



**ANNUAL ENVIRONMENTAL REPORT**  
**GREENSTAR ENVIRONMENTAL SERVICES LIMITED**  
**MATERIALS RECOVERY FACILITY**  
**FORGE HILL**  
**LICENCE NO. W0173-01**  
**JANUARY 2010 – DECEMBER 2010**

**Prepared For: -**

Greenstar Environmental Services Ltd.,  
Unit 6,  
Ballyogan Business Park,  
Ballyogan Road,  
Sandyford,  
Dublin 18.

**Prepared By: -**

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

**31<sup>st</sup> March 2011**

| Project   |            | Annual Environmental Report 2010                  |                        |                       |
|-----------|------------|---------------------------------------------------|------------------------|-----------------------|
| Client    |            | Greenstar Environmental Services Ltd.<br>W0173-01 |                        |                       |
| Report No | Date       | Status                                            | Prepared By            | Reviewed By           |
| 0480201   | 28/03/2011 | Draft                                             | Martina Gleeson<br>PhD | Michael Watson<br>MA. |
| 0480201   | 31/03/2011 | Final                                             | Martina Gleeson<br>PhD | Michael Watson<br>MA. |
|           |            |                                                   |                        |                       |
|           |            |                                                   |                        |                       |
|           |            |                                                   |                        |                       |
|           |            |                                                   |                        |                       |

---

# TABLE OF CONTENTS

---

|                                                                            | <u>PAGE</u> |
|----------------------------------------------------------------------------|-------------|
| <b>1. INTRODUCTION.....</b>                                                | <b>1</b>    |
| <b>2. SITE DESCRIPTION.....</b>                                            | <b>2</b>    |
| 2.1    SITE LOCATION AND LAYOUT .....                                      | 2           |
| 2.2    WASTE MANAGEMENT ACTIVITIES .....                                   | 2           |
| 2.2.1 <i>Waste Types &amp; Processes</i> .....                             | 2           |
| 2.2.2 <i>Plant List</i> .....                                              | 3           |
| <b>3. EMISSION MONITORING .....</b>                                        | <b>4</b>    |
| 3.1    SURFACE WATER MONITORING .....                                      | 4           |
| 3.2    WASTEWATER MONITORING .....                                         | 5           |
| 3.3    GROUNDWATER MONITORING.....                                         | 7           |
| 3.4    NOISE MONITORING .....                                              | 8           |
| 3.5    DUST MONITORING .....                                               | 10          |
| <b>4. SITE DEVELOPMENT WORKS.....</b>                                      | <b>13</b>   |
| 4.1    SPECIFIED ENGINEERING WORKS .....                                   | 13          |
| 4.2    SUMMARY OF RESOURCE & ENERGY CONSUMPTION .....                      | 13          |
| 4.3    BUND INTEGRITY TESTING.....                                         | 13          |
| <b>5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY.....</b>              | <b>14</b>   |
| <b>6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS .....</b>                     | <b>17</b>   |
| 6.1    INCIDENTS.....                                                      | 17          |
| 6.2    REGISTER OF COMPLAINTS.....                                         | 17          |
| <b>7. ENVIRONMENTAL DEVELOPMENT &amp; CONTROL.....</b>                     | <b>18</b>   |
| 7.1    ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT .....                     | 18          |
| 7.1.1 <i>Site Management Structure</i> .....                               | 18          |
| 7.1.2 <i>Staff Training</i> .....                                          | 18          |
| 7.2    ENVIRONMENTAL MANAGEMENT PROGRAMME.....                             | 19          |
| 7.2.1 <i>Schedule of Objectives 2010</i> .....                             | 19          |
| 7.2.2 <i>Schedule of Objectives 2011</i> .....                             | 19          |
| 7.3    COMMUNICATIONS PROGRAMME .....                                      | 19          |
| 7.4    REPORT FINANCIAL PROVISION.....                                     | 20          |
| 7.5    NUISANCE CONTROLS .....                                             | 20          |
| 7.6    EUROPEAN POLLUTANT RELEASE AND TRANSFER REGISTER REGULATION .....   | 20          |
| 7.7    WASTEWATER VOLUMES .....                                            | 20          |
| <b>8. OTHER REPORTS.....</b>                                               | <b>23</b>   |
| <b>APPENDIX 1</b> -       Bund Report Summary                              |             |
| <b>APPENDIX 2</b> -       Procedures List                                  |             |
| <b>APPENDIX 3</b> -       European Pollutant Release and Transfer Register |             |

---

## 1. INTRODUCTION

---

This is the 2010 Annual Environmental Report (AER) for the Greenstar Environmental Services Ltd. (GES), Materials Recovery Facility (MRF) at Forge Hill, Kinsale Road, Cork (W0173-01) ) and covers the reporting period January 2010 to December 2010. The AER has been prepared in compliance with Condition 11.6 of the Licence.

The content is based on Schedule F of the Waste Licence and the report format follows guidelines set in the “Guidance Note for Annual Environmental Report” issued by the Environmental Protection Agency (Agency)<sup>1</sup>.

---

<sup>1</sup> EPA (Environmental Protection Agency) 1999 Waste Licensing – Draft Guidance on Environmental Management Systems and Reporting to the Agency

---

## 2. SITE DESCRIPTION

---

### 2.1 Site Location and Layout

The facility encompasses approximately 10,300 m<sup>2</sup> and is accessed from Forge Hill Road, which forms the western site boundary. The eastern site boundary is marked by the old Kinsale road, which is now a cul de sac. Further east is agricultural land. The site is bounded to the north and south by industrial units.

### 2.2 Waste Management Activities

The licence allows GES to accept and process 82,000 tonnes of waste per annum, comprising commercial/industrial non-hazardous waste, household waste collected by or on behalf of the local authority, source separated biodegradable waste for composting and construction and demolition wastes. All waste processing takes place inside the waste transfer building, as specified in Condition 5.1 of the licence.

#### 2.2.1 Waste Types & Processes

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

- Household Waste (1,600 tonnes),
- Commercial Waste (70,000 tonnes),
- Industrial Waste (6,400 tonnes),
- Construction & Demolition (4,000 tonnes).

No hazardous wastes or liquid waste are accepted at the facility.

The maximum tonnage of each waste type accepted, may be altered with the prior agreement of the Agency as long as the total maximum tonnage is not exceeded. An agreement thus was reached between the Licensee and the Agency 17/12/09 and approved maximum waste type tonnage is as follows:

- Household Waste (25,000 tonnes),
- Commercial Waste (46,600 tonnes),

- Industrial Waste (6,400 tonnes),
- Construction & Demolition (4,000 tonnes).

The key processes carried out at the facility include: -

- Segregation of recyclable materials (paper, cardboards, plastic, wood, metals, glass);
- Bulking up of Municipal Solid Waste;
- Segregation and bulking of C&D waste;
- Transfer of recovered and residual materials to appropriately licensed recycling,

### *Commercial and Industrial Waste*

Both mixed and segregated commercial waste is collected from commercial outlets. Commercial waste rich in recyclables (paper, cardboard, glass, metal and wood) is delivered to the facility both by permitted third party hauliers and by GES vehicles. Plastic, card and paper are baled and stored prior to transfer to a suitable permitted/licensed off-site recycling outlet. Biodegradable wastes suitable for composting which is accepted at the facility are sent to an offsite composting facility. The remaining non-recyclable material is bulked and sent to appropriately licensed landfills.

### *C & D Waste*

Waste loads include mixed construction and demolition wastes and soil and stone. The material arrives in skips of varying sizes. The waste loads are inspected and then processed. The majority of the incoming C&D material is recovered and sent off-site either for re-use or recycling. The non-recyclable materials are transferred to a licensed landfill.

### *2.2.2 Plant List*

A list of the plant in use at the facility is given in Table 2.1. The plant provides 100% duty and 50% standby for waste processing.

**Table 2.1 On-Site Machinery**

| No. | Plant              | Model   | Operational Capacity tpd | Standby Capacity tpd |
|-----|--------------------|---------|--------------------------|----------------------|
| 1   | 18-tonne excavator | Cobelco | 300                      | 170                  |

---

### **3. EMISSION MONITORING**

---

The monitoring required by Schedule D of the licence includes surface water, wastewater, dust and noise monitoring. The monitoring locations are shown on Figure 3.1. As per Schedule E of the licence, monitoring results are included in reports submitted to the Agency at quarterly intervals. An overview of the results of the monitoring is presented in this Section.

