



REPORT

Biffa Waste Services Ltd., Renwick Road Rail Hub
Environmental Permit Application, Odour Management Plan

Submitted to:

Biffa Waste Services Ltd

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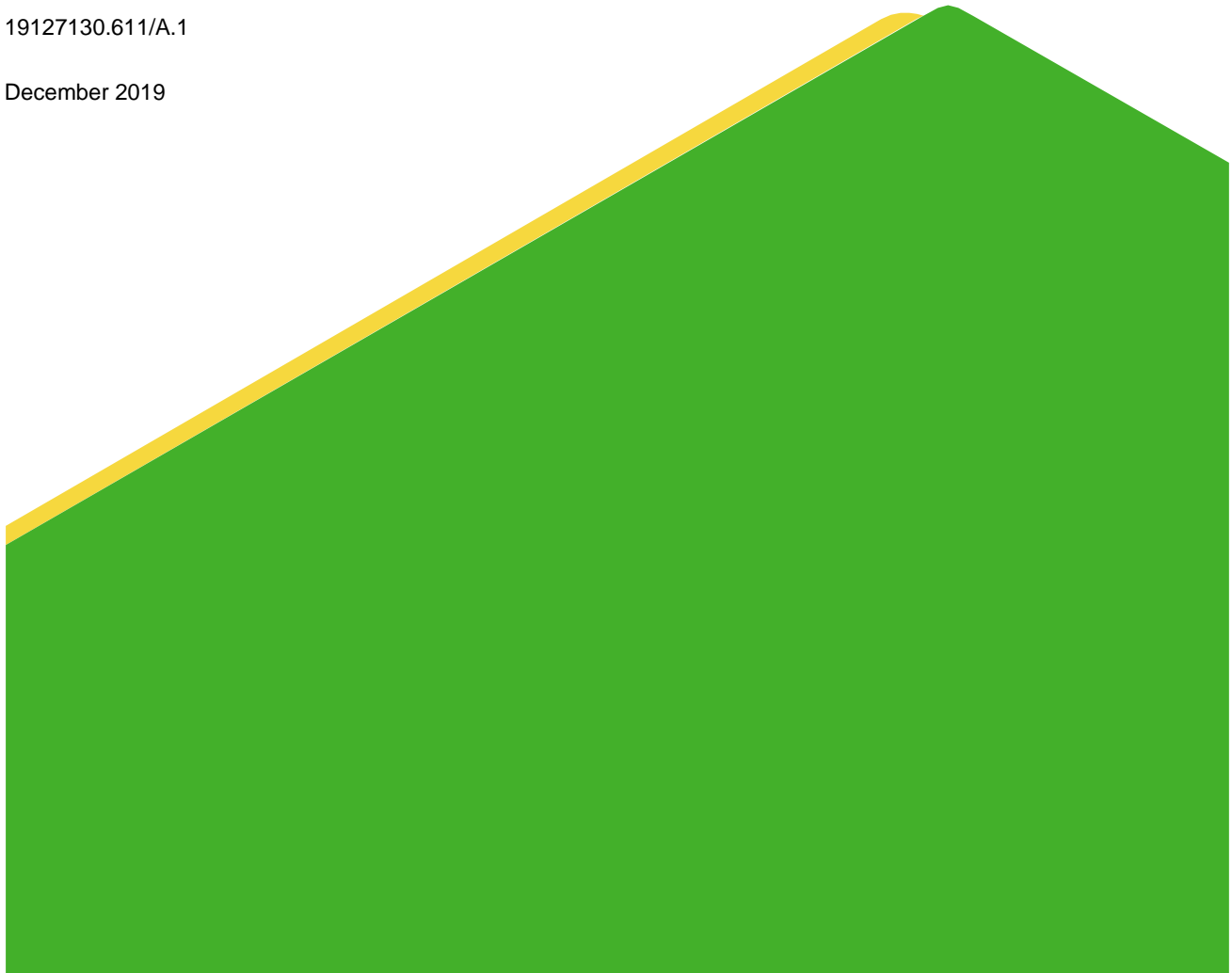
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1.0 INTRODUCTION

1.1 Report Context

Biffa Waste Services Ltd ('Biffa') has requested Golder Associates (UK) Ltd ('Golder') to prepare an Environmental Permit ('EP') Application ('Application') for a Waste Transfer Station at Renwick Road, Barking, East London ('Site') at NGR TQ 470 833. The location of the Site is shown on **Drawing 1 – Site Location Plan** in **Appendix 5**.

The objective of this Application is to obtain an EP which enables Biffa to accept up to 300,000 tonnes per year of selected non-hazardous wastes by road and transfer to rail (i.e. a 'Rail Hub'). This is a joint working agreement between Biffa and GB Railfreight ('GBRf') with Biffa being the permit holder and operator.

The information presented in this application accords with that approved by the Environment Agency ('EA') for Biffa's existing Rail Hub Waste Transfer Stations in Leeds and Manchester.

