



MVV Environment Medworth Limited

MEDWORTH EFW AIR QUALITY MONITORING

Quarterly Report - January to March 2026





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QUALITY CONTROL

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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 second quarterly report detailing the air quality monitoring implemented as part of the LAQMS. The report covers quarter one, January to March 2026.

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 SO₂ levels exceed 50% of the 24-hour mean objective level of (62.5 µg/m³) more than 10 times over a continuous 3-month period, SO₂ 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, NO₂, SO₂ concentrations, a reference equivalent particulate monitor recording both PM₁₀, and PM_{2.5} concentrations and a meteorological (MET) station recording wind speed and direction.
- 2) A continuous indicative sensor (Zephyr) measuring NO₂, PM₁₀, and PM_{2.5}.
- 3) Diffusion tubes collecting monthly NO₂ 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

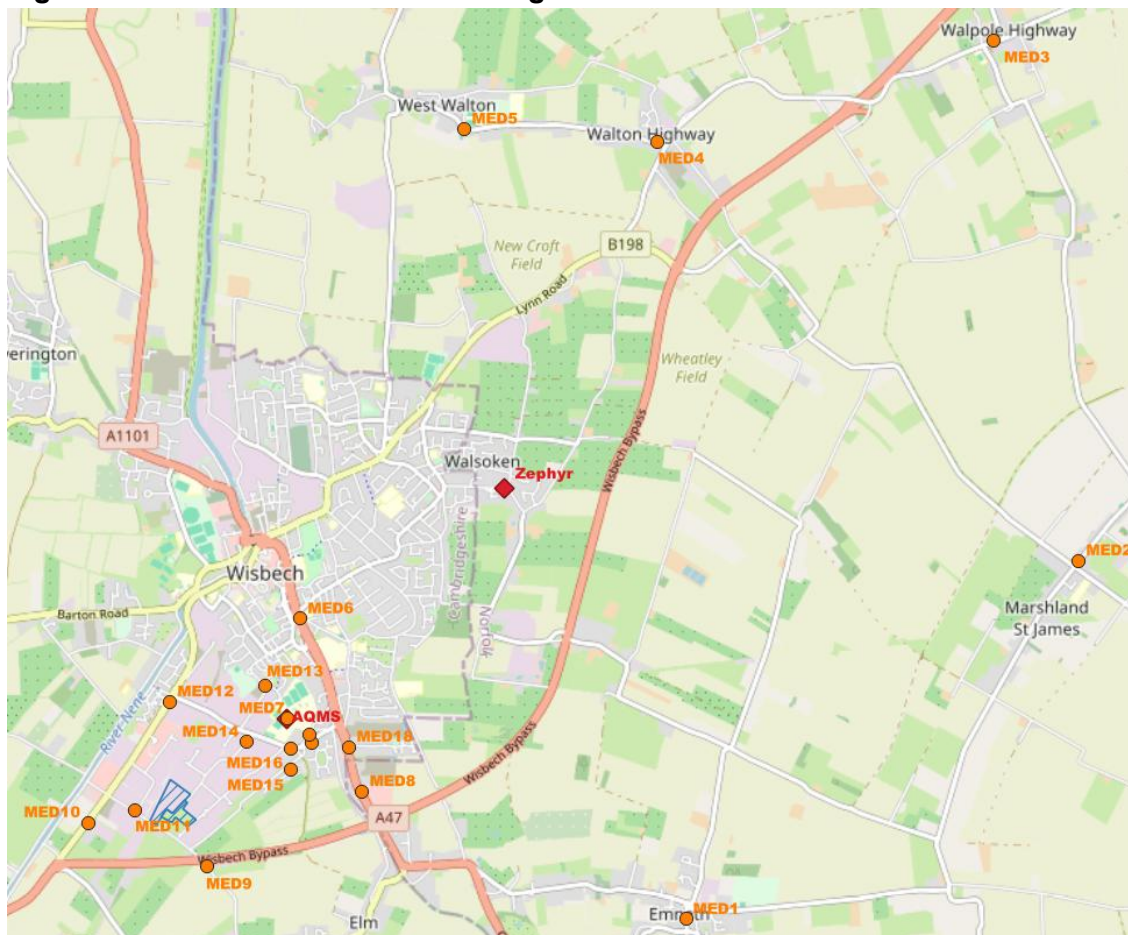
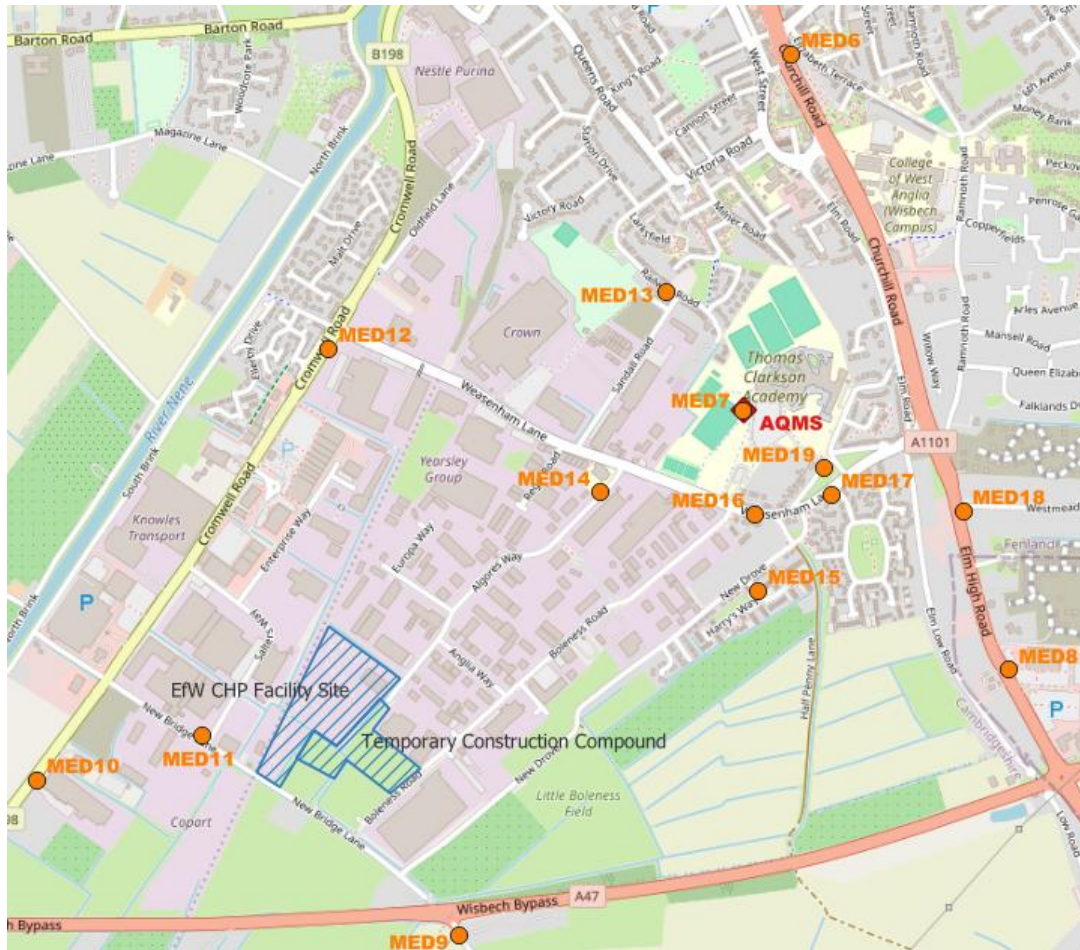


