Mr P. Watson  
Northamptonshire County Council  
Planning Services, Floor 3  
Guildhall Road Block  
County Hall  
Northampton  
NN1 1DN  

18th August 2015  

Dear Phil,  

Storefield Lodge, Rushton – Waste Transfer Station  
Variation of Conditions  
Ref PP – 04413570 (14/00019/WASFUL) and PP-04413742 (11/00049/WAS)  

In November 2008 planning consent (08/00069/WAS) was granted for the erection of a covered waste recycling facility for the reception and recycling of non-hazardous waste materials. (This permission has since been varied to allow Sunday and Bank Holiday working along with the extension of the cessation date to 2030 under consent number 11/00049/WAS). In July 2014, a further consent (14/00019/WASFUL) was granted for an extension to the waste recycling facility (however this consent is yet to be implemented).  

Mick George Ltd are now seeking to extend the operational hours whereby recycling operations undertaken within the confines of the enclosed building can be extended. Accordingly, Mick George Ltd are seeking to vary condition 8 of consent 11/00049/WAS and condition 20 of consent 14/00019/WASFUL, in order to allow the Company to optimise the recycling operations consistent with local and national targets.  

The current permitted hours on site are 07:00 to 18:00 Monday to Friday and 07:00 to 16:00 on Saturday. Mick George Ltd are proposing to extend these hours to permit operations to commence at 06:00hrs and continue until 23:00 Monday to Friday and 18:00 on Saturday. All operations during these extended hours will be confined to the waste recycling structure only.  

The proposed amendment will not increase HGV movements but will divert a greater proportion of waste from landfill. There will be no HGV to site outside current permitted hours for the site as a whole. Therefore no adverse impacts on highways or traffic generated noise are expected.  

No additional external lighting will be required on site, other than for security purposes. Any internal lighting within the waste recycling facility will be inward facing to avoid any potential light spillage. A large landscaped bund at the rear of the building acts as a partial screen to the closest
property. The landform of the site means that the waste recycling building is screened from other properties within the vicinity.

This proposed development will increase employment opportunities, with the introduction of two eight hour shifts (therefore eliminating the need for additional parking space or a larger site office/mess room). 17 additional jobs will be generated by this development.

With regards to the impact of noise, a noise appraisal has been completed by L.F Acoustics which considers the predicted noise levels that will be generated from the night time operations and this appraisal is enclosed as part of the application. The properties in the village of Rushton itself are over 500m away from the waste recycling facility and therefore there will be no adverse impacts upon the residents of the village. There are three other properties within the vicinity of the site, a bungalow approximately 250m south-west of the waste recycling building, a bungalow 800m south-east of the building and a property to the north approximately 1km away. Given the proximity of the bungalow to the south-west, mitigation measures (described below) will be adopted. The predicted noise levels as demonstrated within the appraisal confirms compliance with National Guidance for night time noise levels (42 dB(Aeq)) once these measures have been put into place.

The first measure is to enclose the engine external to the main building that operations the trommel machinery inside of the waste recycling shed. The trommel will operate throughout the extended hours period, and this has been taken into account within the noise appraisal. This enclosure will consist of a cladded structure similar to the recycling building resulting in no visual impacts.

The second measure is to add louvres to the large vent at the rear of the building (required to be open for health and safety regulations). These louvres will deflect noise in a downwards direction rather than noise travelling towards the village. The front of the waste recycling building is open, however this open side of the building is facing into the site, therefore any noise emissions will be directed inwards and there should be no adverse impacts on the local residents.

The conclusion of the noise report states, “the assessment concluded that the operation of the site during the early morning, evening and Saturday afternoon periods would be unlikely to give rise to significant adverse effects at properties surrounding the site and noise levels during these times are considered to be sufficient to minimise any potential disturbance” and “to provide further protection to the occupants of surrounding properties, additional mitigation measures would be provided to attenuate noise from the operation of an engine located at the rear of the building and any break out from vents within the rear façade of the building. With these measures adopted, noise levels would be reduced to a satisfactory standard and whilst certain operations may still be audible at the closest property the noise levels would be reduced to a level that would ensure that there were no adverse noise effects.”

As a positive means of controlling dust, the existing dust management regime will continue which will set trigger levels that relate to wind direction and proximity to residential properties and other sensitive uses. When those trigger conditions are reached, the dust management regime will provide for additional dust suppression measures to be implemented as appropriate. The use of such a management regime reflects a pro-active approach to dust management to ensure that the
amenity of local residents or other sensitive locations is assured and consistent with current good practice.

