2019 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

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Executive Summary: Air Quality in Our Area

Air Quality in Tonbridge and Malling

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and various forms of cancer. Air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with inequalities issues, because areas with poor air quality are also often the less affluent areas[1,2].

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[3].

The main source of air pollution in the Borough is road traffic emissions from major roads, notably the M20, M26, M2, A20, A21, A25, A26, A227, A228 and A229. Traffic emissions are a major source of nitrogen dioxide (NO_2) and particulate matter of different size fractions (PM_{10} and $PM_{2.5}$). Other pollution sources including commercial, industrial and domestic sources also contribute to pollutant concentrations across the Borough.

Currently there are seven Air Quality Management Areas (AQMAs) declared within the Borough, and all of these are related to emissions from vehicle exhaust. Six of the AQMAs have been designated for exceedances of the NO_2 annual mean objective only, and the M20 AQMA has been declared due to exceedances of both the NO_2 annual mean and PM_{10} 24-hour mean objectives.

All current AQMAs can be viewed online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=283, details of the AQMAs are provided in Table 2.1 and boundary maps are presented in Appendix D: Maps of Monitoring Locations and AQMAs.

An Air Quality Action Plan (AQAP) was last completed in 2011, where outlined measures were to be completed in order to pursue compliance with all relevant air quality objectives, thus improving air quality within the AQMAs and therefore the Borough as a whole. Tonbridge and Malling are currently in the process of completing

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[2] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006
[3] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

an updated AQAP that will outline new measures to work towards achieving compliance across the Borough.

Concentrations of NO_2 in 2018 were monitored at 55 sites across the Borough, comprising of 1 continuous monitor and 76 diffusion tubes (30 tubes forming 10 triplicate sites). The automatic monitor located on Tonbridge High Street was relocated in June 2018 to Wateringbury because the Tonbridge retail unit where the instrument was located was being refurbished. The monitoring unit is expected to be returned to Tonbridge High Street in 2020.

During 2018, five monitoring locations reported to exceed the AQS annual mean objective for NO_2. All exceedances experienced within 2018 were reported specifically within AQMAs (AQMA 4, AQMA 5, AQMA 6), demonstrating localised "hot-spots" of air quality issues within Tonbridge and Malling, and indicating that concentrations within AQMA 3 and AQMA 7 have improved compared to 2017, with no exceedances reported in 2018.

After distance correction calculations were performed, only four monitoring sites were reported to exceed the AQS NO_2 annual mean objective within 2018. The 4 sites that reported exceedances in 2018 also exceededed in 2017.

The triplicate site TN42, TN76 and TN77 has historically reported an annual mean concentration greater than 60µg/m^3 every year since installation. In 2018, concentrations reported below 60µg/m^3 at 58.1µg/m^3. In accordance with Defra LAQM.TG (16), any location where an annual mean concentration of over 60 µg/m^3 has been recorded may have experienced exceedances of the AQS 1-hour objective of 200 µg/m^3. In 2018 no monitoring locations reported above 60 µg/m^3 and therefore deemed unlikely to have experienced exceedance of the 200 µg/m^3 threshold.

Actions to Improve Air Quality

A number of actions have been completed within the Borough during 2018 designed to improve local air quality:

- Tonbridge and Malling Borough Council resided on the Kent Low Emissions Strategy steering group, which has developed a strategy to prioritise the reduction of harmful emissions contributing to poor air quality[4];

[4] https://democracy.kent.gov.uk/documents/s86258/Item%2010%20-%20Kent%20Medway%20Energy%20Low%20Emissions%20Strategy%20-%20Emerging%20evidence%20and%20priorities.pdf

- The Kent and Medway Air Quality Partnership (KMAQP) have prepared a new Air Quality Planning Guidance[5] that is to be used by local authorities, developers and consultants. The guidance uses a method for assessing the air quality impacts of a development which includes the quantification of impacts, calculation of damage costs, and the identification of mitigation measures to be implemented to negate the impact of development on air quality. This guidance is to be used in conjunction with Tonbridge and Malling local policies when assessing the impacts of any proposed development within the Borough where air quality is a material consideration. Currently, Tonbridge and Malling Borough Council are consulting with developers within the region about the potential for the KMAQP to become a supporting document in the Local Plan;
- Waste fleet upgrade completed across the Borough to assist in the reduction of emissions from public services. A new contract is planned from March 2019, with an expectation that all vehicles will be upgraded by September 2019; this will be discussed further in the 2020 ASR.

Conclusions and Priorities

The results from 2018 show NO_2 annual mean concentrations within Tonbridge and Malling have reduced at the majority of monitoring sites when compared to 2017.

Exceedances of the annual mean NO_2 AQS annual objective were solely located within declared AQMAs, demonstrating the challenge Tonbridge and Malling Borough Council faces with localisation of air quality hotspots in line with wider improvements to air quality across the Borough.

After distance correction calculations were performed, only four monitoring sites were reported to exceed the AQS NO_2 annual mean objective within 2018 in comparison to seven sites in 2017.

Within the past five years there has not been a reported exceedance of the annual mean AQS objective within Ditton AQMA 2, with recommendations made regarding a potential revocation. A conservative decision was made by the Council to keep the AQMA in place until at least the end of the M20's smart motorway upgrade. The AQMA boundaries will be reviewed following publication of the 2019 AQAP.

[5] Kent and Medway Air Quality Partnership. Air Quality Planning Guidance (Mitigation Option A), December 2015.

Annual mean NO_2 concentrations in Wateringbury AQMA 4 continue to be the highest within Tonbridge and Malling, however in 2018, the triplicate site TN42, 76, 77 has reported below 60 µg/m^3 (an indication of possible exceedances of the 1-hour objective) for the first time since it's installation.

Tonbridge and Malling are currently in the process of updating the 2011 AQAP that covers all of the designated AQMAs. The new/revised measures that will be included within the AQAP will set out the actions required to lower pollutant concentrations within the designated AQMAs and also across the whole Borough.

Despite the majority of NO_2 concentrations within Tonbridge and Malling gradually declining with each monitoring year, some areas are still reporting high levels of annual mean NO_2 concentrations suggesting measures introduced in the 2011 AQAP have not been as effective as initially thought. Therefore, the following actions are considered to be key priorities in ensuring future AQS objectives are met:

- Complete the revised a AQAP;
- Continue to monitor air pollution across the Borough and to consider the need to relocate or increase the amount of monitoring stations within Wateringbury AQMA 4; and
- Continue to seek out financial incentives to help reduce private vehicle reliance on arterial roads within Tonbridge and Malling through investment in public transport and other sustainable forms of transport.

Local Engagement and How to get Involved

Due to the main source of air pollution within Tonbridge and Malling being from transport sources, the public can get involved in helping reduce the release of air pollution and thus improving air quality within the Borough by looking at alternative means of travel. The following are possible alternatives to private travel that would contribute to improving air quality within the Borough:

- Use public transport where available – This reduces the number of private vehicles in operation reducing pollutant concentration through the number of vehicles and reducing congestion;

- Walk or cycle if your journey allows – From choosing to walk or cycle for your journey the number of vehicles is reduced and also there is the added benefit of keeping fit and healthy;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school car sharing reduces the number of vehicles on the road and therefore the amount of emissions being released. This can be promoted via travel plans through the workplace and within schools; and
- Alternative fuel / more efficient vehicles – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel efficient cars are available and all have different levels benefits by reducing the amount of emissions being released.

Further information about air quality including monitoring data, details on the main pollutants associated with air quality and an emissions calculator for travel options is included on the KentAir website[6] and associated Care for Air: Kent & Medway website[7].

[6] KentAir, available online at http://www.kentair.org.uk/
[7] Care for KentAir, available online at http://www.kentair.org.uk/Information

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1 Local Air Quality Management

This report provides an overview of air quality in Tonbridge and Malling Borough Council during 2018. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 Status Report (ASR) is an annual requirement showing the strategies employed by Tonbridge and Malling Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Appendix E: Summary of Air Quality Objectives in England.

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 an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Tonbridge and Malling Borough Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=283. Alternatively, see Appendix D: Maps of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMAs.

The Council propose to keep the current seven designated AQMAs, but are to review all of the AQMA declarations through the process of completing a new AQAP for all relevant AQMAs. The updated AQAP is to be informed by a detailed dispersion modelling study that covers the area of each AQMA

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
M20 AQMA 1	May-01	NO_2 Annual Mean	Larkfield / Ditton	An area extending 39m from the centreline along the M20 motorway between the points where it passes below New Hythe Lane, Larkfield to the west and where it crosses Hall Road, Aylesford to the east.	YES	Modelled predicted exceedances	Exceedances	30.6	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf
M20 AQMA AQMA 1	May-01	PM_{10} 24 Hour Mean	Larkfield / Ditton	As above	YES	Modelled predicted exceedances	Exceedances	n/a	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf
Ditton AQMA 2	Jun-05	NO_2 Annual Mean	Ditton	An area incorporating the Station Road/London Road A20 crossroads in the Parish of Ditton.	NO	40.9	µg/m^3	31.9	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
Tonbridge High Street AQMA 3	June-05	NO_2 Annual Mean	Tonbridge	An area incorporating the High Street between Botany and the High Street/Vale Road roundabout, Tonbridge.	NO	53.3	µg/m^3	39	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf
Wateringbury AQMA 4	Jun-05	NO_2 Annual Mean	Waterinbury	An area incorporating the Red Hill/Tonbridge Road A26 crossroads in the Parish of Wateringbury.	NO	45.2	µg/m^3	58.2	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf
Aylesford AQMA 5	Oct-08	NO_2 Annual Mean	Aylesford	An area encompassing the A20 London Road in Aylesford, including the junction with Hall Road and Mills Road.	NO	48	µg/m^3	41.7	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	Link
Larkfield AQMA 6	Oct-08	NO_2 Annual Mean	Larkfield	An area encompassing the A20 London Road in East Malling, Larkfield and Ditton, including the junction with New Hythe Lane.	NO	39	µg/m^3	42	µg/m^3	Tonbridge and Malling Borough Council Air Quality Action Plan	Jun-11	http://aqma.defra.gov.uk/action-plans/TMBC%20AQAP%202011%20Draft.pdf
Borough Green AQMA 7	Apr-13	NO_2 Annual Mean	Borough Green	Parts of Sevenoaks Road A25, Western Road and the High Street in Borough Green.	NO	46	µg/m^3	39.7	µg/m^3	n/a	n/a	n/a

☒ **Tonbridge and Malling Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date**

2.2 Progress and Impact of Measures to address Air Quality in Tonbridge and Malling

Defra's appraisal of last year's ASR concluded that all AQMAs are reporting exceedances with the exceptions of AQMA 1 and 2, and were in agreement that the status of AQMA 2 should be reviewed. Advice on the development of the AQAP was provided, including an assessment of the AQAP measures to ensure that they meet the air quality objectives.

Tonbridge and Malling have taken forward a number of direct measures during the current reporting year of 2018 in pursuit of improving local air quality, including the continuing work to update the current AQAP with an expectation of publication in early 2020. Details of all measures from the 2011 AQAP are set out in Table 2.2, with the updated AQAP measures to be discussed within next year's ASR.

Key completed measures during 2018 are:

- Introduction of five additional monitoring sites for 2018 (TN118, TN119, TN120, TN121 and triplicate site TN115/116/117), together with a continuous review of monitoring sites in terms of relevant exposure;
- Completion of an updated AQAP that is to be informed by a detailed modelling study completed for areas across all current AQMA designations;
- The set-up of a new steering group engaged for the development of the AQAP, involving several council departments including planning and environmental health; and
- Contract agreed to enable the fleet upgrade of the Council's waste vehicles, expected to come into force in 2019.

Tonbridge and Malling anticipate that the measures in Table 2.2 will be reviewed, and revised in light of the updated AQAP where necessary in order to work towards achieving compliance across all AQMAs. Initialling the designation of each AQMA is to be reviewed following the completion of the detailed modelling study, with updated measures to be defined following any changes made to the existing designations.

