Annual Progress Report (APR)



2024 Air Quality Annual Progress Report (APR) for West Dunbartonshire Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

September 2024

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Executive Summary: Air Quality in Our Area

Air Quality in <West Dunbartonshire>

The 2024 Annual Progress Report (APR) considers measured pollutant concentration from within West Dunbartonshire for the calendar year of 2023 and considers the potential for exceedance of the air quality objectives.

The main pollutant if concern within West Dunbartonshire Council area are nitrogen dioxide and particular matter. Monitoring in West Dunbartonshire was undertaken using automatic (continuous) monitoring at two sites during 2023 and the use of diffusion tubes. Dumbarton monitoring unit only monitors Nitrogen Dioxide (NO₂) and is part of the Automatic Urban and Rural Network (AURN). Both automatic units have triplicate co-located NO₂ diffusion tubes.

No exceedances to the short and long term NO₂ limit were registered at the two continuous monitoring locations. The annual average level continues to fall at the Clydebank location and the Dumbarton location remains statistically steady.

The monitoring location with the highest annual mean for NO₂ is DT18 (Milton 1) with a value of 23.5 μ g/m³ but still below the national annual mean for this pollutant.

The Annual mean PM_{10} and $PM_{2.5}$ levels at Briar Drive Clydebank are not statistically different from previous years, showing only minor fluctuations. These values are below the objective level.

Actions to Improve Air Quality

West Dunbartonshire Council continues to work with internal and external partners to deliver the objectives of Cleaner Air for Scotland 2 – Towards a Better Place for Everyone

Local Priorities and Challenges

West Dunbartonshire Council has no specific priorities in respect of local air quality beyond that of statutory monitoring and idling engines enforcement.

Environmental Health service continues carrying out vehicle idling enforcement programme across the Council area.

How to Get Involved

The general public can find out more about air quality and related subjects by visiting West Dunbartonshire Council web site at <u>http://www.westdunbarton.gov.uk/business/environmental-health/pollution/airquality</u>

Residents can also visit the Scottish Air Quality website and view live air quality Data at http://www.scottishairquality.co.uk

There is the opportunity to register for text and email alerts when air quality is forecast likely to be moderate or higher. This will enable those with breathing problems to make informed judgement about their levels of activity or exposure.

With high levels of nitrogen dioxide coming mainly from vehicle emission there are many ways in which WDC residents can also help contribute towards reducing air pollution in the area, such as choosing to travel around the area by foot, by bicycle or using public transport whenever possible, this can reduce individual contributions to air pollution in the area.

Further information can be obtained by contacting Environmental Health at: Environmental.Health@west-dunbarton.gov.uk

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1 Local Air Quality Management

This report provides an overview of air quality in West Dunbartonshire Council during 2023. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by West Dunbartonshire Council to improve air quality and any progress that has been made.

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO ₂)	40 µg/m³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM ₁₀)	18 μg/m³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m³	Annual mean	31.12.2021
Sulphur dioxide (SO ₂)	350 μg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	125 μg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 μg/m³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 μg/m³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003

Table 1.1 – Summa	ry of Air Quality	y Objectives in	Scotland

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

West Dunbartonshire Council currently does not have any AQMAs.

2.2 Cleaner Air for Scotland 2

<u>Cleaner Air for Scotland 2 – Towards a Better Place for Everyone (CAFS2)</u> is Scotland's second air quality strategy. CAFS2 sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021 – 2026. CAFS2 was published in July 2021 and replaces <u>Cleaner Air for Scotland – The Road to a Healthier Future (CAFS)</u>, which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". A series of actions across a range of policy areas are outlined, a summary of which is available on the Scottish Government's website.

Progress by West Dunbartonshire Council against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally

in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

The West Dunbartonshire development plan now includes the Local Plan 2010 and National Planning Framework 4 (NPF4). Clydeplan has been removed from being part of the statutory development plan. The Local Development Plan, Proposed Plan, as modified is not adopted but is a material consideration in relation to assessment of planning applications. The Local Plan includes consideration of air quality under its General Development Policy GD1, which encourages the "provision for public transport, pedestrian and cycling access, and considering the need for a Green Travel Plan" in order to avoid or minimise adverse impacts on air quality.

