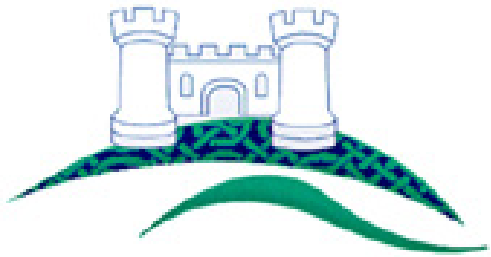

DUNGANNON
& SOUTH TYRONE

Borough Council

2012 Air Quality Updating and Screening Assessment for *Dungannon and South Tyrone Borough Council*

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

MAY 2012

Local Authority Officer	**Christopher Coyle**
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Report Reference number	**DUNGANNONUSA2012**
Date	**MAY 2012**

Executive Summary

Diffusion Tube monitoring during 2011 at 12 locations within Dungannon and South Tyrone Borough Council's area has demonstrated that there are 4 sites with NO_2 levels exceeding the objective limit of 40ug/m^3 at Church Street (Location C), Dungannon; Newell Road, Dungannon; Charlemont Road, Moy and Stewartstown Road, Coalisland. However these sites have previously been declared as AQMA's following Detailed Assessments in 2008 & 2011. Therefore no AQMA's will be declared at this time for any of the sites monitored by Dungannon and South Tyrone Borough Council outside of the existing AQMA's. No detailed assessments are required for NO_2 at this time.

This Updating and Screening Assessment has not identified the need to proceed to a detailed assessment. No new additional monitoring is required and the next course of action to be completed by Dungannon and South Tyrone Borough Council is to submit a Progress Report in April 2013 and an AQMA Action Plans for Newell Road, Dungannon; Charlemont Road, Moy and Stewartstown Road, Coalisland.

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1 Introduction

1.1 Description of Local Authority Area

Dungannon and South Tyrone Borough is located in the geographical heartland of Northern Ireland, a beautiful rural, historic area served by the main motorway network in Northern Ireland, with major road links to the business capital of Belfast, South towards Armagh City and Dublin; and west to Donegal and Sligo. The borough does not have a high level of heavy industry. The majority of the local work force is employed in the delivery of services such as local government, education authority, health and social services, minor retail, agriculture and food processing. Although there are a number of quarries provided graded stone & gravel as well as road-stone coating. The greatest contribution to air quality pollution is from road traffic. Particularly in the town centre 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 surrounding the town of Dungannon, public transport resources are stretched and the reliance on the motor car is greatly exacerbated. Dungannon is regarded as a "route hub" to the border from Mid-Ulster travelling to Belfast, North-West Northern Ireland the Republic Of Ireland; and is main through-route between mid-Ulster and the south east of Northern Ireland and hence probably has a traffic flow higher than that which could be created by local traffic alone. Particulate Matter (PM10) and NO_2 would be considered as the pollutants most at risk of breaching the objective limits in Dungannon as a result of road traffic. Dungannon already has declared an AQMA in January 2008 for NO_2 on Church Street. Following the submission of a Detailed Assessment to the Department of the Environment (Northern Ireland) in July 2011, the Council is in the process of declaring three new AQMA's at Charlemont Road, Moy; Newell Road, Dungannon; and Stewartstown Road, Coalisland.

Domestic fuel usage throughout the Borough has historically been based on solid fuel but, as with the province generally, the use of coal is declining.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in the Environment (Northern Ireland) Order 2002, 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.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

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 1.3. This table shows the objectives in units of micrommes 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 1.3 Air Quality Objectives included in Regulations for the purpose of LAQM in Northern Ireland

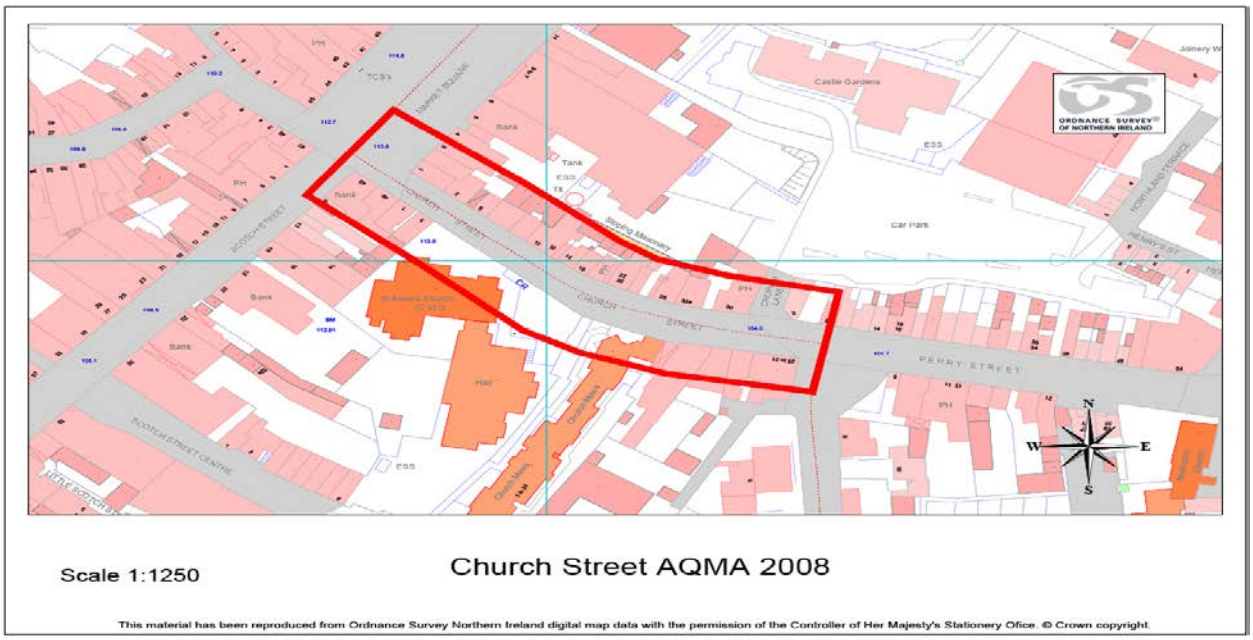
Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	3.25 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
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

