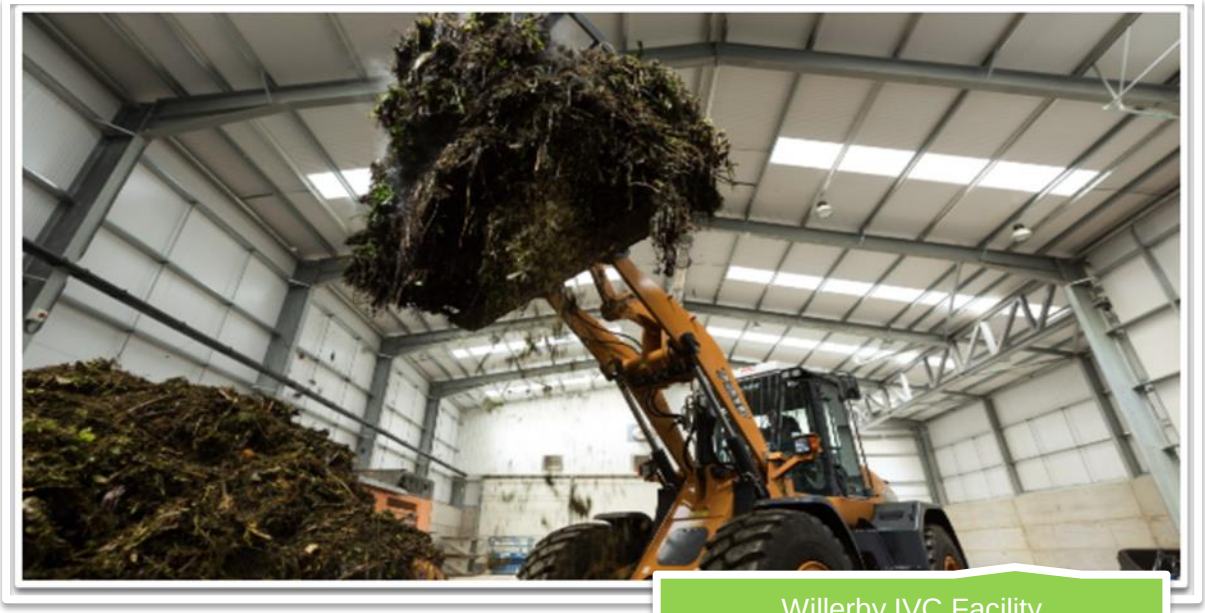
Noise & Vibration Management Plan

Issue 05

Produced for **Biowise**

Document Reference **BIO19**



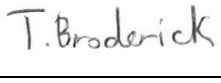
Willerby IVC Facility

A Sustainable Future. Today.

www.wrm-ltd.co.uk

01943 468138

QUALITY CONTROL

Document Title:	Noise & Vibration Management Plan	
Revision:	05	
Date:	03/11/2020	
Document Reference:	BIO19	
Prepared For:	Biowise	
Project Reference:	PR0968W01	
Copyright:	WRM Ltd © 2020	
Author:	Tom Broderick	
Reviewer	Ben Brown	

Version No.	Date	Description of change
01	07/04/2016	Initial management plan
02	28/03/2017	Amended following management review
03	05/03/2019	Updates sensitive receptor list
04	12/11/2019	Amended following management review
05	03/11/2020	Reviewed for submission of permit variation to increase capacity

CONTENTS

1.0 INTRODUCTION

1.1 General

Biowise Ltd
Albion Lane,
Willerby,
Hull,
East Yorkshire,
HU10 6TS

Site Grid Reference: 500500, 431896 (IVC Facility)
Site Grid Reference: 501172, 431336 (ASP, OWC, Wood and Soils)

The site is located in Willerby, 7km west of Hull and approximately 14km from the M62. Willerby is situated approximately 2km to the south east of the site and Beverley 8km to the north east. Access to the site is via Albion Lane.

The site is split by Westfield Road into a northern and southern portion of the site. The northern area consists of an in-vessel composting (IVC) facility treating food and green wastes through an enclosed vessel tunnel system. The southern area of the site consists of open windrow composting (OWC), aerated static pile composting (ASP), wood recycling and soils manufacture processes.