The Local Development Plan, Proposed Plan as modified, similarly requires measures to mitigate air quality impacts under policy ENV8 Air, Light & Noise Pollution. The Proposed LDP also promotes and requires the prioritisation of active travel across a range of policies, including Policies CP2 Green Infrastructure and CON1 Transport Requirements for New Development, which also requires developers of major development to include electric vehicle charging infrastructure.

West Dunbartonshire Council has relevant initiatives in Transport and Climate change, Policy 13 Sustainable transport seeks "To encourage, promote and facilitate developments that prioritise walking, wheeling, cycling and public transport for everyday travel and reduce the need to travel unsustainably." This policy also requires the provision of low and zero-emission vehicle and cycle charging infrastructure.

2.2.2 Transport – Low Emission Zones

Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure.

West Dunbartonshire Council has no Low Emission Zones established within the Local Authority area.

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

West Dunbartonshire Council has not undertaken any specific measures to address local air quality in 2023 beyond the statutory monitoring and reporting requirement improving local air quality.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

West Dunbartonshire Council undertook automatic (continuous) monitoring at 2 sites during 2023. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at <u>http://www.scottishairquality.co.uk/</u>

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

3.1.2 Non-Automatic Monitoring Sites

West Dunbartonshire Council undertook non- automatic (passive) monitoring of NO_2 at 24 sites during 2023. Table A.2 in Appendix A shows the details of the sites. The sites included two set of triplicates tubes co-located with our automatic monitoring sites given a total of 28 tubes. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 μ g/m³ at automatic monitoring sites.

Table A.4 in Appendix A compares the adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 μ g/m³ at non automatic monitoring sites.

For diffusion tubes, the full 2023 dataset of monthly mean values is provided in Appendix B.

Table A.5 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past five years with the air quality objective of $200\mu g/m^3$, not to be exceeded more than 18 times per year

3.2.2 Particulate Matter (PM₁₀)

Table A.6 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of $18\mu g/m^3$.

Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of $50\mu g/m^3$, not to be exceeded more than seven times per year.

3.2.3 Particulate Matter (PM_{2.5})

Table A.8 in Appendix A compares the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years with the air quality objective of $10\mu g/m^3$.

3.2.4 Sulphur Dioxide (SO₂)

West Dunbartonshire Council does not carry out any monitoring in respect of Sulphur Dioxide and has no current plans to do so.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

West Dunbartonshire Council does not carry out any monitoring in respect of Carbon Monoxide, Lead and 1,3-Butadiene and has no current plans to do so

4 New Local Developments

No new developments in the area which may affect air quality have been identified and requires consideration in this report.

4.1 Road Traffic Sources

There were no new road traffic sources identified within West Dunbartonshire Council Area in 2023.

4.2 Other Transport Sources

The following transport sources within the West Dunbartonshire Council local authority boundary do not meet the criteria specified in the Local Air Quality Management, Technical Guidance (TG16) that would trigger the requirement for a more detailed assessment:

- Airports.
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.
- Locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.
- Ports for shipping.

4.3 Industrial Sources

There were no new industrial sources identified within West Dunbartonshire Council Area in 2022 neither has the Scottish Environmental Protection Agency (SEPA) made West Dunbartonshire Council aware of any significant new industrial sources since the previous Annual Progress Report in June 2022.

4.4 Commercial and Domestic Sources

There are no new commercial or domestic sources identified in the West Dunbartonshire Council area. However, there have been many planning applications received for domestic fuel burning through the use of wood burning stoves which continues to grow in West Dunbartonshire.

4.5 New Developments with Fugitive or Uncontrolled Sources

There are no new developments with fugitive or uncontrolled sources identified in the West Dunbartonshire Council area.

5 Planning Applications

There are no new planning applications in 2023 West Dunbartonshire Council that would have the potential to affect air quality.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

No exceedances to the short and long term NO₂ limit were registered at the two continuous monitoring locations. The annual average level continues to fall at the Clydebank location and the Dumbarton location remains statistically steady.

The monitoring location with the highest annual mean for NO₂ is DT18 (Milton 1) with a value of 23.5 μ g/m³ but still below the national annual mean for this pollutant.

