

# 2014 Air Quality Progress Report for Craigavon Borough Council

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

April 2014

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### **Executive Summary**

Monitoring at 7 locations within Craigavon Borough Council's area has demonstrated that there are no sites were NO<sub>2</sub> levels exceeded the objective limit of 40µg/m<sup>3</sup>.

The Updating and Screening Assessment for 2012, 2013 and this Progress Report (2014) have shown that the air quality objective was not breached at Bridge Street (Portadown) & Flush Place (Lurgan) in the last three consecutive years (2011, 2012 and 2013) where there are currently AQMA's in situ. In the 2013 Progress Report, Craigavon Borough Council stated that it would continue monitoring for a further year at both of the AQMA's to determine if a breach of the objective limit for Nitrogen Dioxide (NO2) was likely. Since monitoring during 2013 has not resulted in a breach of the NO2 limit values for a third consecutive year, Craigavon Borough Council will now proceed to revoke the Air Quality Management Areas at Bridge Street (Portadown) and at Flush Place (Lurgan).

Craigavon Borough Council has not seen any significant changes from any pollution sources since the last round of review and assessment and no other sources of pollution have been identified. Therefore the likely impact from such sources is negligible.

A review of the air quality monitoring sites in the borough was completed in December 2013 by the Council's Air Quality Management Officer. This review of the diffusion tube monitoring network in the district determined that Craigavon Borough Council remove a total of 4 diffusion tubes from the following locations;

- Queen Street, Lurgan (x3)
- Lough Road, Lurgan

These 4 diffusion tubes were redistributed to 2 new locations within the Craigavon Borough to the following locations at the beginning of January 2014;

- Belfast Road, Magheralin (x3)
- Belfast Road, Dollingstown

The next course of action to be taken by the council is to prepare a revocation order for the AQMA's at Bridge Street, Portadown and Flush Place, Lurgan; and to submit an Updating and Screening Assessment in April 2015.

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### 1 Introduction

### 1.1 Description of Local Authority Area

**Craigavon Borough Council** is a local council located mostly within County Armagh, in Northern Ireland. Situated on the southern shores of Lough Neagh, Craigavon is a new town that was built between Lurgan and Portadown during the late 1960's. The council area includes the large towns of Lurgan and Portadown, as well as smaller ones including Waringstown and Donaghcloney.

The area is served by the M1 motorway, with major road links to the business capital of Belfast, west towards Armagh City, south to Dublin; and west to Donegal and Sligo.

The main railway line from Belfast to Dublin operates through the Borough with stops at Portadown and Lurgan. Express services between Belfast and Dublin serve Portadown only, whilst commuter services utilise stations at both Portadown and Lurgan.

The Borough has a small level of heavy industry operating from several industrial estates including those at Seagoe, Mahon and Carn. The majority of the local work force is employed in the delivery of services such as local government, pharmaceuticals, education authority, health and social services, retail, agriculture and food processing.

The greatest contribution to air quality pollution is from road traffic. Particularly in the town centres of Portadown and Lurgan where the road network is quickly reaching it's maximum capacity due to the increase in car ownership. Given the size of the rural hinterland within the Borough, public transport resources are stretched and the reliance on the motor car is greatly exacerbated. Particulate Matter (PM10) and NO<sub>2</sub> would be considered as the pollutants most at risk of breaching the objective limits in Craigavon as a result of road traffic.

### 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 microgrammes 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 1.1 - 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 µg/m³	Running annual mean	31.12.2003				
	3.25 µg/m <sup>3</sup>	Running annual mean	31.12.2010				
1,3-Butadiene	2.25 μg/m <sup>3</sup>	Running annual mean	31.12.2003				
Carbon monoxide	10.0 mg/m <sup>3</sup>	Running 8-hour mean	31.12.2003				
Lead	0.5 μg/m <sup>3</sup>	Annual mean	31.12.2004				
	0.25 μg/m <sup>3</sup>	Annual mean	31.12.2008				
Nitrogen dioxide	200 µg/m³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005				
	40 μg/m <sup>3</sup>	Annual mean	31.12.2005				
Particles (PM <sub>10</sub> ) (gravimetric)	50 $\mu$ g/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004				
	40 <i>µ</i> g/m³	Annual mean	31.12.2004				
Sulphur dioxide	350 µg/m³, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004				
	125 µg/m³, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004				
	266 $\mu$ g/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005				

### 1.4 Summary of Previous Review and Assessments

**Table 1.4**- Summary of Previous Review and Assessment Report completed by Craigavon Borough Council

Report Type	Date	Exceedences	Detailed Assessment Required	AQMA's Declared
Initial Review and Assessment	Jan 2001	None	No	None
Progress Report	April 2005	None	No	None
Updating & Screening Assessment	April 2006	None	No	None
Progress Report	April 2007	None	No	None
Progress Report	April 2008	None	No	None
Updating & Screening Assessment	April 2009	None	No	None
Progress Report	May 2010	None	Yes	TBC
Progress Report	April 2011	Yes	Yes	Yes
Updating & Screening Assessment	April 2012	No	No	No
Progress Report	April 2013	No	No	No

### 2 New Monitoring Data

### 2.1 Summary of Monitoring Undertaken

### 2.1.1 Automatic Monitoring Sites

There are no automatic monitoring sites within the Craigavon Borough Council area.

