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**GENT FAIRHEAD & CO. LIMITED
RIVENHALL IWMF
PEST MANAGEMENT PLAN**

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1 INTRODUCTION

Gent Fairhead & Co Limited (GFC) is developing an Integrated Waste Management Facility (IWMF), the Rivenhall IWMF. The facility will comprise the following principal activities:

- Combined Heat and Power (CHP) Plant;
- Materials Recycling Facility (MRF);
- Anaerobic Digestion (AD) facility;
- Mechanical Biological Treatment (MBT) facility;
- De-inked Paper Pulp Production Facility (Pulp plant); and
- Wastewater treatment plant (WWTP).

1.1 Background

The presence of pests is a common problem associated with many waste management facilities. The Environment Agency (EA) guidance document: Control and monitor emissions for your environmental permit¹, states that a Pest Management Plan is required where a facility has potential to cause pollution due to the presence of pests.

In the EA guidance document, pests are classified as 'fugitive emissions' which must be considered as part of an environmental permit application for a waste installation. Typically an environmental permit (EP) will not include specific emissions limits defined for pests, however it will include a condition which requires that pests must be controlled to ensure that they do not cause nuisance outside of the installation boundary.

This Pest Management Plan is considered to be a working document which will contribute to the overall management system for the Rivenhall facility. It will be subject to review following detailed design and once operation if circumstances change; for example if the facility receives a number of complaints related to pests or if there are any changes to the sensitive receptors nearby to the IWMF.

The potential pests most commonly associated with waste facilities, such as the IWMF, include flies and other insects, scavenging birds, and rodents such as rats and mice. As such this plan relates specifically to the prevention and control of these pests. If additional pests are identified once operations commence, the plan will be reviewed so that they are included.

1.2 Objective

The primary objective of this document is to ensure that all appropriate measures are taken to prevent or, where that is not reasonably practicable, reduce the presence of pests at the Rivenhall IWMF.

¹ <https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit>

2 SITE LOCATION AND DESCRIPTION

2.1 The Rivenhall IWMF

Gent Fairhead & Co Limited is proposing to construct and operate the facility. The facility will be located at the former RAF Rivenhall Airfield site.

2.2 The Site

The Site is located on the south-eastern edge of a former World War II airfield known as Rivenhall Airfield between the villages of Bradwell (northwest 2.6 km), Silver End (southwest 1.1 km), Rivenhall (south 2.3 km), Coggeshall (northeast 2.8 km) and Kelvedon (southeast 3.4 km).

Access to the site will be provided via a private access road from the existing A120.

The former airfield and its immediate surroundings are on a plateau above the River Blackwater. This plateau is currently being excavated and, therefore, under the current planning permissions, most of the former airfield will become a restored 'bowl' for continued agricultural use. The airfield was previously open and exposed and had been used predominantly for agricultural purposes, although extensive sand and gravel extraction and restoration has been undertaken at the Site.

The nearest residential properties within 1 km of the Site are: The Lodge, Allshotts Farm, Bumby Hall, Sheepcotes Farm, Green Pastures Bungalow, Goslings Cottage, Goslings Barn, Goslings Farm, Deeks Cottage, Heron's Farm, Deeks Cottage, Haywards, and Park Gate Farm Cottages.

2.3 Summary of Site Operations

There will be six principal activities to the Rivenhall IWMF as listed above. The capacities of the treatment processes are as follows:

- (1) The CHP plant will have a maximum design capacity to process up to 595,000 tonnes per annum of non-hazardous Solid Recovered Fuel (SRF)² and Refuse Derived Fuel (RDF), herein referred to as RDF;
- (2) The MRF will have a maximum design capacity to process 300,000 tonnes per annum of direct waste and treated waste materials from the MBT to recover recyclates for transfer off-site, with the residual material being transferred to the CHP facility;
- (3) The AD plant will be designed to process up to 30,000 tonnes per annum of food and organic waste, with the resultant biogas being combusted in a CHP engine;
- (4) The MBT Plant will have a maximum design capacity to process 170,000 tonnes per annum of waste which will be dried and then fed into the MRF to recover recyclates prior to production of a RDF to be transferred to the CHP plant;
- (5) The Pulp plant will have a maximum design capacity to process 170,000 tonnes per annum of waste paper to produce approximately 85,500 tonnes per annum of recycled and reusable paper pulp; and
- (6) The Wastewater Treatment Plant will have a maximum design capacity of 550,000 m³ per annum of wastewater from the installation.

