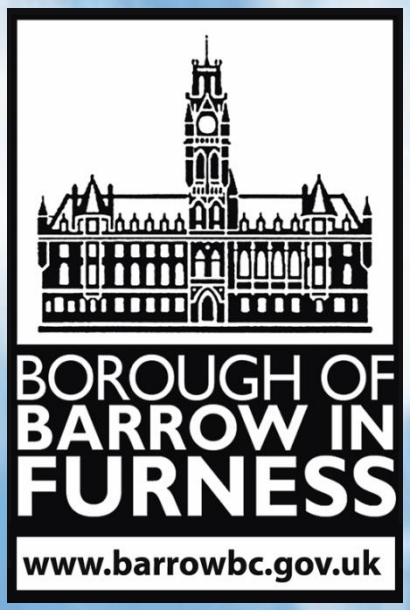

2016 Air Quality Annual Status Report (ASR)

Barrow Borough Council

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

June 2016

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Executive Summary: Air Quality in Our Area

Air Quality in the Borough of Barrow-in-Furness

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 cancer. Additionally, 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 equalities 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 Borough of Barrow-in-Furness has not declared any Air Quality Management Areas (AQMA's) and NO_2 concentrations remain below the annual 'Air Quality Objective' of 40 µg/m^3. Measured background levels for NO_2 in the Borough have shown an encouraging steady decrease, since monitoring began in the early 1990's.

Measured concentrations of NO_2 on the A590 near to Lindal-in-Furness remain the highest in the Borough, the A590 is the major road transport link into the area seeing '18734' vehicle movements each day.

In addition to regulatory requirements, this authority seeks to improve air quality by scrutinising planning applications and new developments that are required to carry out an air quality assessment and where appropriate, an outline of how emissions are to be mitigated. We therefore work closely with other agencies such as Cumbria County Council, the Environment Agency and neighbouring authorities, and consult on future developments and proposals taking into consideration air quality and potential cumulative effects.

[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

Actions to Improve Air Quality

Considerable work to improve air quality through the planning process has taken place for both small and large scale developments. Air quality is an important material consideration, and planning applications are carefully scrutinised for any potential effects on air quality, including HVAC, transport (construction and operational), emissions to air from industrial processes and cumulative or combined effects.

Local Priorities and Challenges

This authority has seen an influx of investment into the area and will continue to have implications over the next few years. Investment into BAE Systems Submarines, Kimberley Clark, Centrica Energy, North West Coast Connections Project and many more small scale projects will have implications on local air quality and this Authority will continue to scrutinise planning applications, air quality reports and liaise with industry to improve air quality.

Initial concerns regarding increased traffic flow on the A590 is highlighted and NO_2 monitoring will continue to be carried out at 'Lindal-in-Furness next to the A590 with this in mind.

How to Get Involved

The general public can get involved and can comment on planning applications if they have further concerns with regards to air quality. This Authority is open and transparent to air quality issues and gladly seek the views of individuals or groups that have a vested concern in air quality. The Environmental Protection Team can be contacted on 01229 876543.

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1 Local Air Quality Management

This report provides an overview of air quality in Barrow-in-Furness Borough during 2015. 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 Barrow-in-Furness 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 Table E.1 in Appendix E.

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 the objectives.

Barrow-In-Furness Borough currently does not have any AQMAs.

2.2 Progress and Impact of Measures to address Air Quality in Barrow-in-Furness Borough

Barrow Borough Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Details of these measures can be found in table 2.1.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Class	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	Adopted Local Policy	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	A significant factor that the Council has considered when identifying potential sites for development is the proximity of potential sites to employment and services. Wherever possible, the Council has sought to locate sites close to employment and services with the aim that this will contribute towards maintaining and increasing the proportion of trips by walking and cycling whilst at the same time reducing the proportion of trips by private car, thus reducing congestion and pollution.
2	Local Policy C5: Promotion of Renewable Energy	Policy Guidance and Development Control	Low Emissions Strategy	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	In order to contribute towards the achievement of national renewable energy targets the Council supports development of new sources of renewable energy provided that measures are taken to avoid and where appropriate mitigate any significant negative impacts of the effects on local amenity resulting from development, construction and operation of the renewable energy schemes.
3	Local Policy C6 - Renewable and Low Carbon Energy Proposals	Policy Guidance and Development	Low Emissions Strategy	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	New development must take into account the effects of climate change, promote the use of energy efficient methods and materials, and minimise its impact on the environment. Proposals will be expected to maximise the design of buildings, use of materials, their layout and orientation on site to be as energy efficient as possible.