1.2 Noise and Vibration Management Requirements

The preparation of this document has been undertaken using the guidance outlined in the Environment Agency Technical Guidance Note H3 (Part 2) – Horizontal Guidance for Noise (part2), Sector Guidance Note (SGN) IPPC 5.06, and How to Comply with your Environmental Permit (EPR 1.00). The typical condition regarding noise and vibration on a permit is as follows:

Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable, to minimise, the noise and vibration.

2.0 NOISE AND VIBRATION

This Management Plan addresses the need to manage the potential for noise and vibration from the operations at site that may be considered as an environmental impact and a nuisance to neighbours, neighbouring businesses and operations.

Noise has been defined in various ways, but essentially it is *unwanted* sounds or sound that is not desired by the recipient. The degree of annoyance and stress that can result from exposure to noise is almost impossible to quantify, since responses may vary widely between individuals.

2.1 Noise and Sound

Sound is the sensation produced in the ear as a result of pressure variations set up in the air by a vibrating source. Such vibrations set up a series of alternate regions of increased and decreased pressure in the surrounding air or other medium. The longitudinal motion of these pressure fronts from source to receiver through a medium (air, ground, buildings, water) takes the form of sound waves.

Noise has been defined in various terms but is essentially sound of undesirable quality. Whilst the various physical attributes of sound can be quantified, the subjective aspects of noise - the degree of annoyance and stress which can result from exposure - is less easily measured. Annoyance and attitude towards noise varies widely between individuals, hence the apparent effectiveness of control measures may vary according to the individual exposed.

2.2 Vibration

Like sound, vibration is the oscillation of a body about a reference point and the number of oscillations or cycles per second gives the frequency of vibration (Hz). What differentiates the sound and vibratory forms of energy is in the way they are perceived - sound can be detected by hearing whilst vibration can be felt as it is transmitted through solid structures.

As with sound, vibration may occur at a single frequency (simple periodic vibration) or more usually there are a number of different frequency components imposed on top of each other and occurring simultaneously - often different parts of a machine will vibrate at different frequencies. A combination of superimposed frequencies can also form a repetitive periodic motion - for example motors and fans.

Random vibration occurs where there is a wide range of frequencies present which vary randomly with time. Vibration may also be transient and die away after a period of time such as occurs with the use of heavy presses or the passage of a heavily loaded vehicle. Vibration is quantified in terms of three parameters: acceleration, velocity or displacement. Displacement is the distance moved from the fixed reference position (amplitude) and may be positive or negative (mm or µm). The velocity is the rate at which displacement varies with time (m/s or mm/s) and acceleration which is the rate of change of velocity over time (m/s2). The latter are generally used for the purpose of determining the various frequencies of vibration and the severity. Displacement is often used to indicate the degree of unbalance in rotating machine parts.

2.3 Legislative Context

2.3.1 Environmental Protection Act 1990

Local Authorities have a duty to inspect their area from time to time to identify any statutory nuisances and where a complaint of a statutory nuisance is made by a person living in the area, to take such steps as are reasonably practical to investigate the complaint.

Where a Local Authority is satisfied that a statutory nuisance exists or is likely to occur or recur in its area, legislation requires that the authority shall serve an abatement notice requiring any of the following:

- the abatement of the nuisance or prohibiting or restricting its occurrence or recurrence, and/or
- the execution of such works and the taking of such other steps as may be necessary for any of these purposes.

It is an offence not to comply with an abatement notice without reasonable excuse. A defence is to prove that the best practicable means were used to prevent or minimise the effects of the nuisance if the nuisance arose from industrial, trade or business premises.

2.3.2 Control of Pollution Act 1974

The main provisions of the Control of Pollution Act 1974 (COPA) with respect to noise are to control noise from construction sites and also to allow for the creation of noise abatement zones. Where it appears to a Local Authority that construction works are being, or are going to be carried out on any premises, the Local Authority may serve a Section 60 Notice imposing requirements as to the way the works are to be carried out. The Notice may specify the type of plant to be used or restrict the times that work can be undertaken or may impose noise level limits.

Sections 63-67 of COPA allow Local Authorities to designate Noise Abatement Zones. The Local Authority will maintain a register of acceptable noise levels permitted within the Noise Abatement Zones and monitoring is undertaken at specified monitoring points. Where a noise level is exceeded without consent the Local Authority may serve a noise reduction notice. Noise Abatement Zones have been criticised for their complexity and consequently few have been designated.

