



2014 Air Quality Progress Report for Denbighshire County Council

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

April 2014

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Executive Summary

Part IV of the Environment Act 1995 places a statutory duty on local authorities to review and assess the air quality within their area and take account of Government Guidance when undertaking such work.

This Progress Report considers all new monitoring data and assesses the data against the Air Quality Strategy objectives. It also considers any changes that may have an impact on air quality.

Updated monitoring showed that there were no exceedences of the Air Quality Objectives within the county in 2013.

There is no requirement for a Detailed Assessment to be undertaken.

Proposed actions arising from this report are as follows:

- Continue to monitor air quality within the district to identify future changes in pollutant concentrations;
- Proceed to an Updating and Screening Assessment Report in 2015.

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1 Introduction

1.1 Description of Local Authority Area

Denbighshire County Council covers an area extending from Rhyl and Prestatyn in North Wales, through the Vale of Clwyd, as far south as Corwen and Llangollen. Denbighshire is largely rural in character with tourism and agriculture being the main industries.

The main source of air pollution in the district is road traffic emissions from major roads, notably the A55, A5 and A494. The A55 crosses north Denbighshire giving direct links to the national motorway network, whilst the A5 crosses the county linking through to Snowdonia in the south. The A494, linking Chester to Dolgellau, also runs through the county.

There are currently no Air Quality Management Areas (AQMAs) declared in Denbighshire.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 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 exceedences are considered likely, the local authority must then 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.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the LAQM process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in Wales** are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in Wales

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m ³	Running annual mean	31.12.2003
	5.00 µg/m ³	Annual mean	31.12.2011
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m ³	Annual mean	31.12.2004
	0.25 µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Denbighshire County Council undertook the First Round of Review and Assessment of air quality in November 2000 (Stage One) and in May 2001 (Stage Two). The conclusions of the first round were that all AQS objectives were expected to be met by the target dates based on the available information at that time.

The first phase of the Second Round of Review and Assessment, the USA, was completed in 2003 and this provided an update with respect to air quality issues within Denbighshire. The 2003 USA concluded that no Detailed Assessment of air quality was required. All Air Quality Objectives were expected to be met. The Progress Reports 2004 and 2005 similarly concluded that all AQS objectives were expected to be met.

The first phase of the Third Round of Review and Assessment, the USA, was completed in April 2006 and this provided a further update with respect to air quality issues within Denbighshire. The USA 2006 concluded that all objectives were expected to be met and no Detailed Assessment was required. In 2007 and 2008 Denbighshire County Council submitted Annual Progress Reports for air quality. The reports considered the latest monitoring data and concluded that no significant changes in pollutant concentrations had occurred and there were no predicted exceedences of air quality objectives.

The first phase of the Fourth Round of Review and Assessment, the USA, was completed in August 2009 and this provided a further update with respect to air quality issues within Denbighshire. The USA 2009 concluded that all objectives were expected to be met and no Detailed Assessment was required. In 2010 Denbighshire County Council submitted an Annual Progress Report for air quality. The report considered the latest monitoring data and concluded that no significant changes in pollutant concentrations had occurred and there were no significant exceedences of the air quality objectives, although the level of Nitrogen Dioxide (NO₂) on Vale Street, Denbigh was of concern. Additional diffusion tubes were installed to monitor the air quality in the location and as agreed with advisors in the Welsh Assembly Government, the situation was reviewed in the 2011 Progress

Report. This resulted in a Detailed Assessment being undertaken in 2011 to assess the level of NO₂ in more detail.

The 2011 Detailed Assessment concluded that the decision on whether to declare an AQMA should be delayed until the full 2011 diffusion tube results were available, if there are no monitored exceedences in 2011 then an AQMA should not be required. There were a number of construction projects being undertaken in the town between 2009 and 2011, which may have increased idling traffic and associated emissions.

The first phase of the Fifth Round of Review and Assessment, the USA, was completed in June 2012. The Report concluded that there were no exceedences of the Air Quality Objectives within the county in 2011. Monitoring methods showed that NO₂ concentrations had decreased at the majority of monitoring sites from the 2010 concentrations. Exceedences observed in 2010 had not been repeated. In line with the recommendations from the 2011 Detailed Assessment, it was not necessary to declare an AQMA. In 2013 Denbighshire County Council submitted an Annual Progress Report for air quality. The report considered the latest monitoring data and concluded that no significant changes in pollutant concentrations had occurred and there were no predicted exceedences of air quality objectives.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

There is currently no automatic monitoring undertaken in Denbighshire.

2.1.2 Non-Automatic Monitoring Sites

Denbighshire County Council undertook monitoring at 26 NO₂ diffusion tube sites in 2013 (see figure 2.1). During 2013 five sites were discontinued (DBR12, DBR39, DBR40, DBR41 and DBR42) and five new sites installed (DBR49, DBR50, DBR51, DBR52 and DBR53).

The diffusion tubes are supplied and analysed by Environmental Services Group Didcot (ESG) and were prepared by spiking acetone:triethanolamine (50:50) onto the grids prior to the tubes being assembled. The tubes were desorbed with distilled water and the extract analysed using segmented flow autoanalyser with ultraviolet detection. ESG participate in the Workplace Analysis Scheme for Proficiency (WASP) for NO₂ diffusion tube analysis. This provides strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. In WASP data rounds 117 through to 124 (April 2012 to March 2014) ESG have scored 100% for all rounds. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

A bias adjustment factor has been applied to the data, which is an estimate of the difference between diffusion tube concentrations and continuous monitoring, the latter assumed to be a more accurate method of monitoring. The technical guidance LAQM.TG (09) provides guidance with regard to the application of a bias adjustment factor to correct diffusion tubes. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data from NO_x / NO₂ continuous analysers. Alternatively, the national database of

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diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