Figure 2-2 - Monitoring Locations near site and school



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 Road	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
MED15	Harry's Way	546457	308190	220	80
MED16	Weasenham Lane	546446	308354	220	145
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-NO_x Gas Analyser
- Teledyne-API MODEL N100 UV SO₂ Gas Analyser
- Palas - FIDAS 200 Particulate Monitor

The FIDAS simultaneously measures PM₁, PM_{2.5}, PM₄, PM₁₀, 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, NO₂, SO₂ and reference equivalent measurements of PM₁₀ 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, NO₂, SO₂) 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 NO_x, NO, NO₂ and SO₂ data from the Envitech website in units of µg/m³. 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. NO_x measurements were scaled using span checks against an NO cylinder. The calibration results were applied separately to the 15-minute NO_x and NO measurements and the 15-minute NO₂ concentrations were calculated by subtracting the 15-minute NO readings from the 15-minute NO_x readings. All three NO_x species (NO_x, NO and NO₂) were then converted back to µg/m³ 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 April visit which was delayed due to the tubes arriving late in the post. The exposure dates for each month are shown in Table 2-2.

Table 2-2 - Diffusion tube exposure dates

Month	Start	End
Jan-2026	07/01/2026	05/02/2026
Feb-2026	05/02/2026	05/03/2026
Mar-2026	05/03/2026	08/04/2026

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 NO₂ concentrations for all locations. This gives a result which is representative of NO₂ 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 2025.

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 NO₂, PM₁₀, 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 Scheme³. 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 January and 31st March 2026 are shown in in Table 3-1 and Table 3-2 below.

Table 3-1 – NO_x and NO Calibration results from LSO visits from January to March 2026

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)
16/01/2026	2.2	2.4	440.6	439.1	428	428
04/02/2026	2.4	2.4	435.0	437.2	428	428
20/03/2026	2.5	2.4	424.9	421.2	428	428

Table 3-2 – SO₂ calibration results from LSO visits from January to March 2026

Date	Zero calibration (ppb)	Span calibration (ppb)	Cylinder concentration (ppb)
16/01/2026	-1.3	449.5	462
04/02/2026	-1.5	443.0	462
20/03/2026	-1.9	449.0	462

3.1.1 DATA CAPTURE

Table 3-3 summarises the monthly and quarterly data capture rates for each pollutant from 1st January to 31st March 2026. 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 quarter 1, 2026 was then calculated from the hourly means.

Table 3-3 – Monthly and quarterly data capture for Thomas Clarkson Reference AQMS from 1st January to 31st March 2026

	January 2026	February 2026	March 2026	Quarter 1 2026
NO ₂ Data Capture (%)	93.7	87.4	98.3	93.3
SO ₂ Data Capture (%)	57.7	87.4	98.3	80.9
PM ₁₀ Data Capture (%)	93.7	87.5	98.4	93.4
PM _{2.5} Data Capture (%)	93.7	87.5	98.4	93.4

Data capture at the Thomas Clarkson AQMS for NO₂, PM₁₀ and PM_{2.5} from January to March 2026 was good with over 90% data capture for the quarter. Data capture for SO₂ was 80.9% for the quarter. The reasons for missing or excluded data are detailed in Table 3-4. Other short interruptions occurred due to routine maintenance.

Table 3-4 - Instrument issues at Thomas Clarkson Reference AQMS during quarter 1, 2026

Pollutant	Dates affected	Instrument issue	Action and outcome
SO ₂	18/01/2026 22:45 to 30/01/2026 01:30	Instrument data flat and unresponsive, noted during monthly data review	Following the logger fault detailed below, the instrument and logger were rebooted which resolved the fault
All	30/01/2026 01:30 to 04/02/2026 12:15	The site logger stopped recording data on Friday 30 th January	WSP contacted Cura Terrae on Monday 2 nd February. The engineer attended to investigate on 4 th February where it was found that the logger was stuck on an update which was resolved by rebooting the logger
All	12/03/2026 01:00 to 12/03/2026 11:30	There was a short gap in data on 12 th March. Missing data was noted in daily checks.	WSP contacted Cura Terrae. Communication with the site logger was restored remotely by Cura Terrae the same day and data resumed at 11:45.

3.1.2 MEAN CONCENTRATIONS

Monthly mean concentrations and the quarterly mean concentration for each pollutant for quarter 1, 2026 measured at the Thomas Clarkson reference AQMS are shown in Table 3-5, below.