Following the completion of the AQAP Table 2.2 will be updated to reflect the adopted measures, this will be completed within the ASR for 2020.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
1	Seek to adopt the Kent and Medway Air Quality and Development Control Guidance as a material consideration in planning decisions.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Air Quality Planning and Policy Guidance	TMBC	N/A	N/A	Adoption of guidance	Discussion with planners and potential adoption as supplementary document to AQAP	Not perused	Planners do not support
2	Joint bus retro fitting project with Maidstone BC	Alternatives to private vehicle use	Other	Other	MBC, TMBC, Defra	N/A	Monitoring along bus routes (A20)	Buses are retro fitted and monitoring suggests decrease in emissions	Outlined in TMBC local plan, August 2018	time taken to retrofit buses	N/A
3	Ensure development likely to have an air quality impact on the AQMAs is appropriately assessed consideration is made to mitigation as necessary and use of S106 agreements or through a Community Infrastructure Levy.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Air Quality Planning and Policy Guidance	TMBC	All new applications reviewed to identify affected proposals	Spreadsheet of comments on relevant applications	Rejected applications in AQMAs, or an increase in mitigation measures	N/A	N/A	Permissions granted on appeal where initially refused
4	TMBC will continue its active involvement and support for the Council's	Policy Guidance and Development Control	Other policy	Other policy	TMBC	Officers currently sit on KAMAQP meetings and are also present on Kent Low	Documents produced by groups	Number of meetings with Steering Group/Partnership/other boroughs	Consultant appointed to assist with Kent Low Emission Strategy	N/A	N/A

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	Action Plan Steering Group, the Kent and Medway Air Quality Partnership and joint working with neighbouring boroughs on shared air quality issues.					Emission Strategy Steering group					
5	TMBC will continue to work with KCC and other partners to support and promote sustainable transport initiatives and encourage the uptake of alternative modes of travel to the car.	Alternatives to private vehicle use	Other	Other	KCC, TMBC	Officers sit on Kent Low Emission Strategy steering group	N/A	Reduction in overall emissions	Appointment of consultant to assist with strategy	N/A	N/A
6	TMBC will assess planning applications to ensure all relevant air quality issues are highlighted and mitigation measures considered where appropriate.	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Air Quality Planning and Policy Guidance	TMBC	All applications are reviewed to identify those with AQ issues	Spreadsheet kept of those applications commented on	Number of planning applications received/responded to	N/A	N/A	N/A
7	TMBC will continue to monitor air quality	Public Information	Other	Other	TMBC	Diffusion tube network in place	Tube results	N/A	Results published in Kentair.org	N/A	N/A

Measure No.	Measure	EU Category	EU Classification	Organisations involved and Funding Source	Planning Phase	Implementation Phase	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
	throughout the borough and ensure information is freely available to the public in an easily understood form.										
8	TMBC will ensure that all air quality monitoring data reported to the public is accurate by continuing to implement quality assurance and control (QA/QC) measures.	Public Information	Other	Other	TMBC	All diffusion tube numbers are site specific	N/A	QA/QC procedures	Recording keeping up to date	N/A	N/a
9	TMBC will continue to assess air quality across the Borough and establish additional monitoring sites in locations where necessary if new areas of potential poor air quality are identified.	Public Information	Other	Other	TMBC	Sites reviewed in December and sites moved in January	Records	Poor quality sites identified and address through Review and Assessment	Four new sites introduced in 2018 (TN 115/116/117, TN118/119, TN120 & TN121), new AQAP commissioned	N/A	N/A

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Currently there is no monitoring of $PM_{2.5}$ or PM_{10} completed within Tonbridge and Malling, therefore no concentration values can be reported or estimated using the method described in Box 7.7 of LAQM.TG(16). The M20 AQMA was designated in 2001 based upon modelled exceedances of the 24-hour PM_{10} AQS objective, and all other AQMAs have been designated due to exceedances of the NO_2 annual mean AQS objective.

The Defra 2018 background maps for Tonbridge and Malling (2017 based)[8] show that all background concentrations of $PM_{2.5}$ are far below the 2020 annual mean AQS objective for $PM_{2.5}$. The highest concentration is predicted to be 12.2µg/m^3 within the 1 x 1km grid square with the centroid grid reference of 570500, 158500. This grid square covers areas of Larkfield which is within close proximity to the M20 and Invicta Park Industrial Estate where construction is present.

There are currently no designated smoke control areas within Tonbridge and Malling. However, the Councils website[9] provides information and guidance on how to minimise problems caused by bonfires, and instructions on how to deal with potential nuisances from bonfire smoke.

The Public Health Outcomes Framework data tool[10] compiled by Public Heath England quantifies the mortality burden of $PM_{2.5}$ within England on a county and local authority scale. The 2017 fraction of mortality attributable to $PM_{2.5}$ pollution across England is 5.1%, and in contrast the fraction within Tonbridge and Malling is slightly higher than the National average at 5.7%.

[8] Defra Background Mapping data for local authorities (2017-based), available online at https://uk-air.defra.gov.uk/data/laqm-background-home
[9] Tonight and Malling Borough Council, Bonfire, available online at https://www.tmbc.gov.uk/services/environment-and-planning/pollution/nuisances/bonfire
[10] Public Health Outcomes Framework, Public Health England, data tool available at https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000008/ati/101/are/E07000115/iid/30101/age/230/sex/4

The Council's approach in reduction of $PM_{2.5}$ emissions will be discussed further in next year's ASR, following the publication of the revised AQAP, establishment of the planned local particulate monitoring and support through the Kent and Medway Air Quality Partnership[11] (KMAQP).

[11] http://www.tunbridgewells.gov.uk/__data/assets/pdf_file/0006/16377/air-quality-technical-guidance.pdf

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

This section sets out what monitoring has taken place and how it compares with objectives.

3.1.1 Automatic Monitoring Sites

As highlighted in last year's ASR, Tonbridge and Malling undertook automatic (continuous) monitoring at two separate sites during 2018 using a single monitor. In June 2018 the monitor was relocated from Tonbridge High Street to Wateringbury due to the continual reporting of elevated NO_2 concentrations within Wateringbury via diffusion tube monitoring. Table A.1 in Appendix A shows the details of the two locations. Continuous monitoring results are available via Kent and Medway Air Quality Monitoring Network[12] and national monitoring results may be accessed from the Automatic Urban and Rural Network (AURN) at https://uk-air.defra.gov.uk/.

Maps showing all monitoring locations are provided within 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

Tonbridge and Malling undertook non- automatic (passive) monitoring of NO_2 at 54 sites during 2018, using 76 diffusion tubes. This is in comparison to 51 sites and 74 diffusion tubes that were in operation in 2017. The triplicate site TN115, TN116, TN117; duplicate site TN118, TN119; and sites TN120 and TN121 were installed during 2018. The sites TN120 and TN121 were installed by the Council from August 2018 following a request from Wouldham Parish Council in response to residents' concerns surrounding emissions from a high level of commuter traffic. The Council anticipates that the site placements are a temporary project, however this will be confirmed further in next year's ASR. The triplicate site TN49, TN53 and TN54 was discontinued in 2018 and the triplicate site TN111, TN112, TN113 was downgraded to a single tube site (TN111).

[12] http://www.kentair.org.uk/

In addition a number of sites have been renamed during 2018. All changes experienced within the monitoring network are presented within Table 3 1, and full site details for all non-automatic monitoring sites is presented in Table A.2.

Table 3 1 – Diffusion Tube Amendments

2017 Site Name	2018 Site Name
TN12b	TN5
TN29	TN29a
TN82	TN108
TN85	TN107
TN87	TN110
TN89	TN105
TN92	TN106
TN97	TN109
TN111, TN112, TN113	TN111
TN49, TN53, TN54	Discontinued

Maps showing all monitoring locations are provided in Appendix D: Maps of Monitoring Locations and AQMAsFurther details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, “annualisation” and distance correction. Further details on adjustments are provided in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3. For diffusion tubes, the full 2018 dataset of monthly mean values is provided in Appendix B.

Appendix A: Monitoring Results also compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

Results for 2018 have been bias adjusted using a national bias adjustment factor of 0.76. Full details of the bias adjustment and QA/QC procedure are provided in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Appendix B: Full Monthly Diffusion Tube Results for 2018 provides a summary of measured annual mean concentrations (annualised and bias adjusted) that were recorded for 2018. During 2018 there were five monitoring sites that reported exceedances of the annual mean NO_2 AQS objective of 40µg/m^3. All exceedances experienced were reported within three of the seven declared AQMAs:

- **AQMA 4** – TN33 & TN42/TN76/TN77;
- **AQMA 5** – DF1/DF2/DF3 & TN60/TN62/TN63; and
- **AQMA 6** – TN106,

There were no exceedances monitored outside of the current AQMAs.

In order for the results to be representative of relevant exposure to comply with the AQS objectives, the NO_2 fall-off with distance calculator has been used, where relevant, to estimate the NO_2 concentration for the diffusion tube locations with non-relevant exposures where monitored annual mean NO_2 was greater than 36µg/m^3. However, the calculation could only be applied to the triplicate site DF1, DF2 and DF3 as the positioning of the receptors in respect to the remaining diffusion tubes was deemed to either already be representative of relevant exposure, or not consistent with the road source relevant to the diffusion tube. The NO_2 fall-off with distance correction calculation is displayed in Table 3 2. As a result of these calculations the annual mean concentration at the point of relevant exposure is predicted to be far below the annual mean objective. Following the distance correction at one site, four monitoring sites were reported to exceed the annual mean objective within 2018, this is a reduction when compared to seven sites in 2017.

Table 3 2 – Annual Mean NO_2 Following Distance Correction Calculations

Site ID	Within AQMA Y/N	2018 Annual Mean Concentration (µg/m^3)
DF1, DF2, DF3	Y – AQMA 5	24.4
All values presented above have been bias adjusted and distanced corrected where applicable.		

Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year. For the past 5 years of data presented this objective has been met, and the highest number of 1-hour means exceeding the hourly objective within this period was two (2014 and 2016). In 2018, there was only one reported exceedance of the NO_2 hourly objective between the two automatic monitoring locations. As the instrument was relocated part way through the year, and data capture for both sites was below 85%, the 99.8th percentile of the 1-hour means was calculated and included within the monitoring results as per the TG(16) Guidance.

The triplicate site TN42, TN76 and TN77, located in AQMA 4, recorded an annual mean concentration below 60µg/m^3 for the first time since installation. In accordance with Defra LAQM.TG (16), a location where an annual mean concentration of over 60µg/m^3 has been recorded may experience exceedances of the 1-hour objective of 200µg/m^3.

M20 AQMA 1

The M20 AQMA has been designated due to monitored exceedances of the annual mean NO_2 objective and modelled exceedances of the 24-hour PM_{10} objective. No monitoring of PM_{10} has been completed during 2018 therefore no comparisons can currently be made between previously modelled concentrations and current concentrations. The Tonbridge and Malling AQAP is in the process of being updated and the current PM_{10} AQMA designation will be assessed during this update. The Council are planning to also introduce particulate monitoring in line with the AQAP review and AQMA boundary review following the results of the 2019 commissioned dispersion modelling report.

The annual mean concentration results for the NO_2 diffusion tubes located within the M20 AQMA are presented in Figure A 1. All monitoring results within the AQMA continue to be below the annual mean objective, the highest concentration in 2018 was recorded at the triplicate site TN5 (38.8µg/m^3). In addition, four out of the six monitoring sites within AQMA 1 reported a decrease in 2018 NO_2 annual mean concentrations in comparison to 2017. In line with previous years, there has not been any exceedances of the annual mean objective. No monitoring locations report concentrations to be within 10% of the annual mean objective in 2018, identifying an improvement in comparison to 2017, where 2 sites (TN5 and TN7b) were monitored to be within the

10% threshold. Due to concentrations at a number of monitoring locations remaining close to the 40µg/m^3 annual mean objective, the M20 AQMA 1 is recommended to remain in force in regards to the annual mean NO_2 designation. The detailed dispersion modelling study that is being completed to inform the revised AQAP will enable the Council to review the AQMA designations and the existing boundary.

Ditton AQMA 2

The annual mean concentration results for the diffusion tubes located within the Ditton AQMA are presented in Figure A 2. There were three monitoring locations within the AQMA in 2017, including 1 triplicate site consisting of diffusion tubes DF4, DF5 & DF6. All monitoring locations achieved compliance with the annual mean objective during 2018, with the highest concentration (32µg/m^3) recorded at the triplicate site DF4, 5 and 6. There has not been an exceedance of the annual mean objective within the past 5 years within Ditton AQMA 2. It was recommended within the 2017 ASR that the Ditton AQMA be revoked which Defra supported through the appraisal of the ASR. However due to proposed housing developments planned to be built within the area, along with commencement of smart motorway works between junctions three and five of the M20, a conservative decision was made by the Council to keep the AQMA in place until at least the completion of the works. The Council will review further following completion of the detailed modelling study.

Tonbridge High Street AQMA 3

There are three monitoring locations within the AQMA, and within 2018 no monitoring sites exceeded the annual mean objective. All monitoring sites experienced a decrease in concentrations compared to 2017 (TN35, TN44, TN45/TN74/TN75). The triplicate site reported a 3.3µg/m^3 decrease in NO_2 annual mean concentrations which ensured compliance with the AQS objective across the AQMA for the first time in five years. The automatic monitoring location ZT5 continues to meet the 1-hour objective, with no reported 1-hour means above 200µg/m^3. The automatic site was relocated to Wateringbury in June 2018, therefore the results for the ZT5 site required annualisation (Table C.2). The AQMA is recommended to remain in force due to two monitoring locations (TN35 – 36.4µg/m^3 and TN45/TN74/TN75 - 39µg/m^3) reporting within 10% of the annual mean objective.

Wateringbury AQMA 4

The annual mean concentration results for the diffusion tubes located within the Wateringbury AQMA are presented in Figure A 4. There are four monitoring locations within the AQMA, two of which continue to exceed the NO_2 annual mean objective (TN33 – 51.9µg/m^3 and TN42, 76, 77 – 58.1µg/m^3), a trend which has remained apparent since 2013. 2018 NO_2 annual mean concentrations decreased at all sites that were present in 2017, with the 2018 addition of triplicate site TN115/TN116/TN117). The automatic site ZT5 was relocated from Tonbridge High Street in June 2018 and installed at the main crossroads in Wateringbury close to the village hall. The relocated site (ZT7), following annualisation, reported an annual mean of 23.6µg/m^3. The triplicate site consisting of diffusion tubes TN42, 76, 77 has constantly recorded the highest annual mean concentration within the Borough, in 2018 the concentration was 58.1µg/m^3. Due to the concentration being below 60µg/m^3, in accordance with Defra LAQM.TG(16), the location is unlikely to have experienced exceedances of the AQS 1-hour objective of 200µg/m^3, indicating an improvement on previous years where the concentration consistently reported above 60 µg/m^3. The continual exceedances of the annual mean objective, and concentrations close to predicted exceedances of the 1-hour objective, confirm that the AQMA should remain in force. This monitoring site is located within Wateringbury, at a key arterial intersection where the A26 meets Red Hill and Bow Lane.

