ODOUR MANAGEMENT PLAN (OMP)

in regard to the

SINKFALL RECYCLING WASTE TRANSFER TREATMENT AND RECYCLING FACILITY

at

Sinkfall Farm Barrow-in-Furness

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Revisions

19/6/14	Revised	
22 Jan 2015	Revised whole document as new format	
4th November 2015	Revised	Updated with variation / Transfer of \Permit
2019	Revised	Updated with variation of Permit
2024 July	Revised	Updated with variation of Permit Clinical Waste & Food Waste
24 Aug24	Note added at Page 12	Describes the assessment of ALL wastes, within **OMP ANNEX 1** (Separate document)

EXECUTIVE SUMMARY

ES 1. Environment Agency Updated Policy

The site is at a distance of 180 metres away from third party sensitive receptors (third party dwellings/ workplaces). These are taken into account within the odour management plan.

The Sinkfall Composting Facility Environmental permit **EPR/DB3701SN/V003** was varied to include additional waste types and treatment technologies (drilling mud and road sweepings); and again in 2024 to include Clinical Waste and Hazardous Waste Transfer.

The Guidance on Odour Management is largely based on the H4 odours Guidance, published by the EA in 2011. This updates and develops upon the H4 Guidance of 2002 (Draft) and builds upon the Part 1 and Part 2 documents. Further Guidance is provided by the EA website.

It is sensible that the key to good odour management begins with attention to the nature and quality of the feedstocks being managed, and then includes the technological means of managing, treating and processing them, containment and appropriate treatment of air exhaust from the facility, where required and the day to day management, including operator training and sensible operating procedures. This Odour Management Plan adopts this approach, and includes properly developed contingency measures and emergency procedures in case of accident or failure in order to provide the means for quick reaction and management of such incidents.

This Odour Management Plan has been **reviewed** by **Recogen Ltd**. for the purpose of serving the **Sinkfall Composting Facility, Barrow-in-Furness** and relates to the Environmental Permit variation of 2024.

The scheme provides Technological and Physical systems that provide containment of much of the processing and in particular, the use of the partially enclosed composting processes.

The feedstocks include some materials that may entail a distinctive odour such as the Green Waste for composting. Other materials that may entail odours include food-waste, plasterboard, clinical waste and hazardous waste; however, these are in very small quantities and are held in very specific, secure containers.

The issue of odour generation and release has been given due consideration and attention within the design of the management plan. The processing of Green Waste via the aerobic composting process, has been undertaken successfully for several years without issues. These materials exclude food wastes that are either ‘Catering Waste’ or meat inclusive food industry wastes i.e. materials that are derived from Animal By-Products but if these materials do need to be transferred, then they will be packaged and containerised in specialist chilled storage containers.

ES 2. Key Benefits of Scheme

The key benefits of the Partially Enclosed Composting scheme include:

1. Confinement of green waste materials reception
2. Enclosure of the composting processes.
3. Enclosure of the waste transfer processes (excludes inert material - soil and aggregates)
4. Enclosure of the waste Treatment processes. (excludes soil and aggregates)
5. Road sweepings and drilling mud treatments are within bunkers in a building
6. Clinical Waste is maintained bagged (packaged) and contained in euro bins, within a secondary steel container to provide odour management, pests protection and security
7. Hazardous Waste is maintained segregated, is not treated and contained in dolavs, tanks or similar suitable containers and within a building or a secondary steel container
8. Food Waste shall be maintained segregated, and contained in a chilled, purpose built sealed secure steel container, or else in euro bins, held within a chilled container.

ES 3. The Odour Management Plan 2024

As part of Sinkfall Composting Facility due diligence towards Odour and Emission management, this document considers the Odour Emission Risk Assessment and provides a Plan and guidance for the Management of these Risks for the Overall Transfer and Treatment Facility at the Sinkfall.

This Odour Management Plan is presented in a format that utilises and follows the EA Guidance so far as possible.

It considers the materials that are proposed for processing.
Following form a Risk Assessment, the Plan provides most attention to the waste types or activities that entails the greater risk odour generation and release.

It sets out a chronological flow path of each material from delivery through to distribution and clearly defines the technological processes that are used. It determines the "Odour Emission Critical Control Points" and using Hazard Analysis, identifies where potential risks may arise and means of containment or management. It considers the EA's '**Source'**, '**Pathway'** and '**Receptor'** model and provides the detailed design and management for the techniques that are proposed for "Odour Risk mitigation" and "Odour Management" with priority attention to prevention and containment.

ES 4. Reference to UK Industry Guidance

The Odour Management Plan follows Environment Agency guidelines in the 'H4 Odour Management' Guidance March 2011.

Information is also taken from the EA Odour Guidance document 2011; the original H4 Part 1 and 2 documents 2002, DEFRA odour Guidance for Local Authorities 2010, and AfOR's 'An Industry Guide for the Prevention and Control of Odours at Biowaste Processing Facilities' 2007; and latterly, The Environment Agency's 'Appropriate Measures'.

ES 5. Materials Processed in the Facility

The waste materials to be transferred or processed are defined and assessed within Appendix 1. The scope of the feedstocks is to meet the needs of the community, including the local Householders, Commercial Businesses and Industrial Enterprises.

The majority tonnage of waste materials takes the form of soils and aggregates. Some materials are simply transferred with only minimal time spent in storage at the site. Some materials are seasonal, e.g. the green waste that is destined for composting. This does not include domestic food scraps (catering waste) and therefore shall in the main entail a 'LOW' odour intensity. Being a rural area, the ratio of woody (carbonaceous) green waste to volatile (nitrogen rich grassy) waste is expected to be high and therefore provides useful buffering of the proteins and ensures a high carbon to nitrogen ratio, with minimal risks of generating or releasing emissions such as sulphides or ammonia. The quantity of Green Waste is comparatively LOW at 2-3,000 tonnes per year.

Volatile or odorous wastes are managed and handled within the buildings, or else are stored in specialist containers and despatched within days of reception, in order to minimise the deterioration on quality and minimise the odour intensity.

ES 6. Environmental Control

Technical Measures and Operational Procedures are in place to mitigate emissions. The handling systems are based on techniques that do not aggressively agitate the material during movement and the operators are trained to understand the importance of this. Highly or even moderately offensive feedstocks may be rejected.

ES 7. Sensitive Receptors and Prevailing Wind Directions

The nearest receptors are in the easterly direction, a separation distance of just greater than 180 metres. (see map/plan at section 2). Winds blowing from the west would have greatest significance. There are also dwellings in the west and further north, but these dwellings are much more than 250 metres distant from the facility.

ES 8. Pathway

The pathway from source to receptors is generally via airborne carriage of the gaseous emission. Various attenuation techniques and technical measures are installed in order to contain, attenuate and mitigate against such transfer. These include enclosure, dust suppression and air handling. Wind direction and wind speed are important elements in determining the direction of any transfer of odours or other emissions. The local topography entails some hedges with trees and also woodland.

ES 9. The Building enclosure

With due regard for the wind direction and proximity of sensitive receptors, the facility has a system of containment for the all processes where odour risks may be present. There are buildings for Waste Transfer, Waste Transfer and Treatment, Composting, and Drying.

The Main Waste Transfer and Treatment Building has one main doorway to the central yard area, to receive incoming loads. This reduces the risk of a through-flow airflow developed.

The Composting is undertaken within its own building, and relies on Air (oxygen) being supplied passively into the composting process by a fan aeration system to spare movement of the material.

ES 10. Contingencies

Contingencies in case of a system failure, accident or incident have been considered and measures designed. In most cases, this entails the early removal of materials if for some reason, adverse odours are noticed.

ES 11. Monitoring and response to Complaints

Procedures (and facilities) for Personal Odour 'Monitoring' (Sniff Tests), Odour Management System monitoring, and for receiving and reacting to odour complaints have been devised and shown at Appendix 2.

ES 12. Conclusions - Odour and Emissions Risk Management

The Facility is designed to provide the Transfer and Treatment of a wide range of Household, Commercial and Industrial Wastes. The small scale activity of composting domestic garden green waste is a significant process with regard to 'odour potential' but this has been undertaken successfully without issues for the past 15 years. The 'new' waste management processes entail the storage (without treatment) of Food, Clinical and Hazardous waste; and each of these entails secure enclosed containerised storage under well managed conditions in order to provide security and minimise the risk of odour.

The composting process minimises the release of odours as fewer movements are required due to the fan assisted aeration, the process being maintained aerobic and enables cooling of the compost before movement out of the buildings.

Conclusion

With the benefit of limiting the volumes in storage or process, the enclosure, containment, and high level of management, there is **MINIMAL** risk that the site cause odour nuisance or emissions that may affect nearby receptors.

CONTENTS

QUALITY ASSURANCE for the MANAGEMENT OF ODOURS/EMISSIONS

Recogen Ltd. Environmental Quality Reporting – An Independent Consultant

For the purposes of quality assurance in the provision of this Odour/Emissions Management Plan, Recogen Ltd. is a recognised organisation with appropriately trained, qualified and experienced personnel; *independent* to the composting site operator. The Odour Management Scheme and the Plan was devised and compiled by D J Baldwin, BSc (Hons) CEnv. MCIWM, Technical Director with Recogen Ltd. who has over 35 years waste and environmental management experience. David is FACTS (fertiliser advice certification) qualified and holds the Environmental Permit Operators Certificate (EPOC).

Recogen Ltd. is registered as a Quality Environmental Consultancy on the National Business Link Register and is a supplier of Technical Consultancy to DEFRA, The Waste and Resources Action Programme (WRAP) and to The Renewable Energy Association (REA) formerly the 'Association for Organic Recycling' (AfoR) aka 'The Composting Association'.

David has managed or contributed to many major projects on waste management for Government (**DEFRA, ETSU, DTI, WRAP, EA**) and The Waste Management Industry including Composting and Anaerobic Digestion processes, compost site design, product quality assurance (PAS100:2011), The Compost Quality Protocol, ISO9001, ISO14001, COSHH and H&S Risk Assessments.

Recogen have a policy for maintaining Professional Technical Competence and have certificates from an Odour Laboratory training programme. Recogen have equipment and resource to undertake tests and sampling of air from ventilation systems and have successfully specified, designed and built and commissioned biofilters, water based trickling filters and chemical based air scrubbers.

David Baldwin of Recogen has been successfully monitored and approved by the Environment Agency (Shropshire Office), undertaking air flow and quality tests.

DEFINITIONS

Active composting phase
A loosely defined term often used synonymously to mean the high rate composting phase.

Aerated static pile systems
Un-turned (i.e. static) piles through which air is forced during composting via pipes laid beneath the composting mass. The air may either be blown (positive aeration or sucked (negative aeration).

Amendment material
Organic material which is used to improve the porosity or balance the C:N ratio within the feedstock. This may include shredded wood waste or oversize compost from screening. This material may be added at any stage of the process; typically it will be incorporated after shredding has taken place as the windrow is being formed.

Aerobic
Occurring in the presence of oxygen. Composting micro-organisms (aerobes) require oxygen to break down feedstocks, forming new microbes, creating humic and fulvic acids, and releasing carbon dioxide, water and heat energy as by-products.

Anaerobic
Occurring in the absence of oxygen. Some micro-organisms (anaerobes) only function and break down substances in environments without oxygen. In the process, they release by-products such as methane (a potent greenhouse gas) and volatile fatty acids (frequently odorous), which can be problematic in aerobic composting.

Animal by-products (in regard to this site)
These include food and other materials derived from animals including food waste, catering waste and former foods.

Biofilter
Organic, microbially active substrates (the medium) that filter odorous air through the action of micro-organisms that grow on the medium.

Catering waste
All waste food originating in restaurants, catering facilities and kitchens, including central kitchens and household kitchens.

Composting
This can be defined as:
The controlled biological decomposition and stabilisation of organic substrates, under conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat. It results in a final product that has been sanitised and stabilised, is high in humic substances and can be beneficially applied to land.

Dust
Small particles of matter, which may include fragments of composting vegetation and clumps of micro-organisms that have been thrown up into the air.

Hedonic tone
A judgement of the relative pleasantness or unpleasantness of an odour made by assessors on an odour panel. Odours which are more offensive will have a negative hedonic score whilst less offensive odours will tend towards a more positive score. The scores are intended to reflect the average responses of a large number of people. Individual responses may vary greatly.

Odour/odorant
A chemical or mixture which stimulates a human olfactory system so than an odour is perceived. In the context of this guide, odours are generally presumed to be unwanted, unpleasant or malodorous, unless otherwise indicated.

Odour unit
Mixtures of compounds require dynamic olfactometry for assessment of odour level. This involves exposing a selected and controlled panel of observers to precise variations in the concentrations in a controlled sequence, to determine the point at which only half the panel can detect the odour. This point is called the **odour threshold** or **one odour unit**. The number of odour units is the concentration of a sample divided by the odour threshold.

Offensiveness
An expression of the degree of unpleasantness of one odour relative to another. The perceived offensiveness of an odour will vary between individuals as a result of both physical and psychosocial differences. A population response of offensiveness can generally be described by a combination of hedonic tone and intensity.

Olfactometry (dynamic dilution olfactometry)
A test method to determine the extent to which substances are odorous using human subjects as a sniff panel.

Threshold level
The level at which an odorous gas is diluted with odour free air until the odour is only detectable by 50% of the population.

Tunnel
A category of in-vessel composting system that consists of long enclosed chambers. The material is completely enclosed and usually aerated through floor perforations, although mechanical agitation has been incorporated into the more expensive versions.

