DESIGN AND ACCESS STATEMENT

PLANNING APPLICATION FOR AN EXTENSION TO THE ELECTRICITY GENERATING AND GAS FLARING COMPOUND AT KILSBY LANDFILL SITE, DAVENTRY ROAD, KILSBY

8th August 2008

Introduction

Biffa Waste Services Limited have submitted a planning application to Northamptonshire County Council for permission to extend the existing electricity generating and gas flaring compound at Kilsby Landfill site.

Background

In May 2006 the government introduced changes to the planning applications process. The circular “Guidance on changes to the development control system” effective from 10th August 2006, sets out the formal requirements.

One of the changes is a requirement to submit a “Design and Access Statement” with all but a limited number of planning applications. The statement has three main elements:

- The Design Component that should explain the design principles that have been applied to particular aspects of the proposal. These are the use, amount, layout, scale, landscaping and appearance of the development
- An appraisal of the context of the proposed development under the headings of assessment, involvement, evaluation and design.
- The Access Component relating to the access to the development, not access to the internal aspects of individual buildings and including consideration of vehicular and transport links and inclusive access.

The remainder of this statement provides the necessary detail in relation to the application at Kilsby Landfill Site. As required, this statement is provided to inform the planning process but does not form part of the formal planning application.

The Design Component

At present landfill gas generated at the landfill site is actively extracted and used to either generate electricity or is burned in a flare stack. The burning of landfill gas is a waste of a valuable resource and this application seeks permission to install a second engine that will use the excess gas in a positive way to generate power. This will help to reduce the quantity of methane that is released into the atmosphere. Methane is a powerful greenhouse gas and there is therefore a positive environmental benefit from the proposed development. The provision of a second engine at the site will also offset the use of fossil fuels in the generation of the equivalent amount of power. The
proposed development also includes the provision of two new flare stacks at the site to burn any residual gas and to handle the total gas produced at the site in the event that one or both engines are shut down.

Appraisal of the Context

Assessment

Biffa operate the Kilsby landfill site. The existing site is designed to minimise the potential environmental effects of site activities including the potential for the escape of landfill gas from the site. This has comprised the installation of a network of landfill gas extraction wells across the site from which landfill gas is actively extracted and transported by pipeline to the existing compound where it is used to generate electricity or is flared. The principles of the design of the existing compound have been carried forward into the design of the proposed extension to the compound.

The provision of the extension to the compound will ensure that the best value is gained from the gas that is extracted from the site and will ensure that the landfill gas is handled in the most environmentally acceptable manner.

Involvement

A qualified planner has prepared the planning application. A design team within Biffa were responsible for preparing the design for the plant and for producing the plans that accompany the application.

Evaluation

The proposed development will serve to ensure that all of the landfill gas generated on the site is extracted, treated and utilised on the site for as long as is required and in accordance with the requirements of the PPC permit for the site issued by the Environment Agency.

Design

This issue is dealt with above.

Access

The generation and flaring compound are in a position that is within easy reach of the site access road and the remainder of the operational site. Sufficient parking is already provided for staff and visitors and the existing buildings and the parking are designed with disabled staff and visitors in mind.
Third tier atmospheric dispersion modelling carried out to assess impacts of increasing LFG generation at the Kilsby landfill to 1.63MW.

Graham Wilkins
22 May 2008
Purpose of the study

This study has been carried out in support of the planning and PPC permit applications to increase the generation capacity at Kilsby from 1006kWe to 1630 kWe, and to install a new flaring system with 500 and 1500 m$^3$/hour flarestacks. The long and short term impacts of NO$_2$, CO, SO$_2$ and PM$_{10}$ emissions from the proposed plant have been modelled at all significant local receptors. In addition, maximum ground level concentrations of these pollutants have also been modelled.

Data used in 3$^{rd}$ tier modelling

- Software – ADMS 4 produced by Cambridge Environmental Research Consultants (CERC)
- Terrain data – 5km x 5km terrain file (high resolution) produced by the ADMS 4 utility from Ordnance Survey Panorama tiles SP44 and SP64
- Weather data – Hourly sequential data files supplied by the Met Office for Coleshill (Birmingham Elmdon Airport) – years 1999, 2000 and 2001 (later years not available)
- Emissions data engines – based on EA pre 2006 emission standards – 650 mg/m$^3$ NOx, 1,500 mg/m$^3$ CO. SO$_2$ emissions calculated from sulphur content of LFG, PM$_{10}$ emissions from Jenbacher data.
- Emissions data flares – based on EA emission standards – 150 mg/m$^3$ NOx, 50 mg/m$^3$ CO. SO$_2$ emissions calculated from sulphur content of LFG.
- Receptors were chosen from a study of Ordnance Survey Landranger series maps and a site visit.
- Maximum LFG flow rate based on modelling using Gassim 2 and practical measurements made on site.

Scenarios modelled

Based on the peak LFG flow rate of 1,500 m$^3$/hour, 2 scenarios were modelled as follows.

- 1006kw engine and 625kw engine running at full load with the 500m$^3$/hr flare running at full capacity burning surplus gas.
- 1500m$^3$/hr flare running at full load, burning all available gas.
Both of these scenarios are considered to be conservative in terms of overall impact.