2.3.3 Noise & Statutory Nuisance Act 1993

The 1993 Act amends the Environmental Protection Act 1990 to control statutory nuisances arising from vehicles, machinery and equipment on roads. The Act makes provisions for control of audible intruder alarms which are dealt with by Statutory Nuisance proceedings.

2.3.4 Noise at Work Regulations 1989

The objectives of the permits issued is to achieve environmental protection and reduce harm to human health not secure worker protection from exposure to noise which is controlled by a separate regulatory regime. Full co-operation between the HSE and the Local Authorities and EA is essential to ensure that noise controls placed on scheduled activities are effective and compatible.

Neither set of controls should adversely affect the protection of the environment, sensitive receptors or the workers. Where environmental protection demands tighter standards of

control than are required to safeguard persons at work, these tighter standards should apply provided they have no adverse effects on the worker protection.

2.3.5 Noise Act 1996

The 1996 Act provides for the control of noise from dwellings at night and for the forfeiture and confiscation of equipment. The only provision relating to industry is section 10 which amends the Environmental Protection Act 1990 by allowing Local Authorities to seize and remove any equipment that appears to be used for the emission of the noise in question.

2.4 Noise Control Principles

Once noise has been generated, there are a number of physical factors involved in determining how the noise is propagated and how much reaches the receiver.

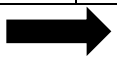
SOURCE	PATHWAY	RECEPTOR
		
		
The amount of noise radiated depends upon: • The sound power level of the source; • The nature of the building structure; • Gaps in the fabric of the building; • The number of sources.	The noise received depends upon the degree of attenuation provided by: • Distance from source; • Attenuation provided by type of ground; • Screening by walls, banks or buildings; • Wind direction; • Meteorological conditions; • Atmospheric absorption.	The strength of any vibration received will depend upon: • The strength of the source; • Ability of the source to transmit vibration to the ground; • The nature of the ground conditions; • Distance of the receiver from the source; • The continuity of the transmission route; • The ability of the receiver to receive the vibration.
HAZARD		Nuisance to local population.

Figure 1 – Source-Pathway-Receptor Model for Noise Nuisance

2.4.1 Noise Control Techniques

Control of noise within waste management facilities can normally be effected at 2 points in this chain:

1. By reducing at source by design or management;
2. By blocking or impeding the transmission paths, control by distance, direction or some form of noise abatement equipment

In determining the degree of control required, it is usual to calculate or measure the sound pressure level close to the source and, knowing the desired end-point, to calculate:

- The attenuation provided by the environment at the sensitive location.
- The additional attenuation required.

A hierarchy of noise control measures determines the most appropriate solution to control where practicable under any one site specific scenario.

