



Eclipse Works, Meare, Glastonbury

Dust Management Plan

May 2016



Notice

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Document Control

Version	Date	Author / Checked by	Change Description
1.6	25/05/2016	LJB	Document format updated

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Contents

1	Introduction	1
2	Eclipse Works	2
	Site Setting	2
	Product	2
	Site Layout.....	2
3	Dust Generation and Control	3
	Dust Generation	3
	Dust Control	3
	Movement of Material.....	4
	Storage.....	4
	Processing	5
	Dust from Vehicle Movements and Machinery	6
	Dust from Loading Activities.....	6
	Contingency Provisions	6
4	Dust Monitoring	8
5	Conclusions and Mitigation Measures	11

Drawings

Reference	Title
2060/Site	Site Plan

Appendices

Appendix A	Daily Record Sheet
Appendix B	Weather and Processing Related Dust Actions
Appendix C	Complaint Log

1 Introduction

- 1.1 This is the Dust Management Plan (DMP) for the Eclipse Works at Glastonbury which is operated by South West Wood Products. The site processes virgin wood and end of life timber into a range of products. The waste wood operations at the site are covered by an environmental permit, reference EPR/YP3297C. The DMP forms part of the environmental management control system that South West Wood Products operates at Glastonbury to ensure that their operations meet the legislative requirements and operate to the high environmental standards. The DMP is a living document subject to on-going review, with updating as appropriate.
- 1.2 Dust, and particulate matter arising from wood processing operations, can cause concern. Operators must be aware of the potential to cause complaints and the effect of dust on sensitive equipment, machinery, nearby landuses, soils, fauna and flora.
- 1.3 Dust is small particulate matter between 1 and 75 microns and is produced by the processing of wood material by the action of chipping and shredding. The amount of dust generated is a factor of the nature of the material, the method of handling and the volume of material being handled. Mechanical handling creates dust in proportion to the size of the machinery used and the volume of material moved. Haulage creates dust in proportion to the size and weight of vehicles together with the speed and number of passes.
- 1.4 Dust emission is the process by which the dust becomes airborne. The most significant cause is windblow. Once dust is created and becomes airborne, air currents disperse it. Fine dust particles can be deposited over a wide area. With minerals operations the greater percentage of dust is deposited within 100 metres of the point of emission but with wood the particles are less dense and can travel greater distances, in excess of 500m.
- 1.5 Obviously the production of dust is not welcomed. In addition to being an irritant and health hazard, dust results in a loss of product and additional cost arising from plant breakdown, repair and maintenance. It is in the operator's interest to control and reduce dust to a minimum. The control of dust at a site is based on the effective implementation of best practices. This assessment identifies the causes of dust and describes the methods which will be involved in the management of dust at the Eclipse Works to reduce the likelihood of dust being produced, and blown within or beyond the boundaries of the site, to a minimum.

2 Eclipse Works

Site Setting

- 2.1 The Eclipse Works lies in the flat open countryside of the Somerset Levels which is a mixture of agricultural land, former peat workings and wooded areas. The Eclipse Works itself is a former processing site, primarily horticultural and flooring products, and is comprised of a variety of buildings and open yard areas. The site access is via Ashcott Road. Site boundaries comprise a mix of mature tree belts and open ground.
- 2.2 The nearest residential property, Eclipse House, is located 60m to the west, with their garden abutting the Works boundary with a boundary screen of leylandi. The next nearest residential properties are approximately 180m to the north on Ashcott Road. Further properties on Ashcott Road lie over 500m to the south. The centre of Meare village is over a kilometre to the north. Ham Wall, a National Nature Reserve, lies immediately to the south east of the site.

Product

- 2.3 Processing at the Eclipse Works involves a variety of processes involving grinding, chipping, shredding and screening to meet various technical product specifications. The recycled wood is used for biofuels, agricultural products and reconstituted wood panel products.

