



PEMBROKESHIRE COUNTY COUNCIL ECO-PARK

# ENVIRONMENTAL PERMIT APPLICATION

Pest Management Plan

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# About WRAP

**WRAP is a climate action NGO working around the globe to tackle the causes of the climate crisis and give the planet a sustainable future.**

**Our core purpose is to help you tackle climate change and protect our planet by changing the way things are produced, consumed, and disposed of.**

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**Written by:** SLR Consulting Ltd



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# 1.0 Introduction

The Waste and Resource Action Programme (WRAP), on behalf of Pembrokeshire County Council (PCC), has instructed SLR Consulting Limited (SLR) to prepare a Pest Management Plan (PMP) in support of a bespoke Environmental Permit (EP) application for the proposed new Pembrokeshire County Council Eco Park in Milford Haven under the Environmental Permitting (England and Wales) Regulations 2016 (as amended). The Eco Park will consist of a Waste Transfer Station (WTS) and a Waste and Recycling Centre (WRC).

This PMP outlines the methods by which PCC will systematically assess, reduce and prevent a potential infestation of pests at the site during normal operation and during potential abnormal events.

## 1.1 Relevant Guidance

This PMP has been written in accordance with the following guidance:

- Technical Guidance Document: How to comply with your environmental permit, Version 8, October 2014;
- Control and monitoring emissions for your environmental permit, November 2018; and
- Fly management: how to comply with your environmental permit, Version 1, April 2013.

## 1.2 Pest Management Plan Structure

This PMP aims to cover the following 6 points:

- Training;
- Pest prevention methods;
- Monitoring;
- Pest control techniques;
- Trigger level for additional control measures to be required; and
- Review of the PMP.

## 1.3 Responsibility

The Site Manager is responsible for ensuring the PMP is kept up to date and implemented correctly on site. Any changes required are the responsibility of the Site Manager or other designated person to update and re-issue the amended plan.

## 2.0 Training

Nigel Cole, Andrew Wood and Peter Harts have achieved a COTC Level 4 Treatment and Transfer of Hazardous Waste with WAMITAB.

The WAMITAB holders will ensure that all relevant training is cascaded down to all other site managers and operatives via a Toolbox Talk. The training will include the following (list not exhaustive):

- Understanding the significance of pests on site;
- Basic identification of flies based on the information contained in Appendix 01;
- On-site inspection techniques;
- Where and how to record any findings;
- Who to report any significant findings to and by what means;
- Material rejection procedures; and
- Any relevant control techniques.

Toolbox talks are undertaken once per quarter and are provided to any new members of staff before they begin work on site

## 3.0 Sources of Pests in the Surrounding Area

Within the surrounding site locale, there are a number of other sources that have the potential to attract pests as follows:

- Poultry farm adjacent to site's eastern EP boundary;
- Surrounding agricultural land predominantly to the north of the site.

Locations are illustrated on Drawing 002A.

## 4.0 Material Types, Storage Time and Dimensions

Table 1: Waste Transfer Station Material Types, Storage Time and Dimensions

Material Type	Max Storage Time	Length (m)	Width (m)	Height (m)	Max Volume (m <sup>3</sup> )
<b>Waste Stored in Bays in Main Recycling Building</b>					
Loose Paper	1 month	8.8	8.4	4	152.5
Baled Cardboard	1 week	8.8	8.4	4	157.3
Cardboard – Contingency	1 week	7.2	14	4	186.9
Food Waste	3 days	4	5.6	4	25.2
Loose Film	1 week	8.8	8.4	4	98.3
Spare Bay 1 (Loose Cardboard)	3 days	8.8	7.2	4	130.7
Spare Bay 2 (Loose Paper)	1 month	8.8	7.2	4	130.7
Baled Aluminium	4 months	5.6	9.6	4	70.2
Baled Plastic	1 month	9.6	8.0	4	115.6
Baled Steel	1 month	9.6	7.2	4	115.6
Baled Cartons	4 months	9.6	7.2	4	115.6
Mixed plastic, cartons and metal packaging	3 days	8.0	7.2	4	113.4
Mixed plastic, cartons and metal packaging	3 days	5.6	7.2	4	61.6
Household Batteries	3 months	1	1	1	3
<b>Waste Stored in Bays in Residual Waste Building</b>					
AHP	2 weeks	10	10	4	217.5
DMR	1 week	10	10	4	196
Residual Bay 1	3 days	10	10	4	217.5
Residual Bay 2	3 days	10	10	4	217.5
Residual Bay 3	3 days	10	10	4	217.5
<b>Waste Stored in External Covered Bays</b>					
Glass	1 week	10	10	4	135
Tyres	6 months	10	10	4	229.5
Scrap Metal	1 month	10	10	4	229.5
UPVC	6 months	10	10	4	229.5