Table 1.4- Summary of Previous Review and Assessment Report completed by Dungannon and South Tyrone Borough Council

Report Type	Date	Exceedences	Detailed Assessment Required	AQMA's Declared
Initial Review and Assessment	Jan 2001	None	Yes	None
Reappraisal of Traffic Pollution Modelling	Jan 2004	None	No	None
Report of the Second and Third Stage R&A of Local Air Quality	Aug 2004	None	No	None
Progress Report	June 2005	None	Yes	None
Review and Assessment: Supplementary Report on NO2 concentrations in Church Street Dungannon	June 2005	None	No	None
Updating and Screening Assessment	June 2006	Yes	Yes	None
Further Assessment of NO2 levels in Church Street	September 2007	Yes	No	Yes
Progress Report	June 2008	Yes	No	Already declared
Updating and Screening Assessment	April 2009	Yes	No	Already declared
AQMA Action Plan and Progress Report	July 2010	Yes	Yes	-
Progress Report	May 2011	Yes	Yes	Yes (3)

Figure 1.1 Map of AQMA Boundaries (if applicable)



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

There are no automatic monitoring sites within the Dungannon And South Tyrone Borough Council area

2.1.2 Non-Automatic Monitoring Sites

Dungannon and South Tyrone Borough Council carries out monitoring of NO_2 by diffusion tubes at 12 sites within the borough during 2011. The NO_2 diffusion tubes were prepared and analysed by Harwell Scientifics (ESG). Harwell Scieintifics (ESG) was contracted to supply and analyse the diffusion tubes from the beginning of April 2011. This laboratory takes part in the NO_2 Network QA/QC Field Intercomparison survey. Harwell Scieintifics 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_2 analyser. Details are given in Table 2.1.2a.

Diffusion Tube Bias Adjustment Factors

The NO_2 diffusion tubes were prepared and analysed by Harwell Scientifics (ESG) from the beginning of April 2011. This laboratory takes part in the NO_2 Network QA/QC Field Intercomparison survey. Harwell Scientifics (ESG) diffusion tubes are prepared by coating the grids in 50% TEA in Acetone. Dungannon and South Tyrone Borough Council obtained the appropriate bias factor from the Defra Website. A factor of 0.84 was taken from the drop down menus available on the excel spreadsheet matrix.

Factor from Local Co-location Studies (if available)

Dungannon and South Tyrone Borough Council did not use a Bias Factor from a local Co-location study. Dungannon and South Tyrone Borough Council does not have an automatic NO_2 analyser in the borough to carry out a co-location assessment.

Discussion of Choice of Factor to Use

Dungannon and South Tyrone Borough Council used the Bias Factor from the Defra Website. This was calculated by using the matrix available on the site by selecting the appropriate laboratory, year of monitoring and significant methodology. Dungannon and South Tyrone Borough Council used a bias factor for 2011 (0.84)

QA/QC of diffusion tube monitoring

See Appendix A for Harwell Scientifics (ESG) WASP data

Table 2.1.2a 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 ?
Market Square	Roadside	-	NO_2	N	Y	<2m	N
Howard Primary School	Urban Background	-	NO_2	N	Y	<2m	Y
Ardgannon	Urban Background	-	NO_2	N	Y(<10)	1m	Y
11 Bushvale	Urban Background	-	NO_2	N	Y(6)	1m	Y
Church Street (x12 Tubes)	Roadside	-	NO_2	Y	Y(<1m)	1m	Y
Newell Road	Roadside	-	NO_2	N	Y(<1m)	1m	Y
Charlemont Street, Moy	Roadside	-	NO_2	N	Y(<1m)	1m	Y
Dungannon Road, Coalisland	Roadside	-	NO_2	N	Y(<1m)	1m	Y
Stewartstown Road, Coalisland	Roadside	-	NO_2	N	Y	1m	Y

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

See Appendix B

2.2 Comparison of Monitoring Results with AQ Objectives

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes 2011

Site ID	Location	Within AQMA?	Data Capture for full calendar year 2011 %	Data Capture for monitoring period %	Annual mean concentrations 2011 (μg/m^3) Adjusted for bias
1	Market Square Dungannon	N	100	100	22
2	Howard Primary School	N	92	100	20
3	Ardgannon Dungannon	N	75	100	6[a]
4	Bushvale Dungannon	N	100	100	10
5	[3]Church Street 1 Dungannon	Y	100	100	39
6	[3]Church Street A Dungannon	Y	92	100	25
7	[3]Church Street B Dungannon	Y	100	100	27
8	[3]Church Street C Dungannon	Y	100	100	**44**
9	[3]Newell Road Dungannon	Y[1]	100	100	**46**
10	[3]Charlemont Road Moy	Y[1]	100	100	**55**
11	Dungannon Road Coalisland	N	100	100	37
12	[3]Stewartstown Road Coalisland	Y[1]	100	100	40

Note 1: [3] denotes sites with diffusion tubes placed in triplicate format.
Note 2: [1] denotes AQMA awaiting council approval
Note 3: [a] denotes result adjusted to estimate annual mean using 4 local long term diffusion tube sites The adjustment R_a = 0.822 for the period monitored.

