WEALDEN 3Rs PERMIT VARIATION APPLICATION

Appendix S: Dust Management Plan

Britaniacrest Recycling Limited

JER8584
Dust Management Plan
2
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12 October2020

Quality Management

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1 INTRODUCTION

1.1.1 This dust management plan (DMP) relates to the operation of the Wealden Works Recycling, Recovery and Renewable energy (3Rs) facility. The Wealden 3Rs Site will comprise waste transfer station (WTS), mechanical sorting and materials recovery (MSMR) and energy recovery facility (ERF) by Britaniacrest Recycling Ltd (Britaniacrest). These three elements will be located within their existing waste management site at Former Wealden Brickworks, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD.

1.1.2 The purpose of this document is to identify activities associated with the WTS, MSMR and ERF that potentially could give rise to dust and particulates, the management controls that will be in place, monitoring plans and corrective actions to be put in place should there be an excess in dust at the site. This version of the DMP has been drafted at an early stage of the project and therefore sets out commitments to further updates prior to the facility coming into operation.

1.1.3 This DMP will be implemented throughout the operational life of the WTS, MSMR and ERF and it will form part of the Environmental Management System (EMS) documentation for the Wealden 3Rs facility.

1.1.4 The waste activities undertaken as part of the WTS and MSMR will consist of simple sorting, treatment and bulking of the incoming wastes to segregate recyclable and non-burnable materials with the residual waste being combusted by the ERF.

1.1.5 The ERF comprises a single processing line with an approximately 80 MW_{th} input boiler that will generate steam. Electricity will be generated using a single turbine and the generated electricity will be exported to the grid.

1.1.6 Recovered, inert and unsuitable materials will be exported for further treatment or disposal off site.

1.2 Site Setting and Sensitive Receptors

1.2.1 The Wealden 3Rs site is located within the administrative areas of West Sussex County Council and Horsham District Council.

1.2.2 The Site is located off Langhurstwood Road and is surrounded by;

- To the north; two ponds, surrounded by grey willow, hawthorn and blackthorn, beyond this vacant land comprising several derelict former brickworks buildings
- To the east; Brookhurst Wood Mechanical and Biological Treatment (MBT) Facility
- To the south; Weinerberger brickworks factory (also known as Warnham Brickworks) and the Warnham train station.
- To the west; the London-Horsham railway line beyond which there are mature tree belts and open countryside

1.2.3 The receptors within 1 km of the site are:

- Various residential properties including Langhurst Wood Road, with the nearest approximately 210 m south-east of site
- Warnham train station
- Warnham Site of Special Scientific Interest (designated for geological purposes)
- Warnham Local Nature Reserve
- 29 designated Ancient Woodland sites

1.2.4 Table 1-1 show the locations with the most sensitive receptors

Table 1-1: Summary of Sensitive Receptors with 1 km of the Wealden 3Rs Site

Distance and Direction from Site	Receptor	Sensitive Receptor
210 m SE	Residential housing; Langhurst Wood Road	Residents
250 m SW	Residential housing; Station Road	Residents
400 m NW	Residential housing; Cox Farm and Lodge	Residents
700 m NW	Residential housing; Orchard Lodge Assisted Living	Residents
900 m SE	Residential housing; Bullfinch Close	Residents
950 m S	Warnham Local Nature Reserve	Local Nature Reserve

1.2.5 The site is not located in a DEFRA Air Quality Management Area (AQMA). Horsham Council has declared 2 AQMAs, the nearest is Cowfold AQMA which incorporates 'The Street', part of Station Road and Bolney Road, approximately 12 km to the south-east of the site. The other is Horsham AQMA which covers, West Street, the High Stret, part of School Hill and Manleys Hill, Storrington.These areas have been designated under Section 83 Environment Act 1995 due in part to known exceedances of the annual mean air quality objective for Nitrogen Dioxide (NO_2) as specified in the Air Quality Regulations 2000. Neither AQMA has been designated for particulates.

1.2.6 The prevailing wind direction is to the south-west.

1.3 Other Dust/ Particulate Emitting Operators

1.3.1 Table 1-2 shows locations surrounding the site which have the potential to emit dust and particulates

Table 1-2: Other Dust/Particulate Emitting Operators

Company	Address	Type of Business	Distance from site boundary (m)
Biffa Waste Services Ltd	Langhurst Wood Road, Horsham RH12 4QD	Waste Management Facility comprising mechanical and biological treatment processes.	0
Weinerberger Ltd	Warnham Works, Langhurstwood Road, Horsham, West Sussex, RH12 4QD	Brickworks Factory	0

2 OPERATIONS AT WEALDEN 3RS FACILITY

2.1 Waste and Raw Material Delivery, Reception and Storage

2.1.1 The main deliveries to the Wealden 3Rs facility will primarily comprise residual non-hazardous waste. Hazardous asbestos waste materials will also be accepted into the WTS operation, but no treatment of asbestos wastes will be carried out. A full list of wastes that are permitted to be accepted at the site is included in Appendix S1 and identifies whether the waste will be handled via the WTS, MSMR, ERF or a combination of these.