The Annual mean PM_{10} and $PM_{2.5}$ levels at Briar Drive Clydebank are not statistically different from previous years, showing only minor fluctuations. These values are below the objective level.

6.2 Conclusions relating to New Local Developments

There have been no new local developments that have the potential to introduce new exceedances of relevant air quality objectives in West Dunbartonshire or expected to have significant impact on air quality in the towns within WDC.

6.3 Proposed Actions

Monitoring data for 2022 has not identified any new exceedances of the objectives for any pollutant and all monitored areas of West Dunbartonshire are not only in compliance but are well below the objective levels, even although traffic levels have returned to pre pandemic levels.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m)	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
CM1	Clydebank	Roadside	249723	672044	NO ₂ ; PM _{10;} PM _{2.5}	NO	Chemiluminescent; FDMS	nescent; 18 IS		1.5
CM2	Dumbarton	Roadside	240238	675193	NO ₂	NO	Chemiluminescent	2.5	5	1.5

Notes:

(1) Om if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

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Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube co-located with a Continuous Analyser?	Tube Height (m)
DT1	Clydebank 1	Kerbside	248479	671115	NO2	No	2	1	Ν	2.5
DT3	Clydebank 7	Kerbside	249918	669868	NO2	No	4	1	Ν	2.5
DT4	Clydebank 9	Kerbside	249761	669990	NO2	No	3	1	Ν	2.5
DT6	Clydebank 11	Kerbside	249801	672288	NO2	No	22	1	Ν	2.5
DT7	Clydebank 12	Kerbside	249747	671665	NO2	No	10	1	Ν	2.5
DT9	Clydebank 14	Kerbside	249872	671854	NO2	No	>25	10	Ν	2.5
DT10	Clydebank 15	Kerbside	249746	671966	NO2	No	8.5	1	Ν	2.5
DT12	Clydebank 17	Kerbside	249987	672440	NO2	No	11	1	N	2.5

DT14	Dumbarton 11	Kerbside	240515	675078	NO2	No	4	1	Ν	2.5
DT15	Dumbarton 12	Kerbside	239410	675330	NO2	No	7	1	Ν	2.5
DT16	Dumbarton 2	Kerbside	240178	675228	NO2	No	8	1	Ν	2.5
DT17	Dumbarton 3	Kerbside	240279	675196	NO2	No	4.5	1	Ν	2.5
DT18	Milton 1	Kerbside	242266	674235	NO2	No	12	1	Ν	2.5
DT19	Milton 2	Kerbside	242160	674299	NO2	No	2	12	Ν	2.5
DT20	Alexandria 1	Kerbside	239024	680206	NO2	No	5	1	Ν	2.5
DT21	Balloch 1	Kerbside	238584	681562	NO2	No	12	1	Ν	2.5
DT22	Briar Drive 1	Kerbside	249723	672044	NO2	No	2.5	5	Y	2.5

DT23	Briar Drive 2	Kerbside	240238	675193	NO2	No	2.5	4.5	Y	2.5
DT24	Briar Drive 3	Kerbside	248479	671115	NO2	No	2.5	1	Y	2.5
DT25	Dumbarton Triplicate 1	Kerbside	240238	675193	NO2	No	18	4.5	Y	2.5
DT26	Dumbarton Triplicate 2	Kerbside	240238	675193	NO2	No	18	4.5	Y	2.5
DT27	Dumbarton Triplicate 3	Kerbside	240238	675193	NO2	No	18	4.5	Y	2.5
DT29	Clydebank 19	Kerbside	249752	669981	NO2	No	2.5	2.5	N	2.5
DT31	Clydebank 21	Kerbside	250531	669269	NO ₂	No	4	1	N	2.5
DT32	Clydebank 22	Kerbside	250199	669551	NO ₂	No	7	1	N	2.5
DT35	Milton 5	Kerbside	242413	674288	NO ₂	No	2	14	N	2.5

DT36	Clydebank 23	Kerbside	249868	671267	NO ₂	No	2.5	1	Ν	2.5
DT37	Dumbarton 13	Kerbside	240858	674932	NO ₂	No	2	1	Ν	2.5

Notes:

(1) Om if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
CM1	Roadside	Automatic	99.6%	99.6%	28.2 ⁽³⁾	21	17.4	17.60	14.8
CM2	Roadside	Automatic	85.8%	85.8%	18	12.6	13.6	12.10	13

Notes:

Exceedances of the NO₂ annual mean objective of $40\mu g/m^3$ are shown in bold.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and**

underlined.