Measure No.	Measure	EU Category	EU Class	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Local Policy I1: Developer Contribution	Policy Guidance and Development	Other policy	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	Community Infrastructure Levy (CIL), which is a levy that the Council may use to charge on new developments. The charge would help to raise funds for new infrastructure that is required to support development in the Borough. Contributions will be sought to ensure that the appropriate enhancements / improvements are made, this includes Climate change and energy initiatives through allowable solutions.
5	Local Policy I4: Sustainable Travel Choices	Transport Planning & Infrastructure	Cycle Network	Barrow Borough Council	Ongoing	Ongoing process- Improved cycling networks in association with Sustrans including provision of cycling paths/ tracks, signage etc. The Council will encourage the integration of vehicle charging infrastructure within new development, particularly commercial development .	N/A	N/A	N/A	2031	The proportion of residents who travel to work by private car in Barrow is rising and is now higher than the national average. However, the number of journeys to work by foot or by bicycle is also high and is significantly above the national average (2011 Census) The Council is keen to ensure all development will be accessible by a range of sustainable transport options, including walking, cycling and public transport in order to reduce reliance on the private car

Measure No.	Measure	EU Category	EU Class	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
6	Policy I5: Travel Plans	Promoting Travel Alternatives	Other	Barrow Borough Council	Ongoing	Ongoing- Development which generates a significant amount of movement will require the submission of a Transport Assessment and/or Travel Plan. Assessment will demonstrate how: a) the needs of cyclists and pedestrians will be met and prioritised on site; b) the development will help to reduce the need to travel, particularly by private car; c) relevant information about existing travel habits in the surrounding area has been assessed; d) provision has been made for improved public transport services; e) the site will safely and conveniently connect to public rights of way and the wider green infrastructure network; f) the impact of the proposed development and the forecast level of trips by all modes of transport likely to be associated with the development, particularly of heavy goods vehicles accessing the site, has been minimised; g) the movement of freight and goods by rail will be maximised where possible.	N/A	N/A	N/A	2031	A significant factor that the Council has considered when identifying potential sites for development is the proximity of potential sites to employment and services. Wherever possible, the Council has sought to locate sites close to employment and services with the aim that this will contribute towards maintaining and increasing the proportion of trips by walking and cycling whilst at the same time reducing the proportion of trips by private car. Where the objectives of a Travel Plan are not met on time, developer contributions should be required to enable further mitigation measures to be achieved. Such contributions would be used by the County Council to develop such measures, in agreement with Barrow Borough Council.

Measure No.	Measure	EU Category	EU Class	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Transport Plan Strategy 2011-2026	Transport Planning & Infrastructure	Other	Cumbria County Council	Ongoing	Initial 3 year review	N/A	N/A	N/A	Ongoing	supports the following local priorities: • safe, strong and inclusive communities • health and well-being throughout life • a sustainable and prosperous economy • effective connections between people and places • world class environmental quality and in doing so minimises carbon emissions. Available from http://www.cumbria.gov.uk/eLibrary/Content/Internet/544/942/41075102846.pdf
8	Air Source Heat Pumps	Policy Guidance and Development	Other Policy	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	The Council is considering whether to develop a policy that promotes renewable energy in new development
9	Policy D55	Policy Guidance and Development	Air Quality Planning and Policy Guidance	Barrow Borough Council	Ongoing	Ongoing	N/A	N/A	N/A	2031	"The Council will not permit development that is likely to cause unacceptable harm to an interest of significant environmental importance by increasing levels of pollution through emissions into air the air or adversely increasing odour levels."
10	Green Action at Work Initiative	Promoting Travel Alternatives	Other	Cumbria County Council	Ongoing	Ongoing	N/A	N/A	N/A	Ongoing	County Council's 'Green Action at Work' initiative includes-Cumbria lift share. This links drivers and passengers together online which reduces the number of journeys made across the county and reduce CO_2 and is part of the largest car sharing scheme in the UK

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.