**Receptors**

The six closest receptors have been chosen from a study of the Ordnance Survey Landranger series maps, by doing a 360 degree sweep around the location of the generation compound. A site visit was then carried out to look at these and any other possible receptors in the area. The only other building of any interest in the vicinity was Grove Farm, which is actually on the Kilsby site. This building consists of a former farm house and a pair of semi-detached tied cottages. Both of these buildings are derelict and in poor condition. These properties are owned by Biffa Waste Services, and are scheduled for demolition. Consequently, they have not been considered as receptors. The closest receptor is Pavillion Lodge, on the A361, which is 444 metres to the west of the proposed generation compound.
<table>
<thead>
<tr>
<th>Plant</th>
<th>E</th>
<th>N</th>
<th>Stack diameter</th>
<th>Discharge Height</th>
<th>Discharge velocity (m/sec actual)</th>
<th>Discharge temperature (deg C)</th>
<th>Scenario</th>
<th>Total LFG extraction rate rate (m³/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006 kWe Jenbacher gas engine</td>
<td>456782</td>
<td>269484</td>
<td>0.35</td>
<td>6.5</td>
<td>38.45</td>
<td>500</td>
<td>Engines + small flare surplussing</td>
<td>1498</td>
</tr>
<tr>
<td>625 kWe Jenbacher gas engine</td>
<td>456765</td>
<td>269500</td>
<td>0.25</td>
<td>6.5</td>
<td>46.8</td>
<td>500</td>
<td>Engines + small flare surplussing</td>
<td>1498</td>
</tr>
<tr>
<td>1500 Uniflare</td>
<td>456769</td>
<td>269488</td>
<td>1.9</td>
<td>7.88</td>
<td>8.28</td>
<td>1000</td>
<td>Flaring only</td>
<td>1500</td>
</tr>
<tr>
<td>500 Uniflare</td>
<td>456774</td>
<td>269500</td>
<td>1.1</td>
<td>7.80</td>
<td>8.32</td>
<td>1000</td>
<td>Engines + small flare surplussing</td>
<td>1498</td>
</tr>
</tbody>
</table>

Table showing input data to ADMS4 model
<table>
<thead>
<tr>
<th>Plant</th>
<th>E (m)</th>
<th>N (m)</th>
<th>NOx (grams/sec)</th>
<th>CO (grams/sec)</th>
<th>SO2 (grams/sec)</th>
<th>PM$_{10}$ (grams/sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1006 kWe Jenbacher gas engine</td>
<td>456782</td>
<td>269484</td>
<td>0.643</td>
<td>1.385</td>
<td>0.0182</td>
<td>0.0054</td>
</tr>
<tr>
<td>625 kWe Jenbacher gas engine</td>
<td>456765</td>
<td>269500</td>
<td>0.399</td>
<td>0.8604</td>
<td>0.01128</td>
<td>0.00336</td>
</tr>
<tr>
<td>1500 Uniflare</td>
<td>456769</td>
<td>269488</td>
<td>0.339</td>
<td>0.113</td>
<td>0.0417</td>
<td>0.0125</td>
</tr>
<tr>
<td>500 Uniflare</td>
<td>456774</td>
<td>269500</td>
<td>0.113</td>
<td>0.038</td>
<td>0.0139</td>
<td>0.0042</td>
</tr>
</tbody>
</table>

Table showing emissions input data to ADMS4 model
<table>
<thead>
<tr>
<th>Receptor</th>
<th>E</th>
<th>N</th>
<th>Type</th>
<th>Distance from proposed generation plant</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hall Farm</td>
<td>457160</td>
<td>270350</td>
<td>Residential</td>
<td>945</td>
<td>24°</td>
</tr>
<tr>
<td>Kilsby Grange houses (on A5)</td>
<td>457790</td>
<td>270350</td>
<td>Residential</td>
<td>1,329</td>
<td>139°</td>
</tr>
<tr>
<td>Ashby St Ledger manor house</td>
<td>457270</td>
<td>268340</td>
<td>Residential</td>
<td>1,244</td>
<td>157°</td>
</tr>
<tr>
<td>Ashby St Ledger houses</td>
<td>456840</td>
<td>268390</td>
<td>Residential</td>
<td>1,096</td>
<td>177°</td>
</tr>
<tr>
<td>Pavillion Lodge (on A361)</td>
<td>456350</td>
<td>269380</td>
<td>Residential</td>
<td>444</td>
<td>256°</td>
</tr>
<tr>
<td>The Ridgeway (side road, close to junction with A361)</td>
<td>456130</td>
<td>270340</td>
<td>Residential</td>
<td>1,076</td>
<td>323°</td>
</tr>
</tbody>
</table>

Table of receptors used in the study
## Table of receptor concentrations 1.63MW + 500 flare running (highest values from 3 yrs weather data)

| Receptor name          | X(m)  | Y(m)  | LTConc[µg/m³]NOx| Engine + small flare|-| 1hr | P100.00[µg/m³]NO2| Engine + small flare|-| 1hr | P 99.79[µg/m³]NOx| Engine + small flare|-| 1hr | LTConc[µg/m³]SO2| Engine + small flare|-| 1hr |
|------------------------|-------|-------|------------------|----------------------|-----|------------------|----------------------|-----|------------------|----------------------|-----|------------------|----------------------|-----|
| Hall Farm              | 457160| 270350| 0.75             | 7.08                 | 5.25| 0.03             |
| Kilsby Grange houses   | 457790| 270350| 0.39             | 5.04                 | 4.69| 0.01             |
| Ashby S L manor        | 457270| 268340| 0.31             | 5.22                 | 3.80| 0.01             |
| Ashby S L houses       | 456840| 268390| 0.34             | 5.71                 | 4.66| 0.01             |
| Pavillion Lodge        | 456350| 269380| 0.42             | 11.21                | 9.41| 0.01             |
| The Ridgeway           | 456130| 270340| 0.26             | 5.95                 | 4.10| 0.01             |

## Table of receptor concentrations 1.63MW + 500 flare running (highest values from 3 yrs weather data)

| Receptor name          | X(m)  | Y(m)  | P100.00[µg/m³]SO2| Engine + small flare|-| 1hr | P99.70[µg/m³]SO2| Engine + small flare|-| 1hr | LTConc[µg/m³]PM10| Engine + small flare|-| 1hr | LTConc[µg/m³]CO| Engine + small flare|-| 8hrs |
|------------------------|-------|-------|------------------|----------------------|-----|------------------|----------------------|-----|------------------|----------------------|-----|------------------|----------------------|-----|
| Hall Farm              | 457160| 270350| 0.48             | 0.33                 | 0.01| 0.14             | 1.51                 | 16.80|
| Kilsby Grange houses   | 457790| 270350| 0.33             | 0.29                 | 0.00| 0.10             | 0.80                 | 15.48|
| Ashby S L manor        | 457270| 268340| 0.35             | 0.24                 | 0.00| 0.10             | 0.61                 | 13.58|
| Ashby S L houses       | 456840| 268390| 0.39             | 0.28                 | 0.00| 0.12             | 0.70                 | 15.60|
| Pavillion Lodge        | 456350| 269380| 0.75             | 0.62                 | 0.00| 0.22             | 0.88                 | 36.40|
| The Ridgeway           | 456130| 270340| 0.40             | 0.26                 | 0.00| 0.12             | 0.52                 | 13.70|

