Rhea Keehn

From: Will Lusty [WLusty@savills.com]
Sent: 07 August 2009 14:46
To: Andrew Ryley
Cc: 'Cunliffe Gary'; 'Catheryn Price'; 'Drew, Gillian'
Subject: FW: Composting at Gt Billing

Dear Andrew

Further to our recent telephone conversation, please see below, a response that we have provided to a Mr Miller in connection with a number of questions that he has submitted to directly to us in respect of the composting proposals at Gt Billing.

We have also been approached by Northamptonshire County Council to provide a Briefing Note for their Cllr Mackintosh. I will also provide a copy of this to you for your information.

Regards

Yours sincerely

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ill Lusty
August 2009 2:41 PM
liam Miller'
Composting at Gt Billing

Dear Mr Miller

Thank you for your questions in relation to the planning application we have submitted to West Northamptonshire Development Corporation for the change of use of land lying within the operational wastewater treatment works to use for composting of green waste and biosolids (09/0041/FULWNC).

I have discussed, your questions with Cambridge Environmental Research Consultants, Cranfield University and our client and the applicant, Anglian Water. I confirm where a response has been provided by either Cambridge Environmental Research Consultants or Cranfield University.

1. Is use of uncorrected wind data from Bedford appropriate to this site? For example, Ecton Brook School suffers from smell and insect days when winds are blown from the works from a North Easterly direction, possibly because of vertical eddies caused by wind blowing over the top of the concave valley shape from the prevailing South West?

Cambridge Environmental Research Consultants respond as follows:

I'm not sure that I follow the description of the wind directions. When "winds are blown from the works from a North Easterly direction", this would mean that anything dispersing from the works would end up to the south west of the WwTW. Ecton Brook School (unless I'm mistaken) is situated almost exactly to the north of the WwTW.

I can, however, address the main point of the question, namely the correction of the wind data. The wind data is not "uncorrected". Indeed it has been corrected to account for the valley and other terrain in the vicinity of the WwTW. This has been reported in both of the CERC bioaerosol and odour reports as follows:

"Sensitivity tests, carried out to assess the effect of the local terrain, showed that the terrain has significant effects on dispersion at the site, and these effects were therefore included in the modelling. Figure 4.3 shows a diagram of the local terrain."

The Appendices to both reports give further details as to how ADMS corrects for terrain effects:

"Complex terrain can have a significant impact on wind-flow and consequently on the fate of dispersing material..... The height of dispersing material is therefore important in determining the route it takes.....The ADMS Complex Terrain Module models these effects using the wind-flow model FLOWSTAR.... FLOWSTAR has been extensively tested with laboratory and field data"

2. What is the error of the modelling estimates of the bioaerosol and odour modelling?
How many days per annum would you expect odour and cfu counts to exceed permitted levels at the school, the traveller encampment or the hotel?

Cambridge Environmental Research Consultants respond as follows:

There are two aspects to the error in dispersion modelling: that associated with the model itself, and that related to the model setup, i.e., the input data specific to a given situtation. With respect to the model itself, ADMS 4 has been extensively validated against experimental data, reports of which can be found on the CERC website: http://www.cerc.co.uk/software/publications.htm.

With respect to model input data, this uncertainty is difficult to quantify for any dispersion modelling study. Where possible, uncertainty identified in the input data was offset by taking a conservative approach, which is described in both the odour and the bioaerosol reports.

Bioaerosol model predictions show that there are no exceedences of the EA suggested limit levels for either Aspergillus fumigatus, Actinomycetes, gram-negative bacteria, nor total bacteria (Actinomycetes plus gram-negative bacteria) at the school, the traveller encampment or the hotel. These results are from running 'Scenario II', as described in the CERC bioaerosols report. As an 8-hour averaging time is used here, this gives an idea of "how many days per annum" are affected. It has been assumed that the "hotel" to which you refer is the Premier Inn, to the west of the WwTW.

Odour modelling predictions show that there are no exceedences of the 3 OU_E/m^3 odour limit at the school, the traveller encampment or the hotel. These results are from running 'Scenario 2', as described in the CERC odour report.

3. Is there the possibility of bioaerosols of faecal pathogens or endotoxins from the sewage cake element, and at what levels and how frequently?

Cranfield University are able to confirm that:

The gram negative bacteria is a classification of bacteria that includes faecal bacteria. Endotoxins are components of gram-negative bacteria. Our monitoring results for gram negative bacteria provides an indication of the current levels at the Great Billing side. The results from Esholt show how this may change at the Great Billing site. The results show that activities, particularly shredding of the waste, will increase concentrations, but that these do rapidly decrease as you move away from the activity. The concentrations measured at both Esholt and Great Billing are an order of magnitude lower than we have detected near activities at other composting facilities.

4. What schedule of routine airborne microbiological monitoring is to be established around the site? What conditions would lead to a shut down?

