

Pests Management Plan

Issue 03

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Willerby IVC Facility




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QUALITY CONTROL

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CONTENTS

1.0	INTRODUCTION.....	1
1.1	Pest Management Planning.....	1
1.2	Target Pests.....	1
1.3	Receptors.....	2
1.4	Reporting and Responsibilities.....	2
1.5	References.....	2
2.0	FLIES.....	3
2.1	Fly Monitoring.....	3
2.1.1	<i>Adult Flies</i>	3
2.1.2	<i>Larval Flies</i>	3
2.2	Critical Limits.....	4
2.3	Fly Prevention Management Techniques.....	4
2.4	Fly Control Methods.....	4
2.4.1	<i>Insecticide Baits</i>	5
2.4.2	<i>Ultra-Low Volume (ULV) Spraying</i>	5
3.0	RATS.....	6
3.1	Rat Monitoring.....	6
3.2	Rat Prevention Management Techniques.....	6
3.2.1	<i>Sanitisation</i>	6
3.2.2	<i>Access Exclusion</i>	6
3.2.3	<i>Eliminating Harborage</i>	7
3.2.4	<i>Bait Boxes</i>	7
3.3	Reactive Measures.....	8
4.0	SCAVENGING BIRDS.....	9
4.1	Bird Monitoring.....	9
4.2	Bird Deterrent.....	9
5.0	COMPLAINTS AND REPORTING.....	11
5.1	Complaint Investigation.....	11
5.2	Site-identified Pest Infestations.....	11
5.3	Internal Review.....	11
5.4	External Reporting.....	12
	ANNEX A: FORM 1 - FLY MONITORING RECORD SHEET.....	13
	ANNEX B: FLY IDENTIFICATION GUIDE.....	16
	ANNEX C: FORM 2 – BIRD MONITORING RECORD SHEET.....	18

ANNEX D: GULL IDENTIFICATION GUIDE.....21

1.0 INTRODUCTION

This Pests Management Plan (PMP) addresses the risk of attracting rats, flies and scavenging birds, hereafter known as pests in this report, and the control measures employed to mitigate the impact. These are supported through monitoring procedures to identify both elevated levels and review complaints should they arise. The complaints management procedure including the management responsibilities are also addressed.

1.1 Pest Management Planning

A Pest Management Plan decision at Biowise Ltd shall consist of the following steps:

1. Identify pest species.
2. Estimate pest populations and compare to established action thresholds.
3. Select the appropriate management tactics based on current on-site information.
4. Assess effectiveness of pest management.
5. Keep appropriate records.

Decisions concerning whether or not pesticides should be applied in a given situation will be based on a review of all available options. Efforts will be made to avoid the use of pesticides by adequate pest proofing of facilities, good sanitation practices, selection of pest-resistant plant materials, and appropriate horticultural practices.

When it is determined that a pesticide must be used in order to meet pest management objectives, the least-hazardous material, adequate for the job, will be chosen.

1.2 Target Pests

Based upon the historical identification of pests on site and the wider understanding of pests commonly encountered at biological waste treatment facilities the following target pests are identified for control within this Pests Management Plan (PMP):

- Flies
- Rats
- Scavenging Birds

All these types are attracted primarily by the waste being deposited; and can cause considerable nuisance to people in the locality. These pests can cause a number of problems for those affected. In all cases, there is the risk of transmission of disease.

Rats, for example, are frequently responsible for infecting humans with Weil's disease, a variety of the respiratory illness Leptospirosis. Birds can also transmit diseases to humans, but are more likely to be noticed because of their droppings, landing on property and on people. Large birds may also impact on commercial aircraft operations.

The proximity of other waste sites in the local area increases the risk of pest problems; as all these species, not just the birds, are fairly mobile and can travel considerable distances. Flies are most likely to transmit disease through contact, walking on food or a food-preparation surface, after contact with waste. The operator of a waste site must take appropriate measures

to control the nuisance caused by these pests. The control measures required for mitigation have some common features, all of which are facets of general good management techniques.