2.1.2 The wastes will be delivered to the Wealden 3Rs facility within an enclosed vehicle.

2.1.3 Waste transfer paperwork will be checked at the weighbridge to ensure that loads conform to those which the Wealden 3Rs facility is permitted to accept and to identify whether the load should be directed to the WTS, MSMR or the ERF. In the event that a delivery is suspected to contain non-conforming wastes a visual spot check of the wastes will be made within the waste processing hall. If confirmed as unacceptable the load will be rejected and returned to its place of origin. If it is deemed acceptable, the vehicle will be accepted on site and directed for unloading.

2.1.4 If the delivery vehicle is one of the following, it will be tipped directly into the ERF bunker:

- a front or rear-end loader carrying residual waste from commercial or municipal collections;
- a bulker carrying mixed residual burnable waste from a transfer station where the waste has been previously sorted; or
- a roll-on-off carrying either municipal or commercial waste with no bulky items or inert waste.

2.1.5 If the vehicle is one of the following, it will proceed to the MSMR area of the waste processing hall and tip on the floor:

- a skip lorry;
- a tipper; or
- a roll-on-off carrying mixed bulk waste.

2.1.6 The waste processing hall door will be fitted with self-closing doors. Access to and from the processing hall will be via entrances fitted with fast acting doors which will remain closed unless containerised vehicles are entering or exiting the hall. The floor area within the hall will be regularly cleaned to ensure a high standard of housekeeping in this area is maintained.

2.1.7 Waste to be processed in the MSMR area will be delivered and stored in the pre-treatment area of the Waste Processing Hall. Residual waste will be stored in the subterranean ERF bunker. In the unlikely event that a non-conforming material is deposited in the ERF bunker the waste will be loaded out from the bunker using the crane maintenance platform as a back-loading facility and again returned to the place of origin.

2.1.8 The tipping hall, MSMR and the waste bunker itself will be contained within the same enclosed structure, known generically as the Waste Processing Hall. The bunker arrangement takes the form of a rectangular pit set down into the floor of the waste processing hall. The capacity equates to approximately 2,900 tonnes or 12,500 m^3 of waste material. This equates to approximately 5 days' storage. The waste bunker will be equipped with two cranes which are designed to allow 100% redundancy i.e. one crane to be in operation and the other to be on standby. The waste will be transferred by crane to the charging hoppers which in turn feed the furnace located within the boiler house. Waste fuel is transferred from the bunker to charging hopper by the use of a hydraulic grab operated via an overhead crane.

