



**YORWASTE LTD**

**WASTE WOOD RECYCLING FACILITY**

# **DUST & PARTICULATE** **EMISSION MANAGEMENT** **PLAN**

OPERATOR:	Yorwaste Limited Kiplin Hall Wood Recycling Facility Kiplin, Richmond, North Yorkshire, DL10 6AT
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PREPARED BY:

WISER Environment Ltd 11 Manor Mews Bridge Street St Ives Cambridgeshire PE27 5UW  Tel: 01480 462232 Fax: 01480 465333  info@wisergroup.co.uk www.wiserenvironment.co.uk	 The logo for WISER ENVIRONMENT, featuring the word "WISER" in large blue letters with an orange swoosh above it, and the word "ENVIRONMENT" in smaller orange letters below it.
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## **DRAWINGS**

Sensitive Receptors Plan                      K257.2~20~002                      April 2017

## **APPENDICES**

Appendix A	Proposed Wood Processing Site Design KIP-DE00-Y1610-001A	Rev. 1	April 2017
Appendix B	Waste Acceptance Procedure EWP L02.01		April 2017

## **TABLES**

Table 1	Summary Of Sensitive Receptors
Table 2	Examples of Permitted Waste Types, Storage and End Use
Table 3	Source-Pathway-Receptor Routes



## REVISION HISTORY

REFERENCE	V	DATE	AUTHOR	COMMENTS
K257.2~09~006	1	18 <sup>th</sup> July 2017	SS	Issued to EA to

## QUALITY CONTROL

ACTION	NAME	DATE	SIGNATURE
PREPARED	S STEPHENSON	10/07/2017	
CHECKED	G OUTRIDGE	14/07/2017	
APPROVED	G OUTRIDGE	14/07/2017	



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## 1 INTRODUCTION

This Dust and Particulate Emission Management Plan has been prepared by WISER Environment Ltd on behalf of the operator, Yorwaste Limited, as a supporting document to the Bespoke Permit Application for a Wood Recycling Facility at Kiplin Hall, Kiplin, Richmond, North Yorkshire, DL10 6AT (National Grid Reference NGR SE 27088 97651).

Yorwaste Ltd has applied for a bespoke environmental permit to permit the acceptance, storage, treatment and transfer of up to 30,000 tonnes per annum of waste wood for recycling and recovery. See Section 2.2.1 for further details on the permitted wastes to be accepted at the site.

The Dust and Particulate Emission Management Plan (hereafter DMP) has been produced in response to a Technical Information Request made by the Environment Agency on the 30<sup>th</sup> June 2017 which requests the submission of a standalone Dust Management Plan detailing operations, responsibilities, monitoring measures and complaints procedures to be implemented at the site. The request from the Environment Agency is due to the volume of waste wood (unprocessed and processed) to be stored on site at any one time and the perceived increased risk of fugitive emissions.

This DMP has been produced in accordance with the Environment Agency's (hereafter EA) Dust & Particulate Emission Management Plan Template and GOV.UK Guidance '*Control and Monitor emissions for your environmental permit*' (published 1<sup>st</sup> February 2016) and relates solely to the waste wood accepted, stored and treated at the site which may produce fugitive emissions.

The DMP identifies potential sources of dust emissions and the associated potential impacts, and details the measures to be implemented at the site to reduce dust and particulate emissions.

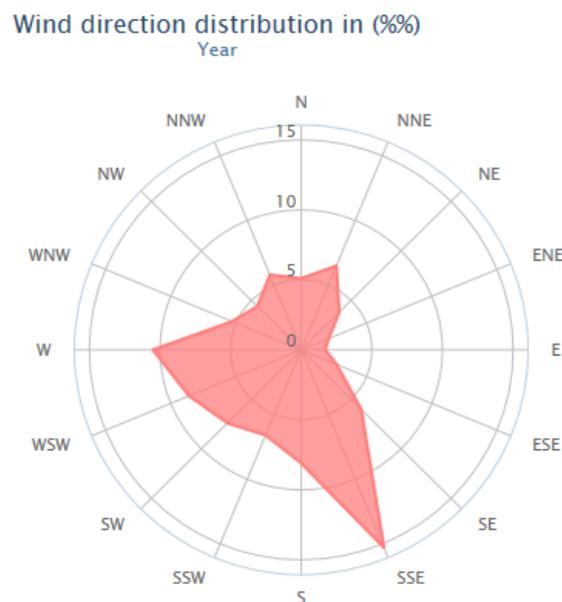


The site is located in the Hambleton District and is not identified on the DEFRA AQMA interactive map<sup>1</sup> as falling within an Air Quality Management Area.