In addition, specific control measures may be applicable to each specific type of pest. The day-to-day management of the site includes routine observations for all aspects of the site. Included in these is the assessment of pests and the operations that can attract them if not managed and undertaken properly.

The Site Diary records kept by the Site Manager should note observations of the pest problems encountered, their severity, and the success (or otherwise) of the control measures employed.

1.3 Receptors

Those likely to suffer nuisance from pests at this site are:

- Local residents.
- Operational personnel (employees, contractors, third-party vehicle drivers, and visitors.
- Other local industrial sites.
- Local agricultural properties.
- Local retail and commercial properties.
-

The severity of the nuisance will generally be directly proportional to the proximity of the receptor to the active waste handling areas.

1.4 Reporting and Responsibilities

All operational staff will be responsible for reporting any vermin, insect or scavenging bird problems immediately to the Site Manager (or designated responsible person).

As identified in subsequent sections, regular site inspections will identify any signs of infestation. A record of any identified infestations will be kept in the Site Diary and the record sheets within this PMP, along with records of the use of vermin or insect control measures.

1.5 References

This Pests Management Plan has been developed in line with industry best practice including technical monitoring techniques and management processes from the following sources:

- Randall, C (1998) General Pest Management: A guide to commercial applicators.
- Environment Agency (2013) Fly management: how to comply with your environmental permit.
- NPMA (2013) Pest Management Standards for Food Plants.

2.0 FLIES

Common house flies and bluebottles have always been associated with putrescible waste (this includes food and green waste) particularly during warmer weather. Infestation typically starts at the point of waste generation, when eggs are laid on waste in domestic or trade waste bins. The longer the period of time before the waste reaches its final disposal point (landfill, composting, incineration) the greater the opportunity for fly problems to develop. In recent years the move towards fortnightly collection of domestic refuse, the introduction of a variety of waste processing techniques, and the reduction in the number of landfill sites and amounts of waste have increased the potential for fly infestation.

Although most adult flies stay close to their breeding sites (manure or putrescent waste), a proportion will disperse away and may cause problems at receptors. Houseflies are capable of dispersing over distances of several kilometres, although problems seldom occur at distances greater than 2-3km from the source. Significant problems likely to cause unacceptable nuisance levels tend to occur within 500m of the source.

2.1 Fly Monitoring

The following techniques are implemented for the monitoring of flies on site.

2.1.1 *Adult Flies*

A Scudder Grid is a standard 60cm square wooden slatted grid which is dropped onto the surface of the waste material. The grid is left to settle. After a period of 10 seconds, the flies resting on the grid are quickly counted and recorded (Annex A: Form 1); these are likely to include common housefly and bluebottles, so an element of identification is necessary (Annex B: Fly Identification Guide).

The count is repeated 10 times in areas with higher fly numbers, such as on and around the active windrow face. Counts are carried out at times when flies are active, typically between 10:00 and 16:00 hrs. Counts are avoided in cold, windy or wet conditions. Counts are typically be carried out once per week. Regular monitoring can determine 'usual' numbers for that site and therefore any rise will be easily seen.

2.1.2 *Larval Flies*

Larva are monitored by scraping the top 2-5cm layer from the surface of the waste over an area of approximately 30 x 30cm. The number of exposed larvae is quickly estimated, and recorded (Annex A). This is carried out at 10 locations within each sampling location. Larval stages are usually found where undisturbed damp waste is present, rather than on surfaces that experience a lot of movement. Drainage channels/grid drainage channels that have a waste residual within them can become nurseries for flies.

Good monitoring locations are those where this material is present for extended periods, allowing a series of counts to be taken and trends to be established. In premises where there is a high turnover and removal of substrate (such as the IVC reception hall), then routine monitoring of larvae is inappropriate, and monitoring will be based on adult counts.