The Site will receive waste materials by road, then stockpile and then load onto rail wagons (for onward distribution) under an Environmental Permit. Wastes will comprise:

- Granular inert and non-hazardous materials delivered to the Site by HGV which will be placed into temporary stockpiles ('bays') prior to loading onto rail wagons for onward haulage for re-use, recovery or disposal at other suitably permitted sites; and
- Baled Refuse Derived Fuel ('RDF') in locked sea containers for temporary storage of those containers prior to loading the sea containers onto rail wagons for onward haulage for recovery or disposal at other suitably permitted sites.

The operations will be the subject of an Environmental Management Plan ('EMP') and Environment Permit ('EP'). The EMP will form part of the overarching Biffa Environmental Management System ('EMS'), referred to as an Integrated Management System ('IMS'), and relates specifically to Biffa's activities at the Renwick Road Waste Transfer Station. The EMP details the potential impacts that the activities may have on the environment, including the closest neighbours, and outlines measures in place to control, minimise and mitigate any potential environmental impacts. Information regarding operations management at the Site includes organisational structure and the roles and responsibilities of Biffa staff. Detailed Waste Acceptance Procedures (WAPs) are included in the EMP to control waste input so that only wastes which do not have the potential to result in unacceptable odorous emissions are accepted at the Site.

As part of the application, Biffa has taken the existing OMP for its Leeds site, which has been approved by the EA for Leeds, and has updated it to reflect the proposed operations and site-specific conditions at Renwick Road.

1.2 Objectives and Scope

The OMP is designed to assist Biffa in meeting the application requirements for its EP, and the company's own internal requirements for continual improvement. The principal objective of the OMP is to identify the operations at the Site which may have the potential to impact local receptors as a result of emissions of odour, and to outline the procedures to be followed to ensure that odour is managed at the Site and that odour nuisance does not arise as a result of the waste transfer operations taking place.

This OMP was written in line with Agency Horizontal Guidance *H4 Odour Management – How to Comply with your Environmental Permit* issued April 2011. The first step in the assessment of odour pollution according to the H4 Guidance is to consider the factors described by the acronym 'FIDOR':

- Frequency of detection;
- Intensity as perceived;
- Duration of exposure;
- Offensiveness; and
- Receptor sensitivity.

Frequency of detection, intensity as perceived, and duration of exposure are important observations recorded in the odour monitoring procedures for the Site and are detailed in the OMP. Offensiveness with regard to potential sources of odour from the proposed activities at the Site are also discussed in this OMP. Receptors and receptor sensitivity are discussed, below.

1.3 Site Location

The Site is located on Renwick Road, approximately 1.5 km north of the River Thames, and approximately 3 km southeast of Barking town centre. The Site is bounded by Renwick Road and some commercial units to the west, light industrial and commercial units of the Rippleside Commercial Estate to the north and east, and a railway line and third-party Waste Soil Hub to the south. There is a small brook immediately to the east of the Site before the railway line. The closest residential properties are located approximately 130 m to the south and southwest. Other residential receptors are located 300 m to the north and 600 m to the east. The area surrounding the Site is largely flat.

1.4 Sensitive Receptors

A desk study has been undertaken to identify the following sensitive receptors to potential odour emissions within 1 km of the Site:

- Ukrani Cash & Carry, industrial and commercial receptor, approximately 5 m north;
- BK Automotives, industrial and commercial receptor, approximately 5 m east;
- The Deli Café, industrial and commercial receptor, approximately 10 m north;
- Gima UK Ltd, industrial and commercial receptor, approximately 10 m north;
- Capital Karts, industrial and commercial receptor, approximately 20 m north;
- Alba Beds, industrial and commercial receptors, approximately 20 m north;
- A13 Steel, industrial and commercial receptor, approximately 40 m north;
- Time Cash & Carry, industrial and commercial receptor, approximately 40 m west;
- Global Engines & Gearboxes, industrial and commercial receptor, approximately 50 m west;
- Just Hire Catering Equipment & Furniture, industrial and commercial receptor, approximately 50 m west;
- Global Reconditioning UK, industrial and commercial receptor, approximately 50 m west;
- Global Engines & Gearboxes, industrial and commercial receptor, approximately 50 m west;
- Shearforce Security Services UK Ltd, industrial and commercial receptor, approximately 60 m northwest;
- Uneek Forwarding, industrial and commercial receptors, approximately 70 m northwest;
- RJ Coachworks, industrial and commercial receptors, approximately 90 m north;
- Buildbase Barking, industrial and commercial receptors, approximately 90 m north-northwest;