Table 2.2b: Estimation of annual mean for Site 3 - Ardgannon

Diffusion Tube Site	Annual Mean (Am)	Period Mean (Pm)	Ratio
Bushvale, Dungannon	10	13	0.769
Ardboe Drive, Lurgan	9	10.7	0.841
Desart Lane, Armagh	13	15.6	0.833
Ballyhannon Rd, Portadown	12	14.2	0.845
			Ra = 0.822
Ardgannon adjusted mean	**6**		

2.2.1 Nitrogen Dioxide

Table 2.2.1 Results of Nitrogen Dioxide Diffusion Tubes in previous years

Site ID	Location	Within AQMA?	Annual mean concentrations ($\mu g/m^3$) Adjusted for bias		
			2008 Bias Factor = 0.92	2009 Bias Factor = 0.90	2010 Bias Factor = 0.92
Site 1	Market Square Dungannon	N	24	25	26
Site 2	Howard Primary School	N	22	22	28
Site 3	Ardgannon Dungannon	N	14	12	13
Site 4	Bushvale Dungannon	N	12	9	10
Site 5	Church Street 1 Dungannon	N	**40**	**44**	**43**
Site 6	Church Street A Dungannon	Y	-	31	36
Site 7	Church Street B Dungannon	Y	-	28	29
Site 8	Church Street C Dungannon	Y	-	**44**	**47**
Site 9	Newell Road Dungannon	N	-	**52**	**56**
Site 10	Charlemont Road Moy	Y	-	**57**	**60**
Site 11	Dungannon Road Coalisland	N	-	37	**40**
Site 12	Stewartstown Road Coalisland	Y	-	**41**	**48**

Automatic Monitoring Data

Dungannon and South Tyrone Borough Council does not have any automatic monitoring sites.

2.2.2 PM_{10}

Dungannon and South Tyrone Borough Council does not monitor for PM10 within the Borough

2.2.3 Sulphur Dioxide

Dungannon and South Tyrone Borough Council does not monitor for Sulphur Dioxide within the Borough

2.2.4 Benzene

Dungannon and South Tyrone Borough Council does not monitor for Benzene within the Borough.

2.2.5 Other pollutants monitored

Dungannon and South Tyrone Borough Council does not monitor for any other pollutant within the Borough

2.2.6 Summary of Compliance with AQS Objectives

Dungannon and South Tyrone Borough Council has examined the results from monitoring in the borough. Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.
.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Dungannon and South Tyrone Borough Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Dungannon and South Tyrone Borough Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

Dungannon and South Tyrone Borough Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Dungannon and South Tyrone Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Dungannon and South Tyrone Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Dungannon and South Tyrone Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Dungannon and South Tyrone Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Dungannon and South Tyrone Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Dungannon and South Tyrone Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Dungannon and South Tyrone Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Dungannon and South Tyrone Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Dungannon and South Tyrone Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Dungannon and South Tyrone Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Dungannon and South Tyrone Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Dungannon and South Tyrone Borough Council confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Dungannon and South Tyrone Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Dungannon and South Tyrone Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Dungannon and South Tyrone Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

Dungannon and South Tyrone Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Dungannon and South Tyrone Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

Diffusion Tube monitoring during 2011 at 12 locations within Dungannon and South Tyrone Borough Council's area has demonstrated that there are 4 sites with NO_2 levels exceeding the objective limit of 40ug/m^3 at Church Street (Location C), Dungannon; Newell Road, Dungannon; Charlemont Road, Moy and Stewartstown Road, Coalisland. However these sites have previously been declared as AQMA's following Detailed Assessments in 2008 & 2011. Therefore no AQMA's will be declared at this time for any of the sites monitored by Dungannon and South Tyrone Borough Council outside of the existing AQMA's. No detailed assessments are required for NO_2 at this time.

8.2 Conclusions from Assessment of Sources

This Updating and Screening Assessment has determined that there are no impacts on local air quality from the assessment of sources in sections 3,4,5,6 & 7 of this Updating and Screening Assessment.

8.3 Proposed Actions

This Updating and Screening Assessment has not identified the need to proceed to a detailed assessment. No new additional monitoring is required and the next course of action to be completed by Dungannon and South Tyrone Borough Council is to submit a Progress Report in April 2013 and an AQMA Action Plans for Newell Road, Dungannon; Charlemont Road, Moy and Stewartstown Road, Coalisland.

9 References

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

Appendices

Appendix A: QA/QC Data & WASP Data

Appendix B: Diffusion Tube Monitoring Maps 2011

Appendix C: 2011 Diffusion Tube Results and Historical Graph of Emissions

Appendix A: QA:QC Data

Factor from Local Co-location Studies (if available)

N/A

Diffusion Tube Bias Adjustment Factors

The NO_2 diffusion tubes were prepared and analysed by Harwell Scientifics from the beginning of April 2011. This laboratory takes part in the NO_2 Network QA/QC Field Intercomparison survey. Harwell Scientifics diffusion tubes are prepared by coating the grids in 50% TEA in Acetone. Dungannon and South Tyrone Borough Council obtained the appropriate bias factor from Defra's LAQM Website. A factor of 0.84 was taken from the drop down menus available on the excel spreadsheet matrix.