Aylesford AQMA 5

The annual mean NO_2 concentration results for the diffusion tubes located within the Aylesford AQMA are presented in Figure A 5. There were four monitoring locations within the AQMA in 2018. The annual mean objective was exceeded at two locations; TN60, 62, 63 (41.7µg/m^3) and DF1, 2, 3 (40.1 µg/m^3). TN60, 62, 63 was located at relevant exposure, therefore did not require distance correction. DF1, 2, 3 is not located at a location of relevant exposure and therefore has been distance corrected as shown in Figure D 5. Following this correction the annual mean is reported to be below the 40µg/m^3 objective (24.4µg/m^3). Due to the continued exceedance recorded at TN60, 62, 63 it is recommended that the AQMA remain in force.

Larkfield AQMA 6

The annual mean concentration results for the diffusion tubes located within the Larkfield AQMA are presented in Figure A 6. There were four monitoring locations

within the AQMA in 2018. The annual mean objective was exceeded at one location (TN106, 42µg/m^3) with DF7, 8, 9 (32.8µg/m^3) achieving compliance without the requirement to perform distance correction calculations. TN106 (site name amended from TN92 in 2017) is located at the western end of the AQMA and exceeded the annual mean objective since its introduction in 2016. The boundary of the AQMA is set to be reviewed following the completion of the detailed modelling study that is to inform the revised AQAP.

Borough Green AQMA 7

The annual mean concentration results for the diffusion tubes located within the Borough Green AQMA are presented in Figure A 7. As in previous years there are nine monitoring locations within the AQMA. In 2018, no exceedance of the annual mean NO_2 AQS objective was recorded, however the concentration at TN70/TN72/TN73 triplicate site was within 10% of the objective (39.6 µg/m^3). This site has exceeded the objective for the past five years, with 2018 recording its lowest concentration to date. All other monitoring sites within the AQMA were far below the annual mean objective, with a collective diffusion tube reduction in AQMA 7 of over 5µg/m^3 compared to 2017. The concentrations at eight out of the nine sites decreased in 2018 compared to 2017, with Site TN71 showing a slight increase in 2018 of 0.9µg/m^3. Due to continual elevated concentrations reported at Site TN70/TN72/TN73 the Borough Green AQMA is to remain in force. As with all other AQMAs, the Borough Green AQAM will be assessed within the detailed modelling study in terms of predicted concentrations and possible amendments.

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?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
ZT5	Tonbridge Roadside 2	Roadside	558877	146185	NO_2	YES	Chemiluminescent	1	2.2	3
ZT7	Wateringbury Roadside	Roadside	569165	153493	NO_2	YES	Chemiluminescent	9	0.2	3

Notes:

(1) 0m 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

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
TN5a	131 Hall Road, Aylesford	Roadside	572611	158545	NO_2	YES	0	26.7	NO	2.42
TN7b	202 New Hythe Lane	Roadside	570391	159032	NO_2	YES	0	33.3	NO	1.82
TN10	Offham Road, West Malling	Urban background	567617	157635	NO_2	NO	11.2	1.7	NO	2.05
TN12b	Hall Rd (lampost)	Roadside	572628	158566	NO_2	YES	4	4.85	NO	2.15
TN18	Wilson Road, Tonbridge	Urban background	560263	148509	NO_2	NO	5.9	2	NO	2.95
TN29a	108A Station Road	Roadside	571736	158688	NO_2	YES	0	22.4	NO	2.16
TN30	99 Teapot Lane, Aylesford	Roadside	572018	158571	NO_2	YES	0	22	NO	2.42
TN33	Tonbridge Road, Wateringbury (Red Hill Corner)	Roadside	569201	153486	NO_2	YES	0	1.25	NO	2.75
TN35	High Street, Tonbridge (no 35, WH Smith)	Urban centre	558948	146277	NO_2	YES	0	3.8	NO	2.47
TN43	Tonbridge Road, Wateringbury (Red Hill)	Roadside	569187	153498	NO_2	YES	0	2.6	NO	2.55

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
TN44	High Street, Tonbridge(no 46a)	Urban centre	558929	146271	NO_2	YES	0	3.3	NO	2.43
TN47	London Road, Ditton (nos 516)	Urban Background	571399	158375	NO_2	YES	0	23	NO	1.84
TN56	8c Pump Close, Leybourne	Roadside	568714	158301	NO_2	NO	0	14.6	NO	1.67
TN61	70 Hadlow Road, Tonbridge	Roadside	559572	147017	NO_2	NO	0	6	NO	1.85
TN64	London Road, Larkfield (no 606)	Roadside	570948	158482	NO_2	YES	0	5	NO	2.9
TN68	7 Hall Road, Aylesford	Roadside	572430	157975	NO_2	YES	0	6.6	NO	1.63
TN71	2 Maidstone Road	Roadside	560816	157217	NO_2	YES	0	12	NO	2.23
TN78	42, Sevenoaks Road	Roadside	560654	157296	NO_2	YES	0	3.1	NO	1.98
TN79	Corner Rock Road/ Sevenoaks Road	Roadside	560670	157269	NO_2	YES	0.8	7.2	NO	2.55
TN80a	218 Station Rd, Aylesford	Roadside	572124	158627	NO_2	YES	0	35.8	NO	2.03
TN81	346 New Hythe Lane	Roadside	570563	159463	NO_2	NO	0	5.4	NO	2.33

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
TN108	181 Tonbridge Rd, Wateringbury	Roadside	569056	153537	NO_2	NO	0	4	NO	2.16
TN84	389 New Hythe Lane	Roadside	570715	159668	NO_2	NO	0	7.4	NO	2.31
TN107	Springfields, 3 Ton Rd, Wateringbury	Roadside	569637	153390	NO_2	NO	4	8.7	NO	2.04
TN86	Flat 21 High Street	Urban centre	560869	157303	NO_2	YES	0	2.46	NO	2.18
TN110	88 High Street, Tonbridge	Roadside	559008	146423	NO_2	YES	0	4.6	NO	2.13
TN88	1 Western Road	Roadside	560910	157370	NO_2	YES	0	4.3	NO	2
TN105	7 Station Road, Ditton	Roadside	571305	158412	NO_2	YES	0	11.8	NO	2.16
TN90	54 Western Road	Roadside	560708	157360	NO_2	YES	0	4.5	NO	2.2
TN91	74 Sevenoaks Road	Roadside	560553	157350	NO_2	YES	0	14.2	NO	2.4
TN93	16 Sevenoaks Road	Roadside	560721	157265	NO_2	YES	8.3	1.5	NO	2.3
TN94	33 Maidstone Road	Roadside	560949	157213	NO_2	NO	0	4.3	NO	2.27
TN95	Harrison Road	Background	560833	157004	NO_2	NO	7.1	1.7	NO	2.3
TN96	1 Bordyke, Tonbridge	Roadside	559145	146891	NO_2	NO	0	3.5	NO	2.04

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
TN109	St Augustines, Quarry Hill, Tonbridge	Roadside	558743	145922	NO_2	NO	0	4	NO	2.17
TN100	351 Hermitage Lane	Roadside	572998	156292	NO_2	NO	0	6.2	NO	2.4
TN102	39 Whitepost Wood Lane	Roadside	572768	157186	NO_2	NO	2	14.5	NO	2.4
TN103	22 Hermitage Lane	Roadside	572739	157532	NO_2	NO	0	9.5	NO	2.4
TN104	158 London Rd (E of mouth of Hermitage Lane)	Roadside	572976	157726	NO_2	YES	0	8.2	NO	2.16
TN114	Holly Cottage, Maidstone Rd, Platt	Roadside	562264	157447	NO_2	NO	0	6.5	NO	4.1
TN42, 76, 77	Tonbridge Road, Wateringbury (Opposite Garage)	Roadside	569226	153475	NO_2	YES	0	1.3	NO	2.39
TN45, 74, 75	High Street, Tonbridge (no 10)	Urban centre	558864	146166	NO_2	YES	0	2.3	NO	2.54
TN57, 58, 59	London Road, Larkfield (no 743)	Roadside	570467	158328	NO_2	YES	0	4.82	NO	1.74
TN60, 62, 63	London Road, Aylesford (no 290)	Roadside	572423	157932	NO_2	YES	0	6.5	NO	1.64

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?	Height (m)
TN70, 72, 73	55, Sevenoaks Road	Roadside	560569	157328	NO_2	YES	0	2.06	NO	1.9
TN83, 98, 99	424 New Hythe Lane	Roadside	570740	159667	NO_2	NO	0	4.1	NO	2.39
TN111	1 Whatcote Cottages, Maidstone Rd, Platt	Roadside	562185	157405	NO_2	NO	11.2	2.2	NO	2.13
DF1, 2, 3	Aylesford (Hall Road) junction Bus stop (E-bound)	Roadside	572459	157904	NO_2	YES	28	2.5	NO	2.33
DF4, 5, 6	London Road (no559), Ditton Bus stop (W-bound)	Roadside	571139	158427	NO_2	YES	10	1.9	NO	2.28
DF7, 8, 9	London Road (by Wealden Hall), Larkfield Bus stop (W bound)	Roadside	570386	158311	NO_2	YES	3	1.4	NO	2.21
TN106	794 London Rd, Larkfield	Roadside	570189	158326	NO_2	YES	0	2.25	NO	2.15
TN120	35 High Street, Wouldham	Roadside	571276	163850	NO_2	NO	0	3	NO	2.16
TN121	2 Hall Road, Wouldham	Roadside	571273	163761	NO_2	NO	5	2.4	NO	2.5
TN115, TN116, TN117	Wateringbury Village Hall	Roadside	569165	153493	NO_2	YES	20	1	NO	1.85

Notes: (1) 0m 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 NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2018 (%) [2]	NO_2 Annual Mean Concentration (µg/m^3) [3]				
					2014	2015	2016	2017	2018
TN5a	Roadside	Diffusion Tube	100.0%	100.0%	37.1	35.5	34.5	34.1	30.1
TN7b	Roadside	Diffusion Tube	100.0%	100.0%	-	-	38.0	36.7	31.5
TN10	Urban background	Diffusion Tube	83.3%	83.3%	15.6	14.9	17.3	15.2	15.8
TN5	Roadside	Diffusion Tube	100.0%	100.0%	-	-	38.1	38.8	34.9
TN18	Urban background	Diffusion Tube	91.7%	91.7%	12.6	12.2	13.6	14.5	12.9
TN29a	Roadside	Diffusion Tube	100.0%	100.0%	24.9	25.4	28.0	25.2	24.1
TN30	Roadside	Diffusion Tube	100.0%	100.0%	28.3	29.3	29.7	26.7	25.5
TN33	Roadside	Diffusion Tube	100.0%	100.0%	**52.7**	**51.9**	**56.4**	**53.6**	**51.9**
TN35	Urban centre	Diffusion Tube	100.0%	100.0%	**43.2**	36.7	34.6	37.5	36.4
TN43	Roadside	Diffusion Tube	83.3%	83.3%	38.2	38.2	39.1	38.7	35.7
TN44	Urban centre	Diffusion Tube	91.7%	91.7%	**42.0**	**40.1**	**40.5**	38.4	35.2
TN47	Urban Background	Diffusion Tube	100.0%	100.0%	19.1	18.8	19.6	19.6	18.0
TN56	Roadside	Diffusion Tube	100.0%	100.0%	21.8	21.3	20.1	19.8	18.8
TN61	Roadside	Diffusion Tube	100.0%	100.0%	23.3	23.4	23.4	22.5	21.6

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2018 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2014	2015	2016	2017	2018
TN64	Roadside	Diffusion Tube	100.0%	100.0%	30.6	29.0	31.0	29.4	29.0
TN68	Roadside	Diffusion Tube	91.7%	91.7%	31.9	30.8	30.8	31.4	28.3
TN71	Roadside	Diffusion Tube	100.0%	100.0%	21.4	20.7	22.3	20.5	21.4
TN78	Roadside	Diffusion Tube	100.0%	100.0%	-	-	33.6	28.7	27.8
TN79	Roadside	Diffusion Tube	100.0%	100.0%	29.3	29.0	31.2	27.6	25.7
TN80a	Roadside	Diffusion Tube	100.0%	100.0%	38.8	35.1	34.4	35.4	30.2
TN81	Roadside	Diffusion Tube	100.0%	100.0%	33.7	29.7	31.2	28.8	28.4
TN108	Roadside	Diffusion Tube	100.0%	100.0%	-	-	23.0	23.7	20.9
TN84	Roadside	Diffusion Tube	100.0%	100.0%	31.1	30.0	29.9	29.6	26.7
TN107	Roadside	Diffusion Tube	100.0%	100.0%	-	-	16.7	16.6	15.6
TN86	Urban centre	Diffusion Tube	100.0%	100.0%	24.6	22.6	25.0	24.5	22.0
TN110	Roadside	Diffusion Tube	100.0%	100.0%	-	-	30.1	32.8	28.4
TN88	Roadside	Diffusion Tube	100.0%	100.0%	24.9	23.8	26.8	23.5	22.2
TN105	Roadside	Diffusion Tube	100.0%	100.0%	-	-	25.8	24.1	21.2
TN90	Roadside	Diffusion Tube	100.0%	100.0%	24.2	22.2	25.7	25.6	22.7

