



2015 Updating and Screening Assessment for Purbeck District Council

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

November 2015

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Executive Summary

Local Authorities are required by Part IV of The Environment Act 1995 to periodically review air quality within their areas. The Air Quality Regulations 2000 and 2002 prescribe the air quality objectives which are to be achieved in the UK by a variety of target dates. Local Authorities are required to assess and review their local air quality and report periodically to the Department for Environment, Food and Rural Affairs (DEFRA) whether these objectives will be met.

Information gathered in compiling this report includes monitoring results from the Council's diffusion tube survey, commercial operations and local development planning information. This report and conclusions have been made in light of technical guidance published by government: Local Air Quality Management Technical Guidance.

In summary there have been no significant changes in infrastructure, transport links or housing in the district in the last year that may give rise to concern that the air quality objectives will or could be breached. Traffic data indicates that there has been a small increase in traffic over the network in the year 2014 however monitoring data from the NO₂ diffusion tube survey shows that there were no areas in the district where there is a concern that the UK air quality objectives would be breached. It is concluded that there is no evidence to suggest that any detailed assessments are required at this time.

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Appendix 1 Summary of significant planning applications 2013 - 2014

1 Introduction

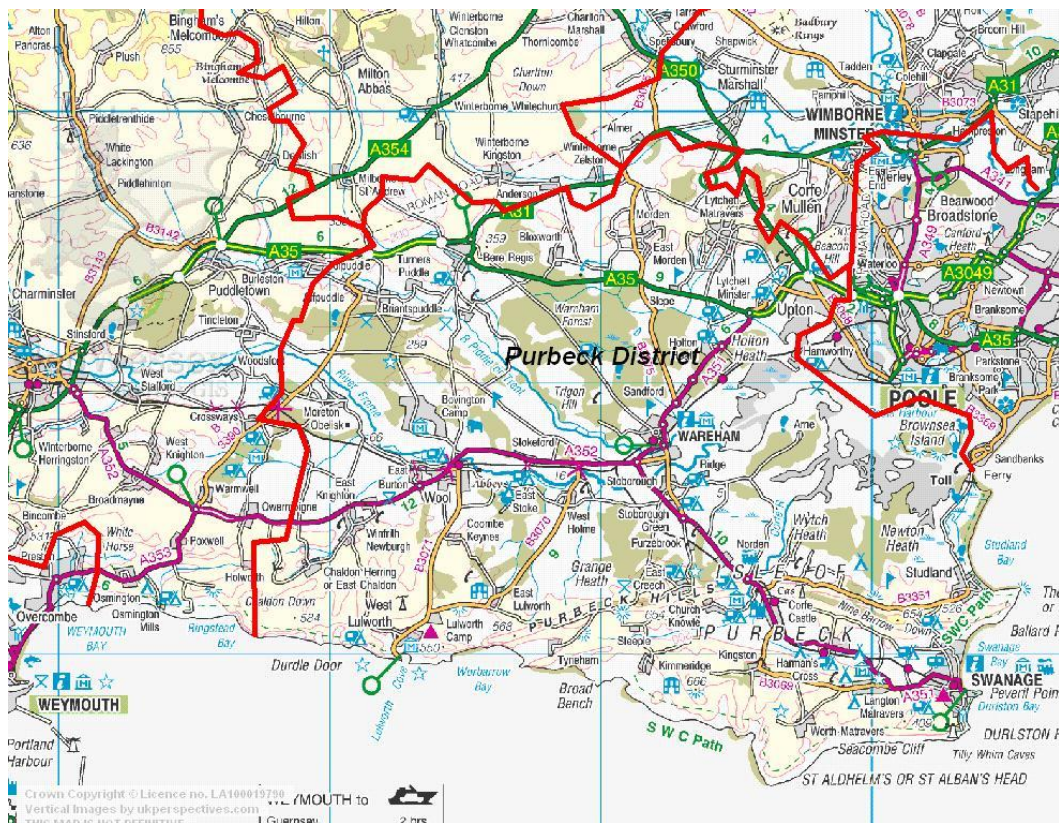
1.1 Description of Local Authority Area

The district of Purbeck (156 sq. Miles in area) is coastal with a predominantly rural environment situated west of the major conurbations of Poole and Bournemouth. It is characterised by a number of picturesque villages and towns with significant areas of scientifically important habitats, such as acid heathlands and the world heritage 'Jurassic' coastline.