Discussion of Choice of Factor to Use

Dungannon and South Tyrone Borough Council used the Bias Factor from the Defra LAQM Website. This was calculated by using the matrix available on the site by selecting the appropriate laboratory, year of monitoring and significant methodology. Dungannon and South Tyrone Borough Council used a bias factor for 2011 (0.84)

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

The Summary of Precision Results Nitrogen Dioxide Collocation Studies as displayed at Defra's website http://laqm.defra.gov.uk/documents/Tube_Precision_2011 (version 03/12) shows that Harwell Scientifics demonstrated good precision in 16 out of 16 collocation studies completed in 2011.

WASP Data

The 2011 WASP data for Harwell Scientifics (ESG) is contained in the table below.

Table 1: Laboratory summary performance for WASP NO2 PT rounds 108 - 115

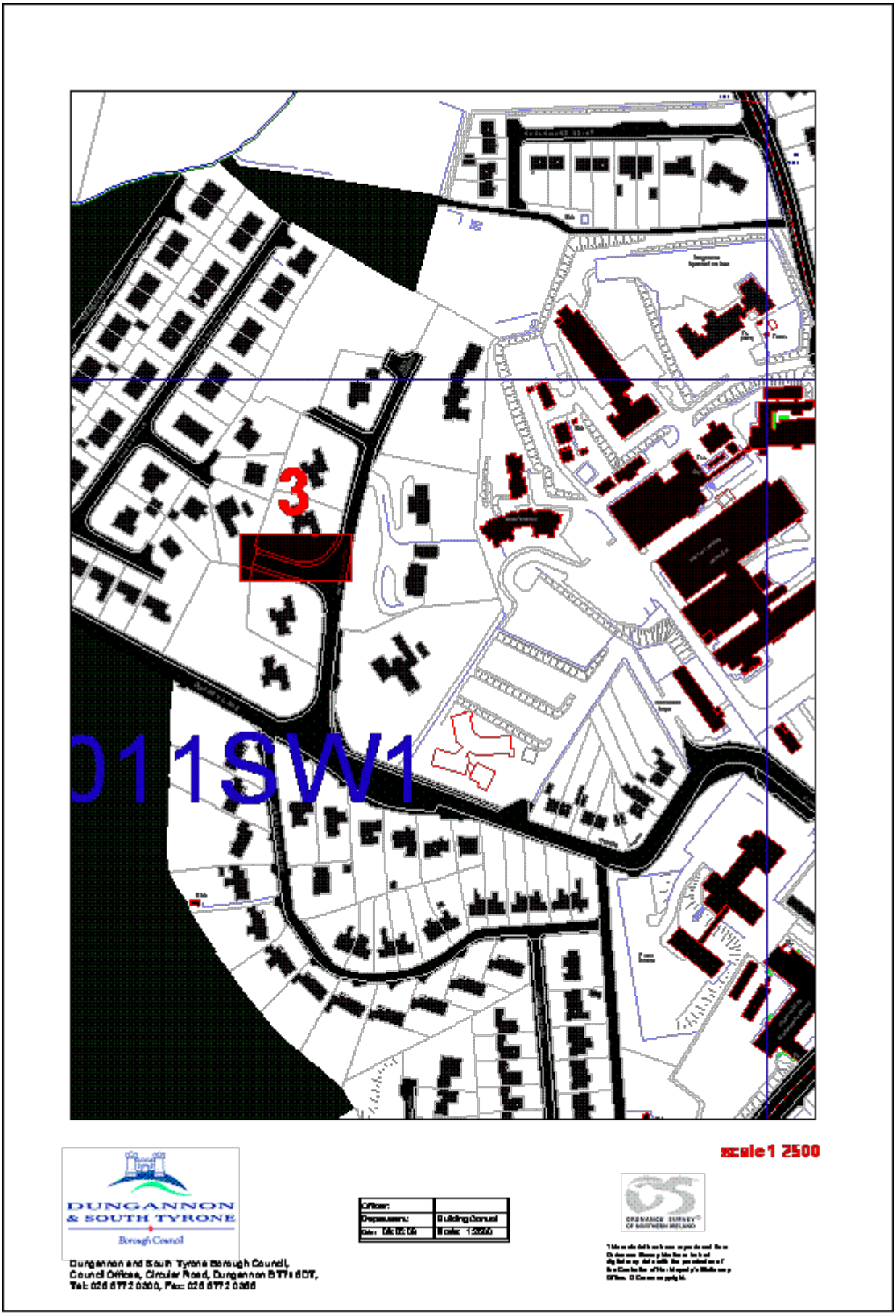
The following table lists those UK laboratories undertaking LAQM activities that have participated in recent HSL WASP NO2 PT rounds and the percentage (%) of results submitted which were subsequently determined to be satisfactory based upon a z-score of < ± 2 as defined above.