### 2.1.2 Non-Automatic Monitoring

During 2013 Craigavon Borough Council carried out monitoring of NO<sub>2</sub> by diffusion tubes at seven sites within the Borough. The NO<sub>2</sub> diffusion tubes were prepared and analysed by Environmental Scientifics Group Limited (ESG). ESG Didcot was contracted to supply and analyse the diffusion tubes from the beginning of April 2012 and April 2013. This laboratory takes part in the NO<sub>2</sub> Network QA/QC Field Intercomparison survey. ESG's diffusion tubes are prepared by coating the grids in 50% TEA in Acetone. Analysis is carried out using a colorimetric technique.

None of the sites were co-located with an automatic NO<sub>2</sub> analyser. Details are given in Table 2.2.

### **Diffusion Tube Bias Adjustment Factors**

The NO<sub>2</sub> diffusion tubes were prepared and analysed by Environmental Sciences Group (ESG) Didcot from the beginning of January 2013 for this monitoring year. This laboratory takes part in the NO<sub>2</sub> Network QA/QC Field Intercomparison survey. ESG's diffusion tubes are prepared by coating the grids in 50% TEA in Acetone. Craigavon Borough Council obtained the appropriate bias factor from the DEFRA Website. <a href="http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html">http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html</a> A bias factor of 0.80 was taken from the drop down menus available on the excel spreadsheet matrix.

#### Factor from Local Co-location Studies (if available)

Craigavon Borough Council did not use a Bias Factor from a local Co-location study. Craigavon does not have an automatic  $NO_2$  analyser in the district to carry out a co-location assessment. Also, although a co-location factor may be available from two other neighbouring councils (Armagh & Newry), it was felt that the national bias factor was drawn from a greater range of sites and could therefore be considered overall more representative of the sites monitored in the borough.

#### **Discussion of Choice of Factor to Use**

Craigavon Borough Council used the Bias Factor from the Defra Website. <a href="http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html">http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html</a>. This was calculated by using the matrix available on the site by selecting the appropriate laboratory, year of monitoring and significant methodology. Craigavon Borough Council used a bias factor for 2013 (0.80)

#### QA/QC of diffusion tube monitoring

See Appendix A for Environmental Scientifics Group (ESG) WASP data

Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst- case Location ?
Ardboe Drive Lurgan	Urban Background	-	NO <sub>2</sub>	N	Y(<1)	15m	N
Ballyhannon Rd Portadown	Urban Background	-	NO <sub>2</sub>	N	Y(4)	10m	N
Ashgrove Community Centre Portadown	Urban Background	المقرير	NO <sub>2</sub>	N	Y(10)	10m	N
Bridge Street Portadown	Roadside	3 - 11	NO <sub>2</sub>	N	Y (<5m)	2m	Υ
Queen St Lurgan	Roadside	-	NO <sub>2</sub>	N	Y (<5m)	2m	Y
Flush Place (King St) Lurgan	Roadside	T-HIER A	NO <sub>2</sub>	N	Y (<5m)	2m	Υ
Lough Rd Lurgan	Roadside	-	NO <sub>2</sub>	N	Y (<5m)	2m	Y

Figure 2.2 Map(s) of Non-Automatic Monitoring Sites (if applicable)

See Appendix B for Maps

## 2.2 Comparison of Monitoring Results with Air Quality Objectives

### 2.2.1 Nitrogen Dioxide

There are no automatic monitoring sites within the Craigavon Borough Council Area

### **Automatic Monitoring Data**

Craigavon Borough Council does not have any automatic monitoring sites in the Council district

### **Diffusion Tube Monitoring Data**

Craigavon Borough Council monitors  $NO_2$  pollution using diffusion tubes at 7 sites throughout the borough. These sites are located in Lurgan, Portadown and Craigavon. All of the tubes are positioned in accordance with the practical guidelines published by AEA Energy and Environment in a report to Defra and the Devolved Administrations.