Site Layout

- 2.4 The site is split into a number of areas with different operations taking place and different materials being processed, see plan 2060/site. Storage and processing takes place in zones 1, 4, 5 and 6, with storage only in zone 2 and the zone 3 is reserved as a quarantine area.

3 Dust Generation and Control

Dust Generation

3.1 The likely dust generation activities includes:

- unloading, movement and transfer wood material;
- processing of the wood material;
- dust from wheels of vehicles; and,
- stockpiling.

Dust Control

3.2 The main principles for preventing dust emissions at the Eclipse Works are by avoidance of dust then containment of dusty processes and suppression of dust (i.e. by spraying).

3.3 The management of dust within the Eclipse Works is undertaken by:

Avoidance/Containment

- Positioning external processing operations downwind of stockpiles i.e. to provide shelter from wind;
- All material leaving site in fully enclosed trailers;
- Provision of screening on northern boundary (tree belt);
- Road sweeping of main entrance and access routes;
- Wetting of material prior to processing (if appropriate); and,
- All loads of dust products sheeted before leaving site;

Suppression

- Provision and use of spray bars over vehicle entrances to main shed; and,
- provision and use of mobile water mister and spray systems provided in strategic positions on processing area and stockpiles as appropriate to conditions;

Wind Dynamics Management

- reducing drop heights from conveyors;
- use of feed chutes; and,
- plant layout design;

Other

- Closing down various or all operations during severe wind events; and,
- Operator procedures i.e. good housekeeping to keep clean and tidy site;
- Transport management.

Movement of Material

3.4 The wood waste material arriving at site, or products being removed from site, are fully enclosed in trailers or sheeted vehicles to prevent any dust during transportation. The material is typically delivered in vehicles with walking floors or ejector systems which minimises the disturbance of material as it is unloaded. Where vehicles do not have such unloading mechanism the material will be damped down as it is unloaded as appropriate to the type of material and weather conditions.

3.5 Unloading is conducted immediately adjacent to the area where it will be stored, with a loading shovel used to push material into the stockpiles. Mobile rain guns or misters are used, as weather conditions dictate, when unloading is generating windblown dust outside the immediate unloading area. The transportation of material within the site can cause dust arising from the wheels of plant or vehicles but controls on vehicles and good housekeeping are employed to minimise dust, see below.

Storage

3.6 The majority of stockpiles of wood waste materials/products, which are awaiting processing or export, are not dusty as the wood material typically has an inherent dampness. But weather conditions tend to 'dry out' the surface of the stockpiles and in windy conditions dust can be generated from the surface of the stockpiles. Rain guns or misters are used to dampen surfaces of the wood waste materials/products stockpiles to suppress dust. The site now typically uses mobile misters and rain guns which are portable and can be moved to suit the configuration of the storage area at any particular time.

- 3.7 The precise volumes and types of materials received at the site vary with market/contract conditions. The storage areas are identified on 2060/Site represents the maximum storage that can occur at the site in line with storage controls, covering dimension and volumes of material as out lined in the Fire Prevention Plan for the site. All stockpiles are regularly monitored, recorded and assessed as part of the site manager's weekly inspections and appropriate action taken such as reducing stockpiles if necessary where the size of storage is giving rise to dust generation and nuisance with recording of any such actions.
- 3.8 A further belt of tree planting to the north, on land outside the permit area between the site and residential properties to the north, has been undertaken.
- 3.9 The storage of materials as outlined should ensure that they are not a potential cause of dust.