WASP Round	WASP R108	WASP R109	WASP R110	WASP R111	WASP R112	WASP R113	WASP R114	WASP R115
Round conducted in the period	Jan – March 2010	April – June 2010	June – August 2010	Oct – Dec 2010	Jan -March 2011	April - June 2011	July - Sept 2011	October - December 2011
Aberdeen Public Analysts	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Bristol City Council	75 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Cardiff Scientific Services	100 %	50 %	100 %	75 %	100 %	100 %	100 %	75 %
Edinburgh City Council	100 %	100 %	75 %	100 %	100 %	100 %	100 %	0 %
Environmental Services Group, Didcot (formerly Bureau Veritas Laboratories, Glasgow and Harwell Scientifics) [1] [2]	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**
Exova (formerly Clyde Analytical)	100 %	50 %	50 %	100 %	100 %	100 %	0 %	75 %
Glasgow Scientific Services	50 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Gradko International [2]	100 %	87.5 %	100 %	100 %	100 %	100 %	100 %	37.5 %
Kent Scientific Services	100 %	100 %	100 %	100 %	50 %	100 %	100 %	75 %
Kirklees MBC	100 %	100 %	100 %	0 %	100 %	0 %	0 %	50 %
Lambeth Scientific Services	50 %	100 %	100 %	100 %	50 %	25 %	100 %	25 %
Lancashire County Analysts [3]	100 %	75 %	50 %	100 %	75 %	-	-	-
Milton Keynes Council	100 %	25 %	50 %	100 %	100 %	75 %	100 %	100 %
Northampton Borough Council	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Somerset Council [4]	-	-	-	-	-	-	-	100 %
South Yorkshire Council Laboratory [5]	25 %	-	-	-	-	-	-	-
South Yorkshire Air Quality Samplers [6]	-	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Staffordshire County Council	100 %	100 %	50 %	100 %	100 %	100 %	100 %	100 %
Tayside (formerly Dundee CC)	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Walsall MBC [7]	-	100 %	100 %	100 %	-	-	-	-
West Yorkshire Analytical Services	100 %	100 %	100 %	100 %	75 %	75 %	100 %	100 %

[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] No longer involved in NO2 diffusion tube measurements from R113.
[4] New participant from R115.
[5] No longer involved in NO2 diffusion tube measurements from R109.
[6] New participant from R109.
[7] Results for WASP R107, R108 and R112 not submitted. No longer involved in NO2 diffusion tube measurements from R113.

Appendix B: Diffusion Tube Monitoring Maps 2011

Market Square (1) and Church St (5, 6&7 Triplicate)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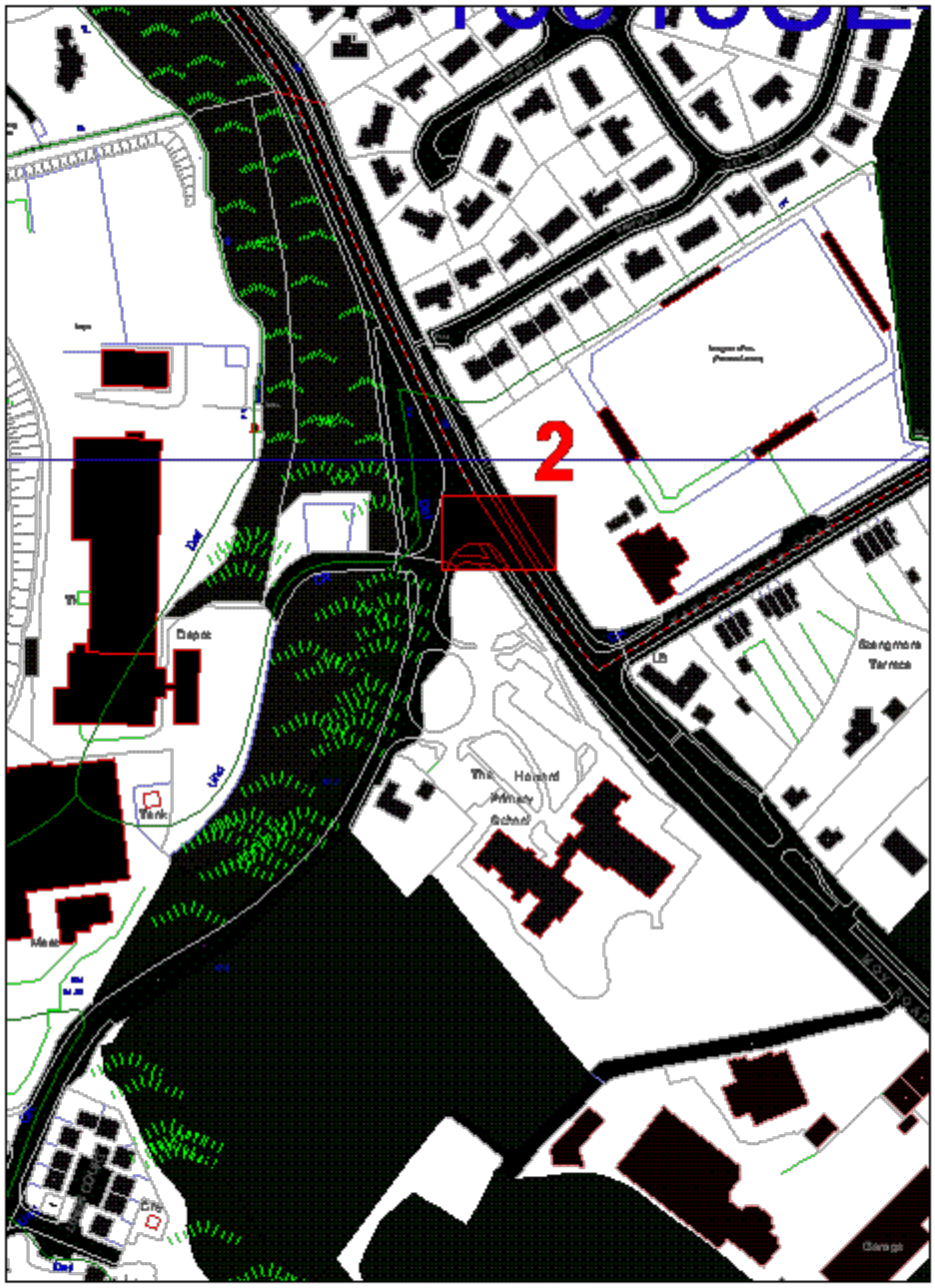
scale1 2500
DUNGANNON
& SOUTH TYRONE
Borough Council
Dungannon and South Tyrone Borough Council,
Council Offices, Circular Road, Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0366
Officer:
Department:
Building Consul
Date: 08/05/06
Scale: 1:2500