Detailed descriptions of the operation of the IWMF are presented within section 1.3 of the Supporting Information submitted with the EP application.

² The planning permissions states as an *Informative* "reference to Solid Recovered Fuel (SRF) for the purposes of this planning permission is considered to be the same as Refuse Derived Fuel (RDF)."

3 REVIEW OF POTENTIAL SOURCES, PATHWAYS AND RECEPTORS

3.1 Sources

The primary source of pests is considered to be within the facility itself due to the presence of wastes being stored and processed on-site. All processing and storage of wastes will take place within environmentally controlled buildings. Putrescible wastes, such as those processed in the IWMF, may provide breeding conditions for vermin, flies and other insects if not managed appropriately.

3.2 Pathways

Pests could potentially move between the facility and the receptors by air or by land.

3.3 Receptors

The relevant receptors are considered to be:

- any on-site personnel at the facility such as employees, contractors, and visitors;
- the residential receptors in the surrounding area;
- the public footpaths in the surrounding area; and
- the workplaces in the surrounding area.

3.3.1 Sensitive Receptors

All sensitive receptors identified as part of the Dispersion Modelling Assessment, and within 1.5km of the IWMF, are presented in Table 1 of Appendix A.

3.3.2 Impacts

Receptors are susceptible to two major categories of impacts from pests: nuisance and the transmission of disease. Impacts could occur at numerous local receptors surrounding the facility as pests can disperse over several kilometres³. The severity of impacts at a receptor is typically considered to be directly proportional to the distance from the facility.

The presence of pests can cause considerable nuisance at receptors. Flies in particular have been associated with a high risk of nuisance complaints from properties neighbouring some facilities. A pest population can be classified as a statutory nuisance if it originates from a commercial operation and interferes with the enjoyment of a person's home.

The transmission of disease from pests to humans can cause serious health impacts. Flies and other insects host a range of pathogens and can potentially transmit disease through contact with food sources or direct contact with humans. Rats can infect humans with Weil's disease, a respiratory condition transmitted through contact with rat urine. Scavenging birds are also known to transmit diseases to humans, but are more frequently classed as a nuisance at receptors.

³ http://www.organics-recycling.org.uk/uploads/article2594/LIT_8177_a04f7c%20%20Fly%20management.pdf

4 PEST MANAGEMENT AND CONTROL MEASURES

The facility has been designed to minimise the generation of pests. All waste reception and storage areas are designed to minimise locations where waste can be retained for long periods and to provide ease of waste handling, removal and cleansing. Internal doors are provided where necessary to further aid control of vectors. External roller shutter doors are provided to minimise the potential for bird access. Operational methods, as discussed below, will ensure that wastes are transferred into the various process plants as quickly as possible and will not remain in storage for long periods. Regular cleaning will take place in those areas most susceptible to the potential for waste to accumulate.

To manage the potential for pests to arise from the operation of the facility, the following measures will be implemented:

- (1) Monitoring;
- (2) Proactive Control Measures; and
- (3) Reactive Control Measures.

The measures presented below have been assessed to balance the economic costs and the benefits of their application. The measures apply specifically to the pests normally associated by the public as being potentially present at waste management facilities i.e. flies and other insects, scavenging birds, and rodents.

4.1 Monitoring

Monitoring is considered to be an essential technique for the management of pest populations. Effective on-site monitoring will ensure that pests are detected at an early stage, allowing problems to be resolved in a timely manner.