Please feel free to contact us if you have any queries or questions relating to this application (07760421117, planning@mickgeorge.co.uk).

Yours sincerely,

[Signature]

John Gough
Planning Manager

Enc.
Application forms x2
Cheque x2
Noise Appraisal
NOISE ASSESSMENT

PROPOSED EXTENDED WORKING HOURS
AT RUSHTON MRF

MICK GEORGE LTD

FINAL REPORT

JULY 2015
Noise Assessment

Proposed Extended Working Hours at Rushton MRF

Mick George Ltd

Final Report

July 2015

This report has been prepared using all reasonable skill and care within the resources and brief agreed with the client. LF Acoustics Ltd accept no responsibility for matters outside the terms of the brief or for use of this report, wholly or in part, by third parties.
1. Introduction

1.1. LF Acoustics Limited have been appointed by Mick George Ltd to carry out a noise assessment to support a planning application to extend the working hours at the Materials Recycling Facility (MRF), located on Oakley Road, Rushton

1.2. At present, the site operates between 07:00 – 18:00 hours Mondays – Fridays and between 07:00 – 13:00 hours on Saturdays. Mick George are seeking to extend these hours to between 06:00 – 23:00 hours, to enable additional amounts of waste to be processed on site. During any extended hours of operation, no deliveries would be made other than during the presently permitted hours, with all activities contained within the MRF building.

1.3. This report presents an assessment of the noise levels associated with the operation of the MRF building at the surrounding properties, which may be potentially affected by noise from working extended operating hours.

1.4. Section 2 provides a summary of the relevant conditions attached to the present consents to operate the facility with a summary of relevant standards and guidelines used to assess noise from this type of operation provided in Section 3. Section 4 provides information on the surrounding land uses and existing noise environment. Calculations and assessment of the noise generated by the operation of the site are provided in Section 5, with recommendations for additional mitigation control measures also provided which seek to reduce noise levels to an acceptable standard. Finally, Section 6 presents a summary of this report.
2. **Current Planning Consents**

2.1. The site presently operates under a number of planning consents.

2.2. The consent for the construction and operation of the MRF building was granted on 19th November 2008 (Application Ref. 08/00069/WAS). The consent was subject to a number of Conditions, with the following relevant to noise:

3. Except as may otherwise be agreed in writing by the Waste Planning Authority, site operations and any associated activities shall only be carried out between the hours of 07.00 and 18.00 Mondays to Friday and 07.00 and 13.00 Saturdays. During the hours of 13.00 and 17.00 on Saturdays deliveries only of non-hazardous waste materials are permitted but there shall be no processing of waste materials or any other associated activities. No operations whatsoever shall be carried out on the site on Sundays, Public or Bank Holidays.

7. All plant and machinery shall be noise attenuated and noise generated from operations on the site shall not exceed 55 dB(A) $L_{eq} 1$ hr free field at the nearest noise sensitive properties.

2.3. Consent has recently been granted (Application Ref. 14/00019/WASFUL) for an extension to the MRF building. To date, this consent has not been implemented, although the consent specifies the same operating hours and noise limits for the MRF, as specified in the conditions above. However, this consent does additionally allow for up to 20 deliveries to be made to the site on Sundays and Bank Holidays.
3. **Applicable Standards and Guidance**

A description of the noise units referred to within this report is provided in Appendix A.

3.1. **National Planning Policy Framework**

3.1.1. The principal planning guidance in the UK was updated in March 2012 and is now contained within the National Planning Policy Framework [1]. At the heart of the NPPF is a presumption in favour of sustainable development, although environmental criteria should be set out to ensure that the permitted operations do not have unacceptable adverse impacts, with appropriate noise limits adopted to control noise.

3.1.2. Reference is made within the NPPF to the Noise Policy Statement for England [2] (NPSE), which sets out the long term vision of the Government noise policy. Further information has been provided on the assessment of noise within recent Planning Practice Guidance, published in March 2014 and available on the Government planning web site. Whilst this guidance does not provide any objective criteria upon which to base noise assessments, the guidance provides a description of the relevant Effects Levels identified within the NPPF and NPSE and this is reproduced in Table 3.1.