2.1.9 A layout plan of the site is shown in Figure 2-1 below.

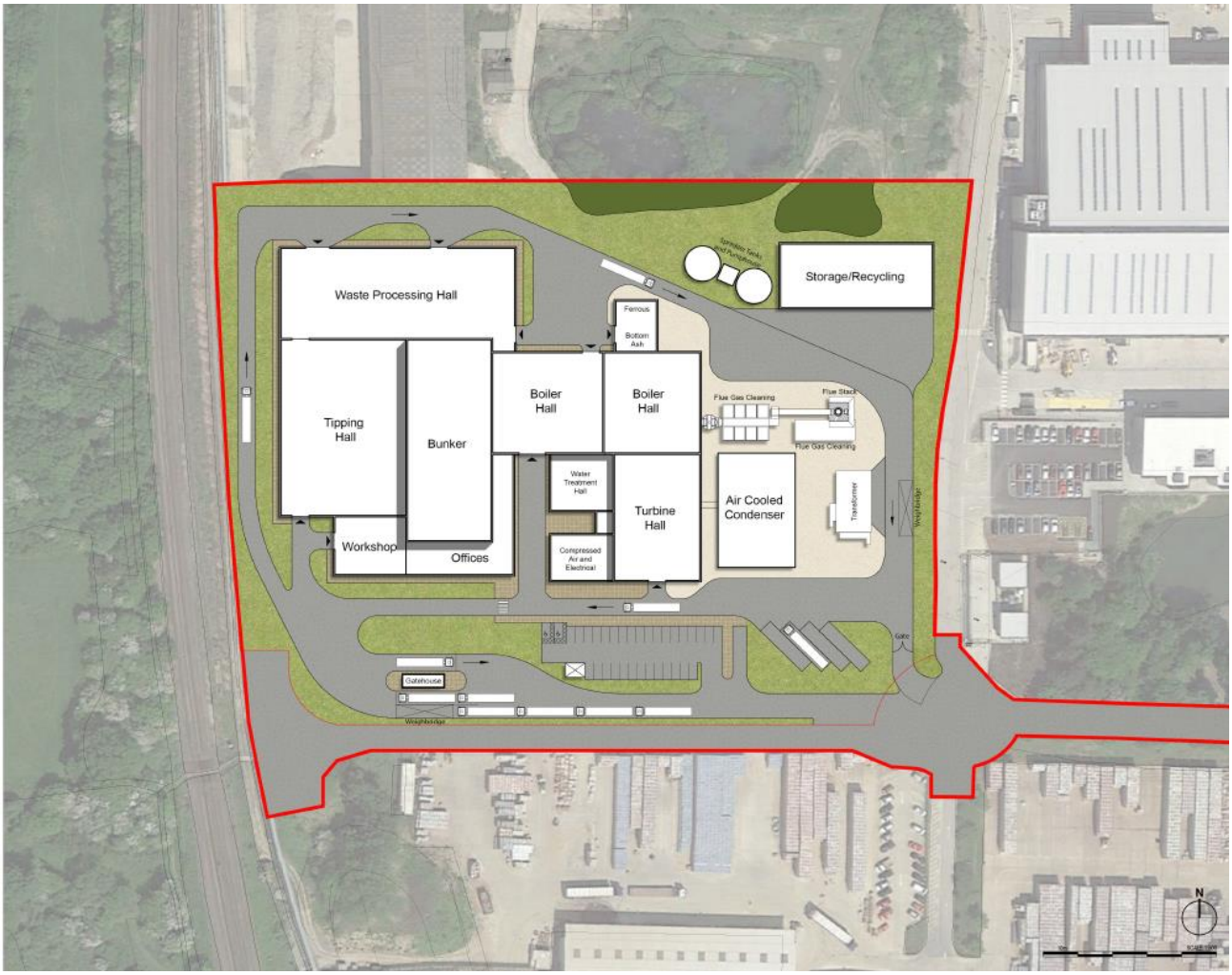

Figure 2-1: Site Layout Plan

Waste Bunker Management

2.1.10 A closed-circuit camera will be set over the charging hoppers to view the hopper conditions and the grab when it is unloading.

2.1.11 A bunker management scheme will be operated to ensure that waste is systematically removed and that prolonged storage of materials does not occur.

2.1.12 Negative pressure will be maintained in the bunker with air being drawn through the furnace and combusted. In the event of a full plant shutdown, waste volumes will be run down prior to the shutdown to minimise the amounts of material remaining in the bunker. Where possible, the shutdown will be timed to coincide with periods where the Wealden 3Rs facility waste deliveries can be minimised. Doors to the waste processing hall will remain closed at all times other than for access, which will be made via fast acting roller shutters.

Fuels and Treatment Chemicals/ Reagents

2.1.13 In addition to the waste input, the ERF will also require various chemical reagents and back up fuel. Back-up fuel will be fuel oil i.e. a liquid and therefore not a source of dust emissions.

2.1.14 All chemical reagents will be delivered by road and discharged into dedicated storage vessels. Deliveries will be overseen by a trained operative and spill containment facilities will be in place.

2.1.15 Activated carbon and hydrated lime will be used within the flue gas treatment plant. Urea may also be stored. These reagents are potentially dusty. Deliveries will minimise the potential for dust releases through the use of sealed connections. Air displaced during deliveries will vent via a filter unit installed on the storage vessel. The filter unit will be visually inspected during unloading operations to ensure that it is operating effectively. In the event of a dust emission the filter will be replaced.

2.2 Waste Transfer Station (WTS)

2.2.1 The WTS comprises sorting and bulking of primarily non-hazardous household, commercial, industrial and construction and demolition waste and storage of asbestos (hazardous waste). . The waste transfer activities will carried out in the Waste Processing Hall.

2.2.2 Asbestos waste received into the WTS will arrived double bagged and sealed. Bags will not be opened and will be stored in clearly identified, segregated and secure lockable containers. On this basis dust from handling of asbestos waste will be avoided.

2.3 Mechanical Sorting and Materials Recovery (MSMR)

2.3.1 Waste to be processed in the MSMR will be delivered and stored in the pre-treatment area of the Waste Processing Hall prior to going through the simple sorting and treatment processes at the plant. The waste processing area will contain the following:

- a pile area accessible by a 360-mobile plant;
- a shredder;
- a screen;
- over band magnet;
- eddy current separator; and
- mobile plant – 360, forklift truck, shovel and/or telehandlers.

2.3.2 Waste will be loaded by the 360 excavator into the shredder for size reduction. In the event that any waste enters the shredder and blocks the rotor, the waste will be discharged from the shredder automatically and operations will continue with minimum interruption.