- Replacement Engines, industrial and commercial receptor, approximately 100 m north;
- Amber Bakery, industrial and commercial receptor, approximately 100 m north;
- USB International, industrial and commercial receptors, approximately 110 m north;
- The Ship and Shovel pub, community receptor, approximately 120 m north-northwest;
- Safestore Self Storage, industrial and commercial receptor, approximately 120 m north;
- Crouch Avenue, residential receptors, approximately 130 m south-southwest;
- Stern Close, residential receptors, approximately 130 m south;
- QP Online, industrial and commercial receptor, approximately 130 m north;
- Luggage Travel Bags, industrial and commercial receptors, approximately 140 m north;
- SBS Eclipse, industrial and commercial receptor, approximately 140 m north;
- Baboo Wholesale Meats Ltd, industrial and commercial receptor, approximately 140 m north;
- Al-Badia Halal Meat & Poultry, industrial and commercial receptor, approximately 140 m north;
- Enterprise Rent-a-Car, industrial and commercial receptors, approximately 150 m north;
- G&G Powder Coatings, industrial and commercial receptor, approximately 170 m north;
- SPAR/TEXACO Barking, industrial and commercial receptor, approximately 180 m north;
- Screwfix, industrial and commercial receptor, approximately 180 m northeast;
- F1 Tyres & MOT, industrial and commercial receptor, approximately 245 m northwest;
- Wivenhoe Road, residential receptors, approximately 250 m southwest;
- Arriva Bus Garage Barking, industrial and commercial receptor, approximately 280 m northwest;
- Krithia Road, Marne Road, Reginald Ellingworth Street, Maplestead Road, Kemmel Road residential receptors, approximately 300 m north-northwest;
- Goresbrook Road, residential receptors, approximately 380 m north;
- Monteagle Primary School, approximately 420 m north;
- Castle Green Childrens Nursery, approximately 450 m northeast;
- Newlands Park, community receptor, approximately 480 m southwest;
- Castle Green Leisure Centre, community receptor, approximately 490 m northeast;
- Barking Football Club Ground, community receptor, approximately 570 m northeast;
- Barking Rugby Union Club, community receptor, approximately 580 m northeast;
- Julia Gardens, residential receptors, approximately 600 m east;
- Ripple local nature reserve, approximately 630 m south;
- Scrattons ecopark and extension local nature reserve, approximately 640 m east;
- Scrattons Terrace, residential receptors, approximately 650 m east;
- Levine Gardens, residential receptors, approximately 690 m east;
- Rippleside Cemetery, community receptor, approximately 690 m northwest;

- The James Campbell Primary School, community receptor, approximately 880 m northeast;
- Barking Power Station, industrial and commercial receptor, approximately 900 m south-southwest; and
- Woodward Road, residential receptors, approximately 900 m north.

Weather conditions have the potential to affect the impact of odour emissions from the Site on receptors, e.g. the odour concentrations at receptors located down-wind of the Site are likely to be more than those located in cross- or up-wind directions. A wind rose for 2018 at London City Airport (considered to be reflective of conditions at the Site) is included as **Figure OMP1**. The wind rose indicates that the prevailing wind direction across the Site is from the west-southwest, east and south-southwest