<table>
<thead>
<tr>
<th>Perception</th>
<th>Examples of Outcomes</th>
<th>Increasing Effect Level</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not noticeable</td>
<td>No Effect</td>
<td>No Observed Effect (NOEL)</td>
<td>No specific measures required</td>
</tr>
<tr>
<td>Noticeable and not intrusive</td>
<td>Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.</td>
<td>No Observed Adverse Effect</td>
<td>No specific measures required</td>
</tr>
<tr>
<td>Noticeable and intrusive</td>
<td>Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.</td>
<td>Lowest Observed Adverse Effect Level (LOAEL)</td>
<td>Mitigate and reduce to a minimum</td>
</tr>
<tr>
<td>Noticeable and disruptive</td>
<td>The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.</td>
<td>Significant Observed Adverse Effect Level (SOAEL)</td>
<td>Avoid</td>
</tr>
<tr>
<td>Noticeable and very disruptive</td>
<td>Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory</td>
<td>Unacceptable Adverse Effect</td>
<td>Prevent</td>
</tr>
</tbody>
</table>

Table 3.1 Significance Criteria
3.1.3. The NPPF advises that development should seek to ensure that noise from proposed developments does not give rise to significant impacts, i.e. a level identified as a Significant Observed Adverse Effect (SOAEL), which is at a level where the noise would cause a material change in behaviour.

3.1.4. The National Planning Policy for Waste was published in October 2014 [3]. The Policy requires local planning authorities to consider potential impacts of proposed waste facilities, to include noise and advises that intermittent and sustained working may be a problem if not properly managed, particularly if night-time working is involved.

3.2. **British Standard BS 4142**

3.2.1. BS 4142 [4] is the British Standard for rating and assessing noise of a commercial or industrial nature. The Standard has been recently updated to reflect the guidance within the National Planning Policy Framework to consider the significance of potential adverse impacts upon surrounding noise sensitive receptors.

3.2.2. BS 4142 is a comparative standard in which the estimated noise levels from the proposed development are compared to the representative background noise level from existing uses.

3.2.3. BS 4142 relates the likelihood of complaint to the difference between the Rating Level of the noise being assessed and the background noise level.

3.2.4. The background noise level is the $L_{A90}$ noise level, usually measured in the absence of noise from the source being assessed, but may include other existing industrial or commercial sounds. The background noise levels should generally be obtained from a series of measurements each of not less than 15 minute duration.

3.2.5. The Rating Level of the noise being assessed is defined as its $L_{Aeq}$ noise level (the 'specific noise level'), with the addition of appropriate corrections should the noise exhibit a marked impulsive and/or tonal component or should the noise be irregular enough in character to attract attention.

3.2.6. During the daytime, the specified noise levels are determined over a reference time interval of 1 hour, with a 15 minute reference period adopted when assessing night-time noise.

3.2.7. If the Rating Level of the noise being assessed exceeds the background level by 10 dB or more BS 4142 advises that there is likely to be an indication of a significant adverse impact, depending upon context. A difference between background level and Rating Level of around 5 dB is likely to be an indication of an adverse impact, depending upon context. The lower the Rating Level is, relative to the background noise level, the less likely the specific source will have an adverse or significant adverse impact. Where the Rating Level does not exceed the background noise level is an indication of a low impact, depending upon context.

3.2.8. The Standard advises that where background noise levels are low, absolute noise levels may be as, or more, relevant than the margin by which the Rating level exceeds the background. This is especially true at night.

3.3. **British Standard BS 8233**

3.3.1. British Standard BS 8233 [5] principally provides design guidance for new buildings. For residential premises, the guidance advises for steady external noise sources, levels of noise internally not exceeding 30 dB $L_{Aeq, 8 \text{ hour}}$ within bedrooms at night are desirable, with a level of 35 dB $L_{Aeq, 16 \text{ hour}}$ representing a desirable standard of noise within living rooms and bedrooms for resting purposes during daytime periods.
3.4. World Health Organisation Guidelines


3.4.2. The guidance advises:
   - few people are moderately annoyed by noise levels of below 50 dB $L_{Aeq}$ during the daytime;
   - for a good night’s sleep, noise levels within bedrooms should not exceed 30 dB $L_{Aeq}$ with individual noise events not exceeding 45 dB $L_{Amax}$, and
   - special attention should be given to noise sources in an environment with low background noise levels and to noise sources with low frequency components.