SECTION 1. INTRODUCTION SITE LOCATION and SITE PLAN

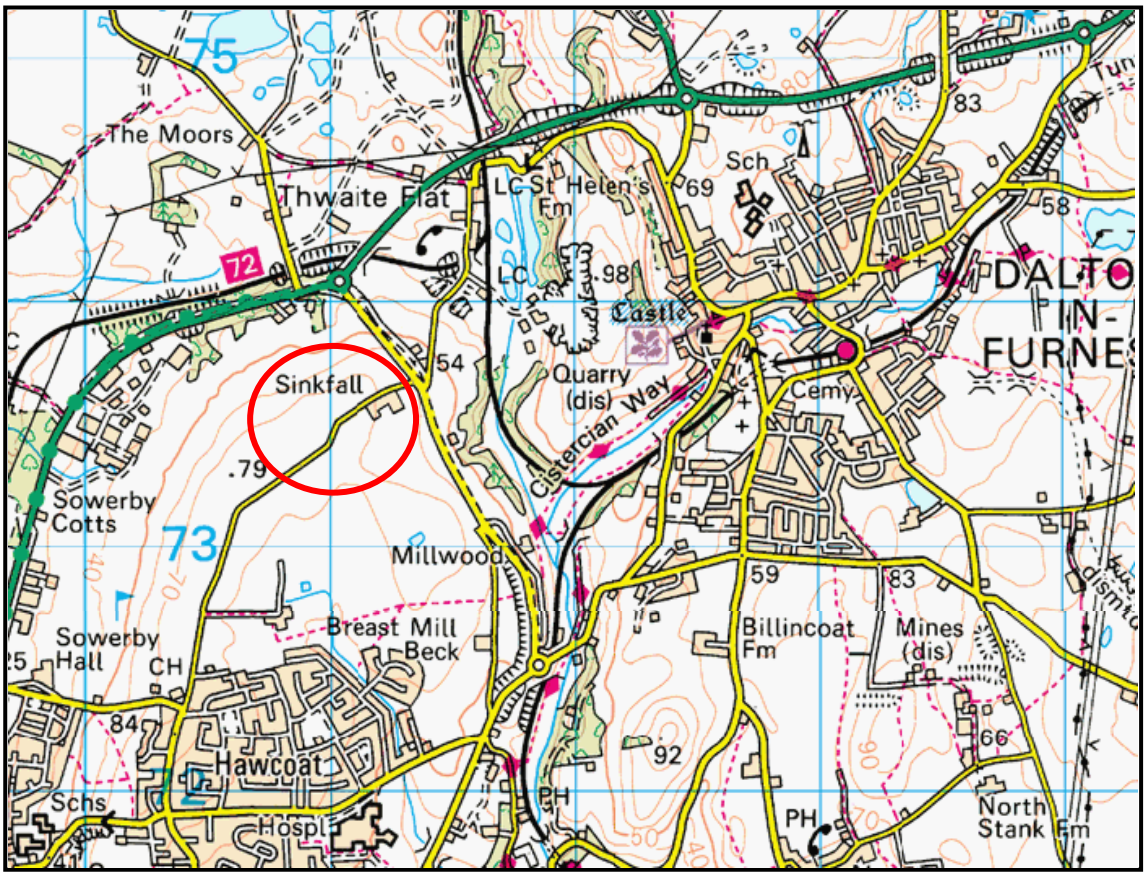
1.1 Site Location

This provides the location and details of management responsibilities. It provides a plan of the site, appropriately marked with points showing the activities and other environmental aspects that are referred to within the management system.

Site Location:

Sinkfall Farm,
Rakesmoor Lane
Barrow-in-Furness,
Cumbria
LA14 4QE National Grid Reference: **SD2118,7358**

Figure 1. Extract from Map (1km grid) Showing location of Composting Facility.



Operator: **Brian Armistead Ltd.**
Site Manager: **Mr. Brian Armistead**

Office Tel: 01229465000
Mobile: 0783141414569

Figure 2. Site Plan (outlined green ink) in relation to nearest sensitive receptor dwellings (marked △)

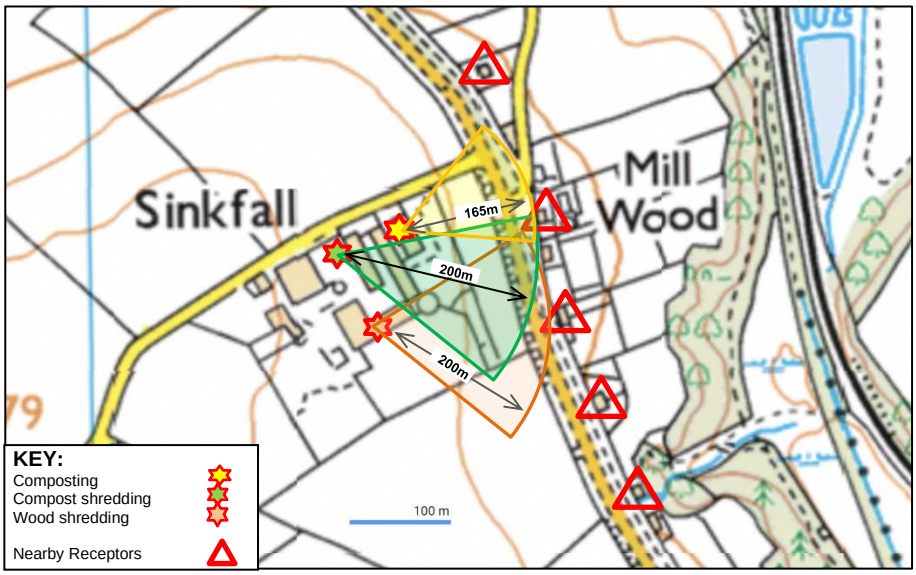
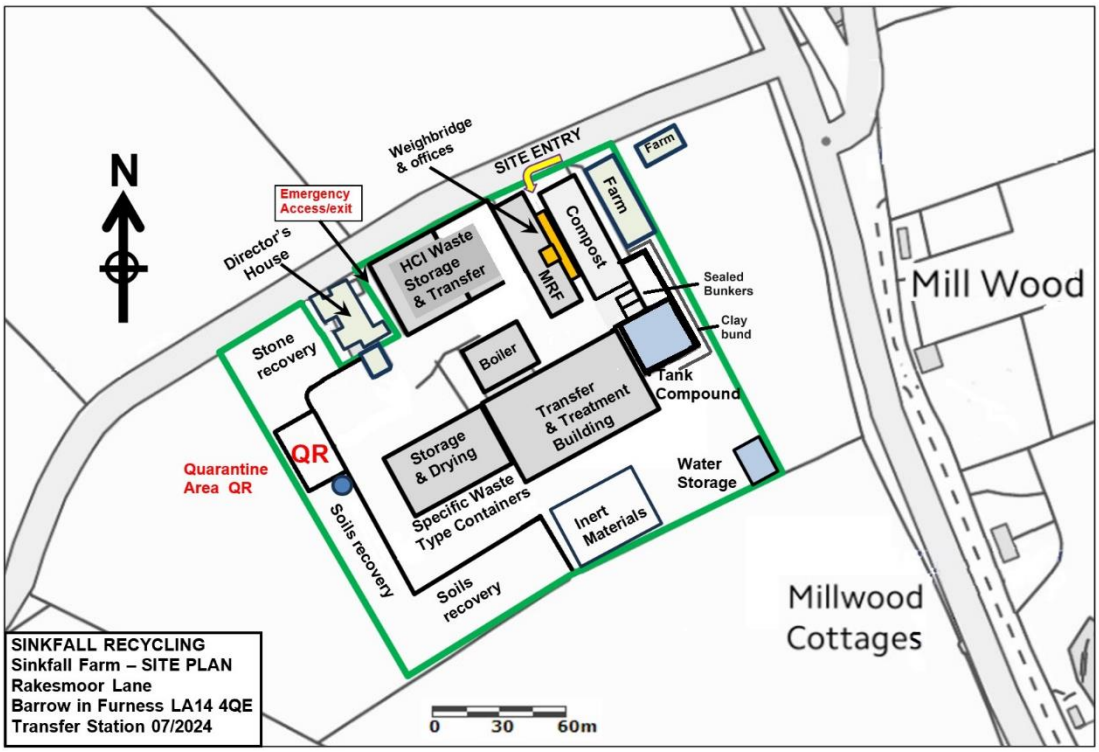


Figure 3. Site Plan Showing Principal Areas of Activity



SECTION 2. ODOUR & EMISSION SOURCE REVIEW

3.1 Determining Likely Odour and Emission Sources,

The scheme has been designed to either contain or suppress odour generation and therefore mitigate against odour release and emission. The key emission areas and sources include:

Table 1. Principal emission areas and sources

	Emission Source	Potential Odour Nature	Comment
a	Green Waste as received	Earthy garden type odour	Not malodorous if kept aerated
b	Composting Process	Earthy humus type odour	Quality Management system, kept aerated
c	Effluent	Ditch-water	Highly diluted watery effluent, low solids content
d	Sludge	Wet mud	Minimal quantities, enclosed area.
e	Wood	Minimal, possibly 'pine' odour	Slight odour when shred. Enclosed process.
f	Metals	Minimal odour	Not being treated at this site.
g	Glass	odour from contents of bottles	Sometimes wine or stale milk, minimal intensity
h	Paper and Cardboard	Minimal odour except if wet	
i	Plastics	odour from contents of bottles	
j	Plasterboard	Odour if wet.	Loaded to enclosed, lidded skip. Not treated.
k	Asbestos	Minimal odour, poly-wrapped	Loaded to enclosed, lidded skip. Not treated.
l	Clinical Waste	Stale odour (urine etc.),	poly-bag wrapped, in Euro + 2nd container
m	Hazardous Waste	Stale odour chemical/volatiles	In containers, in dolavs/similar in 2nd container
n	Soils	Earthy odour if wet	Natural rural, farm type odour
o	Aggregates	odour of concrete	Natural urban type odour
p	Food Waste	Old cabbage	odour depends on age. Kept chilled in container
Q	Quarantine Debris	Burnt ash	
R	HCI Residual Waste	Old Dustbin, musty, 'wet dog'	Depends on source and nature.

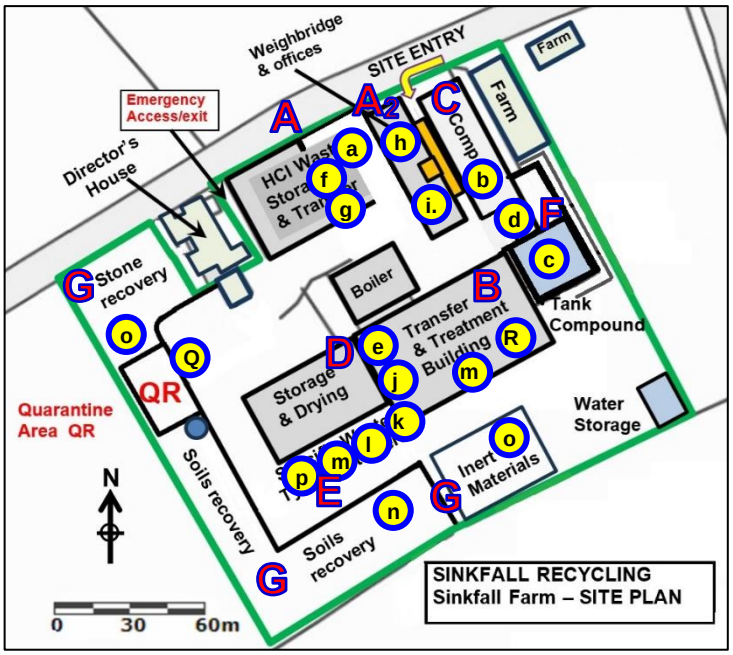
Table 1 provides the register of odour/emission sources, together with a comment to describe the type of odour and its tone and intensity. The various materials are assessed within Appendix 1.

3.3 Site Plan showing Environmental Aspects

The site plan is used to identify the key aspects of the site. These include the environmental aspects and the process related aspects (inputs and outputs).