2.3.3 If the pile contains material sections (concrete, large wood sections, door and window frames etc.), these will selectively be removed by the 360 excavator as required and stored in segregated containers within the processing area. Wood, PVC, inert materials (concrete & rubble) and metals will be removed to the external bays for interim storage as required to maintain waste volumes within the waste processing hall to acceptable levels.

2.3.4 Ferrous and non-ferrous components will be extracted from the waste stream by an over band magnet and eddy-current separator respectively and discharged to the containers via a belt conveyor.

2.3.5 The remaining material will then be processed through a screen to recover fines (i.e. sand, small stones, glass) that are up to 10 mm in size. These materials will be discharged through a chute and transferred to the fines container via a conveyor.

2.3.6 The remaining waste stream will then pass through a classifier which will separate the material into the following fractions: -

- The light fraction such as paper, small wood, cardboard, textiles and plastic foils will be collected by means of a drag chain conveyor and discharged into a container;
- The heavy fraction such as glass, stone, and ceramics will be collected by means of a drag chain conveyor and conveyed to a dedicated discharge area.

2.3.7 Following the classification, the light residual fraction will then be discharged to the waste bunker. The heavy fraction will be removed from the site for appropriate treatment and/or disposal off-site.

2.4 Energy Recovery Facility

2.4.1 A crane grab operating in either manual or automatic mode will ensure the wastes are adequately mixed. The crane transfers the waste materials from the bunker into a feed hopper. From the feed hopper the waste material will be deposited onto the feed grate via a water-cooled feed chute. The feed chute has been designed to hold a relatively large amount of fuel thereby creating a good air lock between the bunker and the furnace. The feed chute opening widens in a downwards direction thus avoiding blockages as the waste material travels through the chute. The connection between the hopper and the feed chute is designed to be as airtight as possible to prevent the potential escape of fumes or excess air flows into the boiler. A hydraulic ram system pushes waste material off the feed table and onto the grate.

2.4.2 Level detection is provided in the feed chute. A low-level alarm will alert the crane operator that more waste material needs to be transferred from the bunker.

2.4.3 A single line reciprocating moving grate is where the combustion of the waste fuel takes place. The charging hopper connects into a feed chute. The fuel in the feed chute acts as a gas tight seal between the combustion chamber and the bunker. Hydraulically driven ram feeders are used to evenly distribute the incinerator charge along its extent and transport it to the grate area. The grate is designed as a single line sliding grate / feed stoker and longitudinally consists of separate grate zones.

2.4.4 Ash residue (IBA) is moved to the end of the grate and discharges into a water quench. The quenched bottom ash is removed from the quench bath by an inclined steel plate conveyor and discharged into the intermediate bottom ash bunker. Any water run-off from the bottom ash whilst on the belt conveyor is returned into the quench bath.

Flue Gas Treatment

2.4.5 Whilst the ERF is designed to minimise the formation of pollutants, abatement plant has been included for those which are generated. Combustion gases will be cleaned before they are released to the atmosphere. The flue gas treatment system will be designed to be compliant with the Industrial Emissions Directive (IED) and Waste Incineration BAT-C and will comprise the following stages:

- Selective Non Catalytic Reduction (SNCR);
- Dry sorption reactor including both hydrated lime and activated carbon injection; and
- Fabric bag filter.

2.4.6 The residues from the bag filter and the reactor (APC residues) will be collected and directed via an enclosed system into a residue silo. The residue silo is designed to discharge product via an enclosed loading chute into trucks or to pass through a mixing unit where water is added prior to disposal.

2.5 Recovered Waste and Residues

2.5.1 Table 2-1 details the recovered materials and residual wastes from the ERF and MSMR

Table 2-1: Typical Amounts of Recovered Materials and Residues from the Wealden 3Rs site

EWC	Product Description	Expected Tonnes Per Annum	Material End Use
19 01 07*	Air Pollution Control (APC) residue Solid wastes from gas treatment	17,000	Sent for re-use or recovery off site by preference, or disposal to landfill, following treatment.
19 01 12	Bottom ash and slag other than those mentioned in 19 01 11	46,000	Sent to an offsite facility where metals will be extracted and processed for re-use within aggregates.
19 12 04, 19 12 12	Oversized material (including PVC)	600	Transfer off-site to a suitable recovery/recycling facility.
19 12 02, 19 12 03	Metals	8,000	Sold to a third party for recovery/recycling.
19 12 12	Inert materials	10,000	Transfer off site to a suitable recovery/recycling facility (preferred) or disposal.
19 12 07	Wood	2,000	Sold to a third party for recovery/recycling.
	Sludge from process water pit	variable	Tankered off site for disposal.
Total		**83,600**	

3 POTENTIAL DUST HAZARDS AND RISK ASSESSMENT

3.1.1 To assess the potential risk of dust from the Wealden Works 3Rs facility, a six-stage process has been followed:

- identify and consider risks for the site, and the sources of the risks;
- identify the receptors at risk;
- identify the possible pathways from the sources of the risks to the receptors;
- assess risks relevant to the activity;
- choose appropriate further measures to control these risks (if required); and
- submit the assessment of overall risk.