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Baled Plastic Film	3 months	10	10	4	157.3
Baled Carpets	3 months	10	10	4	214.6
Wood	1 week	10	10	4	229.5
Mattresses	1 month	10	10	4	216
Rigid Plastic	3 months	10	10	4	123.2

Note: all bay dimensions include a minimum 1m freeboard.

Where the number of storage days listed is greater than the permitted storage times, the bays will be emptied more frequently to ensure compliance.

*Table 2: Waste and Recycling Centre Material Types, Storage Time and Dimensions*

Material Type	Max Storage Time	Length (m)	Width (m)	Height (m)	Max Volume (m <sup>3</sup> )
<b>Waste Stored Externally in Designated Containers</b>					
Large Domestic Appliances 1	1 month	5.84	2.44	2.65	40
Large Domestic Appliances 2	1 month	5.84	2.44	2.65	40
WEEE (LDA's)	1 month	5.84	2.44	2.65	40
Paints 20ft shipping container	3 months	1.2	1	0.73	40
Reusable Furniture 20ft shipping container	2 weeks	6.0	2.6	2.6	40
Non-reusable Furniture 1 20ft shipping container	2 weeks	6.0	2.6	2.6	40
Non-reusable Furniture 2 20ft shipping container	2 weeks	6.0	2.6	2.6	40
Mattresses 20ft shipping container	2 weeks	6.0	2.6	2.6	40
Plasterboard 40 cu/yd closed container	2 months	5.84	2.44	2.65	30
Mixed Glass 20 cu/yd skip	1 month	5.84	2.44	1.50	15
Inert 20 cu/yd skip	1 month	5.84	2.44	1.50	15
Cans and Plastic 1100L Wheelie Bin	2 weeks				1.1
Paper 1100L igloo/bank	3 months	6.0	2.44	2.1	1.1
Textiles 1100L bank	2 months	1.3	1.4	1.9	1.1
Books 1100L bank	3 months	1.6	1	1.8	1.1
Cartons 1100L bank	4 months	2.0	2.0	1.9	1.1

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Shoes	2 months	1.3	1.4	1.9	
Gas Bottles Cage	3 months	13	8	1.9	60
Spare 1 40 yd skip	-				30
UPVC 40 yd skip	3 months	5.84	2.44	2.65	30
Scrap Metal 40 yd skip	1 month	5.84	2.44	2.65	30
Green Waste 1 40 yd skip	1 week	5.84	2.44	2.65	30
Green Waste 2 40 yd skip	1 week	5.84	2.44	2.65	30
Green Waste 3 40 yd skip	1 week	5.84	2.44	2.65	30
Spare 2 40 yd skip	-	5.84	2.44	2.65	30
Spare 3 40 yd skip	-	5.84	2.44	2.65	30
Spare 4 40 yd skip	-	5.84	2.44	2.65	30
Spare 5 40 yd skip	-	5.84	2.44	2.65	30
Spare 6 40 yd skip	-	5.84	2.44	1.50	30
MDF 40 yd skip	1 week	5.84	2.44	2.65	30
Wood 40 yd skip	1 week	5.84	2.44	2.65	30
Hard/Rigid Plastics 40 yd skip	2 months	5.84	2.44	2.65	30
Tyres 20ft shipping container	2 months	5.84	2.44	2.65	40
Carpet 30 yd skip	1 month	5.84	2.44	2.1	20
Cardboard 35 yd skip	2 weeks	6.0	2.5	2.7	25
Residual Waste 1 35 yd skip	4 days	6.0	2.5	2.7	25
Residual Waste 2 35 yd skip	4 days	6.0	2.5	2.7	25
Spare 7 40 yd skip	-	6.0	2.5	2.7	30
Spare 8 40 yd skip	-	6.0	2.5	2.7	30

