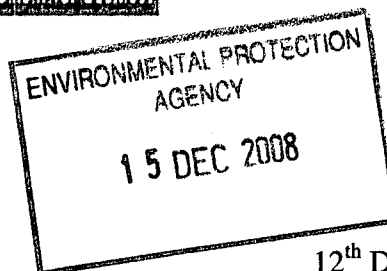


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Dr. Jonathan Derham,  
Office of Climate, Licensing and Resource Use,  
Environmental Protection Agency,  
P.O. Box 3000,  
Johnstown Castle Estate,  
Co. Wexford



12<sup>th</sup> December 2008

RE: Request for Technical Amendment to Condition 3.14 Wood Shredding –  
Greenstar Ltd., Fassaroe Depot W0053-03

Dear Dr. Derham,

We request, on behalf of Greenstar Ltd, (Greenstar) Fassaroe, Bray County Wicklow, a technical amendment of Condition 3.14 of Waste Licence W0053-03.

Condition 3.14 requires Greenstar to enclose its on-site wood shredder and to incorporate measures to mitigate noise and dust nuisances associated with its operation. The wood shredder is currently located in an open area to the rear of the site, as shown on Figure 1 and Figure 2.

Greenstar considers that the Condition was based on historic activities and is no longer applicable to the facility. In 2006 Greenstar received seven complaints from neighbours along the eastern boundary relating to noise and dust emissions from the facility. These were investigated by Greenstar and were found primarily to be associated with the construction of the new Transfer Buildings, and possibly from the external processing of Commercial and Industrial (C&I) and Construction and Demolition (C&D) wastes.

The construction works have now been completed and C&I and C&D waste processing has been moved inside the new buildings. Additional dust suppression measures have been introduced, including the installation of the dust suppression systems on the wood shredder and in the original transfer building.

Greenstar received no complaints about noise or dust emissions in 2007 and none so far in 2008. The routine dust and noise monitoring, which is discussed in more detail below, has confirmed that emissions from the site activities are not a cause of concern. Therefore, Greenstar considers that the external operation of the shredder does not present a significant risk of impairment or interference with amenities or the environment. The grounds for this assessment and the rationale for the amendment to Condition 3.14 is set out herein.

Cont'd

**Location:**

The shredder is approximately 250m from the nearest sensitive location (residence) to the east and approximately 300m from sensitive locations (residences) to the south east (close to the facility entrance). The operation is located on impermeable ground and there are no potential sensitive locations to the north, south or west. The residences to the south east are completely screened by the Phase 1 and Phase 2 Transfer Buildings (ridge height 13m). Those to the east are partially screened by the Buildings and also by earthen mounds that run parallel to the eastern boundary.

**Operation:**

The shredder is a Bandit Beast Model 3680, which is fitted with a dust suppression system, as shown on the enclosed schematic. The timber is initially fragmented and metals removed using a Hammel 750d and then shredded. The enclosed Standard Operating Procedure describes how the unit is operated. Furthermore, in accordance with Condition 6.3.4 of the Licence, the shredder is not operated when wind speeds exceed 10.7 m/s (Force 5). There is an on-site meteorological station, which has an anemometer, and in windy conditions the real time data is used to ensure compliance with this condition.

**Mitigation Measures:**

The mitigation measures currently applied are a mix of the location of the unit and dust suppression systems. The unit is more than 250m away from nearest off-site sensitive locations and the Phase 1 & 2 Buildings and perimeter earthen berms act as a noise attenuation screen for the residences along the sites eastern boundary.

Dust emissions from the shredder are effectively controlled by a retrofitted dust suppression system, which sprays water mist over each step of the shredding process. There is a front sprayer and two side sprayers for the wood inlet and a further three sprayers for the chip outlet (see enclosed schematic). The SOP requires daily checks on the dust suppression system and the suspension of the use of the shredder in dry weather if there is a problem with the system.

