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environmental management for business

Office of Environmental Enforcement,
South East Region,
Environmental Protection Agency,
P.O. Box 3000,
Johnstown Caste Estate,
Co. Wexford

31st March 2009

RE: 2008 Annual Environmental Report - Greenstar Ltd. – Waterford
Reg. No. W0116-02

Dear Sir/Madam,

Please find enclosed an original and 2 no. copies of the 2008 Annual Environmental Report (AER) for the above referenced facility. The AER file has been uploaded to the EPA website and is a true copy of the original Annual Environmental Report. The AER/PRTR emissions data reporting workbook has also been uploaded to the EPA website.

If you have any queries, please call me.

Yours sincerely,

Michael Watson

0804814/MG/JC
Encs.
c.c. Mr. Suzanne Byrne, Greenstar Ltd.
Mr. Denis Mullally, Greenstar Ltd.

email. info@ocallaghanmoran.com Website: www.ocallaghanmoran.com

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environmental management for business

ANNUAL ENVIRONMENTAL REPORT

GREENSTAR LIMITED

LICENCE NO. W0116-02

JANUARY 2008 – DECEMBER 2008

Prepared For: -

Greenstar Ltd.,
Six Cross Roads,
Carriganard,
Butlerstown,
Co. Waterford.

Prepared By: -

O' Callaghan Moran & Associates,
Granary House,
Rutland Street,
Cork.

31st March 2009

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1. INTRODUCTION

This is the 2008 Annual Environmental Report (AER) for Greenstar Ltd. (Greenstar) Materials Recovery Facility (MRF) at Six Cross Roads, Waterford. In January 2009 the Waste Licence for the facility W0116-02 was transferred from Waterford Utilities Services to Greenstar Ltd. The report covers the period from the 1st January 2008 to the 31st December 2008 during which time the facility operated under the name Waterford Utility Services. The content of the AER is based on Schedule F of the Waste Licence (W0116-02) and the report format follows guidelines set in the "*Guidance Note for Annual Environmental Report*" issued by the Environmental Protection Agency (Agency).

2. SITE DESCRIPTION

2.1 Site Location and Layout

The facility is located at Six Cross Roads, Carriganard, Butlerstown and is accessible from the Six Cross Roads, just south off the Waterford by-pass (R710). The surrounding area to the north, south and east of the facility is occupied by industrial and commercial premises. The facility is bordered to the west by a cul de sac third class road and agricultural land.

2.2 Waste Management Activities

The Licence allows Greenstar to accept and process 70,000 tonnes of waste per annum, comprising non-hazardous household and commercial, industrial and construction and demolition wastes. The existing plant used at the facility is listed on Table 2.1.

Table 2.1 Existing Plant

No.	Plant	Model	Operational Capacity
1	Loading Shovel	Volvo L90 F	50 hr/wk
1	Track Machine	Cat	50 hr/wk
1	Forklift	Linde	50 hr/wk
1	Power Washer	PWP	10 hr/wk
1	Tractor Unit	Scania	20 hr/wk
1	Baler	Presona LP 40 BH	-
1	Weighbridge	Precia Molen I-200	50 hr/wk

2.2.1 Waste Types

The facility is licensed to accept a maximum of the following waste types and quantities, as specified in Schedule A of the Licence: -

- Household and Commercial (30,000 tonnes),
- Construction & Demolition (20,000 tonnes),
- Industrial Non-Hazardous Solid (20,000 tonnes)

No hazardous wastes or liquid wastes are accepted.

2.2.2 Waste Handling

All waste is processed internally. Incoming waste is unloaded, separated into fractions, which are then compacted and loaded onto trailers for transfer off-site to appropriately licensed facilities. All cardboard and paper is baled in the on-site baler and then loaded onto trailers for transfer off-site. Mobile plant is used – front loaders, track machine and fork lift – to move waste, feed the on-site baler and load the bulk and baled wastes.

3. EMISSION MONITORING

Greenstar implements the comprehensive environmental monitoring programme specified in the Licence to assess the significance of emissions from site activities. The programme includes surface water, noise and dust monitoring. The monitoring locations are shown on Figure 3.1.

The monitoring results are submitted to the Agency at quarterly intervals. An overview of the results of the monitoring is presented in this Section, with summary data in tables included in Appendix 1.

3.1 Surface Water Monitoring

Surface water monitoring was carried out quarterly at three locations (SW-1, SW-2 and SW-3). The locations initially identified in the application for the original licence (W0116-01) were selected on the understanding that run-off from roofed and paved areas of the facility discharged to the open stream on the western side of the access road. However, following a survey of the drainage system, it was found that runoff discharged to a culverted stream on the eastern side of the access road. It was therefore decided to relocate the monitoring points to the culverted stream and the Agency was informed of this in Q2 2008.

The stream runs from the New Ring Road to the Six Cross Roads and is culverted from the start of the Industrial Estate to the Six Cross Roads. The revised monitoring locations include the surface water discharge from the facility and up and downstream of the discharge as shown on Figure 2.1. SW-1 is located to the north and upstream of the facility. SW-2 is at the discharge from the facility and SW-3 is to the south and downstream, where the stream is not culverted. This is the closest accessible downstream location. As a result of the change in monitoring location, results are only available for the final three quarters of 2008.

The range of analysis was as specified in Schedule C of the Waste Licence and includes quarterly monitoring of pH, electrical conductivity, Chemical Oxygen Demand (COD), total ammonia, suspended solids and mineral oils. There are no Emission Limit Value (ELV) and Trigger Levels set in the Licence. Greenstar have set proposed trigger levels for the surface water emission which will be incorporated into the reporting of future surface water monitoring at the site commencing in Q1 2009.