3.4.3. Assuming an open window provides a reduction in noise levels of between 10 – 15 dB(A), during the night-time the WHO guidance indicates that external noise levels should remain below 40 – 45 dB $L_{Aeq}$ to maintain the restorative processes of sleep.

3.4.4. The WHO produced additional noise guidance in relation specifically to night-time noise in 2009 [7]. This report provides a description of the no observed adverse effect level (which is equivalent to NOEL) and advises for night-time noise (which is considered to be the most sensitive period of the day) that this concept is less useful, as the adversity of effects are less clear. Instead, it advises the use of the observed effects thresholds, above which an effect starts to occur or shows itself to be dependent upon the exposure level.

3.4.5. The guidance is presented in terms of external and internal recommendations to minimise any potential adverse effects. Externally, the guidance advises that an average night-time noise level $L_{night}$ (the $L_{Aeq, 8\text{ hour}}$) of 40 dB is equivalent to the lowest observed adverse effect level and advises this guideline value is recommended for the protection of public health from night-noise. However, below this level there was no change in the small number of awakenings identified and hence a reason for considering that the NOEL was not an appropriate descriptor in noise terms for identifying adverse effects and hence recommend the use of the observed effects threshold as an appropriate descriptor to identify the potential for the onset of adverse effects.

3.4.6. The guidance, however, advises that an external night-time noise level of 30 $L_{Aeq, 8\text{ hour}}$ would be equivalent to the NOEL (note that the guidance does not apply any penalty for characteristic noise and this level is equivalent to a Rating Level of 35 dB $L_{Aeq}$, when a 5 dB(A) penalty is applied), as their research indicated that there were no detectable effects internally, below a level of 32 dB $L_{Amax}$, with no physical awakenings identified below a level of 42 dB $L_{Amax}$ internally.

3.5. Local Planning Guidance

3.5.1. The current planning conditions imposed by Northamptonshire County Council, would suggest that the authority imposed conditions on the site relevant to minerals and waste operations, by imposing a 55 dB $L_{Aeq, 1\text{ hour}}$ limit for the present daytime operations.

3.5.2. Consideration has therefore been given to relevant guidance for the evening and night-time periods, which advises that during the evening period, site noise limits should be set at a level of no more than 10 dB (A) above background, with a night-time limit of 42 dB $L_{Aeq}$ imposed, which seeks to minimise disturbance.
3.6. **Proposed Criteria to be Adopted for Extended Working Hours**

3.6.1. Based upon the above guidance, the following criteria are proposed, which would seek to ensure noise levels remained acceptable during any extended working hours and thus ensured that the operation did not result in any significant adverse effects, thus complying with the requirements of the NPPF.

- During the evening (18:00 – 22:00 hours) and Saturday afternoon (13:00 – 18:00 hours) periods, noise levels associated with the operation of the MRF should not exceed a level of more than 10 dB(A) above the typical background levels; and

- During the night-time periods (22:00 – 23:00 and 06:00 – 07:00 hours), noise levels from the operation of the MRF should not exceed a level of 42 dB $L_{Aeq, 15 \text{ minute}}$. 
4. Baseline Assessment

4.1. Identification of Potentially Affected Noise-Sensitive Receptors

4.1.1. There is a single property located in close proximity of the site, a bungalow on the corner of Station Road and Oakley Road, to the south west, approximately 250 metres from the MRF building. This property is directly adjacent to the haulage yard, with noise levels influenced by the operation of the MRF, the haulage yard, road traffic and rail movements on the Midland Mainline to the south. This property is screened from the MRF building, by the landscaping which was constructed to the rear of the MRF building when it was constructed;

4.1.2. There is a bungalow located to the south east of the site, along Station Road, approximately 800 metres from the MRF building. This property has a line of sight onto the MRF building. Noise levels at this dwelling are principally influenced by road and rail traffic.

4.1.3. There is a single property to the north, located beyond the landfill site and effectively screened by the land formation. This property is approximately 1km from the MRF Building.

4.1.4. Properties within the main village of Rushton, located over 500 metres to the south of the MRF building, are effectively screened from the site by the railway embankment. Given that these dwellings are effectively screened and located further from the site than the dwellings identified above, they have not been considered further within this assessment.