#### **3.1 Surface Water Monitoring**

The run-off from the roofs and paved yards is directed to an underground balance tank, located in the north western section of the site. The water flows from the tank through a Class 1 petrol/oil interceptor, located in the south western section of the site, and is pumped as required to an unnamed stream to the west of the site. This stream joins the Tramore River, approximately 350m to the south of the site. There is a manually operated shut off valve that can be used to stop the discharge from the site in the event of an emergency.

Surface water monitoring is carried out quarterly accordance with Condition 8.1 and Schedule D of the licence at the final discharge point SW-1 as shown on Figure 3.1. The surface water system has an inspection point that allows the sampling and inspection of the final surface water discharge from the site. The sampling and analysis was carried out in accordance with recognised quality assurance and control procedures. The range of analysis was Biological Oxygen Demand (BOD), total suspended solids (TSS), pH, heavy metals, total petroleum hydrocarbons (TPH), mineral oils, fats, oils and greases and ammoniacal nitrogen. The results are presented in Table 3.1, which includes the trigger levels and Emission Limit Values (ELVs) set in the Licence.

The trigger levels and emission limits set for BOD, total suspended solids and mineral oils were not exceeded and the discharge was 100% in compliance with the licence conditions. The results are included on Table 3.1.

**Table 3.1** Surface Water Monitoring Results 2010 SW-1

| Parameter              | Units    | Q1    | Q2    | Q3    | Q4   | Trigger Levels | Emission Limit |
|------------------------|----------|-------|-------|-------|------|----------------|----------------|
| pH                     | pH Units | 8.6   | 9     | 7.6   | 7.5  | N/A            | N/A            |
| BOD                    | mS/cm    | 8     | <1    | 4     | <4   | 25             | N/A            |
| Heavy Metals           | mg/l     | 0.165 | -     | 1.3   | -    | N/A            | N/A            |
| Total Suspended Solids | mg/l     | <5    | 37    | 58    | 19   | 60             | N/A            |
| Ammoniacal Nitrogen    | mg/l     | 26    | 0.343 | 0.554 | 1.33 | N/A            | N/A            |
| Fats Oils Grease       | mg/l     | <1    | 6     | <1    | <4   | N/A            | N/A            |
| TPH                    | mg/l     | 0.012 | 0.775 | 1.25  | 1.21 | N/A            | N/A            |
| Mineral Oils           | mg/l     | <0.01 | <0.01 | 1     | 1.14 | N/A            | 5              |

### 3.2 Wastewater Monitoring

Rainfall at the entrance to Unit 2 and some paved areas adjacent to the on site fuel tank and vehicle/bin wash area is collected and directed to the foul water drainage system. The discharge from the vehicle/bin wash area is also directed to the foul water drainage system. The wastewater passes through a petrol/oil interceptor before discharging to the municipal sewer. Flow is measured using a continuous flow meter. The wastewater sample location (FW-1) is shown on Figure 3.1. The location is downstream of the interceptor and the continuous flow meter. Monitoring is carried out in accordance with Technical Amendment A of the licence.

The sampling and analysis was carried out in accordance with recognised quality assurance and control procedures. The range of analysis was BOD, Chemical Oxygen Demand (COD) TSS, pH, heavy metals, (TPH), mineral oils, fats, oils and greases, detergents, sulphate and volatile organic compounds (VOC). The emission limits set in the licence were not exceeded and the discharge was in compliance with the licence conditions. The results are included on Table 3.2.

pH and flow are monitored daily and the results are submitted to the Agency in the quarterly monitoring reports. The pH level was not exceeded during the monitoring period, in December 2010, the pH level was below the limit set in the Licence, however there was no discharge from the facility on this day. The daily foul water flow volume was exceeded on two occasions in January and three occasions in November 2010. The exceedance in January was due to freezing weather conditions at the time and in November the exceedances were due to high rainfall events. The Agency were notified of these exceedances in accordance with licence conditions.



**Table 3.2** Wastewater Monitoring Results 2010 FW-1

| Date            | COD   | Total Suspended Solids | Oils, Fats & Greases | BOD   | Detergents | VOC   | Sulphate | Total Petroleum Hydrocarbons | Mineral Oils | Total Nitrogen | Heavy Metals |
|-----------------|-------|------------------------|----------------------|-------|------------|-------|----------|------------------------------|--------------|----------------|--------------|
| Units           | mg/l  | mg/l                   | mg/l                 | mg/l  | mg/l       | mg/l  | mg/l     | mg/l                         | mg/l         | mg/l           | mg/l         |
| Emission Limits | 4,000 | 500                    | 40                   | 2,000 | 10         | 1     | 750      | 5                            | 5            | 100            | 1            |
| 13/01/2010      | 22    | 14                     | 3                    | 4     | <0.3       | -     | 18.3     | 0.101                        | <0.01        | -              | -            |
| 20/01/2010      | 164   | 16                     | 8                    | 181   | -          | -     | -        | -                            | -            | -              | -            |
| 26/02/2010      | 20    | 10                     | 1                    | 18    | -          | -     | -        | -                            | -            | -              | -            |
| 22/03/2010      | <8    | <5                     | 6                    | <2    | <0.1       | 0.013 | 26       | 0.049                        | -            | 1.6            | -            |
| 31/03/2010      | 44    | <5                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 06/04/2010      | 31    | 8                      | 10                   | 5     | -          | -     | -        | -                            | -            | -              | -            |
| 30/04/2010      | 35    | 11                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 11/05/2010      | 35    | 13                     | 2                    | 9     | -          | -     | -        | -                            | -            | -              | -            |
| 17/05/2010      | 22    | 7                      | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 08/06/2010      | 24    | <5                     | 5                    | 5     | <0.3       | n.d.  | 16.1     | -                            | -            | -              | -            |
| 21/06/2010      | 33    | 42                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 13/07/2010      | 46    | 13                     | <1                   | 13    | -          | -     | -        | -                            | -            | -              | -            |
| 27/07/2010      | 98    | 44                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 11/08/2010      | 371   | 70                     | 1                    | 75    | -          | -     | -        | -                            | -            | -              | -            |
| 18/08/2010      | 373   | 64                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 23/09/2010      | 101   | 44                     | <4                   | 33    | <0.1       | n.d.  | 32.8     | 0.123                        | 0.123        | 9.6            | <1           |
| 30/09/2010      | 400   | 103                    | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 21/10/2001      | 212   | 36                     | <4                   | 69    | -          | -     | -        | -                            | -            | -              | -            |
| 28/10/2010      | 159   | 70                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 11/11/2010      | 60    | 60                     | <4                   | 36    | -          | -     | -        | -                            | -            | -              | -            |
| 23/11/2010      | 235   | 54                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |
| 13/12/2010      | 429   | 38                     | <4                   | >105  | 0.31       | n.d.  | 54.6     | -                            | -            | -              | -            |
| 20/12/2010      | 287   | 47                     | -                    | -     | -          | -     | -        | -                            | -            | -              | -            |

### 3.3 Groundwater Monitoring

Groundwater sampling is undertaken bi-annually at one on site groundwater well (GW-1), which is in the eastern section of the site in accordance with Condition 8.1 and Schedule D of the licence. The location of the well is shown on Figure 3.1.

The sampling and analysis was carried out in accordance with recognised quality assurance and control procedures. The range of analysis was ammoniacal nitrogen, heavy metals and TPH. There are no emission limits or trigger levels set in the licence and so the results are compared to the Interim Guideline Values (IGV) on groundwater quality published by the Agency.

In the April monitoring event, the levels of ammonia and nickel exceeded the IGV, however the results are thought to be anomalous as the result for 2009 and July 2010 were below the IGV. The levels of chromium and lead were higher than the IGV in the July monitoring event but neither of these parameters were detected in the previous monitoring event in April 2010 and the results are likely anomalous. The IGV levels represent typical background or unpolluted conditions. However, the Agency recognises that levels higher than the IGV may occur naturally depending on the local geological and hydrogeological conditions.