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2018 (%) [2]	NO_2 Annual Mean Concentration ($\mu g/m^3$) [3]				
					2014	2015	2016	2017	2018
TN91	Roadside	Diffusion Tube	100.0%	100.0%	18.4	16.5	18.6	18.2	16.3
TN93	Roadside	Diffusion Tube	100.0%	100.0%	34.8	34.0	39.8	35.8	34.6
TN94	Roadside	Diffusion Tube	100.0%	100.0%	29.1	28.1	28.5	27.3	24.3
TN95	Background	Diffusion Tube	100.0%	100.0%	15.3	14.8	16.1	14.6	13.6
TN96	Roadside	Diffusion Tube	100.0%	100.0%	34.9	33.3	34.0	30.5	30.1
TN109	Roadside	Diffusion Tube	100.0%	100.0%	-	-	36.0	34.3	33.9
TN100	Roadside	Diffusion Tube	100.0%	100.0%	21.5	21.8	22.9	24.4	21.4
TN102	Roadside	Diffusion Tube	100.0%	100.0%	19.4	19.3	20.0	23.0	19.0
TN103	Roadside	Diffusion Tube	100.0%	100.0%	20.6	20.9	23.9	21.5	21.7
TN104	Roadside	Diffusion Tube	100.0%	100.0%	-	-	37.3	32.8	35.5
TN114	Roadside	Diffusion Tube	100.0%	100.0%	-	-	26.1	22.3	20.1
TN42, 76, 77	Roadside	Diffusion Tube	100.0%	100.0%	**64.8**	**63.5**	**64.8**	**61.3**	**58.1**
TN45, 74, 75	Urban centre	Diffusion Tube	86.1%	86.1%	**42.7**	**41.6**	**40.5**	**42.3**	39.0
TN57, 58, 59	Roadside	Diffusion Tube	94.4%	94.4%	36.5	34.0	33.7	31.4	32.2
TN60, 62, 63	Roadside	Diffusion Tube	100.0%	100.0%	**45.3**	**44.1**	**44.8**	**44.8**	**41.7**

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2014	2015	2016	2017	2018
TN70, 72, 73	Roadside	Diffusion Tube	100.0%	100.0%	**42.2**	**42.1**	**45.6**	**43.0**	39.6
TN83, 98, 99	Roadside	Diffusion Tube	100.0%	100.0%	38.2	34.3	35.8	35.9	33.1
TN111	Roadside	Diffusion Tube	100.0%	100.0%	-	-	-	-	16.9
DF1, 2, 3	Roadside	Diffusion Tube	100.0%	100.0%	-	**42.6**	**44.3**	**44.1**	**40.1**
DF4, 5, 6	Roadside	Diffusion Tube	100.0%	100.0%	-	33.1	33.1	31.9	32.0
DF7, 8, 9	Roadside	Diffusion Tube	100.0%	100.0%	-	35.2	**41.8**	35.0	32.8
TN106	Roadside	Diffusion Tube	100.0%	100.0%	-	-	**43.9**	**43.2**	**42.0**
TN120	Roadside	Diffusion Tube	80.0%	33.3%	-	-	-	-	26.0
TN121	Roadside	Diffusion Tube	100.0%	41.7%	-	-	-	-	19.9
TN115, TN116, TN117	Roadside	Diffusion Tube	100.0%	100.0%	-	-	-	-	19.9
ZT5	Roadside	Automatic	100.0%	50.0%	**46.6**	**45.8**	**46.8**	**49.6**	34.9
ZT7	Roadside	Automatic	100.0%	50.0%	-	-	-	-	23.6

☒ **Diffusion tube data has been bias corrected** ☒ **Annualisation has been conducted where data capture is <75%**

Notes: Exceedances of the NO_2 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.**

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

(2) 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%).

(3) Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Figure A 1 - Trends in Annual Mean NO_2 Concentrations –M20, AQMA 1

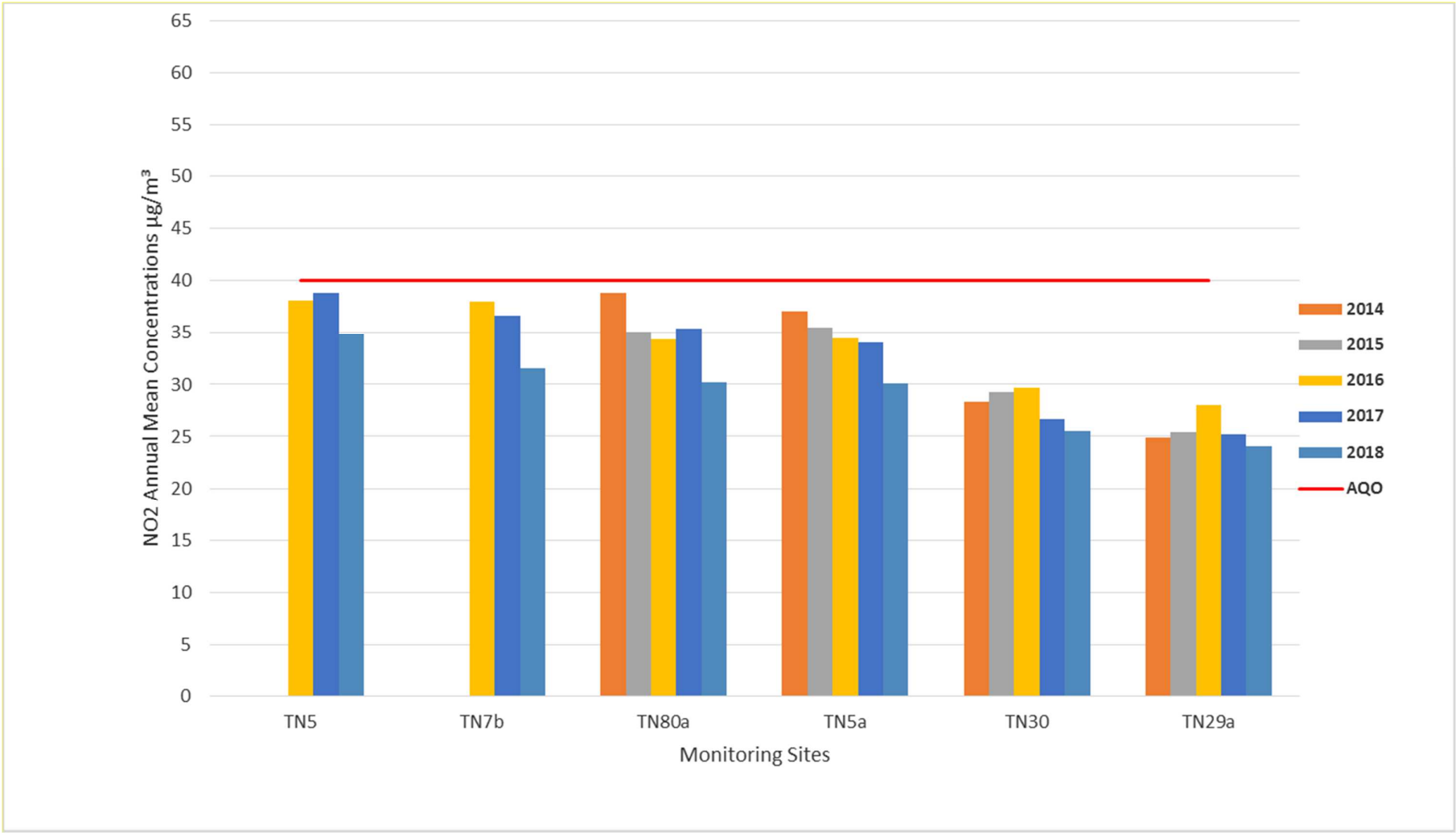


Figure A 2 - Trends in Annual Mean NO_2 Concentrations – Ditton, AQMA 2

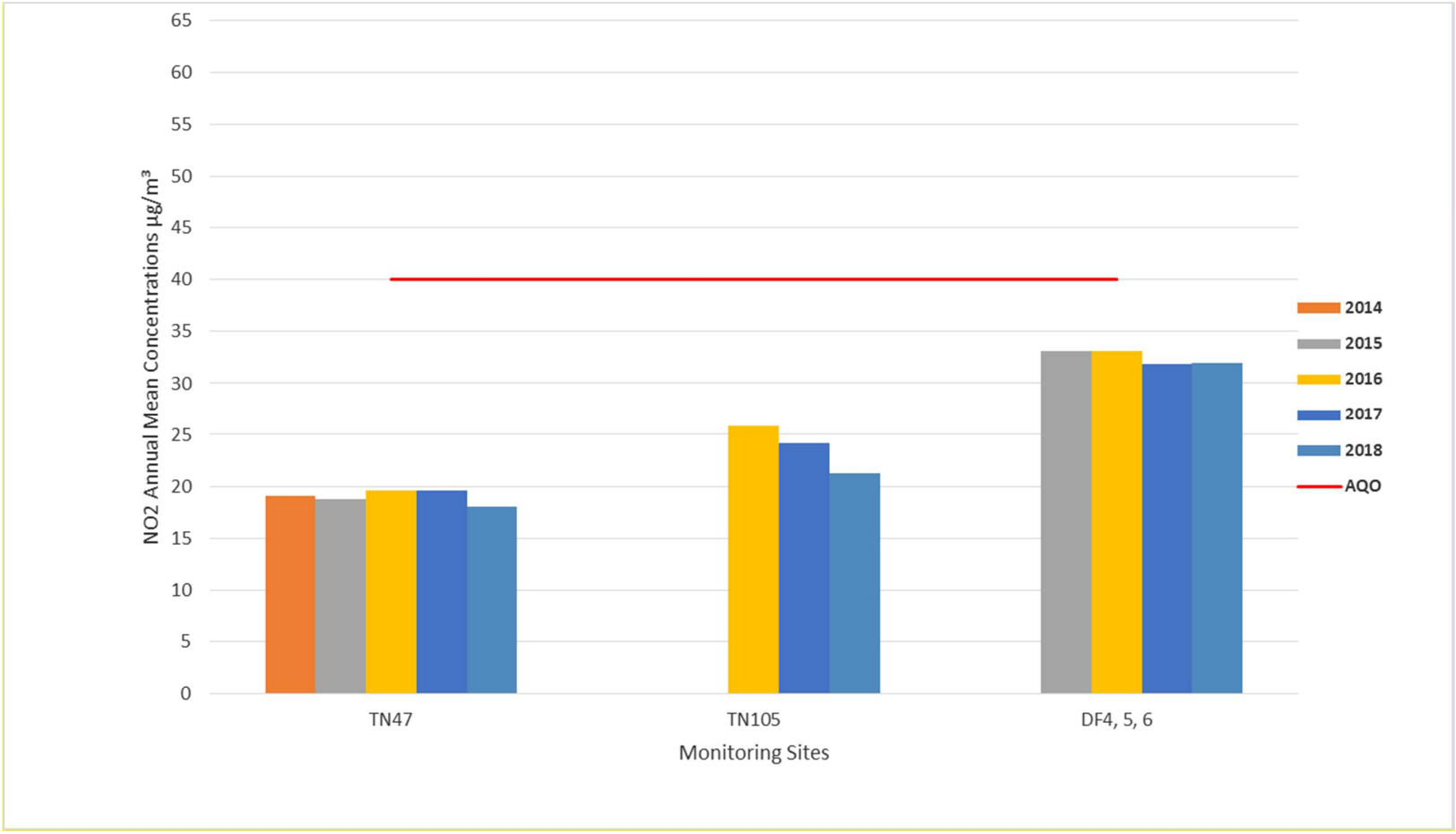


Figure A 3 - Trends in Annual Mean NO_2 Concentrations – Tonbridge High Street, AQMA 3