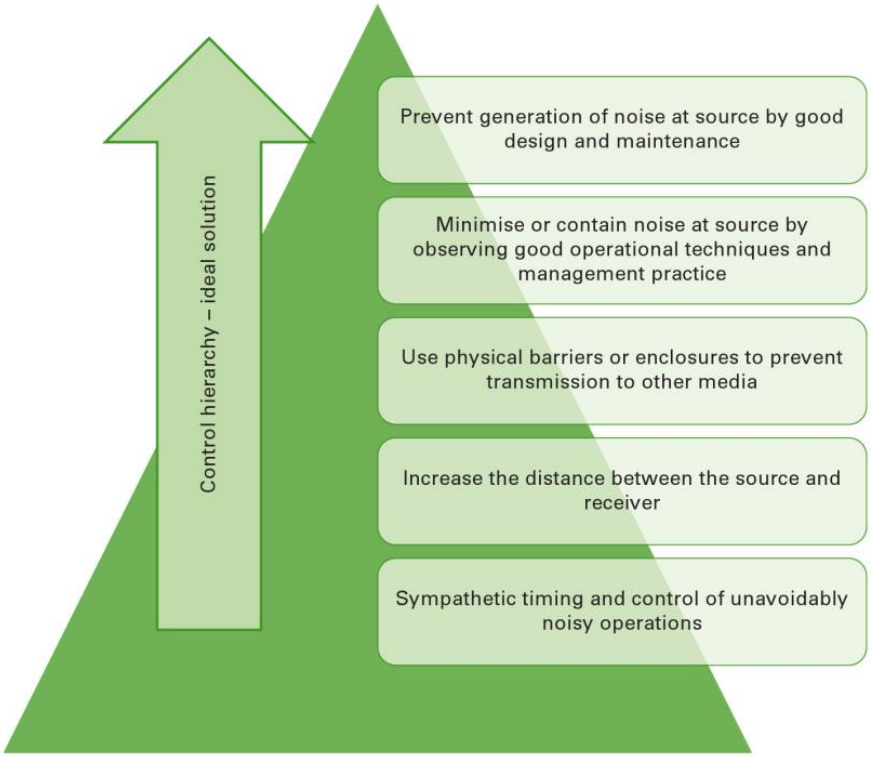


Figure 2 – Noise Control Hierarchy

2.4.2 Management Plan

The Noise and Vibration Management Plan shall identify sources and potential sources of noise and vibration, and shall consider the risk to sensitive receptors. The Noise and Vibration Management Plan has been produced with the intention to reduce as much as possible noise- and vibration-causing activities.

This Noise and Vibration Management Plan contains:

- An assessment of the risks of noise and vibration problems, from normal and abnormal situations, including worst case scenarios, for example of weather, temperature or breakdowns and accidents;
- The appropriate controls (both physical and management) needed to manage those risks;
- Suitable monitoring;
- Actions, contingencies and responsibilities when problems arise;
- Regular review of the effectiveness of noise and vibration control measures.

2.5 Management Responsibilities and Review

It will be the responsibility of the TCM (or designated responsible person) to ensure that the Noise and Vibration Management Plan is adhered to at the site. This includes ensuring the mitigation measures detailed in Section 3 are adhered to.

The TCM (or designated responsible person) will be supported by a company Director.

3.0 SOURCES

The following section identifies potential noise sources at the IVC facility and an assessment is made of noise impact, emergency conditions and action controls. Identification of these sources has been supported by a previous noise impact assessment carried out at the facility in October 2015.

3.1 Noise Monitoring

Noise monitoring was undertaken on site by S&D Garritt Ltd on numerous separate occasions. The findings of these assessments are summarised below.

3.1.1 October 2015

The specific sound levels from the existing IVC facility were measured at 49 dB LAeq (1-hour) at the nearest dwelling, Eppleworth Wood Farm, during the daytime and 43 dB LAeq (15-min) at night.

The existing background levels at the farm averaged 37 dB LA90 during a weekday daytime and 29 dB LA90 at night. After adding correction penalties because of the tonal character of sound, the sound levels at the farm are rated at 16 dB above the background sound levels measured during our day and night survey periods.

It is concluded that there is significant adverse impact at the farm.

3.1.2 December 2015

An addendum investigation was carried out to investigate the source of the continuous noise generated at the IVC facility.

The fan outlets at the IVC behave as two distinct point sources of sound towards the farm which is at 235m to the northwest. There are direct lines of sight from the louvres to the farm

It is proposed to reduce sound from the plant room extraction fans by fitting attenuators to their outdoor terminations. Two alternative types of attenuator are being considered:

a. Cylindrical attenuators which attach directly to each fan outlet and may be mounted either outdoors with the fan in its existing position or mounted indoors by moving the fan inwards.
b. Splitter type attenuators which would be mounted outdoors following a 90^{o} duct bend downwards at each fan outlet.

3.1.3 September 2016

A second addendum investigation was carried out to assess the impact of the noise attenuation installed on the air extraction fans located in the northeast side wall of each of the two plant rooms as recommended in the December addendum.

The results suggest that the specific sound level at Eppleworth Wood Farm is now 27 dB LAeq.

Comparison between the rating level and the background sound levels shows that at the time of this survey the sound from the IVC is rated at 10 dB below the daytime background and 2 dB below the night background sound levels as measured during previous surveys.

3.1.4 September 2016

A separate noise assessment was also conducted during September 2016 to assess the newly installed positive aeration process (aerated static pile composting) consisting of five centrifugal fans. The dominant sound sources were found to be the open air inlets of the five centrifugal fans that are located around 4m above ground level.