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FLO tubes	3 months	2.49	1.2	1.2	
TV Cages	1 month	2.1	1.6	1.2	
Oil bank and cooking oils	-				
Household and vehicle batteries	-				

## 5.0 Pest Prevention Methods

A risk assessment identifying the possible sources of pests, pathways and receptors has been undertaken and is presented in Table 4-1 below. The assessment details the preventative pest control measures implemented on site that aim to prevent or minimise the presence of pests.

Table 3: Pest Management Risk Assessment

What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
<b>Pests</b>						
Flies including: <ul style="list-style-type: none"> <li>Common Housefly;</li> <li>Lesser Housefly;</li> </ul>	Potentially sensitive receptors including residential properties, commercial and industrial premises, ecological receptors and	Via air (flies, pigeons and seagulls) or over ground (rats).	<b><u>Low Potential to Attract Pests</u></b> The following material types are not considered to attract pests: <ul style="list-style-type: none"> <li>Paper;</li> <li>Cardboard;</li> <li>Plasterboard;</li> </ul>	Low	Nuisance, loss of amenity and harm to human health.	Low

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
<ul style="list-style-type: none"> <li>• Blow fly; and</li> <li>• Fruit fly.</li> </ul> Vermin including: <ul style="list-style-type: none"> <li>• Rodents;</li> <li>• Pigeons; and</li> <li>• Seagulls.</li> </ul>	local cultural and heritage features.		<ul style="list-style-type: none"> <li>• Textiles and shoes;</li> <li>• Mattresses;</li> <li>• Furniture (reusable and non-reusable);</li> <li>• Carpets;</li> <li>• Large domestic appliances;</li> <li>• UPVC;</li> <li>• Hard/rigid plastics;</li> <li>• Tyres;</li> <li>• Inert;</li> <li>• Paints;</li> <li>• Gas bottles;</li> <li>• FLO tubes;</li> <li>• Scrap metals;</li> <li>• Steel; and</li> <li>• WEEE (LDA's, and TV's).</li> </ul> These material types do not contain any putrescible material.  Strict waste acceptance procedures will ensure that only authorised materials are accepted.			

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p>Material storage times will be in accordance with Tables 1 and 2 above.</p> <p>Control measures for these material types are not considered necessary.</p>			
			<p><u>Medium Potential to Attract Pests</u></p> <ul style="list-style-type: none"> <li>• Cans and plastic (including composite packaging);</li> <li>• Aluminium;</li> <li>• Mixed plastic, cartons, and metal packaging;</li> <li>• Dry mixed recycling;</li> <li>• Cartons (tetrapaks);</li> <li>• Plastic film;</li> <li>• Glass;</li> <li>• Wood/MDF; and</li> <li>• Green waste.</li> </ul> <p>The above material types are considered to have a medium risk of attracting pests due to the likelihood of a small proportion of putrescible material. Large quantities of food waste should not</p>	Medium	Nuisance, loss of amenity and harm to human health.	Medium