**Impact Assessment:***Noise*

Potential on-site sources of noise include the internal waste processing, external timber shredding, and vehicle movements. The Licence requires quarterly noise monitoring at monitoring locations including off-site and at the nearest noise sensitive locations. Four monitoring locations are located along the sites eastern boundary; N1, N2, N3 and N4 and two off-site noise sensitive locations (residences along the eastern boundary); NSL1 and NSL2. The monitoring carried out to date has established that the facility complies with the ELVs set in the Licence and that emissions from the shredder are not a significant source of noise at either the on or off-site monitoring locations. A summary of the surveys carried out in 2008 is enclosed.

## Dust


Potential sources of on-site dust emissions include vehicle movements on unpaved areas, windblow from stockpiles of processed C&D and timber shredding. Dust monitoring is carried out monthly at four monitoring locations within the facility boundary, DS-01, DS-02, DS-03 and DS-04. DS-01 is in the north of the site and is the closest monitoring point to the shredder. DS-02 is located close to the northern boundary of the site at the edge of the car park serving the new administration building. DS-03 is within the site boundary, close to the car park and to the east of the site weighbridges, and is closest to the sensitive receptors to the east. DS-04 is located on the southern boundary.

A summary of the results for 2008 are enclosed. The monitoring identified just three exceedances of the deposition limit, including a marginal one in August of just 3 mg/m<sup>2</sup>/day at DS-03 and a high reading from a suspected contaminated gauge at DS-02 in February. The remaining exceedance in April 2008 was at DS-01 and contained a significant (174 mg/m<sup>2</sup>/day) inorganic fraction which is not associated with the wood shredder. A number of the gauges were contaminated by bird excrement or damaged by on-site construction traffic and measures have been put in place to protect the gauges.

## Conclusion

Greenstar considers that the enclosure of the shredder is not required to mitigate noise and dust emissions and requests that Condition 3.14 be amended to remove reference to the need to enclose the shredder.

Yours sincerely,

  
Michael Watson

0804804/JOC/MW/JC

Encl – Figure 1 & 2, SOP Timber, Dust Suppression Schematic, Noise Monitoring Summary 2008, Dust Monitoring Summary 2008, Bandit Specifications.

c.c. Mr. Malcolm Dowling, Greenstar Ltd.,  
Ms. Deirdre French – Inspector EPA

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CLIENT	GREENSTAR		LEGEND	FIGURE NUMBER	2	Revision	A
TITLE	WOOD SHREDDER LOCATION FASSAROE			Scale	Not To Scale		

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Title	Timber Shredding	
Document	Procedure	
Doc. Type		
Location	Fassaroe	SOP

## 1 PURPOSE

The purpose of this procedure is to ensure that timber shredding operations are carried out in a safe manner with sufficient control of dust emissions.

## 2 SCOPE

This procedure applies to the shredding of timber at Greenstar Fassaroe.

## 3 RESPONSIBILITIES

### 3.1 Operations Manager and Site Supervisors

They are responsible for the implementation of this procedure.

### 3.2 Equipment Operatives (EOPs) and Weighbridge Operator

They are responsible for adhering to this procedure.

## 4 PROCEDURE

### 4.1 General

Timber shredding will be carried out using a Bandit Beast 3680 shredder, (see Table 1). Ferrous metal will be removed and the timber initially fragmented using a Hammel 750D

Shredder Model	Function
Hammel 750D	Production of pre-shredded fragmented wood. Removal of ferrous material from timber stream (via magnet belt).
Bandit Beast 3680	Production of final woodchip (size < 12 cm) suitable for consignment.

Table 1 - GS Fassaroe Timber Shredding Plant


EOPs may only feed pre-shredded material into the Beast 3680.

Equipment may be operated in series, with out-feed material from Hammel feeding directly onto in-feed bed of Beast 3680.

### 4.2 Risk from Flying Debris

- If personnel enter the timber shredding area on foot the EOP must cease shredding immediately (i.e. place shredders in idle).
- Under no circumstances may the EOP approach shredding plant while in operation (i.e. engine must be idling or hopper/in-feed belt clear).