---

3rd tier dispersion modelling carried out for Kilsby Generation – May 2008 (DRAFT)
| Receptor name         | X(m)   | Y(m)   | LT Conc [µg/m³] NOx Engine + small flare|- 1hr | P100.00 [µg/m³] NO2 Engine + small flare|- 1hr | P 99.79 [µg/m³] NOx Engine + small flare|- 1hr | LT Conc [µg/m³] SO2 Engine + small flare|- 1hr |
|----------------------|--------|--------|--------------------------------------|--------|--------------------------------------|--------|--------------------------------------|--------|
| Hall Farm            | 457160 | 270350 | 0.75                                 | 7.08   | 5.25                                 | 0.03   |
| Kilsby Grange houses | 457790 | 270350 | 0.39                                 | 5.04   | 4.69                                 | 0.01   |
| Ashby S L manor      | 457270 | 268340 | 0.31                                 | 5.22   | 3.80                                 | 0.01   |
| Ashby S L houses     | 456840 | 268390 | 0.34                                 | 5.71   | 4.66                                 | 0.01   |
| Pavillion Lodge      | 456350 | 269380 | 0.42                                 | 11.21  | 9.41                                 | 0.01   |
| The Ridgeway         | 456130 | 270340 | 0.26                                 | 5.95   | 4.10                                 | 0.01   |
| Background           | 456500 | 269500 | 13.36                                | 13.36  | 13.36                                |        |
| PC + background (max)|        |        | 14.11 (PC + b/g)                     | 12.08 (PC + 0.2xb/g) |
| % of EAL             |        |        | 35.27%                               | 6.04%  |
| Significant impact?  |        |        | NO (70%)                             | NO (20%) |

Assessment of significant impact - 1.63MW + 500 flare running (highest values from 3 yrs weather data)
| Receptor name         | X(m)     | Y(m)     | P100.00 [µg/m³] SO2| Engine + small flare|-| 1hr | P99.70 [µg/m³] SO2| Engine + small flare|-| 1hr | LTConc [µg/m³] PM1 | Engine + small flare|-| 1hr | P100.00 [µg/m³] PM10 | Engine + small flare|-| 1hr | LTConc [µg/m³] CO| Engine + small flare|-| 8hrs | P100.00 [µg/m³] CO| Engine + small flare|-| 8hrs |
|----------------------|----------|----------|-------------------|---------------------|---|-----|-------------------|---------------------|---|-------------------|---------------------|---|-------------------|---------------------|---|-------------------|---------------------|---|-------------------|---------------------|---|-------------------|---------------------|
| Hall Farm            | 457160   | 270350   | 0.48              | 0.33                | 0.01 | 0.14 | 1.51              | 16.80               |
| Kilsby Grange houses | 457790   | 270350   | 0.33              | 0.29                | 0.00 | 0.10 | 0.80              | 15.48               |
| Ashby S L manor      | 457270   | 268340   | 0.35              | 0.24                | 0.00 | 0.10 | 0.61              | 13.58               |
| Pavillion Lodge      | 456350   | 269380   | 0.75              | 0.62                | 0.00 | 0.12 | 0.88              | 15.60               |
| Ashby S L houses     | 456840   | 268390   | 0.39              | 0.28                | 0.00 | 0.12 | 0.61              | 13.58               |
| The Ridgeway         | 456130   | 270340   | 0.40              | 0.26                | 0.00 | 0.12 | 0.52              | 13.70               |
| Background PC + b/g  | 456500   | 269500   |                   |                     | 18.8 |     | 18.9 (PC + b/g)   |                     |
| % of EAL             |          |          |                   |                     | 47.3% |     |                   |                     |
| Significant impact?  |          |          |                   |                     | NO (70%) |     |                   |                     |

Assessment of significant impact - 1.63MW + 500 flare running (highest values from 3 yrs weather data)
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>E</th>
<th>N</th>
<th>Long term/short term</th>
<th>Averaging time</th>
<th>Maximum value (μg/m³)</th>
<th>Air Quality Standard (μg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO₂ P100</td>
<td>456750</td>
<td>269550</td>
<td>ST</td>
<td>1 hr</td>
<td>58.07</td>
<td>200</td>
</tr>
<tr>
<td>NO₂ P99.79</td>
<td>456850</td>
<td>269450</td>
<td>ST</td>
<td>1 hr</td>
<td>51.06</td>
<td>200</td>
</tr>
<tr>
<td>SO₂ P100</td>
<td>456750</td>
<td>269550</td>
<td>ST</td>
<td>1 hr</td>
<td>4.54</td>
<td>267</td>
</tr>
<tr>
<td>SO₂ P99.7</td>
<td>456800</td>
<td>269550</td>
<td>ST</td>
<td>1 hr</td>
<td>3.82</td>
<td>267</td>
</tr>
<tr>
<td>PM₁₀ P100</td>
<td>456750</td>
<td>269550</td>
<td>ST</td>
<td>1 hr</td>
<td>1.36</td>
<td>-</td>
</tr>
<tr>
<td>CO P100</td>
<td>456850</td>
<td>269450</td>
<td>ST</td>
<td>8 hr</td>
<td>208.97</td>
<td>10,000</td>
</tr>
<tr>
<td>NOₓ/NO₂</td>
<td>456800</td>
<td>269550</td>
<td>LT</td>
<td>1 hr</td>
<td>11.04</td>
<td>40</td>
</tr>
<tr>
<td>SO₂</td>
<td>456800</td>
<td>269600</td>
<td>LT</td>
<td>1 hr</td>
<td>0.38</td>
<td>50</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>456800</td>
<td>269600</td>
<td>LT</td>
<td>1 hr</td>
<td>0.11</td>
<td>40</td>
</tr>
<tr>
<td>CO</td>
<td>456800</td>
<td>269550</td>
<td>LT</td>
<td>1 hr</td>
<td>22.73</td>
<td>350</td>
</tr>
</tbody>
</table>