The nearest dwelling to the fans is on Westfield Road, Eppleworth at 530m to the northeast with a direct line-of-sight broken only by trees and other foliage. The noise levels at the nearest receptor was found to be above background noise levels.

It is recommended that sound from the five extraction fans is reduced by fitting attenuators to their inlet terminations. Two alternative types of attenuator appear suitable:

a) Cylindrical attenuators attached directly to each fan inlet and mounted horizontally.
b) Splitter type attenuators mounted vertically downwards following a 90^{o} bend and a round-to-rectangle transformation on each fan inlet.

3.2 Source Assessment

There are several sources of noise from the site due to the treatment and transfer activities of waste materials. The individual sources are identified in the assessment below.

Table 1 – Noise and Vibration Source Mitigation Assessment

Source	Nature of Noise or Vibration	Location/Activity	Contribution to Emissions	Mitigation Measures
Vehicles delivering waste materials to the site.	Diesel engine sounds and reverse alarms during manoeuvres to unload waste. Intermittent sound during deliveries of material only. Hours of reception are: Mon-Fri: 07:00-17:00 Sat:07:00- 13:00 Sun: Closed	• IVC reception hall • OWC reception pad • Vehicle access roads	Low – intermittent sound at low levels at receptor.	• Tipping of waste close to the nearest sensitive receptor at the IVC is carried out indoors. • Supervision of material unloading. • Site speed limit set at 10mph.
On site vehicles transporting material around the site.	Diesel engine sounds and reverse alarms during manoeuvres to transport waste. Intermittent sound during material movements only. Hours of operation are: Mon-Fri: 07:00-17:00 Sat:07:00- 13:00 Sun: Closed	• Inside the IVC reception hall • Unloading IVC tunnels • Transporting material to OWC pad • Transport of material to shredder/screener • Turning of OWC windrows • Transportation of final product to storage/customer	Low – intermittent sound at low levels at receptor.	• Site speed limit is set at 10mph. • White noise reverse alarms fitted to all operational plant. • Vehicles switched off when not in use. • Routine vehicle maintenance and inspection undertaken.

Source	Nature of Noise or Vibration	Location/Activity	Contribution to Emissions	Mitigation Measures
Shredder	Diesel powered engine with a woody tearing noise generated during use. Intermittent noise during shredding activities only. Warning alarm during start up and shut down. Hours of operation are: Mon-Fri: 07:00-17:00 Sat:07:00- 13:00 Sun: Closed	• Inside the IVC reception hall. • Outside on the OWC pad.	Medium – Intermittent sound at moderate levels during operational hours.	• Shredding activity close to the nearest sensitive receptor takes place within the IVC building. • Equipment switched off when not in use. • Routine plant maintenance and inspection undertaken. • Doors remain closed during operations except during the reception of waste materials.
Screener	Electric powered static star screen. Intermittent noise during screening activities only. Hours of operation are: Mon-Fri: 07:00-17:00 Sat:07:00- 13:00 Sun: Closed	• OWC pad.	Low – Intermittent sound at low levels at receptor.	• Screening activity does not take place close to the nearest sensitive receptor, screening activity at the OWC pad. • Equipment switched off when not in use. • Routine plant maintenance and inspection undertaken.
Air recirculation fans.	Electrically powered fan units generating a whirring noise. Constantly in use as the aeration system is in operation constantly, even during periods outside of operational hours.	• The recirculation fans are located internally to the IVC building.	Low - fan inlets and outlets are connected to ducts which lead to terminations within the buildings or within the process lines. The fans, ducts and terminations are all inside buildings such that there is no direct sound emission to outdoors from these fans.	• Routine plant maintenance and inspection undertaken. • Doors remain closed during operations except during the reception of waste materials.