Table 2.4a Results of Nitrogen Dioxide Diffusion Tubes

			Data	Data	Annual mean concentrations
Site ID	Location	Within AQMA?	Capture for full calendar year 2013 %	Capture for monitoring period %	2013 (μg/m³) Adjusted for bias (0.80)
1	Ardboe Drive Lurgan	N	100	100	10
2	Ballyhannon Road Portadown	N	100	100	Maril 19 Paragon de la constante de la constan
3	Ashgrove Community Centre Portadown	N	92	100	12
4	Bridge Street* Portadown	N	100	100	38
5	Queen Street Lurgan	N	100	100	30
6	Flush Place** Lurgan	N	100	100	36
7	Lough Road Lurgan	N	100	100	35

<sup>\*</sup>Known as Lurgan Road in the April 2013 Progress Report

<sup>\*\*</sup> Known as King Street in the April 2013 Progress Report.

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Table 2.4b Historical Results of Nitrogen Dioxide Diffusion Tubes

			Annual Mean Concen	Annual Mean Concentration ( $\mu g/m^3$ ) - Adjusted for Bias $^*$	justed for Bias a		
Site ID	Site Type	Within AQMA?	2009 (Bias Factor 1.03)	2010 (Bias Factor 1.02)	2011 (Bias Factor 0.84)	2012 (Bias Factor 0.79)	2013 (Bias Factor 0.80)
Ardboe Drive Lurgan	Roadside	Z	11	14	ō	10	10
Ballyhannon Rd Portadown	Roadside	Z	10	13	7	ō	6
Ashgrove Community Centre Portadown	Roadside	Z	10	15	11	12	12
Bridge Street Portadown	Background	>	42	43	34	39	38
Queen St Lurgan	Background	>	34	39	21	30	30
Flush Place (King St) Lurgan	Roadside	<b>*</b>	44	41	36	39	36
Lough Rd Lurgan	Roadside	Z	35	35	34	36	35

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Figure 2.3 Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Automatic Monitoring Sites





#### 2.2.2 PM<sub>10</sub>

Craigavon Borough Council does not carry out monitoring for PM10 pollution at this time

### 2.2.3 Sulphur Dioxide

Craigavon Borough Council does not carry out monitoring for Sulphur Dioxide at this time.

#### 2.2.4 Benzene

Craigavon Borough Council does not carry out monitoring for Benzene at this time.

### 2.2.5 Other pollutants monitored

Not Applicable

### 2.2.6 Summary of Compliance with AQS Objectives

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

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### 3 New Local Developments

Craigavon Borough 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.

### 4 Local / Regional Air Quality Strategy

There are currently no Local or Regional Air Quality Strategies applicable to Craigavon Borough Council. The Southern Group Air Quality Strategy came to an end in 2010. No further strategies are planned at this time.

### 5 Planning Applications

There was 1 planning applications submitted to The Northern Ireland Planning Service within the Craigavon Borough Council area during 2013 which was deemed to have a potential impact on local air quality. See details below.

**Planning Application Number:** 

N/2013/0353/F

Location:

Millenium Way, Lurgan - Land between Malcolm Road

and Flush Place/Gilford Road.

Proposal:

Extension to Millenium Way - Provide a 600m long single 2 lane carriageway with footways and cycleways from Malcolm Road to Gilford Rd, Lurgan. New signalised 4 arm jct at Malcolm Rd and 4 new 4 arm roundabout at

Gilford Road.

### 6 Air Quality Planning Policies

N/A

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### 7 Local Transport Plans and Strategies

### **Regional Transportation Strategy**

The Regional Transportation Strategy (RTS) for Northern Ireland 2002- 2012 identifies strategic transportation investment priorities and considers potential funding sources and affordability of planned initiatives. The RTS focuses on three geographic areas and one overlying Network. These are as follows:

- Belfast Metropolitan Area (BMA), containing the continuous area comprising Belfast City Council and the built-up areas within the Council areas of Carrickfergus, Castlereagh, Lisburn, Newtownabbey and North Down;
- Other Urban Areas (OUAs): collectively those towns described as main or local hubs in the RDS (including Craigavon) and other towns outside the BMA with a population greater than 5,000);
- Rural Area the remainder of Northern Ireland; and
- Regional Strategic Transport Network (RSTN) comprising the complete rail network and all motorway and trunk road links (including the Key Transport Corridors and Link Corridors).

The RTS is a "daughter document" of the Regional Development Strategy (RDS), which sets out the spatial development framework for Northern Ireland up to 2025. Implementation of the Strategy will be through three Transport Plans covering the Regional Strategic Transport Network (RSTN), the Belfast Metropolitan Area (BMA), and the Sub-Regional Transport Plan (SRTP). Transport studies undertaken to support the RSTN Transport Plan will take due account of current and future cross-border inter-urban transport demands and the roles of the gateway cities and towns, including Craigavon.

