



**Connetts Farm Compost  
Land to West of Flightways Business Park  
Dunkeswell  
EX14 4RD**

**50.866627 -3.225663**

## **Odour Management Plan**

**S21-628/OMP  
September 2023**

Revision 2

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***On behalf of :***

**Connetts Farm Compost  
Land to West of Flightways Business Park  
Dunkeswell  
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## 1.0 Introduction

Southwest Environmental Limited has been appointed by Connetts Farm Compost to prepare an Odour Management Plan (OMP) for their Connetts Farm Compost Open Windrow Compositing Facility. This OMP will assist Heather Stevens & Nick Stevens in effectively managing potential odour releases associated with the operations at Land to West of Flightways Business Park. The OMP has been produced in accordance with the Environment Agency's draft Technical Guidance Note H4: Horizontal Guidance for Odour and following the general monitoring procedures detailed in Environment Agency guidance document Internal Guidance for the Regulation of Odour at Waste Management Facilities.

### 1.1 Structure of Odour Management Plan

The OMP structure is in accordance with the Environment Agencies draft H4 Appendix 7 Template for an Odour Management Plan.

The OMP considers:

- Activities that have the potential to produce odour and sources of release;
- Process/control failures or abnormal events that could lead to an increased level of emission or exposure;
- Potential outcomes of each failure scenario in respect to odour impact; and
- Actions to mitigate the effect of odour release (during normal and abnormal operations) and details of person responsible at the installation.

### 1.2 Status of the OMP

This OMP is a "live" document, the monitoring procedures, responsibilities and compliance actions should be updated as appropriate

## 2.0 SITE BACKGROUND

### 2.1 Site Setting

Connetts Farm Compost, Land to West of Flightways Business Park,

<b>Site</b>	Connetts Farm Compost
<b>Address</b>	Land to West of Flightways Business Park Dunkeswell
<b>Post Code</b>	EX14 4RD
<b>Grid Reference (NGR)</b>	50.866627 -3.225663

Specific odour sensitive receptors considered in the OMP are detailed in Section 2.3.

### 2.2 Composting Facility Overview

Connetts Farm Compost is on a relatively flat area of land. It is proposed that the site is regulated by the Environment Agency under the Environmental Permitting regulations.

The facility has a notional capacity of around 10,000 tonnes municipal green waste per annum, which can increase or decrease dependent upon throughput material residence periods.



Green waste typically comprises green waste from garden trimmings, leaves, shrubs, plants, grass, trees, trunks and branches and similar materials; such as might arise from households, parks, amenity areas, landscape gardens, etc.

The facility comprises a number of built elements typically including:

- Access road and Office/staff welfare facility
- Composting area comprising impermeable (concrete) pad for reception, stockpiling, shredding, windrow composting, screening and maturation.
- 1x RoRo Skip for contrary materials

Potential off-site odour sources include industrial and agricultural land uses.

### 2.3 Potential Odour Sensitive Receptors

Potential odour sensitive receptors within 1km of the site are listed in the table below:

Distance	Receptor	Direction
0-250m	Flightway Industrial Units	West
	“The Laurels” Residential Units	West
250-500m	Dunkeswell Aerodrome	South
	Industrial Areas to the South	South
	Tubby’s Cafe	South
500-1000m	Farms	South West
	Eastern Edge Dunkeswell Village	West

Land surrounding the site to the west and north is predominately agricultural with open fields.

### 2.4 Potential Odour Sources and Activities

Measures to control odour have been considered in the context of the installation setting and the operations that are undertaken. Identified operations with the potential to produce and release odour at the facility are described below. This OMP has been developed to ensure that potential odour, from each part of the process, is minimised through effective management to an acceptable level.

#### 2.4.1 Receipt of green waste, off-loading and shredding

The potential for odour generation during the receipt, offloading and shredding of waste materials is directly influenced by the nature of the incoming wastes and the extent of any degradation. The extent of degradation of raw materials will effectively be determined by the age of the waste and ambient temperatures, i.e. during hot periods of extended retention, materials with higher odour potential will be delivered to site.

#### 2.4.2 Windrow Composting

The nature and magnitude of odours generated during the composting process depends on process conditions such as temperature, oxygen and moisture level, as well as the composition of the composting material itself.



If there is insufficient oxygen in the composting mass, the process can become anaerobic. Under such conditions, decomposition continues but utilises different micro-organisms and biological processes with the potential for the generation of substances such as methane, hydrogen sulphide, organic acids and sulphides. Such compounds are typically characterised as being highly odorous and unpleasant in character.

Turning of the windrows, required to introduce oxygen to the composting mass to minimise the risk of anaerobic conditions developing, and reduce temperature, can result in elevated emissions due to the agitation of the composting material.