Doc No.	SOP	Issue Date		Rev No.	0	PAGE 1 of 2	ISSUED BY	C Ó C	AUTHORISED BY	
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Title	Timber Shredding	
Document	Procedure	
Doc. Type		
Location	Fassaroe	SOP

4.3 Dust Suppression

- EOP must ensure that the Beast 3680 dust suppression system is connected, via hose and stand pipe, to water hydrant while shredding.
- EOP must inspect dust suppression system of Beast 3680 each day prior to operation to ensure that the water nozzles are clear on both in-feed and out-feed sections.
- Blockages must be clear and any damage to dust suppression system must be reported to Site Supervisor immediately.

4.4 Wind Speed Monitoring

- Timber shredding operation must not be carried out in wind speeds above 10.7 ms<sup>-1</sup>.
- Wind speed is monitored via the Davis Vantage Pro2 meteorological station installed at the site weighbridge.
- Alarm will sound on met station control console, in weighbridge office, when wind conditions exceed 10.7 ms<sup>-1</sup>.
- Operator must inform site supervisor (via radio) when alarm sounds.

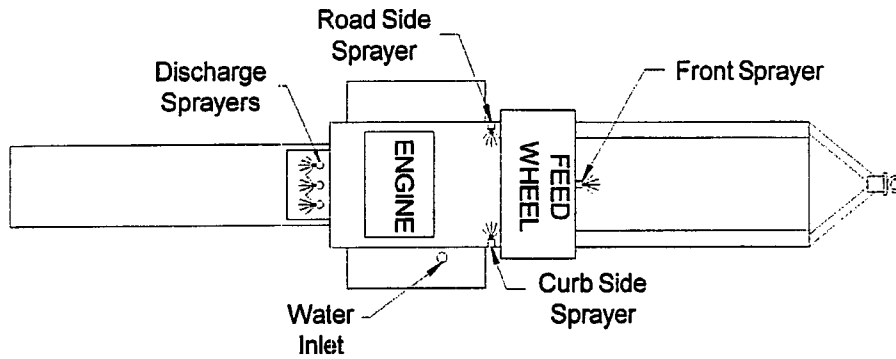
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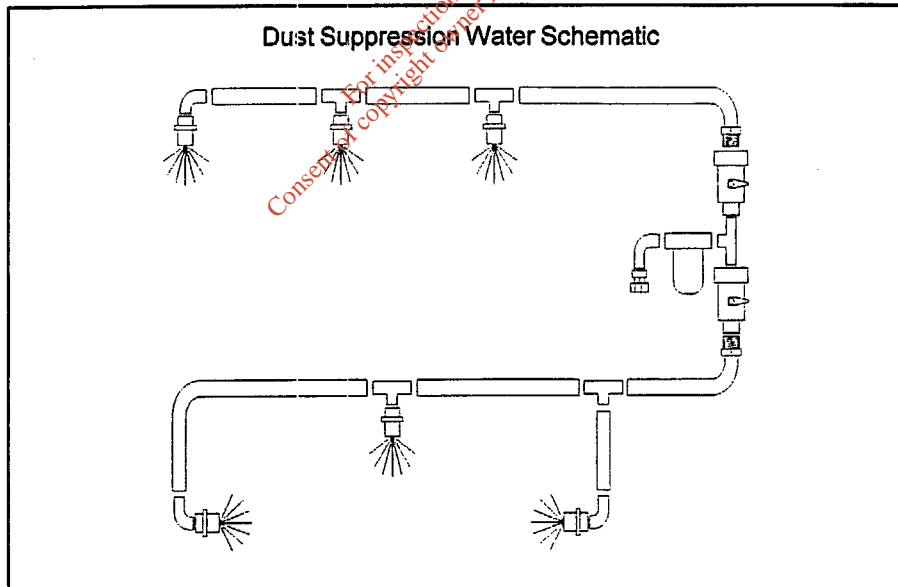


