Spatial Planning AQMA Zoning Update

Key

AQMA Boundary
Corus Boundary
Zone Boundaries

Introduction

The Environment Act 1995 required the UK Government to produce a national air quality strategy, the first of which was adopted in 1997. It has been reviewed a number of times and the current strategy was adopted in 2007.

Air pollution can have a serious effect on people's health and the primary objective is to ensure that everyone has access to outdoor air without significant risk to their health, consideration has also been given to the economic and technical feasibility.

Air Quality Objectives exist for a number of pollutants representing levels at which no significant health effects would be expected in the population as a whole. It should be noted however that PM_{10} is a non threshold pollutant and it is not currently possible to discern a threshold concentration below which there are no effects on the whole population's health.

Both short-term and long-term exposure to ambient levels of PM_{10} are consistently associated with respiratory and cardiovascular illness and mortality as well as other ill-health effects.

Development Control & Air Quality Management

In order to inform both spatial planning and the development control process it was agreed that further guidance was required to quantify constraints to residential development within the Air Quality Management Area (AQMA). A report was issued in May 2010 using existing monitoring data and modelling carried out by Tata Steel.

The AQMA (Appendix 1) was declared in 2005 for PM_{10} (particulate matter less than 10 microns in size) in respect of a breach of the daily mean Air Quality Objective and consequently a breach of the EU Limit Value.

In order to zone the AQMA the boundary of the Integrated Steelworks was used as a guide. A number of significant processes lie within the boundary of the site and some may pose a more significant risk than others. Investigations are currently ongoing to identify the relative importance of specific plants/site areas on PM_{10} concentrations within Scunthorpe.

Modelling data produced by Tata which identified areas within Scunthorpe likely to exceed the PM_{10} Air Quality Objective was used to designate the zones. The modelling is primarily based on emissions from point sources and does not account for fugitive sources prevalent across the site. This suggests the modelling will be an underestimate of the actual levels and triggered the use of actual monitoring data to further refine the zoning.

Further monitoring equipment was strategically positioned within the AQMA increasing confidence within the zones and adding to the already extensive data capture within Scunthorpe. This data is continuously reviewed with any changes reflected in the current advice given.

The most recent monitoring data has confirmed that specific areas of the zones lie within areas of exceedance whereas others have demonstrated compliance. As a result of this the zones have be redrawn to reflect this data. The new data is as follows:

Location	Monitoring Period	Monitoring Method	Falls Within	Annual Mean (<40ug/m3)					
				2010 (ug/m3)	Compliance	2011 (ug/m3)	Compliance	2012 (ug/m3) Provisional Data	Compliance (Projected)
Amvale	09/07/2010 to date	Osiris	Zone 1	28.1	✓	21.2	✓	25.1	✓
Lakeside	14/04/2011 to date	TEOM	n/a			26.8	✓	26.5	✓
Grange Lane	04/06/2011 to 11/03/2012	Osiris	Zone 1			24.1	✓	26.3	✓
Redbourn Club	18/08/2010 to date	TEOM	Zone 2	20.9	✓	23.9	✓	23.6	✓
Leisure Centre	23/12/10 to 28/06/2011	Osiris	Zone 1	20.4	✓	29.2	✓		
Scunthorpe Town (AURN)	Full period (existing station)	FDMS	Zone 1	20.4	✓	22.1	✓	23.9	✓
East Common Lane	Full period (existing station)	TEOM	Zone 1	22.7	✓	26.7	✓	26.6	✓
Station Road	15/09/2010 to 14/03/2011	Osiris	Zone 2	19.1	✓	21.9	✓		

Table 1: Scunthorpe AQ Sites Annual Mean Results
Data for 2012 is up to 7th May 2012

Location	Monitoring Period	Monitoring Method	Falls Within	Daily Mean (<35 daily means of >50ug/m3)					
				2010 (Days)	Compliance	2011 (Days)	Compliance	2012 (Days) Provisional Data	Compliance (Projected)
Amvale	09/07/2010 to date	Osiris	Zone 1	16	X	15	✓	12	X
Lakeside	14/04/2011 to date	TEOM	n/a			20	✓	9	✓
Grange Lane	04/06/2011 to 11/03/2012	Osiris	Zone 1			10	✓	6	✓
Redbourn Club	18/08/2010 to date	TEOM	Zone 2	6	✓	20	✓	6	✓
Leisure Centre	23/12/10 to 28/06/2011	Osiris	Zone 1	0	✓	31	X		
Scunthorpe Town*1 (AURN)	Full period (existing station)	FDMS	Zone 1	6	✓	20	✓	8	✓
East Common Lane*1	Full period (existing station)	TEOM	Zone 1	9	✓	34	✓	12	X
Station Road	15/09/2010 to 14/03/2011	Osiris	Zone 2	2	✓	2	✓		

Table 2: Scunthorpe AQ Sites Daily Mean Results
Data for 2012 is up to 7th May 2012

*1 for the purposes of this comparison, data from the permanent sites of Scunthorpe Town and East Common Lane have been presented over the same period as Amvale, the longest running non permanent site installed for this investigation.

All locations within the Scunthorpe network are compliant with the annual mean objective. Amvale remains an area of concern where a high number of exceedances of the daily mean were recorded in 2010 within a relatively short time period, 2011 confirmed compliant concentrations. Early indications from 2012 suggest that the area is in danger of exceeding the daily mean objective. Concentrations at this location are influenced by the Integrated Steelworks. A number of specific sources have been highlighted within the data from Amvale.

East Common Lane has measured borderline concentrations since its installation in 2004. 2011 achieved the objective by one day and remains an area of concern. The site is close to the Integrated Steelworks Blast Furnaces, a known source of PM_{10}. The site is currently on two Blast Furnace operation producing significantly lower quantities of iron than it has in the past, if Blast Furnace operation increases to three again the concentrations at East Common Lane are likely to rise.

The Scunthorpe Leisure Centre site measured high concentrations of PM_{10} within a 6 month monitoring campaign. This site sits close to a number of processes to the North of the Integrated Steelworks site. The Environmental Protection Team recommend that no residential development takes place at this location.

As well as these areas of concern a number of monitors confirmed compliance at a number of locations. The zoning map (Appendix 1) has now been redrawn to reflect this new understanding within 2 zones:

Zone 1 – No Residential Development

Zone 1 has now been drawn to reflect new monitoring data. The above table highlights exceedances at Amvale Transport Depot, East Common Lane and the Scunthorpe Leisure Centre.

Due to PM_{10} being a non threshold pollutant it is important that a precautionary approach to exposure is taken. On this basis it is recommended that **no residential development should take place within this zone.**

Zone 2 – Residential Development possible Subject to Further Investigation

Zone 2 now covers the remaining areas within the AQMA other than Zone 1. Recent and historic monitoring within this area has demonstrated compliance.

Any applications for residential development should be the **subject of further investigation.** Decisions on the detail of this investigation will be made on a site by site basis.