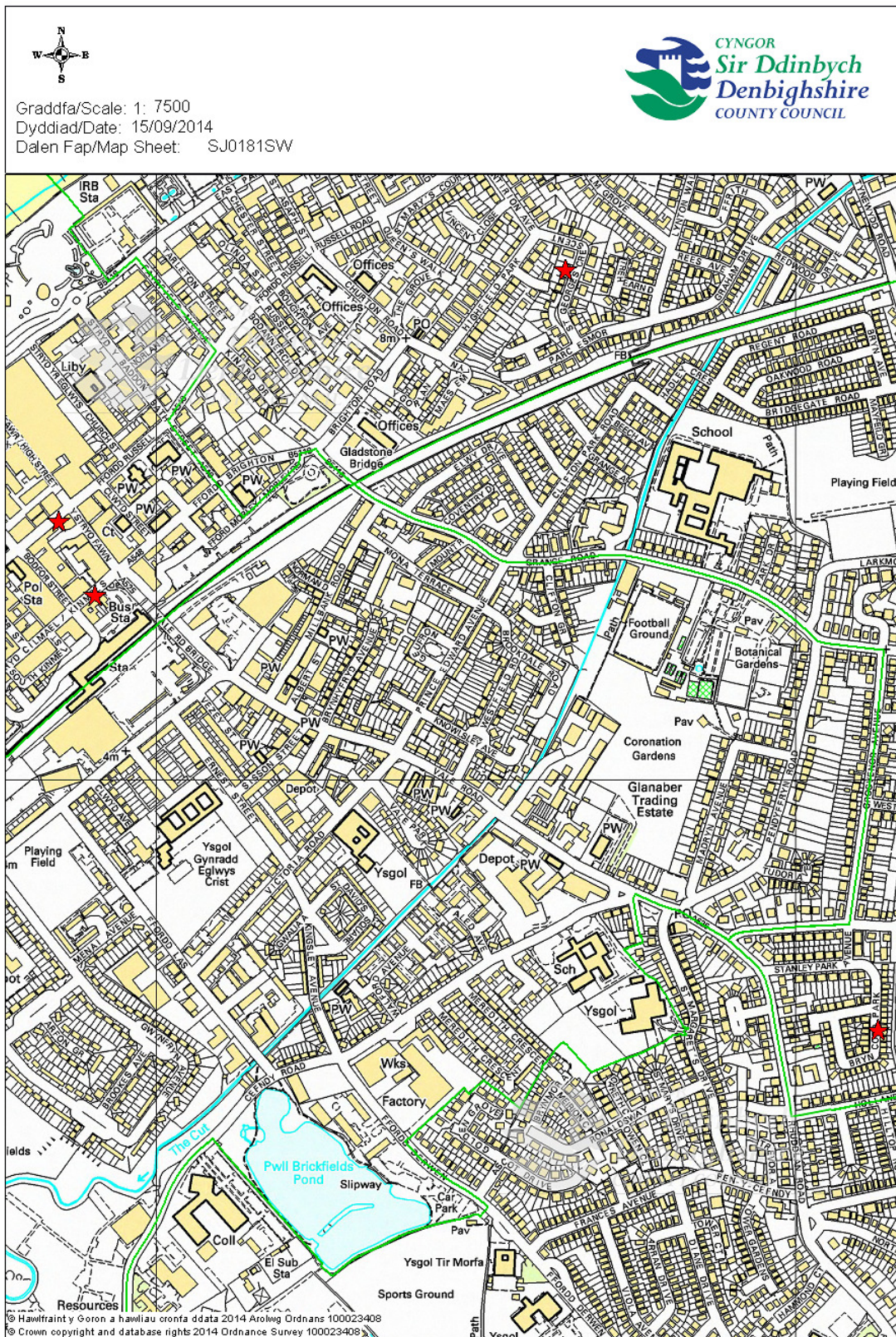
Denbighshire County Council does not operate any continuous NO₂ monitoring sites and as such a local bias adjustment factor cannot be calculated. In the absence of a local bias correction factor, the national bias correction factor has been applied. This factor, calculated as 0.80 for 2013 based on 28 studies has been obtained from the Defra website:-

http://laqm.defra.gov.uk/documents/Database_Diffusion_Tube_Bias_Factors-v03_14-Final-v2.xls