# DUST SUPPRESSION SYSTEM

Location of Dust Suppression Components



Dust Suppression Water Schematic



Smoracy, LLC

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Q1 2008 - Fassaroe W0053-03

Location	Time	Measured Noise Levels (dB r)			Comments
		L <sub>10</sub>	L <sub>A10</sub>	L <sub>90</sub>	
N1	0805-0835	65	65	53	Onsite air handling units audible continuously at low level. Vehicles frequently entering/leaving site dominant when present. Road sweeper truck audible continuously from within site and dominant. Road traffic at roundabout outside entrance significant. Birdsong. Overhead aircraft.
N2	0910-0940	59	61	51	Road sweeper truck audible continuously within site and approaching weighbridge area. Vehicles frequently entering/leaving site significant. Cars accessing car park passing adjacent to SLM*. Onsite waste operations audible, including air handling units. Birdsong. Overhead aircraft.
N3	0943-1013	47	50	43	Noise emissions from onsite waste operations continuously audible at a low level, including road sweeper truck around yard. Not significant. Trucks using site entrance audible at low level. Crows significant. Overhead aircraft.
N4	1019-1049	53	54	52	No site noise audible. Local stream dominant. Birdsong and crows.
NSL1	0837-0907	56	60	52	Road sweeper truck audible continuously at low level within site and near weighbridge area. Vehicles using site entrance also audible. Road traffic on adjacent roads and through roundabout significant. Birdsong. N11 traffic slightly audible continuously. Overhead aircraft.
NSL2	1100-1130	54	55	48	Intermittent local traffic. Rustling vegetation. Birdsong and crows. No site noise audible apart from faintly audible road sweeper truck. Overhead aircraft.

Q2 2008 - Fassaroe W0053-03

Location	Time	Measured Noise Levels (dB r)			Comments
		L <sub>10</sub>	L <sub>A10</sub>	L <sub>90</sub>	
N1	0830-0900	60	63	53	Regular truck movements through site entrance dominant. Continuous site emissions audible at low level in background particularly road sweeper truck around yards. N11 traffic to E and local road traffic dominant in background. Birdsong and crows. Overhead aircraft.
N2	0901-0931	59	60	52	Regular truck movements through site entrance dominant, including trucks idling at weighbridge. Sporadic vehicle movements passing adjacent to SLM. Continuous site emissions audible at low level in background, particularly road sweeper truck around yards. N11 traffic to E audible continuously in background. Birdsong and crows. Overhead aircraft.
N3	0933-1003	56	55	50	Site emissions audible continuously at low level. Not significant. N11 traffic audible continuously and dominant in background. Birdsong and crows. Overhead aircraft.
N4	1004-1034	51	52	49	Site emissions faintly audible. Noise dominated by N11 traffic audible to E continuously, birdsong and crows. Overhead aircraft
NSL1	0800-0830	55	57	60	Site noise emissions slightly audible continuously in background, not significant. Regular truck movements through entrance audible. Road sweeper truck audible moving around the site from 08.20, particularly during one pass through site entrance. Noise dominated entirely by N11 traffic to E and local road traffic. Birdsong and crows. Overhead aircraft.
NSL2	1048-1118	53	53	47	No site noise audible apart from sporadic isolated emissions. Noise dominated entirely by N11 traffic to E and also reflecting off house opposite. Birdsong and crows significant. Intermittent local traffic. Overhead aircraft. Rustling vegetation. Chainsaw audible in distance.