This document is a standalone document and forms part of the site's Environmental Management System (EMS) and will be reviewed on an annual basis, following changes to operations or infrastructure which may increase the potential for dust emissions and in the event of any dust-related incidents or complaints.

Data taken from the closest weather station (RAF Leeming, approximately 5.9 miles to the south of the site) indicates that the prevailing winds are predominantly from the South-southeast. (Figure 1.)

**Figure 1. Wind rose indicating prevailing wind directions**



Data taken from [www.windfinder.com](http://www.windfinder.com)

## 1.1 SENSITIVE RECEPTORS

All sensitive receptors with a 1km radius of the site are identified in the Site Receptors Plan (K257.2~20~002).

<sup>1</sup> <http://uk-air.defra.gov.uk/aqma/>



Predicted exposure risk levels have been determined based on a qualitative assessment which assess the likelihood of exposure to dust emissions based on the receptors proximity from the site and the location of the sensitive receptors in regards to the prevailing wind direction (Figure 1 above).

A summary of the receptors identified on the Sensitive Receptors Plan (K257.2~20~002) along with overall exposure levels and main receptor features can be found in Table 1 below. The overall risk level has been determined based on dominant risk level considered for each receptor within the group.

There are no other dust or particulate emitting operators within 500m of the site which may impact also impact the sensitive receptors detailed below and on the Sensitive Receptors Plan (K257.2~20~002).

**TABLE 1: SUMMARY OF SENSITIVE RECEPTORS**

	<b>HUMAN RECEPTORS</b>
	<b>FACTORIES AND OTHER BUSINESSES</b>
	There is one business identified within a 1km of the site boundary. This receptor is not in close proximity to the site or in the path of the prevailing wind direction. The overall exposure risk for this group of receptors is considered <b>VERY LOW</b> .
	<b>INHABITANTS OF RESIDENTIAL AREAS</b>
	<p>The site is located within a predominantly rural setting. The closest residential area is over 1km from the site boundary. The closest residential receptors are the dozen residential dwellings located along the B6271 to the north west of the site boundary.</p> <p>Due to the lack of sensitive receptors within close proximity and the protection provided by the earth bunds and screening vegetation the overall exposure risk is considered <b>LOW</b>.</p>
	<b>HERITAGE SITES</b> (e.g. Scheduled Ancient Monuments, Battlefields, Historic buildings)
	<p>There are ten Grade II listed structures within 1km of the site, the closest is Kiplin Hall Gateway and Lodge located 63m to the north west off the B6271.</p> <p>The overall exposure level of this receptor is considered <b>LOW</b> based on the level of protection provided by the earth bunds and screening vegetation from the prevailing wind.</p>