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p>be present, and the maximum waste storage volumes indicated in Tables 1 and 2 will be adhered to. Therefore, the following control measures will be implemented:</p> <ul style="list-style-type: none"> <li>• Waste acceptance procedures will ensure that only authorised materials are accepted;</li> <li>• If a load arrives at the site emitting an unacceptable odour or has a fly infestation, it will be rejected, and logged in the site diary for future reference;</li> <li>• Good housekeeping practices will be in place including a daily clean of the site flooring and bays with a brush (on telehandler) to prevent build-up of debris and dust on site. A washdown will be carried out as required;</li> <li>• Mobile plant will be cleaned weekly using the vehicle wash bay and the baler/sorting line will be cleaned weekly;</li> </ul>			

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<ul style="list-style-type: none"> <li>The Site Manager will be responsible for ensuring good housekeeping practices are undertaken;</li> <li>Where practicable the site will operate on a 'first in, first out' basis. For example, material will be deposited into the left side of the bay on Monday and the right side on Tuesday. It is then removed from the left side first followed by the right and the process repeats like this;</li> <li>Material storage times will be in accordance with Tables 1 and 2 above;</li> <li>All material storage at the WTS area will occur within designated bays in the main recycling building, the residual building, and the external covered storage bays. At the WRC all material storage will take place externally within appropriate designated containers;</li> <li>Spillages and accumulations of material will be cleaned up as soon as possible, including</li> </ul>			



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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p>difficult to reach areas, ensuring material does not accumulate in corners. Walkways will be created behind bays to ensure staff can gain access for cleaning;</p> <ul style="list-style-type: none"> <li>• Checks will be carried out by site operatives, as part of the site's general housekeeping, to ensure that there is no old material stuck between building walls and bays or in corners. If material is identified, it will be cleaned up as soon as possible;</li> <li>• As detailed in Sections 2 and 4, site operatives will be trained in the identification of pests and will be vigilant and undertake a daily inspection for sightings of birds, rats, and flies. The findings of the visual inspection will be recorded in the site diary;</li> <li>• In the event that complaints are received or an indication of an increase in flies is identified at the site, the actions detailed in Table 5 will be</li> </ul>			

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p>considered and the appropriate course of action decided by the Site Manager; and</p> <ul style="list-style-type: none"> <li>If rats or birds are identified on site, the actions detailed in Section 5 will be considered and the appropriate course of action decided by the Site Manager.</li> </ul>			
			<p><u>High Potential to Attract Pests</u></p> <p>The following material types are considered to have a high risk of attracting birds, rats and flies due to the proportion of putrescible material and moisture levels. Therefore, these material types will have extra control measures in addition to the measures listed above:</p> <ul style="list-style-type: none"> <li>Food Waste;</li> <li>Absorbent Hygiene Products (AHPs); and</li> <li>Residual/General Waste.</li> </ul> <p>Food Waste</p>	High	Nuisance, loss of amenity and harm to human health.	High

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p>To minimise the potential for infestations, food waste will arrive on site in Resource Recovery Vehicles (RRVs) pods/stillages or trade waste vehicles and where possible this material will be tipped directly into a sealed skip or artic trailer. In some instances, food waste will be tipped into the designated food waste bay prior to transfer to the sealed skip/trailer prior to onward transfer for processing. Each trailer will remain on site for no more than 72hours.</p> <p>The food waste bay is washed down quarterly, and swept daily.</p> <p><b>AHPs</b> AHPs will be collected in bags, deposited within the dedicated sealed container within the bay in the residual building.</p> <p>AHPs will be transported off site for recycling within a maximum of 2 weeks.</p> <p>AHPs will be stored in a sealed container on site.</p>			

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			<p><b>Mixed Municipal Waste (Residual Waste including Bulky Waste)</b></p> <p>Mixed municipal waste is collected in bags and is not treated on site. It remains within the dedicated storage bays, within the residual building, or within the designated container at the WRC at all times. Where practicable the site will operate on a 'first in, first out' basis. For example, material will be deposited into the left side of the bay on Monday and the right side on Tuesday. It is then removed from the left side first followed by the right and the process repeats like this.</p> <p>Material storage times will be in accordance with Tables 1 and 2 above.</p> <p>Therefore, under normal operating conditions a minimum amount of mixed municipal waste will be allowed to remain within the facility at the end of each working day or over the weekends.</p>			

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What do you do that can harm and what could be harmed			Managing the Risk	Assessing the Risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk
			Good housekeeping practices will be in place. Spillages and accumulations of mixed municipal waste will be cleaned up as soon as possible, including difficult to reach area, ensuring material does not accumulate in corners. Walkways will be provided behind the bays to ensure site operatives can clean these areas.			

