



TEST VALLEY

B O R O U G H C O U N C I L

2012 Air Quality Updating and
Screening Assessment for
Test Valley Borough Council

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

April 2012

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29 May 2012

Dear Mr Slaughter

LOCAL AIR QUALITY MANAGEMENT: 2012 UPDATING AND SCREENING ASSESSMENT

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on Test Valley BC's Air Quality Updating and Screening Assessment. Please find comments on the report attached.

The report provides update with respect to air quality management in Test Valley and outlines the changes in air quality since the 2011 Progress Report was issued. Findings of the screening assessment have found no evidence that concentration of any of the pollutants may exceed the objective. Results from monitoring in the borough also show that concentrations are all below the objectives so there is no need to proceed to a Detailed Assessment. The conclusions of the USA are accepted.

We look forward to receiving the 2013 Progress Report by the due date which is the end of April 2013. The Council should take into account the points in the commentary of the appraisal report in future reports and amend the USA report where appropriate.

Yours sincerely

Tutu Aluko
ATMOSPHERE AND LOCAL ENVIRONMENT PROGRAMME



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Executive Summary

Local Authorities in the UK have the statutory duty to review and assess air quality on a regular basis which involves the production of reports on a three year cycle. The 2012 report is the first part of Round 5 of the Review and Assessment process requiring the submission of an Updating and Screening Assessment report by the 30th April 2012. The USA is intended to identify potential areas within the Borough where emissions from a range of sources could adversely impact sensitive receptors.

Firstly, the USA considers the nitrogen dioxide monitoring carried out in 2011 at 17 sites. Secondly, the assessment consists of applying various screening criteria for the purpose of considering whether new or significantly changed sources of air pollutants may lead to an exceedance of an Air Quality Objective for any of the seven key pollutants.

Road transport is one of number of sources of local air pollution within Test Valley and although national air quality data has shown a decrease in air pollution levels in recent years, the Council's own monitoring (2007 – 2011) indicates an upward trend at approximately half of the NO₂ tube locations. Population exposure to traffic-related pollutants is expected to be relatively higher near major roads with a high percentage of HGVs, at busy road junctions and in narrow & congested town centre streets.

Based on the findings of this USA report, Test Valley Borough Council has found no evidence that the concentration of any of these seven pollutants may exceed the specific Air Quality Objectives and therefore has not identified the need to proceed to a Detailed Air Quality Assessment.

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1 Introduction

1.1 Description of Local Authority Area

Test Valley lies on the western side of Hampshire and to the north of the Southampton conurbation. The borough covers 628 square kilometres (243 square miles) and includes the two market towns of Romsey and Andover. The population of the borough in 2012 is estimated at 114,170 based on the 2010 Small Area Population Forecast.

The main source of air pollution within the borough is generated from road traffic using the two east-west routes through Test Valley. In the south of the borough there is approximately 8.5km of the M27 and on the southern outskirts of Andover is the A303 of which around 26km passes through Test Valley. In addition to these two main traffic routes, there is a short section the A34 (approximately 1.3km) which runs north-south on the eastern side of the borough at Upper/Lower Bullington and approximately 3km of the A36 in the southwest of the borough at West Wellow.

Although there are no other major sources of air pollution from industrial processes within the borough, there are 47 Part B installations permitted by Test Valley under the Environmental Permitting (England & Wales) Regulations 2010 and one Part A2 installation. In addition, there are a further 14 sites which have permits issued by the Environment Agency.

1.2 Purpose of 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 exceedances 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 (USA) 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 England are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), 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 exceedances in each year that are permitted (where applicable).

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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide (NO ₂)	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM ₁₀) [gravimetric]	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Set out below is a summary of previous Review and Assessment documents and other relevant information.

April 2011 Progress Report

This Progress Report provided an update to the April 2010 Progress Report, in particular by presenting nitrogen dioxide monitoring results for the period January to December 2010. There were no exceedances of the Air Quality Objective for nitrogen dioxide.

The April 2011 Progress Report is published on the TVBC website at:

<http://www.testvalley.gov.uk/pdf/April%202011%20Progress%20Report.pdf>

April 2010 Progress Report

This Progress Report provided an update to the April 2008 Progress Report, in particular by presenting nitrogen dioxide monitoring results for the period January to December 2009. There were no exceedances of the Air Quality Objective for nitrogen dioxide.

The April 2010 Progress Report is published on the TVBC website at:

<http://www.testvalley.gov.uk/pdf/April%202010%20Progress%20Report1.pdf>

April 2009 Updating and Screening Assessment

The Updating and Screening Assessment, carried out by the Housing, Health & Communities Service in April 2009, indicated that the relevant air quality objectives for benzene, 1,3-butadiene, carbon monoxide, lead, PM₁₀ and sulphur dioxide were being met in 2006 in the TVBC area.

Prior nitrogen dioxide monitoring revealed that, although nitrogen dioxide levels were elevated at some monitoring points, these were not in areas of relevant exposure. According to the screening model used, nitrogen dioxide levels in 2008 were not predicted to exceed the annual mean objective. Therefore, on the basis of the monitoring results and the screening exercise, a detailed assessment was not recommended for nitrogen dioxide.

The April 2009 Updating and Screening Assessment is published on the TVBC website at: <http://www.testvalley.gov.uk/pdf/Air%20Quality%20USA%20Report%20-%20April%202009.pdf>

Exceedances of Air Quality Objectives (AQOs)

No exceedances of the current AQO for nitrogen dioxide have been identified at any relevant locations within the Borough since the April 2009 Updating and Screening Assessment Report.

Air Quality Management Areas (AQMA)

Based on the nitrogen dioxide monitoring carried out by Test Valley Borough Council, no areas have been identified within the Borough which would warrant the declaration of an AQMA.

Locations where AQOs have been exceeded in the past

The 2003 Updating and Screening Assessment Report identified five locations within the Borough where the AQOs were exceeded. An assessment using the DMRB screening model indicated that the annual mean was unlikely to exceed the AQO by 2005; therefore a Detailed Assessment was not recommended for any area within the Borough.

Of the five locations, two were removed from the survey as being unrepresentative of 'Relevant Exposure' (motorway service stations), one diffusion tube was relocated to an adjacent property to provide relevant exposure and the final two locations continue to be monitored and have not exceeded the AQO for nitrogen dioxide since 2004.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Test Valley Borough Council currently has no automatic monitoring sites within its area.

2.1.2 Non-Automatic Monitoring Sites

The non-automatic monitoring carried out by Test Valley Borough Council currently comprises 17 nitrogen dioxide diffusion tubes positioned at selected kerbside, roadside, intermediate and urban background locations. Details of these sites are set out in Table 2.1 below.

The diffusion tubes used by Test Valley Borough Council are supplied and analysed by Environmental Scientifics Group (*ESG*), Southmead Industrial Estate, Didcot, Oxfordshire. The *ESG* laboratory is UKAS accredited they confirm that the method of analysis is **50% TEA** in Acetone.