#### 3.4 Regional Strategic Transport Network Transport Plan

The Regional Strategic Transport Network (RSTN) Transport Plan prepared by the Department for Regional Development (DRD) covers the complete rail network, five Key Transport Corridors (KTCs), four Link Corridors, the Belfast Metropolitan Transport Corridors and the remaining trunk network across Northern Ireland. The Plan is based on the guidance set out in the Regional Development Strategy (RDS) and the Regional Transportation Strategy (RTS), as described in Sections 3.2 and 3.3 of the RSTNT Plan.

The RSTN Transport Plan consists of proposals for transport schemes and measures for the maintenance, management and development of the RSTN until 2015. The RSTN Transport Plan also includes a number of measures for rail, bus, roads, walking and cycling.

#### 3.5 Sub-Regional Transport Plan 2015

The Sub-Regional Transport Plan (SRTP) was prepared by the Department for Regional Development (DRD) and completed in 2007. The SRTP is based upon the guidance provided by the Regional Development Strategy (RDS) and the Regional Transportation Strategy (RTS). Proposed public transport measures for Craigavon (within category of Other Urban Areas (OUA)) contained within the SRTP are as follows:

- · Improved walk/cycle
- · Improved local bus services
- · Bus stop Improvement Strategy
- · Bus based Park and Ride
- · Increased parking at bus/rail station
- · Taxi rank
- · Transport Programme for People with Disabilities

### **Spatial Development Strategy for Northern Ireland**

The Spatial Development Strategy (SDS) guides the physical development of the Region to 2025. The SDS will contribute to meeting a number of key regional challenges emerging from the significant local, national and international forces, which will drive change over the next 25 years, including:

### Transport:

- Promote a change in travel culture and particularly manage the effects of a possible 100% growth in the number of vehicles by 2025;
- Contribute to the creation of a modern, sustainable, safe transportation system for the Region, meeting the travel needs of all groups in society;
- Accommodate the growing volume of freight moving to and from the regional gateways; and
- Strengthen the regional gateways to handle the increasing flow of people and goods in and out of the Region.

#### **Environment:**

- Accommodate future development growth while protecting and caring for the environment:
- Reduce the consumption of resources;
- Continue to maintain or, where needed, to improve the quality of air, water and land resources within the Region;
- Seek to maintain local landscape character and to conserve cultural assets; and
- Take particular care to sustain and, where required, to enhance the biodiversity of the Region, its natural habitats, high quality landscapes and built heritage.

### **Developing a Regional Transportation System**

Creating an upgraded and integrated transport system, built around the Regional Strategic Transport Network of the key transport corridors with their main public transport services providing the framework for future development is recognised as one of the key assets to accommodate growth. Strategic planning guidelines relating to the development of a Regional Transport System (RTS) are as follows:

- **SPG-TRAN 1:** To develop a Regional Strategic Transport Network (RSTN), based on Key Transport Corridors (KTCs), to enhance accessibility to regional facilities and services. Two major roads within the Borough are identified in the RDS as part of the Key Transport Corridors in Northern Ireland: -
- A4 Dungannon Fivemiletown Road: The South Western Corridor; and
- A5 Aughnacloy Omagh Road: The Western Corridor.
- In addition, the A29 Cookstown to Moy Road is identified as part of one of three additional Link Corridors in the RTS.
- **SPG-TRAN 2:** To extend travel choice for all sections of the community by enhancing public transport. Including the strengthening of the regional bus network (including the promotion of public transport routes and Park and Ride schemes) and the regional rail system;
- **SPG-TRAN 3:** To integrate land use and transportation to provide a much better range of travel choices for all, and reduce the demand for travel; and
- SPG-TRAN 4: To change the regional travel culture and contribute to healthier lifestyles, such as giving greater priority to encouraging more walking and cycling.

### 8 Climate Change Strategies

N/A

### 9 Implementation of Action Plans

In the 2013 Progress Report, Craigavon Borough Council stated that it would continue monitoring for a further year at both of the AQMA's to determine if a breach of the objective limit for Nitrogen Dioxide (NO2) was likely. Since monitoring during 2013 has not resulted in a breach of the NO2 limit values for a third consecutive year, Craigavon Borough Council will now proceed to revoke the Air Quality Management Areas at Bridge Street (Portadown) and at Flush Place (Lurgan).

As a result, further work on the Action Plans that were expected to be completed for these AQMA's has now ceased pending the issuance of revocation notices for Bridge Street, Portadown & Flush Place, Lurgan.