### **2.4.3 Maturation**

During maturation, whilst the biological activity slows the key variables of oxygen, moisture and temperature can still significantly influence the potential for odour generation.

Typically the maturation stage is not a significant source of odour generation, however if oxygen, moisture and temperature are not controlled the biological processes can re-accelerate and result in the onset of anaerobic conditions.

### **2.4.4 Screening, Loading and Dispatch of the Final Product**

Screening of matured material can result in increased emissions due to agitation. However screening is typically not a significant odour source unless the material has become anaerobic or is still actively composting. The latter is prevented through robust monitoring and management.

Biological activity can increase due to the introduction of oxygen during the screening process. The screened product has a less porous structure, due to the removal of the over-size material, and therefore pile size and retention time needs to be managed to minimise the risk of anaerobic conditions.

### **2.4.5 Treatment of Maturation Pad Run-Off**

Surface waters collecting on the composting and maturation pad is conveyed by transverse and longitudinal falls, constructed within the slab itself, to a lined pond and water treatment system constructed at the southern extent of the pad area. If anaerobic conditions form in the pond there is the potential for odour to be emitted.

## **3.0 CONTROL MEASURES**

The facility adheres to the principles of the standard operating procedures 4 prepared by the Association for Organics Recycling (formerly Composting Association).

Whilst not specifically aimed at odour control effective management and control of the composting process minimises odour generation.

The following sections detail management techniques, procedures, and odour control measures to minimise the potential for odour generation for each aspect of the operations.

### **3.1 Receipt of Green Waste, Off Loading and Shredding**



Operational techniques to minimise odour during receipt, off-loading and shredding include:

- Site management shall work with suppliers to manage inputs during peak seasons;
- Loads will be tipped in the reception area and inspected on arrival for contaminants or excessively odorous material;
- Non-conforming loads shall be rejected and removed from site;
- Preparation shall be undertaken using dedicated plant as soon as operationally possible to prevent the onset of biological processes during storage;
- Storage duration for input materials prior to shredding will not exceed 5 days except in the event of mechanical failure or adverse weather conditions. Feedstock typically will be shredded on the day of receipt or within 2 working days;
- If odorous material is stored before shredding it may be covered (e.g. with woodchip or oversized composted material or similar) to reduce the release of odours;
- Water may be used during shredding to suppress dust and odours and to moisten dry feedstock;
- Mixing different waste types (within restriction of available material) i.e. oversize, to achieve good structure, even moisture and nutrient distribution prior to shredding; and Operational areas shall be maintained in a clean condition and regularly scraped/swept.

### **3.2 Windrow Composting**

To minimise potential odour emission from windrow composting the following operational techniques shall be applied:-

- Composting material shall be formed into windrows to achieve high surface area for oxygen ingress within practical limits (i.e. access and height);
- Monitoring of active windrows for temperature and moisture shall take place once per working day and at least once per 250 cubic meters. Monitoring of temperature and moisture conducted at least 1m and 0.5m below the windrow surface, respectively;
- Recycled water shall be used to add moisture to the composting material when necessary. If this water is odorous it may not be used for this purpose until effective treatment has been undertaken;
- Monitoring equipment shall be maintained in a functional state by the site manager;
- Monitoring records for each windrow shall be checked every working day;
- Corrective actions shall be carried out if core zone temperature trends move out of the target range or if it takes longer than 48 hours for core zone temperature to return to the target range after batch turning/mixing. Target ranges are as per PAS100 (65-80°C during sanitisation and 45-80°C during stabilisation);
- Corrective action to control windrow temperature shall include additional, or more frequent windrow turning/mixing; modified windrow size; water addition if composting conditions have become too dry; and/or addition of relatively dry input materials (such as oversize) if composting conditions have become too moist;
- Turning of windrows shall be as required to ensure aeration and prevent anaerobic conditions; guidance indicate that frequency of once or twice per week is likely to be sufficient for green waste (EA 2001); and
- Wind direction and strength will be considered in relation to sensitive receptors in order that turning can take place with minimal impact to the local environment - provided this does not significantly increase the risk of anaerobic conditions developing.



### **3.3 Maturation**

To minimise the potential odour emissions the following operational measures shall be used:

- Composting material shall be formed into windrows to achieve high surface area for oxygen ingress within practical limits (i.e. access and height);
- Temperature and moisture monitoring shall take place weekly to ensure the maturation process is optimised for oxygen availability (prevention of anaerobic conditions);
- Windrows shall be turned only to regulate temperature and oxygen content; and
- Addition of oversize material to improve pore structure and oxygen ingress, if required.

