

4.0 Review and Assessment of Benzene

4.1 The Current Air Quality Objective for Benzene

In the First Stage Review and Assessment of Air Quality in York, benzene was assessed against the objective set down in the Air Quality Regulations 1997 which was:

“A running annual mean of 5ppb or less to be achieved by the end of 2005.”

The First Stage Review and Assessment of Air Quality in York concluded that this objective would be met in York and that no further stages of review and assessment were required.

Following the review of the National Air Quality Strategy the objective for benzene has been made more stringent by bringing the compliance date forward to 2003. The current objective is:

“A running annual mean of 16.25 mg/m³ (5ppb) or less to be achieved by the end of 2003.”

4.2 Re-assessment of Benzene in York

The First Stage Review and Assessment of Air Quality in York concluded that benzene concentrations were already below 5ppb and that no further stages of review and assessment were required.

Only those local authorities with relevant locations in the vicinity of major industrial processes which handle, store or emit benzene are expected to proceed beyond the first stage. This guidance has not changed with the introduction of the current objective. The table in Appendix 2 shows those processes which are outlined in the current technical guidance note as being significant emitters of benzene.

For the purpose of the current objective local authorities are required to identify all processes listed in Appendix 2 as being significant benzene emitters and which meet the following criteria:

- Located within the authority boundary.
- Located within 5km of the boundary and have a stack height greater than 60m.
- Located within 2km of the boundary and have a stack height greater than 20m.
- Located within 1km of the boundary and giving rise to fugitive emissions.

When applying these criteria to the updated list of Part A and Part B processes in and around York (Appendix 1) it is found that there are no significant benzene emitters within the City of York Council area or within 5km of it's boundaries.

4.3 Conclusion for the Re-assessment of Benzene in York

The First Stage Review and Assessment of Air Quality in York concluded that the previous 5ppb objective for benzene was already being met in 1998 and that there would be no problem in maintaining concentrations below this level by the previous compliance date of December 2005.

Since the publication of the First Stage Review and Assessment of Air Quality in York there have been no further significant sources of benzene developed within 5 km of the City of York Council boundary. There is presently no evidence of plans to introduce such sources within 5 km of the City before the current compliance date of December 2003.

It is therefore confirmed that based on the findings of the First Stage Review and Assessment of Air Quality in York, and taking into account the current Government guidance, there is no requirement for the City of York Council to progress to a Stage 2 or 3 Assessment for benzene at this time.



5.0 Review and Assessment of 1,3, Butadiene

5.1 The Current Air Quality Objective for 1,3 Butadiene

In the First Stage Review and Assessment of Air Quality in York, 1-3 butadiene was assessed against the objective set down in the Air Quality Regulations 1997 which was:

“A running annual mean of 1ppb or less to be achieved by the end of 2005.”

The First Stage Review and Assessment of Air Quality in York concluded that this objective would be met in York and that no further stages of review and assessment were required.

Following the review of the National Air Quality Strategy the objective for 1-3 butadiene has been made more stringent by bringing the compliance date forward to 2003. The current objective is:

“A running annual mean of 2.25 mg/m³ (1ppb) or less to be achieved by the end of 2003.”

5.2 Re-assessment of 1,3, Butadiene in York

The First Stage Review and Assessment of Air Quality in York concluded that 1,3 butadiene concentrations were already below 1ppb and that no further stages of review and assessment were required.

Only those local authorities with relevant locations in the vicinity of major industrial processes which handle, store or emit 1,3 butadiene are expected to proceed beyond the first stage. This guidance has not changed with the introduction of the current objective. The table in Appendix 2 shows those processes which are outlined in the current technical guidance note as being significant emitters of 1,3 butadiene.

For the purpose of the current objective local authorities are required to identify all processes listed in Appendix 2 as being significant 1,3 butadiene emitters and which meet the following criteria:

- Located within the authority boundary.
- Located within 5km of the boundary and have a stack height greater than 60m.
- Located within 2km of the boundary and have a stack height greater than 20m.
- Located within 1km of the boundary and giving rise to fugitive emissions.

When applying this criteria to the updated list of Part A and Part B processes in and around York (Appendix 1) it is found that there are no significant 1-3 butadiene emitters within the City of York Council area or within 5km of its boundaries.

5.3 Conclusion for Re-assessment of 1,3 Butadiene in York

The First Stage Review and Assessment of Air Quality in York concluded that the previous 1ppb annual average objective for 1,3 butadiene was already being met in 1998 and that there would be no problem in maintaining concentrations below this level by the previous compliance date of December 2005.