Staff employed at the IWMF will be trained to monitor for signs of pests on a continual basis. Inspections will be conducted by a specialist pest control contractor on a periodic basis to identify potential indicators of an infestation of pests.

All information relating to pest monitoring will be recorded in a site log. The log will include details of any pest sightings by employees, such as the time and date, location of sighting, and type of pest observed. The log will also include details and any results from the site inspections undertaken by the pest control contractor. Pest Monitoring records will be retained on site for a minimum of three years.

4.1.1 Fly Monitoring

There are number of recognised techniques for the monitoring of flies, which will be applied both as part of one-off inspections to gain an idea of the level of infestation, and regularly as routine monitoring to build up a picture of trends in fly numbers.

The IWMF operator will employ a pest control subcontractor who will be responsible for undertaking periodic fly monitoring within the IWMF. In addition, given the site's location and the proposed ecological and habitat mitigation proposals (aimed at establishing a biodiverse environment including open mosaic habitat and open-ground for insects), the Ecological Clerk of Works will also advise on the arrangements and mitigation proposals.

The fly monitoring techniques undertaken by the subcontractor will be agreed with GFC. The monitoring will be in accordance with the EA guidance 'Fly management: how to comply with your environmental permit', and the following techniques will be employed:

- Monitoring adult flies at the source;
- Indoor resting counts for common house fly in low frequency movement areas;
- Indoor adhesive paper traps for houseflies within offices where appropriate;
- Open air Scudder grid counts for houseflies on waste piles within reception areas;
- Open air adhesive paper catches for flies at the boundary of the facility;

- Scrape-and-count, for common houseflies on waste piles within waste reception areas; and
- Monitoring adult flies at complainants' premises (if necessary) in indoor locations if flies regularly occur in numbers, such as porches, outbuildings, conservatories and/or kitchens.

The Ecological Clerk of Works and the Pest Controller will also consider if the wider establishment of Priority Habitats around the site (and the development of biodiverse environments likely to attract and support insects) could be the source of pest nuisance, rather than those directly associated with the IWMF operations.

4.2 Proactive Control Measures

Proactive measures are GFC's preferred method for managing pests as they are considered to be more effective at preventing the establishment of populations of pests. Proactive measures are considered to be more sustainable than reactive measures and can be more cost-effective. A number of proactive control measures will be implemented at the IWMF, which are outlined below; however, by maintaining all waste processing operations within the IWMF buildings which will be held under negative pressure, the potential for nuisance by pests will be controlled and limited.

4.2.1 Housekeeping

Maintaining a clean facility is essential for the prevention of pests. Waste treatment equipment will be cleaned down at the end of each shift. Waste spillages around the site will be cleaned up as soon as practicable. Cleaning practices will be implemented to ensure that waste does not accumulate in inaccessible areas. Welfare facilities for employees will be maintained at a high standard of sanitation.

4.2.2 Odour

Odour from a facility is likely to attract scavenging birds and other pests. The management and control measures outlined in the Odour Management Plan will be implemented in full to reduce odour generation and release from the facility.

4.2.3 Waste handling

The operator of each process within the facility will implement pre-acceptance procedures for all incoming waste. The checks will require waste producers to confirm that suitable pest management techniques were implemented at the waste-producing site prior to the transport of waste to the IWMF. Upon arrival at the IWMF all deliveries of waste will be inspected in accordance with waste acceptance procedures. If the waste is identified as being infested with pests it will not be accepted at the site and will be rejected.

Waste reception and storage operations will be undertaken within enclosed buildings to deter pests. All external doors will be kept closed when not in use to prevent the entry of pests into the facility. Furthermore, all deliveries of waste to the IWMF will be in enclosed vehicles, further minimising the risk of introducing pests into the IWMF.

Incoming waste which is delivered to the different waste treatment processes will be stored in the relevant waste reception area for the minimum period of time possible to prevent the settlement of pests.