**Table 3.3** Groundwater Monitoring Results 2010

| Parameter            | Units | April 2010 | July 2010 | IGV   |
|----------------------|-------|------------|-----------|-------|
| Odour                | TON   | 1          | 1         | -     |
| Arsenic              | mg/l  | 0.001      | 0.001     | 0.01  |
| Bismuth              | mg/l  | <0.01      | <0.01     | -     |
| Thallium             | mg/l  | <0.04      | <0.04     | -     |
| Tellurium            | mg/l  | <0.02      | <0.02     | -     |
| Cadmium              | mg/l  | 0.001      | 0.001     | 0.005 |
| Chromium             | mg/l  | <0.001     | 0.071     | 0.03  |
| Copper               | mg/l  | 0.006      | 0.021     | 0.03  |
| Indium               | mg/l  | <0.02      | <0.02     | -     |
| Mercury              | mg/l  | <0.005     | <0.0005   | 0.001 |
| Nickel               | mg/l  | 0.036      | 0.013     | 0.02  |
| Lead                 | mg/l  | <0.001     | 0.017     | 0.01  |
| Selenium             | mg/l  | 0.001      | 0.001     | -     |
| Antimony             | mg/l  | <0.001     | <0.001    | -     |
| Zinc                 | mg/l  | 0.033      | 0.006     | 0.1   |
| Heavy Metals (Total) | mg/l  | 0.078      | 0.071     | -     |
| Ammonia Nitrogen     | mg/l  | 3.5        | 0.02      | 0.15  |
| TPH                  | mg/l  | <0.001     | <0.001    | 0.01  |
| PRO                  | mg/l  | <0.001     | <0.001    | 0.01  |
| DRO                  | mg/l  | <0.001     | <0.001    | 0.01  |

### 3.4 Noise Monitoring

In accordance with Schedule D of the licence, the annual noise survey was carried out in December 2010. The full monitoring report was submitted to the Agency on the 22<sup>nd</sup> December 2010. The monitoring locations include four boundary locations (B1- B4) and one noise sensitive location (NSL1) as shown on Figure 3.2. The survey was conducted when the site was fully operational and confirmed that noise emissions complied with the licence conditions and that the facility is not impacting negatively on the nearest sensitive receptors. A summary of the noise results is shown on Table 3.4.

The  $L_{Aeq\ 30\ min}$  level recorded at the offsite station NSL1 was 68 dB, due chiefly to local road traffic which was dominant. Emissions from the facility were not audible at this location and did not contribute to the local noise environment. Therefore noise emissions from the facility were likely to have been significantly lower than the 55 dB limit set in the Licence at NSL1.

**Table 3.4** Noise Monitoring Results 2010

| Station | Time      | LAeq<br>30 min<br>dB | LAF10<br>30 min<br>dB | LAF90<br>30 min<br>dB | Specific<br>level*<br>dB | Noise audible                                                                                                                                                                                                                                                                                                                                                         |
|---------|-----------|----------------------|-----------------------|-----------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B1      | 1022-1052 | 53                   | 55                    | 50                    | 50                       | Cardboard baler in building slightly audible continuously, with energy in 1000 Hz band, although not tonal. Sporadic truck movements through this area of yard. No other site emissions audible. Forge Hill traffic continuously audible, and dominant, to W and SW. Aircraft and bird song/calls.                                                                    |
| B2      | 1235-1305 | 63                   | 67                    | 53                    | <59                      | No emissions audible from GES facility over continuously dominant Forge Hill traffic, apart from sporadic truck movements through site gates. Truck idling on outgoing weighbridge at 20 m 1250-1253 dominant when present. Continuous emissions from extraction system vent at adjacent offsite premises audible during traffic lulls. Bird song/calls and aircraft. |
| B3      | 1127-1157 | 59                   | 61                    | 51                    | <59                      | No in-building emissions audible. Occasional emissions audible from E yard. Truck x1 and van x1 passed adjacent to sound level meter. Forge Hill road traffic to W continuously dominant. Aircraft also audible. Occasional vehicle movements and commercial activity audible at commercial estate immediately outside boundary.                                      |
| B4      | 1055-1125 | 56                   | 59                    | 49                    | <49                      | Emissions audible intermittently arising from within building, audible through open roller shutter doors on E facade. Not significant. No other site emissions audible, apart from sporadic vehicle movements on E yard, and bird scarer device 1055-1058. Road traffic continuously audible to SW and S, and significant. Bird song/calls and aircraft.              |
| NS1     | 1200-1230 | 68                   | 72                    | 51                    | <51                      | No GES emissions audible. No emissions audible here other than continuously dominant Forge Hill road traffic, aircraft and bird song/calls, audible during rare traffic lulls.                                                                                                                                                                                        |

\* Specific level: Sound pressure level contribution considered attributable to facility.

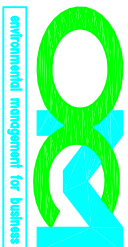
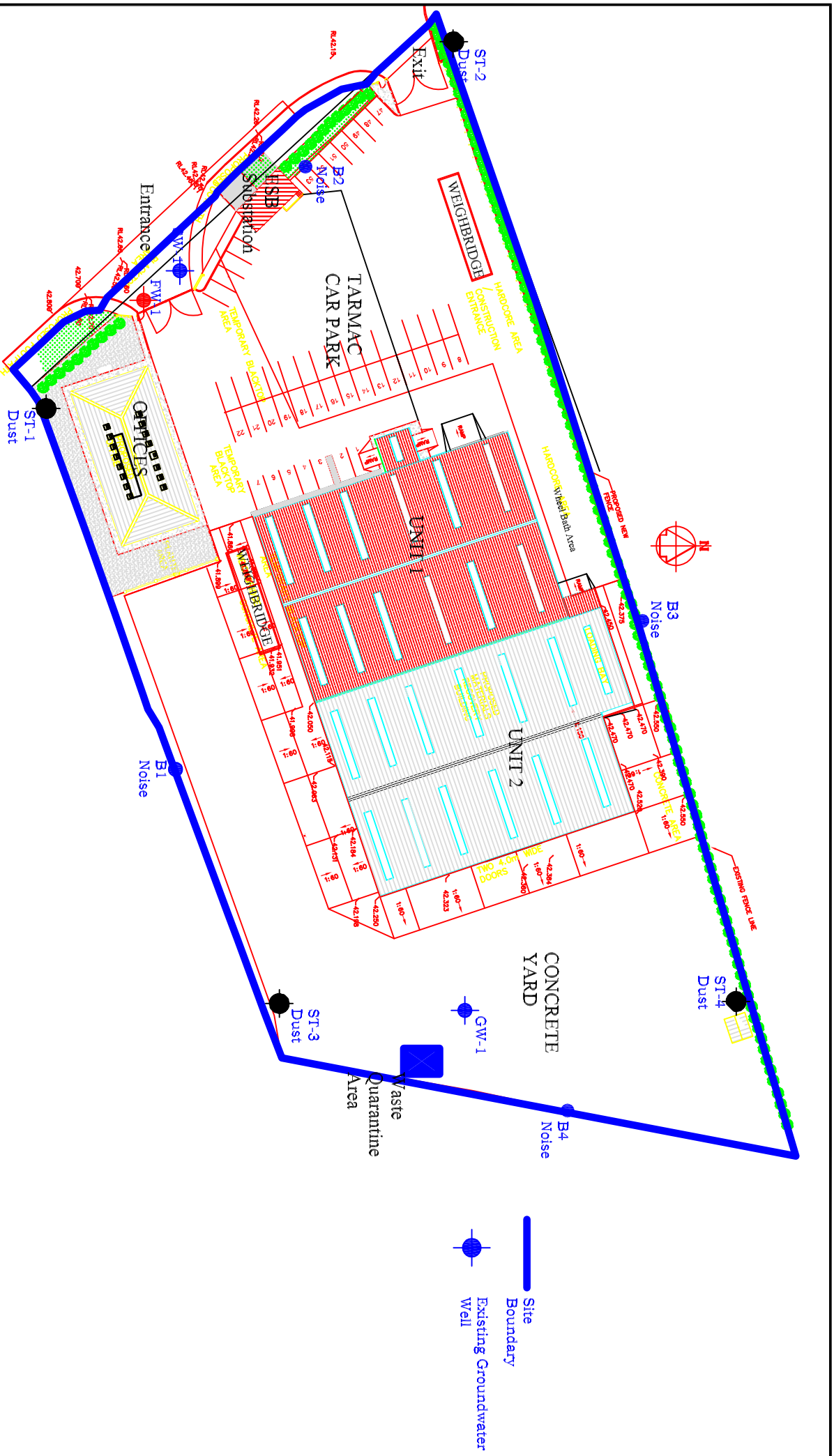
### 3.5 Dust Monitoring

Dust monitoring was carried out on three occasions at four on-site locations (ST-1, ST-2, ST-3 and ST-4) in April, July and September 2010 in accordance with Schedule E of the Licence. The results of the monitoring are included on Table 3.5.