Table 3-5 - Monthly and quarterly mean pollutant concentrations for Thomas Clarkson Reference AQMS from 1st January to 31st March 2026

	January 2026	February 2026	March 2026	Quarter 1 2026
NO ₂ mean (µg/m ³)	12.6	11.1	10.7	11.5
SO ₂ mean (µg/m ³)	0.5	0.6	0.6	0.6
PM ₁₀ mean (µg/m ³)	12.5	12.4	17.9	14.4
PM _{2.5} mean (µg/m ³)	10.0	9.1	12.3	10.6

The mean concentrations for the period 1st January to 31st March 2026 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 January to 31st March 2026 with annual mean objective concentrations for comparison

	Mean Concentration Quarter 1 2026 (µg/m ³)	Annual Mean Objective (µg/m ³)
NO ₂	11.5	40
PM ₁₀	14.4	40
PM _{2.5}	10.6	20

The mean concentrations for NO₂, PM₁₀ and PM_{2.5} at the Thomas Clarkson Academy were higher than the previous quarter, October to December 2025, when quarterly means were 9.6, 10.6 and 6.6 µg/m³ for NO₂, PM₁₀ and PM_{2.5} respectively. However, all pollutants remained well below the annual mean objective concentrations for the period 1st January to 31st March 2026.

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 NO₂, SO₂, and PM₁₀ at the Thomas Clarkson Reference AQMS during January to March 2026 are shown in Table 3-7, below, along with exceedances of the threshold for implementation of SO₂ 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 SO₂ diffusion tube monitoring, at Thomas Clarkson Reference AQMS from 1st January to 31st March 2026

	January 2026	February 2026	March 2026	Quarter 1 2026
NO₂				
1-hour mean >200 µg/m ³ - not to be exceeded more than 18 times per year	0	0	0	0
SO₂				
15 min mean > 266 µg/m ³ – not to be exceeded more than 35 times per year	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
24-hour mean > 125 µg/m ³ – not to be exceeded more than 3 times per year	0	0	0	0
24-hour mean > 62.5 µg/m ³ – 10 exceedances in a 3-month period will trigger the requirement for SO ₂ diffusion tube monitoring	0	0	0	0
PM₁₀				
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 any pollutant during the period 1st January to 31st March 2026. The 24-hour mean SO₂ concentration did not exceed 50% of the objective threshold so there is currently no requirement for SO₂ diffusion tube monitoring to be implemented.

The maximum concentrations measured during January to March 2026 relating to each of the short-term objectives are shown in Table 3-8, below.

Table 3-8 – Monthly and quarterly maximum concentrations relating to the short-term objective thresholds from 1st January to 31st March 2026

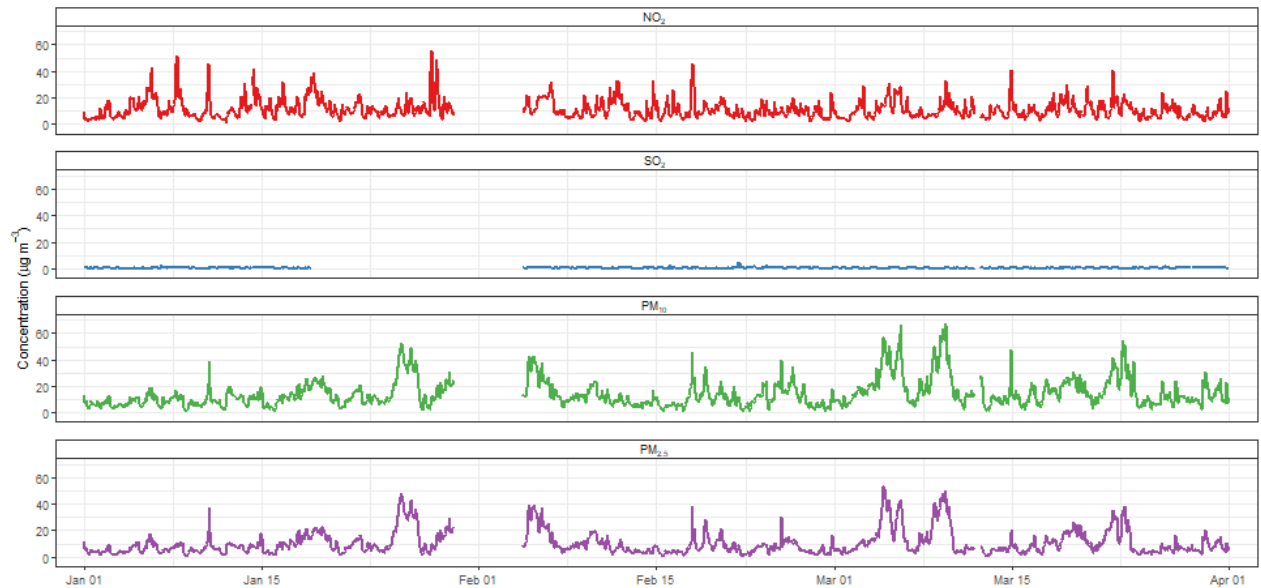
	January 2026	February 2026	March 2026	Quarter 1 2026
NO₂				
Max 1-hour mean (µg/m ³) 200 µg/m ³ - not to be exceeded more than 18 times per year	55.3	46.2	41.2	55.3
SO₂				
Max 15 min mean (µg/m ³). 266 µg/m ³ – not to be exceeded more than 35 times per year	5.6	10.6	2.0	10.6
Max 1-hour mean (µg/m ³) 350 µg/m ³ – not to be exceeded more than 24 times per year	3.3	5.2	1.5	5.2
Max 24-hour mean (µg/m ³) 125 µg/m ³ – not to be exceeded more than 3 times per year	0.8	1.3	1.0	1.3
PM₁₀				
Max 24-hour mean (µg/m ³) 50 µg/m ³ – not to be exceeded more than 35 times per year	37.8	33.7	48.1	48.1

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 January to 31st March 2026 are shown in Figure 3-1.