Source	Nature of Noise or Vibration	Location/Activity	Contribution to Emissions	Mitigation Measures
Air extraction fans.	Electrically powered fan units generating a whirring noise. Intermittent but not time restricted, typically during the day during warmer temperatures and heat generation from plant activity.	• Air extraction fans located in the northeast side wall of each of the two plant rooms.	Low – the estimated sound level contribution at the nearest sensitive receptor is 27 dB LA_{eq}.	• Routine plant maintenance and inspection undertaken. • Additional mitigation measures are now in place.
Plant room louvres.	Intermittent whirring noise during operation to cool the plant room. Intermittent but not time restricted, typically during the day during warmer temperatures and heat generation from plant activity.	• Southwest walls of the IVC reception hall.	Low – the estimated sound level contribution at the nearest sensitive receptor is 5.7 dB LA_{eq}.	• Routine plant maintenance and inspection undertaken.
Pump enclosures.	Intermittent electrical pumping noise for transfer process water, clean water around the IVC system. Intermittent noise but not time restricted. Typically during the day when material is initially loaded into tunnels generating most leachate runoff.	• Northeast wall of the IVC facility.	Low - the estimated sound level contribution at the nearest sensitive receptor is 8-10 dB LA_{eq}.	• Routine plant maintenance and inspection undertaken. • Pump enclosure fully closed outside of operational hours.

Source	Nature of Noise or Vibration	Location/Activity	Contribution to Emissions	Mitigation Measures
IVC building fabric.	Sound leakage from internal machinery operations e.g. shredder, loading shovel, delivery vehicles. Intermittent noise from machinery operations and continual noise from the air handling system.	• In-vessel composting facility.	Low - sound leakage through the cladding and roof glazing was minimal such that it could only be measured at a very close distance.	• Routine plant maintenance and inspection undertaken. • Doors remain closed during operations except during the reception of waste materials.
ASP centrifugal fans.	Electrically powered fan units generating a whirring noise. Operated intermittently as required by composting facility. Not time restricted.	• OWC / ASP Composting Pad.	High – the estimated sound level contribution at the nearest sensitive receptor was higher than previous background levels.	• Routine plant maintenance and inspection undertaken. • Additional attenuation has been proposed. Once attenuation is installed a further noise assessment will be undertaken to reassess sound levels at the closest sensitive receptor.

4.0 SENSITIVE RECEPTORS

4.1 Personnel and Visitors

Personnel/operatives working on site are the closest receptors to any noise and vibration produced on site, however due to consistent working conditions it may be unlikely that operatives would be particularly sensitive to noise and vibration. All operatives should be made aware of the issue of noise and vibration on site and should be fully conversant with the contents of the Site Management System and the Noise and Vibration Management Plan.

Personal Protective Equipment (PPE) shall be made available where appropriate.

It is unlikely that noise and vibration from the site will cause nuisance or distress to visitors to the site. However, all visitors shall be made aware that the site is a composting and waste transfer facility. PPE shall me made available where appropriate or requested.

4.2 Neighbours

Neighbouring sites and businesses are likely to be the most sensitive receptors to noise and vibration nuisances especially those not operating industrial facilities where noisy equipment is used. Good relationships with neighbouring land owners and businesses are essential in order to anticipate potential problems and avoid them, where possible, before official complaints are made. Biowise shall ensure:

- that all the neighbours know how to contact the site if they consider noise and/or vibration to be a problem (Contact details will be clearly visible on the site sign along with the Environment Agency details); and
- that any complaints are recorded and that problems, where possible, are dealt with promptly.

4.3 Site Specific Sensitive Receptors

Noise sensitive receptors are located at:

Ref:	General Wind Direction (To)	Occurrence (%)	Nearest Sensitive Receptor	Approximate Distance From Site (m)	Grid Reference
SR01	N	16	Eppleworth Wood Farm	150 (IVC)	500365, 432137
SR02	N-NE	16	Bungalow Cottage	580 (OC)	501362, 431919
SR03	NE	6	Green Lane Farm	700 (OC)	501885, 431737
SR04	N-E	21	White House Farm	980 (IVC)	501324, 432021
SR05	SE	6	Albion Mill	260 (OC)	501779, 430941
SR06	S	16	Church Farm	360 (OC)	501359, 430813
SR07	S-SW	38	Rawdales Farm	550 (OC)	500829, 430813
SR08	SW-W	47	Hessle Golf Course	210 (IVC)	500165, 431539
N/A	W	5	None within 1km	N/A	N/A
N/A	NW	10	None within 1km	N/A	N/A

4.3.1 Background Noise Levels

Background noise levels from the IVC facility were measured on Friday 2nd October 2015. It was found that the outdoor sound levels at the nearest receptors were affected by sound from existing sources at the site. For this reason true background levels could not be measured at the receptors.