## 6.0 Monitoring

All pests usually have predictable behaviour patterns (food types, habitats, and breeding).

Typical species that could be present on site and will be inspected for are as follows.

Table 4: Typical Pest Species on Site

Pest	Possible Species
Fly	<ul style="list-style-type: none"><li>• Common Housefly</li><li>• Lesser Housefly;</li><li>• Blow Flies; and</li><li>• Fruit Flies.</li></ul>
Vermin	<ul style="list-style-type: none"><li>• Rodents;</li><li>• Pigeons; and</li><li>• Seagulls.</li></ul>

The occurrence of pests will be monitored, and findings recorded to enable the instigation of appropriate control measures. This will be carried out on a daily basis and will be carried out more than once per day if increased pest activity is noted.

### 6.1 Fly Monitoring

All site staff will be required to:

- Remain continuously vigilant for signs of maggots, crawling flies and airborne insects during material acceptance. Each load will be visually inspected when tipped for the signs of flies/maggots/larvae;
- Verbally report any sightings to the Site Manager; and
- Record any findings in the Site diary.

The site will benefit from adhesive fly boards on the site boundary and adhesive fly paper within the building to monitor fly numbers from the start of operations on site. The Site Manager, in conjunction with an external pest control contractor will determine the location of fly boards on the site boundary. The adhesive fly paper in the buildings will be placed in locations where flies, maggots or crawling flies were seen during daily inspections. Site operatives will replace the fly paper and boards weekly and any flies will be identified and recorded in the site diary. Trigger levels are given in Table 5 below.

In addition, general observations will be made by the Site Manager (or suitably trained delegated persons) as part of the site inspections. Each storage bay and waste storage container will be visually inspected.

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As there are various potential sources of flies within the local area, it is proposed that a 'baseline' level will be established prior to the commencement of waste operations on site during spring/summer 2024. To establish a baseline level, fly boards and adhesive paper will be placed on site boundary which the site shares with the poultry farm and at the entrance to the waste storage buildings.

Once operations commence on site, quantitative fly monitoring will be undertaken in response to a complaint – monitoring results will be compared to the established baseline to determine whether waste operations on site are significantly increasing the level of flies within the area.

Should complaints be received or an indication of an increase in flies on site be noted, for example observation by site operatives during daily site activities, an investigation into the source of infestation would commence and be measured using the traffic light system methods documented in Table 5 below.

*Table 5: Traffic Light System for Fly Monitoring*

Classification	Assessment Criteria	Action to be Considered
Normal	Same as baseline level (to be established prior to commencement of operations on site).	None required
Light	Baseline + <100%	Adhesive fly boards are located on the site boundary and adhesive fly paper is located within the buildings. Monitor the adhesive fly paper/boards on a weekly basis. Doors to the recycling building and residual building will be in regular use during normal operations but will remain closed where practicable. Target specific material if identified as problem load with treatment (removal of fly infested material to the quarantine area for targeted use of insecticide). Fly infested material treated with insecticide will be containerised within the quarantine area. This will prevent other amenity issues such as odour. Material will be removed from the quarantine area by a specialist contractor as soon as possible, within a maximum of 72hours. Monitor fly numbers. Site Manager to contact an external pest control contractor.
Medium	Baseline + 100% – 500%	Adhesive fly boards are located on the site boundary and adhesive fly paper is located within the building.