<b>RECREATIONAL AREAS</b>	
	<p>There is 1 recreational area identified within 1km of the site. The record relates to the Kiplin Hall Estate approximately 42m to the east.</p> <p>The overall exposure level of this receptor is considered <b>LOW</b> based on the level of protection provided by the earth bunds and heavy vegetation from the prevailing wind.</p>
<b>SENSITIVE PUBLIC USE</b>	
	<p>There are 2 receptors identified as being 'sensitive public uses' within 1km of the site boundary. The closest receptor is the Kiplin Eco Lodge Park located to the north east of the site.</p> <p>The overall exposure level of this receptor is considered <b>LOW</b> based on the level of protection provided by the earth bunds and heavy vegetation from the prevailing wind.</p>
<b>ARABLE FARMLAND AND ALLOTMENTS</b>	
	<p>The site is located within a predominantly rural setting. Surrounding agricultural areas consist of arable farmland and grassland.</p> <p>Due to a lack of direct pathways for dust and particulate emissions to the receptors, the limited potential impacts from airborne emissions, the overall exposure level is <b>LOW</b>.</p>
<b>CRITICAL INFRASTRUCTURE RECEPTORS</b>	
<b>PUBLIC RIGHTS OF WAY</b>	
	<p>There are 1 bridleway within 1km of the site boundary, this bridleway follows the field boundaries to the north west of the site across the B6271 and is not directly within the path of the prevailing wind therefore the overall exposure level is considered <b>LOW</b>.</p>
<b>ROADS AND RAILWAYS</b>	
	<p>There are several roads within a 1km radius of the site, the closest being the B6271 located to the north of the site. All other roads are either access tracks or provide access to rural residential properties.</p> <p>Due to a lack of direct pathways for dust and particle emissions to the receptors, the limited potential impacts from airborne emissions, the overall exposure level is <b>LOW</b>.</p>
<b>ENVIRONMENTAL RECEPTORS</b>	
<b>SURFACE WATER</b>	
	<p>There are a number of surface water features within a 1km radius of the site. The closest is Bolton Beck located to the north of the site.</p> <p>Due to the controls in place there are no direct pathways to surface water features for dust and particle emissions. Therefore the overall exposure level for the surface water receptors is considered <b>LOW</b>.</p>



	<b>PROTECTED NATURE CONSERVATION SITES AND ANCIENT WOODLANDS</b> (e.g. RAMSAR, SSSI, LWS)
	<p>There are 3 records for protected species and habitats within a 1km radius of the site. The closest is a priority protected habitat (deciduous woodland), located along the north east and eastern boundary of the site. The 4m high earth bund and separation distances to be maintained on site break the pathway between the receptors.</p> <p>Due to a lack of direct pathways for dust and particle emissions to the receptors, the limited potential impacts from airborne emissions, the overall exposure level is <b>LOW</b>.</p>
	<b>AIR QUALITY</b>
	<p>The closest local authority AQMA designations are in the Durham County Council region over 10km from the site. Given the distance of the AQMA boundary from the site likelihood of dust and particle emissions having a significant negative is minimal.</p> <p>Background ambient air quality concentrations supplied by DEFRA<sup>2</sup> have been reviewed and are considered low.</p>

## 2 OPERATIONS AT KIPLIN HALL

### 2.1 WASTE DELIVERIES

Wastes will be delivered to site will be covered Yorwaste Ltd vehicles from HWRC's and Waste Transfer stations (WTS's) via a secured gated entrance off the B6271. Third parties wishing to deliver waste to the site must undergo the pre-acceptance process detailed in the Waste Acceptance Procedure prior to entering into an agreement with Yorwaste Ltd.

Upon arrival at the site all deliveries will pass over the weighbridge where initial inspections of the loads (where possible) and written Duty of Care documentation will be made to ensure compliance with the environmental permit.

All deliveries must meet the Waste Acceptance criteria detailed in the Waste Acceptance Procedure (Doc Ref: EWP-L02.01) (see Appendix B for details). Any loads which do not meet the waste acceptance criteria will be rejected upon detections and placed in a suitable quarantine container for disposal at a suitably permitted facility.

<sup>2</sup> <https://uk-air.defra.gov.uk/data/gis-mapping>



Where inspections cannot be carried out at the weighbridge, the driver will be directed to the tipping area where initial inspections will then be carried out during the unloading process.

All loads received at the site have the potential to emit dust therefore the dampening down a load during the unloading process will depend on weather conditions at the time of acceptance.

Once loads have been unloaded, vehicles will be required to return to the weighbridge for the completion of the relevant Duty of Care documentation.

Detailed below in Table 2 are typical wastes which will be accepted at Kiplin Hall Wood Recycling Facility along with product descriptions, tonnages, storage locations and onwards destinations from the facility.