In general the water quality at SW-1, upstream of the facility is not good and is impacted by activities in the surrounding area. In Q2 2008, the total ammonia and total petroleum hydrocarbon (TPH) levels measured in SW-2 were higher than those measured in the up and downstream monitoring locations.

In Q3 2008, the ammonia levels at all three locations exceeded the EQS value. The results indicated that discharge from the facility did not have an adverse affect on the stream, with both the upstream and downstream samples having similar results.

In Q4 2008, the ammonia and TPH levels at all three locations exceeded the EQS value, with the highest level of ammonia in SW-1, the upstream sample. High TPH levels detected in the discharge was possibly associated with two separate minor spillages of hydraulic oil at the site, which occurred during the week beginning the 24th November 2008. In both cases hydraulic oil hoses on two separate trucks leaked. The spills, which were minor in nature, were cleaned up immediately using the spill kit kept on site and the hydraulic oil hoses on both trucks were replaced. As the leaks were minor they were not categorised as incidents.

The discharge from the facility did not have any significant adverse effect on the receiving water course in 2008. Low flow from the facility and the dilution capacity of the stream are factors.

3.2 Noise Survey

Greenstar carried out the bi-annual noise surveys at the facility in August and October 2008 and the results were submitted to the Agency in September 2008 and January 2009. Monitoring was carried out at three onsite monitoring locations (N1, N2 and N3) and two offsite monitoring locations (N4 and N5). The surveys were conducted when the site was fully operational. The surveys concluded that the facility was in compliance with its licence requirements.

3.3 Dust Monitoring

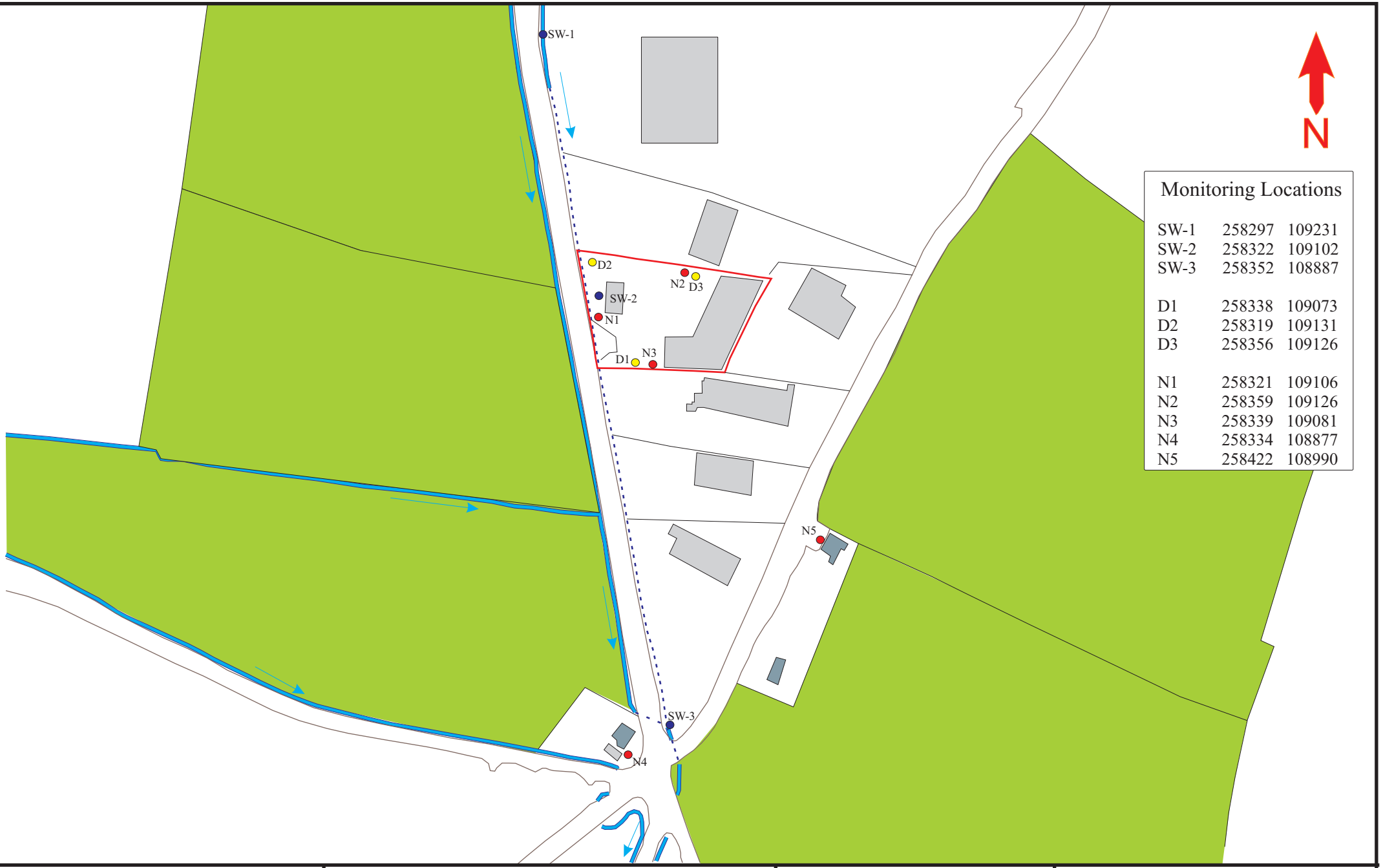
Greenstar conducted dust monitoring on two occasions (May and June) at three on-site locations (D1, D2 and D3). The licence requires that these monitoring events be carried out between May and September. The results are included in Appendix 1.

