period September to December 2025. There were no exceedances of the 15-minute, hourly or 24-hourly Air Quality Objectives and the 24-hour mean has not exceeded 50% of the objective concentration to date. 10 exceedances of this value in a three-month period would trigger the requirement for SO_2 diffusion tube monitoring.
- The mean PM_{10} concentration for the period 1st September to 31st December 2025 measured at the Thomas Clarkson Academy was 10.6 µg/m^3. This was well below the 40 µg/m^3 annual mean UK Air Quality objective.

- There were no exceedances of the 50 µg/m^3 daily mean PM_{10} UK Air Quality objective value measured at the Thomas Clarkson Academy, which is not to be exceeded more than 35 times a year.
- The mean $PM_{2.5}$ concentration for the period 1st September to 31st December 2025 measured at the Thomas Clarkson Academy was 6.6 µg/m^3. This was well below the 20 µg/m^3 annual mean UK Air Quality objective.
- Data capture was 100% for PM_{10}, $PM_{2.5}$ and NO_2 for the Zephyr measurements at Chapnall Road.
- The monthly mean PM_{10} concentration measured by the Zephyr indicative monitor at Chapnall Road for the period 1st October to 31st December 2025 was 9.3 µg/m^3. The monthly mean $PM_{2.5}$ concentration was 5.7 µg/m^3. These concentrations were slightly lower than those measured at the Thomas Clarkson AQMS. The mean NO_2 concentration for the period 1st October to 31st December measured by the Zephyr at Chapnall Road was 13.2 µg/m^3 which was slightly higher than the AQMS. Although the mean concentrations for the full period from the Zephyr did not include measurements from September, the same pattern was seen in the monthly mean comparisons. Monthly mean PM_{10} and $PM_{2.5}$ concentrations measured by the Zephyr were slightly lower than those measured at the Thomas Clarkson AQMS whereas monthly mean NO_2 concentrations measured by the Zephyr were slightly higher than those measured at the Thomas Clarkson AQMS.
- There were no exceedances of the 1 hour mean objective value for NO_2 of 200 µg/m^3 measured by the Chapnall Road Zephyr, which is not to be exceeded more than 18 times per year.
- There were no exceedances of the 50 µg/m^3 daily mean PM_{10} UK Air Quality objective value measured by the Chapnall Road Zephyr, which is not to be exceeded more than 35 times a year.