Counts are undertaken once-a-month. Consecutive counts should not be carried out on exactly the same area of waste. One or two larvae would be considered 'normal', if more than five are found then action is needed.

2.2 Critical Limits

As with other issues such as noise or odour, there is no rigid definition of how many flies represent a nuisance. Experience shows that some households will complain vigorously about five flies in their home, while other households will quietly tolerate thirty flies. Defra's guidance on interpreting the Clean Neighbourhood and Environment Act 2005 says that:

'There are no objective levels at which a statutory nuisance exists or may be caused. In general, in domestic premises, it is likely that the threshold will be very low and control actions might be taken in cases of few house flies.'

As a guideline, an occupier will normally experience some irritation if there are five or more 'flying' house flies present in any one room at any one time on three successive days. If house flies are monitored with baited traps, sticky ribbons, or spot cards, a collection of more than 25 in any 48-hour period may indicate grounds for distress.'

A critical limit shall be established for the site using the methods outlined in section 2.1.

2.3 Fly Prevention Management Techniques

The risk of fly infestation will be high during periods of hot weather, as the incoming waste is likely to be infested and fly development will be rapid. Parts of the site where the process generates elevated temperatures may be at risk of infestation throughout the year. Management techniques employed include:

- Monitor adult fly and larval numbers in key areas of site; IVC waste reception hall, open windrow, aerated static piles, product storage, oversize storage.
- Ensure swift processing of waste and avoid extended storage of unprocessed waste in line with the Odour Management Plan.
- Turning of windrows as required.
- Refuse the waste if it's likely to cause fly infestation – reference the acceptance criteria within the Management System.
- During active composting phases, ensure all waste is uniformly heated to above 45°C to kill all fly stages.
- Ensure that waste doesn't accumulate in inaccessible areas such as behind push walls, pipe work or drains under plant or in corners. Any such waste is removed daily, especially during the summer months.
- Reduction of fly movement out of the IVC building with fast acting roller shutter doors. Maintaining negative air-pressure within the IVC treatment areas to reduce fly egress.
- Ensure site staff are trained in fly monitoring, and aware of the importance of fly prevention.

2.4 Fly Control Methods

Even if proactive fly prevention measures are in place, it is likely that some flies will still occur and need to be controlled. Under the COSHH Regulations operators must consider non-chemical techniques first. The selection of the appropriate control method considers the space in which the infestation may take place (internal and external) and appropriate method considering the final destination of compost products (agriculture and horticulture). Biowise

will contract an appropriately licensed service provider to undertake emergency fly control methods. Control methods are varied and choice of method will be determined by external contractor but would consider internal and external methods such as insecticide baits and ULV sprays.

2.4.1 Insecticide Baits

On detection of an infestation within the IVC building, as determined by exceedance of the critical limit, insecticide baits will be installed within the reception hall.

Insecticide baits typically consist of a mixture of insecticide, sugar and pheromone attractants. They are most commonly mixed to a paste and painted onto sheets of cardboard which are nailed up within the premises, or painted directly onto structural surfaces such as supporting posts, where flies commonly rest. Once applied, the bait will normally last some weeks or longer, but may need re-applying where large numbers of flies are present.

2.4.2 Ultra-Low Volume (ULV) Spraying

On detection of an infestation outdoors at the OWC pad or ASP bays, as determined by exceedance of the critical limit, ULV spraying will be undertaken.

Ultra Low Volume (ULV) sprayers use an air-blast to produce a fine spray of insecticide. The spray is less visible than that from a fogger. Such machines may be hand-held, or permanently installed, and are typically more effective than thermal fogging. ULV insecticide products typically contain non-residual pyrethroids, which have a short-lived effect. Treatments are normally applied at the end of the working day.