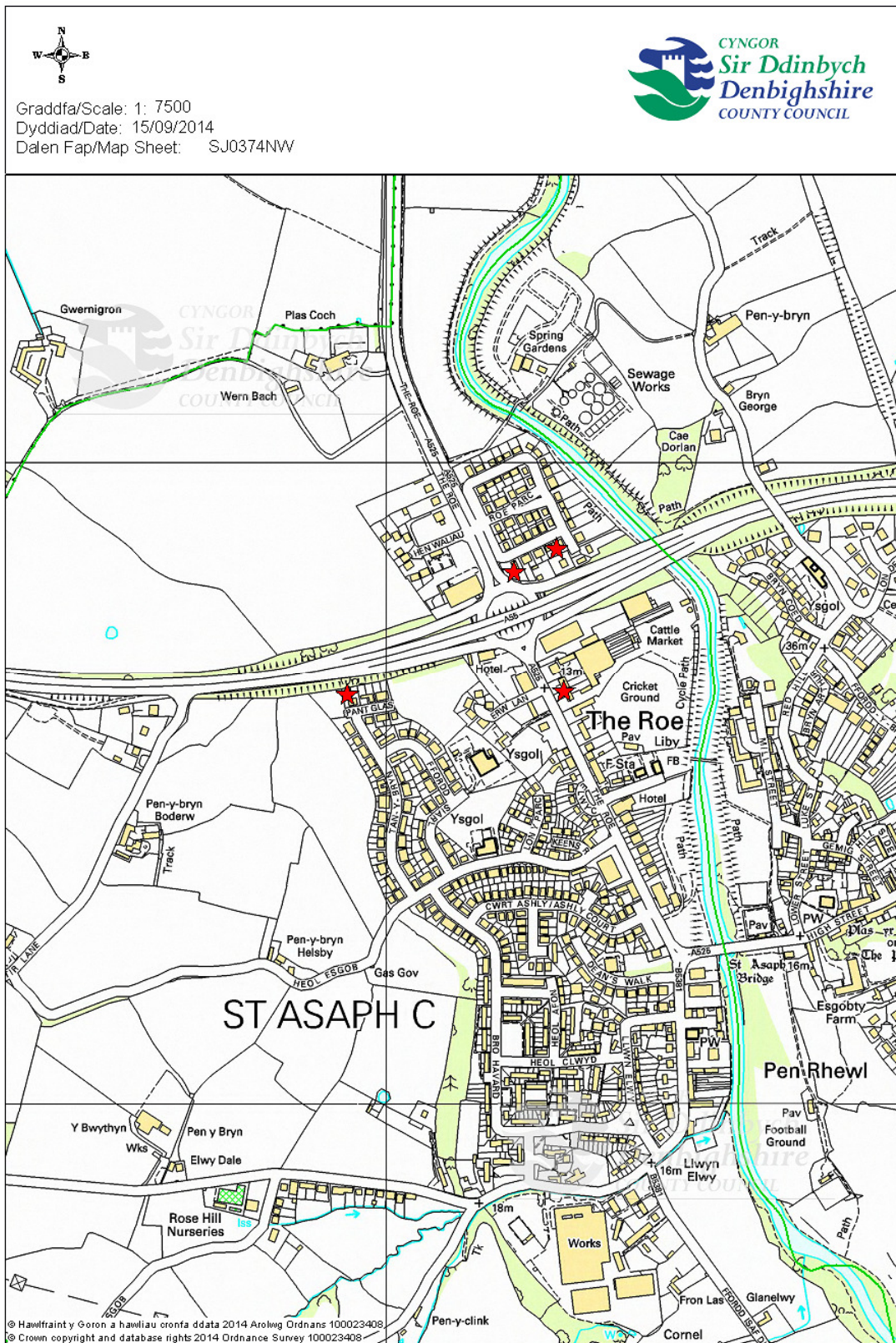
For previous data, years 2008 to 2012, the bias adjustment factors have been taken from the Council's previous LAQM annual reports. The factors used were 0.83 (2008), 0.82 (2009) 0.84 (2010), 0.83 (2011) and 0.79 (2012).

No collocation studies have been undertaken in Denbighshire and the results have not been distance adjusted for relevant exposure.