Processing

- 3.10 The wood waste processing equipment comprises shredding/chipping, trommel and screening machinery. All the equipment is mobile and typically is moved around the site so that it is located immediately adjacent to the material to be processed. Shredding is the main waste wood processing operations with the potential to generate the most. Providing permanent structures to enclose the outdoor mobile equipment is not practical and similarly temporary enclosures have given rise to operational issues. All outdoor processing plant has either in-built water suppression or can be used with mobile water suppression units. The provision of other containment means such as the using stockpiles to provide windbreaks is employed to help minimise dust generation.
- 3.11 Material is directly moved by excavator or loading shovel from its storage location and fed into the processing equipment. As referred to above all external processing equipment is located in the centre of stockpiles to provide a windbreak to the processing operations and also to minimise internal transportation distances. The processed material is then removed by the loading shovel into stockpiles of finished product ready for removal from site.
- 3.12 There is a variety of options for dust suppression of processing, in addition to fixed dust suppression on the plant units, with misters, rain guns and a tank with rain gun attachment all available to dampen the material in the stockpiles prior to processing, as appropriate to the weather conditions. This allows greater effective use of water for dust suppression as it can be directly located adjacent to processing operations. Water is sourced for dust suppression purposes from the site drainage water or via mains water.

Dust from Vehicle Movements and Machinery

3.13 Dust from the movement of machinery and vehicles on site will be reduced or controlled by:

- Haul roads and open yard areas being hardsurfaced;
- The roads and operational open yard areas being washed or dampened as necessary using a water spray;
- Regular sweeping of roads and operational open yard areas
- Spillages on roads will be cleared up immediately
- Vehicle speeds will be reduced to 10 mph or below in dry, windy weather;
- Plant will be kept clean to avoid a build-up of mud or dust on the machine which may be dropped on roads and, later, cause wind-blown dust; and,
- Prior to leaving site, any vehicles which have materials adhering to external surfaces which may have the potential to wind-blown dust, will be cleaned.

Dust from Loading Activities

3.14 A loading shovel is used to load vehicles removing material from site. When the loading of vehicles is giving rise to the generation of dust misters will be used to dampen materials prior to loading. Material loading into vehicles will not be placed higher than the vehicle sides. Any spillages during loading will be clean up as part of routine housekeeping measures. All vehicles will be sheeted upon loading.

Contingency Provisions

3.15 There will be contingency provisions for replacement plant and parts relating to any equipment forming part of the DMP provisions. For key plant contingency measures will be in place to ensure that the equipment can be repaired or replaced within 24hours of breakdown, covering the following:

- Mobile dust suppression units
- Suppression units on processing equipment
- Road Sweeper
- Loading shovel

3.16 Spare supplies of the following will be kept on site:

- Hoses and nozzles
- Any items recommended by manufacturer's guide.

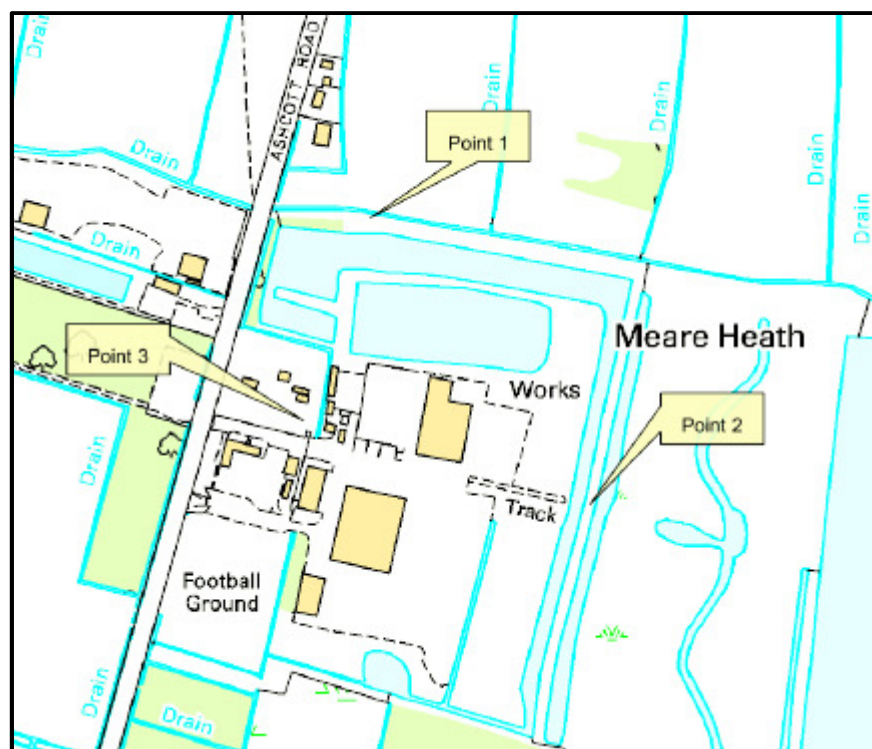
3.17 Where key plant cannot be repaired/replaced within 24 hours or other failure of dust suppression equipment occurs, e.g. freezing of water, additional contingency provisions will be considered involving cessation of relevant processing operations and diverting scheduled waste deliveries away from site, as appropriate.