Since the publication of the First Stage Review and Assessment of Air Quality in York there have been no further significant sources of 1,3 butadiene developed within 5 km of the City of York Council boundary. There is presently no evidence of plans to introduce such sources within 5 km of the City before the current compliance date of December 2003.

It is therefore confirmed that based on the findings of the First Stage Review and Assessment of Air Quality in York, and taking into account the current Government guidance, there is no requirement for the City of York Council to progress to a Stage 2 or 3 Assessment for 1,3, butadiene at this time.



6.0 Review and Assessment of Lead

6.1 The Current Air Quality Objective for Lead

In the First Stage Review and Assessment of Air Quality in York, lead was assessed against the objective set down in the Air Quality Regulations 1997 which was:

“An annual average of 0.5mg/m³ or less to be achieved by the end of 2005.”

The First Stage Review and Assessment of Air Quality in York concluded that this objective would be met in York and that no further stages of review and assessment were required.

Following the review of the National Air Quality Strategy the previous objective for lead has been made more stringent by bringing the compliance date forward to 2004. An additional annual mean objective of 0.25 µg/m³ to be met by December 2008 has also been added. The current objectives for lead are:

“An annual mean of 0.5mg/m³ or less to be achieved by the end of 2004.”

“An annual mean of 0.25mg/m³ or less to be achieved by the end of 2008.”

6.2 Re-assessment of Lead in York

The First Stage Review and Assessment of Air Quality in York concluded that lead concentrations were already below 0.5µg/m³ and that no further stages of Review and Assessment were required.

Government guidance on reviewing and assessing lead advises that annual mean concentrations of lead measured at urban background and kerbside sites across the UK are already well below the current objectives for both 2004 and 2008 (Table 3). This is due to the phasing out of lead in fuel and its complete ban since 1st January 2000. Local authorities are therefore not expected to consider emissions of lead from road traffic in their reviews and assessments.

Measured concentrations of lead in close proximity to specific industrial installations have been found to be in breach of the current lead objectives in some parts of the country and may remain so beyond the compliance dates (Table 3). Those authorities in the vicinity of major industrial processes which handle, store or emit lead are therefore expected to proceed beyond the First Stage Review and Assessment for lead.

Table 3: Annual Mean Lead in Air Concentrations at National Network Monitoring Sites 1994-98

Site Classification	Site	Annual mean lead in air concentration ($\mu\text{g}/\text{m}^3$)				
		1994	1995	1996	1997	1998
Kerbside	London Cromwell Road	0.244	0.199	0.151	-	0.089
Kerbside	Cardiff	0.233	0.165	0.171	0.165	0.107
Urban Background	Central London	0.085	0.060	0.074	0.060	0.038
Urban Background	Glasgow	0.039	0.051	0.052	0.044	0.029
Urban Background	Leeds	0.080	0.076	0.060	0.063	0.044
Urban Background	London Brent	0.144	0.023	0.148	0.089	0.054
Urban Background	Motherwell	0.023	0.050	0.030	0.045	0.018
Urban Background	Manchester	0.123	0.133	0.118	0.102	0.071
Urban Background	Newcastle	0.027	0.025	0.035	0.029	0.019
Industrial	Brookside 1	0.143	0.180	0.177	0.179	0.097
Industrial	Brookside 2	0.438	0.465	0.359	0.477	0.417
Industrial	Elswick 1	0.335	0.480	0.546	0.082	0.055
Industrial	Elswick 2	0.145	0.140	0.117	0.223	0.087
Industrial	Elswick 6	0.200	0.190	0.215	0.177	0.096
Industrial	IMI 1	0.500	0.700	0.579	0.374	0.509
Industrial	IMI 2	1.340	1.020	0.882	1.370	1.273
Industrial	IMI 5	0.480	0.660	0.467	0.596	0.596

For the purpose of the current objective local authorities are required to identify all processes listed in Appendix 2 as being significant lead emitters and which meet the following criteria:

- Located within the authority boundary.
- Located within 5km of the boundary and have a stack height greater than 60m.
- Located within 2km of the boundary and have a stack height greater than 20m.
- Located within 1km of the boundary and giving rise to fugitive emissions.

When applying this criteria to the updated list of Part A and Part B processes in and around York (Appendix 1) it is found that there are no significant lead emitters within the City of York Council area or within 5km of its boundaries.