3.0 RATS

Rats dig burrows around foundations, in earthen banks and in planting beds. They are attracted to debris and food in unsecured waste storage containers. Rat problems originate outside buildings. Rodents usually stay at ground level and below but, if they gain access to wall voids, may climb to upper floors. Rat control starts with three principal operations that do not involve the pest control contractor: sanitation, housekeeping and structural maintenance. These operations are generally more important than trapping and poisoning.

Most successful rat control programs use a combination of tools and procedures to control the rat population and to keep it down. Methods used combine habitat alteration and pesticide application.

3.1 Rat Monitoring

It is not easy to tell how many rats are infesting a site. As a rough guide, the use of rat indicators are used to characterise the population as low, medium, or high:

Low: In rat-free or low-infestation conditions, no signs are seen. The area either has no rats or was invaded recently by a few.

Medium: With medium infestation, old droppings and gnawings can be observed. One or more rats are seen at night; no rats are seen during the day.

High: When there is a high infestation, fresh droppings, tracks, and gnawings are common. Three or more rats are seen at night; rats may be seen in the daytime.

3.2 Rat Prevention Management Techniques

The prevention of rat infestation can be managed through good practice where habitat management discourages rat populations through: improved sanitation, access exclusion, eliminating harbourage and use of bait boxes.

3.2.1 Sanitisation

Like all animals, rats need food to survive. Baiting programs often fail because the bait can't compete with the rats' regular food. The rats simply ignore the baits or cache them. Reducing the rats' normal food encourages them to feed on any rodenticide baits placed in their territory. Food availability is immediately available within the IVC reception building during the receipt of food wastes for processing. The following controls are implemented to maintain sanitary conditions within the IVC reception building:

- Food waste is processed as soon as possible but within 72 hours so that none is left within the reception hall for extended periods of time.
- The waste reception hall is scraped down at the end of each working day to clear any loose food remnants.

3.2.2 Access Exclusion

In the long term, the most successful form of rat control is to build them out. Also called rat-proofing, this approach makes it impossible for rats to get into a building or an area of a

building. Rat-proofing prevents new rats from re-infesting a building once it has been cleared. The following exclusion measures are undertaken on site both internally and externally.

Building Exterior:

- The IVC building is constructed from materials that cannot be gnawed by rats i.e. concrete and metal components.
- All cracks and holes in building foundations and exterior walls are immediately sealed.
- Any openings around water and sewer pipes, electric lines, air vents, and telephone wires are blocked
- Air vents are grated to prevent access.
- Roller shutter doors are fast action and sealed to ensure a tight fit, especially between door and floor threshold.

Building Interior:

- Broken blocks and holes around pipes are sealed upon detection.
- Any gnaw holes are repaired immediately upon detection.
- Floor drains are equipped with sturdy metal grates held firmly in place.

3.2.3 Eliminating Harborage

Preventing the establishment of a rat population can be effective by eliminating areas suitable as a habitat for burrows and rat movements. This can be difficult in some circumstances such as on site where the agricultural location can provide habitat outside of direct control. However, several on site management techniques are deployed to minimise harborage:

- Remove plant ground covers such as ivy near buildings.
- Regular grounds maintenance to trim high grasses and weeds within the site boundary.
- Remove any piles of waste materials or construction debris that permit rats to live and hide adjacent to a building.
- Reduce clutter and storage of any materials within the IVC or immediately adjacent to the IVC building.

3.2.4 Bait Boxes

In support of general management techniques for the prevention of rat infestation, given the nature of the material being processed on site, bait boxes are deployed in order to control and count rat numbers.

Bait boxes are situated against the exterior wall of the IVC process building and baited and inspected regularly. The bait stations are checked weekly to make sure that rats are taking the bait and that the bait is fresh. Entries are made in the site diary of the weekly inspections to ensure that bait is regularly maintained and number of dead rats are recorded.

Upon detection, bait packs are placed in burrows, in wall voids, and similar protected sites. If a site is damp, then paraffin bait blocks or other water-resistant formulations are used. Once bait is taken, the box is left in place for some time as the rats will consider it to be part of their normal surroundings.