4 Dust Monitoring

- 4.1 At all times dust will be monitored by visual assessment. Weather conditions are recorded daily in the Site Diary, see Appendix A. To aid the on-going monitoring (wind direction and strength) a flag is provided readily visible on site to provide an immediate indication of a change of wind direction to site operatives working outside.
- 4.2 The Site Diary will also contain details of the various processing operations that take place each day. The site manager will ensure dust management measures are undertaken as appropriate to the site operations and current weather conditions. Weather conditions which require specific site actions including cessation of processing plant operations are detailed in the site offices allowing actions to be taken in response to the prevailing weather conditions, see Appendix B.
- 4.3 If further management measures are taken to control dust as a result of dust or weather condition monitoring, the additional mitigation measures will be recorded. In certain adverse weather conditions visual monitoring will be more intensive.
- 4.4 The site manager is responsible for the operation of the dust management plan and all site operatives will be trained, and required, to take necessary mitigation action. They will also be required to take preventative action to avoid dust by suitable location of rain guns and misters, clearing any spillages of materials, maintaining water suppression equipment, repair of defective water suppression equipment, maintaining roads clean and in good condition and by washing machinery to keep all plant clean and dust or mud free. Additionally any contractors working on site will be made aware of the provisions of dust management plan and be required to comply with relevant provisions as appropriate to any work they are undertaking on site.
- 4.5 If airborne dust is seen, over and above small clouds in the immediate area of activity which are not escaping out of the site boundaries, in circumstances not provided for in Appendix B, then the site manager will investigate the incident and ensure additional/alternative mitigating measures are employed, which may include relocation of processing equipment, or redeployment of the water sprays. Additional measures may include cleaning and damping haul roads and hard surfaces as and when necessary or imposing further speed limits.

- 4.6 Should weather conditions and operations be such that dust is blown beyond the boundaries of the site, then operations responsible for the generation of airborne dust will be stopped until the weather changes.
- 4.7 Any complaints or incidents, as referred to in paragraphs 4.5 and 4.6 above, will be fully investigated and recorded by the site manager including details of any mitigation or remedial actions taken as per the procedures in the management system with the maintenance of the site diary, see Appendix C. The site manager will ensure that the EA is informed of these within 24 hours, ideally as soon as possible practically possible and appropriate.
- 4.8 Ongoing dust monitoring using the dust Frisbee monitors has been undertaken since 2011 at three locations, see figure 1 below. No discernible trends nor any unacceptable external dust impacts from the site operations been have been identified. Dust monitoring will continue.

Figure 1: Locations of Dust monitors



- 4.9 The site manager will review of the site diary in relation to dust matters together with any complaints, EA inspection records, the monitoring results and weather station information. The results of review shall be used to assess the need for changes to the DMP including amending site procedures and further monitoring work if necessary.

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- 4.10 Notwithstanding the above, the DMP will be reviewed annually by the site manager or otherwise in response to a request from the Environment Agency, changed circumstances such as the operation of new processing plant or substantiated dust complaints.