Figure 3-1 - Plots of hourly pollutant concentrations

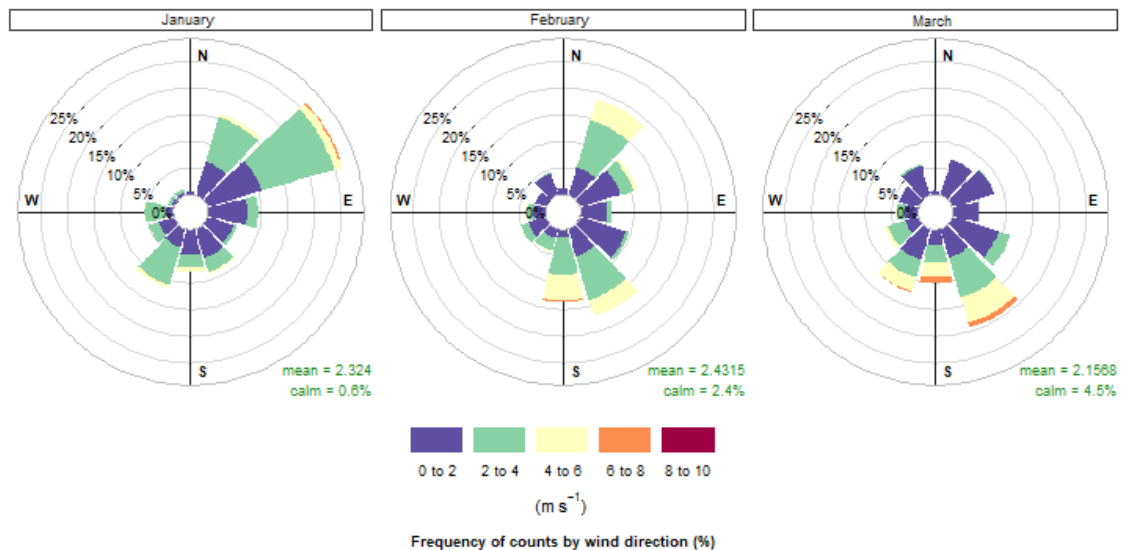


Periods of increased PM₁₀ and PM_{2.5} pollution occurred from 4th to 10th March and 19th to 23rd March. These widespread pollution events were likely caused by episodic pollution import from Europe during south-easterly winds which is common in spring in the UK. This contributes to the higher quarterly mean concentrations measured in January to March 2026, compared with October to December 2025.

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 January to March 2026.

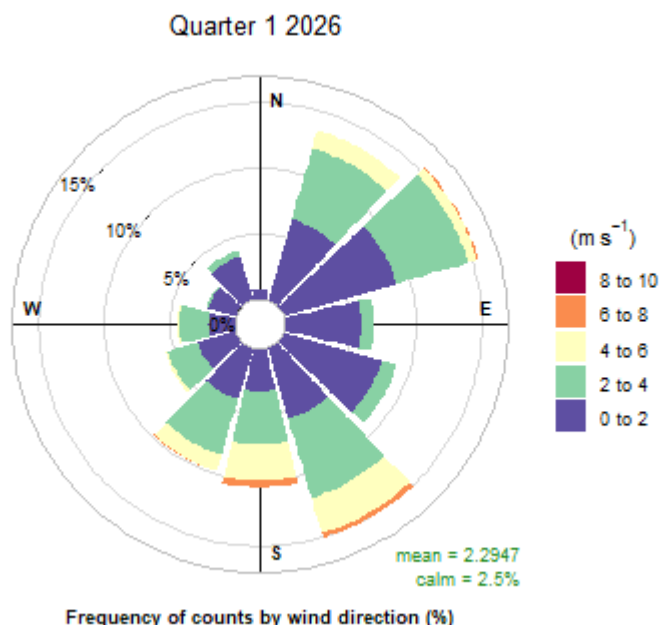
Figure 3-2 – Monthly wind roses of wind speed and direction data measured at the Thomas Clarkson Academy for January to March 2026



During January, winds were predominantly from the north-east with wind speeds up to 6-8 m/s. During February, winds were from the north-east, south and south-east with wind speeds mostly under 4-6 m/s with a very small proportion in the 6-8 m/s range. In March, winds were predominantly from the south, south-east and south-west with speeds up to 6-8 m/s.

A wind rose for the full period, 1st January to 31st March 2026 is shown in Figure 3-3.

Figure 3-3 - Wind rose showing wind speed and direction data measured at the Thomas Clarkson Academy for 1st January to 31st March 2026.



Winds were variable during the quarter with the most common directions from the south-west, south, south-east and north-east. Wind speeds were relatively low, with only a small proportion up to 6-8 m/s and lighter winds the rest of the time.

3.2 DIFFUSION TUBES

Monthly NO₂ diffusion tube concentrations measured at locations in and around Wisbech from January to March 2026 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 2025 and the factor was **0.78**. Full monthly NO₂ diffusion tube laboratory results provided by SOCOTEC, including blank tubes, are included in Appendix B.

Table 3-9 – NO₂ concentrations in and around Wisbech, measured by diffusion tube, from January to March 2026. 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	January 2026	February 2026	March 2026
MED1	Emneth	14.2	Missing tube	11.6
MED2	Marshland St James	12.5	11.2	9.6
MED3	Walpole Highway	13.1	10.9	6.5

MED4	Walton Highway	14.3	Missing tube	7.9
MED5	West Walton	13.7	9.4	8.6
MED6	Churchill Road	31.2	24.9	18.5
MED7	Thomas Clarkson School	13.0	13.2	12.4
MED8	Elm High Road	22.9	17.6	17.1
MED9	A47	11.4	8.3	7.6
MED10	Cromwell Road S	22.8	24.4	20.4
MED11	New Bridge Lane	15.4	13.5	10.7
MED12	Cromwell Road N	26.4	22.3	29.5
MED13	Railway Road	14.4	14.1	11.2
MED14	Algores Way	20.0	15.9	15.0
MED15	Harry's Way	11.8	10.2	10.6
MED16	Weasenham Lane	23.9	19.7	17.5
MED17	Heron Road	18.1	11.9	16.0
MED18	Westmead Avenue	19.4	14.4	16.6
MED19	Corporation Road	16.9	12.9	9.3

The quarterly data capture, the unadjusted time-weighted period mean and the bias corrected time-weighted mean for the period January to March 2026 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 – Quarterly data capture, time-weighted mean and bias corrected mean for each diffusion tube location for the period January to March 2026. The tube co-located with the Thomas Clarkson Academy reference AQMS is shown in bold.