3.3 Reactive Measures

Given the nature of the site we aim to keep the rat population to a low infestation. If signs of a high infestation are observed, then a rat controller will be employed to control the population.

4.0 SCAVENGING BIRDS

Birds provide enjoyment and recreation while greatly enhancing the quality of life. Birds are a key component of natural ecosystems and are studied, viewed, photographed and enjoyed by the general public. For this reason, birds are strongly protected by laws, regulations, and public opinion.

Birds can become pests, however, when they feed on crops, create health hazards, roost in large numbers on buildings, contaminate food, or create a nuisance. No particular species can be flatly categorized as good or bad. Whether birds are beneficial or harmful depends on time, location, and activity.

4.1 Bird Monitoring

The first step in controlling birds is to conduct a detailed and accurate bird survey (Annex C). Surveys are conducted early in the morning, midday, and again in the evening to correspond to the different activity periods of birds. The survey is not limited to information about pest birds; knowledge of non-target bird activity is just as important to minimise risk to these birds. The survey will investigate:

- What birds are present?
- How many?
- Are they residents, migrants, adults, juveniles?
- Are they nesting, feeding, roosting, loafing?
- Where do they eat and drink?
- What is attracting them to the various sites?
- Are the birds causing a health risk?
- Are the birds causing physical damage?
- If dispersed, where would they go?
- Is there risk to non-targets?
- What are the legal considerations?
- Could there be public relations problems?
- Is exclusion or habitat modification practical?

Probably the most commonly-encountered scavenging bird species on UK landfills and waste sites are the Herring Gull (*Larus argentatus*) and the Black-Headed Gull (*Chroicocephalus [Larus] ridibundus*). Others include the Great Black-Backed Gull (*Larus marinus*), Lesser Black-Backed Gull (*Larus fuscus*), and Common Gull (*Larus canus*). Fortunately, none of the common scavenging bird species is a significant agricultural pest, unlike the Wood Pigeon (*Columba palumbus*).

Routine monitoring will be carried out to check on population rates and spot trends in numbers. Where it is determined that scavenging bird numbers are increasing, bird deterrent actions will be implemented to remove this pest.

4.2 Bird Deterrent

Because of the potential noise nuisance on local residents, the use of the traditional LPG-fuelled birdscarer is not the preferred option for this site. Such devices are also known to be of limited effectiveness for some common scavenging species, which become accustomed to

the reports and pay little heed to them. As a result, the employment of a contract falconer is preferred. An American species, the Harris's Hawk (*Parabuteo unicinctus*) or similar hybrids, are now widely employed throughout the UK for such work. Their size renders them effective at scattering large scavenger species such as gulls, which are not readily deterred by smaller hawks. The deterrent effect usually lasts for some hours after the hawk has been flown.

The falconer will be called out as required upon identification of a scavenging bird problem. Rather than fixed times of day, random flights are more effective, as the scavengers do not become accustomed to a regular, predictable disturbance. The contracted falconer will be capable of providing the service at short notice, to provide a reactive response to bird problems. Typically, a working falconer will bring two or more birds to the site, in the event of one becoming injured or lost. The presence of a number of mature trees in the area encourages corvids (crows, starlings, and jackdaws) in particular to roost in the area, adding to the nuisance. As a result, the falconer is required to work the birds not only across the permitted site, but over the adjacent roosting areas to deter the birds from taking up residence.

5.0 COMPLAINTS AND REPORTING

Pest infestation and the presence of scavenging birds may be identified either by receipt of complaint from an affected third party, or by detection of pests as a result of the monitoring procedures detailed in this PMP. This section details the contingency measures in place to identify the source of pests, eradicate them from the site and minimise their impact.

5.1 Complaint Investigation

As part of the company's Management System, a complaints procedure has been implemented (see P05a – Handling Issues). The 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 Site Manager (or designated responsible person) to action as below and record.