Test Valley does not currently have a co-location study included with their current diffusion tube monitoring program. A bias adjustment factor of **0.84** was used for the 2011 data and was obtained from the LAQM/Defra website at: [http://laqm.defra.gov.uk/documents/Diffusion Tube Bias Factors-v03_12.xls](http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors-v03_12.xls)

Table 2.1 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)	Does this location represent worst-case exposure?
ROM1	Urban background	X 435382 Y 121377	NO ₂	N	Yes Property façade	N/A	N
ROM2	Roadside	X 435135 Y 121461	NO ₂	N	Yes Property façade	1m	Y
ROM3	Roadside	X 435206 Y 121148	NO ₂	N	Yes Property façade	1.3m	Y
ROM5A	Kerbside	X 435475 Y 121089	NO ₂	N	No (3 metres)	1m	Y
ROM7	Roadside	X 435481 Y 121103	NO ₂	N	Yes Property façade	2.3m	Y
ROM8	Roadside	X 435865 Y 121275	NO ₂	N	No (-3 metres)	4.8m	Y
ROM9	Roadside	X 435695 Y 121242	NO ₂	N	Yes Property façade equivalent	2m	Y
ROM10	Roadside	X 435395 Y 121175	NO ₂	N	No (6 metres)	2.6m	Y
CHIL12	Roadside	X 441760 Y 118087	NO ₂	N	No (18 metres)	2m	Y
CHIL11B	Intermediate	X 442135 Y 117669	NO ₂	N	Yes Property façade equivalent	24m	N
CHIL14	Roadside	X 442263 Y 117624	NO ₂	N	Yes Property façade equivalent	3m	Y
AND15	Intermediate	X 435861 Y 145378	NO ₂	N	Yes Property façade	9m	N
AND19	Urban background	X 435846 Y 145596	NO ₂	N	No (12 metres)	N/A	N
AND20	Kerbside	X 436498 Y 144936	NO ₂	N	No (6 metres)	<1m	Y
AND22	Urban background	X 436354 Y 144858	NO ₂	N	Yes Property façade equivalent	N/A	N
AND23	Urban background	X 435863 Y 144428	NO ₂	N	Yes Property façade	N/A	N
AND25	Kerbside	X 435738 Y 144233	NO ₂	N	No (4 metres)	<1m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Based on the January – December 2011 diffusion tube results, the annual mean objective for NO₂ was not exceeded at any of the 17 monitoring locations.

Automatic Monitoring Data

Test Valley Borough Council does not carry out automatic monitoring of any pollutants.

Diffusion Tube Monitoring Data

The survey methodology and diffusion tube locations have not changes from that reported in the April 2011 Progress report. Location plans for all 17 diffusion tubes can be found in Appendix D.

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes in 2011

Site Name	Location	Data Capture 2011 %	Confirm if data has been distance corrected	Annual mean concentrations (Not Adjusted for Bias)
				2011 ($\mu\text{g}/\text{m}^3$)
ROM1	Station Road, Romsey	100	No	20.9
ROM2	Cherville Street, Romsey	100	No	22.4
ROM3	Bell Street, Romsey	100	No	27.6
ROM5A	Palmerston Street - West, Romsey	100	No	45.1
ROM7	Palmerston Street - East, Romsey	100	No	39.3
ROM8	Plaza Roundabout, Romsey	100	No	36.0
ROM9	Alma Road - South, Romsey	100	No	36.0
ROM10	Alma Road - North, Romsey	100	No	35.8
CHIL12	Chilworth Road, Chilworth	100	No	46.1
CHIL11B	Birch Lodge, Winchester Road, Chilworth	100	No	33.1
CHIL14	Bracken Place, Chilworth	100	No	34.5
AND15	Weyhill Road, Andover	100	No	26.0
AND19	St. John the Baptist Church, Alexandra Road, Andover	100	No	17.8
AND20	Humberstone Road - junction with Winchester Road, Andover	100	No	22.5
AND22	Humberstone Road - Opposite junction with Croft Avenue, Andover	100	No	17.5
AND23	Barlows Lane – North, Andover	100	No	18.5
AND25	Barlows Lane – South, Andover	100	No	24.4

Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes (2007 to 2011)

Site Name	Annual mean concentration (adjusted for bias) $\mu\text{g}/\text{m}^3$				
	2007 (Bias Adjustment Factor = 0.88)	2008 (Bias Adjustment Factor = 0.83)	2009 (Bias Adjustment Factor = 0.82)	2010 (Bias Adjustment Factor = 0.84)	2011 (Bias Adjustment Factor = 0.84)
ROM1	16.5	17.5	18.0	18.1	17.5
ROM2	21.0	20.2	18.9	19.8	18.8
ROM3	22.7	22.9	23.3	27.9	23.2
ROM5A	30.0	32.2	38.5	34.7	37.9
ROM7	31.4	33.1	35.2	34.0	33.0
ROM8	30.5	31.1	31.9	29.7	30.3
ROM9	29.6	28.9	32.6	27.5	30.2
ROM10	33.2	32.9	32.9	30.9	30.1
CHIL12	33.8	36.2	37.4	35.6	38.8
CHIL11B	22.7	26.1	26.7	25.7	27.8
CHIL14	29.5	29.2	31.7	29.7	29.0
AND15	21.3	24.5	23.7	22.5	21.8
AND19	15.9	15.9	15.8	15.8	15.0
AND20	15.5	15.3	20.8	21.1	18.9
AND22	17.8	21.3	14.8	16.2	14.7
AND23	16.4	16.5	16.1	16.7	15.5
AND25	17.3	21.6	20.2	20.3	20.5

Based on the results of the annual mean NO₂ concentrations measured at Diffusion Tube Monitoring Sites between 2007 and 2011, a series of Trend Charts have been produced and these can be found in Appendix E of this report.

2.2.2 PM₁₀

Table 2.7 Results of Automatic Monitoring of PM₁₀: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture 2011 %	Annual mean concentrations (µg/m ³)	
				2011	
Test Valley Borough Council does not carry out automatic monitoring of PM ₁₀					

2.2.3 Sulphur Dioxide

Table 2.9 Results of Automatic Monitoring of SO₂: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture 2011 %	Number of Exceedances (percentile in bracket µg/m ³)		
				15-minute Objective (266 µg/m ³)	1-hour Objective (350 µg/m ³)	24-hour Objective (125 µg/m ³)
Test Valley Borough Council does not carry out automatic monitoring of SO ₂						

2.2.4 Benzene

Test Valley Borough Council does not carry out monitoring of Benzene.

2.2.5 Other pollutants monitored

Test Valley Borough Council does not carry out routine monitoring of any other pollutants.

2.2.6 Summary of Compliance with AQS Objectives

Test Valley Borough Council has examined the results from monitoring in the borough and concentrations are all below the objectives, 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

Test Valley 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

Test Valley 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.

The latest traffic flow data (Appendix C) obtained from Hampshire County Council and the Highways Agency for the purposes of this Updating & Screening Assessment report shows that there are currently no roads within Test Valley with unusually high proportions of Buses and/or HGVs.