Ardgannon (3)

11 Bushvale (4)


2
Depot
Tank
Tank
Gangmans Terrace
The Harvard Primary School
SCALE 1 2500
DUNGANNON & SOUTH TYRONE
Borough Council
Dungannon and South Tyrone Borough Council,
Council Offices, Circular Road, Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0366

NO2 MONITORING LOCATION MAP

Dungannon Road, Coalisland (10)

DUNGANNON & SOUTH TYRONE Borough Council

Land & Property Services.

NO2 Monitoring Point (Passive Diffusion Tube)

Dungannon and South Tyrone Borough Council,
Council Offices, Circular Road,
Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0368

NO2 MONITORING LOCATION MAP

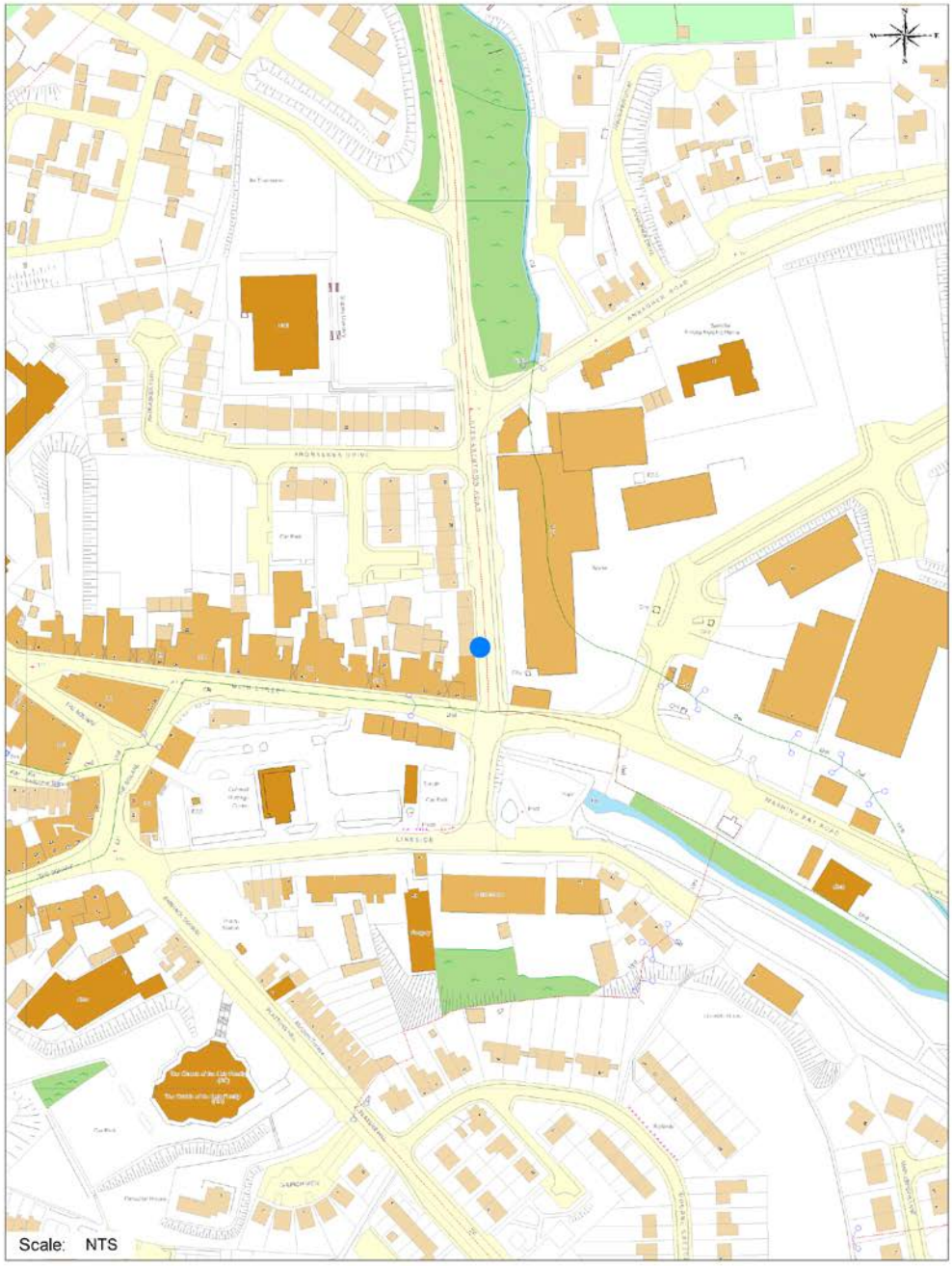
Newell Road, Dungannon (8)

DUNGANNON & SOUTH TYRONE Borough Council

Land & Property Services.