## **2.2 OVERVIEW OF WASTE PROCESSING AND DUST CONTROLS**

### **2.2.1 OVERVIEW OF WASTE PROCESSING**

The Site Layout Plan (Appendix A) clearly identifies the layout of the site and includes the following features;

- Gated site entrance,
- Buildings and other site infrastructure,
- Drainage and site topography,
- Earth bunding,
- Underlying site surfaces,

The site comprises of three different areas where wood is unloaded and stored, processed and stored prior to transfer for recycling or recovery. Only those waste codes detailed in Table 2 will be accepted, stored, treated and transferred at the site in accordance with the site's environmental permit.



The unprocessed wood storage area in the northern part of the site will be underlain by heavily compacted hardstanding with a low permeability level (see Appendix A for location).

The processed wood in the southern and eastern part of the site and treatment area will benefit from an impermeable surface (see Appendix A for location).

All operational areas will drain to a sump with a holding capacity of 224m<sup>3</sup>, located on the western boundary of the site (see Appendix A for location). Water captured within the sump will be recirculated through the waste wood piles (both processed and unprocessed) on a 'on demand' basis.

All non-conforming wastes which are received on site are either rejected upon detection or where detection occurs during unloading will be isolated and stored in a suitable quarantine container before being removed from site. Quarantined waste will be removed as soon as is reasonably possible. Due to the origin of the waste wood arriving at the site the likelihood of non-conforming material being present within a load is low.

**Table 2: Examples of Permitted Waste Types, Storage and End Use**

EWC Code	Product Description	Storage location	Process	Destined use
02 01 03	Wood and Bark only from agriculture, horticulture, aquaculture, forestry, hunting and fishing.	External designated storage piles	Shredding in the treatment area for the purpose of increasing the payload for transportation purposes.  Separation non-ferrous metals using an eddy current separator.	Recycling/ Recovery
02 01 07	Wood and Bark from agriculture, horticulture, aquaculture, forestry, hunting and fishing.			
03 01 01	Waste bark and cork from wood processing and the production of panels and furniture			
03 01 05	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04			
03 03 01	Waste bark and wood from pulp, paper and cardboard production and processing			
15 01 03	Wooden packaging			



17 02 01	Wood from 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 (wood only)			
19 12 07	Wood other than that mentioned in 19 12 06 from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified			
20 01 38	Wood other than that mentioned in 20 01 37 from separately collected municipal wastes (Household waste and similar Commercial, Industrial and Institutional wastes)			
20 02 01	Biodegradable garden and park waste (wood and bark only) from municipal wastes (Household waste and similar Commercial, Industrial and Institutional wastes)			

## 2.2.2 OVERVIEW OF DUST CONTROL

Along with the implementation of dust control measures during dry periods and where dust emissions are identified by the Site Manager or operational staff, the thickets of woodland which bound the site will assist in preventing dust emissions at the site and mitigating potential impacts to surrounding sensitive receptors.

Willow Garth which is a thicket of woodland to the south and south west of the site (see K257.2~20~002 for location) will provide a level of wind screening against prevailing winds (see Figure 1).

The combination of the dense vegetation and the earth bund along the eastern boundary of the site will provide a level of protection to the surrounding receptors identified on the Sensitive Receptors Plan (K257.2~20~002) from any windblown particulates and dust emissions.

Water based dust suppression will consist of either the recirculation of surface water captured within the sump along the eastern boundary of the site or water pumped from the lagoon to a hydrant located adjacent the processed wood storage to the south (see Appendix A for location).



Dampening of material will be carried out in the following situations;

- During dry periods such as in the summer months.
- During the unloading where a load has been identified during the inspection process as being 'dusty'.
- Where dust emissions have been observed by the Site Manager or site operatives.
- Where dust emissions or particulates are observed leaving the site boundary during routine site inspections.
- Following any dust complaints received at the site.
- Where significant dust or particle emissions are observed on the access road, site surfaces during routine site inspections.