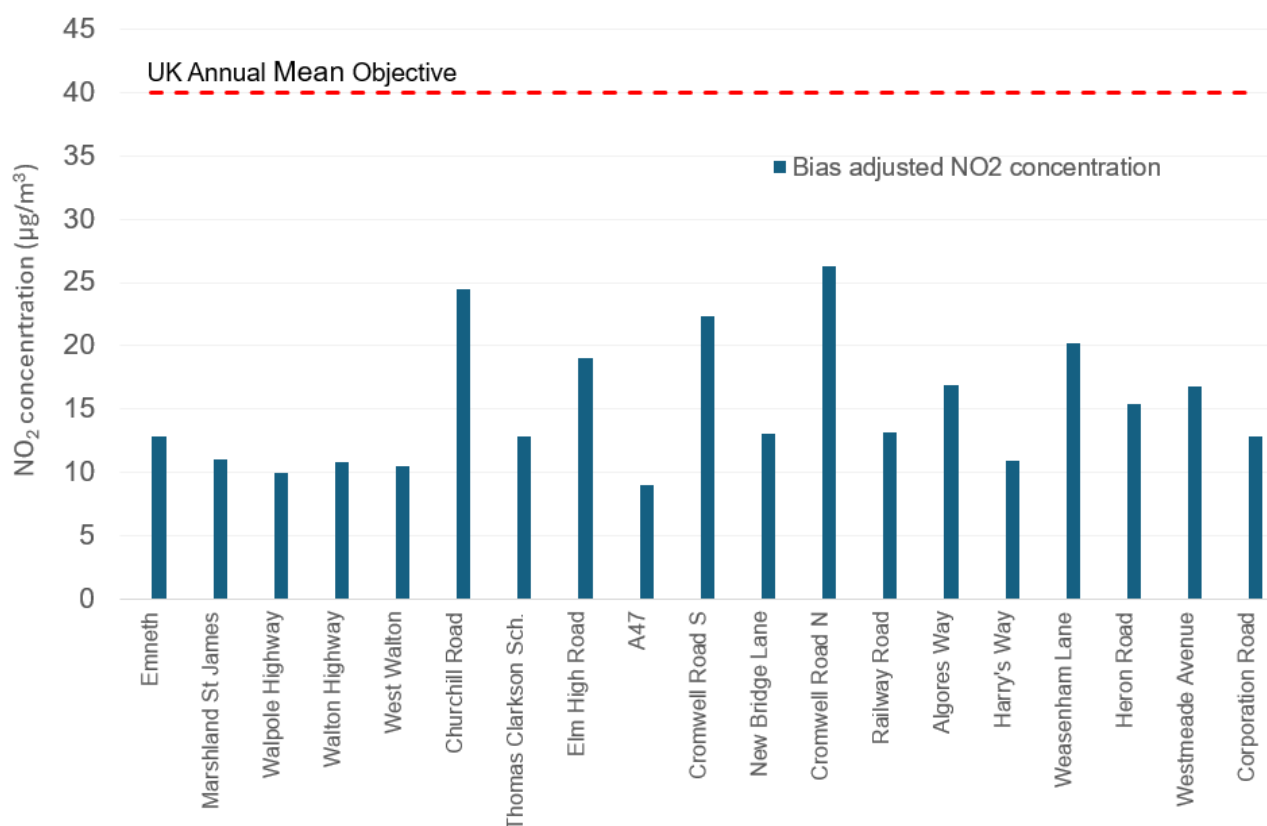
Site ID	Location	Data capture (%)	Time-weighted period mean, not bias corrected	Bias Corrected period mean ($\mu\text{g}/\text{m}^3$)
MED1	Emneth	69.2	16.4	12.8
MED2	Marshland St James	100	14.1	11.0
MED3	Walpole Highway	100	12.8	10.0

Site ID	Location	Data capture (%)	Time-weighted period mean, not bias corrected	Bias Corrected period mean ($\mu\text{g}/\text{m}^3$)
MED4	Walton Highway	69.2	13.9	10.8
MED5	West Walton	100	13.4	10.4
MED6	Churchill Road	100	31.4	24.5
MED7	Thomas Clarkson School	100	16.5	12.8
MED8	Elm High Road	100	24.4	19.1
MED9	A47	100	11.6	9.0
MED10	Cromwell Road S	100	28.7	22.4
MED11	New Bridge Lane	100	16.8	13.1
MED12	Cromwell Road N	100	33.7	26.3
MED13	Railway Road	100	16.8	13.1
MED14	Algores Way	100	21.6	16.9
MED15	Harry's Way	100	13.9	10.9
MED16	Weasenham Lane	100	25.9	20.2
MED17	Heron Road	100	19.7	15.4
MED18	Westmead Avenue	100	21.6	16.8
MED19	Corporation Road	100	16.4	12.8

Data capture was good in the majority of cases. There were occasional missing tubes during the period January to March 2026. 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 January to March 2026 are plotted in Figure 3-4 with comparison to the annual mean objective.

Figure 3-4 – Quarterly diffusion tube time-weighted mean, bias-corrected, for all diffusion tube locations for the period January to March 2026, compared with the UK annual mean objective.



NO₂ concentrations were well below the annual mean objective at all locations. The highest concentration of 26.3 µg/m³ for the period January to March 2026 was measured at location MED12 on Cromwell Road, close to the Weasenham Lane junction. Three other locations measured bias-corrected mean NO₂ concentrations above 20 µg/m³: MED6 at Churchill Road had a bias-corrected mean of 24.5 µg/m³, MED10 at the southern end of Cromwell Road had a bias-corrected mean of 22.4 µg/m³ and MED16 at Weasenham Lane had a bias-corrected mean of 20.2 µg/m³ for the period January to March 2026.

The bias-corrected mean NO₂ concentration measured by the diffusion tube at Thomas Clarkson School was 12.8 µg/m³ for January to March 2026. This was 1.3 µg/m³ higher than the mean NO₂ concentration of 11.5 µg/m³ measured by the reference AQMS. Data capture was good for both the AQMS and the diffusion tube measurements.

3.3 CHAPNALL ROAD ZEPHYR

3.3.1 DATA CAPTURE

Data capture rates for the Chapnall Road Zephyr for the period 1st January to 31st March 2026 are shown in Table 3-11.