### 10 Conclusions and Proposed Actions

Monitoring at 7 locations within Craigavon Borough Council's area has demonstrated that there are no sites were NO<sub>2</sub> levels exceeded the objective limit of 40µg/m<sup>3</sup>.

The Updating and Screening Assessment for 2012, 2013 and this Progress Report (2014) have shown that the air quality objective was not breached at Bridge Street (Portadown) & Flush Place (Lurgan) in the last three consecutive years (2011, 2012 and 2013) where there are currently AQMA's in situ. In the 2013 Progress Report, Craigavon Borough Council stated that it would continue NO2 monitoring for a further year at both of the AQMA's to determine if a breach of the objective limit for Nitrogen Dioxide (NO2) was likely. Since monitoring during 2013 has not resulted in a breach of the NO2 limit value for a third consecutive year, Craigavon Borough Council will now proceed to revoke the Air Quality Management Areas at Bridge Street (Portadown) and at Flush Place (Lurgan).

Craigavon Borough Council has not seen any significant changes from any pollution sources since the last round of review and assessment and no other sources of pollution have been identified. Therefore the likely impact from such sources is negligible.

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### 11 References

Local Air Quality Management Technical Guidance - LAQM.TG(09)

### **Appendices**

Appendix A: QA/QC Data

Appendix B: Diffusion Tube Monitoring Maps

Appendix C: 2013 NO<sub>2</sub> Diffusion Tube Monitoring Data

Appendix C: Craigavon AQMA Maps

### Appendix A: QA:QC Data

### **Diffusion Tube Bias Adjustment Factors**

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#### Discussion of Choice of Factor to Use

Craigavon Borough Council used the Bias Factor from the Defra Website. <a href="http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html">http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html</a>. This was calculated by using the matrix available on the site by selecting the appropriate laboratory, year of monitoring and significant methodology. Craigavon Borough Council used a bias factor for 2013 (0.80)

### **PM Monitoring Adjustment**

N/A

Short-term to Long-term Data adjustment

N/A

QA/QC of automatic monitoring

N/A

QA/QC of diffusion tube monitoring

See table below

Table 1: Laboratory summary performance for WASP NO<sub>2</sub> PT rounds 115 - 122

The following table lists those UK laboratories undertaking LAQM activities that have participated in recent HSL WASP NO<sub>2</sub> PT rounds and the percentage (%) of results submitted which were subsequently determined to be satisfactory based upon a z-score of  $\leq \pm 2$  as defined above.

percentage (%) of results submitted which were	THEE WHICH W		my determined	to be salisted	LOW Dased up	subsequently determined to be satisfactory based upon a z-score of $\geq \pm z$ as defined above.	JI > I Z do ueill	Hed above.
WASP Round	WASP R115	WASP R116	WASP R117	WASP R118	WASP R119	WASP R120	WASP R121	WASP R122
Round conducted in the period	October - December 2011	January – March 2012	April – June 2012	July – September 2012	October – December 2012	January – March 2013	April – June 2013	July – September 2013
Aberdeen Scientific Services	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Bristol City Council [4]	100 %	•	•	•	_	•	•	
Cardiff Scientific Services	75 %	% 001	% 001	100 %	100 %	100 %	100 %	100 %
Edinburgh Scientific Services	% O	100 %	<b>400 %</b>	100 %	100 %	100 %	100 %	75 %
Environmental Services Group, Didoot (formerly Bureau Veritas Laboratories, Glasgow and Harwell Scientifics) [1] [2]	% 001	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Exova (formerly Clyde Analytical)	75%	% O	% 0	100 %	25 %	75 %	NR [5]	NR [5]
Glasgow Scientific Services	100 %	100 %	% 05	100 %	400 %	50 %	25 %	100 %
Gradko International [2]	37.5 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Kent Scientific Services	% SZ	75%	100 %	75 %	#00#	50%	75 %	100 %
Kirklees MBC	50 %	100 %	100 %	75 %	100 %	100 %	100 %	100 %
Lambeth Scientific Services	25 %	% G/	100 %	0 %	100 %	100 %	%0	50 %
Milton Keynes Council	100 %	100 %	100 %	75 %	100 %	55%	100 %	75 %
Northampton Borough Council	100 %	400 %	100 %	100 %	100 %	0 %	100 %	100 %
Somerset Scientific Services [3]	100 %	4004	100 %	100 %	100 %	100 %	100 %	75%
South Yorkshire Air Quality Samplers	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Staffordshire County Council	100 %	% OO1	% OO1	75 %	100 %	50 %	100 %	100 %
Tayside Scientific Services (formerly Dundee CC)	100 %	% OO1	100 %	100 %	100 %	75%	100 %	100 %
West Yorkshire Analytical Services	100 %	% GZ	75%	20 %	% DOI	100 %	100 %	50 %