3.1.2 Activities associated with the ERF, WTS and MSMR activities that have the potential to give rise to dust include:

- Delivering and handling waste for the ERF, WTS and MSMR;
- Handling solid reagents for the flue gas treatment;
- Waste treatment activities;
- Processing waste in ERF;
- Storage and loading of sorted wastes and transportation from the site;
- Removal of bottom ash from the ERF and transportation from the site; and
- Removal of Air Pollution Control (APC) residues from the ERF and transportation from the site.

3.1.3 Sensitive receptors to dust and particulates are detailed in Section 1.2 of this report.

3.1.4 The main pathway for dust is air dispersion, dust can also be spread off site through vehicle tracking.

3.1.5 The risk assessment methodology has used a scoring mechanism whereby scores are assigned to:

- the probability of exposure; and
- the consequence of the hazard to the environment or human health.

3.1.6 The risk assessment has been completed by scoring the hazard areas outlined above using a risk matrix as shown in Table 3-1 below:

Table 3-1: Risk Matrix

Consequence	Probability of Exposure			
	High	Medium	Low	Very Low
High	High	Medium	Low	Low
Medium	Medium	Medium	Low	Insignificant
Low	Low	Low	Low	Insignificant
Insignificant	Low	Insignificant	Insignificant	Insignificant

3.1.7 In completing the assessment, the proposed prevention and control measures are assumed to be in place. Where relevant, details of these measures are identified within the assessment.

3.1.8 The dust risk assessment is presented in Table 3-2.

Table 3-2: Dust Risk Assessment

Hazard What has the potential to cause harm?	**Receptor** What is at risk? What do I wish to protect?	**Pathway** How can the hazard get to the receptor?	**Risk management** What measures will you take to reduce the risk? If it occurs – who is responsible for what?	**Probability of exposure** How likely is this contact?	**Consequence** What is the harm that can be caused?	**What is the overall risk?** What is the risk that still remains? The balance of probability and consequence.
Dust from waste deliveries to and handling within the ERF, WTS and MSMR	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion/ Vehicle tracking	All deliveries and handling will take place within a building and doors will remain shut other than for access. Wastes consisting of solely or mainly of dusts, powders or loose fibres will not be accepted. Waste pre-acceptance and waste acceptance procedures will ensure this is achieved. Asbestos wastes will be double bagged, sealed and will not be treated. The waste tipping, waste processing and waste bunker areas will be kept under a slight negative pressure which will assist in minimising dust leaving the building. Roller shutter doors will be in place which will remain shut other than during tipping of the waste. Delivery vehicles/ containers will be fully contained to minimise dust emissions during transportation to the tipping hall. As far as practicable drop heights will be minimised when off-loading waste. Visual dust monitoring procedures will be developed prior to operation.	Low	Low Nuisance, dust on windows, cars etc.	Low
Dust from handling reagents for the flue gas treatment	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion	Activated carbon and hydrated lime are potentially dusty. If urea is used, this reagent is also potentially dusty. Deliveries will minimise the potential for dust releases through the use of sealed connections. Transfer of material for use within the flue gas treatment plant will be fully enclosed. Air displaced during deliveries will vent via a filter unit installed on the storage vessel. The filter unit will be visually inspected during unloading operations to ensure that it is operating effectively. In the event of a dust emission the filter will be replaced. Level monitoring will be included and will be linked to a switch to prevent overfilling. Any spillage of material during a delivery would be cleared immediately.	Low	Low Nuisance, dust on windows, cars etc. Urea dust can cause soft tissue damage and eye and skin irritation	Low