Table showing maximum ground level concentrations of emitted pollutants (P100 is the highest hourly value in a year, P99.79 is the 19th highest and P99.7 is the 25th highest, corresponding to the number of 18 and 24 exceedences allowed in the Air Quality Standard)
Conclusions

Although the scenario with the 1500 flare only running has also been modelled, the receptor concentrations were considerably lower than the 1.63MW generation scenario, consequently the values have not been included in the report.
In terms of receptor concentrations, the 1.63MW + 500 flare scenario represents the worst likely case.
In the generation scenario, Air Quality Standards are not breached at any receptor for any pollutant modelled.
In carrying out the test for significant impact, the receptor with the highest concentrations is considered (Pavilion Lodge). In the case of long term concentrations the impact is considered to be significant if PC + background = > 70% of AQS. For Pavilion Lodge, NO₂ scored 35.3% and PM₁₀ scored 47.3%, so there is no significant impact from long term emissions of NO₂ or PM₁₀.
In the case of short term emissions, the impact is considered to be significant if PC + 0.2x background = > 20% of AQS. For Pavilion Lodge, NO₂ scored 6.04%, so there is no significant impact from the short term emissions of NO₂. Impacts for SO₂ and CO cannot be calculated as NETCEN no longer gives background information for these pollutants. However emissions of SO₂ and CO are very low indeed.
Maximum ground level concentrations of pollutants all occur within the Biffa site and are all well below the relevant Air Quality Standards.
In conclusion, the 1.63MW flaring scenario with 500m³/hour of flaring is therefore acceptable, it poses no significant impact and does not exceed the Air Quality Standards at any receptor.
Biffa Waste Services Limited
Kilsby Landfill Site
Power Generation Extension
Noise Assessment
July 2008

Halcrow Group Limited
Biffa Waste Services Limited
Kilsby Landfill Site
Power Generation Extension
Noise Assessment

Contents Amendment Record
This report has been issued and amended as follows:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Revision</th>
<th>Description</th>
<th>Date</th>
<th>Signed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>Draft</td>
<td>10 July 2008</td>
<td>QW</td>
</tr>
</tbody>
</table>
## Contents

1 Introduction 1
2 Government Advice and Standards 2
3 Kilsby Landfill Site Existing Noise Survey 7
4 Noise Emissions of Proposed Plant 8
5 Assessment for Kilsby Landfill Site 9
6 Assessment Comparison 12
7 Conclusion 13

Appendix 1 – Assessment Methodology

Appendix 2 – Terms and Definitions
1 Introduction

1.1 Biffa Waste Services Limited has commissioned Halcrow Group Limited to consider the noise impact of an extension to the gas generation compound at their Kilsby Landfill Site, Grove Farm, Daventry Road, Kilsby.

1.2 The plant is fuelled by methane collected from the landfill site and pressurised using an enclosed gas booster. A conventional engine that has been converted to run on this methane drives a generator.

1.3 The existing compound has a Jenbacher 1MW gas plant with a 1000m³/h flare. There is a compressor within the compound which runs the condensate system on site.

1.4 It is proposed to install an additional 625kW generator at the site and to replace the existing single flare with two flares having capacities of 1500m³/h and 500m³/h at the site.

1.5 The engine and generator are contained within an acoustically treated ISO container. Combustion air is passively drawn into the container at low level from one end. The exhaust products are discharged to air via a silencer at roof level.

1.6 Warmed air from within the container is extracted to a shrouded fan set adjacent to the generator set. The engine is water-cooled and fans within the louvered enclosure assist the discharge of heat to the atmosphere.

1.7 Any surplus gas produced from the site, other than that being used by the generator sets, is directed to flares to be combusted.

1.8 Biffa Waste Services Limited already operates electricity generation facilities at this site. This assessment utilises measurements of the ambient noise levels with the existing generator and flare in place to demonstrate whether the introduction of the new plant will result in any additional impact upon residential amenity.
2 Government Advice and Standards

PPG24 1994

2.1 The Planning Policy Guidance Note PPG24 Planning and Noise, published in 1994 outlines the considerations to be taken into account by local authorities in determining planning applications both for noise-sensitive developments and for those activities which will generate noise.

2.2 The Guidance acknowledges that noise can have a significant effect on the environment and on the quality of life enjoyed by individuals and communities. However, it advises that while the planning system should be used to minimise the adverse impact of noise, planning authorities should not place unreasonable restrictions on development, or add unduly to the costs and administrative burdens of business.

The Guidance notes in Paragraph 10 that:

“Much of the development which is necessary for the creation of jobs and the construction and improvement of essential infrastructure will generate noise. The planning system should not place unjustifiable obstacles in the way of such development. Nevertheless, local planning authorities must ensure that development does not cause an unacceptable degree of disturbance.”

2.3 The advice can be summarised as seeking to balance the need for development with the requirement to minimise adverse impact through noise. The use of the phrase “unacceptable degree of disturbance” indicates that some degree of disturbance may be acceptable in particular circumstances.

2.4 Annex 3 of PPG24 gives detailed guidance on the assessment of noise from different sources, including in Paragraph 19 noise from industrial developments:

“The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the “rating level” which should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise. The Standard states
that: “A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance.” Since background noise levels vary throughout a 24 hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (eg day and night) chosen to suit the hours of operation of the proposed development.”

PPS22


2.6 The Government’s Objectives note that:
“Increased development of renewable energy resources is vital to facilitating the delivery of the Government’s commitments on both climate change and renewable energy. Positive planning which facilitates renewable energy developments can contribute to all four elements of the Government’s sustainable development strategy:
social progress which recognises the needs of everyone – by contributing to the nation’s energy needs, ensuring all homes are adequately and affordably heated; and providing new sources of energy in remote areas;
effective protection of the environment – by reductions in emissions of greenhouse gases and thereby reducing the potential for the environment to be affected by climate change;
prudent use of natural resources – by reducing the nation’s reliance on ever-diminishing supplies of fossil fuels; and,
maintenance of high and stable levels of economic growth and employment – through the creation of jobs directly related to renewable energy developments, but also in the development of new technologies. In rural areas, renewable energy projects have the potential to play an increasingly important role in the diversification of rural economies”.