The dust deposition limit was exceeded at D1 and D3 in the May monitoring event with levels of 385 mg/m^2/day and 1,631 mg/m^2/day respectively. In June the dust deposition limit was exceeded at D2 and D3 with levels of 469 mg/m^2/day and 632 mg/m^2/day respectively.

The exceedences are likely associated with contributions from various off site sources, as well as the facility. D1 is on the south-western boundary of the facility, adjacent to a large open paved yard used by a haulage company**.** D2 is on the western boundary of the facility, adjacent to a public road used to access the industrial facilities to the north of the site. D3 is on the north-eastern boundary, adjacent to a neighbouring warehousing facility. The traffic movements and other activities on these adjoining areas are potentially significant off-site

sources of the dust recorded at the monitoring points. There is also significant dust generated by traffic on the public access road to the industrial estate.

Given the facility location within an industrial area and bordered by an access road, it is not possible to determine the level of dust emission from the Greenstar site alone, although the levels are not expected to be significant. The primary source of dust emissions are vehicle movements on paved open yard areas during dry periods. The Greenstar yard area is relatively small (1,600m^2) and therefore vehicles have to travel slowly, which reduces the potential for dust generation. Waste unloading and processing is carried out internally and there are negligible fugitive emissions from this source.



Monitoring Locations

SW-1	258297	109231
SW-2	258322	109102
SW-3	258352	108887
D1	258338	109073
D2	258319	109131
D3	258356	109126
N1	258321	109106
N2	258359	109126
N3	258339	109081
N4	258334	108877
N5	258422	108990

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CLIENT

Greenstar

TITLE

Monitoring Locations
Waterford

LEGEND

- Commercial/Industrial unit
- Private Dwelling
- Agricultural Land
- Surface Water Monitoring Point
- Dust Monitoring Point
- Noise Monitoring Point

FIGURE NUMBER

3.1

Scale

Not To Scale

Revision

A

4. SITE DEVELOPMENT WORKS

4.1 Engineering Works

The concrete wall of the civic amenity area was rebuilt in 2008. Table 4.1 shows the planned engineering works for 2009. The Agency will be notified of all engineering works as per Condition 3.2 of the Licence.

Table 4.1 Site Infrastructural Works Proposed for 2009

Description of Works	Scheduled Date	Proposed Date of Completion
Moving of Septic Tank	01.03.09	01.04.09
Refurbishment of Welfare Facilities	01.06.09	01.07.09
Installation of CCTV Cameras	To be confirmed	To be confirmed

4.2 Summary of Resource & Energy Consumption

Table 4.3 presents an estimate of the resources used on-site during the reporting period.

Table 4.3 Estimated On-Site Resource Use

Resources	Quantities
Diesel	22,352 litres
Ad Blue	1,000 litres
Hydraulic Oil	705 litres
Engine Oil	600 litres
Anti Freeze	205 litres
Electricity	63,820 units

4.3 Bund Integrity Test

Bund integrity tests were carried out in April 2008 on the main fuel bund which passed. A copy of the result is included in Appendix 2.

5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY

Table 5.1 shows the total quantities of waste received and consigned from the facility in 2008, Table 5.2 shows the quantities for 2007 and Table 5.3 shows the quantities of waste received and consigned in previous years. A breakdown of the waste types is provided in accordance with the European Waste Catalogue and Hazardous Waste (EWC/HWL) list.

The total amount received in 2008 was 28,595.73 tonnes. The total amount consigned was 28,714.10 tonnes. There is a difference of 118.37 tonnes more consigned than received in 2008. In 2008 two walls were knocked down on site, this weighed approximately 60 tonnes and was consigned off site as part of a C&D shipment. Approximately 10 tonnes of metal was also consigned off site due to the dismantling of skips onsite. At the end of 2008, 119 tonnes remained onsite which will be consigned in 2009. The recovery rate is estimated at 97%. The increase in recovery rate from 2007 (79%) is due to the designation of waste consigned in 2007 to Thomas Driver (7,118 tonnes) as waste for disposal, this waste has been classified correctly in 2008 as waste for recovery (4,785.93 tonnes).

All the wastes consigned from the site went to recovery and disposal facilities agreed with the Agency. The name and location of the facilities are given in Table 5.4.

Table 5.1 Waste Received & Consigned 1st Jan 2008 – 31st Dec 2008

EWC	Description	Waste In	Waste Out	Destination
15 01 01	Cardboard Packaging	948.01	1,116	Bailey Waste
			22.52	Greenstar Fassaroe
15 01 02	Plastic Packaging	22.65	52.70	Clearpoint Recycling
15 01 03	Wooden Packaging		23.34	OD Recycling
			317.24	Weyerhauser Ltd.
15 01 04	Aluminium	0.38	2.04	Molloy Metals
	Aluminium Cans	53.04	16.12	Clearpoint Recycling
			18.80	Molloy Metals
15 01 06	Mixed Packaging	1,487.58	6.64	Clearpoint Recycling
15 01 07	Glass Packaging	121.05	142.38	Greenstar Wexford
17 01 07	C&D Inert Mixed	993.10	4,785.93	Thomas Driver
17 05 04	C&D Inert Mixed	3,756.39		
	Soil & Stones	2.38		
17 08 02	Plasterboard	89.75		
19 12 07	Wood	25.84		
19 12 12	C&I Dry Mixed	52.13	25.18	Dunmore Landfill
			326.40	KTK Landfill
			101.28	Greenstar Cork
			8,727.14	Greenstar Millennium Park
	MSW Municipal Mixed		567.72	Knockharley Landfill
			1,594.36	Greenstar Fassaroe
			9,151.75	Greenstar Cork
20 01 01	Cardboard & Paper	15.16	469.82	Bailey Waste
	Newsprint		26.28	Bailey Waste
	Recy Paper	2.60	48.74	Bailey Waste
			22.38	Greenstar Fassaroe
20 01 38	Wood	1,264.33	822.92	OD Recycling
			143.56	Weyerhauser
20 01 40	Metal	128.85	182.86	Molloy Metals
20 03 01	MSW Municipal Mixed	9,135.25		
20 03 07	C&I Dry Mixed	10,497.24		
	Total Received	**28,595.73**		
	Total Consigned		**28,714.10**	
	Total Recycled		**27,794.87**	
	Total Disposed		**919.3**	
	Recovery Rate		**96.80%**	