NO2 Monitoring Point (Passive Diffusion Tube)

Dungannon and South Tyrone Borough Council,
Council Offices, Circular Road,
Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0368



NO2 MONITORING LOCATION MAP

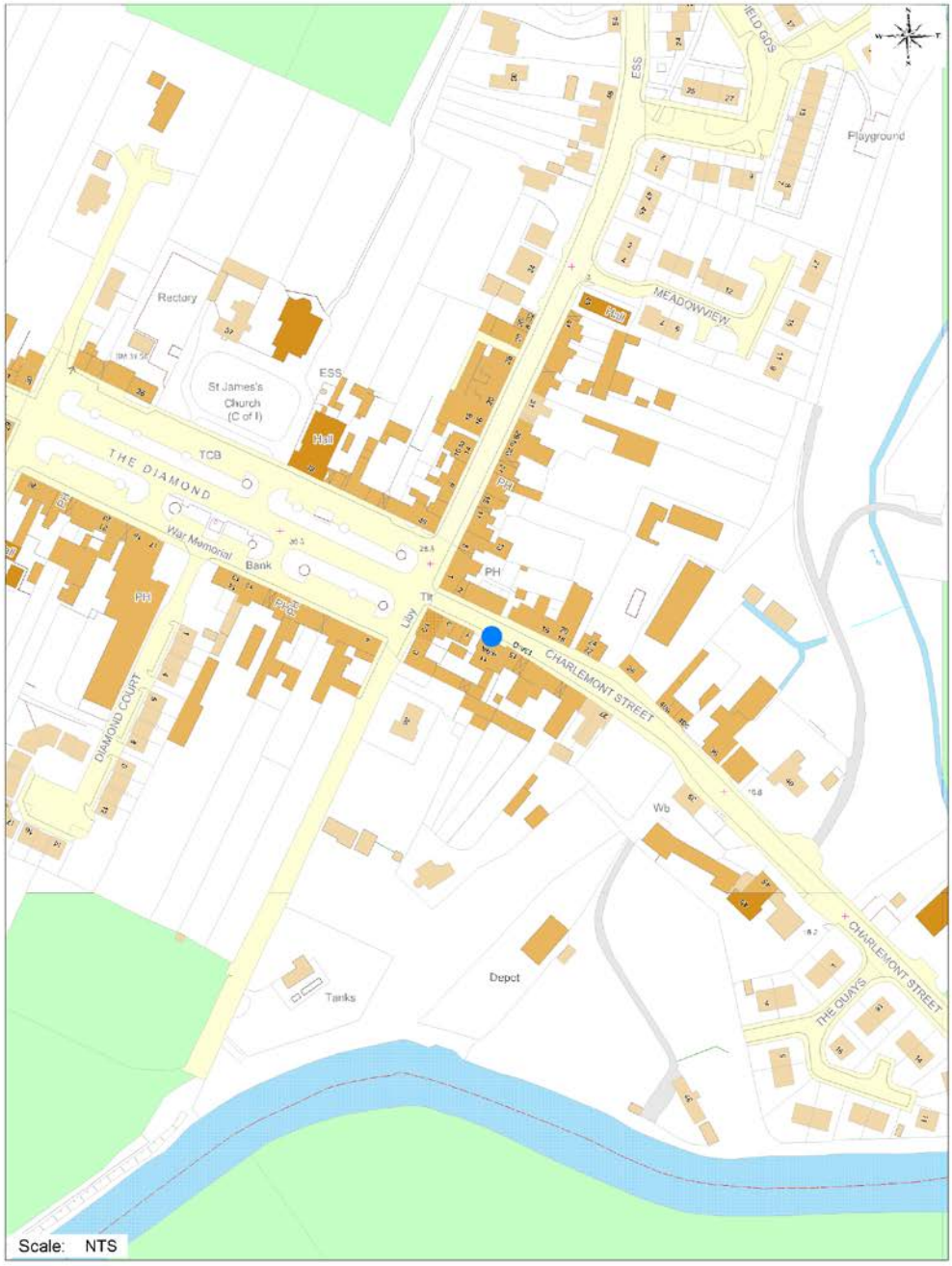
Stewartstown Road, Coalisland (11)

NO2 Monitoring Point
(Passive Diffusion Tube)

DUNGANNON & SOUTH TYRONE Borough Council

Land & Property Services.

Dungannon and South Tyrone
Borough Council,
Council Offices, Circular Road,
Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0368



NO2 MONITORING LOCATION MAP

Moy Hill, Charlemont Street, Moy (9)

NO2 Monitoring Point (Passive Diffusion Tube)