Barrow-in-Furness Borough Council is taking the following measures to address $PM_{2.5}$:

1. This Authority carefully scrutinises developments at the planning stage that may give rise to $PM_{2.5}$ levels. Conditions are imposed that require an appropriate assessment of air quality including $PM_{2.5}$ whereby appropriate mitigations measures may be required.

2. If a Pollution, Prevention Control (PPC) 'substantial' permitting variation or a new application is received, an 'air quality' assessment may be required depended upon the specific nature of the installation.

3. Regularly check local $PM_{2.5}$ levels via the Automatic Urban and Rural Network (AURN) available at the nearest monitoring location (Blackpool, Marton). Available from: https://uk-air.defra.gov.uk/networks/site-info?uka_id=UKA00488

4. Regularly check local $PM_{2.5}$ levels via the DEFRA Data manager 1km x1km squares available from: https://uk-air.defra.gov.uk/data/

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

No automatic air quality monitoring is carried out by Barrow-in-Furness Borough Council.

3.1.2 Non-Automatic Monitoring Sites

Barrow-In-Furness Borough Council undertook non- automatic (passive) monitoring of NO_2 at four (4) sites during 2015. Table A. in Appendix A shows the details of these 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.

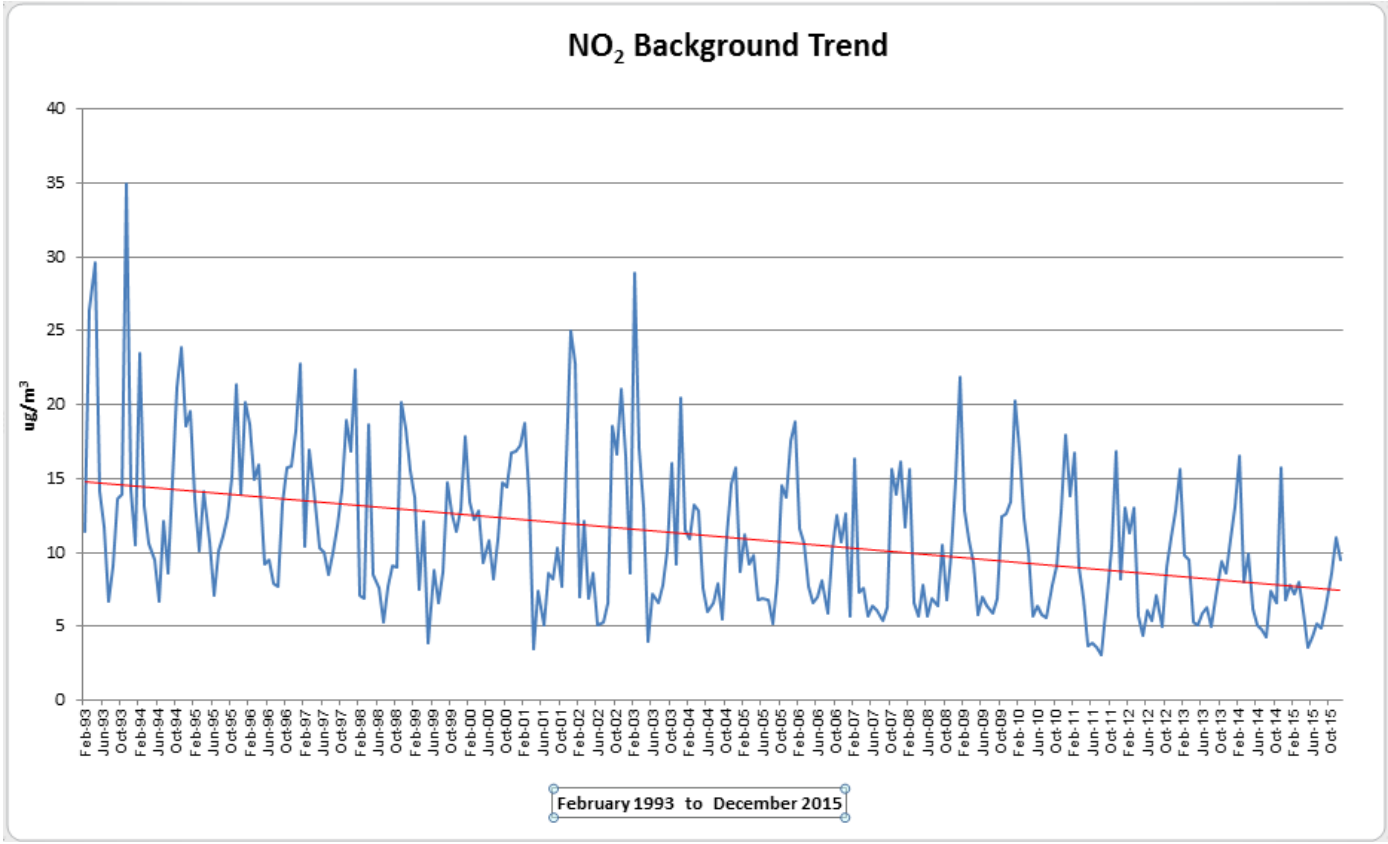
3.2.1 Nitrogen Dioxide (NO_2)