The population is approximately 45,200 with approximately 22,000 units of accommodation (2). The population rises in the summer months as tourism plays a major role in the economy. It is estimated that ½ million people visit the district annually, 3.5 million in the Dorset, Bournemouth and Poole as a whole. (3)

There are two significant dual carriageways present in the district both on the A35, bypassing Upton and Bere Regis. The A roads A351 and A352 link Swanage, Upton and Wool to Wareham respectively.

Figure 1.1 Map of the District of Purbeck, Dorset



The mainline Weymouth to Bournemouth rail link runs through the district passing through Upton, Wareham and Wool. There is also a heritage steam railway link between Corfe Castle and Swanage which may at some stage to link to the main line at Wareham but currently the service terminates at Norden, north of Corfe Castle.

The district is bordered by other rural districts, West Dorset District Council, East Dorset District Council and North Dorset District Council. Upton in the east, borders on the Poole / Bournemouth conurbation and the Borough of Poole.

Parts of the area and road network are subject to periods of localised congestion particularly in the summer months due to tourist visits. The number of HGVs on the road network in Purbeck is relatively low compared to nearby urban areas and is concentrated on the A35 east west route.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management 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 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 micrograms per cubic metre $\mu\text{g}/\text{m}^3$ (milligrams 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	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

Previous air quality reports concluded that none of the air quality objectives were being breached in the District. Published air quality reports can be downloaded from the Council's website: Dorset for You.

Levels of NO₂ have historically been monitored through a diffusion tube survey from January 2003 to March 2011. Previous monitoring and subsequent air quality reports have concluded that levels of NO₂ were significantly below long term air quality objectives at all sites monitored and that no detailed assessments were required. These reports also concluded that there were no other significant sources of other pollutants defined within the air quality regulations within the District area and as a result concluded that no other air quality objectives were likely to be breached in the district. A further round of NO₂ diffusion tubes is currently underway Jan – Dec 2014 & 2015. Results of the survey are shown below.

1.4.1. Sulphur Dioxide – Summary of Detailed Assessment.

In 2006 the Updating and Screening Assessment for that year highlighted concern that the air quality objective for sulphur dioxide near Swanage railway station could be breached. A detailed assessment was carried out in 2008 and submitted in 2009. The detailed assessment found a number of events when levels of SO₂ were elevated over the 6 month period, however overall no breaches of either the short or long term air quality objectives were recorded. In summary the report concluded that the site complied with the air quality objectives for SO₂ and that no further monitoring was required.

There are currently no Air Quality Management Areas in Purbeck.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

No automatic monitoring has been undertaken in the year.

2.1.2 Non-Automatic Monitoring Sites

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) (Front façade)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location?
Wareham B3070	Urban Background	391790 87190	NO ₂	N	Y,(13m)	1m	N
Corfe Castle A351	Kerbside	396276 81699	NO ₂	N	Y, (1m)	1m	Y
Swanage Kings Road	Kerbside	402860 78830	NO ₂	N	Y, (14m)	1m	Y
Swanage Queens Road	Urban Background	402970 78410	NO ₂	N	Y, (17m)	1m	N
Swanage Gilbert Road	Urban Background	402790 78950	NO ₂	N	Y, (7m)	1m	N
Bere Regis A35	Kerbside	383901 95100	NO ₂	N	Y, (12m)	1m	Y
Wool A352	Kerbside	384430 86880	NO ₂	N	Y, (30m)	2m	Y
Sandford A351	Kerbside	393223 89947	NO ₂	N	Y, (20m)	1m	Y
Upton Bypass A35	Kerbside	397910 93425	NO ₂	N	Y, (19m)	2m	Y
Upton B3068 Blandford Rd	Kerbside	398421 92644	NO ₂	N	Y, (16m)	1m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