The dust emission limit ( $350 \text{ mg/m}^2/\text{day}$ ) was exceeded at one monitoring location, ST-4, which is at the north eastern site boundary. The exceedance was reported to the Agency in an incident report on the 18<sup>th</sup> August 2010. The sources of the dust were determined to be a combination of the truck wash and the leaves from nearby trees. There are no sensitive receptors in the vicinity of ST-4 and it is not considered that there was any significant impairment of the environment beyond the facility boundary associated with elevated dust levels.

**Table 3.4** Dust Monitoring Results 2010

|      | <b>Units</b>               | <b>April<br/>2010</b> | <b>July<br/>2010</b> | <b>Sept<br/>2010</b> | <b>Deposition Limit<br/>Value</b> |
|------|----------------------------|-----------------------|----------------------|----------------------|-----------------------------------|
| ST-1 | $\text{mg/m}^2/\text{day}$ | 83.9                  | 278.8                | 60.2                 | 350                               |
| ST-2 | $\text{mg/m}^2/\text{day}$ | 131.1                 | 127.3                | 70.6                 | 350                               |
| ST-3 | $\text{mg/m}^2/\text{day}$ | 162.5                 | 137.3                | 75.8                 | 350                               |
| ST-4 | $\text{mg/m}^2/\text{day}$ | 220.2                 | 758.8                | 37.6                 | 350                               |



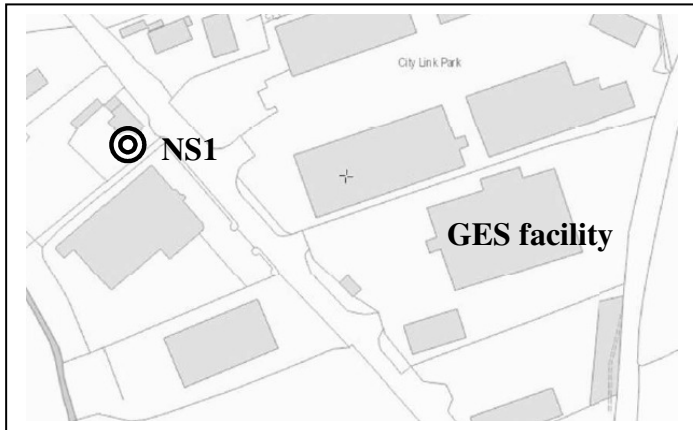
O' Callaghan Moran & Associates,  
 Granary House, Rutland Street,  
 Cork, Ireland.  
 Tel: (021) 4321521 Fax: (021) 4321522  
 email : info@ocallaghannoran.com

This drawing is the property of O'Callaghan Moran & Associates and shall not be used, reproduced or disclosed to anyone without the prior written permission of O'Callaghan Moran & Associates and shall be returned upon request.

|        |                |     |
|--------|----------------|-----|
| CLIENT | GES Forge Hill |     |
| TITLE  | W0173-01       |     |
|        | FIGURE No.     | 3.1 |
|        | SCALE          | NTS |
|        | REV.           | A   |

# Monitoring Locations

**Figure 3.2 NSL Location**



---

## 4. SITE DEVELOPMENT WORKS

---

### 4.1 Specified Engineering Works

There were no Specified Engineering Works carried out in 2010. There are no engineering works planned for 2011. The Agency will be notified of all engineering works as per Condition 3.2 of the Licence.

### 4.2 Summary of Resource & Energy Consumption

Table 4.1 presents an estimate of the resources used on-site during the reporting period.

**Table 4.1 Estimate of Resources Used On-Site in 2010**

| <b>Resources</b>  | <b>Quantities</b> |
|-------------------|-------------------|
| Diesel (green)    | 39,060 litres     |
| Electricity       | 129,000 Units     |
| Hydraulic Oil     | 1,000 litres      |
| Engine Oil        | 100 litres        |
| Heating Oil       | 31,000 litres     |
| Mains Water       | 774,000 litres    |
| AdBlu             | 3,000 litres      |
| Odour Neutraliser | 600 litres        |

### 4.3 Bund Integrity Testing

Condition 3.12.5 of the licence requires that tank and bund testing be carried out at least once every three years. The bunds were tested in September 2010 and passed fit for purpose, a copy of the test report is included in Appendix 1.



---

## **5. WASTE RECEIVED AND CONSIGNED FROM THE FACILITY**

---

Table 5.1 shows the total quantities of waste received and consigned from the facility in 2010. Table 5.2 shows the total quantities of waste received and consigned in 2009. 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 list.

The total quantity of waste received was 44,355.74 tonnes. The total waste consigned was 45,103.26 tonnes. The recording system shows 747.52 more tonnes consigned than accepted during the reporting period. This tonnage consists of waste which remained on site at the end of 2009 (281 tonnes) with the remaining discrepancy (466.52 tonnes or 1%) not considered significant.

The recovery rate for the facility is estimated at 53.97 %. All the wastes consigned from the site went to recovery and disposal facilities agreed with the Agency.

**Table 5.1 Waste Received & Consigned 2010**

| <b>EWC</b> | <b>Description</b>                    | <b>Waste In</b>  | <b>Waste Out</b> |
|------------|---------------------------------------|------------------|------------------|
| 07 05 12   | WWTP sludge from Pharmaceutical Plant | 12.46            |                  |
| 10 01 01   | Boiler Ash                            | 11.12            |                  |
| 15 01 01   | Cardboard & Paper Packaging           | 2,915.11         | 6,744.68         |
| 15 01 02   | Plastic Packaging                     | 190.36           | 505.15           |
| 15 01 03   | Wooden Packaging                      |                  | 17.34            |
| 15 01 06   | Mixed Packaging                       | 11,436.58        | 92.14            |
| 15 01 07   | Glass Packaging                       | 64.54            |                  |
| 16 02 14   | WEEE                                  | 0.84             |                  |
| 17 01 07   | Mixed C&D                             | 554.91           | 640.60           |
| 17 05 04   | Soil & Stone from C&D Waste           | 45.58            | 1,230.49         |
| 17 08 02   | Plasterboard                          |                  | 2.74             |
| 19 12 12   | Mixed Municipal Waste                 |                  | 20,823.38        |
| 20 01 01   | Cardboard & Paper                     | 724.54           | 720.02           |
| 20 01 08   | Canteen Kitchen Waste                 | 867.47           | 737.82           |
| 20 01 21*  | Fluorescent tubes                     |                  | 0.20             |
| 20 01 36   | WEEE                                  |                  | 27.66            |
| 20 01 38   | Timber                                | 192.45           | 471.30           |
| 20 01 40   | Metal                                 | 7.18             | 195.12           |
| 20 03 01   | Mixed Municipal Waste                 | 11,042.91        | 12,894.62        |
| 20 03 01   | Mixed Dry Recyclables                 | 6,326.09         |                  |
| 20 03 03   | Road Sweepings                        | 511.44           |                  |
| 20 03 07   | Bulky Waste                           | 9,452.16         |                  |
|            |                                       |                  |                  |
|            | <b>Total Received</b>                 | <b>44,355.74</b> |                  |
|            | <b>Total Consigned</b>                |                  | <b>45,103.26</b> |
|            | <b>Total Recovered</b>                |                  | <b>24,340.66</b> |
|            | <b>Total Disposed</b>                 |                  | <b>20,762.60</b> |
|            | <b>Recovery Rate</b>                  |                  | <b>53.97%</b>    |
|            |                                       |                  |                  |