Q3 2008 - Fassaroe W0053-03

Location	Time	Measured Noise Levels (dB re 2x10 <sup>-5</sup> Pa)			Comments
		L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	
N1	0857-0927	62	64	54	Waste Processing emissions continuously audible from within site. Intermittent truck movements through site gate adjacent to N1 dominant. Vehicle movements through roundabout outside gate audible. Crows. Road sweeper truck audible occasionally around site yard.
N2	0928-0958	63	63	53	Waste processing emissions continuously audible from within site. Intermittent truck movements through site gate significant. Crows. Road sweeper truck audible manoeuvring around site.
N3	1037-1107	49	52	43	Waste processing operations audible continuously and dominant from main site building. Emissions gradually decreased during interval, following which N11 traffic becoming audible. Birdsong.
N4	1004-1034	44	45	42	No site emissions audible apart from sporadic skip movements above bank. Water flowing in nearby stream dominant continuously. Birdsong significant. Low hum audible continuously from within site.
NSL1	0823-0853	53	55	46	Waste processing emissions audible at low level, not significant. Intermittent truck movements through entrance clearly audible. N11 traffic continuously audible at low level in background. Birdsong and crows. Intermittent traffic movements through roundabout outside entrance and on local road audible. Road sweeper truck audible through entrance at 0848.
NSL2	1115-1145	50	50	45	N11 traffic continuously dominant in background. Birdsong. No site emissions audible other than moving skips and warning alarms. Processing line emissions slightly audible from 1140. Offsite, sporadic local emissions from worker at van. Sporadic local traffic. Passing helicopter at low level intrusive.

Q4 2008 - Fassaroe W0053-03

Location	Time	Measured Noise Levels (dB re 2x10 <sup>-5</sup> Pa)			Comments
		L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	
N1	1110-1140	57	60	49	Frequent traffic movements through site entrance and at weighbridge area dominant. Forklift truck in regular use at weighbridge during bridge calibration procedure audible. Emissions from with site also audible at low level. Birdsong. Local traffic on public roads significant. N11 traffic also audible in background continuously.
N2	1005-1035	56	58	49	Frequent traffic movements through site entrance and at weighbridge area dominant. Emissions from within site also audible.
N3	0932-1002	53	56	74	C&I line emissions continuously audible until shut down 0945. N11 traffic audible continuously in background. Sporadic vehicle movements in carpark. Birdsong
N4	0859-0929	48	49	47	C&I line emissions slightly audible continuously. Nearby watercourse also audible continuously and dominant. Birdsong.
NSL1	1038-1108	52	53	47	Frequent traffic movements through site entrance and at weighbridge area audible. Emissions from within site also audible at low level. Birdsong. Local traffic on public roads significant. N11 traffic also audible in background continuously
NSL2	0817-0847	59	63	50	Continuous Greenstar C&I line emissions audible at low level from approx 0830 during traffic lulls. LA90 considered partly representative. Regular local traffic dominant. N11 traffic continuously audible and significant. Birdsong.

Dust Results Fassaroe 2008 - W0053-03

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DS-01	*	327	*	400	219	119	*	*	*	*		
DS-02	*	795	33	*	*	212	324	345	*	180		
DS-03	*	*	*	313	136	269	194	353	261	198		
DS-04	24	52	42	191	248	339	182	*	*	230		

\*Contaminated

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# Specifications – Bandit 3680

## Colors

## Options

## Engines

Name	Value
<b>Dimensions</b>	
Width	9' 7"
Height	13' 3"
Length	39'
Weight	57, 500 pounds
<b>Tires and Axles</b>	
Tires	(6) 385/65R 22.5, 18.5 ply tires mounted on 10-bolt aluminum rims
Number of Axles	(3) 25,000 pound axles with air brakes
<b>Mill Opening</b>	35" high X 60" wide
<b>Tongue Jack</b>	Hydraulic tongue jack with front stabilizer
<b>Steel Fuel Tank Capacity</b>	500 gallons
<b>Steel Hydraulic Tank Capacity</b>	140 gallons
<b>Towing Hitch</b>	3" pintle ring with safety chains
<b>Infeed Conveyor</b>	20' long X 60" wide (3) speed track-type infeed conveyor
<b>Feed System</b>	
Feed Wheel	24" diameter feed wheel
Cuttermill	42" diameter X 63" wide cuttermill
Cutters	60 teeth and cutterbodies
<b>Discharge Conveyor System</b>	
Length	30 ft.
Width	48"
Height	17.5 ft. (Discharge Height)
<b>Auto feed plus</b>	
<b>Radio remote control with tether backup</b>	
<b>Heat acuated fire suppression system</b>	

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