Table 3-11 – Monthly and quarterly data capture for Chapnall Road Zephyr from 1st January to 31st March 2026

	January 2026	February 2026	March 2026	Quarter 1 2026
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 January to March 2026. 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 January to March 2026

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

3.3.2 MEAN CONCENTRATIONS

Monthly mean concentrations and the quarterly mean concentration for each pollutant for the period 1st January to 31st March 2026 measured by the Chapnall Road Zephyr are shown in Table 3-13.

Table 3-13 – Monthly and quarterly mean pollutant concentrations for Chapnall Road Zephyr from 1st January to 31st March 2026

	January 2026	February 2026	March 2026	Quarter 1 2026
NO ₂ mean (µg/m ³)	16.6	16.4	13.3	15.4
PM ₁₀ mean (µg/m ³)	13.5	14.5	14.7	14.2
PM _{2.5} mean (µg/m ³)	8.6	9.1	9.5	9.1

Table 3-14 - Quarterly mean pollutant concentrations for Chapnall Road Zephyr from 1st January to 31st March 2026 with annual mean objective concentrations for comparison

	Mean Concentration Quarter 1 2026 ($\mu\text{g}/\text{m}^3$)	Annual Mean Objective ($\mu\text{g}/\text{m}^3$)
NO₂	15.4	40
PM₁₀	14.2	40
PM_{2.5}	9.1	20

The mean concentrations for NO₂, PM₁₀ and PM_{2.5} measured by the Chapnall Road Zephyr were all below the annual mean objective concentrations for the period January to March 2026.

3.3.3 SHORT TERM OBJECTIVES

Exceedances of the hourly mean and 24-hour mean Air Quality Strategy objective thresholds for NO₂ and PM₁₀ 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 January to 31st March 2026

	January 2026	February 2026	March 2026	January-March 2026
1-hour mean >200 $\mu\text{g}/\text{m}^3$ - not to be exceeded more than 18 times per year	0	0	0	0
24-hour mean > 50 $\mu\text{g}/\text{m}^3$ – 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 NO₂ or PM₁₀ during the period 1st January to 31st March 2026.

The maximum concentrations measured from 1st January to 31st March 2026 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 – Monthly and quarterly maximum concentrations relating to the short-term objective thresholds from 1st January to 31st March 2026

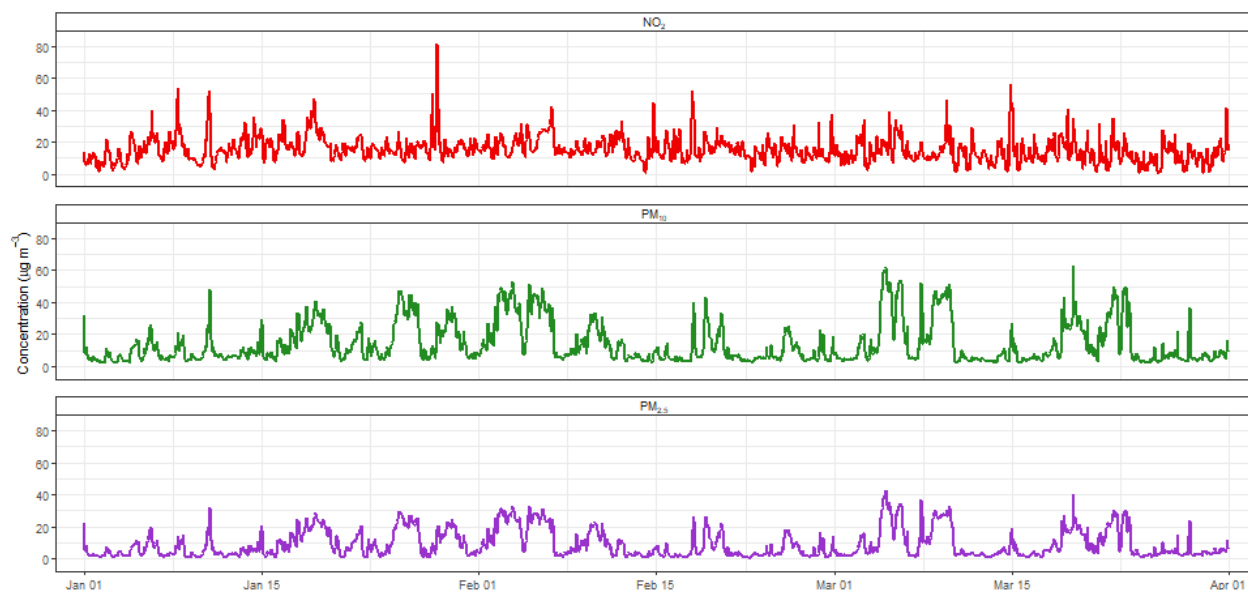
	January 2026	February 2026	March 2026	January-March 2026
NO₂				
Max 1-hour mean (µg/m ³) 200 µg/m ³ - not to be exceeded more than 18 times per year	81.3	51.8	55.8	81.3
PM₁₀				
Max 24-hour mean (µg/m ³) 50 µg/m ³ – not to be exceeded more than 35 times per year	36.8	42.4	43.2	43.2

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 January to 31st March 2026 are shown in Figure 3-5.

Figure 3-5 - Time plot of hourly mean Zephyr PM₁₀, PM_{2.5} and NO₂ data for the period 1st January to 31st March 2026



4 SUMMARY

This report details the data collected during quarter 1, 2026 from 1st January to 31st March 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 is the second quarterly report for the LAQMS.