Figure 2.1 Maps of Non-Automatic Monitoring Sites







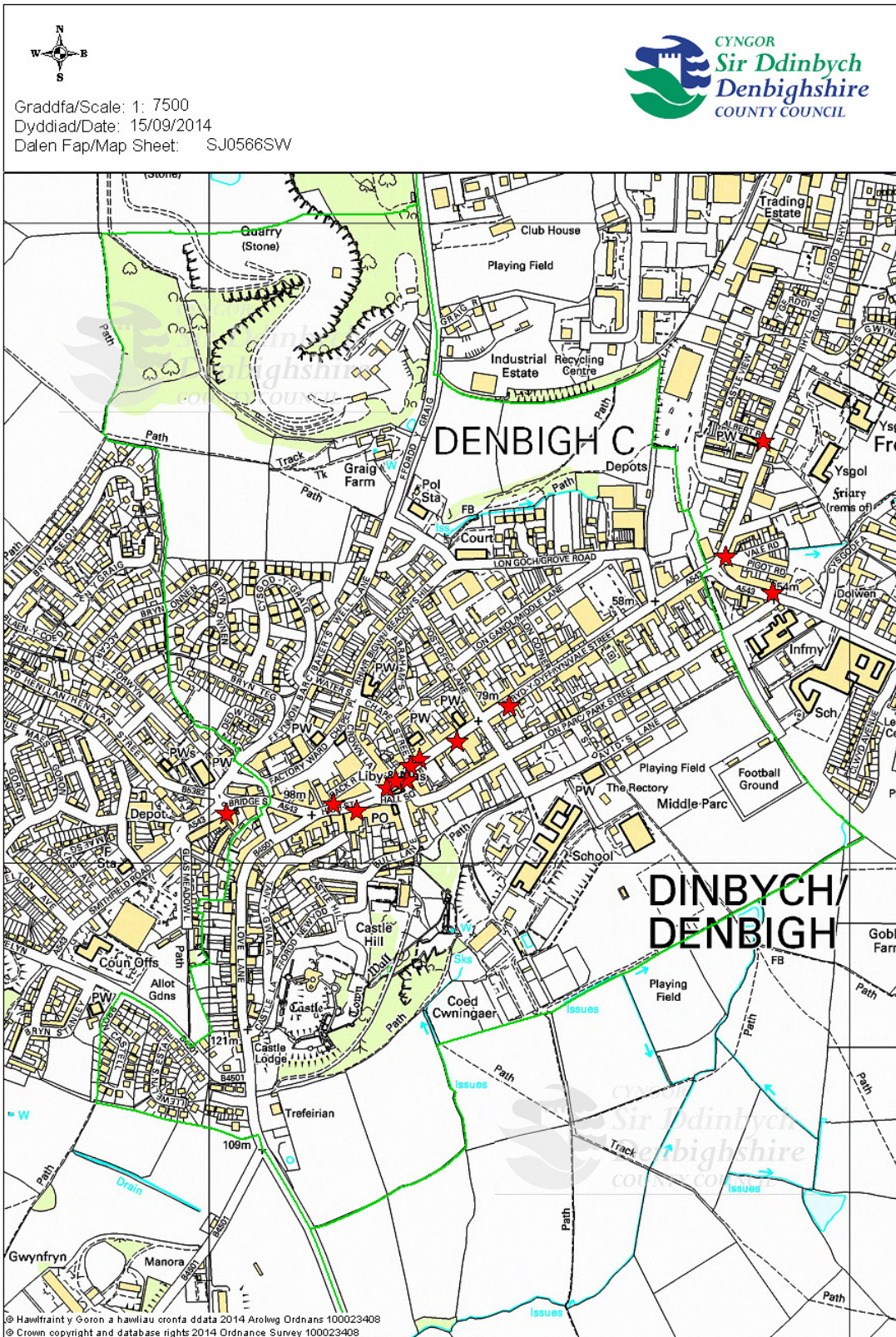




Table 2.1 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Site Height (m)	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Wellington Road, Rhyl	Roadside	300846	381407	2.3	NO ₂	N	N	Y - 0.5	2.2	Y
10 Kimmel Street, Rhyl	Roadside	300903	381292	2.5	NO ₂	N	N	Y - 2.5	0.3	Y
5 St. Georges Cres., Rhyl	Suburban	301640	381800	2.1	NO ₂	N	N	Y - 0	15.1	Y
73 Bryn Coed Park, Rhyl	Suburban	302128	380611	2.3	NO ₂	N	N	Y - 4.7	1.7	Y
2 Pant Glas, St. Asaph	Suburban	302938	374638	2.0	NO ₂	N	N	Y - 9.6	27.5	Y
Adj. 1 Vale Street, Denbigh	Roadside	305276	366119	2.4	NO ₂	N	N	Y - 0	1.0	Y
31 Ruthin Road, Denbigh	Roadside	305878	366424	2.5	NO ₂	N	N	Y - 1.4	2.5	Y
1 Plas Elwy Orchard, The Roe, St. Asaph	Suburban	303270	374640	2.0	NO ₂	N	N	Y - 0	19.4	Y
7 Roe Park, St. Asaph	Suburban	303197	374830	2.0	NO ₂	N	N	Y - 0	14	Y
13 Roe Park, St. Asaph	Suburban	303263	374867	2.0	NO ₂	N	N	Y - 0	47	Y
Denbigh Cutters, 21 Vale Street, Denbigh	Roadside	305330	366160	2.2	NO ₂	N	N	Y - 0	3	Y

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Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Site Height (m)	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Adj 1 Lenten Pool, Denbigh	Roadside	305026	366078	2.2	NO ₂	N	N	Y - 2	1.9	Y
25 Park Road, Ruthin.	Roadside	312106	358306	2.2	NO ₂	N	N	Y - 0	2.9	Y
Adj HSBC Bank, Vale Street, Denbigh	Roadside	305314	366153	2.6	NO ₂	N	N	Y - 5.5	2.5	Y
Opp Rowlands Pharm, Vale Street, Denbigh	Roadside	305386	366191	2.6	NO ₂	N	N	Y - 1.7	1.2	Y
Adj 50 Vale Street, Denbigh	Roadside	305467	366246	2.5	NO ₂	N	N	Y - 3.9	2.0	Y
Haul Fryn Depot, Ruthin	Roadside	312789	358231	2.3	NO ₂	N	N	Y - 1	3.5	Y
Adj 62 Rhos Street, Ruthin	Roadside	312913	358273	2.6	NO ₂	N	N	Y - 0	2.3	Y
Natwest Bank, St Peter's Square, Ruthin	Roadside	312377	358258	2.3	NO ₂	N	N	N	1.0	Y
Adj. Swayne Johnston Solicitors, Vale Street, Denbigh	Roadside	305308	366130	2.9	NO ₂	N	N	N	1.8	Y
Milk Bar, St Peter's Square, Ruthin	Roadside	312379	358315	2.4	NO ₂	N	N	Y - 1	3.9	Y
7 Vale Street, Denbigh	Roadside	305290	366130	2.3	NO ₂	N	N	N	2.0	Y

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Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Site Height (m)	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
2 Rhyl Road, Denbigh	Kerbside	305805	366480	2.4	NO ₂	N	N	Y - 1.3	0.8	Y
47 High Street, Denbigh	Roadside	305193	366093	2.4	NO ₂	N	N	N	5.9	Y
Adj CO-OP, High Street, Denbigh	Roadside	305229	366082	2.3	NO ₂	N	N	N	5.3	Y
Adj Fairyburn, Rhyl Road, Denbigh	Kerbside	305863	366661	2.5	NO ₂	N	N	Y - 11.4	0.9	Y
79 High Street, Prestatyn	Roadside	306580	382906	2.6	NO ₂	N	N	N	1.0	N
Adj. Sarone Court, High Street, Prestatyn	Roadside	306795	382638	2.6	NO ₂	N	N	N	1.0	N

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (NO₂)

There are two Air Quality Objectives for nitrogen dioxide, namely:

- the annual mean of 40µg/m³, and
- the 1-hour mean of 200µg/m³ not to be exceeded more than 18 times a year.

There is no continuous monitoring of NO₂ within Denbighshire County Council; therefore compliance with the hourly mean objective cannot be accurately assessed.

The nitrogen dioxide diffusion tube data are summarised in Table 2.2. The full dataset (monthly mean values) are included in Appendix B.

For the 2013 dataset there were no sites where the annual mean Air Quality Objective was exceeded.

There was good data capture across the monitoring network, with the exception of Sites DBR39 and DBR40 which had only 2 month's data available due to the sites being removed from the monitoring network. Due to only 2 months being available it was not possible to annualise the data from this site.

There are no sites where the annual mean is greater than 60µg/m³, therefore there are no sites likely to be at risk of exceeding the hourly AQS Objective.