**Table 5.2 Waste Received & Consigned 2009**

| <b>EWC</b> | <b>Description</b>          | <b>Waste In</b> | <b>Waste Out</b> |
|------------|-----------------------------|-----------------|------------------|
| 15 01 01   | Cardboard & Paper Packaging | 4,121           | 8,811            |
| 15 01 02   | Plastic Packaging           | 159             | 749              |
| 15 01 06   | Mixed Packaging             | 14,308          | 9,578            |
| 15 01 07   | Glass Packaging             | 264             | 245              |
| 17 01 07   | Mixed C&D                   | 364             | 1,269            |
| 17 08 02   | Plasterboard                |                 | 14               |
| 20 01 36   | WEEE                        |                 | 4                |
| 20 01 38   | Timber                      | 866             | 1,172            |
| 20 01 40   | Metal                       | 39              | 317              |
| 20 02 02   | Soils & Stones              | 28              | 203              |
| 20 03 01   | Mixed Municipal Waste       | 14,853          | 12,375           |
|            |                             |                 |                  |
|            | <b>Total Received</b>       | <b>35,001</b>   |                  |
|            | <b>Total Consigned</b>      |                 | <b>34,737</b>    |
|            | <b>Total Recovered</b>      |                 | <b>22,362</b>    |
|            | <b>Total Disposed</b>       |                 | <b>12,375</b>    |
|            | <b>Recovery Rate</b>        |                 | <b>64.37%</b>    |
|            |                             |                 |                  |

**Table 5.3 Waste Received & Consigned**

|                        | <b>2009</b> | <b>2008</b> |
|------------------------|-------------|-------------|
| <b>Total Received</b>  | 35,001      | 28,001      |
| <b>Total Consigned</b> | 34,737      | 37,179      |
| <b>Total Recovered</b> | 22,362      | 22,079      |
| <b>Total Disposed</b>  | 12,375      | 15,100      |
| <b>Recovery Rate</b>   | 64.37%      | 59.39%      |

---

## **6. ENVIRONMENTAL INCIDENTS AND COMPLAINTS**

---

### **6.1 Incidents**

The routine monitoring programme identified seven incidents during the reporting period. Five of these incidents related to exceedances of the maximum daily flow volume at FW-1. One was related to a low pH reading at FW-1 and one was due to an exceedance of the dust deposition limit at ST-2. The Agency were notified of these exceedances in accordance with licence conditions. It is not considered that any of these incidents caused a significant environmental emission offsite. There were no other incidents in 2010.

### **6.2 Register of Complaints**

GES maintains a register of complaints received in accordance with Condition 10.4 of the waste licence. There were no complaints received during the reporting period.

---

## 7. ENVIRONMENTAL DEVELOPMENT & CONTROL

---

### 7.1 Environmental Management Programme Report

In 2010, the facility attained ISO 14001/OHSAS 18011 certification. The facility is externally audited once per year and internally audited twice per year. The environmental management programme is encompassed in the Integrated Management System (IMS) for the facility and contains a schedule for achieving objectives and targets and designates responsibility and timeframes for achieving those targets. The IMS is reviewed annually as part of the annual management review meeting during which senior management attend.

The success on meeting targets is discussed in the AER as per condition 2.2.2 of the Licence. The schedule of Objectives and Targets, including their status for 2010 (Table 7.1), as well as the proposed Objectives and Targets for 2011 (Table 7.2) are presented below. An index of procedures used at the facility is included in Appendix 2.

#### 7.1.1 *Site Management Structure*

Management and Staffing structure: -

**Name:** Gavin Douglas

**Responsibility:** Depot Manager

**Experience:** 12 years experience waste management experience; has completed the FÁS waste management course.

**Name:** Finbarr Whelan

**Responsibility:** Yard Supervisor

**Experience:** 11 years experience waste management experience; has completed the FÁS waste management course.

#### 7.1.2 *Staff Training*

Staff training was carried out in 2010 in relation to the newly issued Integrated Management System procedures. A copy of the training records is kept in the facility office.

## **7.2 Environmental Management Programme**

### *7.2.1 Schedule of Objectives 2010*

The objectives that were achieved during this reporting period are outlined in Table 7.1. Details on the progress made are also included on the table and an evaluation of what has been achieved to date is presented below.

#### **Objective 1 –Energy Usage**

Plan postponed due to sale of company in April 2010. Reduction in electricity and heating oil usage v 2010.

#### **Objective 2 – Water Usage**

Usage was formally tracked in 2010 as planned. Major cleaning of shores etc in August 2010 affected water usage over 2009 estimated use.

#### **Objective 3 – Office Recycling**

Paperless docket system in use from latter half of 2010.

#### **Objective 4 – EMS**

December 2010 Site Inspection – one non-compliance (late notification of FW flow exceedance, due to rainfall November 2010) and five observations v one non-compliance and 12 observations July 2009.

### *7.2.2 Schedule of Objectives 2011*

A schedule of targets and objectives for 2011 has been set by the management of the facility. These objectives are outlined in Table 7.2.

## **7.3 Communications Programme**

GES are committed to setting the standard in waste management and ensuring environmental compliance in all operations. In addition, GES's Environmental, Health & Safety Policy makes a specific commitment to ensure that this policy and environmental records are available to the public and interested parties.

To this end GES has drawn up a Communications Programme, which details how members of the public are facilitated in accessing and viewing environmental information at the facility. Members of the public who wish to inspect these files may do so at any reasonable time by making an appointment with the Operations Manager using the telephone number posted on the main facility entrance sign.

#### **7.4 Report Financial Provision**

GES has accrued over €3,000,000 in funds, to provide for any potential environmental liabilities at this facility. GES also has adequate insurance cover for environmental liabilities to €6,350,000 for any one occurrence, which will apply to “sudden identifiable and unintended incidents”.

#### **7.5 Nuisance Controls**

GES has contracted a vermin control company Prevent a Pest to carry out nuisance control at the facility. Prevent a Pest carry out site inspection twelve times per annum to maintain internal and external bait boxes. Spraying is carried out for fly control four times per annum.

#### **7.6 European Pollutant Release and Transfer Register Regulation**

Under the European Pollutant Release and Transfer Register Regulation (EC) No. 166/2006 GES 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 3.

#### **7.7 Wastewater Volumes**

In 2010, 1,576 m<sup>3</sup> of waste water was produced by the facility which discharged to the municipal foul water sewer.

**Table 7.1 Objectives and Targets for 2010**

| No | Activity                | Objective                                       | Target                                                                                                                                                                               | Responsibility | Timescale |
|----|-------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|
| 1  | <b>Energy Usage</b>     | Continue the promotion of energy efficiencies   | Complete Energy audit <ul style="list-style-type: none"> <li>• Low Energy Lighting</li> <li>• New climate controls have been installed with new build</li> </ul>                     | Ops Manager    | Dec 2010  |
| 2  | <b>Water Usage</b>      | Identify opportunities for reducing water usage | <ul style="list-style-type: none"> <li>• Track Usage</li> <li>• Recover/reuse water from storm water tank &amp; other sources</li> </ul>                                             | Ops Manager    | Dec 2010  |
| 3  | <b>Office Recycling</b> | Minimise waste output from office               | <ul style="list-style-type: none"> <li>• Generate a measurable reduction</li> <li>• Print both sides</li> <li>• Use recycled paper for drafts</li> <li>• Paperless office</li> </ul> | Ops Manager    | Dec 2010  |
| 4  | <b>EMS</b>              | Maintain regulatory compliance (WL & WCP)       | Target is 50 % on non compliances year on year                                                                                                                                       | Env. Manager   | Dec 2010  |



**Table 7.2 Schedule of Objective and Targets 2011**

| No | Activity                                                                  | Target                                                                                                                                       | Responsibility  | Timescale |
|----|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|
| 1  | <b>Energy &amp; Resource Consumption</b>                                  | Summarise energy and resource usage on a quarterly basis with a view to reducing consumption<br>Carry out an energy audit of the facility    | Site Management | Q4 2011   |
| 2  | <b>Review and Assess the Effectiveness of Nuisance Control Procedures</b> | Continually review and assess all nuisance control procedures to ensure minimal impact on the surrounding area.                              | Site Management | Q4 2011   |
| 3  | <b>Pollution Prevention</b>                                               | Strive to ensure that monitoring results comply with the licence limits and investigate any exceedances of emission limit values.            | Site Management | Q4 2011   |
| 4  | <b>Awareness and Training</b>                                             | Continue to ensure that appropriate training is carried out specific to all site personnel as per the Company's established Training Matrix. | Site Management | Q4 2011   |

---

## **8. OTHER REPORTS**

---

No other reports were requested by the Agency.