### **3.4 Screening, Loading and Dispatch of the Final Product**

To minimise the potential odour emissions, composted material shall be fully stabilised prior to completion of maturation. The following indicators and procedures shall be used:

- Screening shall be carried out once temperatures have stabilised;
- Windrows to be screened shall be of sufficient age and stability and with low odour;
- Wind direction and strength shall be considered in relation to sensitive receptors in order that screening can take place with minimal impact; providing this does not increase the risk of anaerobic conditions developing; and
- Windrows not ready for screening shall undergo further maturation or re-composted.

### **3.5 Treatment of Maturation Pad Run-Off**

The nature of the water treatment system ensures that odour emissions from leachate and storm water run-off are minimal. Regular inspections shall be made to ensure that anaerobic conditions do not occur and cause odour.

### **3.6 Liaison with Neighbours**

If an action is being considered that may cause temporary odour, outside of the normal operational procedures, then before such action is taken the operations manager will be informed. Neighbours who may be affected will be contacted to advise them of the operation being undertaken, and that any increase in odour will be of a temporary nature.

## **4.0 FAILURE OR ABNORMAL EVENT SCENARIOS**

In accordance with the requirements of Environment Agency's draft Technical Guidance Note H41, types of failure or abnormal events considered to have the potential to result in an odour impact have been considered.

These have been identified as abnormal meteorological conditions and failure of aspects of the composting process during any of the process stages previously described. Failure and abnormal event scenarios are presented in Appendix A and summarised below.





#### **4.1 Abnormal Meteorological Conditions**

Extreme meteorological conditions that promote the generation of odour and inhibit its effective dispersion (i.e. high temperatures and stable conditions) may result in increased risk of impact at receptor locations. Applying control measures, such as using meteorological forecasts and maintaining aerobic conditions within the windrows reduces the potential for impact. However, should extreme circumstances occur potential odour impact is more likely.

#### **4.2 Failure in Process Control Measures**

Failures in the process control measures employed have the potential to result in a release of odorous air that could impact at receptor locations.

Potential failures in the composting process include:

- Breakdown of shredding equipment, which may result in a delay in processing the material received. Magnitude of impacts will depend on the length of the breakdown, the type and volume of waste received and the prevailing meteorological conditions but could potentially result in elevated odour concentrations at receptor locations.
- Failure to maintain aerobic conditions within the composting during either the composting process or maturation phase. The magnitude of impact will depend on the volume of material experiencing anaerobic conditions and the prevailing meteorological conditions but could potentially result in elevated odour concentrations at receptor locations.
- Failure of lagoon aeration system leading to development of anaerobic conditions in retained water. This would not a significant issue provided that water is not reused in the composting process until effective treatment has been applied.

Responses to failure and abnormal events are addressed in Section 6.0 and Appendix A

### **5.0 MONITORING MEASURES**

Connetts Farm Compost shall employ the monitoring techniques outlined below to ensure that control measures (Section 3.0) are effective, that operational procedures are followed and that good practices are being implemented:

- Site inspections by the site manager or deputy (as outlined below);
- Site audits and inspections by the Environment Agency;
- Site Inspections by the Planning Authority; and
- Third party audits.

#### **5.1 Responsible Persons**

Responsible persons are detailed within Appendix C. All site personnel are responsible for immediately reporting odour problems to the site manager (or deputy).

#### **5.2 Meteorological Conditions**

Meteorological forecasts and conditions shall be monitored to enable potential odour problems to be predicted and, if necessary, remedial actions, such as modifications to the method of working or the use of abatement techniques. Meteorological data will be



recorded as per Table below.

<b>Monitoring Requirements</b>	<b>Frequency</b>
Observed description of conditions: precipitation, drizzle, rain, sleet, snow, temperature, winds, etc	Recorded daily
Wind speed and direction	Recorded continuously, reported yearly as a wind rose (if required)

### 5.3 Olfactory Monitoring

Odour shall be monitored daily at points around the site boundary and observations shall be noted in the site diary. Surveys shall be carried out in accordance with the monitoring protocol contained within the Environment Agency's draft Technical Guidance Note H41.

The odour assessor may not be subject to significant compost odour in the 30 minutes prior to the assessment and shall be compliant with the requirements laid down in the Olfactory Survey procedure (detailed in Appendix). This is to ensure that monitors are not suffering from odour fatigue and will be sensitive to composting odours.