Figure 4 Site Plan of Processes showing the Process Aspects that may entail Odour Generation

Area	Activity	Emission Source
A	a	Green Waste as received
C	b	Composting Process
	c	Effluent
F	d	Sludge
A, B	e	Wood
A	f	Metals
A	g	Glass
A2	h	Paper and Cardboard
A2	i	Plastics
B, E	j	Plasterboard
B, E	k	Asbestos
B, E	l	Clinical Waste
B, E	m	Hazardous Waste
G	n	Soils
G	o	Aggregates
B, E	p	Food Waste
B, E	Q	Quarantine residues
B	R	HCI Residual Waste
A	A	Northern Transfer Bldg.
B	B	New Transfer & Treat Bldg.
C	C	Composting Building
D	D	Drying Bins and Building
E	E	External Secure Storage



Recogen Ltd - Environmental Quality Reporting
D. J. Baldwin (Technical Director)
MCIWM CEnv. Tel: 01743 340630

Table 2: Inventory of Odour Aspects and Potential Odour Releases

Ref	Aspect	Ref.	Odour Source	Consideration	Odour Rating
1	Incoming Vehicles – HCI and Green Waste	1.1	From raw waste within vehicle	Open vehicle, i.e. lorry not closed, venting pungent odour as travels/static	Low
		1.2	Dirty Vehicle	Odorous waste on external parts	Low
2	HCI Reception building when door opened	2.1	Fugitive emission from reception building	Fresh Household, Commercial, Industrial waste - Low to Moderate odour intensity	Low
3	HCI Vehicle off-loading	3.1	Bulk solid waste being tipped	Tipping of waste releases trapped odours, and exposes new odour surfaces. Waste may have warmed in transport.	Med But LOW in large bldg. space
		3.2	Liquid waste, drained to system	Unlikely Liquid waste from HCI. Liquid waste, pump to a tank causes odorous air displacement	High
4	Washing down	4.1	Wash-water with waste residues	Wash-water carries odorous residues from vehicle body/tank, spills to floor area and to sump	Med
5	Green waste off-loading and storage	5.1	Mixed green waste stored in stockpiles until processed.	Odours from gas pockets and from surface of material	Med
		5.2	Leachate/effluent drainage	effluent draining from green waste along floor, but drain sump nearby	Med
6	Quarantined HCI waste	6.1	Quarantined Storage pile/skip	Odours from surface of material	Med
7	Main Transfer & HCI treat Building	7.1	Floor	Odour from residues of waste	Low
		7.2	Walls	Odour from residues of waste on the push walls.	Low
8	Green Waste Process	8.1	Loading Shovel (bucket)	Odour release when waste is disturbed, tipped into hopper	Med
	Green waste shredding	8.2	Solids shredder green waste	Exposes more odorous surfaces, releases trapped odorous air	High
	Composting Windrows loading	8.3	Moving mixed green waste into windrows	Disturbance of material that is starting to warm up, emits trapped air and water vapour	Med
		8.4	Residues of material spilled to floor during loading	Increased odour surface across floor area.	Med
	Composting Windrows In Operation	8.5	Fugitive leaks from building	Low risk of release except when moved.	Med
		8.6	Odorous air displaced when windrow is turned	Exhaust air dissipates slowly	Med
		8.7	Fugitive emissions from windrows when turned	Moderate odour intensity if occurs. (Refer to contingencies)	High
	Compost screening	8.8	Screening may increase compost surface area, and releases trapped air/vapours during handling.	Composting process nearing completion, material is stable and odours are low intensity.	Low
9	HCI Waste TRANSFER and Treatment	9.1	Moving material to segregate, etc. Time when storage bunker filled	Disturbance of material that may be warmed up, emits trapped air and water vapour	High
	Waste transfer	9.2	Residues material spilled to floor	Increased odour surface across floor area.	Med
	Waste treatment	9.3	Moving material to treat etc	Material in building releasing vapour and odours	Med

Inventory of Odour Sources and Potential Odour Releases (contd.)

Ref	Aspect	Ref.	Odour Source	Consideration	Odour Rating
10	Clinical Waste bulking up	10.1	Loading shovel loading bagged material	Disturbance of material emits trapped air / water vapour	Med
		10.2	Material spilled to floor	Increased odour surface	Med
		10.3	Time when secondary bin/ container is open.	Material releasing vapour and odours to external air	Med
11	Food Waste bulking up to lidded Container	11.1	Loading shovels with buckets. Tipping material	Material maybe warm; higher intensity odour, but in low quantities	Med
		11.2	Food Material in chilled storage container	Material cooled in container, and chilled to keep stable. Retained short period only before taken for recycling.	Med
		11.3	Spillages of material	Clean up procedures, into container	Low
		11.4	Aerial emissions	Bioaerosols and dust	Low
12	Hazardous Waste	12.1	Materials manually segregated and arranged in separate dolavs/containers	No mixing of materials. Simple materials, Batteries, fluorescent lamps, etc and asbestos, not sophisticated chemicals	Med
		12.2	Spillages	Hazardous waste clean-up kit.	Low
13	Asbestos Hazardous Waste	13.1	Asbestos arrives pre-wrapped, is loaded into separate secure container	No mixing of materials. Strict procedures for asbestos.	Low
15	Waste Oils / liquids	14.1	Engine/lubricating Oil Other Oils and liquids	No mixing of liquids. Strict procedures and dedicated containers for oils.	Low
15	Plasterboard	15.1	Wet plasterboard	Avoid it getting wet, specialist container, kept in the dry.	Low
16	Effluent Tank	16.1	Odours from dirty water	Low intensity due to dilution by rainwater.	Low
17	Effluent when filling of Tanker	17.1	Exhaust leaks when filling	Odours from tanker exhaust when building suction	High
		17.2	Liquid spillage when connecting	Odorous Liquor released/spilled	High
		17.3	Liquid spilled dis-connecting	Odorous Liquor released/spilled	Med
18	Storage Tank	18.1	Rainwater addition to tank	Stirred water may release odours	Low
		18.2	Effluent spillage contained within yard area	Odorous Liquor (may be little, or very large odour if a major spill)	High
19	Odour fugitive emission from HCI	19.1	Fugitive emission from building	Inlet Vent or personnel door left open	Low
		19.2	Extraction Fan switched off, or out of action due to service, power failure or breakdown	No suction for compost, therefore fugitive odour escape	Med
20	Contingency, spillages	20.1	Solids inorganic	Odour escape without treatment	Low
		20.2	Solids organic/ compost	Odour escape, aerobic, low odour	Low
		20.3	Liquids – effluent spillage	Odour escape, dilute mainly rain-water	Med
21	Fugitive emissions	21.1	Adverse hot weather	Odour dispersion affected	Low
22	Rainwater runoff	22.1	Rainwater in Yard	Aerobic, removed quickly to system	V. Low

The odour sources considered above help to identify the key risk sources within the system.

The focus continues with the sources and management and control of odour generation and release and accordingly the next section looks specifically at the types of waste proposed for processing at the site, and later sections look at the specific management and controls for containment, enclosure and treatment of the material and the air from within the enclosures.

SECTION 4. WASTE QUALITY AND GREEN WASTE FEEDSTOCKS

4.1 Household, commercial and Industrial Waste Types

The wastes include those for the various parts of the Facility and in generality may be summarised as follows, and are further assessed in the Appendix 1. :

a. Municipal Waste (includes Household Waste) generally under code 20 xx yy
b. Construction and Demolition Waste under codes e.g. 17 xx yy
c. Wastes (for transfer etc.) e.g. from other treatments under 19 xx yy
d. Other Industrial Wastes e.g. from 02, 03, 04, 07, 10 and 11 xx yy
e. Some of the above include Hazardous Waste and Clinical Waste 18 xx yy
f. WEEES, Refrigerators
g. Some waste types have special criteria attached.

The waste types within this Permit that are listed as WEEES, Clinical Waste or Hazardous Waste are retained for 'Transfer' only and shall not be subjected to treatment. Generally these are double contained, i.e. within bags, sacks or other primary containers, and within dolavs or lidded Euro-bins, and stored either in the main building for transfer, or else within a stand-alone steel freight shipping container that is weather-proof, lockable and secure.
Any waste oil or liquid shall be stored in containers, and bunded; or else waste engine oil shall be within a stand-alone, industry standard self bunded oil tank.

4.2 Green Waste Feedstock Types

The feedstocks include those for the various parts of the Integrated Organics Facility and in generality may be summarised as:

h. Green Waste from agriculture/ horticulture
i. Green waste from Civic Amenity Sites
j. Municipal Green Waste from domestic gardens

These feedstock types are listed in the Appendix 1.

4.3 Feedstock Quality – Definitions - Odour Intensity and Offensiveness

The waste types at 4.1 and 4.2 and detailed in the Appendix 1, are provided with an assessment of their odour potential expressed (subjectively) as intensity and pleasantness. Intensity equates to strength or concentration, where-as 'Pleasantness' (or unpleasantness) relates to the hedonic tone, or 'flavour' of the odour.

The definition of Odour Intensity, Pleasantness and offensiveness are taken from the H4 2002 document as follows.

Table 3: Definitions of Odour Offensiveness, Intensity and Unpleasantness

'Offensiveness' –	**Odour Intensity**	**Description**	**'Unpleasantness'** –
should be used to describe offence to the sense of smell; and should include an assessment of factors such as the frequency, intensity, duration and *unpleasantness* of	1	No detectable odour	this should be used to describe the character of an odour in relation to its hedonic tone. Pleasant odour would be bakery or coffee, as opposed to unpleasant odours such as rendering etc.
	2	Faint odour (barely detectable, need to stand still and inhale facing into wind.	
	3	Moderate odour (odour easily detectable while walking and breathing normally, possibly offensive)	
	4	Strong odour (bearable, but offensive odour – will my clothes hair/smell?)	
	5	Very strong odour (this is when you really wish you were somewhere else)	

The feedstock odour assessment is subjective and is affected by the age and history of the material, e.g. whether it has been open to the elements, has become wetted or been subjected to elevated temperatures or a combination of these factors that may have promoted bio-degradation.

In due consideration of this, the assessment bears a note to add additional assessment for materials for which the quality may deteriorate quickly and odour risk is increased. It also considers the effect of aging.

The Assessment is provided for ALL WASTES within the ANNEX 1 TO THIS OMP. This OMP provides a summary with attention to the more significant wastes that may be odorous.

4.4 Waste Quantities for Composting, Transfer and/or Treatment

Feedstock quantities are forecast for the anticipated tonnage and the scheme design capacity.

Table 3: Tonnages based on Annual throughput, daily allowance and Stockpile limits.

Waste type	Annual throughput	Daily limit	In-Process Stockpile limit
Mixed Green waste (<15,000 t/yr)	Up to 3,000 t/yr	<75 t/day	500 t stockpile plus oversize
HCI Waste	25,000 t/yr	1000	1000 exc. Haz/Clinical etc
Pre-treated Waste	25,000 t/yr	1000	500 t
Construction/ demolition waste Including soils	25,000 t/yr	1000	8,000 t
Sludge waste	5000 t/yr	100	1,000 t
Clinical waste	1000 t/yr	10	50 t exc Haz
Hazardous waste	1000 t/yr	10	10 t
Other waste	25,000 t/yr	1000	2500 t

This table is generalised; and more specific details and limits are found in the Permit.

4.5 Quality management of Feedstocks

The quality of the feedstocks shall be managed by;

1. Prior agreement and specification of feedstocks that will be accepted
   Includes 'Pre-Acceptance Criteria' and 'Acceptance Criteria'.
2. Reference to the Planning conditions
3. Reference to the Environmental Permit conditions
4. Reference to the PAS100:2018 QMS and Compost Quality Protocol Annex B (list)
5. Reference to the Aggregates Quality Protocol List

In accordance with the Quality Management Systems, the waste or feedstock deliveries shall be in accordance with the Supply Contracts. Waste types shall have been assessed prior to formalisation of contract and relevant conditions shall have been specified.

Where required, the wastes/ feedstocks may be subjected to scientific evaluation to determine suitability for processing and any contamination issues.

Sinkfall Recycling shall reserve the right to refuse to take delivery of specific loads, as and when appropriate to maintain compliance with the QMS.

4.6 Feedstocks Rejection Policy

Sinkfall Recycling commit to operate a 'Feedstocks Rejection Policy' that means for circumstances where feedstocks have been assessed or are considered to entail an unacceptable odour risk

(based on the pre-acceptance criteria see - EMS), then that feedstock shall be rejected and the material required to be returned to supplier or sent to alternative disposal. These terms shall form part of the feedstock contracts of supply. Staff at site shall be authorised to reject offensive material or material that has an associated high risk of generating highly offensive odours.

SECTION 5. SINKFALL RECYCLING SITE: ODOUR CONTROL AREAS

The key odour sources are illustrated in Figure 4, and described in more detail at Table 2. The following Table 4 provides further assessment of the Odour Risks from each area.

Table 4: Sinkfall Recycling Composting facility's NINE Odour/Emission Control Areas

1.	**VEHICLES at RECEPTION Feedstock Checks**	The deliveries of all wastes and compost feedstock shall be compliance checked for source, type and quality of material. Mal-odorous material shall be identified and processed quickly or if necessary **shall be rejected.**
2.	**OFF-LOADING To the Northern HCI Transfer areas A & A_2**	The offloading of materials shall be supervised and compliance checked both visually and by odour sni9ff assessments. Mal-odorous material shall be identified and if suspected of mal-odours, then the supervisor shall be called.
3.	**OFF-LOADING To B the Southern NEW Large HCI Transfer building**	The offloading of materials shall be supervised and compliance checked both visually and by odour sniff assessments. Mal-odorous material shall be identified and if suspected of mal-odours, then the supervisor shall be called.
4.	**GREEN WASTE RECEPTION -A Feedstock Checks**	The deliveries of the compost feedstock shall be compliance checked for source, type and quality of material. Mal-odorous material shall be identified and processed quickly or if necessary **shall be rejected.**
5.	**GREEN WASTE COMPOST PROCESSING -C**	Materials shall be blended to ensure that the correct mix of carbonaceous material is used to buffer any volatile material such as lush grassy waste. The Feedstock Preparation shall be undertaken so that the discharge of material is into the building. The processing shall be undertaken by monitoring and checking every day to ensure that the correct temperature, moisture and aeration regime is maintained. The screening of compost shall be undertaken within the building in order to minimise emissions.
6.	**EFFLUENT TANK SYSTEM -F Main store and sludge stores**	The Effluent Tank system is fully enclosed to maintain the appropriate conditions. The storage tank shall benefit from full containment to CIRIA 736 standards. It is sealed and provides adequate capacity in accordance with industry standards.
7.	**Storage within the Northern Transfer area A**	Storage of materials in this area is short term. Metals are moved off to a sister site. Wood is sorted and Grade A wood moved to the Wood processing area in B. Glass is stored here and though there are odours from residual liquids, these are of low intensity. The glass is removed to skip each 14 -21 days and the area cleaned down when the bunker is empty.
8.	**Storage within the Northern Transfer area A_2**	Kerbside recyclables, paper, card, cans and plastics are held here for baling, and the bales stored until a full vehicle load is aggregated. The materials and bales are stored for the minimum time due to area constraints. Materials only stored 14-21 days.
9.	**Storage within the Southern New Transfer area B**	Various Commercial and Industrial materials are held here for baling or additional treatment. Wood is stored here for shredding. The materials and bales are stored for the minimum time due to area constraints. Materials are only stored for 14-21 days. Materials such as Food-Waste, WEES, Clinical Waste and Hazardous Waste are loaded into specific containers and moved to the secure shipping containers located in are E. Due to the extent of containerising, the odour emissions are minimised.
10.	**Storage Areas G**	The odour emissions from the soils, aggregates and stone are minimal.