Test Valley Borough Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Based on advice from the Council's Senior Transportation Engineer, no new/busy road junctions have been identified since the last USA report in 2009.

Test Valley 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

The Council's Senior Transportation Engineer also confirms that there are a number of new roads which have been constructed with the borough, but they are 'estate roads' serving new residential developments which are currently under construction in the East Anton & Picket Twenty areas of Andover and Abbottswood in Romsey.

Test Valley Borough Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Although the Council has not identified any roads within the borough with significantly changed traffic flows, a planning application (11/02859/FULLS) for a new Lidl Regional Distribution Centre (RDC) in Nursling, Southampton has been submitted. An Air Quality Assessment submitted with the application concluded that sensitive receptor locations adjacent to roads that are affected by additional vehicle movements generated by the RDC are predicted to experience a 'Negligible' impact.

Test Valley Borough Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Advice has again been provided by the Council's Planning Policy & Transport Service they confirm that there are no Bus/Coach Stations within the borough which have more than 2500 vehicle movements per day. Although precise bus movements at ¹Andover Bus Station and ²Romsey Bus Station for 2012 are not available, the advice is that the bus movements quoted in the 2009 USA report (¹800 & ²220 per day) are likely to have reduced by approximately one third.

[Note: There has been a significant reduction in the funding available to support bus services throughout Hampshire].

Test Valley Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Although there are no airports within the borough, Southampton International Airport is located approximately 1.3 kilometres east of the parish of Chilworth in the southeast of the borough.

Test Valley 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

Advice has again been provided by Hampshire County Council stating that there are no locations within the borough where diesel or steam trains are regularly stationary for periods of 15 minutes or more. The average period of time that trains are stationary is approximately 4 minutes at Romsey station and the longest period was approximately 7 minutes on a Sunday evening.

[Note: The closest relevant exposure to stationary trains at Romsey Railway Station is approximately 22 metres and around 45 metres at Andover Railway Station].

Test Valley 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 15-metres.

4.2.2 Moving Trains

There are no rail lines within Test Valley with a heavy traffic of diesel locomotives [Ref: Table 5.1, Technical Guidance LAQM.TG(09)].

Test Valley Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30-metres.

4.3 Ports (Shipping)

Test Valley has no coastline, the nearest port (shipping) being located in Southampton Docks (container vessels and cruise ships) which is approximately 3.5 kilometres southeast of the borough.

Test Valley Borough Council confirms that there are no ports or shipping that meets 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

No new or proposed installations which would require an Air Quality Assessment have been received by the Council since the last USA report in 2009.

Test Valley 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

Based on a review of existing installations within the borough, none were found to have substantially increased emissions.

Test Valley 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

Test Valley 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

Based on data collected as part of the Council's duties under the Environmental Permitting (E&W) Regulations 2010, none were found to meet the specified criteria requiring a detailed assessment.

Test Valley Borough Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

According to Environment Agency records there are four large poultry farms located within Test Valley which are permitted under the Environmental Permitting (E&W) Regulations 2010. Details of these poultry farms are as follows:

Permit Reference	Name / location	Maximum no. of broilers
GP3636TT	Cowdown Poultry Farm, Goodworth Clatford	50,000
SP3133UX	Bluebell Poultry Farm, Andover	94,500
SP3933UJ	Hennings Poultry Farm, Andover	160,000
TP3337MF	Greenmeadows Poultry Farm, Grateley	261,374

Further examination of the public register held by the Council indicates that the Greenmeadows Poultry Farm comprises of 6 broiler sheds which are ventilated by 'roof mounted fans'. As the threshold for mechanically ventilated sheds is 400,000, a Detailed Assessment of PM₁₀ is not required for this poultry farm.

Test Valley Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Although outline planning permission was granted in 2007 for the installation of a 5MW biomass plant as part of a large commercial development at the former Andover Airfield, colleagues in the Council's Planning policy team have confirmed that the biomass plant has not been constructed.

Test Valley Borough Council confirms that there are no biomass combustion plants in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Based on advice from the Council's Planning & Building Service, no applications for Combustion plants fitting the relevant criteria have been received.

Test Valley Borough Council confirms that there are no biomass combustion plants in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

Based on Housing & Environmental Health records, almost all of the complaints relating to smoke and odour from domestic properties relate to either wood burning stoves or the burning of green waste on garden bonfires. It is likely that only a very small proportion of properties within the borough regularly use solid fuel.

Test Valley Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Housing & Environmental Health records indicate that only a small number (seven complaints since April 2009) of problems relating to dust from muddy roads and construction sites have been received by the Council. These reported complaints were subsequently resolved by the site developers and their contractors.

Test Valley 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

Based on nitrogen dioxide diffusion tube results for 2011, no exceedances of the current Air Quality Objective were identified. Nitrogen dioxide trend charts for all 17 diffusion tube locations utilising data from 2007 to 2011 are included in Appendix E. Of these 17 charts, nine show a 5-year trend for reducing levels of nitrogen dioxide and the remaining eight charts show a trend for increasing in levels of nitrogen dioxide.

To date, Test Valley Borough Council has not identified any Air Quality Management Areas (AQMA) and the most recent monitoring data has not identified any potential areas which may exceed current Air Quality Objectives. The results from the Council's nitrogen dioxide diffusion tube survey will be closely monitored and the need for a detailed assessment will be reconsidered if appropriate.

8.2 Conclusions from Assessment of Sources

Based on the assessment of likely impacts of local developments in terms of traffic, transport, industrial, commercial, residential, fugitive emissions etc. it has been concluded that there have been no new or significantly changed sources of pollutants within the Borough which might result in any of the Air Quality Objective limits being exceeded.

8.3 Proposed Actions

Since we do not expect any of the seven Air Quality Objectives to be exceeded, Test Valley Borough Council does not intend to proceed to a detailed assessment for any these pollutants or to carry out any additional monitoring. Therefore, it is proposed to continue monitoring nitrogen dioxide (by diffusion tube) and prepare and submit a Progress Report by the end of April 2013.

9 References

AEA Energy & Environment (February 2008), Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance for Laboratories and Users, AEAT/ENV/R/2504 - Issue 1a

Defra (February 2009), Part IV of the Environment Act 1995, Local Air Quality Management – Policy Guidance (PG09)

Defra (February 2009), Part IV of the Environment Act 1995, Local Air Quality Management – Technical Guidance LAQM.TG(09)

Guidance on Running the DMRB Screening Model (15th April 2009)

Appendix A: QA:QC Data

Factor from Local Co-location Studies (if available)

Test Valley Borough Council currently have no co-location studies.

Diffusion Tube Bias Adjustment Factors

The diffusion tubes used by Test Valley Borough Council are supplied and analysed (50% TEA in Acetone) by Environmental Scientifics Group (ESG) laboratories, Didcot, Oxfordshire. The bias adjustment factor of **0.84** for our 2011 diffusion tubes was obtained from the following website:

http://laqm.defra.gov.uk/documents/Diffusion_Tube_Bias_Factors-v03_12.xls

Discussion of Choice of Factor to Use

Test Valley Borough Council currently uses the National Bias Adjustment Factors as the Council does not have the facility to calculate its own local derived factor.