Complaints received are logged in the site diary and also recorded on the F05a-01 Action Required Report, together with subsequent investigation details and actions taken, by the Site Manager (or designated responsible person). Records are stored at the site office.

The Site Manager (or designated responsible person) will ensure that:

- The complaint is investigated to identify the cause, if necessary this may involve direct communication with the complainant
- In the event of elevated levels of pests being detected, the presence of 'abnormal' on-site activity is assessed and if necessary immediate reactive measures will be implemented and corrective action 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 also reported to Company Directors and discussed at site meetings.
- Details of other complaints are sent to the other Company personnel as appropriate.
- Once the issue has been resolved, the F05a-01 Action Required Report shall be completed and the issue will be closed.
- Complaints involving a location with Local Authority Contracts will be reported in line with specific Contract requirements and timescales.

5.2 Site-identified Pest Infestations

In the event of a pest infestation being identified by Biowise personnel, the event will be reported to the Site Manager and it will be logged in the Site Diary and on an F05a-01 Action Required Report and then investigated and actioned in a similar manner as above.

5.3 Internal Review

The completed F05a-01 Action Required Reports are distributed throughout the company for review at operational, management and health & safety meetings, as applicable.

Any required updates to site procedures or activities covered within this Pests Management Plan will also require an immediate review and update to the PMP.

In any circumstance, the PMP will always be reviewed annually from date of issue to ensure that controls described are current and sufficient.

5.4 External Reporting











The Site Manager will report a pest infestation complaint/event to the Environment Agency within 24 hours, as detailed in Section 5 of the EA Permit.

Complaints involving a location with Local Authority Contracts will be reported in line with specific Contract requirements and timescales.

External Complainants will be contacted and given information on the investigations conducted and actions taken as appropriate following completion of the actions.

ANNEX A: FORM 1 - FLY MONITORING RECORD SHEET

ANNEX B: FLY IDENTIFICATION GUIDE

	
<p>Common Housefly (<i>Musca domestica</i>)</p>	<p>Lesser Housefly (<i>Fannia canicularis</i>)</p>
	
<p>Stable fly (<i>Stomoxys calcitrans</i>)</p>	<p>Black dump fly (<i>Hydrotaea aenescens</i>)</p>
	
<p>Cluster fly (<i>Pollenia rudis</i>)</p>	<p>Blue bottle (<i>Calliphora</i> sp.)</p>
	
<p>Green bottle (<i>Lucilia</i> sp.)</p>	<p>Larvae of common housefly in wet manure</p>
	
<p>Pupae of common housefly in dry manure</p>	<p>Pupae of lesser housefly (larvae appear similar)</p>

ANNEX C: FORM 2 – BIRD MONITORING RECORD SHEET

Date		Start Time (AM)		Finish Time (AM)	
		Start Time (PM1)		Finish Time (PM1)	
Surveyor		Start Time (PM2)		Finish Time (PM2)	
<i>Survey for 10 minute periods at both the north and south site locations.</i>					
Weather Conditions					
Species Name					
Location					
Total Numbers					
Recorded Activity	Adults (number)				
	Juveniles (number)				
	Flying over or landing on site				
	Feeding at Site (waste)				
	Nesting (On/off site)				
	Damaging Property				
	Carrying nest material				
	Calling/territorial				

Start time AM: 07:00 - 10:00
 Start Time PM1: 12:00 – 14:00
 Start Time PM2: 16:00 – 19:00

ANNEX D: GULL IDENTIFICATION GUIDE



Herring Gull (*Larus argentatus*)



Black-Headed Gull (*Chroicocephalus ridibundus*)



Great Black-Backed Gull (*Larus marinus*)



Lesser Black-Backed Gull (*Larus fuscus*)



Common Gull (*Larus canus*)

WRM Limited
18 Manor Square, Otley, LS21 3AY

Tel: 01943 468138

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

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