Prior to periods of planned maintenance, all quantities of waste stored in the waste reception and storage areas will be 'run-down' so that they do not contain significant quantities of waste during planned shutdown periods.

For instances of unplanned shutdowns of more than 3 days, the waste will be transferred off-site to an alternative waste treatment facility to minimise pests within the IWMF.

4.3 Fly Prevention within the MRF, MBT and AD

The risk of fly infestation is considered to be higher during periods of warm and hot conditions. Therefore, in those waste treatment activity areas where there is more potential for warm and hot conditions, there will be a greater risk of fly infestation throughout the year. Taking this into consideration, there is greater potential for fly infestations within the MRF, MBT and AD areas.

To minimise the risk of fly infestation within these areas, the following controls will be implemented:

- Monitor adult fly and larval numbers in these process areas.
- Ensure swift processing of waste and avoid extended storage of unprocessed waste within the relevant waste reception areas. This will include the removal/processing of all incoming wastes from waste reception areas at the end of each shift.
- Waste acceptance and inspection of wastes prior to acceptance of the waste in the waste reception areas – with quarantining of the waste if required.
- Where appropriate the use of sheeting or other containment measures when storing waste/waste products which are considered to be highly attractive to flies.
- Maintaining negative air-pressure within waste treatment areas to reduce fly egress
- Where practicable, the use of automatic doors between waste processing areas to reduce the movement of flies between waste treatment processes.
- Provide training in fly monitoring for all operational staff within these process areas so that they are aware of the importance of fly management.

4.4 Fly Control Measures

In the unlikely event that a potential pest nuisance is reported by site staff within the facility, control measures will be implemented by a suitably qualified Pest Control Contractor. A Pest Control Contractor has not yet been selected but will be appointed prior to the commencement of operation. The Pest Control Contractor will be contacted immediately in the case of an identified infestation. GFC will ensure that the necessary permits and training have been acquired by the pest control contractor prior to treatment.

The Pest Control Contractor will employ one or more of the following:-

- Physical fly control techniques: Electronic fly killers and traps, such as electronic fly killers or liquid bated traps.
- Insecticides, which could include:
 - Insecticide space treatment ('Knock-down' sprays);
 - Residual insecticide sprays; and
 - Insecticide baits.

Waste will not be stored within the installation for extended periods, so larvicides are not considered to be suitable for fly control within the IWMF. However, this will be subject to review with the Pest Control Contractor and the Ecological Clerk of Works.

All pesticides and insecticides will be used in accordance with statutory label conditions and all activities involving their use, including storage and disposal, will be recorded in the installations COSHH Register.

5 PEST ACTION PLANS/CONTINGENCIES

5.1 Pest Complaint Investigation within the IWMF

The following actions will be taken on receipt of a pest complaint by site staff.

- Any complaints received at the site regarding pests will be logged in the site's incident reporting system.
- Senior Process Managers will be given the details of any pest complaint as quickly as practicable, including the location, nature, time, and date of the complaint.
- If complaints are received, an appropriate senior site manager will immediately investigate the area from which the complaint is received in order to assess the presence and extent of any pests, employing as and when necessary the Pest Control Contractor.
- For all complaints, reference will be made to the site activities at the time of the complaints, and further on-site investigations will be conducted to determine whether any abnormal operation are (or were) occurring
- If the presence of pests is confirmed, appropriate actions will be immediately implemented, and additional proactive measures devised to prevent a reoccurrence.
- Feedback will be given to all complainants on the findings of any investigations, and a summary will be provided of any remedial measures taken to ensure that the problem has been suitably resolved. Regular follow-up by site management will be undertaken and the complainant will be asked if the perceived problem is still occurring to measure any improvement achieved.
- Records of all complaints, subsequent investigations, and remedial actions will be retained on site for a minimum of five years. The site management will ensure that records are readily retrievable, and maintained as fit for retention. As applicable, records will be stored in accordance with the Data Protection Act 1998.
- In addition, the Ecological Clerk of Works will be responsible for monitoring and reporting on the wider establishment of the biodiverse Priority Habitats surrounding the site that are likely to naturally attract insects.