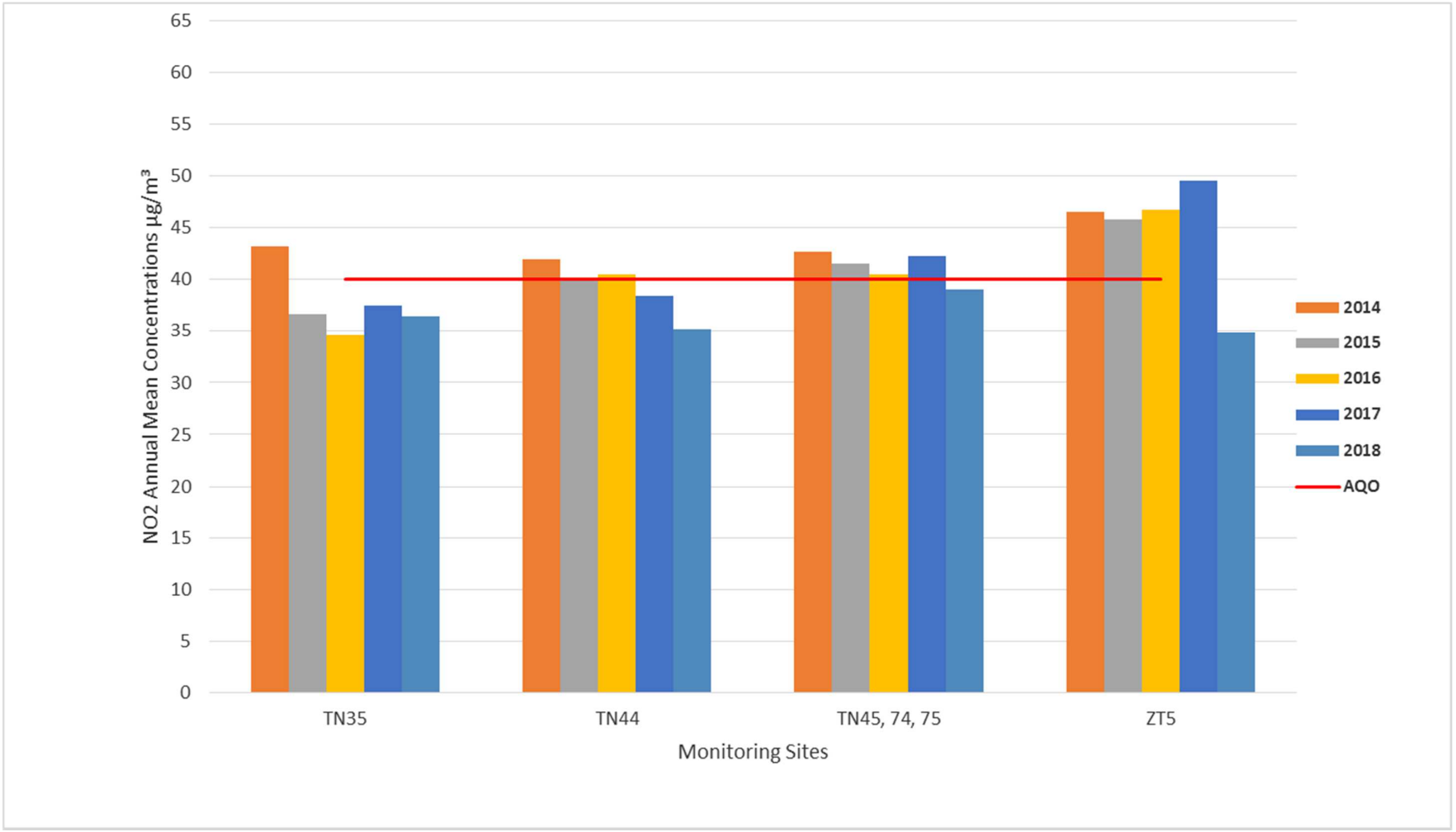


Figure A 4 - Trends in Annual Mean NO_2 Concentrations – Wateringbury, AQMA 4

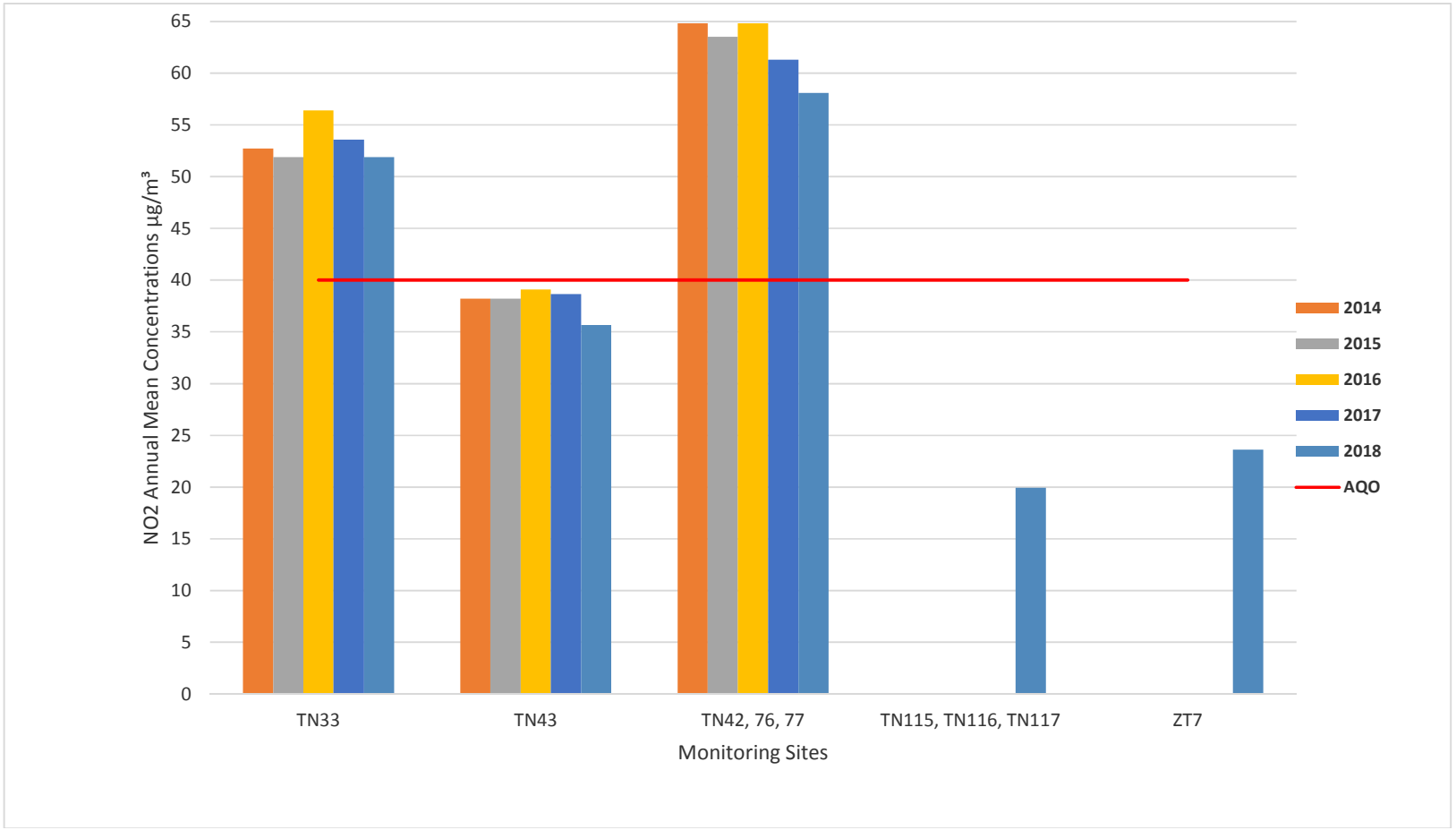


Figure A 5 - Trends in Annual Mean NO_2 Concentrations – Aylesford, AQMA 5

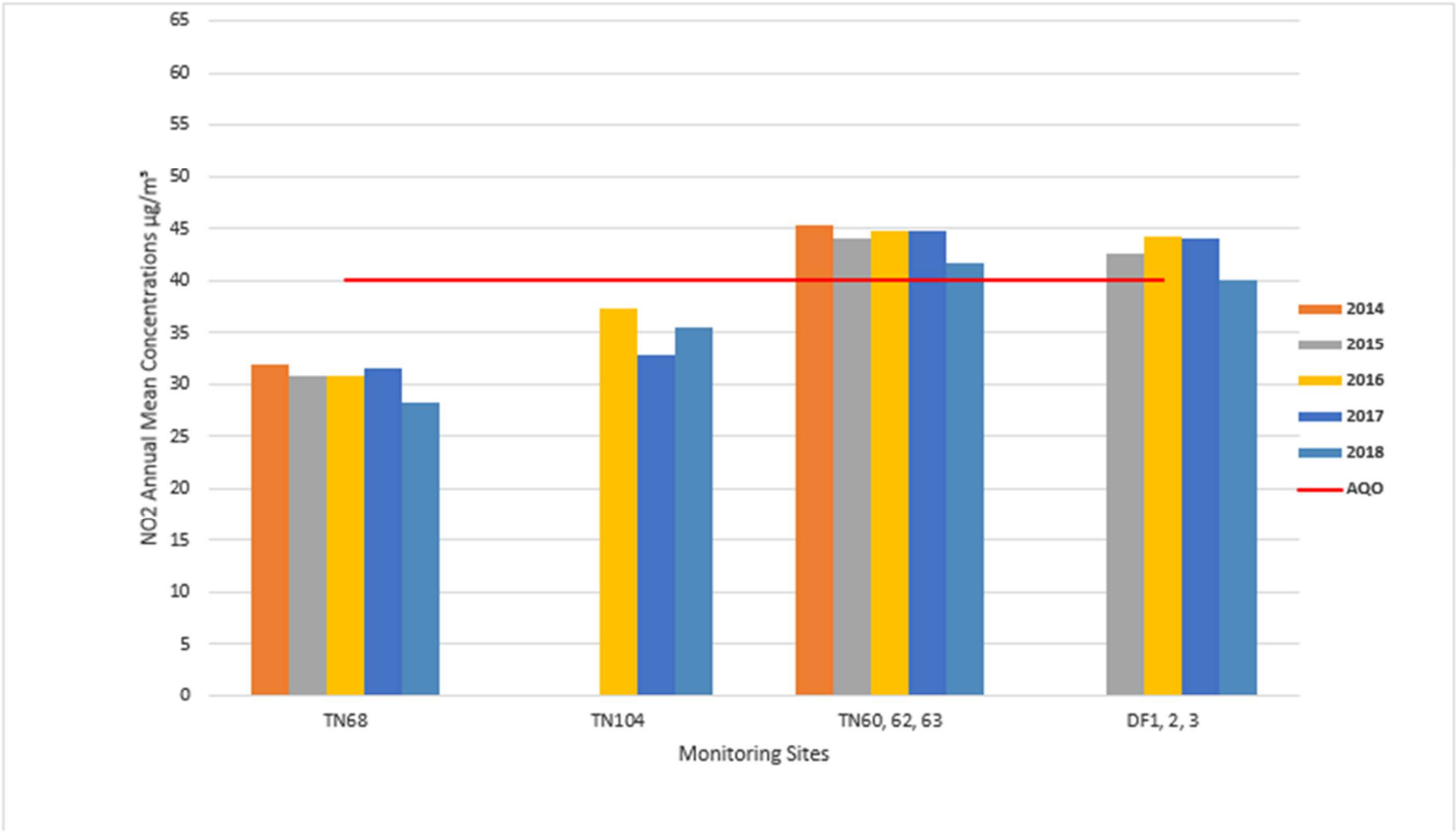


Figure A 6 - Trends in Annual Mean NO_2 Concentrations – Larkfield, AQMA 6

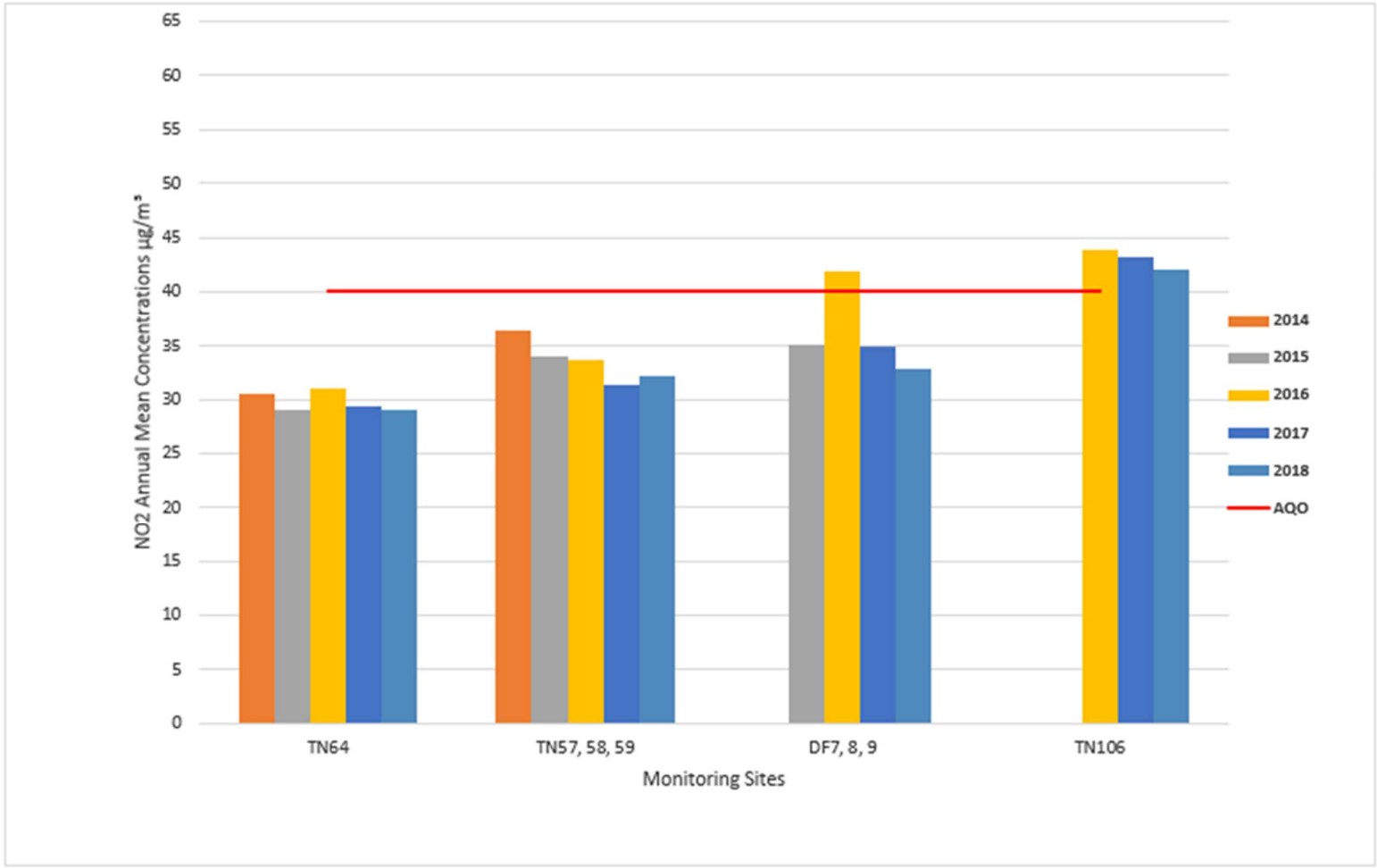


Figure A 7 - Trends in Annual Mean NO_2 Concentrations – Borough Green, AQMA 7

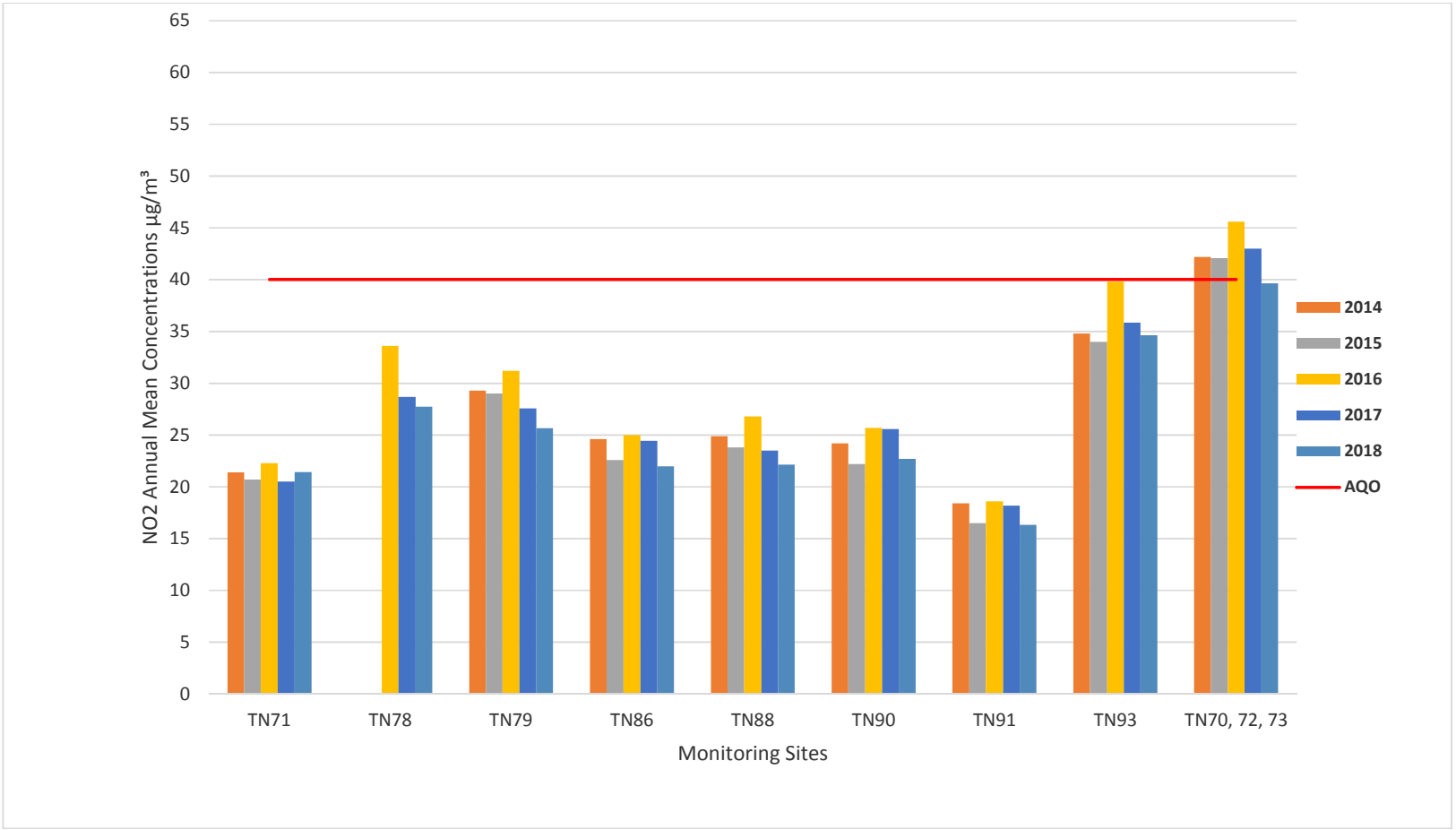


Table A.4 – 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2018 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2014	2015	2016	2017	2018
ZT5	Roadside	Automatic	99.4	46	2	0	2	1	0 (161)
ZT7	Roadside	Automatic	92.9	46.8	-	-	-	-	1 (92)

Notes:

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 not to be exceeded more than 18 times/year) are shown in **bold.**

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

(2) 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%).

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

Appendix B: Full Monthly Diffusion Tube Results for 2018

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2018

Site ID	NO_2 Mean Concentrations (µg/m^3)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.76) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
TN5a	48.4	43.7	40.9	42.3	31.3	29.7	38.3	34.9	37.3	36.1	49.4	42.3	39.6	30.1	
TN7b	50.9	51.6	46.2	47.3	37.7	33.4	42.1	38	41.4	37.8	25.7	45.5	41.5	31.5	
TN10	21.3	27.9	21.2		14	15.2	15.3	13.6	16.6	19.8	43.2		20.8	15.8	
TN120								27.5		35.1	35.8	38.2	34.2	24.4	
TN61	30.9	31.6	34.2	28.6	24.2	25.9	26.2	23.4	28.2	31.2	25.8	30.5	28.4	21.6	
TN18	19.3	20.7	18.2	15.5	10	9.7		11.7	17.3	18.5	22.6	23.6	17.0	12.9	
TN121								20.8	24.5	30.5	27.9	27.5	26.2	19.4	
TN80a	51.4	46.1	48.5	50.8	29.7	26.2	35.3	33.5	32.6	35.9	42.8	44.3	39.8	30.2	
TN29a	29.9	44.4	40.9	31.2	33.9	26.2	28.1	22.4	25.5	30.3	33.4	34	31.7	24.1	
TN30	30	47.1	34.5	32.2	49.4	39.9	29.6	23.8	25.6	32.1	30.1	28	33.5	25.5	
TN33	72.1	78.1	82.2	71.4	75.5	62.3	62.7	54.1	59.2	66.4	72.6	62.9	68.3	**51.9**	
TN42	73.2	85.3	83.3	73.3	90.3	75.1	77.2	73.6	74.4	73	71.1	69.5	76.6	**58.2**	