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

Table A.4 -	- Annual Mean N	O ₂ Monitoring	Results: N	on-Automatic	Monitoring (u	ıa/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
DT1	248479	671115	Kerbside		100.0	22.5	19.1	17.2	19.17	12.0
DT3	249918	669868	Kerbside		90.4	23.9	15.4	13	16.21	9.7
DT4	249761	669990	Kerbside		100.0	20.7	14	14.9	16.22	10.6
DT6	249801	672288	Kerbside		100.0	19.5	12.9	13.6	17.92	11.4
DT7	249747	671665	Kerbside		92.3	19.3	14.9	15.4	20.06	11.5
DT9	249872	671854	Kerbside		100.0	13.8	9.1	8.4	8.72	5.6
DT10	249746	671966	Kerbside		100.0	21.2	15.8	15.6	18.47	13.3
DT12	249987	672440	Kerbside		82.7	21.9	12.9	14.1	14.96	8.9
DT14	240515	675078	Kerbside		92.3	18.3	13.3	15.2	13.51	9.6
DT15	239410	675330	Kerbside		100.0	17.3	13.3	11.7	13.08	10.4
DT16	240178	675228	Kerbside		90.4	25.9	18.5	19	24.41	16.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
DT17	240279	675196	Kerbside		100.0	24.7	16.7	19.9	23.83	17.0
DT18	242266	674235	Kerbside		100.0	<u>42.2</u>	23	29.5	34.44	23.5
DT19	242160	674299	Kerbside		100.0	18.9	19.9	13.7	14.60	9.5
DT20	239024	680206	Kerbside		100.0	22.7	13.7	14.9	18.34	13.4
DT21	238584	681562	Kerbside		100.0	20.1	12.4	14.2	15.42	9.8
DT22	249723	672044	Kerbside		100.0	21.6	12.3	14.2	15.86	11.2
DT23	240238	675193	Kerbside		100.0	20.9	14.9	14.2	15.44	11.2
DT24	248479	671115	Kerbside		100.0	17	14.1	14.2	15.13	11.2
DT25	240238	675193	Kerbside		100.0	18.2	13.3	13.4	13.82	9.4
DT26	240238	675193	Kerbside		100.0	17.7	11.3	13.4	12.93	9.4
DT27	240238	675193	Kerbside		100.0	18.5	10.8	13.4	13.58	9.4

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
DT29	249752	669981	Kerbside		100.0	21.7	12.3	11.6	14.80	9.6
DT31	250531	669269	Kerbside		100.0	20.4	11	12	14.24	9.4
DT32	250199	669551	Kerbside		90.4	19.3	13.4	13	13.20	11.9
DT35	242413	674288	Kerbside		82.7	20.2	16.4	14.1	15.09	6.9
DT36	249868	671267	Kerbside		100.0				18.07	12.3
DT37	240858	674932	Kerbside		100.0				20.00	13.3

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22 (confirm by selecting in box).

Diffusion tube data has been bias adjusted (confirm by selecting in box).

Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction (confirm by selecting in box).

Notes:

Exceedances of the NO₂ annual mean objective of $40\mu g/m^3$ are shown in bold.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and**

underlined.

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG(22) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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- (3) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (4) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
CM1	Roadside	Automatic	99.6	99.6	0(110)	0(85)	0	0	0
CM2	Roadside	Automatic	100	100	0	0	0(86)	0	0

Notes:

Exceedances of the NO₂ 1-hour mean objective (200 μ g/m³ not to be exceeded more than 18 times/year) are shown in bold.

If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
CM1	Roadside	99.6	99.6	11	9	10	10	9.1

Notes:

Exceedances of the PM₁₀ annual mean objective of 18 μ g/m³ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

Table A.7 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
CM1	Roadside	99.6	99.6	4	0	0(20)	0	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ not to be exceeded more than seven times/year) are shown in bold.