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Classification	Assessment Criteria	Action to be Considered
		<p>Monitor the adhesive fly paper/boards on a daily basis. Doors to the recycling building and residual building will be in regular use during normal operations but will remain closed where practicable.</p> <p>Target specific material if identified as problem load with treatment (removal of fly infested material to the quarantine area for targeted use of insecticide). Fly infested material treated with insecticide will be containerised within the quarantine area. This will prevent other amenity issues such as odour. Material will be removed from the quarantine area by a specialist contractor as soon as possible, within a maximum of 24 hours.</p> <p>Monitor fly numbers.</p> <p>Site Manager to contact an external pest control contractor.</p>
Heavy	Baseline + >500%	<p>Adhesive fly boards are located on the site boundary and adhesive fly paper is located within the building.</p> <p>Monitor the adhesive fly paper/boards on a daily basis. Doors to the recycling building and residual building will be in regular use during normal operations but will remain closed where practicable.</p> <p>Cease taking material.</p> <p>Remove material from site</p> <p>Full clean down of transfer station</p> <p>Monitor fly numbers</p> <p>Site Manager to contact an external pest control contractor.</p>

The EMS will be used in conjunction with this PMP to record whether fly numbers are considered compliant (fall within the normal classification in Table 5 above). Any findings outside the normal classification will be recorded as part of the EMS which is reviewed by the Site Manager.

The results of the inspections will be held on site for review and audit purposes and will be made available to Natural Resources Wales (NRW) on request.

Waste will be checked on site for fly larvae before it is transported off site. When vehicles tip material on site, the site foreman will check the load for contamination. At this point the site foreman will check for fly larvae among a smaller load of material. Any identification of fly larvae will be reported to the Site Manager to be containerised in the quarantine area and sprayed if necessary.



## 6.2 Vermin Monitoring

All site staff will be required to:

- Remain continuously vigilant for signs of rats, pigeons or seagulls anywhere on site;
- Verbally report any sightings to the Site Manager; and
- Record any findings in the site diary.

During daily site inspections made by the Site Manager (or suitably trained delegated persons) using the EMS, any sightings of rats, pigeons or seagulls within the building or external area of the site will be recorded. Control techniques for any vermin monitored on site are detailed in Section 6 below.

## 7.0 Pest Control Techniques

### 7.1 Fly Control Techniques

Depending on the severity of the infestation, techniques could be deployed in-situ to a large-scale fly problem or targeted to small proportions of material if it can be removed from the wider pile and isolated within the quarantine area. Table 5 describes the different thresholds that would trigger the implementation of additional control techniques.

The Site Manager will make contact with an external pest control contractor who will determine the most appropriate course of action. Likely pest control techniques will include the following (list not exhaustive):

- 'Paint on' insecticide formula;
- Insecticide space treatment (fogging spray); and
- Ultra-Low Volume System (ULV).

Any use of insecticides will be undertaken by the trained external pest control contractor. Insecticide use will be agreed with NRW, prior to being carried out and all suitable controls will be in place. All relevant Health and Safety Executive (HSE) approvals and assessments will be undertaken.

As checks and monitoring of pests is undertaken daily, any control measures required will be implemented within the same day. This is achieved through responsible management practices, with the Site Manager responsible for ensuring that any fly control measures are implemented within the same day.

### 7.2 Rodent Control Techniques

Rodent control will be achieved via the use of approved rodenticides deployed in bait boxes. All use of rodenticides will be undertaken in line with the following guidance:

- Campaign for Responsible Rodenticide Use (CRRU) UK Code of Practice: Best Practice and Guidance for Rodent Control and the Safe Use of Rodenticides – March 2015; and
- CRRU Guidance: Permanent Baiting – July 2019.

Permanent baiting site locations will be identified; however, these will not contain active rodenticides unless it can be demonstrated that there is an ongoing rodent related problem. A pest control company will re-bait the boxes monthly and monitor for signs of activity. This will allow an ongoing rodent related problem to be identified. If this is established, active rodenticide will be used until the issue is resolved. Checks of the bait boxes by the Site Manager will be undertaken bi-monthly.