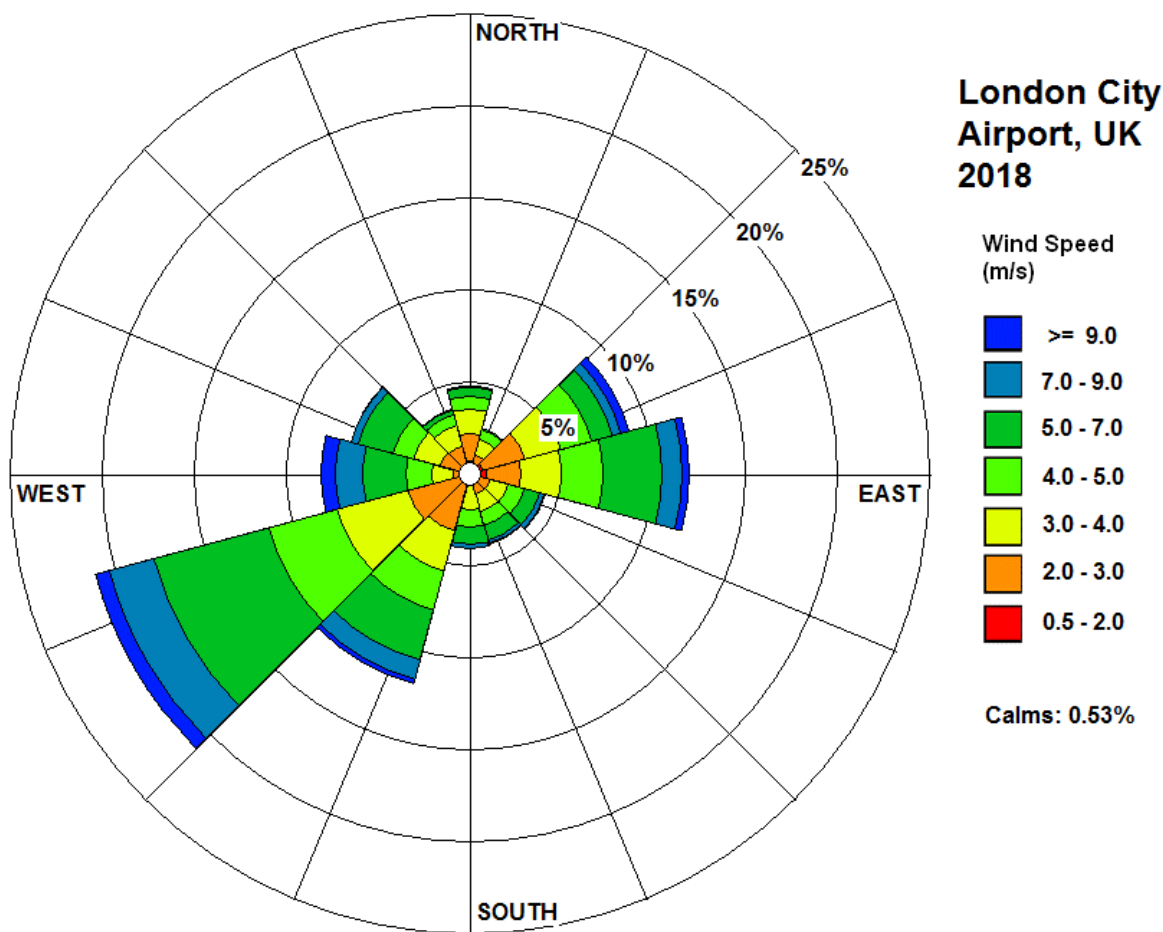


Figure OMP1: Windrose for London City Airport 2018

Distance is also a key factor in the dispersion of odours and therefore the key sensitive receptors have been identified as those located within 1 km of the Site. An assessment of the relative sensitivity of each identified receptor is given in **Table OMP1**. In general terms, relative risk was identified as ‘moderate’ up to 200 m and slight beyond this due to the nature of the operations (low odour risk). Receptors up to 500 m north east of the Site are identified as ‘moderate’ with the predominant south westerly wind direction.

Table OMP1: Sensitive Receptors

Receptor	Distance at closest point (m)	Direction	Receptor Type	Relative Risk of Odour Impact
Ukrani Cash & Carry	5	N	Industrial and commercial properties and users	Moderate
BK Automotives	5	E		Moderate
The Deli Café	10	N		Moderate
Gima UK Ltd	10	N		Moderate
Capital Karts	20	N		Moderate
Alba Beds	20	N		Moderate
A13 Steel	40	N		Moderate
Time Cash & Carry	40	W		Moderate
Global Engines & Gearboxes	50	W		Moderate
Just Hire Catering Equipment & Furniture	50	W		Moderate
Global Reconditioning UK	50	W		Moderate
Global Engines & Gearboxes	50	W		Moderate
Shearforce Security Services UK Ltd	60	NW		Moderate
Uneek Forwarding	70	NW		Moderate
RJ Coachworks	90	N		Moderate
Buildbase Barking	90	N-NW		Moderate
Replacement Engines	100	N		Moderate
Amber Bakery	100	N	Moderate	
USB International	110	N	Moderate	
The Ship and Shovel pub	120	NW	Moderate	
Safestore Self Storage	120	N	Moderate	
Crouch Avenue	130	S-SW	Residential	Moderate

Receptor	Distance at closest point (m)	Direction	Receptor Type	Relative Risk of Odour Impact
Stern Close	130	S	Residential	Moderate
QP Online	130	N	Industrial and commercial properties and users	Moderate
Luggage Travel Bags	140	N		Moderate
SBS Eclipse	149	N		Moderate
Baboo Wholesale Meats Ltd	140	N		Moderate
Al-Badia Halal Meat & Poultry	140	N		Moderate
Enterprise Rent-a-Car	150	N		Industrial and commercial properties and users
G&G Powder Coatings	170	N	Moderate	
SPAR/TEXACO Barking	180	N	Moderate	
Screwfix	180	NE	Moderate	
F1 Tyres & MOT	245	SW	Industrial and commercial properties and users	Slight
Wivenhoe Road	250	SW	Residential	Slight
Arriva Bus Garage Barking	280	NW	Industrial and commercial properties and users	Slight
Krithia Road, Maplestead Road, Reginald Ellingworth Street, Marne Road, Kemmel Road	300	N-NW	Residential	Slight
Goresbrook Road	380	N		Slight
Monteagle Primary School	420	N	Community	Slight
Castle Green Childrens Nursery	450	NE		Moderate
Newlands Park	480	SW		Slight
Castle Green Leisure Centre	490	NE		Moderate
Barking Football Club Ground	570	NE		Slight

Receptor	Distance at closest point (m)	Direction	Receptor Type	Relative Risk of Odour Impact
Barking Rugby Union Club	580	NE		Slight
Julia Gardens	610	E	Residential	Slight
Scrattons Terrace	650	E		Slight
Levine Gardens	690	E		Slight
Rippleside Cemetery	690	NW	Community	Slight
The James Campbell Primary School	880	NE		Slight
Barking Power Station	900	S-SW	Industrial and commercial properties and users	Slight
Woodward Road	900	N	Residential	Slight

2.0 ODOUR SOURCES AND PATHWAYS

2.1 Potential Sources of Odour

2.1.1 Granular Waste

The Site will accept only wastes specified in the EP application and Supporting Statement. Wastes accepted from transfer stations and accepted under EWC 19 12 12 comprise inert and non-combustible waste derived from the processing of construction and demolition wastes via segregated waste processing lines at sites that employ active waste segregation practices. Only wastes which do not have the potential to result in unacceptable odorous emissions will be accepted at the Site; however, consistent with the operation of any waste facility, operations at the Site have the potential to generate odorous emissions. The WAPs and their implementation are the primary odour management techniques in respect of the operation of the proposed Site. The waste acceptance procedures are detailed in the EMP.