[1] Bureau Veritas laboratory and Harwell Scientific now part of ESG Group.
[2] Participant subscribes to two sets of test samples (2 x 4 test samples) in each WASP PT round.
[3] New participant from R115.
[4] No longer involved in NO<sub>2</sub> diffusion tube measurements from R116.
[5] Not reported before round deadline

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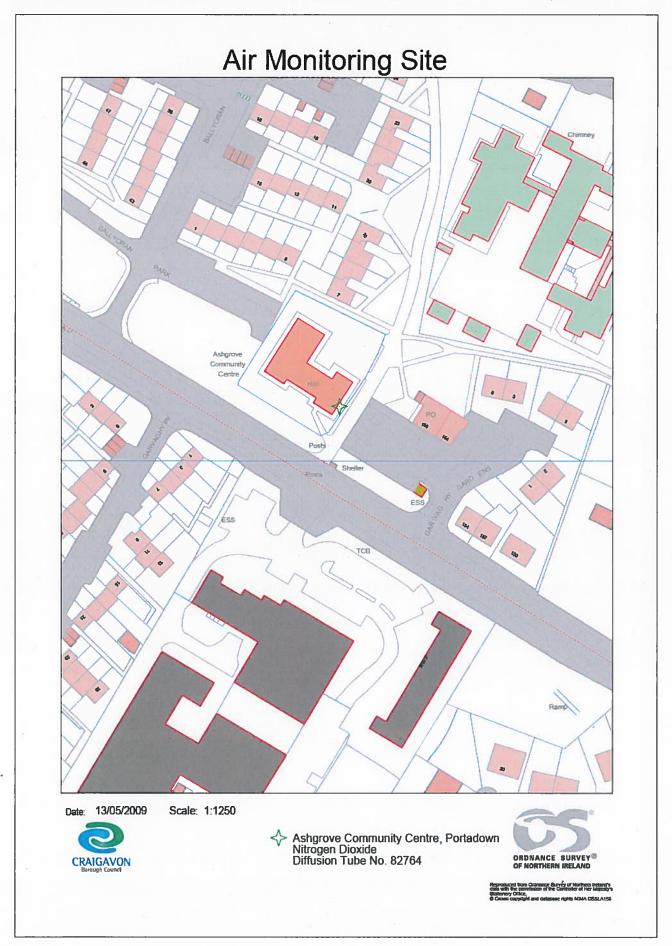
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# APPENDIX B Diffusion Tube Monitoring Maps

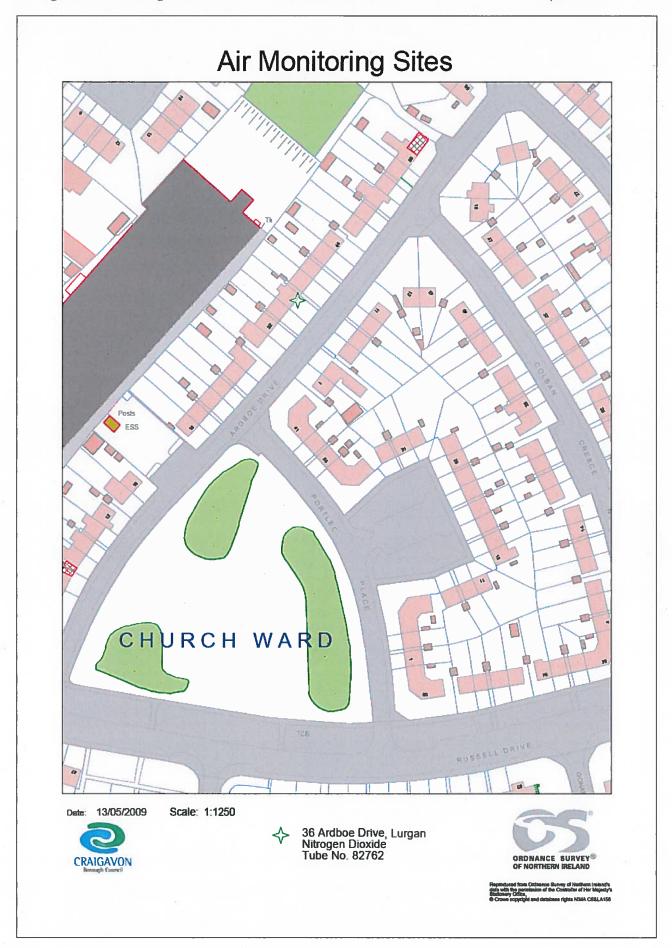
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Progress Report 1