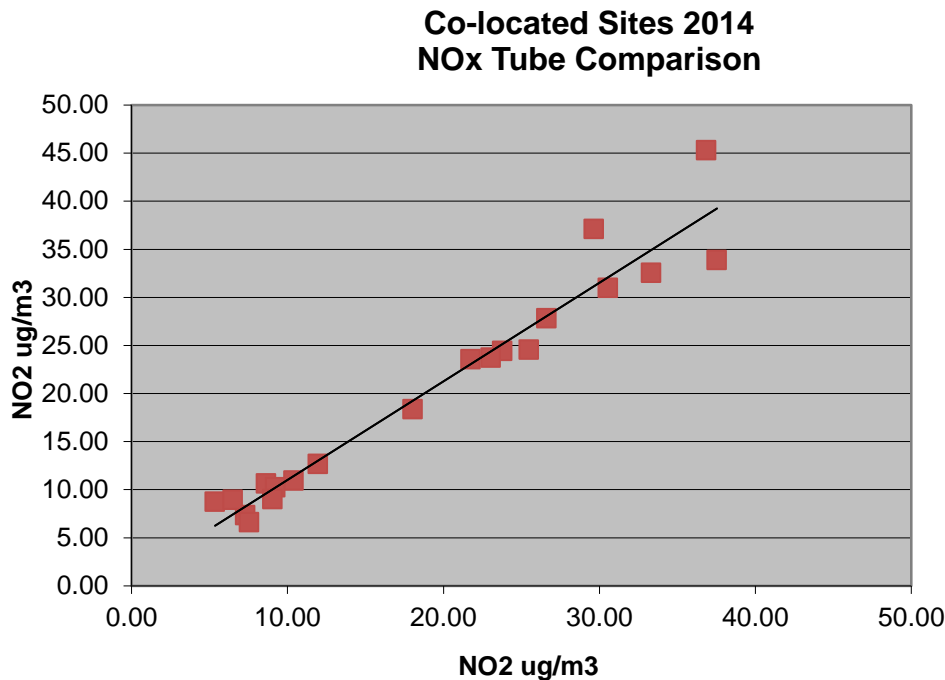
2.2.1 Summary of Nitrogen Dioxide Diffusion Tube Monitoring

Table 2.2 Results of Nitrogen Dioxide Diffusion Tubes in 2014

Tube Site	% Data Capture 2014	Trend +/- since 2010	* Annual Mean 2014 ug/m ³	Annual Mean 2010 ug/m ³	Annual Mean 2009 ug/m ³	A/Q Greater than 40 ug/m ³
Wareham B3070	67%	-1.7	12.8	14.5	15.9	No
Corfe Castle A351	83%	-0.3	21.0	20.7	21.9	No
Swanage Kings Road	92%	+1.8	17.9	19.7	22.1	No
Swanage Queens Road 1	83%	+0.8	9.7	8.9	11.3	No
Swanage Queens Road 2	83%	-0.4	8.8	9.2	11.5	No
Swanage Gilbert Road	92%	+2.6	15.9	13.3	16.1	No
Bere Regis A35	83%	-1.2	11.6	12.8	14.5	No
Wool A352	100%	+6.9	23.1	16.2	16.4	No
Sandford 1 A351	92%	+3.5	27.4	23.9	29.8	No
Sandford 2 A351	83%	+3.8	28.6	24.8	29.9	No
Upton Bypass A35	83%	+1.5	27.7	26.2	30.1	No
Upton B3068 Blandford Rd	100%	-3.4	22.9	26.3	26.8	No

* Adjusted for laboratory bias 0.94 (South Yorkshire Laboratories)

Figure 2.1 Analysis of Co-located tubes A351 Sandford & Queens Road.