PM Monitoring Adjustment

Test Valley Borough Council currently have no co-location studies.

Short-term to Long-term Data adjustment

All 17 nitrogen dioxide diffusion tubes exceeded the minimum 90% capture rate therefore no adjustments of the data were necessary.

QA/QC of automatic monitoring

Test Valley Borough Council currently have no automatic monitoring sites.

QA/QC of diffusion tube monitoring

Test Valley Borough Council can confirm that as far as reasonably practicable, all 17 diffusion tubes are located in accordance with the guidance set out in the February 2008 AEA Energy & Environment report.

A copy of the "Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies, by Laboratory" was downloaded from:

http://laqm.defra.gov.uk/documents/Tube_Precision_2011_version_03_12.pdf. Of the 22 studies which used ESG diffusion tubes, 20 studies indicated 'Good' precision with the remaining 2 indicating 'Poor' precision.

Appendix B: DMRB Calculations

Input Data

Table i

Location	Grid Ref	Background Concentrations for 2011		
		NO _x	NO ₂	PM ₁₀
Basingstoke Road, Bullington	X 445766 Y 142115	10.1661	8.400865	15.127213
Greenhill Lane, Rownhams	X 438459 Y 117595	19.56254	22.038634	17.24816

Table ii

Location	Link number	Distance from link centre to receptor (m)	Traffic flow & speed		Traffic composition		
			AADT (combined, veh/day)	Annual average speed (km/h)	Road type (A,B,C,D)	Total % LDV (<3.5t GVW)	Total % HDV (>3.5t GVW)
Basingstoke Road, Bullington	1	22	*51,632	113	A	89	11
Greenhill Lane, Rownhams	1	48	*128,456	113	A	89	11

* 2010 AADT (Highways Agency) traffic data used for this assessment as data for 2011 is not yet available.

Verification

Advice has been obtained from the LAQM Helpdesk with regards to a Verification Factor which should be used in the following Results Table. It appears that in order to verify the modelled NO₂ results, monitoring results from locations which are close to or have a similar exposure to the two receptors detailed in the above tables. The closest NO₂ diffusion tubes to the residential properties on Basingstoke Road and Greenhill Lane are approximately 10km and 3km respectively.

Results

Table iii

Location/ Receptor	Year	Road NO _x ¹	Verification Factor	Adj Road NO _x ²	Adj Total NO _x ³	Total NO ₂ ⁴	PM ₁₀	
		Annual mean µg/m ³		Annual mean µg/m ³	Annual mean µg/m ³	Annual mean µg/m ³	Days >50µg/m ³	
Basingstoke Road, Bullington	2011	33.66	No suitable monitoring data available for the Verification of these two receptors	N/A	43.83	24.86	20.1	4
Greenhill Lane, Rownhams	2011	25.15		N/A	44.71	33.74	19	2

¹ Rd NO_x = Road NO_x direct from DMRB local output sheet (following Box 1 from DMRB guidance note provided at <http://laqm.defra.gov.uk/laqm-faqs/>)

² Adj Rd NO_x = Rd NO_x x verification factor (state verification factor used)

³ Adj Total NO_x = Adj Rd NO_x + Background NO_x

⁴ Total NO₂ = from NO_x to NO₂ calculator (available at from LAQM Support website)

Table iv

Location / Receptor	Year	Carbon monoxide	Benzene	1,3-butadiene
		Annual mean mg/m ³	Annual mean µg/m ³	Annual mean µg/m ³
Basingstoke Road, Bullington	2011	0.29	0.32	0.30
Greenhill Lane, Rownhams	2011	0.38	0.63	0.46

Conclusion

Based on the results of the DMRB calculations for these two receptor locations, none of the predicted levels of the six air pollutants were shown to exceed the current Air Quality Standards.

Maps of Locations

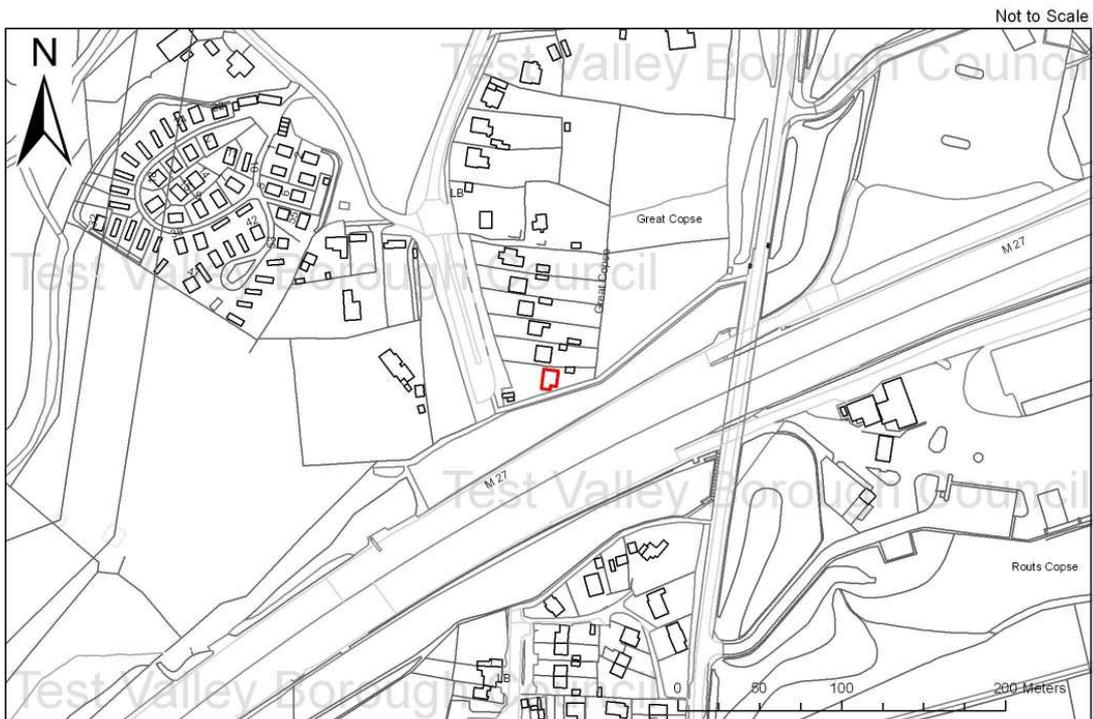


Location of Receptor (outlined in red),
on Basingstoke Road, Bullington
[adjacent to A303]

Housing & Environmental Health Service
Council Offices, Duttons Road,
Romsey Hampshire SO51 8XG
Tel: 01794 527700



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Location of Receptor (outlined in red),
on Greenhill Lane, Rownhams
[adjacent to M27]

Housing & Environmental Health Service
Council Offices, Duttons Road,
Romsey Hampshire SO51 8XG
Tel: 01794 527700