If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

Table A.8 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2023 (%) ⁽²⁾	2019	2020	2021	2022	2023
CM1	Roadside	99.6	99.6	7	5	6	6	5.1

Notes:

Exceedances of the PM_{2.5} annual mean objective of 10 μ g/m³ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

Appendix B: Full Monthly Diffusion Tube Results for 2023

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT1	248479	671115	23.9	29.5	23.6	13.1	11.3	13.2	13.5	16.9	16.9	2.1	12.6	17.3	16.2	12.0		
DT3	249918	669868	18.3	19.3		13.5	14.6	9.8	9.7	15.5	3.6	14.5	15.0	10.9	13.2	9.7		
DT4	249761	669990	14.6	19.4	23.1	13.6	12.4	12.2	7.7	15.2	9.5	15.8	14.7	13.9	14.3	10.6		
DT6	249801	672288	17.9	21.5	18.5	14.0	8.9	11.2	9.3	15.1	16.9	16.7	20.1	14.1	15.4	11.4		
DT7	249747	671665	22.4		19.5	11.0	12.2	15.8	9.0	12.7	17.3	11.7	23.4	16.1	15.6	11.5		
DT9	249872	671854	10.4	10.8	10.8	6.1	5.6	7.4	3.7	5.7	7.1	2.3	12.8	8.8	7.6	5.6		
DT10	249746	671966	21.2	20.4	22.8	14.1	10.0	17.1	29.6	13.9	16.5	13.3	21.0	15.5	18.0	13.3		
DT12	249987	672440	15.1	23.1	17.7		4.1		9.9	5.5	2.9	11.5	12.9	17.0	12.0	8.9		
DT14	240515	675078	15.8	23.8	21.4	7.0		10.5	4.9	9.9	8.5	11.2	17.8	12.3	13.0	9.6		
DT15	239410	675330	12.7	16.6	21.9	13.3	11.7	15.0	9.3	9.6	15.7	9.5	16.6	16.0	14.0	10.4		

Table B.1 – NO₂ 2023 Monthly Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT16	240178	675228	20.1	30.8	27.3	22.6	25.0	27.1	15.8		17.9	21.3	20.1	19.7	22.5	16.7		
DT17	240279	675196	21.1	29.9	30.5	25.3	24.0	23.3	12.5	21.9	21.1	23.7	22.2	20.9	23.0	17.0		
DT18	242266	674235	24.8	45.6	33.9	28.3	25.9	44.2	28.7	25.6	45.4	30.8	24.9	23.6	31.8	23.5		Highest recorded value
DT19	242160	674299	2.2	17.6	18.3	14.4	11.8	15.8	9.1	8.8	17.4	12.4	17.0	8.7	12.8	9.5		
DT20	239024	680206	41.6	20.3	20.4	18.9	9.0	17.6	10.0	11.8	17.9	15.5	17.2	17.4	18.1	13.4		
DT21	238584	681562	10.8	14.2	21.3	19.1	9.5	15.5	7.7	10.7	3.7	14.6	18.5	14.0	13.3	9.8		
DT22	249723	672044	16.0	18.6	21.3	18.1	11.0	15.6	8.7	1.7	12.3	16.0	23.0	15.5	-	-		
DT23	240238	675193	14.0	18.9	20.8	20.0	12.0	12.4	7.1	13.9	12.6	15.2	18.6	17.0	-	-		
DT24	248479	671115	12.8	23.2	20.9	18.2	11.7	17.0	6.3	12.3	12.4	15.6	20.2	13.5	15.1	11.2		
DT25	240238	675193	16.0	17.0	17.6	15.3	14.1	12.2	8.7	13.5	10.5	15.3	13.0	13.6	-	-		
DT26	240238	675193	10.3	17.6	15.8	15.0	11.0	9.3	7.0	13.2	6.5	2.1	19.5	14.8	-	-		
DT27	240238	675193	13.2	14.7	16.7	14.1	11.4	11.9	7.7	12.3	2.2	13.8	19.4	12.0	12.7	9.4		