TN43	50.1	47.2	46.8	45.3	49.3			41.9	56.1	43.9	40.5	48.3	46.9	35.7	
TN74	56.4	52.5	55.7	49.3	52.2	44.2	53.4	46.4		53.4	50.2	51.8	51.4	39.1	
TN75	60.5	49.7	58.4		50.1	45.5	52.4	44.2		54.8	49.7	54	51.9	39.5	
TN35	39.8	56.1	56.7	34	54.8	50.3	48.5	42.8	46.6	50.1	54.2	41.5	48.0	36.4	

TN44	52.9	46.1	51.3	39.9	43	37.9	44.7		49.5	52.5	46.9	44.7	46.3	35.2	
TN45	55.5	49.7	55.3		53.7	48.7	55.3	47.7		46	48.8	46	50.7	38.5	
TN78	29.7	46.1	44.8	33.9	42.1	39.3	30.5	28.9	30.8	38.3	39.5	34.5	36.5	27.8	
TN47	26	32.2	27.1	25	20.4	15.7	20.3	18.9	21.8	23.6	25.2	28.6	23.7	18.0	
TN115	25.1	33.8	31.2	26.1	26.2	24.1	22.8	19.3	17	29.6	29.8	27	26.0	19.8	
TN116	27.8	33.1	29.5	26.8	26.6	24.3	22.3	20.5	22.2	26.1	30.7	27.8	26.5	20.1	
TN117	27.3	34.3	29.9	24.5	29.8	25.1	22.8	19.9	21.8	26.1	26.6	27.1	26.3	20.0	
TN60	54.9	49.4			51.7	49.7	57.1	50.6	56	54.2	61	56.9	54.2	**41.2**	
TN62	58.7	54	61.4	39.4	49.1	50.3	58.8	49	56.5	54.8	55.7	60	54.0	**41.0**	
TN63	59.1	57.8	59.2	58.7	50.1	50	61.3	52.1	52.9	60	60.6	56.4	56.5	**43.0**	
TN57	40.7	47.4	46.1	44	36.6	33.9	37.2	32.9	36.4	42.8	51.1	44.2	41.1	31.2	
TN58	41.6	48.9	50.6	46.6	36.3	32.8	39.4	33.9	39.3	35.7	51.1	46.8	41.9	31.9	
TN59	46.9	53.9	46.8	44.8	38.2	33.4	39.9			40.9	49.7	46.4	44.1	33.5	
TN64	39.5	44.1	42.1	38.2	36.9	30.4	36.4	29.1	38.1	41.6	37.6	43.4	38.1	29.0	
TN76	60.6	85.3	82.4	76.5	81.8	67.5	79.2	71	71.5	83.8	78.4	66.1	75.3	**57.3**	
TN77	74	73.6	82.1	80.4	88.3	73.8	79.4	68	77.1	76.2	80.2	75.5	77.4	**58.8**	
TN119	44.8	46.3	44.6	39.1	32	30.4	39.1	32.9	32.5	37.3	49.4	45.6	39.5	30.0	
TN68	36.7	40	41.8	43.7	31.7	29.7	34.7	29.6		38	44	39	37.2	28.3	
TN70	56.5	53.5	60.4	56.2	45.3	43.2	54.8	46.5	51.9	44.3	50.1	48.7	51.0	38.7	
TN72	62.3	56.7	65.5	53.1	45	41.3	57.7	50.8	56.9	49.6	47.3	50.5	53.1	**40.3**	
TN73	63.2	52.1	63.4	58.7	44.6	42.4	52.9	49.5	51.8	45	52.7	53.7	52.5	39.9	
TN81	41.6	38.4	43.6	38	34.6	28.4	35	31	36.7	38.1	42.6	41.2	37.4	28.4	
TN83	49.2	48.5	41.1	44.5	38.5	35	42.8	36.1	43.6	42.5	49.3	44.4	43.0	32.6	
TN84	40.2	39.4	37.9	32.7	31.3	26.9	33.2	29.9	34.5	37.3	38.4	40.6	35.2	26.7	
TN107	20.4	28.2	23.4	21.6	20.6	14.7	15.4	16.4	17.5	22.8	23	22.8	20.6	15.6	
TN71	38.1	39.2	36.1	25.7	29.1	25.5	19.1	18.8	21.8	25.7	30.8	28.4	28.2	21.4	