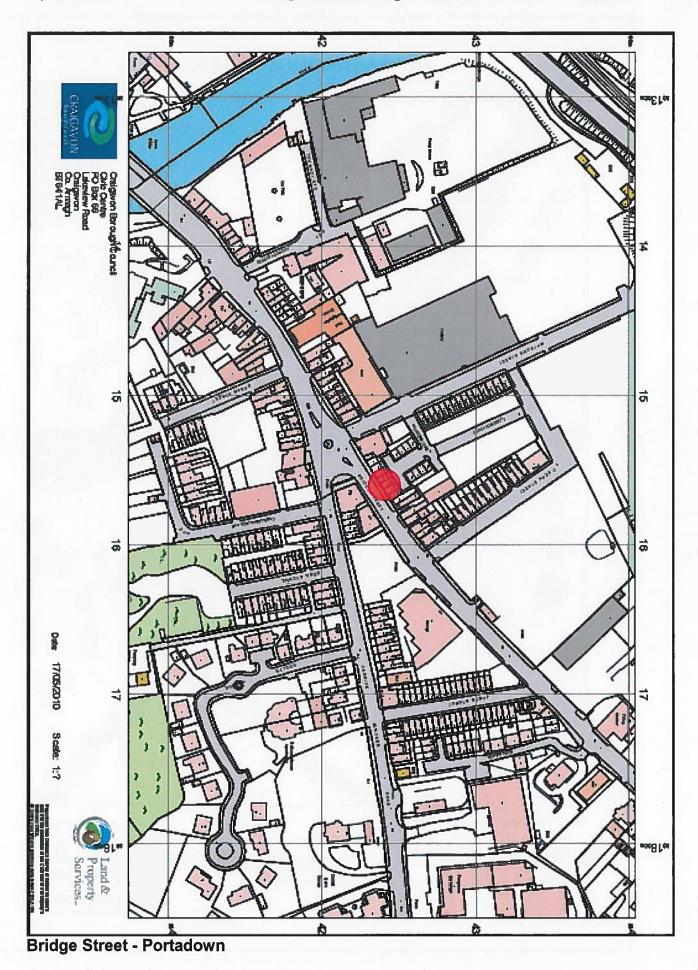
Air Monitoring Site



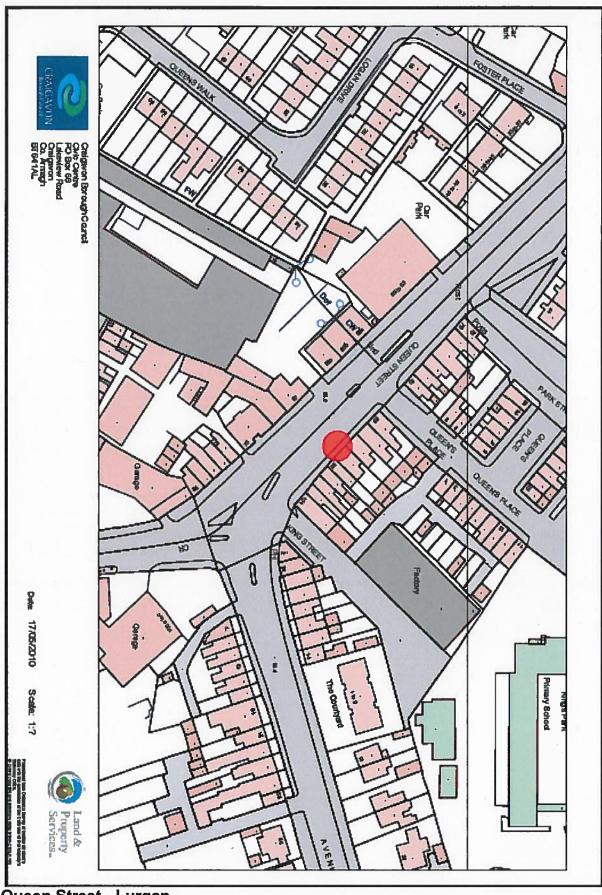
Progress Report 1

### Air Monitoring Sites





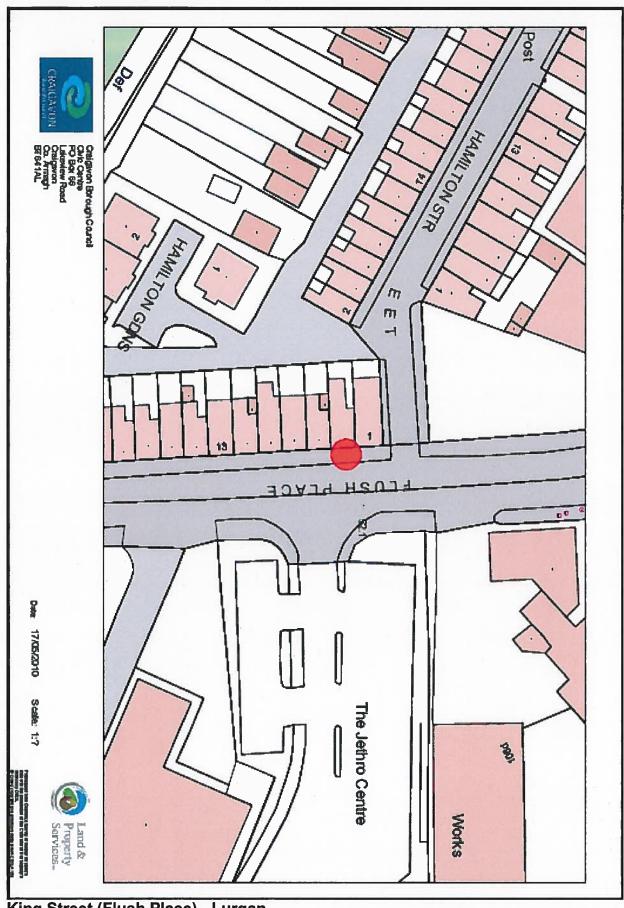
2



Queen Street - Lurgan



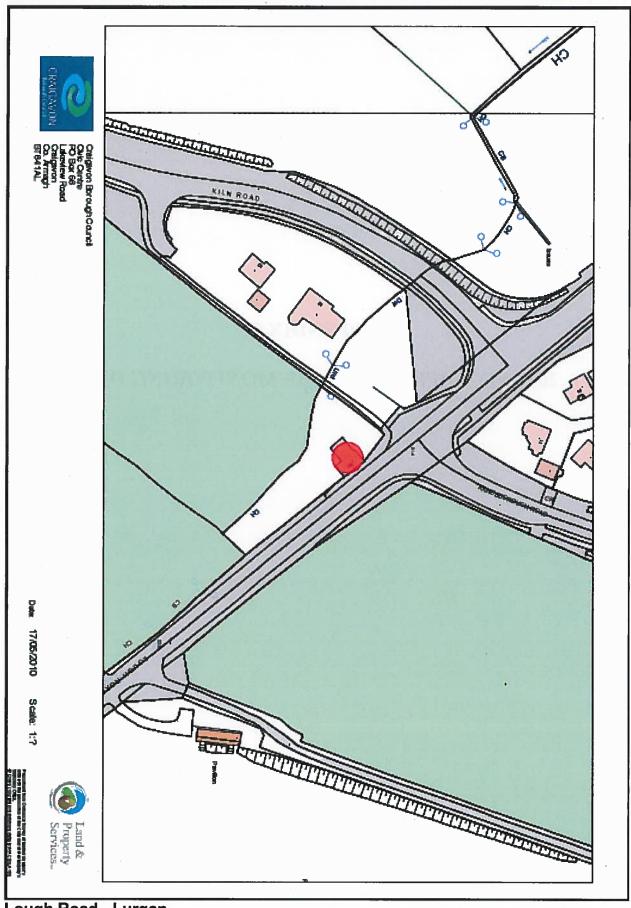
Dates Savad - Lucion



King Street (Flush Place) - Lurgan



Table St. Committee



Lough Road - Lurgan

## APPENDIX C 2013 NO2 DIFFUSION TUBE MONITORING DATA

Craigavon Borough Council - Northern Ireland

April 2014

					i	i	
	Ashgrove CC	Bridge Street (P'down)	Ballyhannon	Ardboe Dr	Queen St	Flush Place	Lough Rd
JANUARY	27	61	20	22	20	55	58
FEBRUARY	15	46	16	18	44	46	39
MARCH	16	45	13	15	4	33	35
APRIL	14	52	10	11	39	47	45
MAY	6	42	œ	80	29	38	40
JUNE	-	46	00	<b>∞</b>	37	38	39
JULY	10	39	7	9	29	37	36
AUGUST	6	44	2	7	26	42	41
SEPTEMBER	13	45	6	11	37	41	40
OCTOBER	16	53	-	13	41	51	49
NOVEMBER	29	89	15	20	45	99	26
DECEMBER	14	36	O	11	29	45	48
AVERAGE	15	48	11	13	38	45	4
Adjusted Ave	12	38	o	10	30	36	35

Appendix D : Craigavon AQMA Maps