Table 2.2 Results of NO₂ Diffusion Tubes 2013

Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.80)
								2013 (µg/m ³)
DBK1	Wellington Road, Rhyl	Roadside	N	N	12	N	N	25.9
DBR2	10 Kinmel Street, Rhyl	Roadside	N	N	12	N	N	29.3
DBB3	5 St. Georges Cres., Rhyl	Suburban	N	N	12	N	N	10.4
DBB4	73 Bryn Coed Park, Rhyl	Suburban	N	N	9	N	N	11.9
DBR5	2 Pant Glas, St. Asaph	Suburban	N	N	12	N	N	15.3
DBR48	Adj 1 Vale Street, Denbigh	Roadside	N	N	12	N	N	29.3
DBR23	31 Ruthin Road, Denbigh	Roadside	N	N	12	N	N	19.5
DBR8	1 Plas Elwy Orchard, The Roe, St. Asaph	Suburban	N	N	12	N	N	16.9
DBR9	7 Roe Park, St. Asaph	Suburban	N	N	11	N	N	21.3
DBR10	13 Roe Park, St. Asaph	Suburban	N	N	12	N	N	16.2
DBR24	Denbigh Cutters, 21 Vale Street, Denbigh	Roadside	N	N	12	N	N	34.1
DBR51	Adj 1 Lenton Pool, Denbigh	Roadside	N	N	9	N	N	28.1
DBR20	25 Park Road, Ruthin.	Roadside	N	N	12	N	N	24.0
DBR43	Adj HSBC Bank, Vale Street, Denbigh	Roadside	N	N	11	N	N	36.7
DBR44	Opp Rowlands Pharm, Vale Street, Denbigh	Roadside	N	N	12	N	N	28.8

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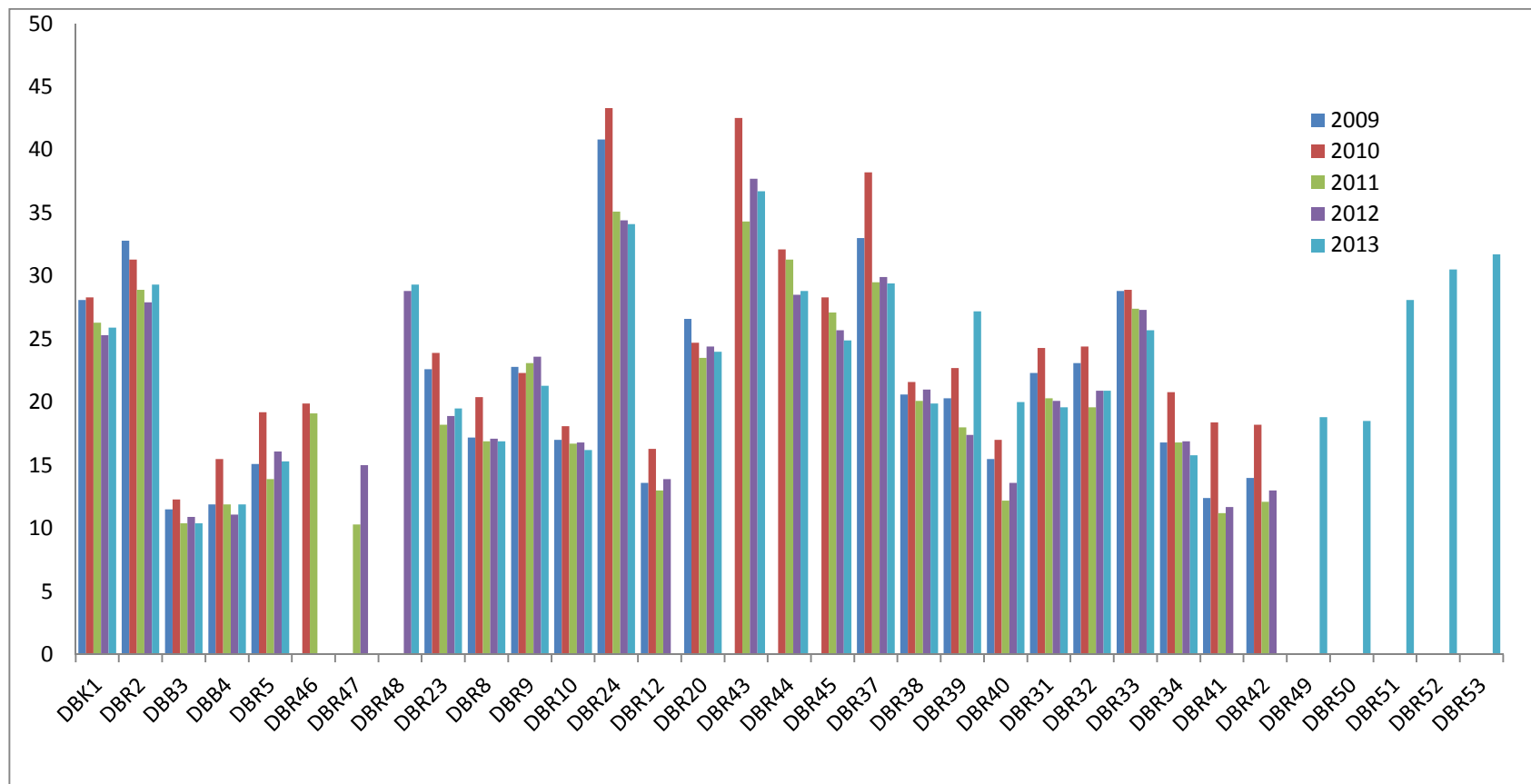
Site ID	Location	Site Type	Within AQMA?	Triplicate or Collocated Tube	Data Capture 2011 (Number of Months or %)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.80)
								2013 ($\mu\text{g}/\text{m}^3$)
DBR45	Adj 50 Vale Street, Denbigh	Roadside	N	N	12	N	N	24.9
DBR37	Haul Fryn Depot, Ruthin	Roadside	N	N	12	N	N	29.4
DBR38	Adj 62 Rhos Street, Ruthin	Roadside	N	N	12	N	N	19.9
DBR39	Natwest Bank, St Peter's Square, Ruthin	Roadside	N	N	2	N	N	27.2*
DBR52	Adj. Swayne Johnston Sol., Vale Street, Denbigh	Roadside	N	N	9	N	N	30.5
DBR40	Milk Bar, St Peter's Square, Ruthin	Roadside	N	N	2	N	N	20.0*
DBR53	7 Vale Street, Denbigh	Roadside	N	N	10	N	N	31.7
DBR31	2 Rhyl Road, Denbigh	Kerbside	N	N	12	N	N	19.6
DBR32	47 High Street, Denbigh	Roadside	N	N	11	N	N	20.9
DBR33	Adj CO-OP, High Street, Denbigh	Roadside	N	N	11	N	N	25.7
DBR34	Adj Fairyburn, Rhyl Road, Denbigh	Kerbside	N	N	12	N	N	15.8
DBR49	79 High Street, Prestatyn	Roadside	N	N	10	N	N	18.8
DBR50	Adj., Saronie Court, High Street, Prestatyn	Roadside	N	N	12	N	N	18.5

* Means should be "annualised" as in Box 3.2 of TG(09), if less than 9 months data obtained. Not possible to annualise due to only 2 months data available.