2.7 “PPS22 Noise” states:
Noise
“Renewable technologies may generate small increases in noise levels (whether from machinery such as aerodynamic noise from wind turbines, or from associated sources – for example, traffic). Local planning authorities should ensure that renewable energy developments have been located and designed in such a way to minimise increases in ambient noise levels. Plans may include criteria that set out the minimum separation distances between different types of renewable energy projects
and existing developments. The 1997 report by ETSU for the Department of Trade and Industry should be used to assess and rate noise from wind energy development.”

**BS4142: 1997**

2.8 PPG24 cites BS4142: 1990. Subsequent to the issue of PPG 24, the Standard was revised and all further references herein will be to the current 1997 edition.

2.9 British Standard 4142: 1997: *Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas* is intended to be used to assess whether noise from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises is likely to give rise to complaints from people residing in nearby dwellings.

2.10 BS4142 defines the following terms for describing existing and future noise levels:

- **Ambient Noise Level**
  The ambient noise is the totally encompassing sound in a given situation at a given time, \( T \), usually composed of sound from many sources near and far, measured as an equivalent continuous A-weighted sound pressure level \( L_{Aeq,T} \).

- **Specific Noise Level**
  The specific noise level is the equivalent continuous A-weighted sound pressure level \( L_{Aeq,T} \) at the assessment position produced by the specific noise source over a given reference time interval \( (T_r) \).

  When measuring the specific noise level, the influence of noise from other sources should be minimised by measuring at times and during intervals when the residual noise level has subsided to typically low levels.

- **Residual Noise Level**
  The residual noise level is defined as the equivalent continuous A-weighted sound pressure level \( L_{Aeq,T} \) of the residual noise remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.
When measuring the residual noise level, all other conditions should be similar to the conditions that exist when the measurements are taken with the specific noise present.

- **Background Noise Level**
  
  The background noise level is the A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 % of a given time interval, T, measured using the fast time weighting ($I_{A90/T}$).

2.11 BS4142 notes that where it is not possible to determine the specific noise level directly by measurement, it may be appropriate to determine the specific noise level by measurement and/or calculation. The recommended method of doing this is to obtain a measurement of the specific noise at some other location, usually close to the source, and then use a method of calculation to estimate the specific noise level at the assessment locations.

2.12 The procedure contained in BS4142 for assessing the likelihood of complaint is to compare the measured or predicted noise level from the source in question immediately outside the dwelling, the ‘specific noise level’, with the background noise level measured in the environment.

2.13 Where the noise contains a ‘distinguishable discrete continuous note (whine, hiss, screech, hum etc.) or if there are distinct impulses in the noise (bangs, clicks, clatters or thumps), or if the noise is irregular enough to attract attention’ then a correction of +5dB is added to the specific noise level to obtain the ‘rating level’.

2.14 The likelihood of noise provoking complaints is assessed by subtracting the background noise level from the rating noise level. BS4142 states:

"A difference of around 10dB or higher indicates that complaints are likely. A difference of around 5dB is of marginal significance. A difference of -10dB is a positive indication that complaints are unlikely."
2.15 The standard states that, when possible, the background noise level should be measured directly at the assessment location. It should be ensured that the measurement is of sufficient duration to obtain a representative value of the background noise level.

2.16 The background noise level should be measured on days of the week and at the times of the day when the specific noise source is expected to be operating.

**World Health Organisation Document “Guidelines for Community Noise”**

2.17 The World Health Organisation (WHO) published the document *Guidelines for Community Noise* in 2000. This states that general outdoor noise levels of below 50 dB L_{Aeq} during the day are desirable to prevent ‘moderate’ community annoyance. The guidance also recommends a noise level in the order of 45 dB L_{Aeq} for periods at night (23:00 - 07:00) in order to meet sleep disturbance criteria.
3 Kilsby Landfill Site Existing Noise Survey

3.1 It is considered that the period of greatest adverse impact from the extended gas compound will be when the background noise levels are at their lowest, which is during the night-time period.

3.2 If the noise from the generators proves to be acceptable at night, it is highly probable that the same noise emission will also be acceptable when compared with a higher background noise level during the day.

3.3 Monitoring of the existing noise levels was undertaken at the nearest residential property, Pavillion Lodge in Ashby St Ledgers, which is located approximately 420 metres from the landfill site.

3.4 The noise measurement survey was carried out between 02:02 and 03:45 hours on 13th June 2008 using a 01dB-Stell Solo Type 1 Sound Level Meter (serial number 11159). The meter was calibrated using a CAL21 Sound Level Calibrator (serial number 51031300). Weather conditions were suitable for noise monitoring being dry with no wind and an air temperature of 8°C.

3.5 The meter was calibrated on site prior to measurements and checked upon completion of the survey and no calibration drifts were found to have occurred.

3.6 The sound level meter used during the noise survey had been calibrated to traceable standards by a UKAS-accredited laboratory in the preceding twenty four months and the calibrator within the preceding twelve months.

3.7 The noise survey recorded the following noise levels prior to the extension of the generation compound and the results are shown in Table 1 below.

<table>
<thead>
<tr>
<th>Site Location</th>
<th>$L_{Acq}$</th>
<th>$L_{A90}$</th>
<th>$L_{A10}$</th>
<th>$L_{Amax}$</th>
<th>$L_{Amin}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pavillion Lodge</td>
<td>61.8</td>
<td>33.8</td>
<td>55.7</td>
<td>87.1</td>
<td>30.4</td>
</tr>
</tbody>
</table>
4 Noise Emissions of Proposed Plant

4.1 The proposals include the provision of one 625kW generator in addition to the existing 1MW plant. It is also proposed to replace the existing 1000m³/h flare with two new flares of 1500m³/h and 500m³/h performance. Similar plant is in operation at other Biffa Waste sites. The impact of noise at the Kilsby Landfill site can therefore be based on noise measurements of comparable plant elsewhere.