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DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
DT29	249752	669981	17.5	16.6	16.9	9.7	6.3	15.8	7.7	10.0	10.3	10.8	17.7	15.7	12.9	9.6		
DT31	250531	669269	18.8	15.9	17.8	14.2	9.7	11.8	8.2	10.5	10.3	8.1	15.0	12.0	12.7	9.4		
DT32	250199	669551	24.8	22.3	29.0	10.2	8.1		13.9	16.8	10.0	15.6	14.6	11.4	16.1	11.9		
DT35	242413	674288	8.3			10.9	11.2	16.8	6.1	9.0	3.4	3.4	10.6	13.3	9.3	6.9		
DT36	249868	671267	15.4	19.8	22.6	20.9	17.2	17.2	11.3	10.7	12.3	16.4	20.5	15.3	16.6	12.3		
DT37	240858	674932	18.5	27.1	21.7	18.0	14.7	19.8	20.8	17.4	15.1	9.2	20.1	13.6	18.0	13.3		

⊠ All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1 (confirm by selecting in box).

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22 (confirm by selecting in box).

 \Box Local bias adjustment factor used (confirm by selecting in box).

☑ National bias adjustment factor used (confirm by selecting in box).

Where applicable, data has been distance corrected for relevant exposure in the final column (confirm by selecting in box).

West Dunbartonshire confirm that all 2023 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System (confirm by selecting in box).
Notes:

Exceedances of the NO₂ annual mean objective of $40\mu g/m^3$ are shown in **bold**.

 NO_2 annual means exceeding $60\mu g/m^3$, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**. See Appendix C for details on bias adjustment and annualisation.

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Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within West Dunbartonshire During 2023

West Dunbartonshire Council has not identified any new sources relating to air quality within the reporting year of 2023.

Additional Air Quality Works Undertaken by West Dunbartonshire During 2023

West Dunbartonshire Council has not completed any additional works within the reporting year of 2023.

QA/QC of Diffusion Tube Monitoring

The diffusion tubes for the year 2023 are supplied and analysed by Glasgow Scientific Services (GSS) and are prepared using the 20% TEA in water method and in accordance with the procedures set out in the practical guidance. The duration of exposure is normally the 4/5 weeks period as suggested by the calendar provided by Defra. All results have been bias adjusted and annualised where required. The full set of monthly NO₂ diffusion tube results are shown in Table B.1 above.

Glasgow Scientific Services (GSS) Laboratory is UKAS accredited laboratory and participate in the AIR NO₂ Proficiency Testing Scheme. In 2023 the results the lab submitted to the scheme were determined to be satisfactory based on a z-score of $=\pm 2$.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within West Dunbartonshire Council recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

Diffusion Tube Bias Adjustment Factors

West Dunbartonshire Council have applied a national bias adjustment factor of 0.74 to the 2023 monitoring data using the national Diffusion Tube Bias Adjustment factor spreadsheet (version 06/24). A summary of bias adjustment factors used by West Dunbartonshire Council over the past five years is presented in Table C.1.

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2023	National	06/24	0.74
2022	National	03/23	1.05
2021	Local	-	0.88
2020	National	03/21	0.96
2019	National	03/20	0.86

NO2 Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within West Dunbartonshire Council required distance correction during 2023.

QA/QC of Automatic Monitoring

All automatic sites are part of the Scottish Air Quality Programme and are audited twice per year by Ricardo. Servicing and repair is carried out by Acoem UK, the service contracts include a six monthly service of instruments, call outs to site for repairs and the routine replacement of consumables. All data is available in real-time, and regularly scaled and ratified by Ricardo on behalf of the Scottish Government.

PM₁₀ and PM_{2.5} Monitoring Adjustment

The type of $PM_{10}/PM_{2.5}$ monitor(s) utilised within West Dunbartonshire do not require the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within West Dunbartonshire Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within West Dunbartonshire Council required distance correction during 2023.

Appendix D: Monitoring Site Location Maps



West Dunbartonshire Council Title : Clydebank NO2

Map No: Map Ref : NS4970 Date : 21/06/2023 Scale : 1:15000

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West Dunbartonshire Council

Glossary of Terms

Abbreviation	Description		
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'		
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives		
APR	f		
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)		
Defra	Department for Environment, Food and Rural Affairs		
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England		
DT	Diffusion Tube		
FDMS	Filter Dynamics Measurement System		
LAQM	Local Air Quality Management		
NO ₂	Nitrogen Dioxide		
NO _X	Nitrogen Oxides		
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less		
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less		
QA/QC	Quality Assurance and Quality Control		
SO ₂	Sulphur Dioxide		

References