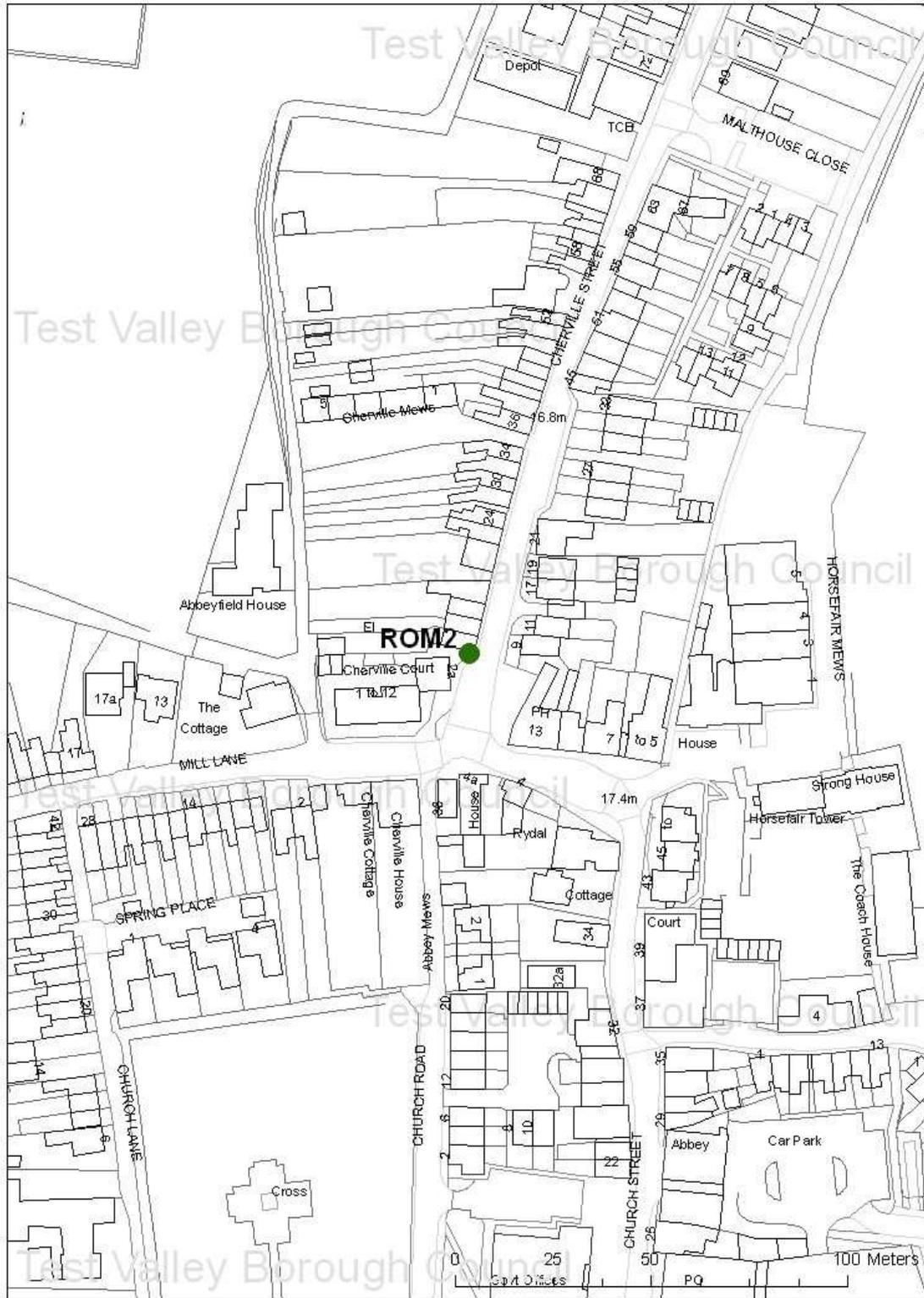
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Appendix C: *Traffic data

Road No	Road Name	Data type AADT / 12 hr	Year	No. of vehicles	% HGV	Notes
1	Weyhill Road, Andover	Man. 12hr count	2009	8286	1.2	
2	Northern Avenue, Andover	Man. 12hr count	2007	17927	2.2	
3	Western Avenue, Andover	Man. 12hr count	2011	14020	0.9	
4	Redon Way, Andover	Man. 12hr count	2011	10174	2.3	
5	Churchill Way West	Man. 12hr count				No Data
6	Eastern Avenue, Andover	Man. 12hr count	2011	10452	0.8	
7	A3093 Churchill Way					No Data
8	B3400 London Road	AADT 24 hr	2011	3806	9.4	41460002
9	A343 Newbury Road					No Data
10	A342 Weyhill Road	24 hr 7 Day Av	2010	12558	No Class	32460444
11	A343 Salisbury Road	24 hr 7 Day Av	2010	10445	6.9	30390442
12	A303 Thruxton Bypass	24 HR AADT	2011	34263	8.5	TRADS East of Thruxton
13	A303 (between A343, Salisbury Road and Churchill Way West)	24 HR AADT TRADS	2011	42495	9.0	TRADS A303 West of A343
14	A303 (between A343, Salisbury Rd and A3057)	24 HR AADT TRADS	2011	44593	8.8	TRADS A303 West of A3057
15	A303 (between A3057, Winchester Road and A3090 Churchill Way)					No Data
16	A303 (West of A34)	24 HR AADT	2010	51632	11.0	30012828 and 3053
17	A303 (East of A34)					No Data
18	A34 (North of intersection with A303)	24 HR AADT TRADS	2011	44834	15.7	TRADS A34 Whitchurch
19	A34 (South of intersection with A303)	24 HR AADT TRADS	2011	50495	No Class	TRADS A34 Bullington
20	A3057 (between Stockbridge and Andover)	24 hr 7 Day Av	2010	4838	7.0	37378459
21	A30 (Stockbridge to A34)	AADT 24 hr	2011	3791	No Class	300053
22	A30 (West of Stockbridge)					
23	A3057 (between Romsey & Stockbridge)	24 hr 7 Day Av	2011	6789	No Class	33251057
24	A27 Salisbury Road	24 hr 7 Day Av	2011	6168	No Class	32210440
25	A3090 Romsey By Pass	AADT 24 hr	2011	18116	7.8	34200002
26	A3090 Winchester Road					No Data
27	A27 Southampton Rd Romsey					No Data
28	A27 Luzborough Lane Romsey	24 hr 7 Day Av	2010	10138	No Class	37200407
29	A27 North Baddesley					No Data
30	A3090 Pauncefoot Hill Romsey					No Data
31	A36 West Wellow					No Data
32	A3057 (between A27 & M271)	24 hr 7 Day Av	2011	15907	No Class	36181055
33	M27 (between J2 & J3)					No Data
34	M271 (from A3057 to J3)					No Data
35	A3057 (from M271 South to Southampton)	Man. 12hr count	2011	10533	0.4	
36	M27 (between J3 & J4)	24 HR AADT	2010	128456	11.0	2934 and 2935
37	M27 (between J4 & J4A)					No Data
38	Winchester Road, Chilworth					No Data
39	A33 Chilworth to M3 J14					No Data
40	M3 (between J14 & J13)	24 HR AADT	2010	94587	8.4	TRADS
41	M27 (between J4 & J5)					No Data