The measured annual mean concentrations for NO_2 indicate that the objective of 40 $\mu g/m^3$ was not exceeded at any of the monitoring locations in the Borough.

The Dalton-in-Furness roadside location was removed in December 2010 because levels were nearly 40% below the objective; however a specific spot was identified where residential properties were in close proximity to a major road, therefore a new sampling point was installed in Dalton approximately 337 metres from the original sampling point removed in 2010. (Please see Appendix D)

Monitoring will continue at all 3 current roadside locations in 2016 to obtain additional information on NO_2 concentrations.

Figure 1: Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Background Site (Dowdales School 1993-2015 [Bias Adjusted])



Background monitoring at the only location remaining from the original monitoring programme is shown in Figure 1 (Dowdales School).. All the other monitoring locations are recent and therefore have no trend history. The graph indicates a decreasing trend in annual mean background NO_2 concentrations in the Borough.

Background concentrations increased to 10.7μg/m^3 in 2009 from 7.9μg/m^3 in 2007 and 8.6μg/m^3 in 2008, but reduced to 9.7μg/m^3 in 2010 and 8.6μg/m^3 in 2011. Post 2011- the background concentrations stabilise with recorded concentrations of 8.7μg/m^3 in 2012, 8.2μg/m^3 in 2013, 8.7μg/m^3 in 2014 and 6.85μg/m^3 in 2015, thus giving a 5 year average of 8.21μg/m^3 which is similar to recorded concentration levels before the 2009 annual mean spike.

There are no exceedances of the air quality objectives for NO_2 and there are no areas of concern at this time.

Table A.2 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 2015 season dataset of monthly mean values is provided in Appendix B.

3.2.2 Particulate Matter (PM_{10})

There is no monitoring of PM_{10} concentrations carried out by Barrow-in-Furness Borough Council.

3.2.3 Particulate Matter ($PM_{2.5}$)

There is no monitoring of $PM_{2.5}$ concentrations carried out by Barrow-in-Furness Borough Council.

3.2.4 Sulphur Dioxide (SO_2)

There is no automatic or non-automatic monitoring of SO_2 concentrations carried out by Barrow-in-Furness Borough Council.

Appendix A: Monitoring Results

Table A.1 – 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)
LIND 1	Lindal	Roadside	325229	475856	NO_2	N	0	2	N/A	3
DALT 1	Dalton	Roadside	323235	474138	NO_2	N	0	2	N/A	3
WALN 1	Walney Road	Roadside	319246	469502	NO_2	N	0	3	N/A	3
BKGD 1	Dowdales School	Urban Background	322732	474429	NO_2	N	N/A	N/A	N/A	3