4.1.5. These locations are identified on Figure 1.

4.2. Baseline Noise Monitoring

4.2.1. A noise monitoring exercise was carried out between 14 – 21 May 2015 to determine the existing noise environment at locations representative of dwellings surrounding the site. The measurement exercise comprised unattended measurements taken at one location at the south eastern corner of the site (to determine representative noise levels for the closest dwellings when the site was not operational), which was supplemented with attended measurements during the daytime with the site operational at two locations adjacent to the potentially most affected properties.

4.2.2. The measurements were obtained using Rion NL-52 Class 1 Sound Level Meters, which were calibrated before and after the exercise using a Rion NC-74 Class 1 Acoustic Calibrator, with no drift recorded. At each position, the microphone was positioned at a height of between 1.2 – 1.3 metres and freefield (i.e. at least 3.5 metres from any building facades).

4.2.3. At each position, measurements were obtained over 15 minute monitoring periods.

Unattended Noise Survey

4.2.4. Unattended noise measurements were taken at a position within the south eastern corner of the site between 14 – 21 May 2015. The monitoring position was approximately 120 metres to the south of the MRF building.

4.2.5. The location was chosen as it was considered that the background noise levels monitored whilst the site was not operational (i.e. during the evening and night-time periods) were representative of the noise environment at the two properties to the south. The monitoring location is indicated on Figure 2.
4.2.6. Weather conditions during the survey were mixed, with generally fine and dry conditions and light winds, with the occasional heavy rain shower. The weather conditions were considered suitable for undertaking an environmental noise survey.

4.2.7. The results of the monitoring exercise are presented in graphical form within Appendix B.

4.2.8. The results of the survey have been analysed to determine the noise levels during the evening and night-time periods when the site was not operational. The results of the analysis are provided below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Evening (18:00 – 22:00)</th>
<th>Night-time (22:00 – 07:00)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$L_{A_{eq,T}}$</td>
<td>Typical $L_{A_{90}}$</td>
</tr>
<tr>
<td>Thursday 14/5/15</td>
<td>53</td>
<td>43</td>
</tr>
<tr>
<td>Friday 15/5/15</td>
<td>53</td>
<td>42</td>
</tr>
<tr>
<td>Saturday 16/5/15</td>
<td>56</td>
<td>38</td>
</tr>
<tr>
<td>Monday 18/5/15</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>Tuesday 19/5/15</td>
<td>51</td>
<td>43</td>
</tr>
<tr>
<td>Wednesday 20/5/15</td>
<td>53</td>
<td>45</td>
</tr>
<tr>
<td>Average</td>
<td>53</td>
<td>43</td>
</tr>
</tbody>
</table>

Table 4.1 Results of Unattended Noise Monitoring

4.2.9. The instrument was additionally fitted with an audio recording card, which was used to capture periodic audio snapshots of the noise environment during the survey. The audio files have been analysed to ascertain the principal influences on the noise levels during these periods, which include:

- Distant road traffic on the main roads and local traffic using Station and Oakley Road;
- Rail movements on the Midland Mainline;
- Leaves rustling in trees;
- Birdsong.

4.2.10. It was noted that vehicle engines started within the haulage yard any time after 4am. Noise from these vehicles would have influenced noise levels at the adjacent bungalow.

4.2.11. The results also indicated that background noise levels remained typically above 40 dB $L_{A_{90}}$ until 23:00 hours and after 06:00 hours.

Attended Measurements

4.2.12. Attended measurements were made at two positions representative of the two dwellings closest to the site of the MRF during the afternoon of Thursday 21st May 2015.

4.2.13. The aim of the measurements was to evaluate the noise levels and audibility of the operations associated with the MRF and associated landfill.

4.2.14. At each position, two 15 minute measurements were obtained, whilst the site was fully operational.
4.2.15. The measurements taken adjacent to the bungalow to the south east, were made on the roadside, approximately 10 metres from the kerb. The results obtained at this location are provided below.

<table>
<thead>
<tr>
<th>Time</th>
<th>Measured Noise Levels [dB]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$L_{A_{eq}}$</td>
<td>$L_{A_{max,F}}$</td>
</tr>
<tr>
<td>13:00 – 13:15</td>
<td>59.2</td>
<td>79.9</td>
</tr>
<tr>
<td>13:15 – 13:30</td>
<td>60.6</td>
<td>80.7</td>
</tr>
</tbody>
</table>

Table 4.2 Results of Noise Monitoring at Property to South East

4.2.16. Noise levels at this location were principally influenced by road and rail traffic.

4.2.17. The operation of the MRF was generally not audible at this position. Occasional banging was audible, which is understood to have been most likely attributable to the handling of large bins on the concrete pad outside of the MRF building, as the vehicles collect them to transfer waste onto the landfill, or associated with containers being unloaded upon delivery to site.