Granular wastes will be stored in bays and only on concrete surfaces on Site. HGVs carrying granular materials will be directed into the tipping area to reverse into a tipping bay to discharge its load into the allocated bay. Site mobile plant including loading shovels will be used to manage the tipped material within the bays for temporary storage.

The Site will have a quarantine area for any unauthorised wastes which have been identified following tipping at the Site, the wastes will be stored here prior to removal from Site by road. Quarantined wastes will be removed by road as soon as possible. The method of removal and timescale for removal will be based on the nature of the unauthorised waste.

In the event that a train is cancelled, the method of removal and timescale for the removal of waste from the site will be determined based on the quantity of waste on site, the nature of the waste and the timescales associated with rescheduling a train. Only wastes which do not have the potential to result in unacceptable emissions such as odour will be accepted at the site. Wastes which could result in an unacceptable odour emission will comprise an unauthorised waste and in the unlikely event that they are accepted at the Site they will be managed as quarantined waste. The management of unauthorised waste is a matter for the Biffa Site Manager.

2.1.2 Refuse Derived Fuel

HGVs will also carry locked sea containers containing baled RDF. Such vehicles will be directed to an unloading area where site mobile plant i.e. reach stacker, will be used to lift the container from the HGV onto the ground or onto another sea container. Sea containers will be stored either in a designated bay(s) or at the eastern or western ends of the Site. A maximum of 48 full sea containers will be stored in an orderly fashion on the Site at any one time and will be stacked no more than three containers high.

2.1.3 Assessment

In assessing the potential level of odour emissions, the factors described by the acronym 'FIDOR' have been considered. Offensiveness is considered below with regards to the waste types to be accepted at the Site and the H4 Guidance on offensiveness. The H4 Guidance presents the following *examples* of the most offensive and moderately offensive processes for odour emissions:

Most offensive:

- Processes involving decaying animal or fish remains;
- Processes involving septic effluent or sludge; and
- Biological landfill odours.

Moderately offensive:

- Intensive livestock rearing;
- Fat frying (food processing);
- Sugar beet processing; and
- Well aerated green waste composting.

None of the wastes to be accepted at the Site are considered to fall under the 'most offensive' or 'moderately offensive' categories.

All RDF waste shall arrive, be stored and be exported from the Site in locked sea containers. To summarise, it is therefore only in the unlikely event that potentially odorous granular waste loads are accepted at the Site, that the following activities have the potential to lead to odorous emissions:

- The release of odour as waste is back-tipped from HGVs into the bays at the Site;
- Sorting of potentially odorous wastes by mobile plant;
- The release of odour from potentially odorous wastes stockpiled in bays; and
- The release of odour during loading of potentially odorous stockpiled wastes onto vehicles/trains for transfer off Site.
- Vehicles/trains leaving the Site in the unlikely event that they are transporting potentially odorous wastes;

The management and monitoring techniques to be in place at the Site to prevent and minimise odour are discussed in this OMP.

2.2 Odour Release Pathways

The aim of this OMP is to control odour generation at the Site such that local receptors do not experience significant odours. The transfer of odours off-site and towards local residential and commercial properties occurs through release to air and subsequent atmospheric dispersal of the emissions in air. The extent to which odour is detectable at receptor locations depends on a number of factors including:

- The nature and concentration of the odorous components at the emission source;
- Wind speed and wind direction;
- Dilution and dispersion of the odorous components as they are transported by the wind; and
- The location of the receptors in relation to the emission source.

A wind rose for 2018 at London City Airport (considered to be reflective of conditions at the Site) is included as **Figure OMP1**. The wind rose indicates that the prevailing wind direction across the Site is from the west-southwest, east and south-southwest. A weather station will be installed on Site when operations commence.

A number of sensitive receptors are located downwind of the Site under prevailing wind conditions and therefore measures will be put in place to control fugitive odour releases to atmosphere.

3.0 ODOUR RISK ASSESSMENT

An odour risk assessment for the Site is presented below as **Table OMP2**.