*Data provided by Hampshire County Council and the Highways Agency

Not to Scale

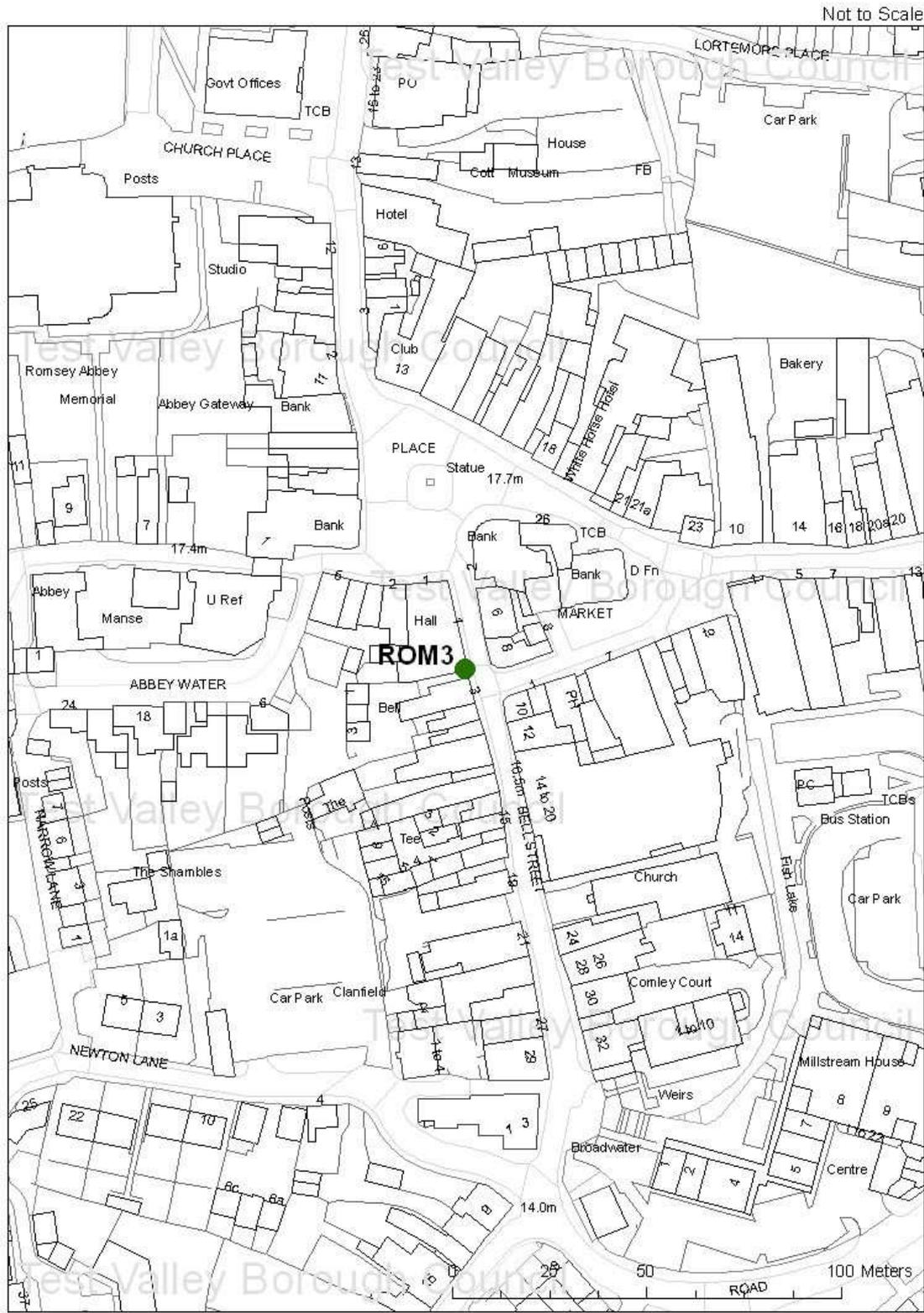


Plan 2
Approximate location of the ROM2
Nitrogen Dioxide diffusion tube in Romsey

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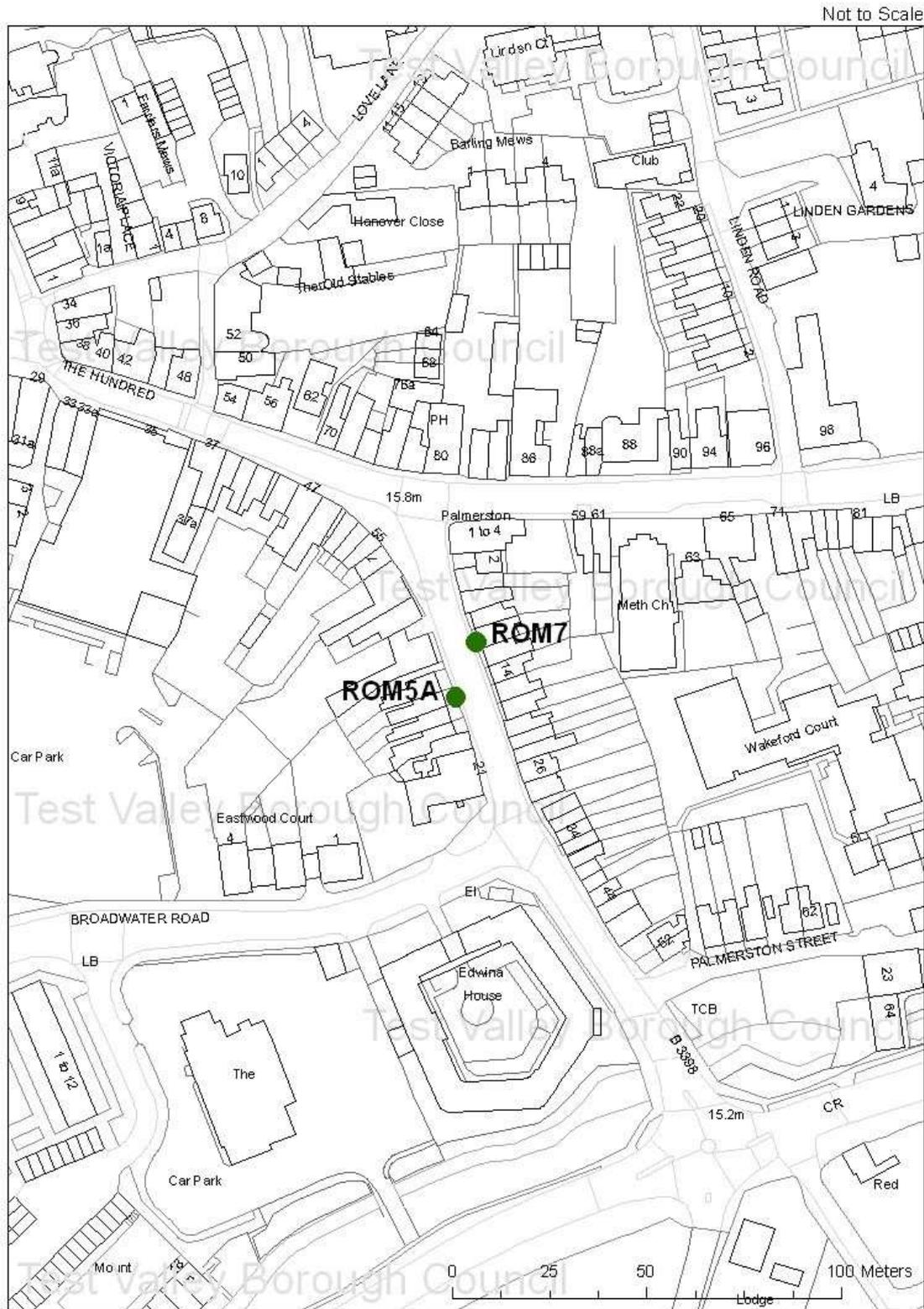