# **APPENDIX 1**

## Bund Report Summary



**Greenstar Environmental Services Ltd**  
**Forge Hill,**  
**Kinsale Road**  
**EPA Waste Licence W0173-01**

**Integrity Testing of above ground bunds.**  
**As per Condition 3.12.5 of the EPA Waste Licence**

*3.12.5 The integrity and water tightness of all the bunds and their resistance to penetration by water or other materials stored therein shall be confirmed by the licensee following its installation and prior to its use as a storage area.*

**Mobile bunds inspected:**

- Diesel Tank Bund – photographs provided
- Quarantine Bund – photographs provided
- Adblue Bund – photographs provided

**Water Tightness Test**

A water test was performed on the above bunds in accordance with the following guidance documents:-

*BS 8007 (1987) – Design of Concrete Structures for Retaining Aqueous Liquids*

*CIRLA Report 163 - Construction of Bunds for Oil Storage Tanks*

On Thursday September 9<sup>th</sup> each bund was filled to an appropriate level, marked accordingly and photographed. All tanks were stored internally therefore no precipitation affected the levels. Approximately 24 hours later on Friday September 10<sup>th</sup> each bund was assessed and photographed.

No drop in water levels was recorded in the diesel bund, quarantine bund or ad blue bund during the test period.

The integrity and water tightness of the bunds is sound and are therefore fit for purpose.

Suzanne Byrne

Environmental Engineer

For and *on behalf* of Greenstar Environmental Services Ltd

# **APPENDIX 2**

## Procedures List



|                          |                                                                                    |                             |
|--------------------------|------------------------------------------------------------------------------------|-----------------------------|
| <b>Doc. No.:</b> Control | <b>Revision No.:</b> As Shown                                                      | <b>Issue Date:</b> As Shown |
| <b>Approved By:</b>      | Malcolm Dowling – Group Environmental Manager<br>Oliver Callan – Group H&S Manager | <b>Page 1 of 2</b>          |

**Integrated Procedures - IP**

|       |                                                           |                  |
|-------|-----------------------------------------------------------|------------------|
| IP-01 | Document & Record Control Procedure                       | Rev 02, 05/02/10 |
| IP-02 | Health & Safety Risk Assessment Procedure                 | Rev 03, 10/03/10 |
| IP-03 | Environmental Aspects & Impacts Procedure                 | Rev 03, 10/03/10 |
| IP-04 | Legal & Regulatory Requirements Procedure                 | Rev 03, 10/03/10 |
| IP-05 | Objectives, Targets & Management Programmes Procedure     | Rev 03, 10/03/10 |
| IP-06 | Competence, Training & Awareness Procedure                | Rev 03, 10/03/10 |
| IP-07 | Communication & Consultation Procedure                    | Rev 04, 28/04/10 |
| IP-08 | Monitoring, Measurement & Improvement Procedure           | Rev 02, 05/02/10 |
| IP-09 | Evaluation of Compliance Procedure                        | Rev 03, 10/03/10 |
| IP-10 | Non Conformances, Corrective/Preventive Actions Procedure | Rev 03, 10/03/10 |
| IP-11 | Internal Audit Procedure                                  | Rev 03, 10/03/10 |
| IP-12 | Management Review Procedure                               | Rev 02, 05/02/10 |
| IP-13 | Control of Contractors/Visitors Procedure                 | Rev 03, 10/03/10 |
| IP-14 | Health & Safety & Environmental Monitoring                | Rev 02, 05/02/10 |
| IP-15 | Emergency Preparedness & Response Procedure               | Rev 02, 10/03/10 |

**Safety Procedures - SP**

|       |                                        |                  |
|-------|----------------------------------------|------------------|
| SP-01 | Permit to Work Procedure               | Rev 03, 10/03/10 |
| SP-02 | Maintenance & Calibration Procedure    | Rev 03, 10/03/10 |
| SP-03 | Mobile Plant Procedure                 | Rev 02, 05/02/10 |
| SP-04 | Fork Truck Procedure                   | Rev 03, 10/03/10 |
| SP-05 | Operation of Fixed Plant Procedure     | Rev 03, 10/03/10 |
| SP-06 | Lock Out / Tag Out Procedure           | Rev 03, 10/03/10 |
| SP-07 | Health & Safety Notification Procedure | Rev 03, 10/03/10 |

**Environmental Procedures - EP**

|       |                                            |                  |
|-------|--------------------------------------------|------------------|
| EP-01 | Office Waste & Energy Management Procedure | Rev 02, 05/02/10 |
| EP-02 | Decommissioning and Aftercare Procedure    | Rev 02, 05/02/10 |
| EP-03 | EPA Communications Procedure               | Rev 02, 05/02/10 |
| EP-04 | Waste Permits & Licences Procedure         | Rev 01, 01/10/09 |
| EP-05 | Waste Acceptance Procedure                 | Rev 01, 01/10/09 |
| EP-06 | Unacceptable Waste Procedure               | Rev 02, 10/03/10 |
| EP-07 | Waste & Material Storage Procedure         | Rev 02, 10/03/10 |
| EP-08 | Waste Processing Procedure                 | Rev 01, 01/10/09 |
| EP-09 | Site Infrastructure Procedure              | Rev 02, 05/02/10 |
| EP-10 | Nuisance Management Procedure              | Rev 02, 05/02/10 |
| EP-11 | Civic Amenity Site Procedure               | Rev 02, 05/02/10 |





# **APPENDIX 3**

## European Pollutant Release and Transfer Register



Environmental Protection Agency

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited |  
 Filename : W0173\_2010.xls | Return Year : 2010 |

[Guidance to completing the PRTR workbook](#)

# AER Returns Workbook

Version 1.1.11

|                       |      |
|-----------------------|------|
| <b>REFERENCE YEAR</b> | 2010 |
|-----------------------|------|

**1. FACILITY IDENTIFICATION**

|                            |                                          |
|----------------------------|------------------------------------------|
| Parent Company Name        | Greenstar Environmental Services Limited |
| Facility Name              | Greenstar Environmental Services Limited |
| PRTR Identification Number | W0173                                    |
| Licence Number             | W0173-01                                 |

Waste or IPPC Classes of Activity

| No.                                            | class_name                                                                                                                                                                                                      |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.12                                           | Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.                                                                                                          |
| 3.11                                           | Blending or mixture 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.     |
| 4.12                                           | Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.                                                                                                         |
| 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. |
| 4.2                                            | Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).                                                             |
| 4.3                                            | Recycling or reclamation of metals and metal compounds.                                                                                                                                                         |
| 4.4                                            | Recycling or reclamation of other inorganic materials.                                                                                                                                                          |
| Address 1                                      | Forge Hill                                                                                                                                                                                                      |
| Address 2                                      | Kinsale Road                                                                                                                                                                                                    |
| Address 3                                      | Cork                                                                                                                                                                                                            |
| Address 4                                      |                                                                                                                                                                                                                 |
| Country                                        | Ireland                                                                                                                                                                                                         |
| Coordinates of Location                        | -8.48191 51.8703                                                                                                                                                                                                |
| River Basin District                           | IESW                                                                                                                                                                                                            |
| NACE Code                                      | 3821                                                                                                                                                                                                            |
| Main Economic Activity                         | Treatment and disposal of non-hazardous waste                                                                                                                                                                   |
| <b>AER Returns Contact Name</b>                | Garrett Walsh (W0173)                                                                                                                                                                                           |
| <b>AER Returns Contact Email Address</b>       | garrett.walsh@greenstar.ie                                                                                                                                                                                      |
| <b>AER Returns Contact Position</b>            | Environmental Officer                                                                                                                                                                                           |
| <b>AER Returns Contact Telephone Number</b>    | 051 333946                                                                                                                                                                                                      |
| <b>AER Returns Contact Mobile Phone Number</b> | 086 1705034                                                                                                                                                                                                     |
| <b>AER Returns Contact Fax Number</b>          | 051 333945                                                                                                                                                                                                      |
| <b>Production Volume</b>                       | 0.0                                                                                                                                                                                                             |
| <b>Production Volume Units</b>                 |                                                                                                                                                                                                                 |
| <b>Number of Installations</b>                 | 0                                                                                                                                                                                                               |
| <b>Number of Operating Hours in Year</b>       | 0                                                                                                                                                                                                               |
| <b>Number of Employees</b>                     | 0                                                                                                                                                                                                               |
| <b>User Feedback/Comments</b>                  |                                                                                                                                                                                                                 |
| <b>Web Address</b>                             |                                                                                                                                                                                                                 |