5.2 Action Plans

In the event that a pest complaint is proven to be justified and attributable to operations undertaken at the IWMF, a defined action plan will be implemented. This will be based upon recommendations from the Pest Control Contractor and Ecological Clerk of Works, as the specific measures to be undertaken will be dependent on a number of variables such as the type and number of pests identified. A review of the monitoring and proactive measures in place at the IWMF will also be undertaken to identify potential areas for improvement. Where identified, appropriate changes in normal operational practices will be implemented to reduce the potential for similar problems in future.

Appendix A - Sensitive Receptors within 1.5km of the IWMF

Table 1: Sensitive Receptors				
ID	Receptor Name	Location		Distance from the Stack (m)
		X	Y	
D1	Sheepcotes Farm (Hanger No.1)	581564.6	220328.3	882
D2	Wayfarers Site	582557.4	220185.4	260
D3	Allshot's Farm (Scrap Yard)	582892.6	220458.3	452
D4	Haywards	583235.7	221162.6	1088
D5	Hérons Farm	582443.0	221378.3	960
D6	Gosling's Farm	581426.9	221380.9	1399
D11	Silver End / Bower Hall / Fossil Hall	581286.5	219730.6	1345
D12	Rivenhall Pl/Hall	581860.9	219104.3	1437
D13	Parkgate Farm / Watchpall Cottages	582336.5	219195.2	1228
D16	Unknown Building 1	583131.7	219462.9	1178
D17	Bumby Hall / The Lodge / Polish Site (Light Industry)	582947.2	220115.2	589
D18	Footpath 8, Receptor 1 (East of Site)	582660.7	220977.1	600
D19	Footpath 8, Receptor 2 (East of Site)	582597.0	220688.5	311
D20	Footpath 8, Receptor 3 (East of Site)	582609.1	220564.0	221
D21	Footpath 8, Receptor 4 (East of Site)	582627.3	220497.2	201
D22	Footpath 8, Receptor 5 (East of Site)	582590.9	220415.2	149
D23	Footpath 8, Receptor 6 (East of Site)	582761.0	220217.8	376
D24	Footpath 8, Receptor 7 (East of Site)	583016.1	220026.5	695
D25	Footpath 35, Receptor 1 (North of Site)	582861.2	220843.4	597
D26	Footpath 35, Receptor 2 (North of Site)	582454.2	221013.5	595
D27	Footpath 35, Receptor 3 (North of Site)	582032.1	221162.3	850
D28	Footpath 31, Receptor 1 (North west of Site)	581877.2	220958.8	782
D29	Footpath 31, Receptor 2 (North west of Site)	581740.6	220764.5	783
D30	Footpath 31, Receptor 3 (North west of Site)	581379.2	220548.8	1071
D31	Footpath 7, Receptor 1 (South east of Site)	582505.9	220117.6	307
D32	Footpath 7, Receptor 2 (South east of Site)	582757.9	220066.0	473
D33	Footpath 7, Receptor 3 (South east of Site)	582967.5	219959.7	697
D34	Footpath 7, Receptor 4 (South east of Site)	583167.9	220372.7	727
D35	Footpath 7, Receptor 5 (South east of Site)	583301.5	220725.0	912
D36	Elephant House (Street Sweepings)	582368.7	220189.0	241
D37	Green Pastures Bungalow	581249.9	221176.1	1413
D38	Deeks Cottage	582873.4	221255.1	941
D39	Woodhouse Farm	582583.9	220617.9	245

Table 1: Sensitive Receptors

ID	Receptor Name	Location		Distance from the Stack (m)
		X	Y	
D40	Gosling Cottage / Barn	581508.4	221305.5	1288



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