Table 2.3 Results of NO₂ Diffusion Tubes (2009 to 2013)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) µg/m ³				
			2009 (Bias Adjustment Factor = 0.82)	2010 (Bias Adjustment Factor = 0.84)	2011 (Bias Adjustment Factor = 0.83)	2012 (Bias Adjustment Factor = 0.79)	2013 (Bias Adjustment Factor = 0.80)
DBK1	Roadside	N	28.1	28.3	26.3	25.3	25.9
DBR2	Roadside	N	32.8	31.3	28.9	27.9	29.3
DBB3	Suburban	N	11.5	12.3	10.4	10.9	10.4
DBB4	Suburban	N	11.9	15.5	11.9	11.1	11.9
DBR5	Suburban	N	15.1	19.2	13.9	16.1	15.3
DBR46	Roadside	N	-	19.9	19.1	-	-
DBR47	Suburban	N	-	-	10.3	15.0	-
DBR48	Roadside	N	-	-	-	28.8	29.3
DBR23	Roadside	N	22.6	23.9	18.2	18.9	19.5
DBR8	Suburban	N	17.2	20.4	16.9	17.1	16.9
DBR9	Suburban	N	22.8	22.3	23.1	23.6	21.3
DBR10	Suburban	N	17.0	18.1	16.7	16.8	16.2
DBR24	Roadside	N	40.8	43.3	35.1	34.4	34.1
DBR12	Suburban	N	13.6	16.3	13.0	13.9	-
DBR20	Roadside	N	26.6	24.7	23.5	24.4	24.0
DBR43	Roadside	N	-	42.5	34.3	37.7	36.7
DBR44	Roadside	N	-	32.1	31.3	28.5	28.8
DBR45	Roadside	N	-	28.3	27.1	25.7	24.9
DBR37	Roadside	N	33.0	38.2	29.5	29.9	29.4
DBR38	Roadside	N	20.6	21.6	20.1	21.0	19.9
DBR39	Roadside	N	20.3	22.7	18.0	17.4	27.2
DBR40	Roadside	N	15.5	17.0	12.2	13.6	20.0
DBR31	Kerbside	N	22.3	24.3	20.3	20.1	19.6
DBR32	Roadside	N	23.1	24.4	19.6	20.9	20.9
DBR33	Roadside	N	28.8	28.9	27.4	27.3	25.7
DBR34	Kerbside	N	16.8	20.8	16.8	16.9	15.8
DBR41	Roadside	N	12.4	18.4	11.2	11.7	-
DBR42	Roadside	N	14.0	18.2	12.1	13.0	-
DBR49	Roadside	N	-	-	-	-	18.8
DBR50	Roadside	N	-	-	-	-	18.5
DBR51	Roadside	N	-	-	-	-	28.1
DBR52	Roadside	N	-	-	-	-	30.5
DBR53	Roadside	N	-	-	-	-	31.7

Figure 2.2 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites



The above figure shows the trend of NO₂ concentrations at all the monitoring sites from 2009 through to 2013. From this it can be seen that for the majority of the sites the 2013 concentrations are lower than those observed in 2010 (except for DBR39 and DBR40 which were only exposed for 2 months and so are higher than the annual average). The 2013 results are at the lower end of the 5 year trend for most sites.

2.2.2 Particulate Matter (PM₁₀)

There is currently no monitoring undertaken for PM₁₀ within Denbighshire.

2.2.3 Sulphur Dioxide (SO₂)

There is currently no monitoring undertaken for Sulphur Dioxide within Denbighshire.

2.2.4 Benzene

There is currently no monitoring undertaken for Benzene within Denbighshire.

2.2.5 Summary of Compliance with AQS Objectives

Denbighshire County Council has examined the results from monitoring in the County. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 New Local Developments

3.1 Road Traffic Sources

There are no new/newly identified road traffic sources that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Other Transport Sources

There are no new/newly identified other transport sources that have not been adequately considered in previous rounds of Review and Assessment.

3.3 Industrial Sources

There are no new/newly identified industrial sources that have not been adequately considered in previous rounds of Review and Assessment.

3.4 Commercial and Domestic Sources

There have been several biomass combustion plant applications received within the County. All have been assessed using the biomass calculator tool, obtained through the Local Air Quality Helpdesk and available on the Defra website at:-

<http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#biomass> ,

All have been shown not to exceed the target values obtained and so therefore they are unlikely to cause an exceedance of the objective limits.

The biomass boilers are:-

Location	Planning Reference	Decision	Assessed
Rhyl High School, Rhyl	45/2012/0383	Granted	Yes
Clifford Jones Timber, Ruthin	02/2012/1629	Pending	Yes
Sainsbury's Rhyl Store, Rhyl	45/2013/0305	Granted	Yes
Bryn Oerog, Trevor	03/2013/0115	Granted	Yes
Bryn Ffynnon Sawmill, Llanferres	21/2014/0427	Pending	Yes

3.5 New Developments with Fugitive or Uncontrolled Sources

There are no new/newly identified developments with fugitive or uncontrolled sources that have not been adequately considered in previous rounds of Review and Assessment.

Denbighshire County Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

Denbighshire County Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Air Quality Planning Policies

Denbighshire County Council's Local development plan 2006 – 2021 was adopted in June 2013 and is available on line at:-

<http://denbighddms.wisshost.net/webfiles/Adoption/Adopted%20LDP%20text%20english.pdf>

Policy RD 1 – 'Sustainable development and good standard design' on page 14 of the above document is relevant to air quality issues.