**2. PRTR CLASS ACTIVITIES**

| Activity Number | Activity Name                                         |
|-----------------|-------------------------------------------------------|
| 5(c)            | Installations for the disposal of non-hazardous waste |
| 5(c)            | Installations for the disposal of non-hazardous waste |
| 50.1            | General                                               |

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

|                                                                                     |  |
|-------------------------------------------------------------------------------------|--|
| Is it applicable?                                                                   |  |
| 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

[Link to previous years emissions data](#)

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited | Filename : W0173\_2010.xls | Return Year : 2010 |

01/04/2011 10:00

**SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS**

| POLLUTANT    |      | RELEASES TO AIR |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------|------|-----------------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| No. Annex II | Name | M/C/E           | METHOD      |                            | Emission Point 1                                   | QUANTITY          |                        |                      |
|              |      |                 | Method Code | Designation or Description |                                                    | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) 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 PRTR POLLUTANTS**

| POLLUTANT    |      | RELEASES TO AIR |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------|------|-----------------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| No. Annex II | Name | M/C/E           | METHOD      |                            | Emission Point 1                                   | QUANTITY          |                        |                      |
|              |      |                 | Method Code | Designation or Description |                                                    | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) 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 C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)**

| POLLUTANT     |      | RELEASES TO AIR |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|---------------|------|-----------------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| Pollutant No. | Name | M/C/E           | METHOD      |                            | Emission Point 1                                   | QUANTITY          |                        |                      |
|               |      |                 | Method Code | Designation or Description |                                                    | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) 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

**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:

Greenstar Environmental Services 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

[Link to previous years emissions data](#)

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited | Filename : W0173\_2010.xls | Return Year : 2010 |

01/04/2011 10:00

**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 t

| RELEASES TO WATERS |      |       |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------------|------|-------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| POLLUTANT          |      | M/C/E | Method Used |                            | QUANTITY                                           |                   |                        |                      |
| No. Annex II       | Name |       | 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 |      |       |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------------|------|-------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| POLLUTANT          |      | M/C/E | Method Used |                            | QUANTITY                                           |                   |                        |                      |
| No. Annex II       | Name |       | 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 |      |       |             |                            | Please enter all quantities in this section in KGs |                   |                        |                      |
|--------------------|------|-------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|
| POLLUTANT          |      | M/C/E | Method Used |                            | QUANTITY                                           |                   |                        |                      |
| Pollutant No.      | Name |       | 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

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited | Filename : W0173\_201

01/04/2011 10:00

SECTION A : PRTR POLLUTANTS

| OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER |                |        |             |                                                                          | Please enter all quantities in this section in KGs |                   |                        |                      |     |
|----------------------------------------------------------------------------|----------------|--------|-------------|--------------------------------------------------------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|-----|
| POLLUTANT                                                                  |                | METHOD |             |                                                                          | QUANTITY                                           |                   |                        |                      |     |
| No. Annex II                                                               | Name           | M/C/E  | Method Used |                                                                          | Emission Point 1                                   | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |     |
|                                                                            |                |        | Method Code | Designation or Description                                               |                                                    |                   |                        |                      |     |
| 12                                                                         | Total nitrogen | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 8.8256            | 8.8256                 | 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 |                              |        |             |                                                                          | Please enter all quantities in this section in KGs |                   |                        |                      |     |
|----------------------------------------------------------------------------|------------------------------|--------|-------------|--------------------------------------------------------------------------|----------------------------------------------------|-------------------|------------------------|----------------------|-----|
| POLLUTANT                                                                  |                              | METHOD |             |                                                                          | QUANTITY                                           |                   |                        |                      |     |
| Pollutant No.                                                              | Name                         | M/C/E  | Method Used |                                                                          | Emission Point 1                                   | T (Total) KG/Year | A (Accidental) KG/Year | F (Fugitive) KG/Year |     |
|                                                                            |                              |        | Method Code | Designation or Description                                               |                                                    |                   |                        |                      |     |
| 303                                                                        | BOD                          | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 64.18618          | 64.18618               | 0.0                  | 0.0 |
| 306                                                                        | COD                          | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 229.308           | 229.308                | 0.0                  | 0.0 |
| 308                                                                        | Detergents (as MBAS)         | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 0.48856           | 0.48856                | 0.0                  | 0.0 |
| 314                                                                        | Fats, Oils and Greases       | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 7.092             | 7.092                  | 0.0                  | 0.0 |
| 343                                                                        | Sulphate                     | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 46.58656          | 46.58656               | 0.0                  | 0.0 |
| 240                                                                        | Suspended Solids             | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 60.2032           | 60.2032                | 0.0                  | 0.0 |
| 348                                                                        | Total petroleum hydrocarbons | C      | PER         | Calculated using flow to sewer over the year. Analysis is ISO accredited |                                                    | 0.143416          | 0.143416               | 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

[Link to previous years emissions data](#)

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited | Filename : W0173\_2010.xls | Return Year : 2010 |

01/04/2011 10:01

**SECTION A : PRTR POLLUTANTS**

| POLLUTANT    |      | RELEASERS TO LAND |             |                            | Please enter all quantities in this section in KGs |                   |                        |
|--------------|------|-------------------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|
| POLLUTANT    |      | METHOD            |             |                            | QUANTITY                                           |                   |                        |
| 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)**

| POLLUTANT     |      | RELEASERS TO LAND |             |                            | Please enter all quantities in this section in KGs |                   |                        |
|---------------|------|-------------------|-------------|----------------------------|----------------------------------------------------|-------------------|------------------------|
| POLLUTANT     |      | METHOD            |             |                            | QUANTITY                                           |                   |                        |
| 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

| PRTR# : W0173 | Facility Name : Greenstar Environmental Services Limited | Filename : W0173\_2010.xls | Return Year : 2010 |