Cranfield University are able to confirm, as per the Environment Agency's new risk assessment guidance that:

Typically, a three stage sampling regime will be proposed for bespoke permitted sites with a sensitive receptor within 250m of the site boundary:

- *Stage 1: Background sampling should be undertaken before a site begins operating, to understand the level of bioaerosols before site activity.*
- *Stage 2: New sites should monitor quarterly for the first year of operations, to provide some indication of the level of variance in emissions.*
- *Stage 3: Under normal operating conditions, bioaerosol monitoring should be undertaken twice a year. This may be discussed with the Environment Agency on a site-specific basis.*

It is anticipated that most sites will remain within Stage 3. However, under the following circumstances monitoring should return to Stage 2 and then progress through Stage 3 as appropriate:

- *Sensitive receptors identified close to the site (i.e. within 250m)*
- *Any increase in the tonnage/amount of material being processed*
- *Any changes to the site operations, including new equipment or changes in feedstock*
- *High concentration of bioaerosols is detected during routine sampling*

5. At other open windrow composting sites where there have been odour and health implications, what goes wrong, is this fully understood, why do these issues still seem to persist, why should local residents around Billing have confidence that these issues will nor arise here?

West Northamptonshire Development Corporation has available powers to attach conditions to any planning permission in seeking to control the operation of a given use or development. For example, such conditions might seek to control the way in which any use or process is carried out. Where any conditions are required in relation to matters which are beyond the professional competency of the Local Planning Authority, such conditions will be the subject of advice from relevant statutory consultees and other relevant parties where appropriate.

Outside of the controls of the planning system, the operation of the proposed use will also be subject to authorisation through the issue of relevant Environmental Permits.

6. Is there any reason why this activity should not be enclosed by a building?

Any land use or activity is only normally enclosed within a building where there is a need to do so. As the proposed use can be carried out outside and as it will have no unacceptable environmental impact, there is no need to enclose the activity within a building.

As per our response to question 5, West Northamptonshire Development Corporation has available powers to attach conditions to any planning permission in seeking to control the operation of a given use or development. For example, such conditions might seek to control the way in which any use or process is carried out. Where any conditions are required in relation to matters which are beyond the professional competency of the Local Planning Authority, such conditions will be the subject of advice from relevant statutory consultees and other relevant parties where appropriate.

Outside of the controls of the planning system, the operation of the proposed use will also be subject to authorisation through the issue of relevant Environmental Permits.

7. Would you be prepared to live as close as the travellers' camp or send your children to Ecton Brook School?

As per our response to question 5, West Northamptonshire Development Corporation has available powers to attach conditions to any planning permission in seeking to control the operation of a given use or development. For example, such conditions might seek to control the way in which any use or process is carried out. Where any conditions are required in relation to matters which are beyond the professional competency of the Local Planning Authority, such conditions will be the subject of advice from relevant statutory consultees and other relevant parties where appropriate.

Outside of the controls of the planning system, the operation of the proposed use will also be subject to authorisation through the issue of relevant Environmental Permits.

8. When cfu counts were made as inputs for the modelling, was the compost/cake mixture at rest, or being disturbed, mixed or turned?

Cranfield University are able to confirm that:

At Esholt, we monitored during mixing and shredding activities, as well as from static windrows. At Great Billing, we monitored from static sewage cake as well as from 2 point of activity (top and base) where the sewage was being delivered via conveyor belt into a storage tank.

9. Does cfu/odour emission vary with the maturity of the mixture?

Cambridge Environmental Research Consultants are able to confirm that:

With respect to odour, studies do suggest that emission rates do vary with compost maturity. For the odour modelling study, to ensure that we accounted for compost at varying stages of maturity, we considered as many measured emission rates as possible, including those from studies that specifically focussed on the changes in emissions with compost age. In the report, we specifically describe one such study:

"The yard waste values were found to be 5,000 to 10,000 OUE/tonne/hour for the first ten days after the establishment of the windrows, and 100 to 700 OUE/tonne/hour for the remainder of the composting period."

This suggests that these compost emissions are higher at the start of the composting process. We then converted these to units used in our modelling study, for better comparison:

"Converting these to values representing proposed operations at Great Billing (as described previously for the County Mayo report), gives values of around 0.5 to 1OUE/m2/s for the first ten days, and 0.01 to 0.07 OUE/m2/s for the remaining time"

The emission rate we used for the compost windrows in our modelling study (22 $OU_E/m^2/s$) is substantially higher than even the highest value in this range (1 $OU_E/m^2/s$).

Cranfield University are able to confirm that:

With respect to bioaerosols, we have measured bioaerosols from a number of different composting facilities representing various composting feedstock and compost mature. To date, we have not found a definite quantifiable relationship between bioaerosol concentration and compost maturity.

10. What microbiological data are available for other open windrow composting sites at times when they are causing concern to local residents?

Cambridge Environmental Research Consultants are able to confirm that:

Although we carried out an extensive review of available literature and guidance in order to carry out our assessment, we believe that this specific question is outside the scope of the dispersion modelling study carried out for the Great Billing site.

Thank you again for your questions and your interest in the planning application. The planning application has been made to West Northamptonshire Development Corporation for their determination as the Local Planning Authority and we now await their decision.

Yours sincerely

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