4.2 The measured noise levels of the likely plant item are shown in Table 2 below, based upon the measured levels of similar equipment at other sites.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Sound Power level (LWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flare 500 to 2500m³/hr</td>
<td>98.0</td>
</tr>
<tr>
<td>Generator</td>
<td>93.0</td>
</tr>
</tbody>
</table>

Table 2 - Noise Levels (dB) for proposed equipment
5 Assessment for Kilsby Landfill Site

5.1 The background noise levels at the nearest noise sensitive receptor are reported in Section 3 above.

5.2 The noise emitted by the individual elements of the proposed plant has been determined by measurement of comparable plant at other sites.

5.3 Four potential operating scenarios have been considered. These are:

- **Option 1** – existing plant with 1 new generator.
- **Option 2** – existing plant with 1 new generator and 1 new flare.
- **Option 3** – existing plant with 1 new generator and 2 new flares.
- **Option 4** – existing plant with 2 new flares.

5.4 Data regarding the rest of the plant and equipment on site has been taken directly from the previous First Engineering report, undertaken prior to the commencement of the energy from waste development on the site.

5.5 For both sites the intervening ground is acoustically soft, and attenuation due to the soft ground effect is inevitable. However, as is noted below, the generation site is surrounded by considerable barriers or is protected by topography. As a result, using the guidance contained within BS.5228: Part1: 1997, attenuation over hard ground, corrected for barriers, should be considered. The method for predicting attenuation over hard ground is:

\[
K_{10} = 20\log R + 8, \text{ where}
\]

- \( R \) is the source to receiver distance in meters, and
- \( K_{10} \) is the attenuation level, in Decibels over that distance of hard ground

5.6 Table 3 below applies the above data in assessments using the methodology of BS4142: 1997. It should be noted that no acoustic feature correction has been considered appropriate in relation to the operation of the generator sets. These are enclosed in acoustically treated containers and when operational, emit no apparent tonal component, and are not impulsive in acoustic terms as the noise emission from them possesses no irregularities.
Table 3 – BS4142 Assessment

<table>
<thead>
<tr>
<th>Description</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to Pavillion Lodge</td>
<td>420m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted Specific Noise Level, $L_{Aeq,15min}$</td>
<td>22.5dB</td>
<td>28.7dB</td>
<td>31.2dB</td>
<td>30.5dB</td>
</tr>
<tr>
<td>Rating Level</td>
<td>22.5dB</td>
<td>32.9dB</td>
<td>35.8dB</td>
<td>35.5dB</td>
</tr>
<tr>
<td>Background Level, $L_{A90,15min}$</td>
<td></td>
<td></td>
<td>33.8dB</td>
<td></td>
</tr>
<tr>
<td>Excess of Rating Level over Background (dB(A))</td>
<td>-11.3</td>
<td>-0.9</td>
<td>+2.0</td>
<td>+1.7</td>
</tr>
<tr>
<td>Conclusion</td>
<td>A positive indication that complaints will not occur</td>
<td>Less than of marginal significance but greater than a positive indication that complaints will not occur</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.7 From the above it can be seen that the site-attributable noise level from the proposed site operations will give rise to a less than marginal likelihood of complaints for all the options considered, with the exception of Option 1, where the assessment provides a positive indication that complaints will not occur.

5.8 It is also important to consider the potential impact of the operations against the likelihood of sleep disturbance contained in the World Health Organisation document *Guidelines for Community Noise*.

5.9 Using the same calculation methodology as for the assessment under BS4142: 1997, an assessment of the potential impact upon the measured $L_{Aeq}$ noise levels has been undertaken for the monitoring location. These assessments are detailed in Table 4 below:
Table 4 – WHO Noise Assessment

<table>
<thead>
<tr>
<th>Description</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to Pavilion Lodge</td>
<td></td>
<td></td>
<td></td>
<td>420m</td>
</tr>
<tr>
<td>Predicted Noise Level, $L_{Aeq,15\text{min}}$</td>
<td>22.5dB</td>
<td>28.7dB</td>
<td>31.2dB</td>
<td>30.5dB</td>
</tr>
<tr>
<td>Measured Night-time Noise Level $L_{Aeq,15\text{min}}$</td>
<td></td>
<td></td>
<td></td>
<td>61.8dB</td>
</tr>
<tr>
<td>Resultant Noise Level $L_{Aeq}$ at receiver</td>
<td>61.8dB</td>
<td>61.8dB</td>
<td>61.8dB</td>
<td>61.8dB</td>
</tr>
<tr>
<td>Change in $L_{Aeq}$</td>
<td>0dB</td>
<td>0dB</td>
<td>0dB</td>
<td>0dB</td>
</tr>
</tbody>
</table>

5.10 The indication from the above analysis is that the development of the facility, would not lead to any discernible increase in noise levels at the nearest residential location.

5.11 The predicted external noise level of 61.8dB $L_{Aeq}$ corresponds to an internal noise level of 48.8dB $L_{Aeq}$ assuming 13dB attenuation for windows partially open for ventilation. This level is above that advised by WHO for freedom from sleep disturbance, but is solely attributable to existing road traffic noise sources in the vicinity.
6 Assessment Comparison

6.1 Two different assessment methodologies have been used to calculate the potential impact of the proposed development. In order to provide appropriate criteria for suitable noise levels under BS4142: 1997, levels of $L_{A90} + 5\text{dB}$ for the potential source are considered to be of marginal significance.

6.2 In relation to the World Health Organisation *Guidelines for Community Noise*, it is recommended that a level of 45.0 dB $L_{Aeq}$ is not to be exceeded at night in order to ensure no sleep disturbance.

6.3 Table 5 compares the two methodologies, the calculated worst case noise levels for each location and the criterion levels.

