

## 3.0 Progress Report for Sulphur Dioxide

### 3.1 The national perspective

The main sources of sulphur dioxide in the United Kingdom are power stations which accounted for more than 71% of the total emissions in 2000. Other sources of emissions include other industrial combustion sources, domestic solid fuel burning and shipping.

Although concentrations of sulphur dioxide have been reduced significantly in recent years, exceedences of the current sulphur dioxide objectives may still occur in the vicinity of localised combustion plant, in areas where solid fuels are still the predominant source of domestic heating and in close proximity to major ports.

In the first round of reviews and assessments a small number of AQMAs were declared in the UK due to sulphur dioxide emissions from coal fired boiler plants, domestic coal burning and a major port. The majority of these have now been revoked.

### 3.2 The local perspective

In the First Stage Review and Assessment of Air Quality in York sulphur dioxide was assessed against the following objectives:

*'The 99.9<sup>th</sup> percentile of 15-minute averages not to exceed 100ppb by the end of 2005.'*

The First Stage Review and Assessment of Air Quality in York concluded that in general concentrations of sulphur dioxide in York are low. However, the occurrence of occasional peaks in the monitoring data, possibly due to power station emissions, was highlighted and it was recommended that a detailed review and assessment of sulphur dioxide should be undertaken.

In the Second and Third Stage Review and Assessment of Air Quality in York sulphur dioxide was assessed against revised objectives which were:

*'A 24 hour mean of 125µg/m<sup>3</sup> (47ppb), not to be exceeded more than 3 times a year, to be achieved by the end of 2004'*

*'A one hour mean of 350µg/m<sup>3</sup> (132ppb), not to be exceeded more than 24 times a year, to be achieved by the end of 2004'*

*'A 15 minute mean of 266µg/m<sup>3</sup> (100ppb), not to be exceeded more than 35 times a year, to be achieved by the end of 2005'*

It was concluded that these objectives would also be met in York without the need for further action at a local level.

In 2003 an Update and Screening Assessment was carried out. This assessment concluded that a detailed assessment of sulphur dioxide emissions from domestic solid fuel burning and idling diesel locomotives should be carried out. The Detailed Assessment was published in April 2004. It concluded that there was no risk of the air quality objectives being breached due to emissions from either of these sources.

### **3.3 Sulphur dioxide monitoring results from real-time monitoring stations**

City of York Council has undertaken real time monitoring of sulphur dioxide at three locations in the city. These are :

- Bootham [urban background site]
- Dunnington [sub-urban background site]
- City Centre [city centre site]

The location of these monitoring sites are shown on figure 3 in chapter 2.

All the sulphur dioxide analysers used were Monitor Labs ML9850b. Full information about the air pollution station locations, data management procedures and other QA/QC procedures for the real time air pollution stations have been previously documented as part of the Second and Third Stage Review and Assessment of Air Quality in York.<sup>1</sup>

The results of the sulphur dioxide monitoring undertaken at these sites are shown in table 12. The data is for the first time shown in the form of calendar years.

As there have been no recorded breaches of the sulphur dioxide objectives in York, and no indication that there are likely to be, all three sulphur dioxide monitoring sites have now been closed.

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<sup>1</sup> CITY OF YORK COUNCIL Second and Third Stage Review and Assessment of Air Quality in York – Technical Annex 2: Air Quality Monitoring in York Feb 2001

**Table 12 : Summary of real time sulphur dioxide monitoring results**

<b>Parameter</b>	<b>Station</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>Number of exceedences of 266 µg/m<sup>3</sup> 15 minute mean objective (35 allowed in one year)</b>	Bootham	4	0	-	0	0	0	0
	Dunnington	2	0	8	2	0	0	0
	City Centre	1	4	0	12	0	0	0
<b>Number of exceedences of 350 µg/m<sup>3</sup> hourly objective (24 allowed in one year)</b>	Bootham	0	0	0	0	0	0	0
	Dunnington	0	0	1	0	0	0	0
	City Centre	0	0	0	0	0	0	0
<b>Number of exceedences of 125µg/m<sup>3</sup> 24 hour mean objective</b>	Bootham	0	0	0	0	0	0	-
	Dunnington	0	0	0	0	0	0	0
	City Centre	0	0	0	0	0	0	0
<b>Percentage data capture</b>	Bootham	91.21	88.18	84.79	91.0	88.76	99.01	-
	Dunnington	98.88	91.46	96.29	77.68	88.67	62.59	99.29
	City Centre	46.27	48.55	34.50	96.39	79.05	87.35	-

### **3.4 Conclusions**

The results shown in table 12 indicate that the objectives for sulphur dioxide are currently being met at all the real-time monitoring locations around York. A further update and screening exercise for Sulphur Dioxide shall be carried out in April 2008.