SECTION 6. SENSITIVE RECEPTORS

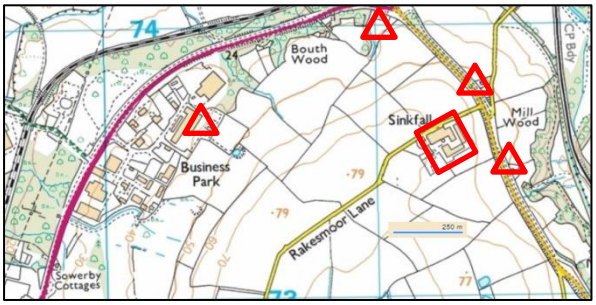
Site Situation with Site Situation with Regard to Sensitive Receptors

The composting site is located at a reasonably remote site that is set in a rural area. The nearest third parties/ receptors are located as follows:

Table 5 Wind Directions & Sensitive Receptors

North	Open fields up-hill with extended distance down to woodland and houses at Bouth Wood beyond 500m
East	Rural housing beyond 250m east at Mill Wood near the junction of Rakesmoor Lane and Park Road.
South	Fields with hedgerows and extended distance down to roadway and few houses beyond.
West	Open fields with hedgerows and extended distance (~800m) before The business park at Sowerby wood

Fig 5. Sensitive Receptor Locations



Nearest Receptors

In accordance with the Environment Agency definitions the nearest receptor is to the east at Mill Wood near the junction of Rakesmoor Lane and Park Road.

SECTION 7. METEOROLOGICAL CONDITIONS FOR THE SITE

The National Meteorology office Wolverhampton, have provided meteorological data that provides A representation of the wind strength and direction averages for this area.

Background

The dominant wind directions in the UK normally blow from between South and West. However, the direction of the prevailing winds can be modified by local topography. In general it is true to say that the more pronounced the topography, then the greater the potential influence upon local wind directions.

The Met Office maintains a network of observing stations across the UK. Wind speed and direction information is collected hourly from a number of these stations.

Analysis of Wind Speeds and Directions – UK

The mean wind speed and direction records is summarised in Table 5 and illustrated

Table 6. Percentage Frequency of Wind Directions by Month and annually

	N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW
Jan	3.0	2.2	3.7	6.9	8.6	11.7	12.8	13.0	17.0	7.3	3.6	6.2
Feb	3.1	1.2	1.6	6.4	4.9	7.2	12.4	15.1	19.4	12.2	7.2	7.1
Mar	3.9	2.1	2.8	7.4	4.8	7.3	9.2	9.0	20.4	14.6	6.7	9.9
Apr	7.6	4.5	4.3	7.9	5.5	6.9	9.2	9.0	15.2	10.6	5.6	11.2
May	8.5	6.2	10.7	12.3	4.7	5.7	7.3	6.7	10.6	6.7	4.8	13.7
Jun	6.7	3.0	4.2	6.2	3.7	4.6	8.8	8.5	17.4	11.0	8.6	14.4
Jul	5.3	2.2	3.4	8.4	4.3	5.2	7.9	8.8	20.4	13.7	6.8	11.2
Aug	6.0	2.4	4.9	8.3	5.0	5.8	6.8	9.8	18.3	12.4	6.6	11.2
Sep	5.9	4.1	6.7	9.1	5.5	6.8	8.6	8.7	14.4	11.1	6.5	10.6
Oct	5.1	4.2	5.7	9.5	5.3	8.6	11.1	10.3	14.8	10.7	5.2	6.5
Nov	4.3	2.1	2.4	7.2	8.8	9.8	10.4	10.4	14.6	11.3	4.7	10.8
Dec	3.7	2.2	5.2	8.2	6.7	7.2	8.7	11.3	17.1	11.8	4.3	8.1

Ann	5.3	3.0	4.7	8.2	5.7	7.2	9.4	10.0	16.6	11.1	5.9	10.1

Notes

- The above table shows the directions FROM which the winds blow.
- The NNE sector covers directions from 15 to 45 degrees and so on in 30 degree sectors.
- 100% of hours in a 30 day month = 720 ; 20.0% = 144 hours etc.

Main Features

- The prevailing winds blow from between west-south west (16.6%) and west (11.1%)
- Winds blowing from the south-south-west (10.0%) and north-north-west (10.1%) are also quite frequent.
- The least frequent winds blow from the north-north east (3.0%) and east-north east (4.7%)
- Calm conditions account for 2.9% of hours.

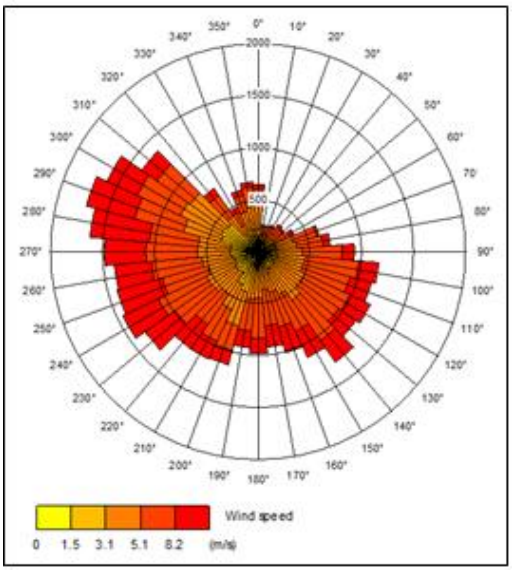
Frequency of Wind Direction by Speed

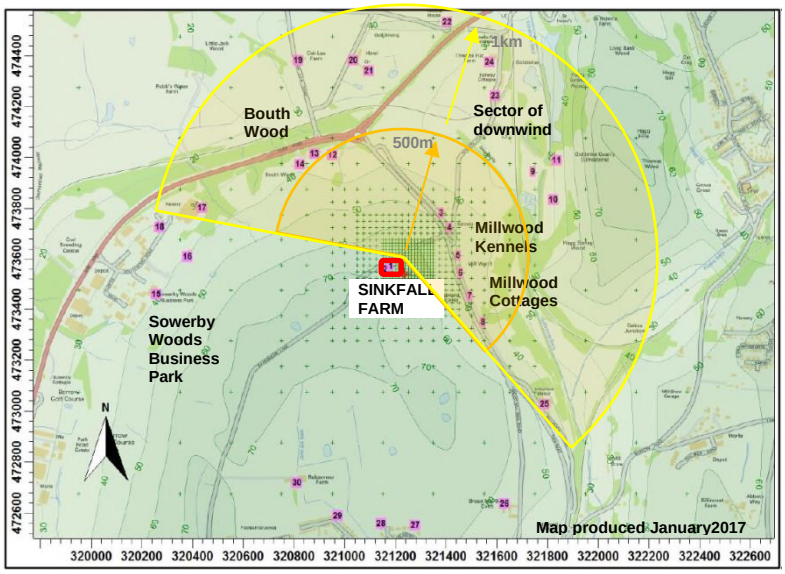
The distribution of wind speeds is typical. Wind speeds in the range 3.0 to 5.0 m/s are the most frequent. Speeds in excess of 10 m/s are relatively infrequent. The strongest winds blow from between south and west - see Table 7 and Fig 6.

Table 7: Annual Average Wind Speeds - Percentage Frequencies

Speed m/s	*N*	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	NNW	WNW	Total
0													2.9
0.5-2.5	2.1	1.5	2.4	3.5	2.6	2.2	2.4	2.9	3.7	2.5	1.6	3.4	30.8
3.0-5.0	2.2	1.0	1.5	3.1	2.3	3.3	3.5	3.1	5.5	4.5	2.6	4.2	37.0
5.5-7.5	0.8	0.4	0.6	1.2	0.7	1.4	2.4	2.4	4.4	2.7	1.3	1.9	20.3
8.0-10.0	0.2	0.1	0.1	0.2	0.1	0.3	0.8	1.1	2.1	1.1	0.4	0.4	6.8
>10.0	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	0.4	0.9	0.4	0.1	0.1	2.2

Figure 6: Wind Rose (arrow denotes most frequent direction of wind)



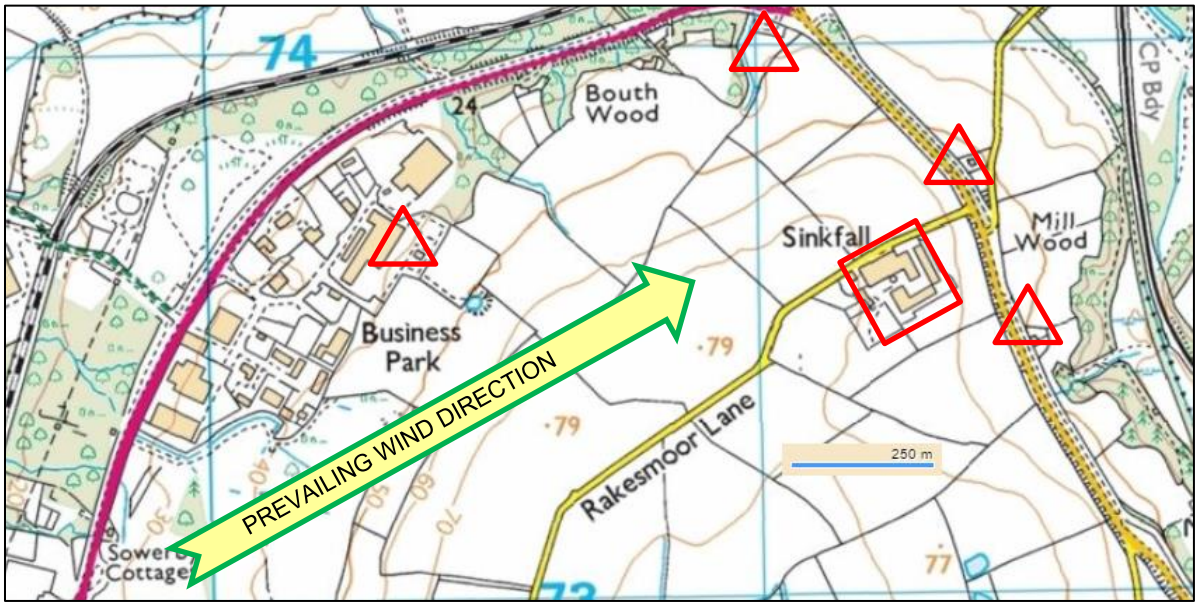


SECTION 8. ODOUR RISKS EVALUATION

8.1 Proximity of Sensitive receptors

The sensitive receptors were identified and are again shown on Figure 7.

Figure 7. Map (1km grid) Showing location of Sensitive Receptors.

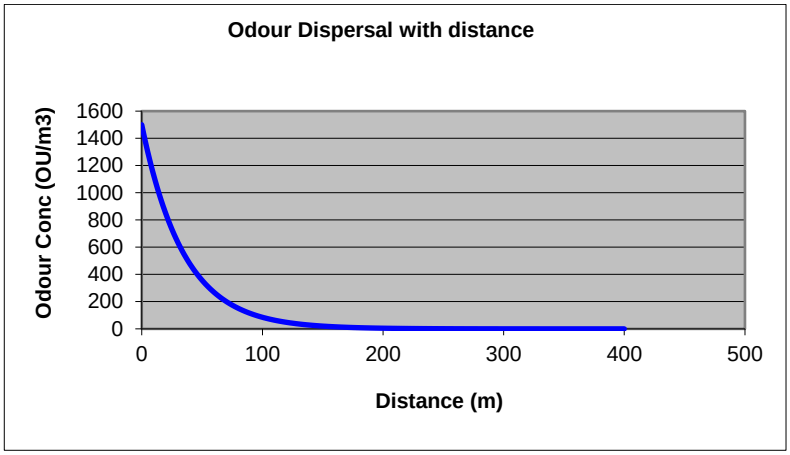


9.2 Projection of air quality

The air odour quality is subject to dilution due to dispersion. The odour strength of the air from a moderately odorous site may be estimated based on standard data and previous trials work to be 1,000 to 2000 OU_E/m^3 taken as a mean of around 1,500 OU_E/m^3.

The residual odour at the nearby receptors that may be attributable to this source may then be assessed using standard principles of inverse exponential reduction. This reveals that at 150m distance, then the residual odour will be less than 5 OU_E/m^3

Figure 8. Odour Dispersion and Projection of Concentration at distance from the Source



SECTION 9. ODOUR MANAGEMENT PROCEDURES

9.1 General Process Monitoring

Under normal operating conditions the facility will be monitored by onsite staff operatives during the day as well as remotely via the use of onsite CCTV. This will alert the Site Manager of any potential issues that could develop into odour problems should they arise.

The procedures for the site are based on the measures set out in Section 5 of the EA's H4 odour guidance (where applicable).

Daily site walkover inspections will monitor the facilities processes, buildings, equipment and all point source emissions to ensure that odour releases are being contained and controlled within the system to ensure the site meets with best practice and acceptable standards.

- Routine monitoring of odour will include:
- Sniff testing to a standard as defined by the EA's H4 Guidance;
- Daily monitoring of weather conditions;
- Monitoring of onsite odour abatement equipment;
- Monitoring of process conditions to give early warning of potential odour issues; and
- Monitoring of complaints and other forms of community feedback.