<table>
<thead>
<tr>
<th>Assessment Methodology</th>
<th>Ambient Level</th>
<th>Highest calculated Level</th>
<th>Criterion Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS4142: 1997</td>
<td>33.8 dB $L_{A90}$</td>
<td>35.8 dB</td>
<td>38.8 dB</td>
</tr>
<tr>
<td>WHO 'Guidelines for Community Noise'</td>
<td>61.8 dB $L_{Aeq}$</td>
<td>31.2 dB</td>
<td>45.0 dB</td>
</tr>
</tbody>
</table>

6.4 From the results in Table 5 it can be seen that the proposed development meets the criterion levels in relation the World Health Organisation document *Guidelines for Community Noise*, and BS4142: 1997 *Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas*. Any potential planning conditions based on the latter methodology, would be unreasonable given the pre-existing $L_{Aeq}$ noise levels, which are due to other noise sources in the local environment.
7 Conclusion

7.1 Halcrow Group Limited has undertaken a desk based assessment of the potential impact of an extension to the landfill gas generation facility at the Kilsby Landfill Site.

7.2 The assessment has shown that for all scenarios, the impact is of less than marginal significance when considered against the guidance contained within BS.4142: 1997. The predicted noise levels at Pavilion Lodge are also below the WHO recommended noise limits at which the onset of sleep disturbance can occur.

7.3 As a result, it can be seen that the proposed facility is unlikely to cause an adverse impact or any significant loss of amenity to the nearest residents.
Appendix 1

Assessment Methodology
Appendix 2

Terms and Definitions
**ACTIVITY, \( L_{\text{Aeq}} \)**

The value of the equivalent continuous A-weighted sound pressure level determined at a distance of 10m from and over the period of a given activity. The activity may involve the operation of more than one item of plant. [BS5228]

**AMBIENT NOISE**

Totally encompassing sound in a given situation at a given time usually composite of sounds from many sources near and far. [BS4142]

**ATTENUATION, SOUND**

A reduction in the intensity of a sound signal.

**A - WEIGHTING dB(A)**

The sound pressure level determined when using the frequency-weighting network A. The A-weighting network modifies the electrical response of a sound level meter so that the sensitivity of the meter varies with frequency in approximately the same way that the sensitivity of the human hearing system varies with frequency.

The human ear has a non-linear frequency response; it is less sensitive at low and high frequencies and most sensitive in the range 1 to 4 kHz. The A-weighting is applied to measured or calculated sound pressure levels so that these levels correspond more closely to the response of the human ear. A-weighted sound levels are often denoted as dB(A).

**BACKGROUND NOISE LEVEL, \( L_{\text{A90s,T}} \)**

The A-weighted sound pressure level of non-specific noise in decibels exceeded for 90% of the given time, T. [BS4142]

**DECIBEL (dB)**

1. Unit level which denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of two amounts of power is 10 times the logarithm to the base 10 of this ratio.
2. A linear numbering scale used to define a logarithmic amplitude scale, thereby compressing a wide range of amplitude values to a small set of numbers.

3. A unit that indicates that a quantity has a certain LEVEL above some pre-defined reference value.

4. The unit of measurement used for sound pressure levels. The scale is logarithmic rather than linear. The threshold of hearing is 0dB and the threshold of pain is 120dB. In practical terms these limits are seldom experienced and typical levels lie within the range 30dB (a quiet night time level in a bedroom) to 90dB (at the kerbside of a busy city street).

EQUIVALENT CONTINUOUS A-WEIGHTED SOUND PRESSURE LEVEL (L_{Aeq})

Value of the A-weighted sound pressure level of a continuous, steady sound that; within a specified time interval T (starting at t1 and ending at t2) and measured in decibels, has the same mean square sound pressure as the sound under consideration whose level varies with time.

MAXIMUM SOUND LEVEL, L_{Ap,max}

The highest value of the A-weighted sound pressure level that occurs during a given event or time period. The time-weighting should be specified. [BS5228]

MEASUREMENT TIME INTERVAL, T_M

The total time over which measurements are taken. [BS4142][BS8233]

PERCENTILE LEVEL (STATISTICAL SOUND LEVEL INDICES, L_{AN}, L_{A90})

L_{AN} is the dB(A) level exceeded N% of the time measured on a sound level meter with Fast(F) time weighting, e.g. L_{A90} the dB(A) level exceeded for 90% of the time, is commonly used to estimate background noise level. LA10, the level exceeded for 10% of the time, is commonly used in the assessment of road traffic noise.
RATING LEVEL, $L_{eq,T}$

The equivalent continuous A-weighted sound pressure level during a specified time interval, plus specified adjustments for tonal character and impulsiveness of sound. [BS4142][BS8233]

REFERENCE TIME INTERVAL, $T_r$

The time interval to which an equivalent continuous A-weighted sound pressure level can be referred. [BS4142][BS8233]

SOUND PRESSURE LEVEL ($L_p$)

1. The level of the pressure of the sound above the internationally accepted reference value of 20 µPa (2x10⁻⁶N/m²), which corresponds to the pressure of the quietest sound an average person can hear at the frequency of 1000 Hz. It is a quantity that can be measured, thus the intensity of a sound can be derived from it.

2. The sound pressure level is a measure of a dynamic variation in atmospheric pressure. The pressure at a point in space minus the static pressure at that point.

3. A value equal to 20 times the logarithm to the base 10 of the ratio of the ratio of the root-mean-square pressure of a sound to a reference pressure, which is normally taken to be 2x10⁻⁶N/m².

SOUND POWER LEVEL ($L_w$)

1. The sound power level of a sound source, in decibels, is 10 times the logarithm to the base 10 of the ratio of sound power radiated by the source to a reference power. The reference power is 1 picowatt (1x10⁻¹² watt).

2. The sound power level is the fundamental measure of the total sound energy radiated by a source per unit time.

3. A value equal to 10 times the logarithm to the base 10 of the ratio of the total acoustic power emitted by a source to a reference power, which is normally taken to be 10⁻¹² watt.
Our ref: MT/070808/K2.P
07 August 2008

County Planning, Transportation and Environment Officer
Northamptonshire County Council
PO Box 221
John Dryden House
8-10 The Lakes
Northampton
NN4 7DE

FAQ: Mr G P Watson

Dear Sir

KILSBY LANDFILL SITE, GROVE FARM, DAVENTRY ROAD, KILSBY
PLANNING APPLICATION TO EXTEND THE ELECTRICITY GENERATING AND GAS
FLARING COMPOUND

Please find enclosed our planning application for an extension to the existing electricity
generating and gas flare compound at Kilsby landfill site, Daventry Road, Kilsby. The
application comprises:

- Completed forms and certificates;
- Plans numbered K3990100, K3030600, K3030700 and K3030800;
- Design and Access Statement;
- Report entitled “Kilsby Landfill Site – Power Generation Extension Noise
  Assessment” dated July 2008 prepared by Halcrow Group Limited;
- Report entitled “Third tier atmospheric dispersion modelling carried out to assess
  impacts of increasing LFG generation at the Kilsby landfill to 1.63MW”; and
- A cheque for £335.00 in payment of the planning fee.