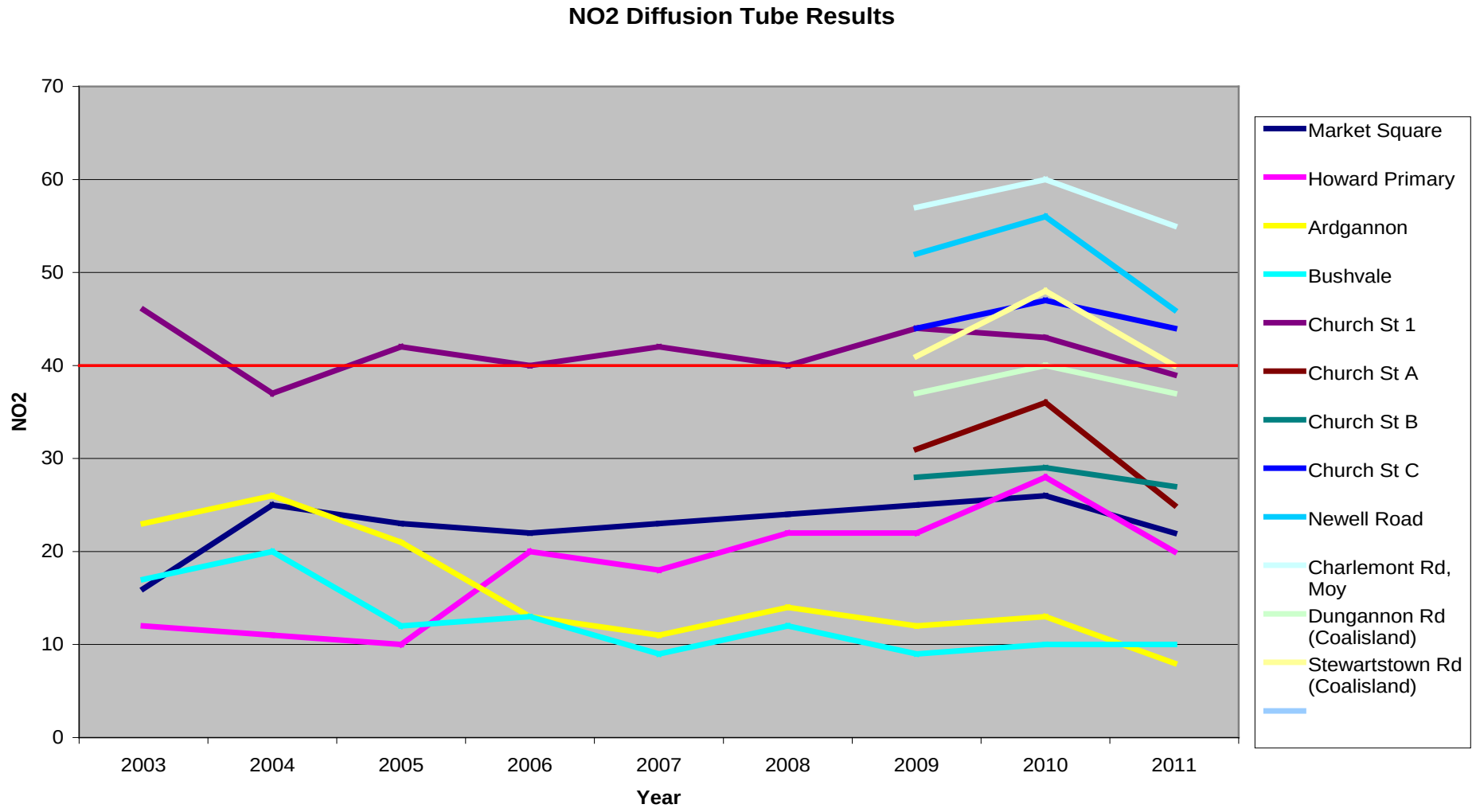
DUNGANNON & SOUTH TYRONE Borough Council

Land & Property Services.

Dungannon and South Tyrone Borough Council,
Council Offices, Circular Road,
Dungannon BT71 6DT,
Tel: 028 8772 0300, Fax: 028 8772 0368

Appendix C – Diffusion Tube Results 2011

NO2 DIFFUSION TUBE RESULTS 2011 (µg/m^3)												
	Market Square	**Dungannon Road (Coalisland)**	**Ardgannon**	**Church St 1**	**Church St A**	**Church St B**	**Chruch St C**	**Newell Road**	**Moy**	**Stewartstown Road (Coalisland)**	**Bushvale**	**Howard Primary**
JANUARY	27	39	18	41	38	34	59	50	54	53	15	30
FEBRUARY	30	57	18	47	32	39	48	37	56	53	14	29
MARCH	26	46	-	46	32	28	49	56	57	45	12	25
APRIL	24	56	-	58	35	34	61	66	74	53	8	-
MAY	21	41	14	41	25	25	43	53	58	38	5	20
JUNE	24	40	-	50	36	32	57	67	73	46	7	26
JULY	26	31	7	40	35	27	49	58	60	38	5	23
AUGUST	26	36	8	43	-	27	51	64	72	46	6	23
SEPTEMBER	22	43	11	44	26	34	47	49	64	44	7	19
OCTOBER	21	51	13	47	33	31	44	52	78	46	9	25
NOVEMBER	30	55	21	52	35	38	57	57	72	50	17	36
DECEMBER	31	34	11	44	28	34	60	48	62	54	39	36
AVERAGE	26	44	14	46	30	32	52	55	65	47	12	24
Adjusted Ave	22	37	8	39	25	27	**44**	**46**	**55**	**40**	10	20


NO2 Diffusion Tube Results
70
60
50
40
30
20
10
0
NO2
2003
2004
2005
2006
2007
2008
2009
2010
2011
Year
Market Square
Howard Primary
Ardgannon
Bushvale
Church St 1
Church St A
Church St B
Church St C
Newell Road
Charlemont Rd, Moy
Dungannon Rd (Coalisland)
Stewartstown Rd (Coalisland)