Table OMP2: Odour Source Risk Assessment

Odour Source	Material	Pathway	Main Receptor(s)	Likelihood	Control Measures in Place	Residual Likelihood	Odour Emission Action Plan	Responsible Person
Waste materials in bays/stockpiles awaiting transfer by rail	Accepted granular wastes	Air transport then inhalation	Identified receptors around the Site (see Section 1.4)	Low	Strict material management controls will be put in place to restrict the waste types and quantities accepted by the Site and to limit the residence times that it is stored. Any other waste type will be rejected, or if identified following tipping, it will be quarantined for removal from the Site.	Very Low	<p>If a significant abnormal odour occurs internally the material will be removed and disposed of and the storage area thoroughly cleaned. Any odorous materials will be removed for disposal.</p> <p>Whilst this is underway, daily olfactory testing will be undertaken to monitor the resultant odour release from the Site. In the event that an unacceptable odour emission release cannot be contained, Site activities will cease until the control measures have been successfully actioned and the odour has been removed.</p>	Biffa Site Manager
Baled RDF in bales in sea containers awaiting transfer by rail	Accepted RDF EWC 13 12 10			Medium	Baled RDF shall be delivered, stored and loaded to rail in locked sea containers. No RDF shall be stored in loose stockpiles or directly in bays. Containers may be opened by the Site Manager and his staff for inspection purposes, but shall be locked at all other times	Very Low		
Waste material in Quarantine awaiting transfer by road	Unauthorised waste			Medium	Waste is quarantined if it is deemed unauthorised by the Site following tipping. Quarantined waste is to be removed by road as soon as possible.	Low		
Floor of Storage Areas	Waste that has been spilt/fallen on the floor			Low	Regular inspection and cleaning. Management controls implemented through painted lines to guide tipping to minimise spillage.	Very Low		

4.0 MANAGEMENT RESPONSIBILITIES

The Biffa Site Manager will have overall responsibility for odour management at the Site. Their role includes the overall control of operations at the Site and maintenance of resources to support the work of Biffa staff working on Site. The Site Manager's overall responsibilities as outlined in the EMP (which includes the OMP) are as follows:

- Implementing the EMP (which includes the OMP) and compliance with the EP;
- Reviewing and amending the EMP (which includes the OMP) to ensure the appropriate operations at the Site and compliance with the EP;
- Providing the necessary resources for implementing the EMP (which includes the OMP) and complying with the EP;
- Monitoring and managing day-to-day implementation of the EMP (which includes the OMP) and compliance with the EP; and
- Setting and communicating responsibilities to all staff on Site.

It is recognised that all employees have a responsibility to maintain odour control; and as such odour minimisation training is provided to all relevant employees as part of overall site training and staff competence as detailed in the EMP.

5.0 ODOUR CONTROL MEASURES

An Odour Risk Assessment for the Site has been provided above and details controls that are in place to manage odour at the Site. The following sections detail procedures on the following:

- Operational Controls;
- Action Plan and Routine Contingency Measures;
- Emergency Conditions; and
- Olfactory Monitoring Programme and Complaints Response.

5.1 Operational Controls

Based on the waste acceptance controls that will be in place at the Site, it is considered unlikely that the operations undertaken at the Site will result in odour beyond the Site boundary; however, Biffa will implement a number of measures to control and monitor odour at the Site as a matter of good practice.

The H4 Guidance states under the heading 'Primary Control Measures – Source materials':

"Understanding the nature and extent of the stock of odorous materials held on site is key to recognising and exploiting control opportunities"

The H4 Guidance states under the heading 'Primary Control Measures – General':

"The best OMPs will include a number of simple measures which each make a significant contribution to the overall objectives. OMPs which rely on single measures, such as containment and abatement systems, can be vulnerable to minor failures and may not provide the most cost effective solution"

The primary control measure to be employed at the Site in terms of odour will be waste acceptance procedures and the management of potentially odorous materials at the Site. Waste will be subject to pre-acceptance checks and acceptance checking. Malodorous wastes are not to be accepted at the Site, and in the event that they are delivered to the Site, they will be rejected. If it is determined after acceptance that waste is malodorous, the waste will be quarantined before removal from the Site to a suitably permitted facility. If it is not possible to remove quarantined waste by the end of the working day, the quarantined waste will be stored such that it will not result in any unacceptable emissions. The method of removal and timescale for removal will be based on the nature of the unauthorised waste and will be determined by the Biffa Site Manager.

Waste material will be stockpiled no higher than 0.5 m below the top of the bay walls to minimise the risk of over-spillage onto the concrete surface, though waste material within the bay and away from the bay walls may be stockpiled above this height. No wastes will be tipped or stored within 1 m of the edge of the concrete surface or kerb. Restricting the extent of the storage in this way minimises the risk of spillage outside of the concrete surfaces. Limits will be identified by painted lines on the concrete surface, 1 m from the kerb around the perimeter. The bays will be managed and loading rotated to ensure the minimum residence time for any waste. Bays will be regularly fully empty. Any waste which may be spilled during the rail loading operations will be cleaned up as soon as the train departs the Site, and at the latest by the end of the working day. A road sweeper will be used on Site to sweep the areas of hardstanding and across the embedded track. Sweepings will be returned to the tipping bays. There will be room for 'person access' between the back of the bays and the kerb boundary, allowing dust/spill to be manually swept from the area.