Sniff Testing
The Site Manager or delegated Site Operative undertakes a sniff test walk around the site perimeter to monitor odours. The walk path will take into account sensitive receptors, wind direction, investigating a source of odour or responding to a complaint. The sniff testing will be carried out in the early morning before the member of staff's sense of smell becomes conditioned to any site odours. To improve data quality, another sniff test walk may be undertaken after lunch by a person who has been off site and re-enters the site with a fresh sense of smell. Any adverse results will be recorded to the odours record file and will include details of date, time, location, weather conditions, temperature, wind direction, sensitive receptor, source of odour, description of smell and duration of sniff testing.

Odour Diaries
Sinkfall Recycling will work with any complainants to keep odour diaries so that any pattern of odour problems may be determined if the odour problems persist.

Records
Monitoring results will be retained on site in accordance with Permit requirements. Data collected will be reviewed and used to inform any changes necessary to odour control and abatement techniques, as well as the review and updating of this Odour Management Plan.

10.2 Odour Management Procedures

Procedures have been designed to take account of the key odour control points listed in section 3.

10.3.1 Odour Monitoring, Management and Control Matrix

Table 9.

Ref	Aspect	Ref.	Odour Source		Odour Rating	Monitoring	Control
1	Incoming Vehicles – HCI and Green Waste	1.1	From raw waste within vehicle	Open vehicle, i.e. lorry not closed, venting pungent odour as travels/static	Low	Checked at site reception	Driver informed, haulier informed. Load may be rejected, and sent away.
		1.2	Dirty Vehicle	Odorous waste on external parts	Low	Checked at site reception	Driver informed, haulier informed Vehicle power washed in building
2	HCI Reception building when door opened	2.1	Fugitive emission from reception building	Fresh Household, Commercial, Industrial waste - Low to Moderate odour intensity	Med	Procedure undertaken by site officer. Regular odour checks by site manager	Procedure followed. Regular Odour assessment by site manager, increase ventilation if required; else identify precise source and use containment or removal
3	HCI Vehicle off-loading	3.1	Bulk solid waste being tipped	Tipping of waste releases trapped odours, and exposes new odour surfaces. Waste may have warmed in transport.	High	Checked when tipped	if required, given priority for loading to processing system, or to secondary containment system e.g. sealed lidded container.
		3.2	Liquid waste, drained to system	Unlikely Liquid waste from HCI. Liquid waste, pump to a tank causes odorous air displacement	Med	Check made to ensure drainage system working OK Check made to identify any liquid ponding in reception building	Drainage system within building Sump in building Clean water available Steam cleaning available Site manager checks floor/drain residues regularly.
4	Washing down	4.1	Wash-water with waste residues	Wash-water carries odorous residues from vehicle body/tank, spills to floor area and to sump	Med	Checks undertaken to asses feedstock quality.	Controlled by containment in reception building and sealed system. If required, waste is given priority for loading to processing or containment system
5	Green waste off-loading and storage	5.1	Mixed green waste stored in stockpiles until processed.	Odours from gas pockets and from surface of material	Med	Check made to ensure drainage system working OK Check made to identify any liquid ponding in reception building	Drainage system within building Sump in building Clean water available Steam cleaning available
		5.2	Leachate/effluent drainage	effluent draining from green waste along floor, but drain sump nearby	Med		Contained, soaked up or directed to liquor drainage system

10.3.2 Odour Monitoring, Management and Control Matrix

Ref	Aspect	Ref.	Odour Source		Odour Rating	Monitoring	Control
6	Quarantined HCI waste	6.1	Quarantined Storage pile/skip	Odours from surface of material	Med	Site manager makes regular checks. Material covered, or moved to enclosed container if required.	if required, given priority for loading to processing system, or to secondary containment system e.g. sealed lidded container.
7	Main Transfer & HCI treat Building	7.1	Floor	Odour from residues of waste	Low	Check made to ensure drainage system working OK Walls power washed daily Steam clean when required	Drainage system within building Sump in building Clean water available Steam cleaning available
		7.2	Walls	Odour from residues of waste on the push walls.	Low	Check made to ensure drainage system working OK. Drain traps checked / emptied as required	Drainage system within building Sump in building Steam cleaning available
8	Green Waste Process	8.1	Loading Shovel (bucket)	Odour release when waste is disturbed, tipped into hopper	Med	Supervisor/manager checks operator procedures acceptable	Operator training Adequate capacity equipment Material maintained aerobic
	Green waste shredding	8.2	Solids shredder green waste	Exposes more odorous surfaces, releases trapped odorous air	High	Supervisor/manager checks machine at end of day	Procedures and training to PAS100 QMS. Blend carbon waste with grassy waste to buffer and provide correct C:N ratio. Shred to appropriate particle size for aeration.
	Composting Windrows loading	8.3	Moving mixed green waste into windrows	Disturbance of material that is starting to warm up, emits trapped air and water vapour	Med	Supervisor/manager checks quality, moisture content and admixture. Assesses emissions	Procedures and training Quick tests and checks; increase woody waste to mix if required Maintenance
		8.4	Residues of material spilled to floor during loading	Increased odour surface across floor area.	Med	Supervisor/manager checks cleaning procedures according to Vets HACCP	Procedures and training Use of Powered squeegee, and water washing.
	Composting Windrows In Operation	8.5	Fugitive leaks from building	Low risk of release except when moved.	Med	Supervisor/manager checks that procedures adhered to	Procedures and training Manager checks odour by daily intensity sniff checks.
		8.6	Odorous air displaced when windrow is turned	Exhaust air dissipates slowly	Med	Supervisor/manager checks that procedures adhered to	Procedure utilises passive fan ventilation to maintain aerobic.
		8.7	Fugitive emissions from windrows when turned	Moderate odour intensity if occurs. (Refer to contingencies)	Med	Supervisor/manager checks that procedures adhered to	Procedure utilises passive fan ventilation to maintain aerobic.

10.3.3 Odour Monitoring, Management and Control Matrix

Ref	Aspect	Ref.	Odour Source		Odour Rating	Monitoring	Control
	Compost screening	8.8	Screening may increase compost surface area, and releases trapped air/vapours during handling.	Composting process nearing completion, material is stable and odours are low intensity.	Low	Batch records show when compost process is completed. Verification tests show compost is well stabilised.	Procedures and training Quick tests and checks; Annual PAS100 compost testing, to validate and verify process.
9	HCI Waste TRANSFER and Treatment	9.1	Moving material to segregate, etc. Time when storage bunker filled	Disturbance of material that may be warmed up, emits trapped air and water vapour	High	Supervisor/manager undertakes regular sniff/odour checks Regular checks around site	If mal-odours detected then material is conditioned if required, or else contained with covered or lidded vessel; or else is removed from site.
	Waste transfer	9.2	Residues material spilled to floor	Increased odour surface across floor area.	Med	Check made to ensure drainage system working OK. Drain traps checked / emptied as required	Drainage system within building Sump in building Steam cleaning available
	Waste treatment	9.3	Moving material to treat etc	Material in building releasing vapour and odours	Med	Supervisor/manager undertakes regular sniff/odour checks Regular checks around site	If mal-odours detected then material is conditioned if or else contained, aerated carefully, loaded to container for early removal.
10	Clinical Waste bulking up	10.1	Loading shovel loading bagged material	Disturbance of material emits trapped air / water vapour	Med	Supervisor/manager undertakes regular sniff/odour checks	If mal-odours detected then euro bins labelled, kept closed and containers are removed from site by contractor. Maybe cooled in hot weather; or more regular contractor visits for removals.
		10.2	Material spilled to floor	Increased odour surface	Med	Supervisor/manager checks Staff extra well trained	Bagged materials, are re-bagged, or loaded to the euro-bins and lids closed.
		10.3	Time when secondary bin/ container is open.	Material releasing vapour and odours to external air	Med	Supervisor/manager checks that procedures adhered to	Euro-bin lids only opened for loading.
11	Food Waste bulking up to lidded Container	11.1	Loading shovels with buckets. Tipping material	Material maybe warm; higher intensity odour, but in low quantities	Med	Supervisor/manager checks procedures	If mal-odours detected then material is conditioned with chilled air cooling system; and the container checked to ensure lid closed tightly, or else loaded to container for early removal.

10.3.4 Odour Monitoring, Management and Control Matrix

Ref	Aspect	Ref.	Odour Source		Odour Rating	Monitoring	Control
11	Food Waste bulking up to lidded Container	11.2	Food Material in chilled storage container	Material cooled in container, and chilled to keep stable. Retained short period only before taken for recycling.	Med	Supervisor/manager checks procedures	If mal-odours detected then material is conditioned with chilled air cooling system; lid closed tightly, or else scheduled for early removal.
		11.3	Spillages of material	Clean up procedures, into container	Low	Supervisor/manager checks that procedures adhered to	materials, are cleaned up, and loaded to the euro-bins and lids closed.
		11.4	Aerial emissions	Bioaerosols and dust	Low	Supervisor/manager checks cleaning procedures	Area damped down. Steam cleaning available
12	Hazardous Waste	12.1	Materials manually segregated and arranged in separate dolavs/containers	No mixing of materials. Simple materials, Batteries, fluorescent lamps, etc , not sophisticated chemicals	Med	Supervisor/manager checks that procedures adhered to	Checks on the specific containers, dolavs, euro-bins, tanks, drums / boxes. Reduce quantity held at site; increase frequency of contractor visits.
		12.2	Spillages	Hazardous waste clean-up kit.	Low	Supervisor/manager checks that procedures adhered to	Hazardous waste clean-up Kit available . Area damped down. Steam cleaning available
13	Asbestos Hazardous Waste	13.1	Asbestos arrives pre-wrapped, is loaded into separate secure container	No mixing of materials. Strict procedures for asbestos.	Low	Supervisor/manager checks asbestos storage is correct. Staff extra well trained	Hazardous waste clean-up Kit available. increase frequency of the regular visits from contractor
15	Waste Oils / liquids	14.1	Engine/lubricating Oil Other Oils and liquids	No mixing of liquids. Strict procedures and dedicated containers for oils.	Low	Supervisor/manager checks asbestos storage is correct. Staff extra well trained	Hazardous waste clean-up Kit available. increase frequency of the regular visits from contractor
15	Plasterboard	15.1	Wet plasterboard	Avoid it getting wet, specialist container, kept in the dry.	Low	Supervisor/manager checks plasterboard storage is correct. Staff well trained	waste clean-up kit available. increase frequency of the regular visits from contractor
16	Effluent Tank	16.1	Odours from dirty water	Low intensity due to dilution by rainwater.	Low	Supervisor/manager checks the effluent store and sludge stores daily	Steam cleaning available Removal of liquids to waste water treatment works.
17	Effluent when filling of Tanker	17.1	Exhaust leaks when filling	Odours from tanker exhaust when building suction	High	Supervisor checks the emissions when filling	Use rainwater dilution to reduce odour potential.
		17.2	Liquid spillage when connecting	Odorous Liquor released/spilled	High	Supervisor checks the emissions when filling	Spillage clean up procedure and absorbents available
		17.3	Liquid spilled dis-connecting	Odorous Liquor released/spilled	Med		Spillage clean up procedure

10.3.5 Odour Monitoring, Management and Control Matrix

Ref	Aspect	Ref.	Odour Source		Odour Rating	Monitoring	Control
18	Storage Tank	18.1	Rainwater addition to tank	Stirred water may release odours	Low	Supervisor/manager checks the effluent store and sludge stores daily	Rainwater will dilute odour risk. Removal of liquids to waste water treatment works.
		18.2	Effluent spillage contained within yard area	Odorous Liquor (may be little, or unlikely to be a large spillage.	Med	Supervisor/manager checks the emissions when filling	Spillage clean up procedure and absorbents available
19	Odour fugitive emission from HCI	19.1	Fugitive emission from building	Vehicle doors or personnel door left open, when should not be	Low	Supervisor/manager undertakes regular sniff/odour checks	If mal-odours detected then doors kept closed and containers are removed from site by contractor. Maybe ventilation or cooling used in hot weather; Wastes removed from the building
		19.2	Ventilation is not working, or out of action due to service, power failure or breakdown	Potential odour build up and fugitive odour escape	Med	Supervisor/manager undertakes regular sniff/odour checks	If mal-odours detected then doors kept closed and containers are removed from site by contractor. Maybe ventilation or cooling used in hot weather; Wastes removed from the building
20	Contingency, spillages	20.1	Solids inorganic	Odour escape without treatment	Low	Supervisor/manager checks the waste bunkers and storage areas on daily walk round	Clean up procedures in place, and staff trained. Steam cleaning available Early removal of wastes off site if required. Increase visits from contractor.
		20.2	Solids organic/ compost	Odour escape, aerobic, low odour	Low	Supervisor/manager checks the compost system on daily walk round. Compost retained aerobic minimises odour potential.	Low rate aeration system is available to minimise odours. Re-form the waste and add more carbon material is required. Early removal of wastes off site if required.
		20.3	Liquids – effluent spillage	Odour escape, dilute mainly rain-water	Med	Supervisor/manager checks for effluent ponding or spillages daily	Steam cleaning available Removal of liquids to waste water treatment works.
21	Fugitive emissions	21.1	Adverse hot weather	Odour dispersion affected	Low	Supervisor/manager checks procedures	If mal-odours detected then chilled air cooling system used. Check lids closed tightly, schedule removal.
22	Rainwater runoff	22.1	Rainwater in Yard	Aerobic, removed quickly to system	V. Low	Supervisor checks for rainwater ponding.	Early removal of liquids to waste water treatment works.

10.4 Control Measures during Routine Maintenance

When maintenance work is undertaken, there is the potential that the facility is more vulnerable, or there is a risk of a small odour release, e.g. removing a pump, replacing a pipeline, or rodding/flushing a particular pipe/chamber/stone trap etc.
Maintenance works will be completed by suitably qualified and competent contractors. Rules/work permits will be required for all Contractors working on site.
Sections of the plant which require maintenance will be sealed off from the main process to control and limit the potential release of odours during maintenance works.