4.2.18. Further measurements were obtained at the bungalow on the corner of Station Road and Oakley Road. The measurements were taken on the opposite side of the road, which was approximately a further 30 metres from the MRF building.

4.2.19. Noise levels at this position were principally influenced by traffic using the two roads, which included a number of HGVs travelling to the site. Train passbys were also clearly audible on a number of occasions during the measurements.

4.2.20. The results obtained at this location are provided below.

<table>
<thead>
<tr>
<th>Time</th>
<th>Measured Noise Levels [dB]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$L_{A_{eq}}$</td>
<td>$L_{A_{max,F}}$</td>
</tr>
<tr>
<td>13:35 – 13:50</td>
<td>59.4</td>
<td>79.8</td>
</tr>
<tr>
<td>13:50 – 14:05</td>
<td>61.5</td>
<td>80.3</td>
</tr>
</tbody>
</table>

Table 4.3 Results of Noise Monitoring at Property to South West

4.2.21. The operation of the MRF was audible at this location, principally associated with the external engine, which is used to power the hydraulics for the trommel and the occasional handling of larger items as they passed through the trommel or being dropped from the picking line.

4.2.22. The results of the monitoring at the two properties, indicated that, whilst audible, the operation of the MRF generated low levels of noise, substantially below the 55 dB $L_{A_{eq}}$ noise limit permitted for permitted daytime operations.
On-site Noise Monitoring

4.2.23. The building construction is formed of concrete panels at low level, acting as a push wall, with a single skinned steel clad construction to the upper walls and roof. There is a gap between the concrete and steel cladding, which reduces the acoustic performance of the building. The front of the building, which faces north, is open to allow access.

4.2.24. There is a large vent within the rear facade of the building. This vent has a weather protection cover over it, which provides some attenuation, although noise break out from this element was audible to the rear and the potential reason why certain activities were audible at the closest property.

4.2.25. Externally, to the rear of the building, set at low level, is a diesel engine which operates the hydraulics for the trommel within the building. There is very little protection around this plant at present and noise from this plant was the main influence on the noise levels to the rear of the building.

4.2.26. A large landscaped bund has been constructed to the rear of the building, which partially screens the building and engine from the closest property.

4.2.27. A series of measurements have been made around the MRF building, to ascertain the noise levels associated with the current operation. The monitoring positions are indicated on Figure 3, which also indicates the measured A-weighted noise level at each position. The measurements were made in terms of 1/3 octave bands in addition to the A-weighted levels, which have been used as the basis of the noise modelling.
5. Calculations and Assessment

5.1. Proposed Operations

5.1.1. Mick George are proposing to extend the operating hours of the MRF to enable more waste material to be processed.

5.1.2. The proposed operating hours for the MRF building are between 06:00 – 23:00 hours weekdays, and until 18:00 hours on Saturdays.

5.1.3. During the extended operating periods, there would only be activity within the building, no deliveries would be made to site during the evening / night-time periods, and there would be no operational activity outside the building.

5.2. Calculation and Assessment of Noise Levels

5.2.1. As indicated previously, noise levels associated with the operation of the MRF during the daytime period were observed to be low at the surrounding properties and it was therefore not possible to measure the noise levels directly.

5.2.2. Noise levels associated with the operation of the MRF have therefore been calculated using SoundPlan, which implements the methodology from ISO 9613-2. The calculations have utilised the results of the measurements taken around the building, together with the mitigation provided by the landscaping to the rear of the building.

5.2.3. The calculations have been based upon the basis of proposed operations during extended operating hours within the building, with no activity externally.

5.2.4. The results of the modelling are presented graphically on Figure 4, with a summary of the predicted noise levels at the closest properties provided in Table 5.1 below.