Correlation Coefficient +0.97 Confidence (0.05) +/- 0,61ug/m³

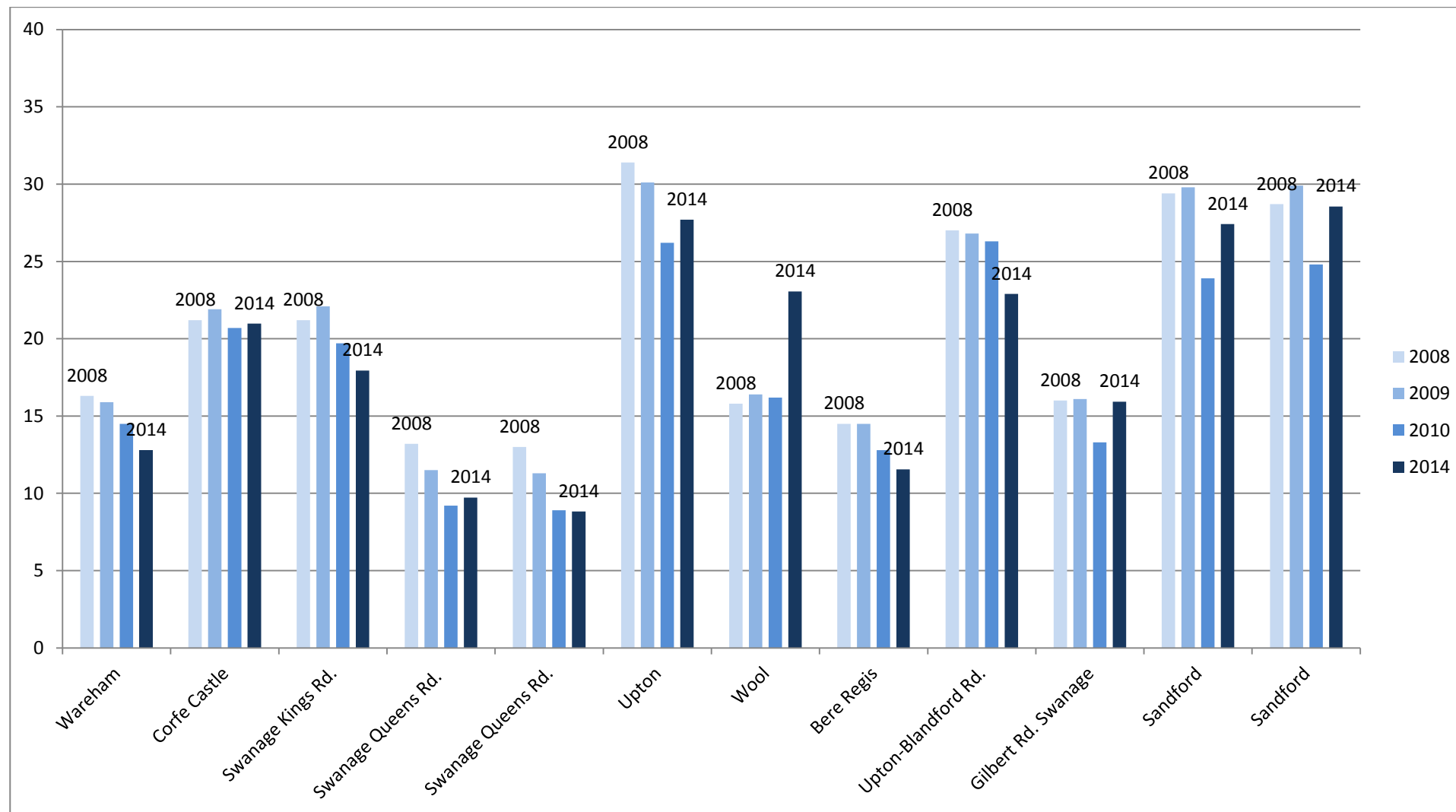
Comparison of Monitoring Results with Air Quality Objectives

Historical survey results show that all sites were significantly below the annual average air quality objective for NO₂ (40ug/m³). The diffusion tube survey of sites in 2014 shows that there has been an average increase of around 5% at individual sites since the last survey was carried out in 2010. This increase is likely to be related to a measured increase in traffic of 2.2% since that time.

The correlation of tubes at co-located sites (shown in figure 2.1) continues to indicate a high level of confidence in the results particularly between 10 – 35ug/m³.

Table 2.2.1 indicates that there are no sites where there was any risk that the air quality objective would be breached. The longer term trends in NO₂ shown in Figure 2.2 below also do not indicate any significant upward trend at this time. Purbeck Council considers that there is no evidence to suggest that a detailed assessment of NO₂ is required at this time.

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



2.2.2 PM₁₀

The local authority is not currently monitoring PM₁₀. Since the USA 2009 and previous Progress Reports there have been no new road junctions or roads built within the district which could have a significant impact on local PM₁₀ levels. In the short term traffic levels have increased by an average of 2.2% (2013 – 2014), over the medium term the increase is 1% (2010 – 2014) reflecting the general economic slow-down during that period. As there is no significant trend of increasing traffic at this time it is concluded that no screening of PM10 is required.