### **3 DUST AND PARTICULATE (PM<sub>10</sub>) MANAGEMENT**

#### **3.1 RESPONSIBILITY FOR IMPLEMENTATION OF THE DMP**

The Site Manager and Technical Competent Manager (TCM) (where different from the Site Manager) will oversee the implementation of the DMP and ensure that the methods detailed within this DMP provide effective dust mitigation. Where the responsible individual is unavailable to oversee the implementation of dust suppression measures a suitably experienced site operative will be allocated responsibility.

Where dust and particulate emissions continue to be observed following the use of the dust suppression measures detailed in this DMP, the DMP will be reviewed and additional measures such as fixed suppression systems considered.

The DMP will be amended to reflect any improvements identified during the review process.



The TCM who will oversee the implementation of the DMP has been assessed in the implementation of site control measures as part of the Certificate of Technical Competence and therefore is deemed competent to implement and review this DMP.

All staff members will be trained in the dust suppression measures detailed with this DMP during the induction process. Where new dust suppression measures are to be implemented refresher training will be provided to ensure staff remain competent.

The DMP will be reviewed at least annually or following any changes in operations which have the potential to increase the level of exposure to surrounding sensitive receptors.

### **3.2 SOURCES AND CONTROL OF FUGITIVE DUST/PARTICULATE EMISSIONS**

Detailed below are examples of potential sources of fugitive dust and particulate emissions associated with the acceptance, storage, treatment and dispatch of waste wood at the site.

- Vehicles entering and/or leaving the site with mud on wheels, and tracking dust on to or off the site.
- Debris falling off lorries which arrive uncovered.
- Vehicles and plant moving around the site kicking up dust
- Road vehicles tipping waste
- Excavators/360s moving waste wood
- Plant treating waste
- Site surfaces (not just the ground include around plant and equipment)
- Loading waste materials back on to vehicles.
- Particulate emissions from the exhaust of vehicles/plant/machinery on site.
- Generators, plant and other non-road going mobile machinery.

Table 3 below details the measures to be implemented at the site for each of the sources detailed above in order to break the source-pathway-receptor routes.



**Table 3: Source-Pathway-Receptor Routes**

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Mud	Tracking dust on wheels and vehicles, Mud dropping off wheels/vehicles when dried	Residential properties along B6271	Visual build-up of dust and particulates, also consequent redistribution of dust into the air column.	<ul style="list-style-type: none"> <li>• Site is underlain by heavily compacted hardstanding and impermeable surfaces therefore the likelihood of operational areas becoming waterlogged is low.</li> <li>• Inspection of vehicles and, where required, removal of mud prior to exiting site.</li> <li>• Long access road ensures any residual mud drops off before vehicle reaches B6271.</li> <li>• Where debris is identified as an ongoing issue a road sweeper can be provided from a nearby Yorwaste Ltd site.</li> </ul>
Debris	falling off lorries	Residential properties along B6271	Visual build-up of dust and particulates, also consequent redistribution of dust into the air column.	<ul style="list-style-type: none"> <li>• Vehicles delivering and collecting waste will be covered.</li> <li>• Efficient and prompt unloading of vehicles directly into allocated area.</li> <li>• Long access road ensures residual mud drops off before vehicle reaches B6271.</li> <li>• Where debris is identified as an ongoing issue a road sweeper can be provided from another Yorwaste Ltd site.</li> <li>• All areas subject to regular housekeeping.</li> <li>• Litter picking will be carried out on a 'see it, pick it up' basis.</li> </ul>
Vehicles and plant moving	Atmospheric dispersion	Surrounding sensitive receptors	Airborne particulates	<ul style="list-style-type: none"> <li>• Site is underlain by heavily compacted hardstanding and impermeable surfaces therefore</li> </ul>