TN86	29.9	34.2	34.4	27.3	27.7	22.1	27.4	23.5	24.6	30.1	33.6	32.3	28.9	22.0	
TN110			35.4	41.1	39.1	34.2	38.6	35.7	42.2	32.4	40.1	34.6	37.3	28.4	
TN114	27.8	31.3	31.5	21.5	26.6	23.1	22.3	22	23.6	29.1	29.6	28.9	26.4	20.1	
TN105	30.9	36.6	31.5	30.5	23.9	20	24.6	22.6	27.1	25.9	28.2	33.2	27.9	21.2	
TN90	32.3	37.7	35.6	27.4	27.5	27	27.8	24.1	25.6	29.5	31	32.8	29.9	22.7	
TN91	21.1	26.7	26.4	22.7	20	17.4	19.7	17.8	21.2	23.1	18.4	23.2	21.5	16.3	
TN106	51.3	50.6	56.8	53.7	57.9	53	59.9	50.4	59.8	57.2	55.8	57.2	55.3	**42.0**	
TN93	42.8	46.9	56.2	43.7	50.2		44.8	35.9	36.5	47.3	49.8	47	45.6	34.6	
TN94	33.5	32.3	38.1	32.3	28.1	26.3	30.9	28.9	29.5	34.5	35.4	34.3	32.0	24.3	
TN95	20.6	21.3	21.5	18.3	13.8	15	14.3	12.4	13.5	20.9	21.1	21.5	17.9	13.6	
TN96	35.9	47.9	38.8	38.9	48.8	42.4	38.9	31.5	34.2	41.9	38.9	37.8	39.7	30.1	
TN109	43.6	51.4	53.8		40.2	36.1	47.3	34.2	37.3	44.8	57.8	44	44.6	33.9	
TN98	45.4	44	49.1	46.1	41.3	36.4	47	40.8	39.9	42.5	46.9	48.7	44.0	33.4	
TN99	46.2	48.6	41.3	40.7	41.5	36.5	46.5	40.4	38.6	43.7	52.4	48	43.7	33.2	
TN100	27.9	31.3	28.8	27.7	29.5	23.7	28.5	26.4	28.2	28.9	26.9	30.1	28.2	21.4	
TN104	45	44.4	47.8	45.4	47.2	42.4	48	42.9	43.5	61.6	48.1	43.8	46.7	35.5	
TN102	24.4	33.4	29.9	21.5	26.1	23.8	21.8	18.4	20.3	27.3	27.8	26	25.1	19.0	
TN103	25.2	34.2	34.4	28.6	32.3	29.9	28.9	22.4	21.5	30.2	27	27.8	28.5	21.7	
DF1	62.9	51.6	62	61.4	36.2	34.3	57.2	49.2	45.2	53.8	59.4	62.9	53.0	**40.3**	24.4
DF2	60.1	53.6	66.8	62.2	36.5	32.6	52.7	49.1	51.8	51.4	61.8	62.6	53.4	**40.6**	24.6
DF3	63.4	50.7	58.5	57.3	34.6	31.5	51.8	47	51.8	53.6	63.5	60.1	52.0	39.5	24.1
DF4	38.1		46.6	44	49.7	42.3	42.8	32.8	33	43	46.9	44	42.1	32.0	
DF5	39.8	49.5	45.8	41.7	51.3	43.9	42.6	34.6	29.8	41.7	47.5	42.9	42.6	32.4	
DF6	41.5	41.2	49.6	40.4	48.2	43.1	40.3	33.5	33	41.4	47	39.7	41.6	31.6	
DF7	49.3	52.3	48.7	40.5	45.5	37.4	39.9	35.1	33.3	45.3	43.5		42.8	32.5	
DF8	48.1	56	43.6	40.1	47.4	39.8	38.9	32.6	34.6	42.9	46.9		42.8	32.5	

DF9	46.6	54.8	45.6	42.9	47.1	41.4	39.8	34.5	36.8	46.7	47.3		44.0	33.4	
TN111	18.1	28.7	27.6	20.3	26	21.3	19.3	15.8	18	24.6	22.9	24.7	22.3	16.9	
TN118		42.2	56.9	47.1	40.2	38.6	48.5	39.9		42.8			44.5	33.8	
TN5	54.5	48.2	53.4	54.2	37.1	30.9	44.9	38.8	45.7	45.1	50.9	47.4	45.9	34.9	
TN56	28.4	30.8	27	26.5	19.9	17.5	23.7	18.6	22.6	25.2	29.6	26.9	24.7	18.8	
TN79	35.3	35.7	41.8	31.5	32.1	28.9	34.4	29.6	33.6	31.6	34.9	35.8	33.8	25.7	
TN108	33.4	31.9	29.7	23.8	22.2	19.7	22.5	25.6	28.6	28.1	33.4	30.9	27.5	20.9	
TN88	28.8	37.2	35.3	27.2	30.1	28.1	24.3	22.1	26.5	27.1	32.1	31.2	29.2	22.2	

☒ **National bias adjustment factor used**

☒ **Annualisation has been conducted where data capture is <75%**

☒ **Where applicable, data has been distance corrected for relevant exposure**

Tube Missing **Tube not yet in operation**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(1) See Appendix C for details on bias adjustment and annualisation.

(2) Distance corrected to nearest relevant public exposure.

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

Diffusion tube data for Tonbridge and Malling Borough Council is supplied and analysed by SOCOTEC Didcot using the 50% triethanolamine (TEA) in acetone preparation method. The national bias adjustment factor for SOCOTEC Didcot 50% TEA in acetone is 0.76 for the year 2018 (based on 21 studies, version 03/19) as derived from the national bias adjustment factor spreadsheet[13].

QA/QC of Diffusion Tube Monitoring

SOCOTEC Didcot (previously ESG Didcot) is a UKAS accredited laboratory and participates in the in the new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO_2 tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO_2 concentrations reported are of a high caliber. The lab follows the procedures set out in the Harmonisation Practical Guidance and in the latest available AIR-PT results, AIR-PT AR024 (January to February 2018), AIR-PT AR025 (April to May 2018), AIR-PT AR027 (July to August 2018) and AIR-PT AR028 (September to October 2018). SOCOTEC Didcot scored 100% scored 100%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ±2.Short-term to Long-term Data Adjustment.

Short-term to Long-term Data Adjustment

Diffusion tube data capture for 2018 was lower than 75% at 2 of the monitoring locations (33.3% at TN120, 41.7% at TN121) as they were introduced from August 2018 only. Diffusion tubes TN120 and TN121 were therefore annualised and Table C.1 details the annualisation factor (AF) that was calculated and then applied to the raw annual mean data together with the bias adjustment factor.

[13] National Diffusion Tube Bias Adjustment Factor Spreadsheet version 03/19 available at https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Table C.1 – Diffusion Tube Annualisation factors 2018

Site ID	Unadjusted Diffusion Tube Mean (µg/m^3)	Canterbury AF	Thurrock AF	London Bexley AF	Average AF	Annualised & Bias Adjusted (0.76) Concentration (µg/m^3)
TA120	34.2	0.909	0.978	0.936	0.941	24.4
TA121	26.2	0.953	0.999	0.962	0.972	19.4

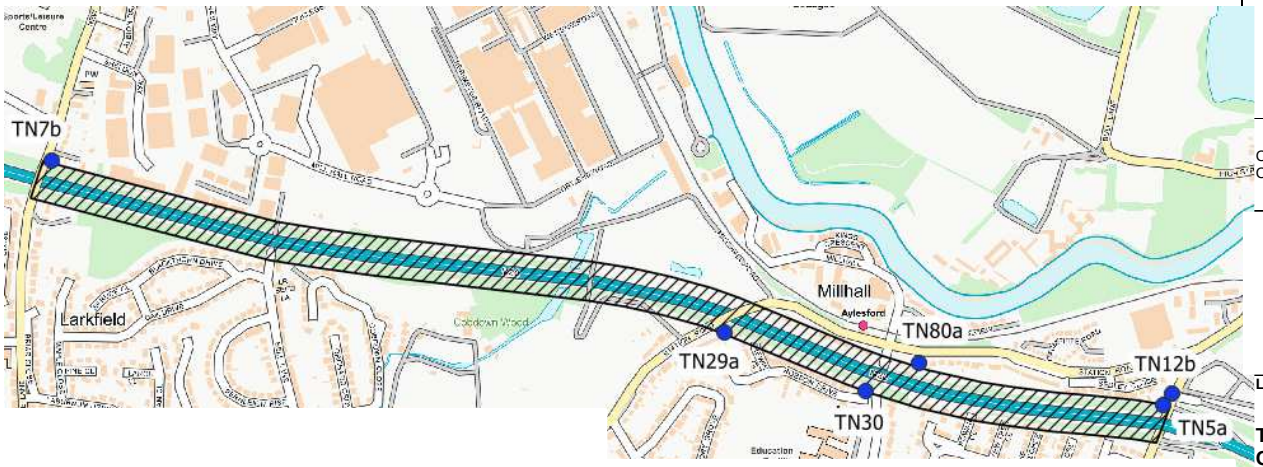
Automatic monitoring sites were also required to be annualised due to the data capture within 2018 being below 75%. The automatic site ZT5 was removed on 18th June 2018 from the Tonbridge High Street AQMA site and reinstalled as ZT7 within the Wateringbury AQMA on 19th June 2018 due to a refurbishment taking place at the Tonbridge retail unit where the instrument was located. There was a period of insufficient data during June for both ZT5 and ZT7 therefore, for the purposes of the annual mean, both sites' June data was not included within this report following the Council's agreement. Table C.2 identifies the AF used for the purposes of the continuous monitoring locations, with bias adjustment not required at the automatic sites, in line with the outlined criteria stated in TG16.

Table C.2 – Continuous Monitoring Annualisation factors 2018

Site ID	Unadjusted Diffusion Tube Mean (µg/m^3)	Canterbury AF	Thurrock AF	London Bexley AF	Average AF	Annualised Concentration (µg/m^3)
ZT5	36.2	0.98	0.96	0.96	0.97	34.9
ZT7	23.8	0.97	1.01	1.00	0.99	23.6

Appendix D: Maps of Monitoring Locations and AQMAs

Figure D 1 - Map of Current Air Quality Management Area Boundaries: M20 AQMA



Legend

Designated AQMA

Diffusion Tube

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
London, E1 8HG

Location

Tonbridge & Malling Borough Council

Title

Tonbridge & Malling Borough Council: M20 AQMA

By	Approved
JD	PB
Scale	**Job Ref**
Not To Scale	6486502
Date	**Figure No.**
June 2019	**D.1**

Figure D 2 - Map of Current Air Quality Management Area Boundaries: Ditton AQMA

Legend

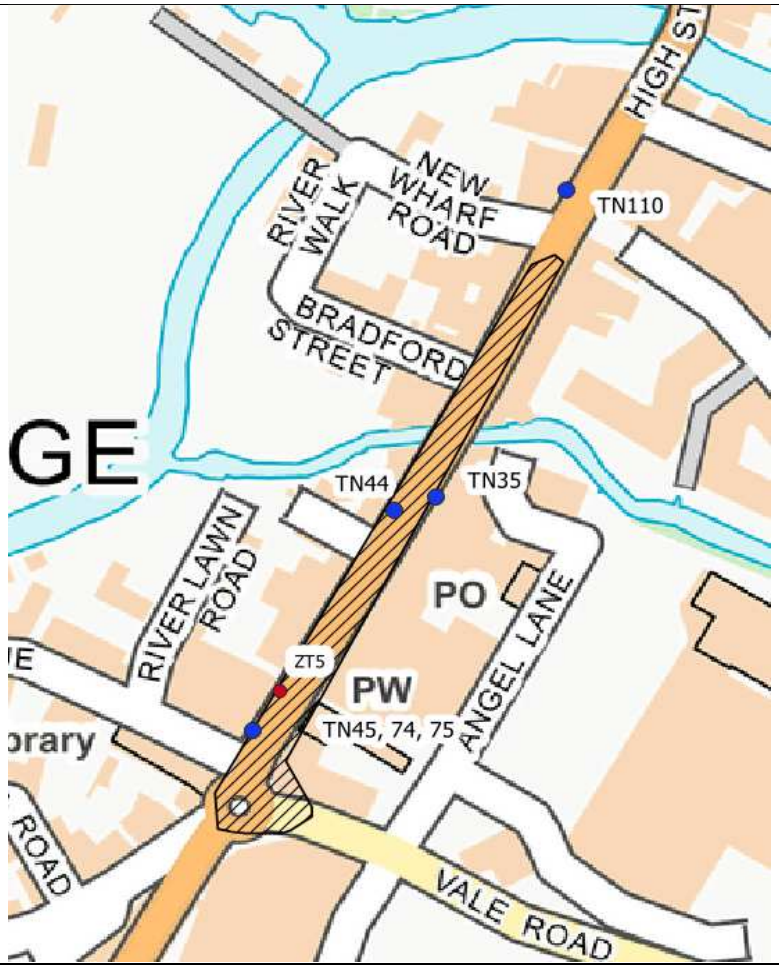
Designated AQMA

Diffusion Tube

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
London, E1 8HG

Location	**Tonbridge & Malling Borough Council**
Title	**Tonbridge & Malling Borough Council: Ditton AQMA**
By JD	**Approved** PB
Scale Not To Scale	**Job Ref** 6486502
Date June 2019	**Figure No.** **D.2**

Figure D 3 - Map of Current Air Quality Management Area Boundaries: Tonbridge High Street AQMA



