

AIR QUALITY MONITORING AT HUNLOKE PRIMARY SCHOOL



Background

A large part of the operation to clean-up The Avenue former coking works takes place under an Environmental Permit issued by the Environment Agency. One requirement of this Permit is that we must monitor the levels of various chemicals in the atmosphere at locations both on and off-site. There are 7 fixed monitoring stations in total which record the quality of the surrounding air through a combination of continuous monitoring and recovery of samples which are taken away for laboratory analysis every fortnight.

We employ an independent company called Bureau Veritas to carry out the air quality monitoring. The monitoring results are interpreted by Entec, an environmental consultancy, who produce a monthly report that we publish on the The Avenue website.

The Environmental Permit sets out Trigger Levels which are **absolute** values equal to the UK Air Quality Guidelines for the 25 different chemical compounds being monitored. The UK Air Quality Guidelines are actually **average** annual values which take into account a range of potential values to be recorded during a running 12 month period. Air Quality Standards are concentrations defined by DEFRA as being acceptable in terms of what is scientifically known about the effects of each pollutant on health and on the environment¹.

Taking samples on a fortnightly basis gives a better idea of trends and the Trigger Level approach is used to ensure that if the values measured in any fortnight exceed the UK Air Quality Guidelines average they Trigger us to investigate why these values have been recorded and to take prompt actions if required.

March 2011 Results - What's happened and what does this mean?

Hunloke Park Primary School was chosen as a good site for one of the 7 monitoring stations because it helps us to understand if the clean-up is having an impact that is noticeable off site. Air quality monitoring began at the School in April 2001 and there has been a continuous programme in place since January 2010.

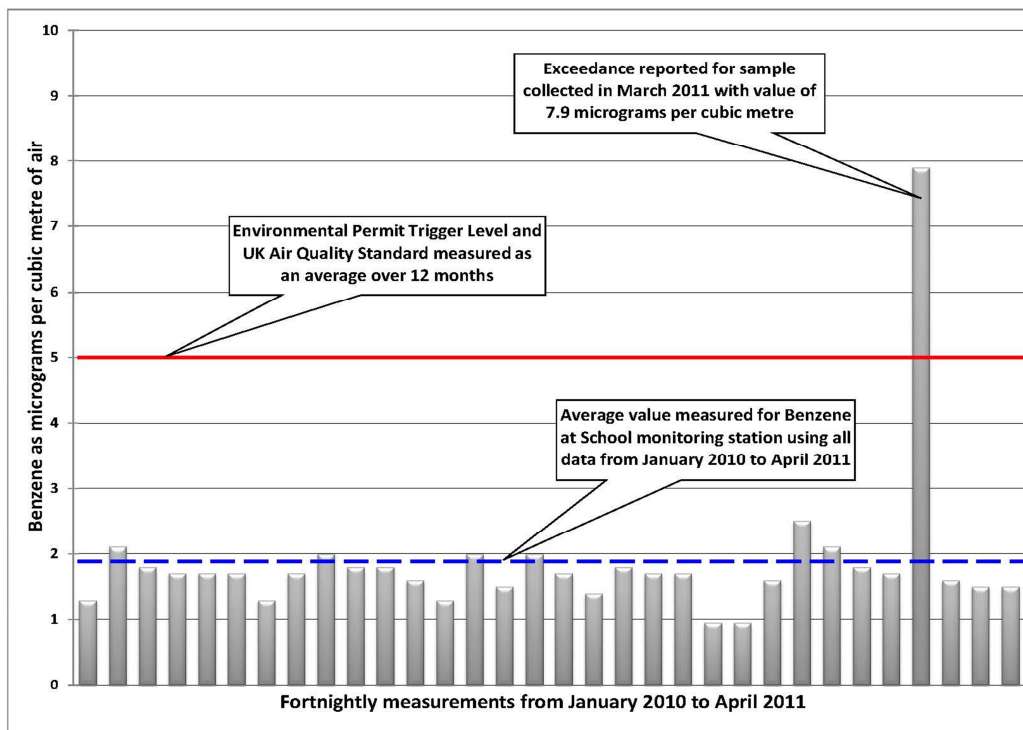
Analysis of the sample taken at the School covering the first 2 weeks of March recorded that the result for Benzene (one of the 25 chemicals monitored) exceeded the agreed Trigger Level. This sample was the 29th sample taken since January 2010 and the first to record a value above the Trigger Levels for any of the chemicals monitored.

The laboratory results for the 2 week period recorded 7.9 micrograms per cubic metre of air for Benzene compared to the Trigger Level of 5 micrograms per cubic metre. Previously the ranges of values recorded for Benzene have been between 1.3 and 2.5 with an average value of 1.9 micrograms per cubic metre.

In the second half of March the result for Benzene was below 1.6 micrograms per cubic metre; giving an average for the month of 4.75, compared to the UK Air Quality Guideline value of 5 micrograms per cubic metre. Benzene levels for Periods 1 & 2 in April were both 1.5; again well below the UK Air Quality Guideline value of 5 micrograms per cubic metre.

In summary, although the results for the first 2 weeks of March were above the Trigger Level for Benzene, the average level for the month was below UK Air Quality Guidelines. It is also important to note that the average Benzene level over the last 12 months is still 62% below the UK Air Quality Guidelines limit.

You can see what this looks like on the graph below which is drawn from the actual monitoring data collected at the School between January 2010 and April 2011.



What has been done about these results?

Although Benzene can come from various different sources, for example vehicle exhaust fumes, it is considered likely that the elevated levels recorded at the School for this 2 week period are related to regeneration work at The Avenue. The higher values recorded in early March may be due to particularly still weather conditions along with relatively high daytime temperature and cold nights which meant odours and chemicals in the atmosphere were not being quickly dispersed.

Despite the return to 'background' Benzene levels recorded at the School we are continuing to thoroughly investigate potential causes of the exceedance and are identifying the necessary steps to reduce the potential for it to happen again. One part of our investigation includes checking the quality control systems at the laboratory that supply of the monitoring equipment, as possible cross contamination of samples by has not been ruled out. We have already installed additional monitoring stations between the Site and the School, and the 3 results from mid-March to mid-April have recorded values well below the Trigger Levels for Benzene.

We have also updated The Avenue Odour and Emissions Action Plan which looks at the key sources of emissions from the site and have installed a new spray control system around the area that has the greatest potential for emissions. We have also changed the location of some of the existing odour and dust suppression equipment on site so it works more effectively to control emissions during varying weather conditions.

The Environment Agency continues to assess the monitoring results as they are reported and will be looking to see if the new infrastructure has made a difference. VSD and the Environment Agency are working closely with the Environmental Health departments of both North East Derbyshire and Chesterfield Borough Councils.

Want to know more?

If you have any questions please ring **01246 554580** or e-mail **enquiry@avenuecw.co.uk**

You can see the Monthly Monitoring Reports on our website: **www.theavenueproject.co.uk**
 - Go to 'Facts and Figures' then 'Environmental & Technical Reports'

¹ <http://uk-air.defra.gov.uk/air-pollution/uk-eu-limits>