## 7.3 Bird Control Techniques

The likelihood of an infestation of pigeons or seagulls is considered to be extremely low as the building doors remain closed outside of operational hours and there is a constant human presence on site during operational hours.

Techniques for bird abatement that could be considered by a suitably qualified individual are:

- Pre-recorded bird distress calls;
- Bird kites which mimic birds of prey;
- Helium balloons;
- Birds of prey; and
- Scarecrows.

Selection of the most appropriate technique(s) is dependent upon a number of factors.

Preference will be given to passive techniques to minimise disturbance to neighbours.

Consideration will be given to the presence of protected bird species in the vicinity of the facility, prior to utilising falconry/birds of prey. Techniques can also be rendered ineffective due to habituation and therefore a combination of different techniques will be used to ensure their individual effectiveness.

## 8.0 Trigger Levels and Complaints

### 8.1 Fly Monitoring Trigger Levels

Trigger levels for control levels will be determined following establishment of the baseline level of flies in the surrounding locale as detailed in Table 5 above.

### 8.2 Vermin Monitoring Trigger Levels

If any rats, pigeons or seagulls are observed within the EP boundary, the Site Manager will immediately assess whether a specialist pest control contractor should be called.

### 8.3 Complaints

Any complaints related to pests will be handled in accordance with the Complaints Procedure and recorded on the Complaints Record Form.

#### 8.3.1 Complaints Regarding Flies

In step 5 of the Complaints Procedure, it is necessary to determine that the facility is the source of flies at the complainant's address. To do this, the following will be investigated.

- The species of the fly found at the complainants address to determine if it is the same as any flies found on site;
- Whether there is evidence of breeding of the same species of fly at the facility;
- If there are any other significant sources of the same species of fly near to the site (see Section 3.0); and
- If changes in fly numbers at the site (for example due to a particular load of material being delivered) are mirrored at the complainant's address.

Step 5 of the Complaints Procedure also requires the source of the complaint to be investigated if it is attributed to the facility. The following measures will be used to investigate the complaint;

- Check the site for the presence of adult flies and take dated photographs of any key issues seen;
- Examine the material for fly larvae;
- Check any sticky boards for number and species of fly; and
- Check that there is no old material stuck between building walls and bays or in corners.

## 9.0 Review of the Pest Management Plan

This PMP sets out the appropriate measures PCC will undertake in order to maintain good housekeeping practices with the aim of minimising the risk of pests from the operations. A review will be carried out to ensure the plan remains suitable and sufficient to meet the needs of the facility.

The review will be carried out on an annual basis or because of any of the following activities (list not exhaustive):

- The issue of an EP variation by the NRW;
- Material changes to the operational process;
- A substantiated complaint; or
- Any changes in legislation or guidance documents applicable to the pest management at the facility.

Following such a review should the document be updated, a revised draft of the plan will be submitted to NRW for discussion, consideration, and approval.

# Appendix 1: Pictures and Description of Common Fly Types

(Taken from: Fly management: how to comply with your environmental permit, Version 1, April 2013)

## WRAP – Pembrokeshire County Council Eco-Park

Common Housefly  
(*Musca domestica*)



Lesser Housefly  
(*Fannia canicularis*)



Stable fly  
(*Stomoxys calcitrans*)



Black dump fly  
(*Hydrotaea aenescens*)



Cluster fly  
(*Pollenia rudis*)



Blowflies:

Blue bottle  
(*Calliphora* sp.)



Green bottle  
(*Lucilia* sp.)