Appendix A

SITE PHOTOS

APPENDIX A – SITE PHOTOS

DIFFUSION TUBES

Site MED1

Site MED2

Site MED3

Site MED4

Site MED5

Site MED6

Site MED7

Site MED8

Site MED9

Site MED10

Site MED11

Site MED12

Site MED13

Site MED14

Site MED15

Site MED16

Site MED17

Site MED18

Site MED19

AQMS

View of AQMS and Meteorological Sensor

View of AQMS and Inlet Manifold Cage

Manifold Aspect of AQMS Inlet Manifold Cage

Internal View of AQMS

ZEPHYR

Left: Zephyr during installation

Right: Zephyr and solar panel installed

Appendix B

DIFFUSION TUBE ANALYTICAL LABORATORY RESULTS

APPENDIX B – DIFFUSION TUBES ANALYTICAL LABORATORY RESULTS

Table B-1 - SOCOTEC lab results for September 2025

Sample Number	WSP Site Code	Site	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m^{-3}	ppb	Comments
WSP/25A/NA1S1	MED1	Emneth	27/08/2025 10:20	30/09/2025 12:45	818.42	0.5	8.7	4.5	
WSP/25A/NA1S2	MED2	Marshland St James	27/08/2025 10:50	30/09/2025 14:05	819.25	0.6	10.5	5.5	
WSP/25A/NA1S3	MED3	Walpole Highway	27/08/2025 11:00	30/09/2025 14:20	819.33	0.57	10	5.2	
WSP/25A/NA1S4	MED4	Walton Highway	27/08/2025 11:15	30/09/2025 14:30	819.25	0.6	10.6	5.5	
WSP/25A/NA1S5	MED5	West Walton	27/08/2025 11:25	30/09/2025 14:40	819.25	0.51	9	4.7	
WSP/25A/NA1S6	MED6	Churchill Road	27/08/2025 11:45	30/09/2025 14:55	819.17	1.56	27.4	14.2	
WSP/25A/NA1S7	MED7	Thomas Clarkson Sch.	27/08/2025 12:30	30/09/2025 15:20	818.83	0.63	11	5.7	
WSP/25A/NA1S8	MED8	Elm High Road	27/08/2025 13:30	30/09/2025 16:40	819.17	1.21	21.2	11	
WSP/25A/NA1S9	MED9	A47							Missing
WSP/25A/NA1S10	MED10	Cromwell Road S	27/08/2025 13:55	30/09/2025 16:05	818.17	1.35	23.7	12.3	
WSP/25A/NA1S11	MED11	New Bridge Lane	27/08/2025 14:10	30/09/2025 16:08	817.97	0.6	10.5	5.5	
WSP/25A/NA1S12	MED12	Cromwell Road N	27/08/2025 14:20	30/09/2025 15:55	817.58	1.71	30	15.6	
WSP/25A/NA1S13	MED13	Railway Road	27/08/2025 14:35	30/09/2025 16:25	817.83	0.84	14.7	7.6	WEBS
WSP/25A/NA1S14	MED14	Algores Way	27/08/2025 14:45	30/09/2025 15:47	817.03	0.88	15.5	8.1	

WSP/25A/NA1S15	MED15	Harry's Way	27/08/2025 14:55	30/09/2025 16:20	817.42	0.66	11.5	6	
WSP/25A/NA1S16	MED16	Weasham Lane	27/08/2025 15:00	30/09/2025 15:45	816.75	1.02	18	9.3	
WSP/25A/NA1S17	MED17	Heron Road	27/08/2025 15:05	30/09/2025 15:30	816.42	0.91	15.9	8.3	
WSP/25A/NA1S18	MED18	Westmeade Avenue	27/08/2025 15:15	30/09/2025 16:30	817.25	1.12	19.7	10.2	
WSP/25A/NA1S19	MED19	Corporation Road	27/08/2025 15:30	30/09/2025 15:35	816.08	0.59	10.4	5.4	
WSP/25A/NA1B1		Blank							no tube

Table B-2 - SOCOTEC lab results for October 2025

Sample Number	WSP Site Code	Site	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m^{-3}	ppb	Comments
WSP/25A/NA2S1	MED1	Emneth	30/09/2025 12:45	05/11/2025 10:10	861.42	0.78	13	6.8	
WSP/25A/NA2S2	MED2	Marshland St James	30/09/2025 14:05	05/11/2025 10:35	860.5	0.8	13.3	6.9	
WSP/25A/NA2S3	MED3	Walpole Highway	30/09/2025 14:20	05/11/2025 10:40	860.33	0.65	10.8	5.6	
WSP/25A/NA2S4	MED4	Walton Highway	30/09/2025 14:30	05/11/2025 10:45	860.25	0.77	12.8	6.7	
WSP/25A/NA2S5	MED5	West Walton	30/09/2025 14:40	05/11/2025 10:55	860.25	0.56	9.3	4.8	
WSP/25A/NA2S6	MED6	Churchill Road	30/09/2025 14:55	05/11/2025 11:15	860.33	1.69	28.2	14.7	
WSP/25A/NA2S7	MED7	AQMS	30/09/2025 15:20	05/11/2025 11:30	860.17	0.79	13.2	6.9	
WSP/25A/NA2S8	MED8	Elm High Road	30/09/2025 16:40	05/11/2025 11:45	859.08	1.43	23.9	12.4	
WSP/25A/NA2S9	MED9	A47							Missing
WSP/25A/NA2S10	MED10	Cromwell Road S	30/09/2025 16:05	05/11/2025 13:30	861.42	1.58	26.4	13.7	
WSP/25A/NA2S11	MED11	New Bridge Lane	30/09/2025 16:08	05/11/2025 13:35	861.45	0.82	13.6	7.1	
WSP/25A/NA2S12	MED12	Cromwell Road N	30/09/2025 15:55	05/11/2025 13:40	861.75	2.08	34.7	18	
WSP/25A/NA2S13	MED13	Railway Road	30/09/2025 16:25	05/11/2025 13:45	861.33	1.16	19.3	10	