2.2.3 Sulphur Dioxide

In 2006 the Council's Updating and Screening Assessment identified the Swanage Railway Depot as requiring a detailed assessment for possible breaches of the air quality objectives for SO₂. The detailed air quality assessment was published in April 2009.

Elevated levels of SO₂ were noted over the 6 month period of monitoring attributed to steam locomotives in the depot area, however overall there were no breaches of the air quality objectives. The report concluded that the site complied with the air quality objectives for SO₂. The railway continues to operate an environmental policy which limits the maximum time locomotives are left running and/or stationary to 15 minutes at locations in the Swanage Station area. It is not considered likely that the objective is at risk of being breached at this time. As there are no other significant sources of SO₂ identified in the district in the last year it is concluded that a detailed assessment is not required at this time.

2.2.4 Benzene

There are no new sources of benzene identified in the district in 2014. Oil extraction operations at Wytch Farm continue to be the most significant potential point source; production from the site is slowly declining over time as the yield from the oil field declines. Diffusion tube monitoring by the operator since 2011 has shown that levels at all sites were significantly below the air quality objective (5ug/m³). Currently the operator deploys diffusion tubes in 22 locations primarily on the plant and in nearby areas associated with the plant. The site itself is located in a sparsely populated rural

area. Results for 2014 diffusion tube survey are shown in Table 2.3 below. It is concluded that there is no evidence that detailed assessment is required at this time.

Table 2.3 Benzene Diffusion Tube Data – Wytch Farm

Location		Benzene Annual Average (ug/m ³)				
		2014	2013	2012	2011	2010
A1 Furzebrook	SY931 842	0.33	>0.29	0.45	0.62	0.57
A2 Furzebrook	SY931 843	0.31	>0.29	0.34	0.61	0.46
A3 Kimmeridge Well Site	SY904 793	1.28	1.82	1.23	1.23	2.65
A4 Kimmeridge Well Site	SY904 793	1.26	0.86	2.03	2.03	1.05
A5 Kimmeridge Well Site	SY904 792	1.19	0.80	0.95	0.95	2.43
A21 Kimmeridge Village	SY969 844	>0.30	0.32	0.35	0.31	0.45
A6 Gathering Station	SY974 848	>0.30	>0.29	0.49	0.33	0.44
A7 Gathering Station	SY975 849	>0.30	0.30	0.50	0.45	0.46
A8 Gathering Station	SY971 853	>0.30	0.37	0.37	0.53	0.53
A9 Gathering Station	SY976 854	>0.30	>0.29	0.45	0.47	0.31
A10 Gathering Station	SY978 852	>0.30	>0.29	0.42	0.59	0.34
A11 Gathering Station	SZ010 856	>0.30	>0.29	0.41	0.53	0.43
A22 Gathering Station	SZ012 858	>0.30	>0.29	0.41	0.55	0.41
A12 Goathorn	SZ012 860	>0.30	>0.29	0.21	0.45	0.41
A13 Goathorn	SZ011 860	>0.30	>0.29	0.26	0.44	0.43
A14 Goathorn	SY989 857	>0.30	>0.29	0.24	0.37	0.41
A15 Goathorn	SY990 864	>0.30	>0.29	0.30	0.48	0.45
A16 Goathorn	SZ010 871	0.49	>0.29	0.51	0.37	0.36
A17 Goathorn	SZ014 871	0.48	>0.29	0.70	0.48	0.36
A18 Furzey Island	SZ011 870	>0.30	>0.29	0.53	0.39	0.41
A19 Furzey Island	SY916 796	0.33	>0.29	0.31	0.51	0.56
A20 Furzey Island	SY972 852	0.31	>0.29	0.33	0.52	0.42

2.2.5 Summary of Compliance with AQS Objectives

Purbeck Council considers that there is no evidence to suggest that a detailed assessment of any of the air quality objectives is required at this time.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Purbeck District 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

Purbeck District 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.