An alternative location for background measurements was chosen on Westfield Road at the entrance to a private access road leading to Woodhouse Farm. Background noise readings measured identified the noise levels as follows:

- Daytime: 37 dB LA_{90}
- Night time: 29 dB LA_{90}

4.3.2 Receptor Screening

A. Eppleworth Wood Farm

The rating level at the nearest dwelling, Eppleworth Wood Farm, was found during the noise survey periods of both the daytime and at night to be 16 dB above the background sound level. The conclusion by the method of BS 4142 is that the results are likely to be an indication of a significant adverse impact at the dwelling.

As previously mentioned above, subsequent noise monitoring following the installation of noise attenuation on the air extraction fans located in the northeast side wall of each of the two IVC plant rooms has shown the rating level is now 27 dB LAeq.

Comparison between the rating level and the background sound levels shows that at the time of the subsequent survey the sound from the IVC is rated at 10 dB below the daytime background and 2 dB below the night background sound levels as measured during previous surveys.

B/C. Eppleworth/Raywell

The next nearest dwellings to the IVC facility, OWC and ASP operations are at Eppleworth and near Raywell at 900-1000m distance. The specific sound levels at these more distant dwellings are estimated at 34 dB LA_{eq} during the daytime and 28 dB LA_{eq} at night. Comparison between the rating levels at the more distant dwellings and the average value of the background levels during our survey periods shows the sound from the IVC facility to be rated at 3 dB below the daytime background and 1 dB below the night background.

The conclusion by the method of BS 4142 is that the results are an indication of the IVC facility having a low impact at the more distant dwellings located at Eppleworth and near Raywell at 900-1000m from the facility.

As the risk at these receptors has previously been identified as low risk, they were not assessed in the second addendum report.

5.0 NOISE COMPLAINT RESPONSE

Elevated levels of noise may be identified either by receipt of a noise complaint from a third party suggesting that there is an excessive noise from the Waste Treatment Plant or by detection of noise as a result of daily site checks by site personnel.

This Section details the contingency measures in place to identify the source of elevated noise levels, bring noise levels back under control and minimise their impact, if elevated noise has been identified through receipt of a noise complaint from a third party.

Each required action will include a target timescale for rectification. The F05a-04 Noise & Vibration Compliant Form will record any actions taken to rectify the issue, ensure that any necessary actions or reviews are recorded and ensure that the person reporting the incident is notified.

5.1 Noise Complaint Investigation

A site diary, plus forms to record complaints, will be completed by the TCM (or designated responsible person) and a record kept at the site office.

A customer care and complaints procedure will be implemented (see OP05a – Handling Issues). The customer care and complaints procedure applies to all complaints, feedback and requests made by third parties regarding operational activities, environmental, health and safety performance or quality of service/product.

All complaints from third parties including external customers, potential customers, statutory authorities, statutory consultees, members of the general public and internal clients will be forwarded to the TCM (or designated responsible person) to action as below and recorded in the F05a-02 Issue Log within 24 hours.

The TCM (or designated responsible person) will ensure that:

- The complaint is investigated to identify the cause, in line with the F05a-04 Noise & Vibration Compliant Form. If necessary, this may involve direct communication with the complainant.
- In the event of elevated levels of noise being detected, the presence of ‘abnormal’ onsite activity is assessed and if necessary corrective action is taken that will prevent a reoccurrence of the same problem. These actions must be documented.
- The Complainant will be contacted and given information on the investigations conducted and actions taken as appropriate.
- All complaints are reported to a member of the senior management team. Progress against all actions shall be reviewed in monthly management meetings.
- If the investigation indicates that the complaint has not been justified this will be clearly recorded in the F05a-04 Noise & Vibration Compliant Form. All complaints will be logged.

The TCM (or designated responsible person) will investigate the performance failure event within 24 hours and, if necessary, will report the event to the Environment Agency. Once the issue has been resolved, the corrective action taken will be recorded and the issue will be closed.

6.0 EMERGENCY RESPONSE

This Section considers the potential for accidents (or incidents) which would result in the loss of control of noise emissions and could have an unacceptable short-term impact on the local community.