WSP/25A/NA2S14	MED14	Algores Way	30/09/2025 15:47	05/11/2025 11:46	859.98	0.83	13.9	7.2	Spider nest (plastic tube replaced)
WSP/25A/NA2S15	MED15	Harry's Way	30/09/2025 16:20	05/11/2025 11:55	859.58	0.79	13.1	6.8	
WSP/25A/NA2S16	MED16	Weasham Lane	30/09/2025 15:45	05/11/2025 13:40	861.92	1.4	23.3	12.1	
WSP/25A/NA2S17	MED17	Heron Road	30/09/2025 15:30	05/11/2025 11:32	860.03	1.28	21.4	11.1	
WSP/25A/NA2S18	MED18	Westmeade Avenue							Missing
WSP/25A/NA2S19	MED19	Corporation Road	30/09/2025 15:35	05/11/2025 11:28	859.88	0.92	15.3	8	
WSP/25A/NA2B1		Blank				<0.03			

Table B-3 - SOCOTEC lab results for November 2025

Sample Number	WSP Site Code	Site	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m^{-3}	ppb	Comments
WSP/25A/NA3S1	MED1	Emneth	05/11/2025 10:10	05/12/2025 11:05	720.92	0.81	16.2	8.4	
WSP/25A/NA3S2	MED2	Marshland St James	05/11/2025 10:35	05/12/2025 11:15	720.67	0.85	16.8	8.7	
WSP/25A/NA3S3	MED3	Walpole Highway	05/11/2025 10:40	05/12/2025 11:22	720.7	0.69	13.8	7.2	
WSP/25A/NA3S4	MED4	Walton Highway	05/11/2025 10:45	05/12/2025 11:26	720.68	0.88	17.5	9.1	
WSP/25A/NA3S5	MED5	West Walton	05/11/2025 10:55	05/12/2025 11:31	720.6	0.81	16.1	8.4	
WSP/25A/NA3S6	MED6	Churchill Road	05/11/2025 11:15	05/12/2025 11:46	720.52	2.03	40.4	21	
WSP/25A/NA3S7	MED7	AQMS							Missing
WSP/25A/NA3S8	MED8	Elm High Road	05/11/2025 11:45	05/12/2025 12:47	721.03	1.12	22.2	11.5	
WSP/25A/NA3S9	MED9	A47	05/11/2025 13:25	05/12/2025 12:54	719.48	0.52	10.3	5.4	
WSP/25A/NA3S10	MED10	Cromwell Road S	05/11/2025 13:30	05/12/2025 13:00	719.5	1.41	28.1	14.6	
WSP/25A/NA3S11	MED11	New Bridge Lane	05/11/2025 13:35	05/12/2025 13:05	719.5	0.47	9.4	4.9	
WSP/25A/NA3S12	MED12	Cromwell Road N	05/11/2025 13:40	05/12/2025 13:17	719.62	1.81	36.1	18.8	
WSP/25A/NA3S13	MED13	Railway Road	05/11/2025 13:45	05/12/2025 12:30	718.75	1.09	21.7	11.3	
WSP/25A/NA3S14	MED14	Algores Way	05/11/2025 11:46	05/12/2025 12:28	720.7	1	20	10.4	
WSP/25A/NA3S15	MED15	Harry's Way	05/11/2025 11:55	05/12/2025 12:22	720.45	0.68	13.5	7	