Purbeck District Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Purbeck District 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

Purbeck District Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Purbeck District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Purbeck District Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Purbeck District Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Swanage Heritage Railway (SHR) operates an environmental policy which aims to reduce the impact of both heritage steam and diesel locomotives. The railway operates between Swanage and Corfe Castle a distance of approximately 8 miles through predominantly rural countryside. The environmental policy, which aims to preclude locomotives being stationary for periods longer than 15 minutes in built up areas is the direct responsibility of the Operations Manager. The manager oversees training and the day to day management of the drivers, including the management of the locomotives. The Council actively liaises with SHR to ensure the policy is enforced. A detailed investigation at Swanage Station was carried out in 2009, no breaches of the air quality objectives were found at that time.

4.2.2 Moving Trains

Purbeck District Council confirms that there are no locations with a large number of movements of diesel locomotives.

4.3 Ports (Shipping)

Purbeck District 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

Purbeck District 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

Purbeck District 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

Purbeck District 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

Purbeck District Council confirms that there are no petrol stations meeting the specified criteria. No new petrol stations have opened in the district in 2014.

5.4 Poultry Farms

Purbeck District Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Purbeck District Council confirms that there are no biomass combustion plants in the Local Authority area

6.2 Biomass Combustion – Combined Impacts

Purbeck District Council confirms that there are no biomass combustion plants in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

Purbeck District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Purbeck District 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

Monitoring data over this period does not indicate that there have been any significant changes in NO₂ that might lead to a breach in the air quality objectives. Levels at all sites monitored were significantly below the national air quality objective. There has not been any significant increase in infrastructure, industry, roads or other sources in the same period.

8.2 Proposed Actions

The Updating and Screening Assessment has not identified any pollutant likely to be at risk of breaching air quality objectives and as such no actions are proposed at this time.

9 References

- (1) Local Air Quality Management Technical Guidance TG(09)
- (2) Dorset Data Book 2011
- (3) Dorset Local Transport Plan 2011
- (4) Purbeck Transportation Strategy 2012

Appendices

Appendix A Summary of all significant planning applications in the District 2013 - 2014

Planning Ref No	Location:	Proposal:	Significance / likely Impact on air quality
6/2014/0155	Location: Victoria Avenue (Plot 3, Prospect Business Park), Swanage, BH19 5AP	Proposal: Erect a block of four industrial units (B1, B2 and B8).	Existing industrial estate / Low impact
6/2014/0206	Location: Victoria Avenue (25 - 30 Prospect Business Park), Swanage BH19 1AU	Proposal: Erect 6 industrial and commercial units (Use Classes B1, B2 and B8) with associated parking.	Existing industrial estate / Low impact
6/2014/0295	Location: Slepe Farm, Arne, Wareham, BH20 5BN	Proposal: Partial replacement to existing group of buildings comprising Class B1, B2, B8 & C3	Existing buildings / isolated rural area Very low impact
6/2014/0346	Location: Worgret Manor Farm (Wareham Wellsite C), Wareham	Proposal: Drilling of 2 additional wells Wellsite C	Isolated rural area Very low impact
6/2014/0338	Location: Bere Road (Oaklands Plantation) Coldharbour Wareham BH20 7PA	Proposal: Construction of a 5.8 MW solar photovoltaic park	Very low impact
6/2014/0437	Location:	Proposal:	Rural village / near

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	Bere Regis Primary School, off Southbrook, Bere Regis	Erect new school and pre-school in field at end of Egdon Close	A35 Low Impact
6/2014/0526	Location: Lampton Close (Land adjacent 3), Wool, BH20 6EW	Proposal: Erect four detached two storey dwellings	Rural village Low impact
6/2014/0616	Location: Victoria Avenue (Plot 1 - Prospect Business Park), Swanage	Proposal: Construct ten B1, B2 and B8 units and four small storage units	Existing industrial estate / Low impact
6/2014/0663	Location: Marsh Lane (1), Upton, Poole, BH16 5NH	Proposal: Demolish existing detached house and erect two, three bedroomed detached houses	Urban area Very low impact
6/2014/0685	Location: High Street (46 - 48), Swanage BH19 2NX	Proposal: Demolish existing shop units and garage/storage units. Erect classic car showroom, 2 shop units and 7 flats.	Replacement of existing units Very Low impact