Table 5.2 Waste Received & Consigned 2007

EWC	Description	Waste In	Waste Out Recycled	Waste Out Disposed	Destination
20 03 01	Mixed Residual Waste	8,985	13,759		Greenstar Cork
15 01 01	Cardboard Packaging & paper packaging e.g. corrugated packaging cardboards, and other cardboards, paper shopping bags, wrapping paper	1,193	1,418		Bailey Recycling
20 01 01	Paper and cardboard from municipal sources e.g. office paper, newspaper (non-packaging)	1	80		Bailey Recycling
15 01 02	Plastic bottles, jars e.g. PVC, PET & PE containers, supermarket bags, refuse bags, plastic wrappers for food	32	55		Clearpoint Recycling
20 01 39	Plastic from municipal sources e.g. C&D plastic (non-packaging)	6			
15 01 07	Glass packaging e.g. bottles, jars and other glass containers	84	118		Stafford Shipping
20 01 02	Glass from municipal sources (non-packaging)	22			
20 01 38	Wood waste from municipal sources (non-packaging) e.g. furniture	1,398			
15 01 04	Aluminium packaging e.g. soft drink & beer cans, aluminium foil	32	50		Clearpoint Recycling
20 01 40	Metals separated from municipal household and commercial waste e.g. light iron (non-packaging)	157	9		Clearpoint Recycling
15 01 06	Mixed Packaging	1,049	46		Clearpoint Recycling
17 01 07	C&D Inert Mixed	5,086		6,378	Thomas Driver
17 05 04	C&D Inert mixed Soil & Stones	762		740	Thomas Driver
17 06 04	LDF Insulation Materials	3			
17 08 02	LDF Gypsum Plasterboard	184	26		Gypsum Recycling
19 12 09	Fines C&D	1			
20 03 07	C&I Dry Mixed	12,015			
19 12 12	C&I Dry Mixed		9,531.62		Greenstar Millennium
				328.38	KTK Landfill
19 12 01	Cardboard & Paper		594		Bailey Recycling
19 12 02	Metal		361		Molloy Metal
19 12 07	Wood		260.54		Pat O'Donnell
			1,099.46		Weyerhauser
	Total Received	**31,010**			
	Total Recycled		**27,408**		
	Total Disposed			**7,446**	
	Recycling Rate		**79%**		

Table 5.3 – Waste Received and Consigned since 2006

	2007	2006
Total Received	31,010	34,643
Total Consigned	34,854	34,978
Recovery Rate	79%	62.66%

Table 5.4 Off-Site Disposal / Recovery Agents

Final Recovery or Disposal Destination	Waste Licence or Permit	Waste Type Accepted
Baileys Waste Paper, Rosemount Business Park, Blanchardstown, Dublin 16	WPT(1)B	Paper & Cardboard
Clearpoint Recycling, Ballylynch, Carrick-on-Suir, Co. Tipperary	WM/WP/12/05	Plastic, Aluminium Cans
Dunmore Landfill, Dunmore, Co. Kilkenny	W0030-02	C&I
Greenstar Recycling, Sarsfieldcourt, Glanmire, Co. Cork	W0136-01	Paper, Cardboard, Plastic & Metals
Greenstar Recycling, Fassaroe, Bray, Co. Wicklow	W0053-03	Cardboard Packaging, Paper & MSW
Greenstar Recycling, Millennium Business Park, Ballycoolin, Dublin 11	W0183-01	Wood, Cardboard Packaging& C&I
Knockharley Landfill, Kentstown, Co. Meath	W0146-01	MSW
KTK Landfill, Kilcullen, Co. Kildare	W0081-03	C&I
Molloy Metals Recycling, Ballycarney, Enniscorthy, Co. Wexford	WP/000/15	Metal
OD Recycling, Ballyboe, Ballypatrick, Clonmel, Co. Tipperary	WM/WP/06/03b	Wood, Wooden Packaging
Thomas Driver, Rocketts Castle Estate, Portlaw, Co. Waterford	WP 50/06	C&D Inert Mixed
Weyerhauser, Clonmel, Co. Tipperary	P0593-01	Wood, Wooden Packaging

6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS

6.1 Incidents

There were no incidents in 2008.

6.2 Register of Complaints

Greenstar maintains a register of complaints received in accordance with Condition 3.13 of the waste licence. No complaints were received in 2008.

7. ENVIRONMENTAL DEVELOPMENT

7.1 Environmental Management Programme Report

In compliance with Conditions 2.1 and 2.2 of the Licence, Greenstar has established an Environmental Management System (EMS) for the facility. With the exception of the Schedule of Objectives and Targets, which are amended annually as part of the AER the environmental management programme was not amended in 2008. The schedule of Objectives and Targets, including their status for 2008 (Table 7.1), as well as the proposed Objectives and Targets for 2009 (Table 7.2) are presented below.