WSP/25A/NA3S16	MED16	Weasham Lane	05/11/2025 13:40	05/12/2025 12:25	718.75	1.36	27.2	14.1	
WSP/25A/NA3S17	MED17	Heron Road	05/11/2025 11:32	05/12/2025 12:18	720.77	1.03	20.4	10.6	
WSP/25A/NA3S18	MED18	Westmeade Avenue							Missing
WSP/25A/NA3S19	MED19	Corporation Road	05/11/2025 11:28	05/12/2025 11:49	720.35	0.81	16.2	8.4	
WSP/25A/NA3B1		Blank				<0.03			

Table B-4 - SOCOTEC lab results for December 2025

Sample Number		Site	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m-3	ppb	Comments
WSP/25A/NA4S1	MED1	Emneth	05/12/2025 11:05	07/01/2026 10:10	791.08	0.78	14.1	7.3	
WSP/25A/NA4S2	MED2	Marshland St James	05/12/2025 11:15	07/01/2026 10:20	791.08	0.81	14.8	7.7	
WSP/25A/NA4S3	MED3	Walpole Highway	05/12/2025 11:22	07/01/2026 10:30	791.13	0.79	14.4	7.5	
WSP/25A/NA4S4	MED4	Walton Highway	05/12/2025 11:26	07/01/2026 10:38	791.2	0.85	15.3	8	
WSP/25A/NA4S5	MED5	West Walton	05/12/2025 11:31	07/01/2026 10:43	791.2	0.74	13.4	6.9	
WSP/25A/NA4S6	MED6	Churchill Road	05/12/2025 11:46	07/01/2026 10:58	791.2	1.75	31.6	16.4	
WSP/25A/NA4S7	MED7	Thomas Clarkson Sch.	05/12/2025 12:06	07/01/2026 12:45	792.65	0.83	14.9	7.8	
WSP/25A/NA4S8	MED8	Elm High Road	05/12/2025 12:47	07/01/2026 11:13	790.43	1.2	21.7	11.3	
WSP/25A/NA4S9	MED9	A47	05/12/2025 12:54	07/01/2026 11:20	790.43	0.62	11.2	5.8	
WSP/25A/NA4S10	MED10	Cromwell Road S	05/12/2025 13:00	07/01/2026 11:25	790.42	1.55	28.1	14.6	
WSP/25A/NA4S11	MED11	New Bridge Lane	05/12/2025 13:05	07/01/2026 11:30	790.42	0.89	16.1	8.4	
WSP/25A/NA4S12	MED12	Cromwell Road N	05/12/2025 13:17	07/01/2026 12:05	790.8	2.11	38.3	19.9	
WSP/25A/NA4S13	MED13	Railway Road	05/12/2025 12:30	07/01/2026 12:10	791.67	0.83	15	7.8	
WSP/25A/NA4S14	MED14	Algores Way	05/12/2025 12:28	07/01/2026 12:17	791.82	1.01	18.3	9.5	

WSP/25A/NA4S15	MED15	Harry's Way	05/12/2025 12:22	07/01/2026 12:25	792.05	0.78	14.1	7.3	
WSP/25A/NA4S16	MED16	Weasenham Lane	05/12/2025 12:25	07/01/2026 12:27	792.03	1.2	21.7	11.3	
WSP/25A/NA4S17	MED17	Heron Road	05/12/2025 12:18	07/01/2026 12:30	792.2	1.1	20	10.4	
WSP/25A/NA4S18	MED18	Westmeade Avenue	05/12/2025 12:43	07/01/2026 11:08	790.42	0.88	15.9	8.3	
WSP/25A/NA4S19	MED19	Corporation Road	05/12/2025 11:49	07/01/2026 12:32	792.72	0.78	14.1	7.3	
WSP/25A/NA4B1		Blank				0.04			

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