The planning fee has been calculated on the basis that the application area is 569m² or
0.06ha (rounded up). The appropriate fee category is 1 (5) “the erection, alteration or
replacement of plant and machinery”.

Site Location

The Kilsby site is located at National Grid Reference SP567695 as shown on plan
reference K3990100. The site is in a rural area. The closest residential property to the
site is Grove Farm located approximately 192m from the electricity-generating
compound. This property is unoccupied and in a state of dereliction. The next nearest
property is Pavillon Lodge on the A381 approximately 461m from the electricity-
generating compound, but on the opposite side to the main landfill site. The electricity-
generating compound is located centrally on the landfill site and is not visible from
outside of the site.
The Existing Position

The Kilsby landfill site has been operational since the early 1970's and has accepted a full range of waste materials. Planning permission DA/97/1683C for the installation of a 1.0MW electricity generating station fuelled by landfill gas generated at the site and for the installation of a single gas flare was granted on 10th October 1997. The plant is operating a full capacity and whilst landfill gas is being effectively controlled on the site, only part of the generated gas is being used to produce electricity. The remaining gas is being flared in the permanent flare stack installed within the compound and also in a temporary flare that has been erected on the landfill site.

The Proposed Development

The flaring of landfill gas is a waste of a valuable resource and Biffa wish to install a second engine to use the excess landfill gas in the generation of energy.

The new engine would provide an additional 0.625MW of power from the site into the national grid. At the same time, and due to changes in environmental regulation, it is necessary to upgrade the flaring capacity at the site. It is therefore proposed to remove the existing flare at the site and to install two new permanent flare stacks in the extension to the compound, both of which will be 8m in height. The smaller of the two flares, which will be capable of flaring 500m³ of gas per hour, will be used to flare excess gas that isn't used in generation. The second flare, which will be capable of flaring 1500m³ of gas per hour, will be used in the event that one or both engines are shut down.

The proposed layout of the extension to the compound is shown on drawing number K3030700. Cross sections through the plant are shown on drawing number K3030800. In addition to the new generator and the two flares the extension area will also include clean and dirty oil tanks, a transformer and a container housing the gas plant. The engine containers and the oil tanks will be painted dark green and the flares and transformers will be galvanised grey in appearance. A 1.8m high grey palisade fence will surround the whole of the extension area with gated entrances for vehicles and pedestrians.

In preparing the planning application the following issues have been identified as requiring further consideration:

- Effect on surface water and groundwater;
- Gaseous Emissions;
- Noise.

The remainder of this supporting letter considers each of these three issues.

Impact on surface and groundwater

To minimise the potential for the pollution of surface water and groundwater the extension to the compound will be provided with a surface water drainage system. All drainage will pass into the existing water drainage system for the landfill site. The existing compound and the extension to the compound are situated on a previously landfill area. The surface water drainage from the landfill is regularly monitored as a requirement of the sites Pollution Prevention and Control (PPC) Permit.
Lubricants stored at the compound will be held at minimum levels consistent with operational needs and held in a self-bunded tank. Waste oil will be disposed of in an approved manner for reprocessing or incineration.

Collected condensate will pass directly back into the landfilled wastes hence removing the risk of condensate passing into the groundwater or surface water systems.

It is considered that the proposed measures for the control of surface water drainage, the storage and disposal of lubricants and the disposal of condensate will effectively minimise the potential for pollution or surface or groundwater from the existing and proposed development.

**Gaseous Emissions**

A landfill gas risk assessment has been undertaken using ADMS. Predicted concentrations from the flares and generators were added to the ambient background data taken from published information. The worst-case scenario was modelled and mitigating strategies are included. A copy of the assessment is included with this application.

For clarity, two scenarios were modelled as follows.

- The existing 1006kw engine and the proposed 625kw engine running at full load with the 500m³/hr flare running at full capacity burning surplus gas.
- 1500m³/hr flare running at full load, burning all available gas.

Both of these scenarios are considered to be worst-case and very conservative in terms of overall impact.

Although the scenario with only the 1500m³ flare running was modelled, the receptor concentrations of the modelled gases were considerably lower than the scenario with both engines and the 500m³ flare running, consequently the values have not been included in the report.

The report concludes that the scenario with both engines running and 500m³/hour of flaring is acceptable; it poses no significant impact and does not exceed the Air Quality Standards at any receptor.

It should be added that the pumping of landfill gas from the site and generation of renewable electricity converts the methane contained in the gas to carbon dioxide. Carbon dioxide is a less potent greenhouse gas hence there is a positive environmental benefit to be gained by preventing the release of free methane to the atmosphere.

**Noise**

The existing and proposed engines and generators are contained within acoustically treated ISO containers and the exhaust products are discharged to air via a silencer at roof level. Halcrow Group Limited was appointed to carry out an assessment of the potential impact of noise from the proposed development. The assessment included a survey of existing nighttime background noise levels at the closest occupied residential
property, Pavilion Lodge and predictions of the noise that will be generated by the proposed plant. A copy of the report is enclosed with this application.

The assessment concludes that the proposed facility is unlikely to cause an adverse impact or any significant loss of amenity to the nearest residents and as a result it is concluded that the proposed development is acceptable in noise terms.

I trust that I have provided sufficient information for you to be able to determine our planning application. However, should you need any further details or have any queries then please do not hesitate to contact me.

Yours faithfully
For Biffa Waste Services Ltd

Mary Tappenden
BSc (hons) MSc DIC DipTP MRTPI
Assistant Planning Manager

Encs.