If odour is detected and is judged to be moderate (Odour Intensity rank 3) then the composting facility Manager will be notified immediately and the olfactory survey will continue to attempt to determine the scope and extent of the odour plume, as follows. A suitable location downwind of Green Ore Farm and potentially sensitive receptor at which the odour plume is unlikely to extend will be selected for assessment;

### 5.4 Complaint Monitoring

Complaints shall be recorded and include: date and time, nature of complaint, name of complainant (if given), a summary of investigation and actions taken and their results. In the event of a complaint further olfactory monitoring will be undertaken. The monitoring protocol below is adapted for Green Ore Farm from the Environment Agency guidance document for the regulation of odour at waste management facilities'

The odour assessor shall undertake odour observation at the location of the complaint and at potentially sensitive receptor locations downwind from the site. At each location observations shall be made concerning odour intensity, persistence and character. Details will be logged following the instruction provided in the pro forma (see Appendix B).

Monitoring shall additionally endeavour to identify the scope and extent of the odour plume as described in Section 5.3.

### 5.5 Records

Daily records shall be maintained and include the following details:-

- Results of inspections and olfactory monitoring carried out by site personnel;
- Weather conditions including wind speed and wind direction;



- Operational problems including date, time, duration, prevailing weather conditions and cause of problem;
- Complaints received including address of complainant (if available);
- Details of corrective action taken, and any subsequent changes to operational procedures; and
- An evaluation of the effectiveness of control and abatement techniques used.

## **6.2 Compliance Actions**

Exceedance of the control level will necessitate further investigation into the causes and indicate whether further monitoring is required. Actions to be taken in the event of an exceedance will be dictated by the nature and extent of the exceedance(s) (e.g. by considering the magnitude of exceedance and whether it was event driven or on-going).

## **6.3 Response to Complaints**

Receipt of an odour complaint during normal composting operations is treated as an exceedance of control levels. The primary response will be as detailed in accordance with the site's complaints procedure. An investigation shall be initiated into the cause of the complaint, this will involve as necessary:-

- An olfactory survey following the procedure detailed in Section 5.3;
- An examination of the site activities at the time of the complaint;
- An examination of the meteorological conditions at the time of the complaint; and
- A review of the effectiveness of operational and odour control procedures.

If the complaint is validated it will be treated as an exceedance of the control level. The outcome of the investigation will determine the corrective actions to be implemented (see Section 6.5 below).

## **6.4 Detection of Moderate Odour During Olfactory Survey**

Detection of a moderate odour, (i.e. 'odour easily detected while walking and breathing normally, possibly offensive'), will initiate a more extensive olfactory survey to determine the extent of the odour plume (as described in Section 5.3). An investigation will be initiated into the cause of the odour. This shall involve as necessary:-

- A review of the site activities at the time of the olfactory survey;
- A review of the meteorological conditions at the time of the olfactory survey; and

## **6.5 Corrective Actions**

The outcome of an investigation will determine the corrective actions to be implemented, they will consider, but not be limited to:



- Alteration to waste reception procedures and odour control measures employed;
- Effectiveness of methods used to mix waste to achieve a compost of suitable structure and moisture for composting and to avoid formation of anaerobic conditions;
- Turning frequencies and meteorological conditions under which turning should be carried out
- Review of maturation pad run off treatment system; and
- Update of OMP if new procedures are created.

## **6.6 Reporting**

Exceedance of a control level will be investigated (as described above) and recorded in accordance with Connetts Farm Compost current procedures. This includes recording the following:

- Nature of the incident;
- Date of occurrence/s;
- Results of the investigation;
- Details of responses/ action plans implemented; and
- The event will be marked within the site's incident log.

The report will be made available to the Environment Agency on request.



## **APPENDIX 1**

### **Odour Forms**

## Complaint, Actions and Outcome Record Sheet

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### Complainant

Record name, or 'withheld' if requested but not given by complainant, or 'not supplied' if was not requested by person receiving the complaint.

Name of person	
Organisation name	
Address	
Telephone	
Fax	
E-mail	

### Complaint about

Organisation name	
Composting process location	
Compost grade(s)	
Certification assessment code(s)	

### Nature and record of complaint

<p>Product / Service / Action / Document / Other (describe):</p> <p>Person who used / expected it:</p> <p>Date used / expected:</p> <p>Nature of the deficiency:</p>
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Complaint number: \_ \_ \_

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**Complaint handled by**

Name of person	
Role	
Received by	Letter / email / telephone / fax / meeting
Date received	

**Actions and issues being investigated**

[Record details of any another organisation / external person involved, if applicable. Add more action rows if necessary.]

Action 1 (description)	
Action by (name of person)	
Date by	
Action 2 (description)	
Action by (name of person)	
Date by	
Action 3 (description)	
Action by (name of person)	
Date by	

**Outcome**

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**Communicated to**

Date complainant notified	
Date any other relevant parties notified	
Names of any other relevant parties (for each, state person and organisation)	

**Keep a copy of this record file with it any other documents associated with the complaint, actions taken and the outcome.**

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