Legend

Designated AQMA

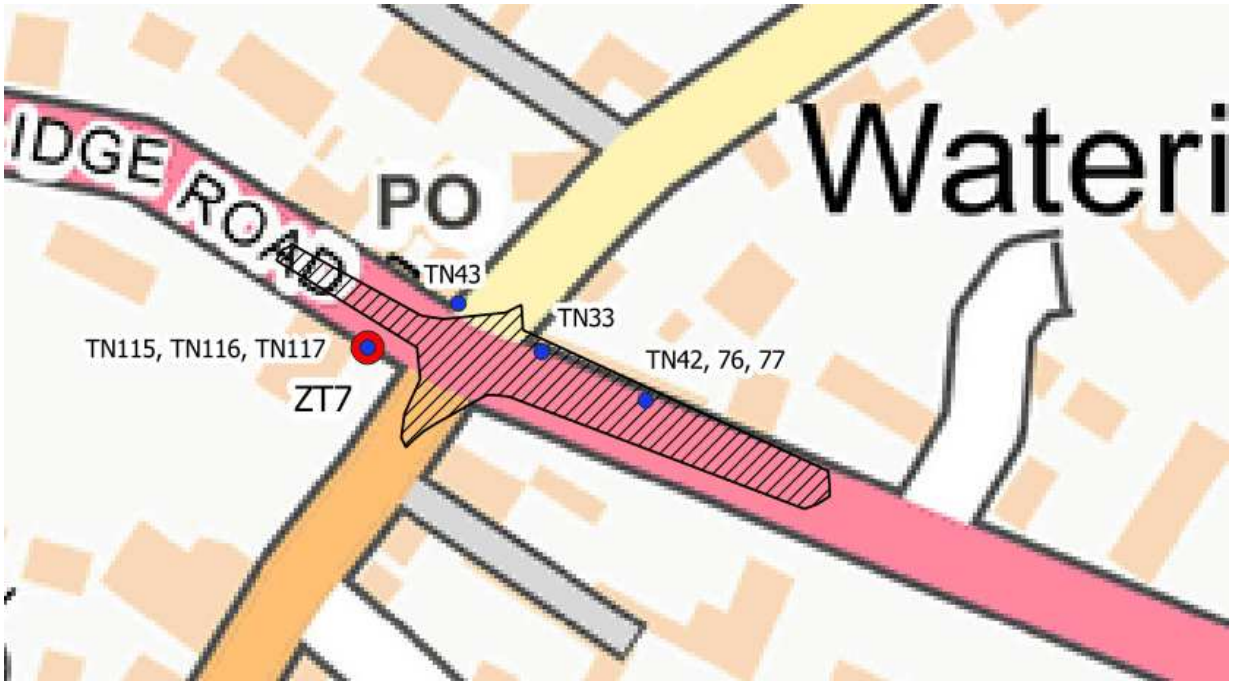
Diffusion Tube

Automatic Site

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
London, E1 8HG

Location	**Tonbridge & Malling Borough Council**
Title	**Tonbridge & Malling Borough Council: Tonbridge High Street AQMA**
By JD	**Approved** PB
Scale Not To Scale	**Job Ref** 6486502
Date June 2019	**Figure No.** **D.3**

Figure D 4 - Map of Current Air Quality Management Area Boundaries: Wateringbury AQMA



Legend

Designated AQMA

Diffusion Tube

Automatic Site

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
London, E1 8HG

Location	**Tonbridge & Malling Borough Council**
Title	**Tonbridge & Malling Borough Council: Wateringbury AQMA**
By JD	**Approved** PB
Scale Not To Scale	**Job Ref** 6486502
Date June 2019	**Figure No.** **D.4**

Figure D 5 - Map of Current Air Quality Management Area Boundaries: Aylesford AQMA

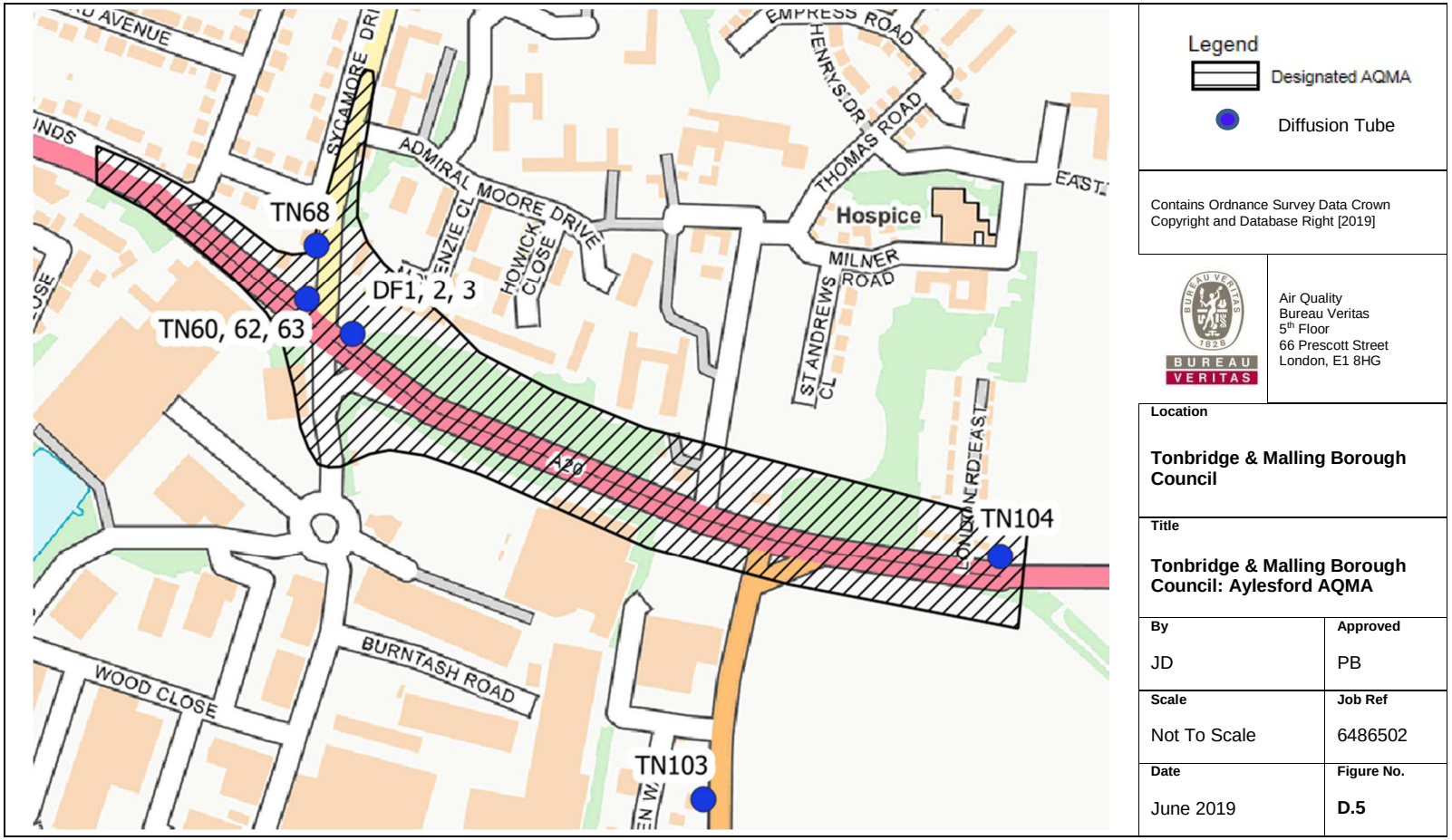
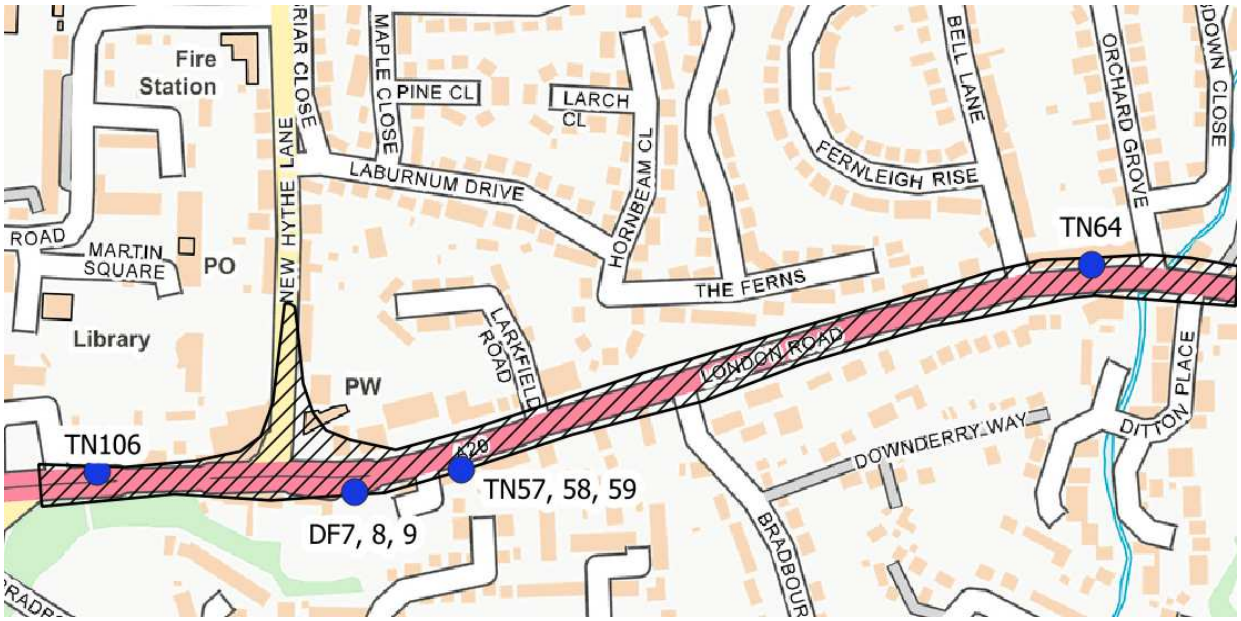


Figure D 6 - Map of Current Air Quality Management Area Boundaries: Larkfield AQMA



Legend

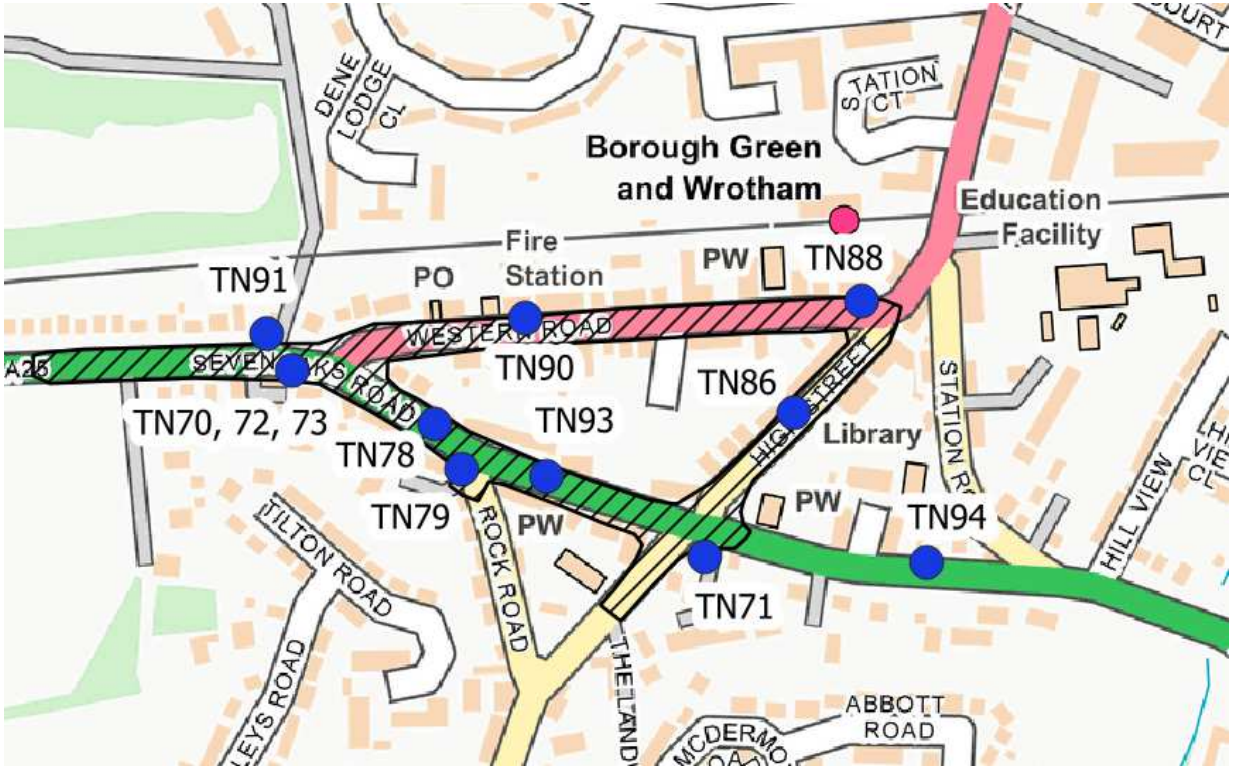
Designated AQMA

Diffusion Tube

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
London, E1 8HG

Location	**Tonbridge & Malling Borough Council**
Title	**Tonbridge & Malling Borough Council: Larkfield AQMA**
By JD	**Approved** PB
Scale Not To Scale	**Job Ref** 6486502
Date June 2019	**Figure No.** **D.6**

Figure D 7 - Map of Current Air Quality Management Area Boundaries: Borough Green AQMA



Legend

Designated AQMA

Diffusion Tube

Air Quality
Bureau Veritas
5th Floor
66 Prescott Street
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Location	**Tonbridge & Malling Borough Council**
Title	**Tonbridge & Malling Borough Council: Borough Green AQMA**
By JD	**Approved** PB
Scale Not To Scale	**Job Ref** 6486502
Date June 2019	**Figure No.** **D.7**

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[14]	
	Concentration	Measured as
Nitrogen Dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m^3	Annual mean
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m^3	Annual mean
Sulphur Dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean

[14] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority 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
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
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

- Local Air Quality Management Technical Guidance LAQM.TG(16). May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
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- National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 03/19 published in March 2019.