In Q3 2008 Greenstar initiated a programme to update the Environmental Management System at all its sites. This will assist in achieving improved compliance with relevant national and European legislation, regulatory licences and permits, industry best practice and client requirements. It will also improve the control of contractors, materials and waste management, energy management and emission control. A revised EMS will be implemented in Q2 2009.

7.1.1 Schedule of Objectives 2008

The objectives that were achieved during this reporting period are outlined in Table 7.1.

7.1.2 Schedule of Objectives 2009

A schedule of targets and objectives for 2009 has been set by the management of the facility. These objectives are outlined in Table 7.2.

7.1.3 Site Management Structure

Details of the site management structure are included on Table 7.3.

7.1.4 Staff Training

Staff training carried out during the year included spill kit procedures training carried out in June 2008 for ten drivers and. chemical handling training for two general operatives carried out in July 2008.

Table 7.1 Schedule of Objective and Targets 2008

No	2008 Objective	Responsibility	Update
1	To constantly review operating and waste acceptance procedures and environmental systems as to reduce the environmental impact the facility has on the surrounding environment.	Facility Manager	Ongoing
2	The foul water system will be connected to the main public sewerage system following installation of the system by Waterford City Council.	Facility Manager	Waterford City Council has confirmed that they will not be extending the foul sewer service to include Carriganard at Six Cross Roads. This will be removed as an objective
3	The company continually aims to increase the recovery rate through greater material segregation at the facility.	Facility Manager	Ongoing
4	Ensure monitoring results comply with licence limits & investigate any exceedences of emission limit values (ELVs)	Facility Manager	Complete
5	Ensure compliance with the conditions of the new licence (W0116-02), which allows for 70,000 tonnes per annum	Facility Manager	Complete
6	Awareness & Training Programme to be established for the site as part of the new licence conditions and EMS	Facility Manager	Ongoing

Table 7.2 Schedule of Objective and Targets 2009

No	2009 Objective	Responsibility	Update
1	Implementation of an improved Environmental Management System	Facility Manager	Q3 2009
2	Reduce the energy/fuel usage at the facility. Monitor diesel, water and electricity usage quarterly	Facility Manager	Ongoing
3	Continuous collection and segregation of waste on-site	Facility Manager	Ongoing
4	Review the dust monitor locations and causes of dust on site	Facility Manager	Q3 2009
5	Improve on-site storage facilities	Facility Manager	Q4 2009
6	Environmental awareness and training to be carried out as necessary throughout the year	Facility Manager	Ongoing

Table 7.3 Site Management Structure

Name	Position	Replacement	Experience
Denis Mullally	General Manager, overall responsibility for the running of the business, including environmental compliance	Declan O'Reilly	5 years waste management experience
Eileen Hayes	Office Manager	Denis Mullally	28 years waste management experience.
Ivan Cummins	Operations Manager	Denis Mullally	24 years experience in waste business
John Cottrell	Transport Manager	Denis Mullally	35 years waste management experience

7.2 Communications Programme

All correspondence received and sent to the Agency (except commercially sensitive information) is available to the public to view at the facility.

Records available for public inspection on site include:-

- Environmental Policy,
- Waste Licence,
- Licence Application and Review documentation,
- Monitoring Records,
- Complaints File,
- EPA Correspondence File.

Opening Times for Inspection of Records are from 10 am – 4 pm. Visits to the site should be arranged in advance by ringing the Facility Manager or Supervisor at 1890 600 900.

7.3 New Procedures Developed in 2008

A new procedure for the handling of gypsum waste was developed in 2008, a copy of which is included in Appendix 3.

7.4 Report Financial Provision

Greenstar has accrued over €3,000,000 in funds to provide for any potential environmental liabilities including the unexpected closure of the facility. Greenstar Ltd. has adequate insurance cover for environmental liabilities to €6,500,000 for any one occurrence, which will apply to "sudden identifiable and unintended incidents" that might occur in the decommissioning period.

7.5 Nuisance Control

Greenstar carry out routine site inspections and litter collections including on site, the roadway and boundary fence and daily road cleansing and monitoring. Greenstar has contracted a vermin control company Rentokill to carry out nuisance control at the facility.

As mitigation against dust generation Greenstar regularly dampen the site and sweep it with a mechanical road sweeping machine. The frequency of this cleaning is increased depending on weather conditions.

7.6 European Pollutant Release and Transfer Register

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 Greenstar are required to submit information annually to the Agency. A copy of the information submitted to the Agency via the web-based data reporting system is included in Appendix 4.

7.7 Foul water Volume Transported Off-Site

The total amount of foul water removed from the facility during the reporting period was 80,000 litres which originated from the cleaning of the interceptors and 45,000 litres from the on site septic tank.

8. OTHER REPORTS

There are no other reports requested by the Agency.