The measures in place to mitigate any emergency situations will generally be the same as the contingency measures identified in Section 7.2. If the situation is considered to be an emergency by the TCM (or designated responsible person) then the mitigation measures will be immediately implemented, and the manager will consider limiting the hours of operation or immediately suspending the site operations creating the unacceptable levels of noise. These measures will be considered on a case by case basis.

6.1 Breakdown of Equipment and Plant

Elevated levels of noise may escape from the site due to the breakdown of the waste treatment equipment or abatement equipment. Machines not operating to the manufacturer's specification may create unacceptable levels of noise and the failure of control equipment such as damage to acoustic cladding or acoustic barriers may allow unacceptable levels of noise to escape from the site.

In the event of equipment or abatement breakdown the mitigation measures to be undertaken are the same as the contingency mitigation measures detailed in Section 7.2.

6.2 Review of Noise Control Measures

Noise control measures will be reviewed through monthly checks as part of the monitoring and reporting of the general site Management System.

With reference to noise, the monthly checks will include but not limited to the following:

- Inspections of the paper trail of forms and the MS to ensure that all data is being entered correctly.
- Reviews on the higher risk sources of noise to check monitoring and maintenance procedures are being carried out in accordance with this management plan.
- Checks to ensure that any issues reported have been resolved correctly.

7.0 MONITORING

7.1 Monitoring Plan

It is acknowledged that there will be instances throughout the day where there will be some noise and/or vibration generated on site. Inevitably this shall occur during the deposition and transferring of waste. It is proposed that these occurrences shall be minimised in accordance with the control measures outlined in Section 3 of this document. It shall be the responsibility of the site supervisor to monitor site operations and ensure that the proposed control measures are being implemented.

Any additional quantitative monitoring shall be undertaken on an as required basis, as determined by the TCM. Triggers for quantitative monitoring could include:

- Receipt of a substantiated noise complaint;
- Following installation of a noise mitigation control e.g. noise attenuator or shield;
- After a change of noise risk posed by alteration or addition of a new operational process or technique;
- Upon request by the Environment Agency of Local Authority; or
- As part of on-going due diligence works to ensure compliance with the Environmental Permit.

7.2 Detection of Elevated Noise Levels

Any elevated levels of noise identified by monitoring undertaken will be mitigated as follows:

- The TCM (or designated responsible person) will investigate the source of the noise and carry out a range of checks at the identified source of the elevated levels if it is found to be originating from within the site. As part of these checks, the TCM (or designated responsible person) will consider the need for quantitative monitoring.
- Any noise monitoring will be completed in accordance with the relevant British Standards, including Method for rating industrial noise affecting mixed residential and industrial areas (BS4142).
- Monitoring locations will be agreed with the Environment Agency and/or the local Planning Authority prior to undertaking monitoring.
- The results of any noise monitoring will determine whether the site is causing an unacceptable impact at the receptor in question.
- The TCM (or designated responsible person) will then ensure the plant is being operated to the manufacturer's specification and ensure that any improvements required to minimise the noise levels are made.

To further mitigate the elevated noise levels, the following actions shall also be considered where practical and technologically viable.

- The replacement of equipment identified as generating excess noise.
- Once the improvements identified by the TCM (or designated responsible person) have been completed, the manager will commission a further set of monitoring to ensure that the improvements have met the required standard. If the noise levels are

still not being met, then the manager will repeat the investigation into improvements and subsequent monitoring until the limits are met as far as is reasonably practicable.

If operational failings are identified, the retraining of employees will take place to ensure that all employees operate to the required standards. If the failings are identified as part of the operating techniques, then the problem will be raised as part of the review of control measures.

The TCM (or designated responsible person) will ensure a close liaison with the Environment Agency throughout all stages of the process following an identified elevated noise level.

7.3 Noise and Vibration Records

Records of site inspections, complaints log and site diary check sheets (non-exhaustive) shall be maintained and stored in line with the retention of records table (see F05g-02 Retention of Records Table). Any adverse operating conditions, non-conformances, complaints and mitigation/management failure resulting in an accident or non-compliance with the Permit shall be recorded in the site diary

WRM Limited
18 Manor Square, Otley, LS21 3AY

Tel: 01943 468138

Email: info@wrm-ltd.co.uk Web: www.wrm-ltd.co.uk