2010 Air Quality Progress Report for

OMAGH DISTRICT COUNCIL

In fulfillment of the Environment (Northern Ireland) Order 2002 - Local Air Quality Management

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Executive Summary

The Environmental Health Department of Omagh District Council has undertaken a Progress Report in accordance with Local Air Quality Management Technical Guidance LAQM.TG (09). The Progress Report provides a summary of the latest available monitoring data. The report concludes that as the air quality objectives have not been exceeded and are not likely to be exceeded, there is no requirement for a detailed assessment to be undertaken. A further Progress Report will be undertaken in 2011.

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1 Introduction

1.1 Description of Local Authority Area

The Omagh District Council area is the second largest council area in Northern Ireland covering an area of almost 113,000 hectares. The population in the Omagh District Council area is approximately 52,427 (www.nisra.gov.uk, accessed December 2010).

The town of Omagh is at the centre of the region with the rest of the Omagh district primarily rural in character, with its population living in scattered small towns and villages or in dispersed rural communities.

1.2 Purpose of Progress Report

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 Local Air Quality Management 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 Northern Ireland** are set out in the Air Quality Regulations (Northern Ireland) 2003, Statutory Rules of Northern Ireland 2003, no. 342, and are shown in Table 1.1. This table shows the objectives in units of micrograms per cubic metre $\mu g/m^3$ (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 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in Northern Ireland.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	3.25 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Local Air Quality Management

Omagh District Council has in line with the technical guidance issued by DETR carried out the review and assessment approach to air quality on a phased approach as follows:-

Stage One Review

An initial screening of industrial, transportation and other sources of pollution that could have a significant impact within the district resulting in exceedances of the air quality objectives.

The Stage One report concluded that :-

(i) No further investigation or action was required to be undertaken for the following pollutants:

- Benzene
- 1,3-Butadiene
- Lead
- Carbon Monoxide

(ii) A stage 2/3 Review and Assessment was required for the following pollutants:

- Nitrogen Dioxide
- Sulphur Dioxide
- Particulate Matter (PM_{10})

The First Stage Report for Omagh District Council was completed in September 2001

Second/Third Stage Review

A more focused examination of the three pollutants identified from Stage One was undertaken by way of a Stage Two/Three review utilising modelling exercises and reference to locally monitored air quality data.

The second/third stage report concluded that:

- **Nitrogen Dioxide (NO_2) (Second Stage)**

Assessment relied upon the application of the Design Manual for Roads and Bridges (DMRB) model and local diffusion tube monitoring data. The results show that it is unlikely that either the annual mean or hourly NO_2 objectives will be exceeded at relevant receptor locations.

- **Particulate Matter PM_{10} (Second Stage)**

Assessment for PM_{10} arising from traffic sources at the respective road sections/junctions was undertaken using the DMRB model. The modelling predicted no exceedences of the PM_{10} objective from traffic sources.

A number of fugitive emissions from industrial sources of PM_{10} were examined as part of the Second Stage Assessment. Based on recent findings in GB and the results of local monitoring at a hard rock quarry it was considered that it was not necessary to proceed to a Third Stage Assessment in respect of these sources.

- **Sulphur Dioxide and Particulate Matter SO_2/ PM_{10} (Second and Third Stage)**

The absence of reliable locally monitored data necessitated Omagh District Council to proceed directly to a Third Stage Assessment for SO_2 and PM_{10} in respect of emissions from domestic sources and traffic sources. The assessments using appropriate modelling suggested that it is unlikely that there will be an exceedance of the SO_2 or PM_{10} objectives in the modelled areas.

In conclusion the first round of Review and Assessment procedures indicated that there is no requirement to declare an Air Quality Management Area within the Omagh District Council Area.

An Updating and Screening Assessment

The latest Updating and Screening Assessment was completed in December 2009 in accordance with the methodology described in Technical Guidance LAQM TG (03) and subsequent update as issued by the Department for Environment Food and Rural Affairs.

The Updating and Screening Assessment has concluded that for each of the prescribed pollutants, air quality objectives are likely to be met in the Omagh District Council area and that it is not necessary to proceed to the Detailed Assessment Stage.

Progress Reports

Omagh District Council has various duties with respect to local air quality management (LAQM) but following Government consultation it was concluded that the process was in danger of being too "start-stop" and that gaps may occur between air quality reviews. Detailed Assessments are now required at intervals of three years whilst Progress Reports are to be produced in the intervening years. Omagh District Council provided a Progress Report in 2008 in accordance with Local Air Quality Management: Policy Guidance on Air Quality Progress Reports LAQM. PRG NI (04) issued under Art 16 of the Environment (NI) Order 2002.