<table>
<thead>
<tr>
<th>Location</th>
<th>Calculated Noise Levels [dB LAeq, T]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property to South West</td>
<td>45.1</td>
</tr>
<tr>
<td>Property to South East</td>
<td>35.3</td>
</tr>
<tr>
<td>Property to North</td>
<td>30.9</td>
</tr>
</tbody>
</table>

Table 5.1 Calculation of Noise Levels – Base Case

5.2.5. The calculations indicate that the operation of the MRF building during extended working hours would generate low levels of noise at the properties to the north and south east of the MRF building.

5.2.6. However, noise levels at the closest property, located on the corner of Station Road and Oakley Road are predicted to be 45 dB LAeq,T, which is consistent with the monitoring data obtained either closer to the plant or from the attended measurements made on the opposite side of the dwelling.

5.2.7. An assessment of the noise levels at this property would indicate that the levels would be within the proposed limit of 10 dB(A) above background for any working during the evening or Saturday afternoon periods, with the predicted levels 2 dB(A) above the typical background noise levels during these periods.
5.2.8. Generally, noise from the operation of the MRF would not be clearly audible during these periods, with the main source of noise attributable to the operation of the hydraulic motor engine. Given that the noise associated with the operation of this plant is similar to that associated with an engine of a passing vehicle or train, the noise should not attract any penalty when assessing the levels against the guidance within BS 4142.

5.2.9. The operation of the MRF building during evening and Saturday afternoon periods would therefore result in acceptable levels of noise, which would not generate any significant adverse effects and thus comply with the requirements of the NPPF.

5.3. Consideration of Additional Noise Mitigation Measures

5.3.1. Given that the building is open fronted, there is limited scope for substantially reducing noise levels from the activities carried out inside at the surrounding properties.

5.3.2. The calculations provided previously, indicated that the noise levels at the dwelling to the north and south east would be acceptable for both evening and early morning operation. However, noise levels associated with the early morning and potentially late evening operation at the closest property, on the corner of Oakley Road and Station Road, would have the potential to cause some disturbance.

5.3.3. Observations made on site indicated that the main source of noise at this dwelling was attributable to the operation of the engine which powers the hydraulic motors of the trommel, with occasional transient noise associated with the handling of materials on the picking line.

5.3.4. To facilitate extended operational hours, the following measures are therefore recommended.

5.3.5. A more substantial enclosure should be constructed around the engine and hydraulic motors, with a silencer with an improved acoustic performance provided. These measures should be designed to provide a reduction in noise levels of around 10 dB(A), to provide a noticeable reduction in noise levels from this source.

5.3.6. With regards noise from internal activities, it is recommended that the acoustic performance of the existing high level vent is improved. This could be achieved in a number of ways, principally by the provision of acoustic louvres, or potentially more simply by increasing the size of the weather protection strip over the vent to increase the screening effect. This should be lines internally with an absorptive material, to minimise any reflection effects. A reduction of between 5 – 10 dB(A) would be possible depending upon the solution identified. Either way, the audibility of the internal activities at the property would be reduced, although noting that the internal activities are still likely to be audible at this property due to the break out from other areas of the building.

5.3.7. Further mitigation of the building would be very difficult, given that the front of the building is open, and the fact that the building is clad with single skinned steel cladding.

5.3.8. The SoundPlan model has been re-run taking account of the additional mitigation measures identified above. The mitigation noise levels are presented on Figure 5, with a summary of the levels at the properties provided in the following Table.
<table>
<thead>
<tr>
<th>Location</th>
<th>Calculated Noise Levels [dB LAeq, T]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property to South West</td>
<td>40.5</td>
</tr>
<tr>
<td>Property to South East</td>
<td>34.2</td>
</tr>
<tr>
<td>Property to North</td>
<td>30.8</td>
</tr>
</tbody>
</table>

Table 5.2 Calculation of Noise Levels – Mitigated Case

5.3.9. The calculations indicate that the proposed mitigation measures would reduce noise levels at the closest property by 5 dB(A), which would be a noticeable reduction in noise levels.

5.3.10. The mitigation measures would seek to reduce noise levels associated with the operation of the MRF building to below the proposed night-time limit of 42 dB LAeq, T.

5.3.11. Given that the noise with the mitigation would not be particularly characteristic or tonal in nature and an improvement over the present operational noise from the site, assessing the calculated noise levels against the requirements of BS 4142, would not suggest that any penalties would be necessary. An assessment against this guidance would therefore indicate at worst a site noise level 1 - 2 dB(A) above the typical background noise levels. This increase above background is not considered to result in a significant adverse effect.