5 Conclusions and Mitigation Measures

- 5.1 Wood processing operations do produce dust but the dust produced will be limited by the nature of the operations and mitigation measures. In any event dust can be controlled to confine and prevent its escape and to minimise airborne dispersal.
- 5.2 At the Eclipse Works the main causes of dust relate to processing, transportation and stockpiling.
- 5.3 Dust from processing will be controlled sensible site management controls including careful movement by experienced operators, use of water mister and rain guns equipment, containment/screening to shelter other processing operations, limiting location of certain processing operations, operation of best practise in terms of housekeeping operations, and if necessary with cessation of operations in certain weather conditions if dust blows beyond the site boundaries.
- 5.4 Effective site management, to ensure the control of air-borne dust, will include:
- Regular review of prevailing weather conditions and site operations;
 - Use of rain guns/water mister and sprays on processing operations;
 - Location of stockpiles to provide 'windbreak' screen round processing plant;
 - Keeping surfaces of stockpiles damp where windblown dust could potentially be generated;
 - Sheeting of all dust loads immediately after vehicle loading;
 - Keeping hard surfaces damp in hot, dry, windy weather using a water spray or bowser or misters;
 - Maintaining as much boundary vegetation and bunding as possible;
 - Regular maintenance of all plant including water sprays and misters;
 - Keeping vehicles clean and dust free and internal haul roads dust free limiting the speed of vehicles especially in adverse weather;
 - Careful moving of material;
 - Postponing operations if significant wind-blown dust is likely to result; and,

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- Cessation of operations if significant wind-blown dust is caused.
- 5.5 Ongoing monitoring of dust levels and review of the operation of DMP, with appropriate updating, will ensure continuing effective dust management at Eclipse Works without any adverse dust impacts off site.

Drawings

Drawing 2060/Site – Site Plan

Appendices

Appendix A – Daily Record Sheets

Daily Site Record

Date:.....

		Start time (am)		Start time (pm)	
Weather	Wind strength/direction				
	Sunny, dry, showers, rain, etc				

Operations & Locations	Start time (am)	Visible Dust	Actions	Start time (pm)	Visible Dust	Actions
<ul style="list-style-type: none"> • Transport¹ • Plant movements • Unloading • Shredding • Chipping • Screening • Bedding • Loading • Stockpiling • Other (specify) 						

Signed:..... (Site supervisor or nominated deputy)

¹ See Log of Lorry movements with weighbridge records

Appendix B – Weather and Processing Related Dust Actions

Weather and Processing Related Dust Actions

The provisions in this section will be kept under review and amended in the light of on-site experiences

Weather Conditions	Operations	Actions
No wind with frost, fog, mist, snow or wet/rainy conditions	All operations	No dust mitigation required
Dry conditions no wind	Processing operations: Shredding and Screening	Dampen material prior to handling/processing
Winds from SE/S/SW	Processing operations: Shredding and Screening	Processing in zones 1 and 4 kept under review and operations to cease if visible windblown dust from site approaching nearby properties
Strong winds from SE/S/SW	Storage	Regular damping of processed piles during day
Winds from E	Processing operations: Shredding and Screening	Processing in zones 1 and 4 kept under review and operations to cease if visible windblown dust from site approaching nearby properties
Strong winds from E	Storage	Regular damping of processed piles during day
Wind direction from N or W	Processing operations: Shredding and Screening	Dampen material prior to handling/processing
Strong winds from N or W	Storage	No dust mitigation required
Storm/gale conditions	All operations	No processing

Appendix C – Complaint Log

Complaint Log:

Date of Incident		Time of Incident		Weather conditions at time of incident	
Date of Complaint		Time of complaint			
Name		Address		Contact details	
Complaint					

Signed:.....

Details of Investigation				
Action Taken				
Future Actions				
Reporting ²	Complainant	Site Staff	Management	EA

Signed:..... (Site manager)

² Confirm date, verbal or written.