around the site kicking up dust				<p>dust generation which may impact surrounding sensitive receptors should be minimal.</p> <ul style="list-style-type: none"> <li>All areas are subject to regular housekeeping.</li> </ul>
Tipping, storage, treatment and handling of wastes in external areas	Atmospheric dispersion	Surrounding sensitive receptors	Visual build-up of dust and particulates and airborne particulates	<ul style="list-style-type: none"> <li>Site bounded by thick vegetation with an earth bund installed along the eastern boundary.</li> <li>Waste piles will not exceed the 4m height of the earth bund.</li> <li>Minimise source strength by means of low drop heights. Dampening down of material during dry periods or where load is identified during the inspection process as 'dusty'.</li> <li>The only treatment carried out is the shredding of waste wood to increase payloads for transportation purposes.</li> <li>All plant is inspected prior to and after use for dust and material build up.</li> <li>Plant is regularly cleaned down after use to prevent the build-up of dust and loose material.</li> <li>All plant used on site is maintained and serviced in accordance with manufacturer's guidelines and service agreements.</li> <li>Waste is stored in managed stockpiles.</li> </ul>
Exhaust emissions	Atmospheric dispersion	Surrounding sensitive receptors	Airborne particulates	<ul style="list-style-type: none"> <li>Regulatory controls and best-practice measures to minimise source strength.</li> <li>Plant will be switched off when not in use.</li> <li>Delivery and collection vehicles will be required to switch off engines (where possible) while unloading and loading.</li> </ul>



## **4 VISUAL DUST MONITORING**

Dust monitoring at the site boundary will be carried out as part of routine daily site inspections with any observations recorded and retained onsite.

All plant is inspected daily regularly and cleaned down after use in order to prevent the build-up of dust on machinery parts and hot exhausts.

Informal dust monitoring comprising of operational staff remaining vigilant for visual dust and particulate emissions will be carried out by operational staff members during the treatment process. Where dust emissions are identified during the treatment process, operations will cease and the site boundary will be checked to ensure emissions are not being discharged from the site. Where dust emissions are observed leaving the site boundary material will be dampened down before the treatment process resumes.

No dust monitoring will be carried out outside operational hours, the earth bunding and thick vegetation will provide wind screening for unprocessed and processed stock piles. Where regular complaints are being received outside of operational hours over a period of two weeks or more dust mitigation measures will be reviewed with the potential for stockpiles to be dampened down prior to the end of shift.

All dust monitoring results will be recorded and retained in the site office along with dates, times, weather conditions, wind direction and the name of the individual carrying out the monitoring event.

Where dust is identified as an issue at the site during daily site inspections, an inspection will be carried out by the Site Manager or TCM to determine the cause.



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Where a site activity is identified as being the source of the emissions and implemented mitigation measures have failed, the operation identified as the source will be ceased until a remedial measure has been found.

Visual monitoring along the site boundary will be increased to twice daily until the issue is resolved.

Due to the level of wind screening and protection provided by the thick vegetation around the boundary of the site and the earth bund along the eastern boundary of the site the likelihood of dust and particle emissions impacting sensitive receptors in close proximity to the site is considered LOW and therefore no other form of dust monitoring is proposed for the site.

Where dust emissions are continually identified as an issue at the site and complaints are received as a result Yorwaste Ltd will review the mitigation measures and monitoring techniques detailed in this DMP in order to improve detection and prevent emissions being discharged from the site.

## **5 REPORTING AND COMPLAINTS**

Yorwaste Ltd operate and maintain a certified Environmental Management System (EMS) to ISO 14001. All complaints received concerning dust and particulate emissions at the permitted site will be dealt with in accordance with the company's EMS complaints procedure.

On receipt of the complaint the TCM, or their nominated person, will investigate the complaint to establish the root cause and determine the most effective corrective or preventative action to prevent future emissions to be implemented. Where additional time is required in order to implement the appropriate corrective or preventative action the complainant will be contacted with details on the actions to be implemented and the estimated timescales for completion. The average response time for contacting a complainant will be two working days.



In all cases, and where information is available, all complaints will be acknowledged and investigated, with resultant actions reported to the complainant.

## **5.1 INFORMING THE ENVIRONMENT AGENCY**

The Environment Agency will be informed within 24 hours of detection of any emissions not controlled by an emission limit which has caused, is causing or may cause significant pollution.

Any complaints received by the Environment Agency relating to dust emissions from the site will be dealt with as soon as is reasonably possible upon notification.