5 Local Transport Plans and Strategies

The Local Transport Plans and Strategies for this County are included in the latest version of the TAIITH – North Wales Regional Transport Plan. This document is available at the following website:-

<http://www.taith.gov.uk/wp-content/uploads/2012/06/FINAL-RTP-30-09-091.pdf>

Taith is the North Wales Regional Transport Consortium, a grouping of the six North Wales Local Authorities that the Welsh Assembly Government has charged with preparing the North Wales Regional Transport Plan. There are four consortia altogether. The others deal with Mid-Wales (TraCC), South East Wales (SEWTA) and South West Wales (SWWITCH).

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The review of new monitoring data has shown that there are no exceedences of the AQS objectives in 2013 at any monitoring location in Denbighshire County Council therefore there is no requirement to declare an AQMA at this time or proceed to a detailed assessment.

6.2 Conclusions relating to New Local Developments

The review of sources of pollution within Denbighshire County Council area identified that there have been several biomass combustion plant applications received within the County. All have been assessed using the biomass calculator tool and have been shown not to exceed the target values obtained and so therefore they are unlikely to cause an exceedance of the objective limits and as such there is no requirement for a Detailed Assessment to be undertaken.

6.3 Proposed Actions

The Progress Report has considered new monitoring data and a review of emission sources in the area. The assessment identified that there were no exceedences of the air quality objective within the county from existing and new emission sources.

Proposed actions arising from the Progress Report are as follows:

- Continue to monitor air quality within the district; and
- Proceed to an Updating and Screening Assessment in 2015.

7 References

- Local Air Quality Management Technical Guidance LAQM TG.(09) February 2009, published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Denbighshire County Council 2009 – Updating and Screening Assessment
- Denbighshire County Council 2010 – Progress Report
- Denbighshire County Council 2011 – Progress Report
- Denbighshire County Council 2011 – Detailed Assessment
- Denbighshire County Council 2012 – Updating and Screening Assessment
- Denbighshire County Council 2013 – Progress Report
- Denbighshire County Council planning applications available on the planning website:-

<http://www.denbighshire.gov.uk/en-gb/DNAP-8B8F4E>

- TAITH – North Wales Regional Transport Plan dated 30th September 2009. This document is available at the following website:-

<http://www.taith.gov.uk/wp-content/uploads/2012/06/FINAL-RTP-30-09-091.pdf>

- Denbighshire County Council's Local development plan 2006 – 2021 This document is available at the following website:-

<http://denbighddms.wisshost.net/webfiles/Adoption/Adopted%20LDP%20text%20english.pdf>

- Bias Adjustment Factor Spreadsheet from website:

http://laqm.defra.gov.uk/documents/Database_Diffusion_Tube_Bias_Factors-v03_14-Final-v2.xls

- Biomass calculator tool from website:

<http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#biomass>

Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix B: 2013 Nitrogen Dioxide diffusion tube results in $\mu\text{g}/\text{m}^3$

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The diffusion tubes are supplied and analysed by Environmental Services Group utilising the 50% Triethanolamine (TEA) in acetone preparation method. The bias adjustment factor for 2013 is 0.80 (based on 28 studies, version 03_14) as derived from the national bias adjustment calculator.

Factor from Local Co-location Studies

Denbighshire County Council does not have any continuous monitors within the County and therefore a co-location study is not available to derive a local bias factor.

Discussion of Choice of Factor to Use

Denbighshire County Council does not have any continuous monitors within the County and therefore a co-location study is not available to derive a local bias factor. Thus the national bias adjustment calculator has been used, as for all previous LAQM reports.

PM Monitoring Adjustment

No PM₁₀ monitoring is carried out in the County.

Short-term to Long-term Data adjustment

26 of the diffusion tubes had data capture which met the 75% data capture criteria.

Two sites (DBR39 and DBR40) failed to meet data capture criterion. However, the data has not been annualised because the amount of available data is too low to derive a reliable annualised value.

QA/QC of automatic monitoring

Denbighshire County Council did not undertake any automatic monitoring in 2013 and thus there are no QA/QC procedures to report.

QA/QC of diffusion tube monitoring

Environmental Services Group (ESG Didcot) currently holds UKAS accreditation and participates in the Workplace Analysis Scheme for Proficiency (WASP) for NO₂ diffusion tube analysis and the NO₂ Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO₂ concentrations reported are of a high calibre. The WASP calculations were reviewed in 2011-2013 such that the z-scores for laboratories rather than a value judgement were provided. The criteria against which to determine laboratory performance is the percentage of results which met a z-score $< \pm 2$ (satisfactory). Assuming there is no systematic error in analysis 19 out of 20 z-scores (95%) should meet the 'satisfactory' criterion. For the rounds which occurred during 2013 ESG Didcot scored 100% for the trials.

Appendix B.