APPENDIX 1

Environmental Monitoring Summary Tables

SURFACE WATER MONITORING RESULTS

SW-1	Units	Q2	Q3	Q4
pH	pH units	7.4	7.17	7
Temperature	°C	13.2		10
Conductivity	mS/cm	0.899	0.431	0.388
COD	mg/l	53	<15	45
Total Ammonia	mg/l	2.55	0.3	0.27
Suspended Solids	mg/l	35	<10	114
Mineral Oils	mg/l	0.242	<0.01	0.356

SW-2	Units	Q2	Q3	Q4
pH	pH units	7.5	7.63	7.5
Temperature	°C	14.4	-	9.9
Conductivity	mS/cm	0.737	0.305	0.337
COD	mg/l	124	<15	108
Total Ammonia	mg/l	24.68	3.1	0.26
Suspended Solids	mg/l	76	52	167
Mineral Oils	mg/l	1.52	<0.01	2.061

SW-3	Units	Q2	Q3	Q4
pH	pH units	7.4	7.22	7
Temperature	°C	13.8		10
Conductivity	mS/cm	0.408	0.434	0.41
COD	mg/l	<20	<15	42
Total Ammonia	mg/l	<0.36	0.3	0.24
Suspended Solids	mg/l	4	<10	80
Mineral Oils	mg/l	<0.05	<0.01	0.499

DUST DEPOSITION RESULTS

	May-08	Jun-08
D1	385	216
D2	263	469
D3	1631	632

NOISE RESULTS

14/08/2008

Station	Time	LAeq 30 min dB	LA10 30 min dB	LA90 30 min dB	Noise Audible
N1	1058-1128	69	72	59	Noise dominated entirely by truck movements through gate, and around yard and weighbridge areas. Occasional emissions audible from FEL and FLT within building. No offsite sources audible apart from sporadic vehicle movements on access road outside gate.
N2	1205-1235	63	64	60	SLM 0.5 m from wall for safety, and thus noise levels presented incorporate **-3 dB** correction. Truck idling continuously throughout interval at 20 m. Emissions from trucks around yard and FEL in building also audible. No other noise audible.
N3	1131-1201	61	65	47	Noise dominated by 1. truck movements through gate, and around yard and weighbridge areas, and 2. FLT operating offsite at adjacent premises from 1140. Occasional emissions audible from FLT and FEL within building. Truck audible idling at adjacent premises from 1151. Sporadic vehicle movements audible on access road outside gate.
N4	1242-1312	51	54	42	Almost-continuous traffic on local roads dominant, including access road towards Greenstar. Crows significant. Birdsong. Voices audible at low level in garden at adjacent house. No emissions audible from Greenstar facility. Rustling vegetation. High altitude aircraft.
N5	1339-1409	66	69	44	Almost-continuous traffic on local roads dominant, including access road towards Greenstar. AHU slightly audible continuously at nearby premises. Birdsong. No emissions audible from Greenstar facility. Rustling vegetation. High altitude aircraft.

AHU: Air handling unit
end loader
truck
SLM: Sound level

29/10/2008

Station	Time	LAeq 30 min dB	LA10 30 min dB	LA90 30 min dB	Noise Audible
N1	0949-1019	65	68	48	Trucks moving around yard and weighbridge area dominant, particularly trucks idling on weighbridge. FLT & FEL audible within buildings. No emissions audible from offsite apart from passing traffic on access road.
N2	0915-0945	69	68	48	SLM 0.5 m from wall for safety, and thus noise levels presented incorporate **-3 dB** correction. Trucks moving around yard and weighbridge area dominant. FEL dominant locally from 0939. No emissions audible from offsite sources.
N3	1020-1040	60	64	48	Trucks moving around yard and weighbridge area dominant. FLT audible in nearest building. Offsite sources: passing traffic on access road, truck idling at adjacent yard 1020-1025, agricultural machinery operating at nearby field audible from 1029 and approaching within 40 m of N3. Terminated early due to rain onset.
N4	0800-0830	58	62	47	Road traffic through local junction almost continuous and dominant, including intermittent traffic on access road to site. Bypass traffic continuously audible in background. Local car near SLM x1. No site emissions audible. Birdsong and crows.
N5	0834-0904	68	73	49	Traffic on adjacent road almost continuous and dominant. Bypass traffic continuously audible in background. Birdsong. No emissions audible from Greenstar site, apart from reversing alarms possibly arising from Greenstar.

AHU: Air handling unit
FEL: Front end loader
FLT: Forklift truck
SLM: Sound level

APPENDIX 2

Bund Integrity Test

EURO environmental services

Environmental Monitoring, Consultancy & Testing

Greenstar Recycling Ltd
Waterford Utility Services

Six Cross Roads, Carriganard, Butlerstown, Co. Waterford

Bund Verification Report

Report Date:
23rd September 2008

EURO environmental services
Unit 35 Boyne Business Park, Drogheda, Co. Louth

Report No: 1910/M37

1.0 Overview

EURO environmental services were commissioned by Greenstar Recycling Ltd to carry out inspection and testing of bund structures at Waterford Utility Services, Six Cross Roads, Carriganard, Butlerstown, Co. Waterford. Euro Environmental performed an integrity test on the Oil Storage Bund on site. Testing was carried out by Kevin O'Shea on the 10th and 11th September 2008.

2.0 Methodology Employed During the Survey

Bund tests were based on section 9: inspection and testing: BS 8007:1987, British Standard Code of Practice for Design of concrete structures for retaining aqueous liquids. The test was carried out over a 24-hour period. The bund was located inside the recycling shed and would thus not be affected by rainfall conditions. Leakage from a bund should not be any greater than 0.5 litres/ m^2 / 24 hour period. Depth measurements were taken at 3 different locations of the bund which have been labeled as A, B, C in Section 3.

The bund dimensions were as follows:

- Width: 220 cm
- Length: 400 cm
- Depth: 30 cm

The total volume of the bund was estimated at 2.64 m^3 (2640 litres).

3.0 Bund Results

Bund	Approx Capacity (m^3)	Dates of Assessment	Water Level Day 1 (mm)	Water Level Day 5 (mm)	Pass / Fail
Oil Storage Bund Point A	2.64	10 -11 September	263	263	Pass
Oil Storage Bund Point B	2.64	10 – 11 September	263	263	Pass
Oil Storage Bund Point C	2.64	10 – 11 September	263	263	Pass

4.0 Conclusions

No leakage from the oil storage bund was detected during the bund integrity testing conducted over the24-hour period. The bund was determined to be in good condition.