The current Progress Report for 2010 is provided in accordance with the previously outlined legislation/technical guidance in order to ensure that air quality within the Omagh District is assessed on a yearly basis.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring

Omagh District Council has no automatic monitoring sites.

2.1.2 Non-Automatic Monitoring

The latest round of NO_2 diffusion tube monitoring at the three roadside locations (see Table 2.1) has been undertaken over a two year period which concluded at the end of September 2009. The diffusion tubes were sited at representative locations along the recently opened final section of the throughpass around Omagh Town (See Appendix B). There is relevant exposure at each of these locations with members of the public likely to be regularly exposed to pollutants arising from road traffic. The monitoring data

(see Table 2.2) indicates that there have been no exceedances of the annual mean limit of 40ugm^{-3} for nitrogen dioxide at any of the locations, over the two year period of monitoring, thus indicating compliance with the current air quality objective.

Table 2.1 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutant Monitored	In AQMA ?	Relevant Exposure ?	Distance to kerb of nearest road	Worst-case Location?
Crevenagh Road	roadside	245989 372784	NO_2	No	Y	5m	Y
Dublin Road	roadside	245735 372241	NO_2	No	Y	2m	Y
Doogary	roadside	246314 370718	NO_2	No	Y	3m	Y

- Details of the QA/QC for the supply and analysis of diffusion tubes is included in **Appendix A** to this report.

- The locations of the NO_2 diffusion tube monitoring sites are indicated on the location map as outlined in **Appendix B** to this report. No co-location study has been undertaken in the Omagh district.

2.2 Comparison of Monitoring Results with Air Quality Objectives

Diffusion Tube Monitoring Data

Passive diffusion tube monitoring has been undertaken at three roadside sites in Omagh namely, Crevenagh Road, Dublin Road and at Doogary. There is relevant exposure at each of these locations as members of the public are likely to be regularly exposed as close to building facades of residential properties, schools, hospitals. The full set of monitoring data for Nitrogen Dioxide for 2008 and 2009 is provided in Appendix C. A summary the data is provided in the Table below.

Table 2.2 Results of Monitoring for Nitrogen Dioxide

Site ID	Location	Within AQMA?	Data Capture 2008 %	Annual mean concentration 2008 (μg/m3) Adjusted for bias (x0.9)	Data Capture 2009 (for Jan-Sep) %	Annualised Mean concentration January-September 2009 (μg/m3) (Adjusted using 2008 bias (x0.9)
1	Crevenagh Road, Omagh	No	92	19.15	100	17.89
2	Dublin Road, Omagh	No	100	26.76	100	25.95
3	Doogary, Omagh	No	100	18.54	89	20.49

All measurements are bias adjusted. In 2009, monitoring was undertaken over a 9 month period, i.e. January- September. The mean concentration for nitrogen dioxide has therefore been annualised using the methodology indicated in TG(09) before being compared to the annual mean objective. The data indicates that there have been no exceedances of the **Annual Mean Limit of 40ugm^{-3} for Nitrogen Dioxide** at any of the monitoring locations.

3 New Local Developments

3.1 Industrial

There is one new significant local development since the 2009 Updating and Screening Assessment namely Fane Valley Foods Ltd, Bankmore Way, Omagh. The operation is a large scale animal feed compounding business located in a new purpose built factory on a recently developed industrial site to the south of Omagh town. It operates in accordance with emission controls as required under the Pollution Prevention Control Regulations (NI) 2003 as a Part A premises and has obtained a permit to operate the process from Northern Ireland Environment Agency (Premises Reference PO334/10A). With incorporation of the mitigation measures as outlined in the Environmental Impact Statement for this business and adherence to the operating conditions as prescribed in the PPC permit above this development is not expected to adversely affect air quality.

3.2 Commercial and Domestic Sources

Housing development has continued to expand within the urban area with ongoing construction at Shergrim and proposed development at Strathroy and Glencam. These developments are all of a similar type and density of existing developments and are not expected to adversely affect air quality.

3.3 Road/Traffic Sources

There are no new/newly identified road traffic sources that have not already been adequately considered.

3.4 Other Transport Sources

There are no new/newly identified non-road traffic sources that need to be considered.