Hazard What has the potential to cause harm?	**Receptor** What is at risk? What do I wish to protect?	**Pathway** How can the hazard get to the receptor?	**Risk management** What measures will you take to reduce the risk? If it occurs – who is responsible for what?	**Probability of exposure** How likely is this contact?	**Consequence** What is the harm that can be caused?	**What is the overall risk?** What is the risk that still remains? The balance of probability and consequence.
Dust from waste treatment activities	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion	All waste treatment including waste processing and shredding will be undertaken within a building. Roller shutter doors will be in place which will remain shut other than during tipping of the waste. The shredder unit and the air classifier will have localised dust collection dedicated to that unit. As far as practicable drop heights will be minimised when sorting and treating waste. The buildings will be kept clean and tidy to prevent dust build up, this will be regularly inspected by the Site Manager. Visual dust monitoring procedures will be developed prior to operation. Maintenance checks will be regularly carried out on the waste treatment plant to ensure that it is correct working order	Low – all processing undertaken in enclosed system	Low	Low
Dust from processing of waste in the ERF	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion	The ERF will be designed to be air-tight which will prevent any fugitive emissions. Once waste is in the feed hopper it will be in an air-tight, fully enclosed system. The doors to the ERF building will be kept closed except for vehicular access during normal working hours. Air from within the ERF building is extracted as combustion air. Exhaust gases are subject to flue gas treatment including a bag filter for particulate removal. The treated exhaust gases are released from a stack which has been designed to achieve effective dispersion. Air dispersion modelling has demonstrated effects from dust releases from the stack are not significant. The buildings will be kept clean and tidy to prevent dust build up, this will be regularly inspected by the Site Manager. Visual dust monitoring procedures will be developed prior to operation. Maintenance checks will be regularly carried out on the ERF plant to ensure that it is correct working order	Low - all processing undertaken in enclosed system. Exhaust gases subject to particulate removal through bag filter.	Medium	Low

Hazard What has the potential to cause harm?	**Receptor** What is at risk? What do I wish to protect?	**Pathway** How can the hazard get to the receptor?	**Risk management** What measures will you take to reduce the risk? If it occurs – who is responsible for what?	**Probability of exposure** How likely is this contact?	**Consequence** What is the harm that can be caused?	**What is the overall risk?** What is the risk that still remains? The balance of probability and consequence.
Dust from storage of recovered wastes - oversized materials, metal, wood and inert materials	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind Dispersion	Waste will be stored within the storage/ recycling building or within the waste processing hall and tipping hall prior to processing. Waste material will be transferred from the bunker via an overhead gantry crane into the waste charging hopper. There may be some waste transported by excavators as required and securely stored temporarily in segregates containers in external bays, but this will be limited to wood, PVC, inert materials (concrete and rubble) and metals which will have a low dust generation potential. The buildings will be kept clean and tidy to prevent dust build up, this will be regularly inspected by the Site Manager. Visual dust monitoring procedures will be developed prior to operation.	Low	Low	Low
Dust from loading of recovered wastes – oversized materials, metal, wood and inert materials	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion/ Vehicle tracking	All vehicles that transfer waste off site will be sheeted or covered before leaving site. This will be enforced by the Site Manager and communicated to the drivers when they arrive at the site. Recovered materials will generally be removed by the 360 excavator and will comprise larger sections which are not dusty. Visual dust monitoring procedures will be developed prior to operation.	Low – waste has a low potential to generate dust.	Low – waste will not be hazardous	Low
Dust from Bottom ash handling and storage	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air	Bottom ash will discharge from the grate into the ash quench. The ash removed from the quench and stored will therefore be moist, Bottom ash storage and loading will be undertaken within a building and doors will remain shut other than for access. The buildings will be kept clean and tidy to prevent dust build up, this will be regularly inspected by the Site Manager. Tanker loading of bottom ash to be removed off site for disposal will be monitored by site personnel.	Low	Low – typically non-hazardous classification	Low

Hazard What has the potential to cause harm?	**Receptor** What is at risk? What do I wish to protect?	**Pathway** How can the hazard get to the receptor?	**Risk management** What measures will you take to reduce the risk? If it occurs – who is responsible for what?	**Probability of exposure** How likely is this contact?	**Consequence** What is the harm that can be caused?	**What is the overall risk?** What is the risk that still remains? The balance of probability and consequence.
Dust from storage and loading of APC residues from the ERF	Local residents (nearest receptors approx. 210 m from the installation) Industrial unit (nearest are adjacent Biffa MBT and Wienerberger Brickworks)	Air/ Wind dispersion/ Vehicle tracking	APC residues are handled in an enclosed system prior to storage in a silo. The storage silo has a dust filter to capture dust during filling. The filter on the silo vent is fitted with a differential pressure alarm and automatic cleaning. Residues will be discharged either via a sealed connection to a road tanker or mixed with water prior to discharge to a contained vehicle for off-site disposal. Tanker loading of APC residues to be removed off site for disposal will be monitored by site personnel. Visual dust monitoring procedures will be developed prior to operation.	Low – the APC system is fully contained. During routine plant walkovers, any leakage would be identified.	Medium – material is hazardous and fine.	Low

4 DUST AND PARTICULATE (PM_{10}) MANAGEMENT

4.1 Responsibility for Training and Implementation of the DMP

4.1.1 The Site Manager is responsible for implementation of this DMP.

4.1.2 This DMP will be reviewed every two years or sooner if there is a change in activities which will have a potential impact on dust on site. The DMP shall also be reviewed if there is a significant dust emission or verified dust complaint, this is detailed further in section 6 of this DMP.