Michael Cohen
Environmental Technician

Aadil Khan
Environmental Technical Manager

23rd September 2008

APPENDIX 3

New Procedures

1. SCOPE/OBJECTIVE

This procedure will apply to all Greenstar facilities.
The purpose of this procedure is to ensure the safe and efficient handling, rejection and/or quarantining of gypsum based material.

2. RESPONSIBILITY

The Facility Manager (FM) will implement this procedure.
The FM, Environment Manager (EM), Site Operatives (SO) and Customer Care (CC) personnel will follow this procedure.

3. DEFINITION

"Non -hazardous gypsum-based materials" typically include plaster board waste from construction and demolition sites which can often be present in general C&D waste skips. In terms of the European Waste Catalogue, separately collected gypsum based construction material is coded as 17 08 02 and source separation of this material is encouraged. Typically, however, gypsum wastes arising from works of demolition in particular may arise in general C&D waste loads. In this instance the appropriate code is 17 09 04 (mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03).

COUNCIL DECISION of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of Annex II to Directive 1999/31/EC states:
"2.2.3. Gypsum Waste;
Non hazardous gypsum-based materials should be disposed of only in landfills for non-hazardous waste in cells where no biodegradable waste is accepted".

Mixing gypsum wastes with biodegradable wastes can lead to the evolution of hydrogen sulphide and consequently where gypsum based material is accepted at a non landfill site, this material must be segregated from the general (C&D) waste accepted.

Site Safety Statement

4. PROCEDURE

4.1. <u>Generalities</u>

Gypsum based material may arrive on site mixed with general Construction and Demolition (C&D) waste. Where possible and practicable, all gypsum-based products must be segregated from other types of C&D waste and stored separately in a suitable, clearly labelled, covered container pending removal off-site to a licensed or permitted facility.

Where large proportions of gypsum waste are found to be contaminating skips received from a particular customer on an on-going basis, the FM must contact the Customer Account Manager to explain that further loads of this nature will not be received at the facility, giving reasons why and insisting that the customer site in question avail of separate covered storage and collection of gypsum-based waste for removal to licensed facilities.

The FM will arrange for the transport and disposal off-site of segregated gypsum based material by an approved third party specialist contractor (Ref. SOP 016, and GS028).

This material will only be sent to a fully approved (licensed or permitted) facility.

APPENDIX 4

European Pollutant Release and Transfer Register

Environmental Protection Agency

AER Returns Worksheet

Version 1.1.03

REFERENCE YEAR	2008

1. FACILITY IDENTIFICATION

Parent Company Name	Waterford Utility Services (Waste Disposal) Ltd
Facility Name	Waterford Utility Services (Waste Disposal) Limited
PRTR Identification Number	W0116
Licence Number	W0116-02

Waste or IPPC Classes of Activity

No.	class_name
4.2	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
3.11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.
4.3	Recycling or reclamation of metals and metal compounds.
4.4	Recycling or reclamation of other inorganic materials.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Address 1	Six Cross Roads
Address 2	Carriganard
Address 3	Butlerstown
Address 4	Co Waterford
Country	Ireland
Coordinates of Location	367600.000
River Basin District	IE-South Eastern
NACE Code	382
Main Economic Activity	Waste treatment and disposal
AER Returns Contact Name	Malcolm Dowling (W0116)
AER Returns Contact Email Address	malcolm.dowling@greenstar.ie
AER Returns Contact Position	
AER Returns Contact Telephone Number	01- 2947969
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5c	Installations for the disposal of non-hazardous waste

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR								
POLLUTANT		METHOD				QUANTITY		
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Waterford Utility Services (Waste Disposal) Limited

Please enter summary data on the quantities of methane flared and / or utilised	**T (Total) kg/Year**	**M/C/E**	**Method Used**		**Facility Total Capacity m3 per hour**	
			Method Code	**Designation or Description**		
Total estimated methane generation (as per site model)	0.0				N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A	

4.2 RELEASES TO WATERS

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

Data on ambient monitoring of storm/surface water or groundwater, conducted as part of your licence requirements, should NOT be submitted under AER / PRTR Reporting as this only concerns Releases from your facility

RELEASES TO WATERS								
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO WATERS								
POLLUTANT					QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO WATERS								
POLLUTANT					QUANTITY			
			Method Used		SW-2			
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
306	COD	E	EN ISO 17025	Flow was estimated based on rainfall amount over the year and the area of the facility. The analysis was ISO accredited	156.0571	156.0571	0.0	0.0
238	Ammonia (as N)	E	EN ISO 17025	Flow was estimated based on rainfall amount over the year and the area of the facility. The analysis was ISO accredited	12.57426	12.57426	0.0	0.0
240	Suspended Solids	E	EN ISO 17025	Flow was estimated based on rainfall amount over the year and the area of the facility. The analysis was ISO accredited	132.2898	132.2898	0.0	0.0
324	Mineral oils	E	EN ISO 17025	Flow was estimated based on rainfall amount over the year and the area of the facility. The analysis was ISO accredited	2.408796	2.408796	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER								
POLLUTANT		METHOD			QUANTITY			
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER								
POLLUTANT		METHOD			QUANTITY			
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