3.5 New Developments with Fugitive or Uncontrolled Sources

There are no new or newly identified local developments which may have an impact on air quality within the Omagh District Council area.

4 Climate Change Strategies

Omagh District Council recognises that Climate Change is likely to be one of the key drivers of change within our community this century.

The Council has strategies that highlight the need for action on climate change, the environment and sustainability; these are:

- Draft Sustainable development Strategy and Action Plan 2011 – 2015
- Low Carbon Procurement Policy
- Environmental Management System for Omagh District Council 2011
- Waste Management Plant 2008
- Omagh District Council Energy Management Review 2009

5 Conclusions and Proposed Actions

5.1 Conclusions relating to new NO_2 monitoring data

On the basis of the considerations outlined below, it has been determined that it is not necessary to undertake predictive air dispersion modelling informed by the monitoring data due to the levels of pollutants measured:-

(i) the monitoring sites are representative of worst case locations with regard to relevant exposure
(ii) the data has been adjusted using an appropriate bias factor
(iii) the data has been collected over sufficient duration (two periods of 12 months) and annualised where appropriate.
(iv) the laboratory used for analysing the diffusion tubes is suitably accredited i.e. Gradko laboratory (which Envirotechnology use for analysis) is NAMAS accredited and complies with the requirements of the Workplace Analysis Scheme for Proficiency

The Environmental Health Department sought advice on this matter through consultation with the Local Authority Support Helpline (which can be confirmed by quoting Enquiry Number 2640).

In conclusion, the operation of the throughpass is not anticipated to significantly affect air quality.

5.2 Conclusions relating to New Local Developments

The operation of the animal food compounding business is not anticipated to significantly adversely affect air quality.

5.3 Proposed Actions

The Environmental Health Department will continue with the review and assessment process for Air Quality with Omagh District Council by undertaking a 2011 Progress Report.

6 References

1) Defra (2009) Local Air Quality Management, Technical Guidance LAQM.TG (09)

2) AEA Energy & Environment (2008) Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users, AEA/ENV/R/2504 – Issue 1a

3) Air Quality Archive (http://www.airquality.co.uk/archive/index.php)

Appendices

Appendix A: QA/QC Data

Appendix A:

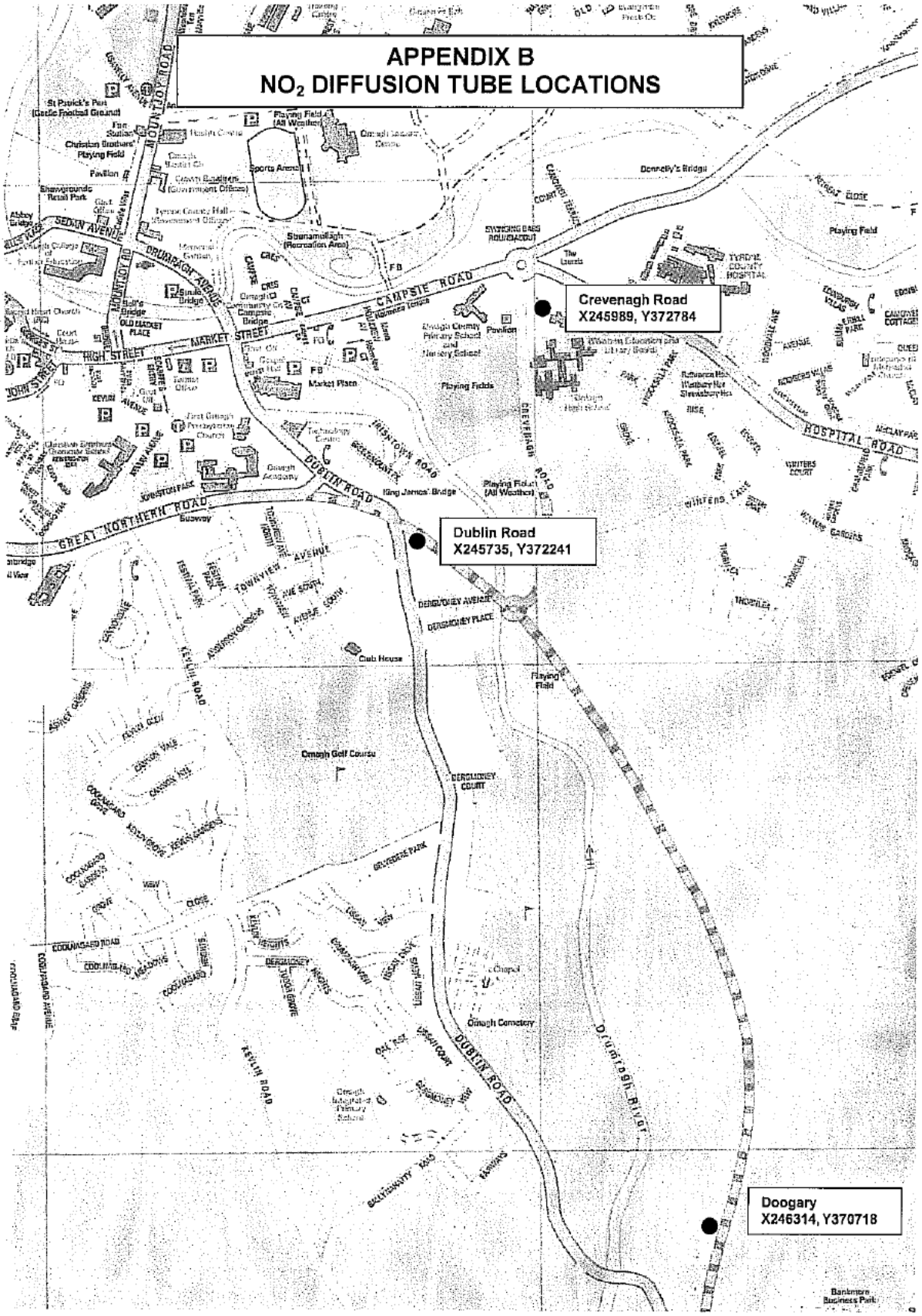
Diffusion Tube QA/QC Information:

- The NO_2 diffusion tubes are supplied by Envirotechnology plc.

- They are Gradko tubes and the preparation method is 20%TEA in water.

- The Gradko laboratory which Envirotechnology use for analysis is NAMAS accredited and complies with the requirements of the Workplace Analysis Scheme for Proficiency.

- The review and assessment website indicates they are of ‘good precision’ and that the following bias adjustment factor of 0.9 should be applied for **2008**.


APPENDIX B
NO2 DIFFUSION TUBE LOCATIONS
Crevenagh Road
X245989, Y372784
Dublin Road
X245735, Y372241
Doogary
X246314, Y370718
CAMPSIE ROAD
MARKET STREET
HIGH STREET
DUBLIN ROAD
GREAT NORTHERN ROAD
HOSPITAL ROAD
Omagh Golf Course
Omagh Cemetery
Playing Field
Playing Fields

NITROGEN DIOXIDE SURVEY RESULTS: 2008

	ug/m3 **NO1 CREVENAGH RD Omagh** **Grid Reference 245989 372784**	ug/m3 **NO2 DUBLIN ROAD Omagh Grid Reference 245735 372241**	ug/m3 **NO3 DOOGARY Omagh Grid Reference 246314 370718**
January	30.9	31.91	16.77
February	28.2	28.86	21.58
March	19.3	26.05	16.87
April	17.21	34.61	23.48
May	2.7	31.26	21.28
June	missing	30.41	12.39
July	13.67	29.81	14.46
August	9.83	24.07	8.53
September	23.15	27.74	14.34
October	18.13	26.01	17.19
November	53.25	45.74	61.05
December	17.75	20.25	19.2
Annual Mean	21.28	29.73	20.60
Adjusted by correction factor 0.9	19.15	26.76	18.54

NITROGEN DIOXIDE SURVEY RESULTS: 2009

	ug/m3 **NO1 CREVENAGH RD Omagh** **Grid Reference 245989 372784**	ug/m3 **NO2 DUBLIN ROAD Omagh Grid Reference 245735 372241**	ug/m3 **NO3 DOOGARY Omagh Grid Reference 246314 370718**
January	24.05	38.96	void
February	32.19	19.4	23.55
March	17.18	23.1	30.08
April	18.56	35.81	28.5
May	14.15	24.24	17.29
June	12.09	25.48	16.24
July	13.51	21.77	14.01
August	16.11	25.21	17.58
September	14.81	22.01	18.31
October			
November			
December			
Annual Mean	18.07	26.22	20.70
Annualised Mean	19.88	28.84	22.77
Adjusted by correction factor 0.9	17.89	25.95	20.49