10.5 Diverted Wastes during Operational Difficulties

In the event of a critical failure during the usual operating procedure of the facility which would result in restricted reception capacity, additional mitigation measures will be put in place to minimise the impact of the incident. These shall include:

- No receipt of waste during times of plant failure;
- Containment of spillages or odour releases;
- Clean-up procedures;
- Wash-down procedures; and
- Removal of waste either into tanks or to an alternative facility within 48hrs.

10.6 Cessation or Reduction of Operations

As and when required, Sinkfall Recycling will prepare a site closure plan in line with Environment Agency Guidance to confirm how the site will be decommissioned to return it to a satisfactory state upon the cessation of activities.

The Site Closure Plan will be maintained on site and updated as circumstances change, for example, should there be any process changes or change of land use.

Records will be maintained of the location of facilities, as well as the services and sub surface structures installed during the construction and operating phases of the facility.

De-commissioning will be in compliance with procedures outlined in the Site Closure Plan. During the de-commissioning process, operational records will be reviewed and assessed against the conceptual site model documented in the permit application. If areas of deterioration during the operation of the site are identified these areas will be re-examined and the site will be returned to a satisfactory state as defined at the permit application stage.

SECTION 10. ODOUR MANAGEMENT – CONTINGENCY MEASURES

10.1 Odour Management Contingencies

Taking into account the odour Sources, the risks of emission and the Odour Rating (Intensity and Duration), and with attention to the odour management procedures in SECTION 10, the following contingencies have been designed to provide improvements to the management and control at times when required; and to establish quick response procedures in the case of an accident, spillage, emergency or sudden failure..

Contingency Requirements have been identified as follows:

Table 10. Odour Management Contingencies

	Contingency Event	Uncorrected Outcome	Contingency Measure
C1	Electrical Power Failure	Fan stops extracting air from compost exhaust suction system, leads to fugitive emissions from building, or from tanker exhaust	Bring in or utilise stand-by power supply. Have name of generator rental company within management system.
C2	Fan Motor Failure	Fan stops extracting air from compost exhaust suction system, leads to fugitive emissions from building, or from tanker exhaust	Replacement motor can be obtained within 24 hrs. Motors are very reliable. Option to bring in alternative fan likely to prolong the time taken to fix existing one.
C3	Ventilation duct failure	Cracked, broken or failed duct joint, prior to fan, decreases suction effect.	Can be temporarily repaired with polythene sheet and Duct tape, until full and proper fixing can be undertaken.
C4	Ventilation fan outlet duct failure	Cracked, broken or failed duct joint, means odorous air released	Can be temporarily repaired with polythene sheet, backed with sealant and strong plastic sheeting, held with and Duct tape and wire straps or bands.
C5	Odorous Effluent spillage, somewhere in system	Odour emitted from release of liquid	Use slurry tanker to suck up liquid immediately, and feed it into the system, or dispose off site at permitted facility. Use absorbant material, woodchip, sawdust, sand to absorb liquid and dispose to approved site (composting). Use flexible hose ducting to generate suction of odorous air from the area, into the building.
C6			

SECTION 11. ODOUR MANAGEMENT – COMMUNITY RELATIONS

11.1 Engagement with Neighbours

In the event of odour issues, the operator Sinkfall Recycling will ensure that their complaints procedure is followed and will engage with the public in an appropriate and timely fashion.

Sinkfall Recycling have been very proactive in engaging with their neighbours during the planning and permitting application process to ensure there was clear and robust consultation both with statutory consultees and the public,

Sinkfall Recycling shall regularly keep the public up to date as the project is developed.

Sinkfall Recycling intends to maintain an open and transparent approach and intends to continue engaging with the local community upon commencement of operations.

11.2 Responding to Complaints

The site office telephone number will be made available for the public to use should they wish to register a direct complaint to the operator. Following any complaints received, the operator will endeavour (where possible) to contact the complainant to provide feedback on actions taken to both assess the event and convey any remedial actions taken.

Any external request for information will be acknowledged, recorded and dealt with on an individual basis as the type of information provided will depend on the content and source of the request. All communications will be reviewed during routine management review meetings.

11.3 Documentation of Complaints and Record Keeping

Sinkfall Recycling shall utilise the standard template documents provided by the Environment Agency as part of H4. This will enable the complainant a better opportunity to explain and describe the nature of the problem and will enable Sinkfall Recycling a clearer understanding on where to look in order to resolve the issue and either make the required rectification or implement revised procedures.

The recording Templates include:

- H4 Odour form sniff test
- Odour Complaint Report Form
- Odour Complaint Investigation Form
- Odour Diary

The templates are provided at **Annex 4.**

11.4 Odour Complaints / Incident Review

It is vital to record and act upon complaints received and communicate the outcome of the investigation to the complainant. It is equally vital to undertake a review following complaints or incidents to implement further control measures or change behavioural practices on site to prevent the event from occurring again. The site operator, Sinkfall Recycling, will undertake a formal review of onsite processes following any major incident, and will routinely review any complaints received as and when they occur.
All records of events and actions taken will be retained as required by the Environmental Permit.

11.5 Notifying the Environment Agency

In the event that an accident or incident occurs Sinkfall Recycling will notify the Environment Agency as soon as practically possible, using the emergency 24hr phone line (08708 506506). The TCM for the facility will also notify the Regulatory Officer should any material complaints be received directly to site, and advise what remedial measures or actions have been taken to address the problem. Copies of any material complaints received will be made available to the Environment Agency for review.

SECTION 12. EMERGENCY PLANS

12.1 General

Operators must consider what incidents or emergencies might adversely affect the control of odour pollution in order that they can plan and take appropriate steps to reduce the likelihood of the incident occurring, minimise any impacts if the incident were to occur, and recover control of the process as quickly as possible.

It is not necessary to consider events which are either very unlikely to occur or where odour would be a minor element of the overall environmental impact. For example, if there were to be a major environmental incident in the area that affected the site and prevented staff from getting to work, then odours would be a relatively minor aspect of the overall disruption and environmental impact.

However, events that are uncommon but reasonably foreseeable which could affect the running of the site and cause odour problems should be addressed e.g. deliveries may be affected from time to time or staff (internal and external) may be unavailable for some reason e.g. illness.

12.2 Abnormal Meteorological Conditions

In the event that meteorological conditions prevent delivery or dispatch vehicles, or staff arriving on site, emergency contingency plans will need to be followed to ensure the site can be remotely managed until the plant can return to operation under normal conditions. The site manager and staff operatives will undertake daily weather checks to ensure that any abnormal weather conditions can be foreseen as much as possible and contingency arrangements can be put in place prior to any problem occurring on site. In the event that the site has to be closed due to severe weather conditions deliveries will be diverted to an alternative suitably authorised site for either recovery or disposal.

12.3 Breakdown of Process Equipment and Plant

In the event that there is a breakdown of equipment or plant during out-of-hours operations the standby and duty staff will be alerted to the problem immediately via text message. Telemetry will also be sent to the off-site control centre where the alarm can be raised to ensure the standby duty staff is aware that attendance is required.
Reserve equipment will be kept on site so that any failed parts are quickly replaced and unnecessary delays in ordering parts can be avoided. When a spare part is used, the Site Manager will be made aware and another replacement part ordered to ensure the stock of spare parts is replenished.

12.4 Staffing Issues

The facilities standby staff rota will be actively managed, and in the event of staff illness, the next name will be drawn down from the list, and the standby system will continue. Equally during staff holidays the standby rota will be updated to ensure there is suitable cover continuously.

Staff listed on the standby rota are provided with a list of emergency contact names and numbers.

12.5 Incident (Accident) Plan

In the event of a liquid spillage on site, site operatives and the standby duty officer will be provided with a list of 24hr tanker service companies who would be able to assist at short notice in the event of a liquid spillage or accident on site. Refer to EMS and 'Accident Management Plan'

Likewise, in the event of an emergency local emergency services contact numbers will be displayed in the site office or provided to the standby duty officer.

In the event that the site has to be closed and is given restricted access, staff will be contacted and prevented from travelling to work. Contractors will be contacted to cease deliveries / collections / services to the site and to arrange alternative disposal options for the interim period.

Risk assessments will be undertaken during and after any incident to ensure the site is safe to re-enter.

SECTION 13. SENIOR MANAGEMENT RESPONSIBILITIES AND REVIEW

13.1 Policy and Commitment

Sinkfall Recycling is committed to managing effectively the offsite impacts of odour from the Sinkfall Recycling / Composting facility. This commitment extends from Council policies, through to on site resources managing odour-critical work based activities onsite.

13.2 Roles and Responsibilities

The responsibility for this OMP is as described below:

The operation of the Sinkfall Recycling is the responsibility of the officers the company;

The Facility has a dedicated Site Manager who has overall responsibility for the daily operations;

The facility's designated Technically Competent Person will be responsible for ensuring the site complies with the conditions of the Environmental Permit and will be the primary point of contact for the Environment Agency;

Site staff shall be responsible for maintaining an awareness of general site performance during their daily activities. Staff will be instructed to report any unusual odour occurrences to the Site Manager without delay.

13.2 Odour Management Plan Review

The Odour Management Plan will be reviewed by senior management **at least once every year** or immediately following **any change** or any major incident / event. Any technical and managerial changes on site will also initiate a review of the OMP to ensure that the odour control techniques and abatement systems remain appropriate for the site.

APPENDICES
Appendix 1 List of Wastes, with rating for Odour Risk Potential. **SEE ALSO OMP ANNEX 1**
Appendix 2 Odour Incident Report Form

APPENDIX 1. LIST OF WASTES – WITH ODOUR RISK RATING

SEE ALSO OMP ANNEX 1

Appendix B of the Compost Quality Protocol lists and describes acceptable biowaste types for the production of quality compost.

Input materials are required to be biodegradable materials that have been separately collected from non-biodegradables and that have not been mixed, combined or contaminated with other potentially polluting wastes, products or materials including invasive species. This requirement applies to each of the waste types listed below.

If *operatives or managers at this Facility* have any doubt over whether an input material is compliant, they should discuss the issue with the Compost Technical Director or seek clarification from the relevant certification body.

Guidance associated with this list covers composting process additives such as those used for odour control

KEY: The entry of a code in the final box shows that the feedstock may be accepted, and also shows an assessment of its likely Odour Intensity and Offensiveness and in brackets what that assessment would be if the material was at least 1 week aged in storage prior to reception at site. This is used to provide an arbitrary Odour Risk Rating.

Materials that are given a High or Very High Risk rating are given more detailed consideration and the materials with very high, will either require direct injection into the AD system or else will be declined.

Odour Intensity	Odour	Pleasantness
	Pleasant	+2
0 No odour		+1
1 Very faint odour	**Neutral**	**0**
2 Faint odour	**Bearable**	**-1**
3 Distinct odour	**Unpleasant**	**-2**
4 Strong odour	**Offensive**	**-3**
5 Very strong odour	**Very Offensive**	**-4**
6 Extremely strong odour	**Sickly - unbearable**	**-5**

Intensity

0 No odour	1 Very faint odour	2 Faint odour	3 Distinct odour	4 Strong odour	5 Very strong odour	6 Extremely strong odour

Tone (examples. Note: tone may also be something pleasant like chocolate or fresh bread)

Fruity	Acidic	Rotten Veg	Inside dustbin	Damp/Musty	Wet Dog	Blocked drain	Cheesy	Sewage	Rotten eggs	Dead Rat

Offensiveness (Note: scale may also be positive if the odour is regarded as pleasant. 0 is neutral)

0 Neutral	-1 Bearable	-2 Unpleasant	-3 Offensive	-4 Very Offensive	-5 Sickly unbearable

APPENDIX 1-AR1 = COMPOST

		Odour Intensity 0 - 6	Odour Tone 0 to -5	Odour Risk L M H
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing**			
02 01	**wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**			
02 01 03	plant-tissue waste	3	-1	LOW
02 01 06	soiled animal bedding	3	-2	LOW
02 01 07	wastes from forestry	2	0	LOW
3	**Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard**			
03 01	**wastes from wood processing and the production of panels and furniture**			
03 01 01	waste bark and cork	2	0	LOW
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	2	0	LOW
03 03	**wastes from pulp, paper and cardboard production and processing**			
03 03 01	waste bark and wood	2	0	LOW
15	**Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified**			
15 01	**packaging (including separately collected municipal packaging waste)**			
15 01 01	paper and cardboard packaging	2	0	LOW
15 01 03	wooden packaging	2	0	LOW
15 01 09	textile packaging	2	0	LOW
17	**Construction and demolition wastes (including excavated soil from contaminated sites)**			
17 02	**wood, glass and plastic**			
17 02 01	wood	2	0	LOW
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**			
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**			
19 12 01	paper and cardboard	2	0	LOW
19 12 07	wood other than that mentioned in 19 12 06	2	0	LOW
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**			
20 02	**garden and park wastes (including cemetery waste)**			
20 02 01	biodegradable waste	3	-1	LOW
20 03	**other municipal wastes**			
20 03 02	waste from markets	3	-1	LOW

APPENDIX 1-AR2 = METALS

		Odour Intensity 0 - 6	Odour Tone 0 to -5	Odour Risk L M H
	Metals are low in volume and not retained on site for long			
	Metals are NOT treated at this site.	1	-1	LOW