## WRAP – Pembrokeshire County Council Eco-Park

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Larvae of common housefly in wet manure  
(larvae of blowflies appear similar) (Copyright C. Boase)



Pupae of common housefly in dry manure  
(pupae of blowflies appear similar) (Copyright C. Boase)



Pupae of lesser housefly (larvae appear similar)  
(Copyright C. Boase)



## WRAP – Pembrokeshire County Council Eco-Park

Stage	Feature	Common housefly ( <i>Musca domestica</i> )	Lesser housefly ( <i>Fannia canicularis</i> )
Adult	Size:	Typically 6-7mm long, but does vary.	Typically 4-6 mm long, but does vary.
	Pattern on dorsal surface of thorax:	Four distinct longitudinal dark lines.	Three indistinct longitudinal dark lines.
	Abdomen colour:	Yellow-ish at basal end.	Often yellow-ish along sides.
	Wing venation:	Fourth longitudinal vein bends forwards (see below).	Fourth longitudinal vein straight (see below).
	Position of wings when at rest:	Projecting out from the sides of the abdomen, giving a delta- shaped outline.	Folded one over the other, directly over the abdomen, giving a more parallel sided outline.
	Adult resting behaviour	Typically resting in numbers on a range of surfaces within the building, e.g. walls, posts, ceiling etc. Sometimes in large clusters in preferred places.	Even when abundant, tends not to rest in numbers on walls or ceilings. More often resting on the manure, or on surfaces very close to the manure.
	Flight behaviour at source:	Flies very readily and in numbers. Often alighting on or colliding with people within the building.	Even within poultry sheds, the numbers of flies on the wing is low. Males flight is typically jerky circling high up within the building. Very seldom alighting on people.
	Flight behaviour at complainants' premises:	CHF will continually alight on work surfaces, food, walls, cupboards and people.	LHF normally flies in jerky circles within the room, often high up and around hanging objects occasionally alighting on light shades or pelmets etc. It seldom alights on people or food.

## WRAP – Pembrokeshire County Council Eco-Park

Stage	Feature	Common housefly ( <i>Musca domestica</i> )	Lesser housefly ( <i>Fannia canicularis</i> )
Larva	Appearance:	White-ish, smooth, maggot appearance. Active wriggling behaviour, often in clumps, just beneath manure surface. Normally in wetter manure. Easy to see when manure disturbed.	Dull grey-brown, spiky exterior. Inactive, and seldom clumped. Normally in wetter manure. Needs careful and close examination of the manure to find them.
Pupa	Appearance:	Smooth, barrel shaped, from tan, through chestnut-brown to almost black in colour, depending on maturity. Normally in drier manure. Easy to find. (See below)	Dull grey-brown, spiky exterior. Normally in drier manure. Needs careful and close examination of the manure to find them. (See below)
Issue		Common housefly ( <i>Musca domestica</i> )	Lesser housefly ( <i>Fannia canicularis</i> )
Overwintering behaviour		This species cannot hibernate. It can only overwinter in warm locations, e.g. in pig farrowing units, or intensive poultry layer sites, where it continues breeding. Flies at cooler sites, e.g. free-range poultry units, will die out each winter, and so have to be re-colonised each spring, hence CHF problems in such sites, if they occur, are often later in the summer.	At the onset of winter, LHF will hibernate at the pupal stage, within the manure. These pupae will hatch the following spring, with the onset of warmer weather. Manure removal in the winter will take out most of the infestation.
Dispersal behaviour		Some adult flies will leave the source and may cause nuisance in buildings up to two or more km away. Dispersing flies are not obvious in	Some adult flies will leave the source and may cause nuisance in buildings up to two or more km away. Dispersing flies are not obvious in

## WRAP – Pembrokeshire County Council Eco-Park

Stage	Feature	Common housefly ( <i>Musca domestica</i> )	Lesser housefly ( <i>Fannia canicularis</i> )
		intervening areas.	intervening areas.
	Typical breeding sites	<ul style="list-style-type: none"> <li>- Intensive poultry layer units.</li> <li>- Free-range poultry layer units (less commonly).</li> <li>- Pig units.</li> <li>- Waste bins.</li> <li>- Waste transfer stations.</li> <li>- Landfill sites.</li> </ul>	<ul style="list-style-type: none"> <li>- Free-range poultry layer units.</li> <li>- Waste bins.</li> <li>- Waste transfer stations.</li> <li>- Landfill sites.</li> </ul>

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