4.1.3 The site labourers and machine operatives will have the necessary training to implement dust control measures detailed within this DMP, this training will be delivered by the Site Manager.

4.2 Management of Fugitive Dust / Particulate Emissions

4.2.1 There are some aspects of the design of the buildings and infrastructure which will contribute to the control of any potential fugitive dust / particulate emissions. These are detailed in section 2 of this DMP.

4.2.2 Site practices will minimise the potential for fugitive dust / particulate emissions. These are detailed in paragraphs 4.2.3 to 4.2.25 below.

Waste Storage and Material Transfers

4.2.3 All wastes will be stored within buildings for further treatment or awaiting removal from the site.

4.2.4 The vehicle operators transferring material to or from the Facility will adhere to site speed limits. This will be made clear during site inductions/ training and enforced by site management.

4.2.5 All 360 excavator and front-loader drivers will be trained and this will include clear instructions on ensuring front-loaders are not overloaded. When loading waste in for transfer or the MSMR, drivers will ensure drop heights are minimised.

4.2.6 Waste material for the ERF will be transferred from the waste bunker in the waste processing hall via a crane into the waste charging hopper. The connection between the hopper and the feed chute is designed to be as airtight as possible. The fuel in the feed chute acts as a gas tight seal between the combustion chamber and the bunker.

4.2.7 Deliveries of Activated Carbon and hydrated lime (and urea if used) will minimise the potential for dust releases through the use of sealed connections. Air displaced during deliveries will vent via a filter unit installed on the storage vessel. The filter unit will be visually inspected during unloading operations to ensure that it is operating effectively. In the event of a dust emission the filter will be replaced.

4.2.8 All vehicles that transfer waste off site will be sheeted or covered before leaving site. This will be enforced by the Site Manager and communicated to the drivers when they arrive at the site. Vehicles removing APC residues from the site will do so in a fully enclosed system.

Operation of Mechanical Sorting and Materials Recovery

4.2.9 The Site Manager will be responsible for enforcing the requirement that all MSMR activities are undertaken in the Waste Processing Hall building and the doors will remain shut other than for access.

4.2.10 Sorting will be carried out in manner which minimises drop heights.

4.2.11 The shredder and screening units will have localised dust controls. These units will be routinely monitored to ensure dust controls remain effective. Where dust emissions are noted, dust controls will be repaired. This requirement will be enforced by the Site Manager.

Operation of the ERF

4.2.12 All activities relating to the ERF will be carried out within a building. The doors to the ERF building will be kept closed, opening only for vehicular access during normal daytime working hours. This requirement will be enforced by the Site Manager.

4.2.13 The ERF has been designed to be airtight.

4.2.14 The IBA is collected at the end of the grate in the water filled bottom ash extractor located beneath the grate, where this material is quenched. The IBA will therefore be handled moist reducing the potential for dust during handling. All of IBA loading will be carried out will be carried out within a building and doors will be kept shut other than for access.

4.2.15 APC residues will be handled in fully enclosed system. The residues will be stored in silos and discharged via sealed connections into fully contained disposal vehicles. These measures will avoid the release of dust from handling and transfer of this material.

4.2.16 The ERF will be operated in accordance with site operating procedures and these will include the flue gas cleaning plant. Operating procedures will cover start-up and shutdown of the plant, foreseeable emergencies as well as normal operation. All ERF operators will be trained against these procedures.

Housekeeping and Spillages

4.2.17 Housekeeping measures that will be implemented on site to minimise the potential for fugitive dust / particulate emissions include:

- The site will be kept clean and tidy both externally and within buildings.
- Any spillages of materials and wastes will be immediately cleaned up.
- Visual checks will be undertaken of the haul road to minimise potential dust spreading off site.
- A road sweeper is deployed on a weekly basis as a minimum to keep site roadways and access clean. Should there be visible dust emissions from the 3Rs site on roads or surfaces this will be utilised more frequently.
- A static dust suppression system will be available at the site.
- The Site Manager will undertake site inspections which will include checking for dust and litter across site and implementing corrective measures should any be identified. The site inspections will be recorded on the site inspection form.

ERF Particulate Abatement

4.2.18 A fabric bag filter system will be provided for particulate control. The bag filter unit will contain compartments which will each contain a set of filter bags. The compartments can be isolated for maintenance or cleaning. Exhaust gases enter into the lower half of the filter. Distribution baffles inside the filter will ensure that the heaviest particulates are removed directly into the hoppers before the gases pass through the filter medium.

4.2.19 Over time there will be a build-up of particulates on the surface of the filter media, which improves the particulate removal efficiency and also provides additional reduction of acid gases with unspent reagent in the dust cake. Online cleaning will be provided using a reverse jet compressed

air cleaning system to periodically remove the dust cake. The dust cake will discharge via the bottom of the filter compartment and will be collected.