5.3.12. BS 4142 advises that consideration should also be given to absolute noise levels during the night-time period. The calculated noise level at the closest property is below the WHO limit of 42 dB LAeq, specified within the WHO guidance, which would indicate the potential for a significant adverse effect.

5.3.13. The operation of the MRF during the proposed extended operating hours, with the additional mitigation measures proposed would therefore result in an assessment indicating the Lowest Observed Adverse Effects Level (LOAEL), where the noise from the operation of the site may still be audible, but unlikely to result in any particular disturbance. On this basis, the proposed extended working within the MRF with the additional mitigation incorporated would generate acceptable levels of noise and comply with the requirements of the NPPF.
6. Summary

6.1. LF Acoustics Limited have been appointed by Mick George Ltd to carry out a noise assessment to support a planning application to extend the working hours at the Materials Recycling Facility (MRF), located on Oakley Road, Rushton.

6.2. At present, the site operates between 07:00 – 18:00 hours Mondays – Fridays and between 07:00 – 13:00 hours on Saturdays. Mick George are seeking to extend these hours to between 06:00 – 23:00 hours weekdays and potentially until 18:00 on Saturdays, to enable additional amounts of waste to be processed on site. During any extended hours of operation, no deliveries would be made other than during the presently permitted hours, with all activities contained within the MRF building.

6.3. An assessment of the noise levels associated with the operation of the MRF has been made upon the basis of noise monitoring results and calculations.

6.4. The assessment concluded that the operation of the site during the early morning, evening and Saturday afternoon periods would be unlikely to give rise to significant adverse effects at properties surrounding the site and noise levels during these times are considered to be sufficient to minimise any potential disturbance.

6.5. To provide further protection to the occupants of surrounding properties, additional mitigation measures would be provided to attenuate noise from the operation of an engine located at the rear of the building and any break out from vents within the rear facade of the building. With these measures adopted, noise levels would be reduced to a satisfactory standard and whilst certain operations may still be audible at the closest property the noise levels would be reduced to a level that would ensure that there were no adverse noise effects.
References


Figures
Figure 3: On Site Noise Monitoring Positions and Results
Appendix A

Noise Units

Decibels (dB)

Noise can be considered as ‘unwanted sound’. Sound in air can be considered as the propagation of energy through the air in the form of oscillatory changes in pressure. The size of the pressure changes in acoustic waves is quantified on a logarithmic decibel (dB) scale firstly because the range of audible sound pressures is very great, and secondly because the loudness function of the human auditory system is approximately logarithmic.

The dynamic range of the auditory system is generally taken to be 0 dB to 140 dB. Generally, the addition of noise from two sources producing the same sound pressure level will lead to an increase in sound pressure level of 3 dB. A 3 dB noise change is generally considered to be just noticeable, a 5 dB change is generally considered to be clearly discernible and a 10 dB change is generally accepted as leading to the subjective impression of a doubling or halving of loudness.

A-Weighting

The bandwidth of the frequency response of the ear is usually taken to be from about 18 Hz to 18,000 Hz. The auditory system is not equally sensitive throughout this frequency range. This is taken into account when making acoustic measurements by the use of A-weighting, a filter circuit that has a frequency response similar to the human auditory system. All the measurement results referred to in this report are A-weighted.

Units Used to Describe Time-Varying Noise Sources (L_{Aeq}, L_{Amax}, L_{A10}, and L_{A90})

Instantaneous A-weighted sound pressure level is not generally considered as an adequate indicator of subjective response to noise because levels of noise usually vary with time.

For many types of noise the Equivalent Continuous A-Weighted Sound Pressure Level (L_{Aeq,T}) is used as the basis of determining community response. The L_{Aeq,T} is defined as the A-weighted sound pressure level of the steady sound which contains the same acoustic energy as the noise being assessed over a specific time period, T.

The L_{Amax} is the maximum value that the A-weighted sound pressure level reaches during a measurement period. L_{Amax,F}, or Fast, is averaged over 0.125 of a second and L_{Amax,S}, or Slow, is averaged over 1 second. All L_{Amax} values referred to in this report are Fast.

The L_{A90} is the noise level exceeded for 90% of the measurement period. It is generally used to quantify the background noise level, the underlying level of noise that is present even during the quieter parts of measurement period.
Appendix B
Results of Unattended Noise Measurements