D. J. Baldwin (Technical Director)
MCIWM CEnv. Tel: 01743 340630

APPENDIX 1-AR3 = WASTES FOR TRANSFER ONLY

01	Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals	Odour Intensity 0 - 6	Odour Tone 0 to -5	Odour Risk L M H
01 01	**wastes from mineral excavation**			
01 01 01	wastes from mineral metalliferous excavation	1	-1	LOW
01 01 02	wastes from mineral non-metalliferous excavation	1	-1	LOW
01 03	**wastes from physical and chemical processing of metalliferous minerals**			
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05	2	-2	LOW
01 03 09	red mud from alumina production other than the wastes mentioned in 01 03 07	2	-2	LOW
01 04	**wastes from physical and chemical processing of non-metalliferous minerals**			
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07	2	-1	LOW
01 04 09	waste sand and clays	2	-1	LOW
01 04 11	wastes from potash and rock salt processing other than those mentioned in 01 04 07	2	-1	LOW
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11	2	-1	LOW
01 04 13	wastes from stone cutting and sawing other than those mentioned in 01 04 07	2	-1	LOW
01 05	**drilling muds and other drilling wastes**			
01 05 04	freshwater drilling muds and wastes	2	-2	LOW
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing**			
02 01	**wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**			
02 01 03	plant-tissue waste	3	-1	LOW
02 01 04	waste plastics (except packaging)	2	-1	LOW
02 01 06	soiled animal bedding	3	-1	LOW
02 01 07	wastes from forestry	1	-1	LOW
02 01 10	waste metal	1	-1	LOW
02 02	**wastes from the preparation and processing of meat, fish and other foods of animal origin**			
02 02 01	- Sludges from washing and cleaning AN	3	-2	Med
02 02 02	- Animal-tissue waste AN	3	-3	High
02 02 03	materials unsuitable for consumption or processing	2	-1	LOW
02 02 04	- Sludges from onsite effluent treatment AN	2	-1	LOW
02 03	**wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**			
02 03 04	materials unsuitable for consumption or processing	2	-1	LOW
02 04	**wastes from sugar processing**			
02 04 01	soil from cleaning and washing beet	2	-2	LOW
02 04 02	off-specification calcium carbonate	2	-1	LOW
02 05	**wastes from the dairy products industry**			
02 05 01	materials unsuitable for consumption or processing	2	-1	LOW
02 06	**wastes from the baking and confectionery industry**			
02 06 01	materials unsuitable for consumption or processing	2	-1	LOW
02 06 02	wastes from preserving agents	2	-1	LOW
02 07	**wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**			
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials	2	-1	LOW
02 07 02	wastes from spirits distillation	2	-2	LOW
02 07 04	materials unsuitable for consumption or processing	2	-1	LOW
03	**Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard**			
03 01	**wastes from wood processing and the production of panels and furniture**			

03 01 01	waste bark and cork	1	-1	LOW
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	1	-1	LOW
03 03	**wastes from pulp, paper and cardboard production and processing**			
03 03 01	waste bark and wood	1	-1	LOW
03 03 05	- De-inking Sludges from paper recycling AN	2	-2	LOW
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard	1	-1	LOW
03 03 08	wastes from sorting of paper and cardboard destined for recycling	1	-1	LOW
03 03 09	- Lime mud waste AN	2	-2	LOW
03 03 10	- Fibre rejects fibre, filler and coating-sludges. AN	2	-2	LOW
03 03 11	- Sludges from onsite effluent treatment other than those mentioned in 03 03 10. AN	2	-2	LOW
04	**Wastes from the leather, fur and textile industries**			
04 01	**wastes from the leather and fur industry**			
04 01 08	waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium	1	-1	LOW
04 01 09	wastes from dressing and finishing	1	-1	LOW
04 02	**wastes from the textile industry**			
04 02 09	- Wastes from composite materials (impregnated textile, elastomer. Plastomer) AN	2	-2	LOW
04 02 10	- Organic matter from natural products (for example grease, wax). AN	2	-2	LOW
04 02 21	wastes from unprocessed textile fibres	2	-2	LOW
04 02 22	wastes from processed textile fibres	2	-2	LOW
06	**Wastes from inorganic chemical processes**			
06 09	**wastes from the MSFU of phosphorous chemicals and phosphorous chemical processes**			
06 09 02	phosphorous slag	2	-2	LOW
06 09 04	calcium-based reaction wastes other than those mentioned in 06 09 03	2	-2	LOW
06 11	**wastes from the manufacture of inorganic pigments and opacificiers**			
06 11 01	calcium-based reaction wastes from titanium dioxide production	2	-2	LOW
07	**Wastes from organic chemical processes**			
07 02	**wastes from the MFSU of plastics, synthetic rubber and man-made fibres**			
07 02 13	waste plastic	2	-2	
07 05				
07 05 14	- Solid wastes other than those mentioned in 07 05 13. MN	2	-2	LOW
09	**Wastes from the photographic industry**			
09 01	**wastes from the photographic industry**	1	-1	LOW
09 01 07	photographic film and paper containing silver or silver compounds	1	-1	LOW
09 01 08	photographic film and paper free of silver or silver compounds	1	-1	LOW
09 01 10	single-use cameras without batteries	1	-1	LOW
09 01 12	single-use cameras containing batteries other than those mentioned in 09 01 11	1	-1	LOW
10	**Wastes from thermal processes**			
10 01	**wastes from power stations and other combustion plants (except 19)**			
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)	2	-2	LOW
10 01 05	calcium-based reaction wastes from flue-gas desulphurisation in solid form	2	-2	LOW
10 01 07	- Calcium based reaction wastes from flue-gas desulphurisation in sludge form. AN	2	-2	LOW
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14	2	-2	LOW
10 01 19	wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18	2	-2	LOW
10 01 24	sands from fluidised beds	2	-2	LOW
10 02	**wastes from the iron and steel industry**			
10 02 01	wastes from the processing of slag	2	-2	LOW

10 02 02	unprocessed slag	2	-2	LOW
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07	2	-2	LOW
10 02 10	mill scales	2	-2	LOW
10 02 14	- Sludges and filter cakes from gas treatment other than those mentioned in 10 02 13 MN	2	-2	LOW
10 02 15	- Other sludges and filter cakes. MN	2	-2	LOW
10 03	**wastes from aluminium thermal metallurgy**			
10 03 02	anode scraps	2	-2	LOW
10 03 05	waste alumina	2	-2	LOW
10 03 16	skimmings other than those mentioned in 10 03 15	2	-2	LOW
10 03 18	carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17	2	-2	LOW
10 03 24	solid wastes from gas treatment other than those mentioned in 10 03 23	2	-2	LOW
10 03 26	- Sludges and filter cakes other than those mentioned in 10 03 25 MN	2	-2	LOW
10 03 28	wastes from cooling-water treatment other than those mentioned in 10 03 27	2	-2	LOW
10 03 30	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29	2	-2	LOW
10 04	**wastes from lead thermal metallurgy**			
10 04 10	wastes from cooling-water treatment other than those mentioned in 10 04 09			
10 05	**wastes from zinc thermal metallurgy**			
10 05 01	slags from primary and secondary production	2	-2	LOW
10 05 09	wastes from cooling-water treatment other than those mentioned in 10 05 08	2	-2	LOW
10 05 11	dross and skimmings other than those mentioned in 10 05 10	2	-2	LOW
10 06	**wastes from copper thermal metallurgy**			
10 06 01	slags from primary and secondary production	2	-2	LOW
10 06 02	dross and skimmings from primary and secondary production	2	-2	LOW
10 06 10	wastes from cooling-water treatment other than those mentioned in 10 06 09	2	-2	LOW
10 07	**wastes from silver, gold and platinum thermal metallurgy**			
10 07 01	slags from primary and secondary production	2	-2	LOW
10 07 02	dross and skimmings from primary and secondary production	2	-2	LOW
10 07 03	solid wastes from gas treatment	2	-2	LOW
10 07 08	wastes from cooling-water treatment other than those mentioned in 10 07 07	2	-2	LOW
10 08	**wastes from other non-ferrous thermal metallurgy**			
10 08 09	other slags	2	-2	LOW
10 08 11	dross and skimmings other than those mentioned in 10 08 10	2	-2	LOW
10 08 13	carbon-containing wastes from anode manufacture other than those mentioned in 10 08 12	2	-2	LOW
10 08 14	anode scrap	2	-2	LOW
10 08 18	- Sludges and filter cakes from flue-gas treatment other than those mentioned in 10 08 17	2	-2	LOW
10 08 20	wastes from cooling-water treatment other than those mentioned in 10 08 19	2	-2	LOW
10 09	**wastes from casting of ferrous pieces**	2	-2	LOW
10 09 03	furnace slag	2	-2	LOW
10 09 06	casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05	2	-2	LOW
10 09 08	casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07	2	-2	LOW
10 09 14	waste binders other than those mentioned in 10 09 13	2	-2	LOW
10 09 16	waste crack-indicating agent other than those mentioned in 10 09 15	2	-2	LOW
10 10	**wastes from casting of non-ferrous pieces**			
10 10 03	furnace slag	2	-2	LOW
10 10 06	casting cores and moulds which have not undergone pouring, other than those mentioned in 10 10 05	2	-2	LOW
10 10 08	casting cores and moulds which have undergone pouring, other than those mentioned in 10 10 07	2	-2	LOW

10 10 14	waste binders other than those mentioned in 10 10 13	2	-2	LOW
10 10 16	waste crack-indicating agent other than those mentioned in 10 10 15	2	-2	LOW
10 11	**wastes from manufacture of glass and glass products**			
10 11 03	waste glass-based fibrous materials	2	-2	LOW
10 11 10	waste preparation mixture before thermal processing, other than those mentioned in 10 11 09	2	-2	LOW
10 11 12	waste glass other than those mentioned in 10 11 11	2	-2	LOW
10 11 16	solid wastes from flue-gas treatment other than those mentioned in 10 11 15	2	-2	LOW
10 11 18	- Sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17.	2	-2	LOW
10 12	**wastes from manufacture of ceramic goods, bricks, tiles and construction products**			
10 12 01	waste preparation mixture before thermal processing	2	-2	LOW
10 12 05	- Sludges and filter cake from gas treatment. AN	2	-2	LOW
10 12 06	discarded moulds	2	-2	LOW
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)	2	-2	LOW
10 12 10	solid wastes from gas treatment other than those mentioned in 10 12 09	2	-2	LOW
10 12 12	wastes from glazing other than those mentioned in 10 12 11	2	-2	LOW
10 13	**wastes from manufacture of cement, lime and plaster and articles and products made from them**			
10 13 01	waste preparation mixture before thermal processing	2	-2	LOW
10 13 04	wastes from calcination and hydration of lime	2	-2	LOW
10 13 07	- sludges and filter cakes from gas treatment. AN	2	-2	LOW
10 13 10	wastes from asbestos-cement manufacture other than those mentioned in 10 13 09	2	-2	LOW
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10	2	-2	LOW
10 13 13	solid wastes from gas treatment other than those mentioned in 10 13 12	2	-2	LOW
10 13 14	- Waste concrete and concrete sludge . AN	2	-2	LOW
11	**Wastes from chemical surface treatment and coating of metals and other materials; non-ferrous hydro-metallurgy**			
11 01	**wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphatising, alkaline degreasing, anodising)**			
11 01 10	- Sludges and filter cakes other than those mentioned in 11 09 09. MN	2	-2	LOW
11 01 14	degreasing wastes other than those mentioned in 11 01 13	2	-2	LOW
11 02	**wastes from non-ferrous hydrometallurgical processes**			
11 02 03	wastes from the production of anodes for aqueous electrolytical processes	2	-2	LOW
11 02 06	wastes from copper hydrometallurgical processes other than those mentioned in 11 02 05	2	-2	LOW
11 05	**wastes from hot galvanising processes**			
11 05 01	hard zinc	2	-2	LOW
11 05 02	zinc ash	2	-2	LOW
12	**Wastes from shaping and physical and mechanical surface treatment of metals and plastics**			
12 01	**wastes from shaping and physical and mechanical surface treatment of metals and plastics**			
12 01 01	ferrous metal filings and turnings	1	-1	LOW
12 01 03	non-ferrous metal filings and turnings	1	-1	LOW
12 01 05	plastics shavings and turnings	1	-1	LOW
12 01 13	welding wastes	2	-2	LOW
12 01 17	waste blasting material other than those mentioned in 12 01 16	2	-2	LOW
12 01 21	spent grinding bodies and grinding materials other than those mentioned in 12 01 20	2	-2	LOW
15	**Waste packaging, absorbents, wiping cloths, filter**			

	materials and protective clothing not otherwise specified			
15 01	**packaging (including separately collected municipal packaging waste)**			
15 01 01	paper and cardboard packaging	1	-1	LOW
15 01 02	plastic packaging	1	-1	LOW
15 01 03	wooden packaging	1	-1	LOW
15 01 04	metallic packaging	1	-1	LOW
15 01 05	composite packaging	1	-1	LOW
15 01 06	mixed packaging	1	-1	LOW
15 01 07	glass packaging	1	-1	LOW
15 01 09	textile packaging	1	-1	LOW
15 02	**absorbents, filter materials, wiping cloths and protective clothing**			
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02			
16	**Wastes not otherwise specified in the list**			
16 01	**end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)**			
16 01 03	end-of-life tyres			
16 03	**off-specification batches and unused products**			
16 03 04	inorganic wastes other than those mentioned in 16 03 03	1	-1	LOW
16 03 06	organic wastes other than those mentioned in 16 03 05	1	-1	LOW
16 11	**waste linings and refractories**			
16 11 02	carbon-based linings and refractories from metallurgical processes others than those mentioned in 16 11 01	1	-1	LOW
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03	1	-1	LOW
16 11 06	linings and refractories from non-metallurgical processes others than those mentioned in 16 11 05	1	-1	LOW
17	**Construction and demolition wastes (including excavated soil from contaminated sites)**			
17 01	**concrete, bricks, tiles and ceramics**			
17 01 01	concrete	1	-1	LOW
17 01 02	bricks	1	-1	LOW
17 01 03	tiles and ceramics	1	-1	LOW
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	1	-1	LOW
17 02	**wood, glass and plastic**			
17 02 01	wood	1	-1	LOW
17 02 02	glass	1	-1	LOW
17 02 03	plastic	1	-1	LOW
17 03	**bituminous mixtures, coal tar and tarred products**			
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	1	-1	LOW
17 04	**metals (including their alloys)**			
17 04 01	copper, bronze, brass	1	-1	LOW
17 04 02	aluminium	1	-1	LOW
17 04 03	lead	1	-1	LOW
17 04 04	zinc	1	-1	LOW
17 04 05	iron and steel	1	-1	LOW
17 04 06	tin	1	-1	LOW
17 04 07	mixed metals	1	-1	LOW
17 04 11	cables other than those mentioned in 17 04 10	1	-1	LOW
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**			
17 05 04	soil and stones other than those mentioned in 17 05 03	1	-1	LOW
17 05 06	dredging spoil other than those mentioned in 17 05 05	2	-2	LOW
17 05 08	track ballast other than those mentioned in 17 05 07	2	-2	LOW
17 06	**insulation materials and asbestos-containing construction materials**			
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03	2	-2	LOW