4.2.20 Cleaning will be activated via pressure drop monitoring across the filter media, when the set point is exceeded the unit will commence cleaning. Cleaning operations cease when the pressure differential returns to normal.

4.2.21 The use of trends in particulate emissions will provide a reliable system for detecting bag filter failures, as well as a drop in pressure, and allows investigation to identify and isolate the failed compartment.

Site Inspection and Maintenance

4.2.22 The whole plant will be regularly inspected and maintained to ensure it is in good working order. Inspection and maintenance will be in accordance with manufacturers recommendations as a minimum.

4.2.23 Key plant/infrastructure that will be subject to routine inspection to maintain dust control will include:

- Routine inspection of the waste processing hall, tipping hall and ERF bunker building fabric.
- Routine inspection and maintenance of the automatic doors to the waste processing hall and tipping hall building to ensure they remain in good working order.
- The bag filter unit will be regularly inspected and maintained to ensure it is effectively controlling particulate emissions. Pressure drops are monitored to identify when the bag needs cleaning or replacing (see paragraph 4.2.20 and 4.2.21 above).
- Routine inspection and maintenance of dust controls on the shredder and classifier units will be carried out.
- Routine inspection and maintenance of the furnace to ensure it remains airtight.
- The CEMS monitoring system will be calibrated by means of parallel measurements with the reference methods at least every three years.
- Routine inspection of the ERF will be undertaken to ensure it remains airtight.

4.2.24 Details of the inspection and maintenance routines will be established prior to the facility coming into commercial operation.

4.2.25 Records of inspections and maintenance will be retained in the site office.

5 DUST MONITORING

5.1 Visual Dust Monitoring

5.1.1 The Site Manager will ensure that a daily routine inspection of the site is undertaken, which includes visual monitoring for dust. Details of inspections are recorded (see paragraph 5.2.2 below).

5.1.2 It will also note if there are any abnormal conditions on site likely to give rise to dust emissions, such as particularly dry weather.

5.1.3 Any improvements to dust controls required will be actioned by the Site Manager as soon as possible to minimise any potential impacts to the site or surrounding neighbours.

5.2 Record Keeping

5.2.1 The daily site inspection is recorded as required and specified by the EMS – in the Site Diary, which is a requirement of the site's existing Environmental Permit.

5.2.2 A Site Inspection Form, which will be defined within the EMS, which also provides requirements on its completion and retention. The site inspection includes:

- Compliance with the environmental permit and EMS;
- Waste storage;
- Signage;
- Condition of building;
- Dust emissions; and
- Complaints received.

5.2.3 In accordance with the current environmental permit on site. records will be retained at least 6 years from the date the records were made, or in the case of the records pertaining to off-site environmental and health effects, until the permit is surrendered

5.2.4 The EA may request copies of the Site Diary and site inspection records at any time.

6 ACTIONS IN THE EVENT OF A DUST EMISSION OR COMPLAINT

6.1 Actions in the Event of a Dust Emission

6.1.1 In the event that a dust emission is identified the following actions will be taken, as set out below.

1. All dust emission incidents must be communicated to the Site Manager immediately.
2. The Site Manager will ensure that the cause of the dust emission is identified and if the source is on site.
3. The Site Manager will stop the associated activity where possible or identify appropriate measures that can be applied to reduce or stop the dust emission (e.g. sheeting and/or dampening of stockpile).
4. The Site Manager will ensure that the corrective actions taken to eliminate the causes of dust emission are appropriate to the magnitude of problem and commensurate with the environmental impacts encountered. The Site Manager will also be responsible for ensuring that preventative actions are considered and where appropriate measures which may be general or specific to the problem or incident are identified and that appropriate plans are put in place to deliver these measures within a reasonable timeframe.
5. The dust emission event, all mitigating and preventative actions will be recorded in the Site Diary and on a Non-Compliance Report form.
6. The Site Manager will continue to monitor the issue and review the effectiveness of corrective and preventative action taken.
7. The Site Manager will implement and record any changes in the EMS documented procedures resulting from corrective and preventive action;
8. If the dust or particulate fugitive emission has caused, is causing or may cause significant pollution the EA will be notified without delay, in accordance with the conditions of the environmental permit.
9. The Site Manager will report to the Operations Director as regards all of his responsibilities set forth above, any dust emission events and all mitigating and preventative actions.

6.1.2 If required, changes can be made to the dust management plan in order to prevent the dust emission from reoccurring in the future.

6.2 Actions in the Event of a Dust Complaint

6.2.1 A complaints procedure has been established that will set out the procedure for handling, recording investigated and actions arising from a complaint. This procedure will be followed should a complaint relating to dust emissions be received.

Appendices

Appendix S.1

List of EWC Codes