Although only wastes which do not have the potential to result in unacceptable odorous emissions will be accepted at the Site, as a matter of good practice strict material management controls for waste coded EWC 19 12 12 will be implemented at the site. Material Management Spreadsheets will be used to control the quantity of all wastes and especially 19 12 12 wastes stored and loaded into rail wagons, and the time over which the 19 12 12 waste will be stored at the site. All wastes will be loaded on a 'first in, first out' basis. Each Material Management Spreadsheet will cover one week of operation from Monday to Friday. As a minimum, each storage bay will be emptied typically on a weekly basis. In particular, the quantity of 19 12 12 waste that can be accepted to site in any week will be restricted to the quantity of 19 12 12 waste which will be removed from the site in that week.

Baled RDF shall be delivered, stored and loaded to rail in locked sea containers. No RDF shall be stored in loose stockpiles or directly in bays. Containers may be opened by the Site Manager and his staff for inspection purposes, but shall be locked at all other times

In the event that a train is cancelled, the method of removal and timescale for the removal of waste from the site will be determined based on the quantity of waste on site, the nature of the waste and the timescales associated with rescheduling a train. Only wastes which do not have the potential to result in unacceptable emissions such as odour will be accepted at the site. Wastes which could result in an unacceptable odour emission will comprise an unauthorised waste and in the unlikely event that they are accepted at the Site they will be managed as quarantined waste. The management of unauthorised waste is a matter for the Biffa Site Manager.

5.2 Action Plan and Routine Contingency Measures

The odour risk assessment presented as Table OMP3 details measures that will be taken if a significant abnormal odour occurs. Following the identification of the odour on Site, the following action plan will be instigated:

- Investigate the odour release incident to establish the cause;
- If the odour source is on-Site:
 - Remove the odour source from the Site (as soon as is possible);
 - Thoroughly clean the source area to remove residual waste which could lead to further odour generation;
 - Complete on and off-Site monitoring (sniff test) to confirm that odour is no longer being generated from the Site; and
 - When odour is no longer detected continue with the Site operations as normal.
- If the odour source is in an external area:
 - Identify the odour source which may include exiting the Site to observe local activities and conditions; and
 - Record the incident including date, time, and weather conditions.

The aim of this action plan is to minimise exposure or annoyance effects of any odour incidents which may due, or may be suspected to be due, to the operations undertaken on Site, and to take a proactive role in resolving any issues.

5.3 Emergency Conditions

There is the potential for emergency conditions to occur which could lead to an odour release. Potential emergency conditions and ways in which they would be mitigated are as follows:

- Waste spill e.g. HGV or Site mobile plant operative accidentally spilling large volume of waste outside of the designated tipping area or rail wagons. This could lead to a fugitive odour release and cause other Site issues such as obstructions to site road and rail traffic.

Action: Spill to be immediately cleaned up to prevent the odour becoming a significant release, and to return the Site to normal operations as soon as is possible.

- Fire e.g. fire in site reception area or stored RDF:

Action: Cease activities (if safe to do so) and evacuate the Site. Alert emergency services and follow instructions. When safe to return to the Site and as appropriate, undertake full clean down and thoroughly check the systems for fire damage. Once the Site are returned to fully operational state, commence operations.

5.4 Olfactory Monitoring and Complaints Response

The Biffa Site Manager is responsible for implementing an appropriate monitoring regime for odour measurement. As part of this, Biffa will undertake daily olfactory monitoring ('sniff testing') at the Site boundary and downwind of the waste operations, and the results will be recorded in the Site Diary or recorded electronically.

Daily olfactory monitoring is considered to be the most effective method of detecting odorous emissions throughout the working day, therefore facilitating prompt assessment of such emissions and the appropriate implementation of control measures as quickly as possible. Given the number of receptors close to the Site boundary, the Site boundary is considered the compliance point in respect of unacceptable emissions of odour. Any problem that is observed will be reported to the Site Manager, who will hold responsibility for investigation procedures and implementation of actions to resolve the issue. The results of any further monitoring undertaken

as a result of any potential issues relating to odour identified during daily olfactory monitoring will be recorded using an odour reporting form. An example form has been presented in **Annex A** which uses the template presented in the H4 Guidance.

All Site staff will be trained to identify significant odorous emissions and to implement appropriate corrective actions where necessary. A record of staff training will be held on Site. A record of corrective actions taken will be recorded in the Site Diary/Log.

In the event that unacceptable odour emissions are identified from the Site during daily olfactory monitoring or a complaint is received in respect of odour, then immediate action will be taken to investigate the odour, and where necessary, action will be taken to correct the issue in accordance with the Odour Action Plan (**Annex B**). A record of any complaints received, and the corrective actions taken will be recorded electronically.

The Environment Agency will be notified in accordance with the EP following the detection of:

- Any malfunction, breakdown or failure of equipment or techniques, accident or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution;
- The breach of a specified limit in the EP; and
- Any significant adverse environmental effects.