A summary of air quality network data collected during quarter 1, 2026 is as follows:

- Data capture was 93.4% for PM₁₀ and PM_{2.5}, 93.3% for NO₂ and 80.9% for SO₂ at the reference measurement site at the Thomas Clarkson Academy. The missing PM and NO₂ data was due to a logger fault on 30th January which was resolved by an engineer visit on 4th February. Additional SO₂ data was excluded prior to this due to flat unresponsive data noted during monthly review. A short gap in all pollutants on 12th March was resolved remotely the same day. Remaining gaps in data related to routine LSO visits and maintenance.
- The mean scaled NO₂ concentration measured by the reference instrument at the AQMS for the period 1st January to 31st March 2026 was 11.5 µg/m³ with the highest monthly mean concentration of 12.6 µg/m³ in January 2026. The mean NO₂ concentration for January to March 2026 measured by the diffusion tube located at the AQMS was 12.8 µg/m³. Diffusion tube results were adjusted using the latest, 2025, national bias adjustment factor for the Socotec 50% TEA in acetone method. The monthly diffusion tube measurements were similar to the reference measurements but were slightly higher in February and March. The good agreement of the quarterly diffusion tube result gives confidence in the other diffusion tube results adjusted with the same factor.
- The highest bias adjusted NO₂ concentration for January to March 2026 was 26.3 µg/m³, measured at MED12 on Cromwell Road close to the Weasenham Lane junction. The diffusion tube at MED6 at Churchill Road, MED10 at the southern end of Cromwell Road and MED16 at Weasenham Lane also measured over 20 µg/m³, with bias adjusted concentrations of 24.5, 22.4 and 20.2 µg/m³ respectively. However, all diffusion tube locations were below the 40 µg/m³ annual mean UK Air Quality objective for NO₂ for the period January to March 2026.
- There were no exceedances of the 1 hour mean objective value for NO₂ of 200 µg/m³ measured at the Thomas Clarkson AQMS, which is not to be exceeded more than 18 times per year.
- SO₂ concentrations at the Thomas Clarkson Academy were low, with a mean scaled concentration of 0.6 µg/m³ for the period January to March 2026. 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 SO₂ diffusion tube monitoring.
- The mean PM₁₀ concentration for the period 1st January to 31st March 2026 measured at the Thomas Clarkson Academy was 14.4 µg/m³. This was well below the 40 µg/m³ annual mean UK Air Quality objective.

- There were no exceedances of the 50 $\mu\text{g}/\text{m}^3$ 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 $\text{PM}_{2.5}$ concentration for the period 1st January to 31st March 2026 measured at the Thomas Clarkson Academy was 10.6 $\mu\text{g}/\text{m}^3$. This was well below the 20 $\mu\text{g}/\text{m}^3$ annual mean UK Air Quality objective.
- Data capture was 100% for PM_{10} , $\text{PM}_{2.5}$ and NO_2 for the Zephyr measurements at Chapnall Road.
- The quarterly mean PM_{10} concentration measured by the Zephyr indicative monitor at Chapnall Road for the period 1st January to 31st March 2026 was 14.2 $\mu\text{g}/\text{m}^3$. The quarterly mean $\text{PM}_{2.5}$ concentration was 9.1 $\mu\text{g}/\text{m}^3$. These concentrations were very similar to those measured at the Thomas Clarkson AQMS. The mean NO_2 concentration for the period 1st January to 31st March 2026 measured by the Zephyr at Chapnall Road was 15.4 $\mu\text{g}/\text{m}^3$ which was 4 $\mu\text{g}/\text{m}^3$ higher than measured by the AQMS.
- There were no exceedances of the 1 hour mean objective value for NO_2 of 200 $\mu\text{g}/\text{m}^3$ 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 $\mu\text{g}/\text{m}^3$ 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



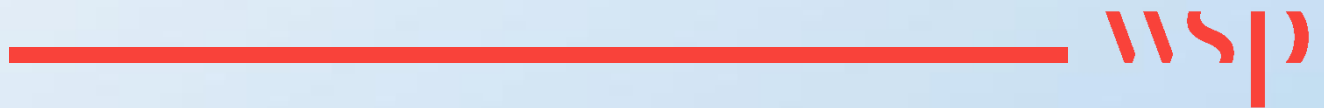
Left: Zephyr during installation



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 January 2026

Sample Number	Site Name	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m ⁻³	ppb	Comments
WSP/25A/NA5S1	Emneth	07/01/2026 10:10	05/02/2026 09:55	695.75	0.89	18.2	9.5	
WSP/25A/NA5S2	Marshland St James	07/01/2026 10:20	05/02/2026 10:05	695.75	0.78	16	8.3	
WSP/25A/NA5S3	Walpole Highway	07/01/2026 10:30	05/02/2026 10:15	695.75	0.81	16.8	8.7	
WSP/25A/NA5S4	Walton Highway	07/01/2026 10:38	05/02/2026 10:20	695.70	0.89	18.3	9.5	
WSP/25A/NA5S5	West Walton	07/01/2026 10:43	05/02/2026 10:30	695.78	0.85	17.5	9.1	
WSP/25A/NA5S6	Churchill Road	07/01/2026 10:58	05/02/2026 10:50	695.87	1.94	40	20.8	
WSP/25A/NA5S7	AQMS	07/01/2026 12:45	05/02/2026 12:35	695.83	0.81	16.7	8.7	
WSP/25A/NA5S8	Elm High Road	07/01/2026 11:13	05/02/2026 11:10	695.95	1.42	29.3	15.2	
WSP/25A/NA5S9	A47	07/01/2026 11:20	05/02/2026 11:20	696.00	0.71	14.6	7.6	
WSP/25A/NA5S10	Cromwell Road S	07/01/2026 11:25	05/02/2026 11:30	696.08	1.42	29.2	15.2	
WSP/25A/NA5S11	New Bridge Lane	07/01/2026 11:30	05/02/2026 11:35	696.08	0.96	19.8	10.3	



WSP/25A/NA5S12	Cromwell Road N	07/01/2026 12:05	05/02/2026 11:45	695.67	1.64	33.8	17.6	
WSP/25A/NA5S13	Railway Road	07/01/2026 12:10	05/02/2026 11:55	695.75	0.89	18.4	9.6	
WSP/25A/NA5S14	Algores Way	07/01/2026 12:17	05/02/2026 12:00	695.72	1.25	25.7	13.4	
WSP/25A/NA5S15	Harry's Way	07/01/2026 12:25	05/02/2026 12:05	695.67	0.73	15.1	7.9	
WSP/25A/NA5S16	Weasenhams Lane	07/01/2026 12:27	05/02/2026 12:10	695.72	1.48	30.6	15.9	
WSP/25A/NA5S17	Heron Road	07/01/2026 12:30	05/02/2026 12:15	695.75	1.13	23.2	12.1	
WSP/25A/NA5S18	Westmead Avenue	07/01/2026 11:08	05/02/2026 10:55	695.78	1.21	24.9	12.9	
WSP/25A/NA5S19	Corporation Road	07/01/2026 12:32	05/02/2026 12:30	695.97	1.05	21.7	11.3	
WSP/25A/NA5B1	Travel blank				<0.03			