Table A.2 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2015 (%) (2)	NO_2 Annual Mean Concentration ($\mu g/m^3$) (3)				
					2011	2012	2013	2014	2015
LIND 1	Roadside	Diffusion Tube	100	100	32.6	36.3	32.3	33.6	30.01
DALT 1	Roadside	Diffusion Tube	100	100	N/A	N/A	N/A	27.2	23.15
WALN 1	Roadside	Diffusion Tube	100	100	N/A	N/A	N/A	16.8	14.44
BKGD 1	Urban Background	Diffusion Tube	100	100	8.6	8.7	8.2	8.7	6.85

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 Technical Guidance LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1 – NO_2 Monthly Diffusion Tube Results - 2015

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean	
													Raw Data	Bias Adjusted (1)
LIND 1	28.37	32.16	33.64	34.01	23.86	29.97	31.98	30.67	28.63	40.4	35.29	30.15	31.59	30.01
DALT 1	23.88	24.71	29.77	26.7	19.23	21.87	21.33	22.06	23.38	26.38	26.66	26.41	24.37	23.15
WALN 1	13.77	15.69	15.26	14.08	11.36	11.71	14.08	13.21	14.49	17.64	21.47	19.7	15.21	14.44
BKGD 1	8.19	7.57	8.39	6.29	3.81	4.55	5.45	5.11	6.57	9.01	11.59	9.95	7.21	6.85

(1) See Appendix C for details on bias adjustment

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

QA:QC Data

Factor from Local Co-location Studies (if available)

There are no local co-location studies therefore the national NO_2 bias factor has been used (see below):

Diffusion Tube Bias Adjustment Factors

- The laboratory supplying and analysing the nitrogen dioxide diffusion tubes is Gradko Ltd.
- The preparation method used by the laboratory is 50% TEA v/v in acetone and analyses are carried out using UV spectrophotometry.
- The current bias factor of **0.95** has been applied to the annual mean values of diffusion tube analyses for each monitoring location. The factor was obtained from the Review and Assessment web-site: http://laqm.defra.gov.uk/documents/Database_Diffusion_Tube_Bias_Factors_v03_16_Final_v2.xls

- The spreadsheet version number is 03/16.

Discussion of Choice of Factor to Use

The national NO_2 bias factor was obtained from the National Diffusion Tube Bias Adjustment Spreadsheet provided by Defra LAQM, as there is no co-location study.

PM Monitoring Adjustment

Barrow-in-Furness Borough Council does not undertake any particulate matter monitoring.

Short-term to Long-term Data adjustment

No short-term to long-term data adjustments are necessary as datasets for the diffusion tube monitoring were for a complete 12 month period.

QA/QC of automatic monitoring

Barrow-in-Furness Borough Council does not undertake any automatic monitoring.

QA/QC of diffusion tube monitoring

- **Tube Precision**

  The precision results for Gradko Environmental (A division of Gradko International Ltd.) are stated as GOOD on the following website: http://laqm.defra.gov.uk/documents/Tube_Precision_2015_version_03_16-Final-REDUCED.pdf

- **WASP Results**

  Information obtained from Gradko Environmental states the laboratory has taken part in the WASP proficiency scheme since it's inception, and has maintained the highest ranking of 'Satisfactory'. See Table Below for more information.

Table 1 : Laboratory WASP Results & Gradko NO_2 Proficiency Scheme 2015

Laboratory summary performance for AIR NO_2 PT rounds AR001, 3, 4, 6, 7, 9, 10 and 12

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent AIR NO_2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be **satisfactory** based upon a z-score of ≤ ± 2 as defined above

