Grays Biogas Ltd
Mona AD Facility
Dust Management Plan

3407/819/DMP/1
Version 1.0

Oaktree Environmental Ltd

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DUST EMISSIONS TO AIR

INTRODUCTION

There are a number of potential fugitive sources of emissions to air from the site as a result of waste handling operations and road transportation, A number of management plans have been prepared in as part of the permit variation submission. This plan covers the monitoring and management of dust. It should also be read in conjunction with the EMS (3407/819/EMS and the Emissions and Monitoring Plan 3407/819/C.

The planning consent for the adjacent waste recycling facility required the creation of a dust management plan and this plan should be considered in the context of that plan.

RISK

The environmental risk assessment identified some potential sources of dust though these were all considered to pose no significant risk under normal site management conditions. There were two possible sources of dust identified which include the storage/handling of chicken litter and biomass (maize and rye) feedstocks and vehicles moving along site roads.

The site in general receives feedstocks either in liquid form via tanker or in solids form in securely covered containers, the solid wastes are generally of a medium to high moisture content (biomass) and the chicken litter medium to low moisture content. The procedures for reception of the chicken litter are such that the material will be transported to site from the neighbouring broiler sheds in covered trailers and will be deposited and stored within a fully enclosed, negative pressure reception building which has fast acting roller/shutter doors which will be closed except when the chicken litter is being loaded or unloaded. The chicken litter shed and the liquid feedstock reception compound benefit from a dedicated odour abatement system. It has been estimated that the loading and unloading process will last for a maximum 45 minutes each day. The biomass is delivered in covered trailers and stored in covered silage clamps x3, the walls of which are 5m high. The silage clamps will be covered when material is not being deposited/extracted for use in the process. In reality the end of the silage clamp will only be open for a maximum 30 minutes per day.

Delivery vehicles are not allowed to enter the site unless they are sealed or securely sheeted. The risk of release is therefore minimised.

The movement of the solid feedstock material is carefully carried out using bucket loader and the distance the material is hauled on site is kept to a minimum (ie from the storage areas to the feed hoppers serving the digestion tanks approx 20m as shown on site layout drawing). Drop heights are kept to a minimum. The feed hoppers will be closed when not being loaded with feedstocks and during loading operations an odour neutraling spray which should help minimise fugitive emissions including dust. There is a risk from vehicles moving in and out of the site creating dust on site roads

in common with all premises. Good housekeeping to ensure the site yard areas are kept clean regularly brushed and the chicken litter reception shed emptied and cleaned at least weekly.

This is therefore the principal subject of this management plan

CONTROL OF DUSTS, FIBRES AND PARTICULATE MATTER

Chicken litter is stored inside the reception shed. Control of dust, fibres and particulates from the waste reception and building will be achieved by the extraction of air from the building. This will create a negative air pressure within the building. Extraction air is passed through particulate filters and an odour control unit (OCU). This ensures there is no visible dust emitted from the building and that smaller particles are minimised. More details of the OCU are included in the Odour Assessment Report.

Use of tarmacadam and concrete surfaces will minimise potential for dust generation by waste delivery vehicles arriving at the facility. Incoming feedstock which have the potential to be dusty will be transported within covered containers (sheeted trailers) so is not likely that incoming vehicles will track material onto site which could cause dust.

Outgoing delivery vehicles will either be:

- tankers leaving the site with digestate will not come into contact with any potentially dust generating wastes;

The floor of the chicken litter shed building is also regularly cleaned and washed down consequently it is considered very unlikely that delivery vehicles will be intrinsically dusty. The silage clamps will be frequently brushed/cleaned to ensure non of the material escapes from the clamp enclosure and washed down when empty.

Vehicles importing dairy DAF and removing liquid digestate will be tankers vehicles. Similar arguments apply to the tankers in that these will not be intrinsically dusty. The digestate has a relatively high moisture content and is thus not considered to be a high risk for generating dust.

The biggest risk is that solid waste is tracked onto the site roads or building apron dries out and is then tracked over by vehicles creating dust or the natural tendency for hard surfaces to create a low level of dust occurs. Both of these scenarios manifest in dry weather conditions but need to be coupled with poor management practices for significant dust generation.

General site checking procedures and programmes of cleaning and planned maintenance will be undertaken to ensure plant, machinery and abatement equipment are operating effectively and performance of plant will be reviewed in accordance with the permitted emission limit values.

Good housekeeping procedures within the management system should prevent the tracking of materials that could produce dust onto areas where it could dry out and lead to dust. Equally,

regular sweeping and damping down will minimise the general dust arising as the normal interaction of vehicles and hard surfaces.

The external areas of the site drain to a rain water collection system via a series of gullies and silt traps this system stores water for use in the AD plant itself and provides a supply of water for wash down sprinklers and bowsers the system is designed to retain all rainfall for use within the site. Mains water supply is also available if needed.

MONITORING

Monitoring will be undertaken to ensure that the site is kept clean and tidy. It will also be monitored to ensure it is not generating unacceptable concentrations of dusts, fibres and particulate matter. The monitoring will consist of daily visual monitoring of dust emissions (combined with odour monitoring) and also of external vehicle movements on the hardstanding areas to ensure that these are not generating dust. If dusty wastes are being accepted checks will also be made, where appropriate, on all external openings to the building, to ensure that these are closing properly and are not giving rise to fugitive emissions.

Should visible emissions of dust, fibres and particulates be observed within the site boundary, which have the potential to cause an impact outside the site boundary; the following actions will be taken:

- Where dust is being generated on internal hardstanding areas as a result of vehicle movements, appropriate action will be taken to have the affected surfaces damped down and cleaned using manual or mechanical sweeping as appropriate.
- For external areas suppression of dust, fibres and particulates shall be undertaken using water sprays.
- The results of visual dust, fibres and particulates monitoring will be recorded in the site log. Any actions carried out to identify the cause of dust emissions and to rectify the sources of these will also be recorded in the site log, along with routine maintenance carried out on the dust control systems.

All monitoring and maintenance works will be documented in the site log sheets. Where maintenance is required to the control system that requires a shut down this will, where possible, be undertaken during periods when wastes are not being processed.

COMPLAINTS PROCEDURE

If complaints are received they will be recorded and dealt with in accordance with the complaints procedure appended to the Written Management System.

CONCLUSION

The main wind direction being from south to south west which would direct any emissions in the direction of the neighbouring poultry sheds rather than residential receptors.

Under normal operating conditions it is very unlikely that this site will be intrinsically dusty as it uses feedstocks either a liquid form or solids with medium to high moisture content. Reception and storage takes place in a negative pressure building designed to extract the smallest of particles gaseous and odorous emissions not simply dusts (chicken litter), within covered silage clamps (for the biomass) and lidded feed hoppers with odour neutralizing spray bars for the digestion tanks feed system. Movement of any potential dusty material will be kept to a minimum (max distance 20m across sheltered yard area as shown on site layout drawing) and drop heights kept to a minimum when unloading In general the site will subject to regular wash down/cleaning the only possibility of dust becoming problematical would be a catalogue of errors of the type unlikely to occur on an intensively managed facility such as this. Requirements to monitor odour on a regular basis give the opportunity to make a note if dust is being generated. The above details and procedures are considered to meet the indicative BAT requirements within the Sector Guidance notes.