6.3 Conclusion for Re-assessment of Lead in York

The First Stage Review and Assessment of Air Quality in York concluded that the previous $0.5\mu\text{g}/\text{m}^3$ annual mean objective for lead was already being met in 1998 and that there would be no problem in maintaining concentrations below this level by the previous compliance date of December 2005.

Since the publication of the First Stage Review and Assessment of Air Quality in York there have been no further significant sources of lead developed within 5 km of the City of York Council boundary. There is presently no evidence of plans to introduce such sources within 5 km of the City before the current compliance dates of December 2004 and December 2008.

It is therefore confirmed that based on the findings of the First Stage Review and Assessment of Air Quality in York, and taking into account the current Government guidance, there is no requirement for the City of York Council to progress to a Stage 2 or 3 Assessment for lead at this time.



7.0 Review and Assessment of Carbon Monoxide

7.1 The Current Air Quality Objective for Carbon Monoxide

In the First Stage Review and Assessment of Air Quality in York, carbon monoxide was assessed against the objective set down in the Air Quality Regulations 1997 which was:

“An 8-hour running average of 10ppm, or less, to be achieved by the end of 2005.”

The First Stage Review and Assessment of Air Quality in York concluded that this objective would be met in York and that no further stages of review and assessment were required.

Following the review of the National Air Quality Strategy the objective for carbon monoxide has been made more stringent by bringing the compliance date forward to 2003. The current objective is:

“An 8-hour running mean of 11.6mg/m³ (10ppm) or less to be achieved by the end of 2003.”

7.2 Re-assessment of Carbon Monoxide in York

The First Stage Review and Assessment of Air Quality in York concluded that the previous objective for carbon monoxide would be met in York by the 2005 compliance date. This was based on previous Government guidance which stated that reductions in vehicle emissions, under the Auto-Oil Programme, would ensure compliance with the previous carbon monoxide air quality objective next to all roads which have a traffic flow of less than 50,000 vehicles per day.

The recently revised Government guidance continues to assure local authorities that reductions in vehicle emissions, as part of the Auto-Oil Programme, will deliver the current objective for carbon monoxide next to most roads, even though the compliance date has been brought forward to the end of 2003.

Under the current guidance only those local authorities which have the following situations arising in their areas are expected to progress beyond Stage One.

- Significant industrial sources of carbon monoxide as listed in Appendix 2 within their boundary.
- Significant industrial sources of carbon monoxide in surrounding local authority areas if they are:
 - Within 15km of the boundary and have a stack height greater than 100m.

- Within 5km of the boundary and have a stack height greater than 60m.
- Within 2km of the boundary and have a stack height greater than 20m.
- Roads within the boundary which meet the following criteria:
 - Single carriageway with daily average traffic flows of greater than 80,000 vehicles per day.
 - Dual carriageway with daily average traffic flows of greater than 120,000 vehicles per day.
 - Motorways with daily average traffic flows of greater than 120,000 vehicles per day.

Authorities which do not have these situations arising in their areas are not expected to carry out monitoring of carbon monoxide in their area and will find it difficult to obtain funding from central Government to do so.

Applying the criteria outlined above to York it is found that there are currently no significant industrial sources of carbon monoxide within 15km of the City of York Council boundary and no evidence of any plans to introduce such sources.

There are no single carriageway roads in York with current or predicted daily average flows greater than 80,000 vehicles per day and no dual carriageways with daily average traffic flows of greater than 120,000 vehicles per day. York does not have any motorways running through it's area. Presently there are no plans to introduce new roads which would meet any of the above criteria.

7.3 Conclusion for the Re-assessment of Carbon Monoxide in York

The First Stage Review and Assessment of Air Quality in York concluded that the 10ppm running 8-hour mean objective for carbon monoxide would be met by the previous 2005 compliance date. Since the publication of the First Stage Review and Assessment of Air Quality in York, the compliance date for the carbon monoxide air quality objective has been brought forward to 2003. A further assessment of carbon monoxide concentrations against the current objective has therefore been undertaken.

Since the publication of the First Stage Review and Assessment of Air Quality in York there have been no further significant industrial sources of carbon monoxide developed within 15 km of the City of York Council boundary and none are currently being planned. A review of the current and predicted daily average traffic flows on current and planned roads in the York area has shown that none meet, or are expected to meet, the criteria for which further stages of review and assessment are recommended for the current carbon monoxide objective.

It is therefore confirmed that based on the findings of the First Stage Review and Assessment of Air Quality in York, and taking into account the current Government guidance, there is no requirement for the City of York Council to progress to a Stage 2 or 3 Assessment for carbon monoxide at this time.