Results of Analysis of Nitrogen Dioxide Diffusion Tubes

Station Code	Site Name	WAQF ref No	Site Classification	Part of UK Network	Grid Ref	Tube No.	Nitrogen Dioxide Concentration in Air (ug/m3) 2013												Tube No.	Average	Bais Adjustment
							January	February	March	April	May	June	July	August	September	October	November	December			
DBK1	Wellington Road, Rhyl	RHBC/006	A	Yes	SJ 008 814	1	44	33	38	36.5	25.3	27.5	32.6	26.8	26.7	30.8	36.9	30.5	1	32.38	25.91
DBR2	10 Kimmel Street, Rhyl	RHBC/017	A	Yes	SJ 009 813	2	47	27	46	42.1	27.6	31.4	33.5	31.5	30.2	38.1	48.3	36.8	New2	36.63	29.30
DBB3	5 St. Georges Cres., Rhyl	RHBC/004	C	Yes	SJ 016 818	3	23	17	20	14	8	8.8	8.6	7.7	9.1	11.8	15.5	13.1	3	13.05	10.44
DBB4	73 Bryn Coed Park, Rhyl	RHBC/005	C	Yes	SJ 021 806	4	24		22		8.7	9.9	8.3	12.9	12.5		22.8	12.2	4	14.81	11.85
DBR5	2 Pant Glas, St. Asaph	RHBC/007	B	No	SJ 029 746	5	20	27	25	17.8	19.2	19.6	20.3	17.1	18.8	19.9	15.2	9.4	5	19.11	15.29
DBR48	Adj. 1 Vale Street, Denbigh	RHBC/051	A	No	SJ 053 661	6	44	41	43	31.1	29.1	33.7	31.5	30.7	34.8	38.6	52.5	28.7	New6	36.56	29.25
DBR23	31 Ruthin Road, Denbigh	RHBC/026	A	No	SJ 059 664	7	33	30	26	21.4	20.6	18.6	14.8	17	23	25.6	43.4	18.6	New7	24.33	19.47
DBR8	1 Plas Elwy Orchard, The Roe, St. Asaph	RHBC/010	B	No	SJ 033 746	8	26	25	23	18.4	17.1	18.4	19	17	19.2	19.4	32.7	17.5	8	21.06	16.85
DBR9	7 Roe Park, St. Asaph	RHBC/011	B	No	SJ 032 749	9	34	26	28	29.5	21.5	23.2	24.6	22.7	24.3	27.4		31.4	9	26.60	21.28
DBR10	13 Roe Park, St. Asaph	RHBC/012	B	No	SJ 033 749	10	32	22	26	22.8	12.7	15.4	15.8	13.8	16.5	18.3	26.4	21.3	10	20.25	16.20
DBR24	Denbigh Cutters, 21 Vale Street, Denbigh	RHBC/027	A	No	SJ 053 662	11	47	45	42	39.4	43.6	37.9	40.2	42.2	36.8	44.6	57.2	34.8	New11	42.56	34.05
DBR51	Adj 1 Lenton Pool, Denbigh	RHBC/054	A	No	SJ 050 661	12	42	38	46			32.5	29.9	F	20.5	37	35	35.2	12	35.12	28.10
DBR20	25 Park Road, Ruthin.	RHBC/023	A	No	SJ 121 583	13	35	35	33	25	26.8	26.3	25.5	27.2	27.8	31.4	41.3	25.9	New 13	30.02	24.01
DBR43	Adj HSBC Bank, Vale Street, Denbigh	RHBC/046	A	No	SJ 053 662	14	45	50	47		44.3	37.7	41.5	46.1	41.6	48	61.4	42	New 14	45.87	36.70
DBR44	Opp Rowlands Pharm., Vale Street, Denbigh	RHBC/047	A	No	SJ 054 662	15	32	44	40	36.4	33.1	33.6	33.4	34.6	33.3	35.1	48.7	27	New 15	35.93	28.75
DBR45	Adj 50 Vale Street, Denbigh	RHBC/048	A	No	SJ 055 662	16	37	34	39	33.1	23.6	26.7	26.4	27.3	26.8	34.3	33.3	32.4	New 16	31.16	24.93
DBR37	Haul Fryn Depot, Ruthin	RHBC/040	A	No	SJ 128 582	17	33	37	43	36.2	37.4	33.2	30.2	35.1	36.1	38	57.7	24.5	New 17	36.78	29.43
DBR38	Adj 62 Rhos Street, Ruthin	RHBC/041	A	No	SJ 129 583	18	30	30	27	25.5	20.7	19.1	21.1	23.4	21.9	25.6	31.6	22.4	New 18	24.86	19.89
DBR39	Natwest Bank, St Peter's Square, Ruthin	RHBC/042	A	No	SJ 124 582	19	34	34	*	*	*	*	*	*	*	*	*	*	19	34.00	27.20
DBR52	Adj. Swavne Johnston Sol., Vale Street, Denbigh	RHBC/055	A	No	SJ 053 661	New 19	*	*	46	41.2		34.5	31.5	34	33.1	40.9	44.2	37.5	New 19	38.10	30.48
DBR40	Milk Bar, St Peter's Square, Ruthin	RHBC/043	A	No	SJ 124 583	20	27	23	*	*	*	*	*	*	*	*	*	*	20	25.00	20.00
DBR53	7 Vale Street, Denbigh	RHBC/056	A	No	SJ 053 661	New 20			41	33.6	37.6	33.6	33.8	37.3	42.2	42.3	59.8	35.6	New 20	39.68	31.74
DBR31	2 Rhyl Road, Denbigh	RHBC/034	A	No	SJ 058 665	21	30	26	34	27.1	17	20.8	20.3	18	18.2	26.4	31.9	23.9	21	24.47	19.57
DBR32	47 High Street, Denbigh	RHBC/035	A	No	SJ 052 661	22	29	32	31		23.9	22.5	21	22.9	23.3	25.2	35.9	20.2	22	26.08	20.87
DBR33	Adj CO-OP, High Street, Denbigh	RHBC/036	A	No	SJ 053 661	23	46	43	43	17.6	28	29.3	29.5	30.7	25.4	28.8	37.9	37.6	23	32.16	25.73
DBR34	Adj Fairybourn, Rhyl Road, Denbigh	RHBC/037	A	No	SJ 059 667	24	23	19	29	22.5	13.9	17.8	16.2	14.5	16.7	21.1	23.1	20.1	24	19.74	15.79
DBR49	79 High Street, Prestatyn	RHBC/052	A	No	SJ 066 829	25	32	31	27	24.7	18.9	21.9	21.9	17.9	21.3	21.6	28.9	16.3	New 25	23.45	18.76
DBR50	Adj., Saronie Court, High Street, Prestatyn	RHBC/053	A	No	SJ 068 826	26	32	28	27	24.1	20	20.8	22.5	19.7	22.9	19.1	26.9	13.9	New 26	23.08	18.46

- A) Sample tube not returned by client
B) Sample tube damaged. unable to analyse
C) Sample tube contaminated, unable to analyse
D) Sample lost during analysis
E) Result widely different and so ignored.