Table B-2 - SOCOTEC lab results for February 2026

Sample Number	Site Name	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m ⁻³	ppb	Comments
WSP/25A/NA6S1	Emneth							Missing
WSP/25A/NA6S2	Marshland St James	05/02/2026 10:05	05/03/2026 10:21	672.27	0.67	14.4	7.5	
WSP/25A/NA6S3	Walpole Highway	05/02/2026 10:15	05/03/2026 10:39	672.40	0.66	14	7.3	
WSP/25A/NA6S4	Walton Highway							Missing
WSP/25A/NA6S5	West Walton	05/02/2026 10:30	05/03/2026 10:57	672.45	0.56	12	6.2	
WSP/25A/NA6S6	Churchill Road	05/02/2026 10:50	05/03/2026 11:34	672.73	1.49	31.9	16.6	
WSP/25A/NA6S7	AQMS	05/02/2026 12:35	05/03/2026 13:31	672.93	0.79	16.9	8.8	
WSP/25A/NA6S8	Elm High Road	05/02/2026 11:10	05/03/2026 14:16	675.10	1.06	22.5	11.7	
WSP/25A/NA6S9	A47	05/02/2026 11:20	05/03/2026 12:02	672.70	0.5	10.7	5.5	
WSP/25A/NA6S10	Cromwell Road S	05/02/2026 11:30	05/03/2026 12:06	672.60	1.47	31.3	16.3	
WSP/25A/NA6S11	New Bridge Lane	05/02/2026 11:35	05/03/2026 12:11	672.60	0.81	17.3	9	
WSP/25A/NA6S12	Cromwell Road N	05/02/2026 11:45	05/03/2026 12:53	673.13	1.34	28.6	14.9	



WSP/25A/NA6S13	Railway Road	05/02/2026 11:55	05/03/2026 14:02	674.12	0.85	18.1	9.4	
WSP/25A/NA6S14	Algores Way	05/02/2026 12:00	05/03/2026 12:58	672.97	0.96	20.4	10.6	
WSP/25A/NA6S15	Harry's Way	05/02/2026 12:05	05/03/2026 13:05	673.00	0.61	13.1	6.8	
WSP/25A/NA6S16	Weasenham Lane	05/02/2026 12:10	05/03/2026 13:53	673.72	1.18	25.2	13.1	
WSP/25A/NA6S17	Heron Road	05/02/2026 12:15	05/03/2026 13:14	672.98	0.72	15.2	7.9	
WSP/25A/NA6S18	Westmead Avenue	05/02/2026 10:55	05/03/2026 14:10	675.25	0.87	18.4	9.6	
WSP/25A/NA6S19	Corporation Road	05/02/2026 12:30	05/03/2026 13:16	672.77	0.77	16.5	8.6	
WSP/25A/NA6B1	Travel blank				<0.03			



Table B-3 - SOCOTEC lab results for March 2026

Sample Number	Site Name	Date and Time ON	Date and Time OFF	Exposure Time (Hours)	Total µg	µg m ⁻³	ppb	Comments
WSP/25A/NA7S1	Emneth	05/03/2026 09:57	08/04/2026 09:50	815.88	0.85	14.9	7.7	
WSP/25A/NA7S2	Marshland St James	05/03/2026 10:21	08/04/2026 10:00	815.65	0.7	12.3	6.4	
WSP/25A/NA7S3	Walpole Highway	05/03/2026 10:39	08/04/2026 10:10	815.52	0.47	8.3	4.3	
WSP/25A/NA7S4	Walton Highway	05/03/2026 11:07	08/04/2026 10:30	815.38	0.58	10.1	5.3	
WSP/25A/NA7S5	West Walton	05/03/2026 10:57	08/04/2026 10:35	815.63	0.63	11	5.7	
WSP/25A/NA7S6	Churchill Road	05/03/2026 11:34	08/04/2026 10:50	815.27	1.35	23.7	12.3	
WSP/25A/NA7S7	AQMS	05/03/2026 13:31	08/04/2026 12:30	814.98	0.9	15.9	8.3	
WSP/25A/NA7S8	Elm High Road	05/03/2026 14:16	08/04/2026 11:25	813.15	1.24	21.9	11.4	
WSP/25A/NA7S9	A47	05/03/2026 12:02	08/04/2026 11:30	815.47	0.55	9.7	5.1	
WSP/25A/NA7S10	Cromwell Road S	05/03/2026 12:06	08/04/2026 11:35	815.48	1.48	26.1	13.6	
WSP/25A/NA7S11	New Bridge Lane	05/03/2026 12:11	08/04/2026 11:40	815.48	0.78	13.7	7.1	
WSP/25A/NA7S12	Cromwell Road N	05/03/2026 12:53	08/04/2026 11:50	814.95	2.15	37.8	19.7	



WSP/25A/NA7S13	Railway Road	05/03/2026 14:02	08/04/2026 12:00	813.97	0.82	14.4	7.5	
WSP/25A/NA7S14	Algores Way	05/03/2026 12:58	08/04/2026 12:05	815.12	1.09	19.2	10	
WSP/25A/NA7S15	Harry's Way	05/03/2026 13:05	08/04/2026 12:20	815.25	0.77	13.6	7.1	
WSP/25A/NA7S16	Weasenham Lane	05/03/2026 13:53	08/04/2026 12:10	814.28	1.27	22.4	11.6	
WSP/25A/NA7S17	Heron Road	05/03/2026 13:14	08/04/2026 12:15	815.02	1.17	20.5	10.7	
WSP/25A/NA7S18	Westmead Avenue	05/03/2026 14:10	08/04/2026 11:00	812.83	1.21	21.3	11.1	
WSP/25A/NA7S19	Corporation Road	05/03/2026 13:16	08/04/2026 12:35	815.32	0.68	11.9	6.2	
WSP/25A/NA7B1	Travel blank				<0.03			



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