17 08	**gypsum-based construction material**			
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01	2	-2	LOW
17 09	**other construction and demolition wastes**			
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	2	-2	LOW
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**			
19 01	**wastes from incineration or pyrolysis of waste**			
19 01 02	ferrous materials removed from bottom ash	2	-2	LOW
19 01 12	bottom ash and slag other than those mentioned in 19 01 11	2	-2	LOW
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17	2	-2	LOW
19 01 19	sands from fluidised beds	2	-2	LOW
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**			
19 02 03	premixed wastes composed only of non-hazardous wastes	1	-1	LOW
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09	1	-1	LOW
19 03	**stabilised/solidified wastes**			
19 03 05	- Stabilised wastes other than those mentioned in 19 03 04. AN	1	-1	LOW
19 03 07	-Solidified wastes other than those mentioned in 19 03 04. AN	1	-1	LOW
19 04	**vitrified waste and wastes from vitrification**			
19 04 01	vitrified waste			
19 05	**wastes from aerobic treatment of solid wastes**			
19 05 01	non-composted fraction of municipal and similar wastes	2	-2	LOW
19 05 02	non-composted fraction of animal and vegetable waste	2	-2	LOW
19 05 03	off-specification compost	2	-2	LOW
19 08	**wastes from waste water treatment plants not otherwise specified**			
19 08 01	- Screenings. AN	2	-2	LOW
19 08 05	sludges from treatment of urban waste water	2	-2	LOW
19 09	**wastes from the preparation of water intended for human consumption or water for industrial use**			
19 09 01	- Solid waste from primary filtration and screenings. AN	1	-1	LOW
19 09 04	- Spent activated carbon. AN	1	-1	LOW
19 10	**wastes from shredding of metal-containing wastes**			
19 10 01	- iron and steel waste. AN	1	-1	LOW
19 10 02	- Non- ferrous waste AN	1	-1	LOW
19 10 04	Fluff-light fraction and dust other than those mentioned in 19 10 03	2	-2	LOW
19 10 06	- other fractions other than those mentioned in 19 10 05. MN	2	-2	LOW
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**			
19 12 01	paper and cardboard	1	-1	LOW
19 12 02	ferrous metal	1	-1	LOW
19 12 03	non-ferrous metal	1	-1	LOW
19 12 04	plastic and rubber	1	-1	LOW
19 12 05	glass	1	-1	LOW
19 12 07	wood other than that mentioned in 19 12 06	1	-1	LOW
19 12 08	textiles	1	-1	LOW
19 12 09	minerals (for example sand, stones)	1	-1	LOW
19 12 10	- combustible waste (refused derived fuel).AN	1	-1	LOW
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11*	1	-1	LOW
19 13	**wastes from soil and groundwater remediation**			
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01	1	-1	LOW
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**			
20 01	**separately collected fractions (except 15 01)**			

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20 01 01	paper and cardboard	1	-1	LOW
20 01 02	glass	1	-1	LOW
20 01 08	biodegradable kitchen and canteen waste	1	-1	LOW
20 01 10	clothes	1	-1	LOW
20 01 11	textiles	1	-1	LOW
20 01 38	wood other than that mentioned in 20 01 37	1	-1	LOW
20 01 39	plastics	1	-1	LOW
20 01 40	metals	1	-1	LOW
20 01 41	wastes from chimney sweeping	1	-1	LOW
20 02	**garden and park wastes (including cemetery waste)**			
20 02 01	biodegradable waste	2	-2	LOW
20 02 02	soil and stones	1	-1	LOW
20 03	**other municipal wastes**			
20 03 01	mixed municipal waste	1	-1	LOW
20 03 02	waste from markets	2	-2	LOW
20 03 03	street-cleaning residues	2	-2	LOW
20 03 07	bulky waste	1	-1	LOW

APPENDIX 1-AR3-WEEES = WASTES WEEES

01	**Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals**	**Odour Intensity 0 - 6**	**Odour Tone 0 to -5**	**Odour Risk L M H**
09	**WASTES FROM THE PHOTOGRAPHIC INDUSTRY**			
09 01	wastes from the photographic industry	2	-2	LOW
09 01 11*	single-use cameras containing batteries included in 16 06 01, 16 06 02 or 16 06 03	2	-2	LOW
09 01 12	single-use cameras containing batteries other than those mentioned in 09 01 11	2	-2	LOW
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**			
15 01	packaging (including separately collected municipal packaging waste)			
15 01 06	mixed packaging	2	-2	LOW
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**			
16 02	wastes from electrical and electronic equipment			
16 02 09*	transformers and capacitors containing PCBs	2	-2	LOW
16 02 10*	discarded equipment containing or contaminated by PCBs other than those mentioned in 16 02 09	2	-2	LOW
16 02 11*	discarded equipment containing chlorofluorocarbons, hydrochlorofluorocarbons and hydrofluorocarbons	2	-2	LOW
16 02 12*	discarded equipment containing free asbestos	2	-2	LOW
16 02 13*	discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	2	-2	LOW
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02.13	2	-2	LOW
16 02 15*	hazardous components removed from removed from discarded equipment	2	-2	LOW
16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15	2	-2	LOW
16 06	batteries and accumulators			
16 06 01*	lead batteries	2	-2	LOW
16 06 02*	Ni-Cad batteries	1	-1	LOW
16 06 03*	mercury-containing batteries	2	-2	LOW
16 06 04	alkaline batteries (except 16 06 03)	1	-1	LOW
16 06 05	other batteries and accumulators	2	-2	LOW
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**			
20 01	separately collected fractions (except 15 01)			
20 01 21*	fluorescent tubes and other mercury-containing waste	1	-1	LOW
20 01 23*	discarded equipment containing chlorofluorocarbons	1	-1	LOW

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20 01 33*	Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries.	2	-2	LOW
20 01 34	Batteries and accumulators other than those mentioned in 20 01 33	2	-2	LOW
20 01 35*	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	2	-2	LOW
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	2	-2	LOW

APPENDIX 1-AR4= SOIL AND AGGREGATES

	Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals	**Odour Intensity 0 - 6**	**Odour Tone 0 to -5**	**Odour Risk L M H**
Soils	In general it is assessed that the waste soils may have a damp earthy odour and therefore could be deemed to rate a 2 for intensity; and their tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	2	-2	LOW
aggregates	In general it is assessed that the waste aggregates may have a damp earthy odour and therefore could be deemed to rate a 2 for intensity; and their tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	2	-2	LOW

APPENDIX 1-AR6= BIOMASS

		Odour Intensity 0 - 6	**Odour Tone 0 to -5**	**Odour Risk L M H**
Biomass	In general it is assessed that the Biomass may have a pine, woody odour and therefore could be deemed to rate a 2 for intensity; and their tone of the odour may be slightly acidic, and therefore a negative maximum of a -1 is determined.	2	-1	LOW
Wood drying	In general it is assessed that the wood drying may have a damp earthy odour and therefore could be deemed to rate a 2 for intensity; and the tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	2	-2	LOW
Paper drying	In general it is assessed that the paper drying may have a damp earthy odour and therefore could be deemed to rate a 2 for intensity; and the tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	2	-2	LOW

APPENDIX 1-AR7= CLINICAL WASTE

		Odour Intensity 0 - 6	**Odour Tone 0 to -5**	**Odour Risk L M H**
	The clinical waste will arrive, already sealed in the 'yellow' plastic sack bags. These are stored within traditional 4 wheeled lidded euro-bins. Though the materials may be mal-odorous; the assessment is based on the materials being so-bagged and containerised. As such this may rate a 2 for intensity; and the tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	2	-2	LOW

APPENDIX 1-AR8= HAZARDOUS WASTES

		Odour Intensity 0 - 6	**Odour Tone 0 to -5**	**Odour Risk L M H**
	The hazardous waste take various forms. These shall comprise very small quantities These are stored within primary containers lidded dolavs. Though the materials may be mal-odorous; the assessment is based on the materials being so containerised. As such this may rate a 2 for intensity; and the tone of the odour may be notable, and therefore a negative maximum of a -2 is determined.	1	-1	LOW
		1	-1	LOW

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APPENDIX 2. ODOUR MONITORING & COMPLAINT MANAGEMENT

Example odour reporting form (sniff testing)

The use of this form is not mandatory. The information may be recorded in any form.

You may need to carry out an assessment either to work out whether you are complying with your permit, or as a part of an investigation into a complaint.

You can use routine assessments to build up a picture of the impact the odour has on the surrounding environment over time. You can develop 'worst case' scenarios by doing assessments during adverse weather conditions or during particularly odorous cycles of an operation. Ideally, you should use the same methodology to follow up complaints.

Please note:

- Staff normally exposed to the odours may not be able to detect or reasonably judge the intensity of odours off-site. You might be better off using office staff or people who have not recently been working on the site to do this.
- Anyone who has a cold, sinusitis or a sore throat, is likely to underestimate the odours.
- To improve (or to check) data quality, you can get two people to do the test independently at the same time.
- Those doing the assessment should avoid strong food or drinks, including coffee, for at least half an hour beforehand. They should also avoid strongly scented toiletries and deodorisers in the vehicle used during the assessment.

Where you test will depend on:

- whether you are responding to a complaint;
- whether you are checking your state of compliance at sensitive receptors;
- whether you are trying to establish the source of an odour;
- wind direction.

The assessment may involve someone walking along a route that you have selected either because of these factors, or in response to the conditions they found when they got there. Another option is to choose fixed points so that you can evaluate the changing situation over several weeks or months. Or the test points may vary from test to test according to local conditions, which would help you identify worst case conditions.

You should also keep a note of any external activities (such as agricultural practices) that could be either be the source of the odour, contribute to the odour, or be a confounding factor. Remember that an odour will become diluted and may change character as this happens.

You should also take the factors given in H4 Section 5.2 Monitoring – Ambient Air into account.

Odour report form					Date
Time of test					
Location of test e.g. street name etc					
Weather conditions (dry, rain, fog, snow etc):					
Temperature (very warm, warm, mild, cold, or degrees if known)					
Wind strength (none, light, steady, strong, gusting) Use Beaufort scale if known					
Wind direction (e.g. from NE)					
Intensity (see below)					
Duration (of test)					
Constant or intermittent in this period or persistence					
What does it smell like?					
Receptor sensitivity (see below)					
Is the source evident?					
Any other comments or observations					

Sketch a plan of where the tests were taken, the potential source(s).

Intensity	**Receptor sensitivity where odour detected**
0 No odour 1 Very faint odour 2 Faint odour 3 Distinct odour 4 Strong odour 5 Very strong odour 6 Extremely strong odour Ref: German Standard VDI 3882, Part 14	Low (e.g footpath, road) Medium (e.g. industrial or commercial workplaces) High (e.g. housing, pub/hotel etc)

Odour Complaint Report Form

Time and date of complaint:	Name and address of complainant:
Telephone number of complainant:	

Date of odour:	
Time of odour:	
Location of odour, if not at above address:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (eg from NE):	
Complainant's description of odour: ○ What does it smell like?	
○ Intensity (see below):	
○ Duration (time):	
○ Constant or intermittent in this period:	
○ Does the complainant have any other comments about the odour?	
Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure):	
Any other relevant information:	
Do you accept that odour likely to be from your activities?	
What was happening on site at the time the odour occurred?	
Operating conditions at time the odour occurred (eg flow rate, pressure at inlet and pressure at outlet):	
Actions taken:	

Form completed by:	Date	Signed

Intensity

0 No odour
1 Very faint odour
2 Faint odour
3 Distinct odour
4 Strong odour
5 Very strong odour
6 Extremely strong odour

Odour Diary	Form version 110319	Sheet No
Name: Telephone Number:	Address:	

Date of odour:						
Time of odour:						
Location of odour, if not at above address (indoors, outside):						
Weather conditions (dry, rain, fog, snow etc):						
Temperature (very warm, warm, mild, cold or degrees if known):						
Wind strength (none, light, steady, strong, gusting):						
Wind direction (eg from NE):						
What does it smell like? How unpleasant is it? Do you consider this smell offensive?						
Intensity – How strong was it? (see below 1-5):						
How long did go on for? (time):						
Was it constant or intermittent in this period:						
What do believe the source/cause to be?						
Any actions taken or other comments:						

Intensity

0 No odour
1 Very faint odour
2 Faint odour
3 Distinct odour
4 Strong odour
5 Very strong odour
6 Extremely strong odour