Plan 3
 Approximate location of the ROM3
 Nitrogen Dioxide diffusion tube in Romsey

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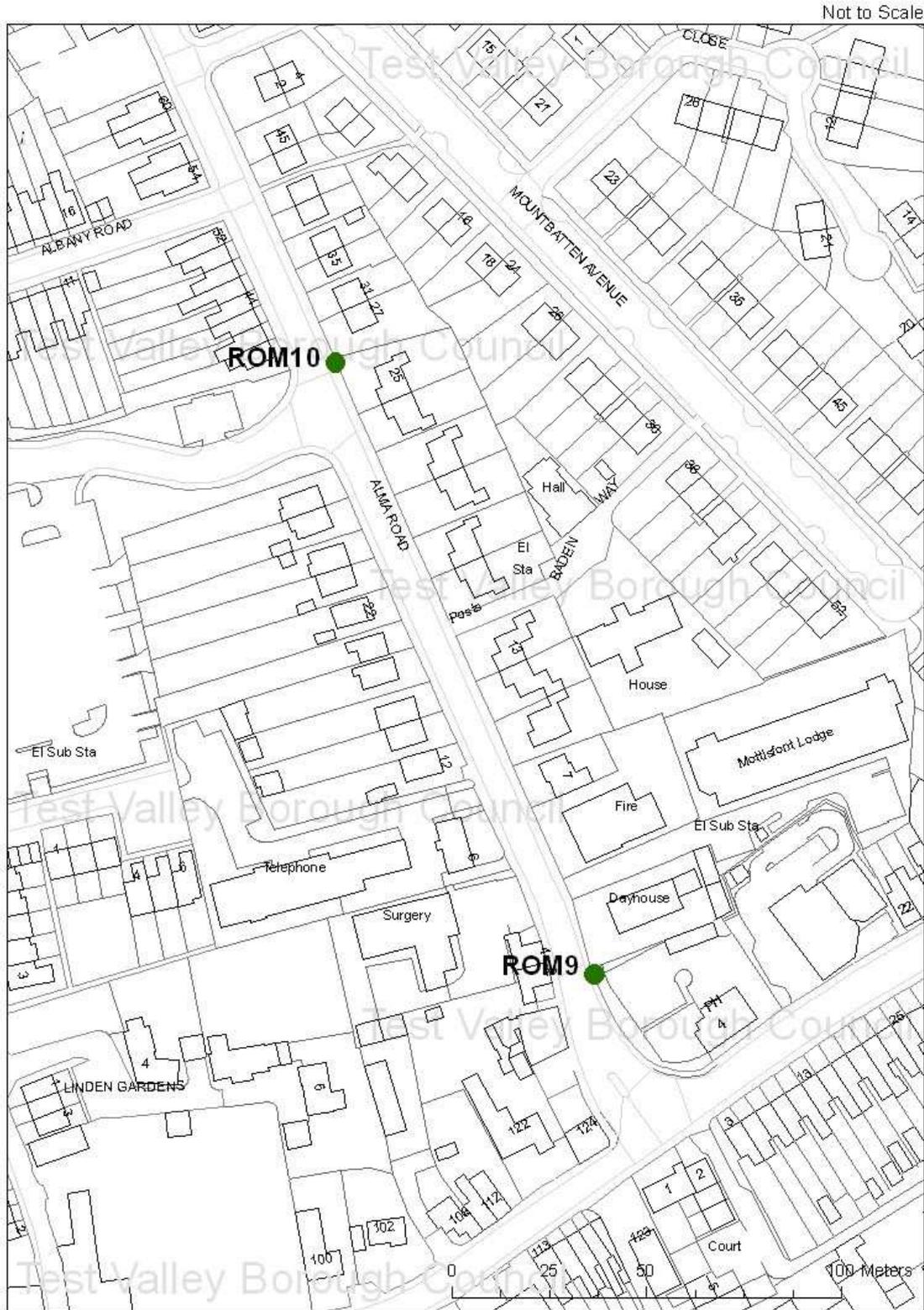


Plan 5
 Approximate location of the ROM8
 Nitrogen Dioxide diffusion tube in Romsey