The notification process, which includes controls and emissions relating to odour, will be made by the Biffa Site Manager (or appointed nominee) using the Notification Form expected to be presented in the EP. A record of the events leading to the submission of the notification, the information included in the notification, and the corrective actions taken will be included in the Site Diary.

6.0 REPORTING

6.1 Making and Submission of Odour Management Records

6.1.1 Olfactory Monitoring

Daily olfactory monitoring records are kept in the Site Diary held by the Site Manager. Records will be made available to the Environment Agency upon request.

6.2 Review of Odour Management Plan

The OMP and the results of qualitative odour monitoring will be reviewed periodically and at least annually to facilitate the review and assessment of operational activities. The review will be carried out in conjunction with a review of meteorological data that are available and the Site operations that took place over the monitoring period, in conjunction with any complaints regarding odour emissions that may have been received. The review will inform changes in the documented procedures where necessary.

A copy of any additional procedures which are prepared further to the review will be appended to the OMP.

Signature Page

Golder Associates (UK) Ltd



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SW/CM/pw

Date: 20 December 2019

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ANNEX OMP A

Odour Reporting Form

Annex A – Odour Reporting 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 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	Receptor sensitivity Low (e.g footpath, road) Medium (e.g. industrial or commercial workplaces) High (e.g. housing, pub/hotel etc)
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ANNEX OMP B

Odour Action Plan

Annex B - Odour Action Plan

1. Introduction

- a) This Odour Action Plan will be implemented in the event that:
- i) There is an unacceptable odour (minimum intensity 3 on the Odour Report Form) recorded on the site by Biffa during the daily olfactory monitoring; or
 - ii) An odour potentially attributable to the site operations is recorded off site or a complaint is received.

The timescale for implementation of the Odour Action Plan will vary depending on the circumstances under which it is implemented. If an unacceptable odour is observed by site personnel there will be no delay in implementing the Action Plan, whereas a complaint may be received by Biffa a number of hours or even days after the activity that may have contributed to the complaint took place. In the latter case, investigation of the complaint will be based on a review of the data and observations recorded at the Site corresponding to the time at which the complainant observed the event.

2. Action Plan

- a) In the event that an unacceptable odour (above minimum intensity 3 on the Odour Report Form) is observed by Site personnel during the daily olfactory monitoring, the event will be investigated immediately to determine the source as follows:
- Determine from the weather conditions (as recorded on the Odour Report Form) the wind speed and direction.
 - Review the location of the unacceptable odour at the Site and review the waste types that are being accepted and handled at the Site on that day.
 - Identify whether there are any other activities being undertaken at locations other than the Site and estimate the extent to which such other activities may contribute to the odour observed. This will include circumstances where odour may be transported across and/or over the site from external sources.
 - Repeat the odour monitoring downwind of the initial monitoring point moving towards the site boundary giving consideration to the location of the off-site receptors.
 - If the odour is unacceptable at the Site boundary, and the wind direction is from the Site towards the off-site receptors, and no other potential external sources of odour are identified in the vicinity of the Site actions, the following actions will be taken to investigate and reduce the source of the odour including where relevant:
 - Ceasing temporarily an activity that may be giving rise to odour.
 - Relocation if practicable of a waste pile or portion of a waste pile to a location which is not close to the site boundary or which is not upwind of off-site receptors.
 - Covering the surface of a waste pile or portion of a waste pile with a suitable cover material (such as non-odorous waste or a tarpaulin) to minimise the release of odorous emissions.
 - The use of de-odourising sprays having regard to the proximity of sensitive receptors.
 - Removal of the waste from the Site as soon as possible and in accordance with the EMP.
 - The details of the actions taken will be recorded on the Odour Report Form.

- b) In the event that an odour potentially attributable to the site operations is recorded off-site, or a complaint in respect of odour received from the Environment Agency, Environmental Health Officer or a member of the public, an investigation will be undertaken immediately to determine the source as follows:
- Identify from the Site Diary what activities were being undertaken at the time at which the recorded odour/complaint event occurred and in which location at the Site and review the waste types that were accepted and handled at the Site on that day.
 - Review the weather data recorded on the Odour Reporting Form during the daily olfactory monitoring on the day of the recorded odour/complaint to determine whether the odour emissions are potentially a result of the operations at the Site.
 - Give consideration to the wind direction identified by the weather data to review whether on Site activities or any other activities being undertaken at locations other than the Site may have contributed to the odour observed including circumstances where odour may have been transported across and/or over the site from the external sources.
 - If it is established that the odour emissions were most likely attributable to activities being undertaken at the Site, as necessary review the relevant operational procedures and implement improvements and provide additional training to site personnel and third-party contractors to improve the control of future emissions.
 - If the source of the odour that gave rise to the recorded odour/complaint remains on site carry out the actions identified in Paragraph 2.1 of the Action Plan.

The action taken will be communicated to the Environment Agency or Environmental Health Officer as appropriate. The nature of the recorded odour/complaint, the findings of the investigation and the action taken will be recorded using the Odour Complaint Form.



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