4.4 RELEASES TO LAND

SECTION A : PRTR POLLUTANTS

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

RELEASES TO LAND							
POLLUTANT		METHOD			QUANTITY		
			Method Used				
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year
					0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Transfer Destination	European Waste Code	Hazardous	Quantity T/Year	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Name and Licence / Permit No. of Recoverer / Disposer / Broker	Address of Recoverer / Disposer / Broker	Name and Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)	Licence / Permit No. of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	15 01 01	No	1116.0	Cardboard Packaging	R3	M	Weighed	Offsite in Ireland	Baileys Waste Paper WTP(1)B	Rosemount Business Park, Blanchardstown, Dublin 16		
Within the Country	15 01 01	No	22.52	Cardboard Packaging	R3	M	Weighed	Offsite in Ireland	Greenstar Fassaroe W0053-03	Fasaroe, Bray, Co. Wicklow		
Within the Country	15 01 02	No	52.7	Plastic Packaging	R3	M	Weighed	Offsite in Ireland	Clearpoint Recycling WM/WP/12/05	Ballylynch, Carrick-on-Suir, Co. Tipperary		
Within the Country	15 01 03	No	23.34	Wooden Packaging	R3	M	Weighed	Offsite in Ireland	OD Recycling WM/WP/06/03b	Ballyboe, Ballypatrick, Clonmel, Co. Tipperary		
Within the Country	15 01 03	No	317.24	Wooden Packaging	R3	M	Weighed	Offsite in Ireland	Weyerhauser P0027-02	Clonmel, Co. Tipperary		
Within the Country	15 01 04	No	2.04	Aluminium	R4	M	Weighed	Offsite in Ireland	Molloy Metal Recycling WP/000/15	Ballycarney, Enniscorthy, Co. Wexford		
Within the Country	15 01 04	No	16.12	Aluminium Cans	R4	M	Weighed	Offsite in Ireland	Clearpoint Recycling WM/WP/12/05	Ballylynch, Carrick-on-Suir, Co. Tipperary		
Within the Country	15 01 04	No	18.8	Aluminium Cans	R4	M	Weighed	Offsite in Ireland	Molloy Metal Recycling WP/000/15	Ballycarney, Enniscorthy, Co. Wexford		
Within the Country	15 01 06	No	6.64	Mixed Packaging	R3	M	Weighed	Offsite in Ireland	Clearpoint Recycling WM/WP/12/05	Ballylynch, Carrick-on-Suir, Co. Tipperary		
Within the Country	15 01 07	No	142.38	Glass Packaging	R5	M	Weighed	Offsite in Ireland	SERC W0111-01	Carrigbawn, Pembrokestown, Co. Wexford		
Within the Country	17 01 07	No	4785.93	C&D Inert Mixed	R5	M	Weighed	Offsite in Ireland	Thomas Driver WP 50/06	Rocketts Castle Estate, Portlaw, Co. Waterford		
Within the Country	19 12 12	No	25.18	C&I Dry Mixed	D5	M	Weighed	Offsite in Ireland	Dunmore Landfill W0030-02	Dunmore, Co. Kilkenny		
Within the Country	19 12 12	No	326.4	C&I Dry Mixed	D5	M	Weighed	Offsite in Ireland	KTK Landfill W0081-01	Kilcullen Co. Kildare		
Within the Country	19 12 12	No	101.28	C&I Dry Mixed	R5	M	Weighed	Offsite in Ireland	Greenstar Cork, W0136-01	Sarsfieldcourt, Glanmire, Co. Cork		
Within the Country	19 12 12	No	8727.14	C&I Dry Mixed	R5	M	Weighed	Offsite in Ireland	Greenstar Recycling Millennium W0053-03	Millennium Business Park, Ballycoolin, Dublin 11		
Within the Country	19 12 12	No	567.72	MSW Municipal Mixed	D5	M	Weighed	Offsite in Ireland	Knockharley Landfill W0146-01.	Navan, Co. Meath		
Within the Country	19 12 12	No	1594.36	MSW Municipal Mixed	R5	M	Weighed	Offsite in Ireland	Greenstar Fassaroe W0053-03	Fasaroe, Bray, Co. Wicklow		
Within the Country	19 12 12	No	9151.75	MSW Municipal Mixed	R5	M	Weighed	Offsite in Ireland	Greenstar Cork, W0136-01	Sarsfieldcourt, Glanmire, Co. Cork		
Within the Country	20 01 01	No	469.82	Cardboard & Paper	R3	M	Weighed	Offsite in Ireland	Baileys Waste Paper WTP(1)B	Rosemount Business Park, Blanchardstown, Dublin 16		
Within the Country	20 01 01	No	26.28	Newsprint	R3	M	Weighed	Offsite in Ireland	Baileys Waste Paper WTP(1)B	Rosemount Business Park, Blanchardstown, Dublin 16		
Within the Country	20 01 01	No	48.74	Recy Paper	R3	M	Weighed	Offsite in Ireland	Baileys Waste Paper WTP(1)B	Rosemount Business Park, Blanchardstown, Dublin 16		
Within the Country	20 01 01	No	22.38	Recy Paper	R3	M	Weighed	Offsite in Ireland	Greenstar Fassaroe W0053-03	Fasaroe, Bray, Co. Wicklow		
Within the Country	20 01 38	No	822.92	Wood	R3	M	Weighed	Offsite in Ireland	OD Recycling WM/WP/06/03b	Ballyboe, Ballypatrick, Clonmel, Co. Tipperary		
Within the Country	20 01 38	No	143.56	Wood	R3	M	Weighed	Offsite in Ireland	Weyerhauser P0027-02	Clonmel, Co. Tipperary		
Within the Country	20 01 40	No	182.86	Metal	R4	M	Weighed	Offsite in Ireland	Molloy Metal Recycling WP/000/15	Ballycarney, Enniscorthy, Co. Wexford		

* Select a row by double-clicking the Description of Waste then click the delete button