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 Romsey Hampshire SO51 8XG



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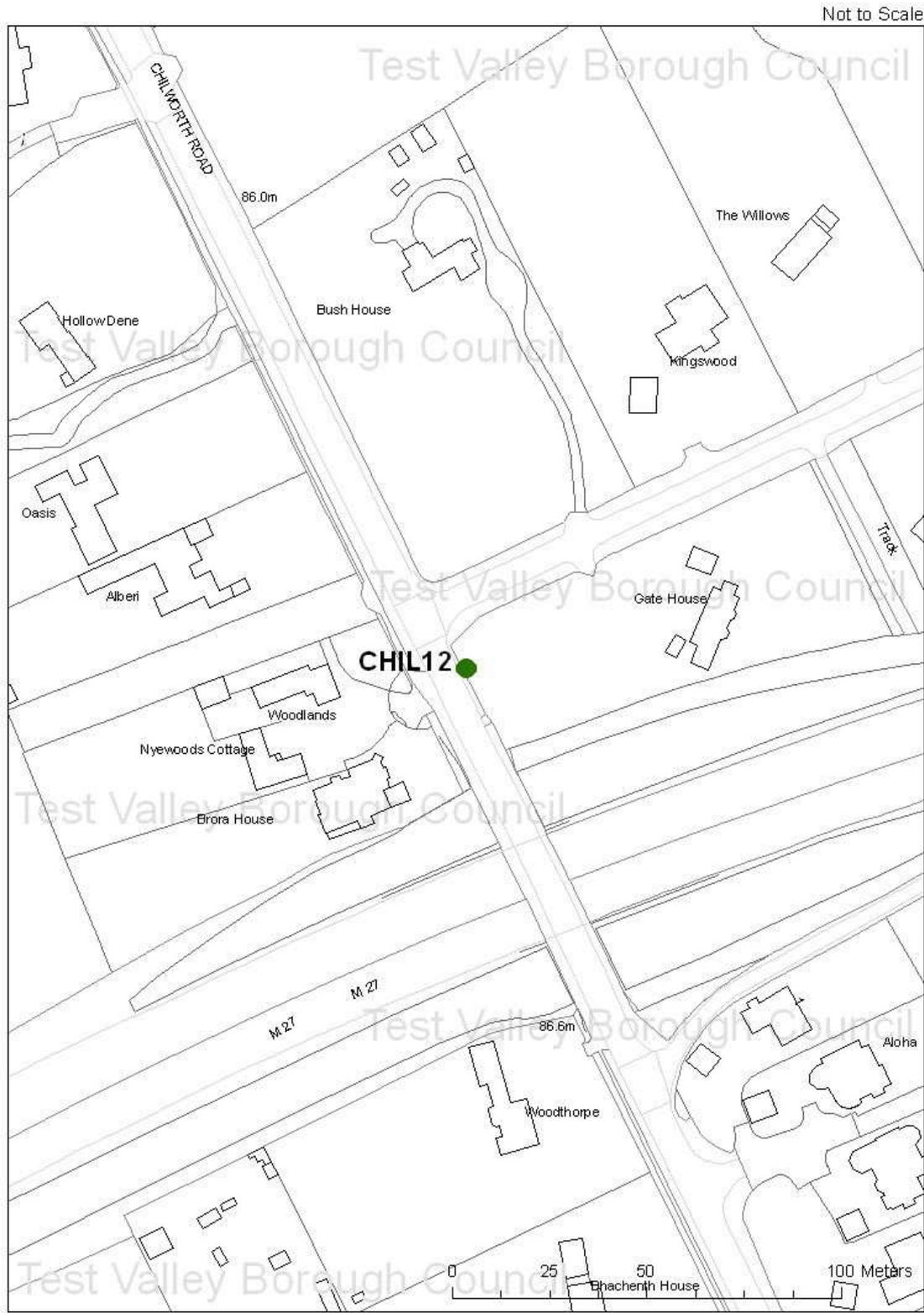
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Plan 6
Approximate location of the ROM9 & ROM10
Nitrogen Dioxide diffusion tubes in Romsey

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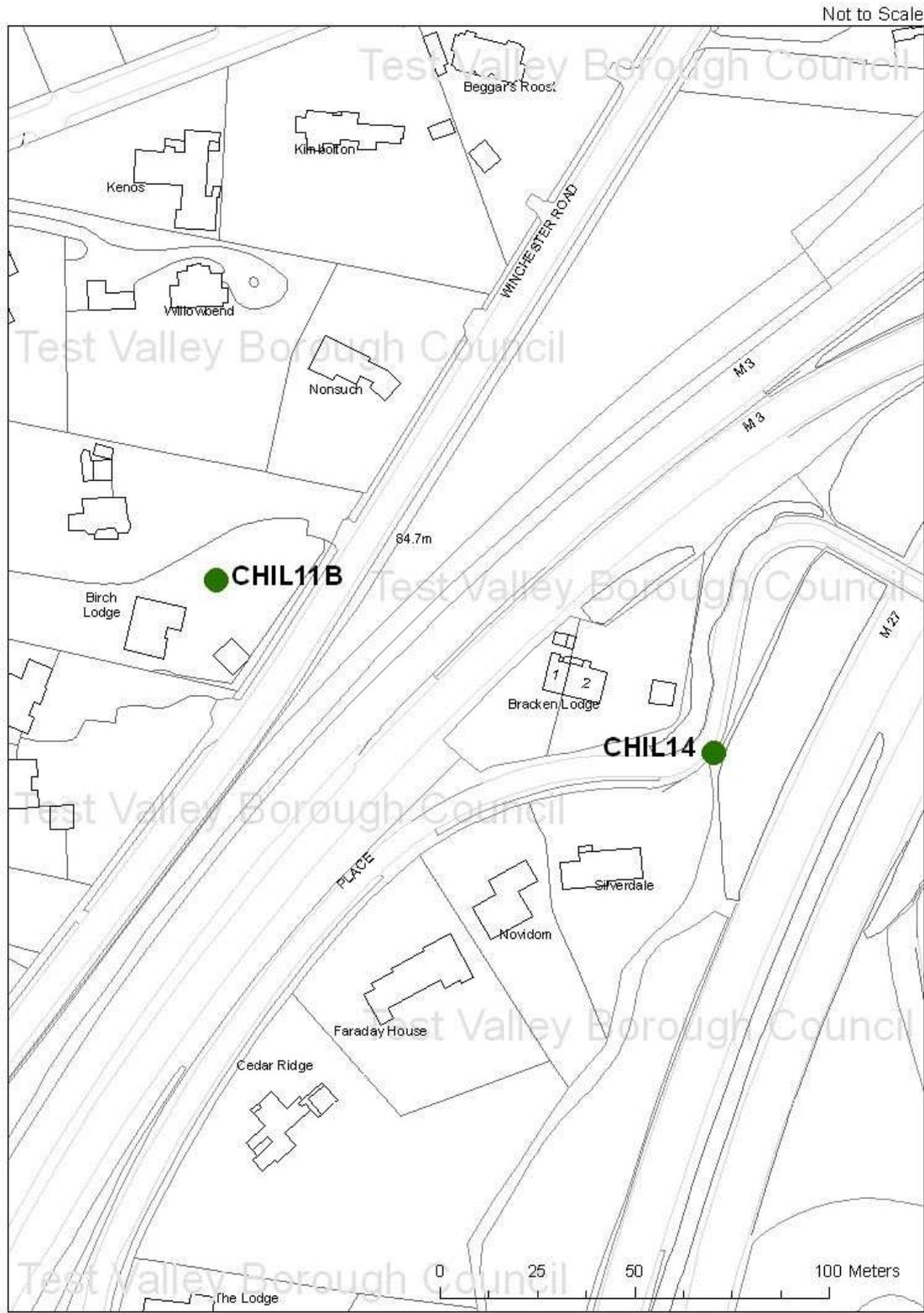


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Plan 7
Approximate location of the CHIL12
Nitrogen Dioxide diffusion tube in Chilworth

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Plan 8
 Approximate location of the CHIL11B & CHIL14
 Nitrogen Dioxide diffusion tubes in Chilworth

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Plan 9
 Approximate location of the AND15 & AND19
 Nitrogen Dioxide diffusion tubes in Andover

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Plan 10
 Approximate location of the AND22 & AND20
 Nitrogen Dioxide diffusion tubes in Andover

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Plan 11
 Approximate location of the AND23 & AND25
 Nitrogen Dioxide diffusion tubes in Andover

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Appendix E: NO₂ trends (2007 – 2011)