AIR PT Round	AR001	AR003	AR004	AR006	AR007	AR009	AR010	AR012
Round conducted in the period	April – May 2014	July – August 2014	October – November 2014	January – February 2015	April – May 2015	July – August 2015	October – November 2015	January – February 2016
Aberdeen Scientific Services	100 %	100 %	100 %	100 %	100 %	75 %	100 %	100 %
Cardiff Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Edinburgh Scientific Services	100 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %
Environmental Services Group, Didcot [1]	100 %	100 %	100 %	87.5 %	100 %	100 %	100 %	100 %
Exova (formerly Clyde Analytical)	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Glasgow Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	75 %
Gradko International [1]	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Kent Scientific Services	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]	NR [3]
Kirklees MBC	100 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %
Lambeth Scientific Services	50 %	100 %	100 %	25 %	100 %	100 %	100 %	100 %
Milton Keynes Council	100 %	100 %	75 %	100 %	100 %	100 %	100 %	50 %
Northampton Borough Council	100 %	0 %	0 %	100 %	100 %	100 %	100 %	50 %
Somerset Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
South Yorkshire Air Quality Samplers	100 %	100 %	100 %	100 %	100 %	100 %	75 %	100 %
Staffordshire County Council	100 %	25 %	100%	100 %	100 %	75 %	75 %	75 %
Tayside Scientific Services (formerly Dundee CC)	NR [2]	100 %	100 %	100 %	NR [2]	NR [2]	NR [2]	100 %
West Yorkshire Analytical Services	75 %	100 %	75 %	100 %	75 %	75 %	75 %	75 %

[1] Participant subscribed to two sets of test samples (2 x 4 test samples) in each AIR PT round.
[2] NR No results reported
[3] Kent Scientific Services, Cardiff Scientific Services and Exova (formerly Clyde Analytical) no longer carry out NO_2 diffusion tube monitoring and therefore did not submit results.

Table 2: Results of Nitrogen Dioxide Tubes 2010 to 2015 , including previous monitoring locations by year.

Results of Nitrogen Dioxide Diffusion Tubes (2010 to 2015)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m^3					
			2010 (Bias Adjustment Factor = 0.75)	2011 (Bias Adjustment Factor = 0.82)	2012 (Bias Adjustment Factor = 1.01)	2013 (Bias Adjustment Factor = 1.01)	2014 (Bias Adjustment Factor =0.97)	2015 (Bias Adjustment Factor =0.95)
LIND	Roadside	N	32.3	32.6	36.3	32.3	33.6	30.01
LIND2	Roadside	N	NA	24.8	29.7	31.4	N/A	N/A
WALN	Roadside	N	22.1	23.5	25.0	23.5	N/A	N/A
WALN 1*	Roadside	N	NA	NA	N/A	N/A	16.8	14.44
DALT	Roadside	N	24.5	NA	N/A	N/A	N/A	N/A
DALT 1*	Roadside	N	N/A	N/A	N/A	N/A	27.2	23.15
BKGD	Urban Background	N	9.7	8.6	8.7	8.2	8.7	6.85

* WALN 1 & DALT 1 represent two new locations for 2014

Appendix D: Map(s) of Monitoring Locations

Lindal 1 (LIND 1) – Ulverston Road.

Dalton In Furness (DALT 1)- Ulverston Road.

Walney Road (WALN 1)

Dowdales School (BKGD 1)- Urban Bankground.

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective[4]	
	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

[4] 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
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
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

- Technical Guidance LAQM.TG(09)
- Stage 1 Air Quality Review & Assessment 2000 (Barrow-in-Furness B C)
- Stage 2 Air Quality Review & Assessment 2001 (Barrow-in-Furness B C)
- Air Quality Updating and Screening Assessment 2003 (Barrow-in-Furness B C)
- Air Quality Progress Report 2005 (Barrow-in-Furness B C)
- Air Quality Detailed Assessment 2006 (Barrow-in-Furness B C)
- Air Quality Updating and Screening Assessment 2006 (Barrow-in-Furness B C)
- Air Quality Progress Report 2007 (Barrow-in-Furness B C)
- Air Quality Progress Report 2008 (Barrow-in-Furness B C)
- Air Quality Updating and Screening Assessment 2009 (Barrow-in-Furness B C)
- Air Quality Progress Report 2010 (Barrow-in-Furness B C)
- Air Quality Progress Report 2011 (Barrow-in-Furness B C)
- Air Quality Updating and Screening Assessment 2012 (Barrow-in-Furness B C)
- Air Quality Progress Report 2013 (Barrow-in-Furness B C)
- Air Quality Progress Report 2014 (Barrow-in-Furness B C)
- EPUK Guidance: Development Control-Planning for Air Quality (2010)
- Air Quality Updating and Screening Assessment 2015 (Barrow-in-Furness B C)
- Technical Guidance LAQM.TG(16)