01/04/2011 10:01

Please enter all quantities on this sheet in Tonnes

25

| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste                                                                                                                         | Waste Treatment Operation | Method Used |             | Location of Treatment | Haz Waste : Name and Licence/Permit No of Next Destination Facility<br>Non Haz Waste: Name and Licence/Permit No of Recoverer/Disposer | Haz Waste : Address of Next Destination Facility<br>Non Haz Waste: Address of Recoverer/Disposer | Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------|-------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                      |                     |           |                            |                                                                                                                                              |                           | M/C/E       | Method Used |                       |                                                                                                                                        |                                                                                                  |                                                                                                |                                                                                                |
| To Other Countries   | 15 01 01            | No        | 6573.92                    | paper and cardboard packaging                                                                                                                | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,China                                                                                      |                                                                                                |                                                                                                |
| To Other Countries   | 15 01 01            | No        | 170.76                     | paper and cardboard packaging                                                                                                                | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,United Kingdom                                                                             |                                                                                                |                                                                                                |
| To Other Countries   | 15 01 02            | No        | 266.7                      | plastic packaging                                                                                                                            | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,China                                                                                      |                                                                                                |                                                                                                |
| Within the Country   | 15 01 02            | No        | 124.98                     | plastic packaging                                                                                                                            | R3                        | M           | Weighed     | Offsite in Ireland    | Asian Eagle,CK(S) 552/08                                                                                                               | Cork,....,Ireland                                                                                |                                                                                                |                                                                                                |
| To Other Countries   | 15 01 02            | No        | 97.36                      | plastic packaging                                                                                                                            | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,United Kingdom                                                                             |                                                                                                |                                                                                                |
| Within the Country   | 15 01 02            | No        | 16.11                      | plastic packaging                                                                                                                            | R3                        | M           | Weighed     | Offsite in Ireland    | WF Recycling Ltd.,CK(S) 437/07                                                                                                         | Ballinrinsig,Waterfall,Co. Cork,....,Ireland                                                     |                                                                                                |                                                                                                |
| Within the Country   | 15 01 03            | No        | 17.34                      | wooden packaging                                                                                                                             | R3                        | M           | Weighed     | Offsite in Ireland    | Chep Pallets,N/A Tullagower                                                                                                            | Jamestown Business Park,Jamestown Road,Finglas,Dublin 11,Ireland                                 |                                                                                                |                                                                                                |
| Within the Country   | 15 01 07            | No        | 92.14                      | glass packaging mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17                                             | R5                        | M           | Weighed     | Offsite in Ireland    | Mallow Contracts Ltd,WP 277/05                                                                                                         | Mallow ,Co. Cork,....,Ireland                                                                    |                                                                                                |                                                                                                |
| Within the Country   | 17 01 07            | No        | 640.6                      | 01 06 soil and stones other than those mentioned                                                                                             | R5                        | M           | Weighed     | Offsite in Ireland    | Mallow Contracts Ltd,WP 277/05                                                                                                         | Mallow ,Co. Cork,....,Ireland                                                                    |                                                                                                |                                                                                                |
| Within the Country   | 17 05 04            | No        | 1230.49                    | in 17 05 03 gypsum-based construction materials other                                                                                        | R5                        | M           | Weighed     | Offsite in Ireland    | WRS Recycling,W0170-01                                                                                                                 | Cork,....,Ireland                                                                                |                                                                                                |                                                                                                |
| Within the Country   | 17 08 02            | No        | 2.74                       | than those mentioned in 17 08 01                                                                                                             | R5                        | M           | Weighed     | Offsite in Ireland    | WRS Recycling,W0170-01                                                                                                                 | Youghal Landfill,Mudflats,Youghal ,Co. Cork,Ireland                                              |                                                                                                |                                                                                                |
| Within the Country   | 19 12 12            | No        | 7082.76                    | Mixed Municipal Waste                                                                                                                        | D5                        | M           | Weighed     | Offsite in Ireland    | Cork Co. Co.,W068-02                                                                                                                   | Connaught Regional Landfill,Ballinasloe,Co. Galway,.,Ireland                                     |                                                                                                |                                                                                                |
| Within the Country   | 19 12 12            | No        | 11543.8                    | Mixed Municipal Waste other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 | D5                        | M           | Weighed     | Offsite in Ireland    | Greenstar Holdings Ltd.,W0178-01                                                                                                       | Greenstar Holdings Ltd.,W0178-01                                                                 |                                                                                                |                                                                                                |
| Within the Country   | 19 12 12            | No        | 1076.42                    | 11 other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12                    | D5                        | M           | Weighed     | Offsite in Ireland    | Bord Na Mona,W0201-01                                                                                                                  | Drehid Landfill,Naas,Co. Kildare,.,Ireland                                                       |                                                                                                |                                                                                                |
| Within the Country   | 19 12 12            | No        | 1059.62                    | 11 other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12                    | D5                        | M           | Weighed     | Offsite in Ireland    | Greenstar Holdings Ltd.,W0146-01                                                                                                       | Knockharley Landfill,Kentstown,Co. Meath,.,Ireland                                               |                                                                                                |                                                                                                |
| Within the Country   | 19 12 12            | No        | 60.78                      | 11                                                                                                                                           | R13                       | M           | Weighed     | Offsite in Ireland    | Greenstar Ltd.,W0183-01                                                                                                                | Millennium Business Park,Grange,Ballycoolin,Dubl in 11,Ireland                                   |                                                                                                |                                                                                                |
| To Other Countries   | 20 01 01            | No        | 215.82                     | paper and cardboard                                                                                                                          | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,China                                                                                      |                                                                                                |                                                                                                |
| To Other Countries   | 20 01 01            | No        | 504.2                      | paper and cardboard                                                                                                                          | R3                        | M           | Weighed     | Abroad                | ...                                                                                                                                    | .....,United Kingdom                                                                             |                                                                                                |                                                                                                |
| Within the Country   | 20 01 08            | No        | 441.92                     | biodegradable kitchen and canteen waste                                                                                                      | R3                        | M           | Weighed     | Offsite in Ireland    | Miltown Composting Systems,W0270-01                                                                                                    | Tipperary,.,Ireland                                                                              |                                                                                                |                                                                                                |
| Within the Country   | 20 01 08            | No        | 295.9                      | biodegradable kitchen and canteen waste                                                                                                      | R3                        | M           | Weighed     | Offsite in Ireland    | Acorn Recycling Ltd.,W0249-01                                                                                                          | Ballybeg,Littleton,Co. Tipperary,.,Ireland                                                       |                                                                                                |                                                                                                |
| Within the Country   | 20 01 21            | Yes       | 0.2                        | fluorescent tubes and other mercury-containing waste                                                                                         | R5                        | M           | Weighed     | Offsite in Ireland    | KMK Metals,W0113-03                                                                                                                    | Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland                           | KMK Metals,W0113-03,Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland     | Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland                         |
| Within the Country   | 20 01 36            | No        | 27.66                      | discarded electrical and electronic equipment other than those mentioned in 20                                                               | R5                        | M           | Weighed     | Offsite in Ireland    | KMK Metals,W0113-03                                                                                                                    | Offaly,Ireland                                                                                   |                                                                                                |                                                                                                |
| Within the Country   | 20 01 38            | No        | 50.76                      | wood other than that mentioned in 20 01 37                                                                                                   | R3                        | M           | Weighed     | Offsite in Ireland    | CTO Environmental Solutions,WP12/01                                                                                                    | Rostellan,Co. Cork,....,Ireland                                                                  |                                                                                                |                                                                                                |



| Transfer Destination | European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste                       | Waste Treatment Operation | Method Used |             | Location of Treatment | Haz Waste : Name and Licence/Permit No of Next Destination Facility | Haz Waste : Address of Next Destination Facility                       | Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY) | Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY) |
|----------------------|---------------------|-----------|----------------------------|--------------------------------------------|---------------------------|-------------|-------------|-----------------------|---------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
|                      |                     |           |                            |                                            |                           | M/C/E       | Method Used |                       | Haz Waste: Name and Licence/Permit No of Recover/Disposer           | Non-Haz Waste: Address of Recover/Disposer                             |                                                                                                |                                                                                                |
| Within the Country   | 20 01 38            | No        | 420.54                     | wood other than that mentioned in 20 01 37 | R3                        | M           | Weighed     | Offsite in Ireland    | WRS Recycling,W0170-01                                              | Cullenagh,Co. Cork,....Ireland                                         |                                                                                                |                                                                                                |
| Within the Country   | 20 01 40            | No        | 0.94                       | metals                                     | R4                        | M           | Weighed     | Offsite in Ireland    | KMK Metals,W0113-03                                                 | Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland |                                                                                                |                                                                                                |
| Within the Country   | 20 01 40            | No        | 194.18                     | metals                                     | R4                        | M           | Weighed     | Offsite in Ireland    | Pouladuff Dismantlers Ltd.,CK(S) 478/07                             | Forge Hill,Co. Cork,....Ireland                                        |                                                                                                |                                                                                                |
| Within the Country   | 20 03 01            | No        | 12894.62                   | Mixed Dry Recyclables                      | R5                        | M           | Weighed     | Offsite in Ireland    | Killarney Waste Disposal Ltd.,W0217-01                              | Killarney ,Co. Kerry,....Ireland                                       |                                                                                                |                                                                                                |

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