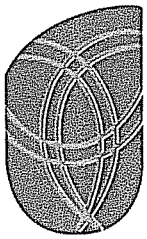
Annual Environmental Report 2008

CARLOW
COUNTY COUNCIL
COMHAIRLE CHONTAE CHEATHARLOCHA



Haroldstown Waste Transfer Station

Waste Licence Reg. No. W0139-01

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1.0 Introduction

This report comprises an Annual Environmental Report (AER) for Haroldstown Waste Transfer Station (HWTS), Haroldstown, Co. Carlow. The report has been compiled in accordance with Schedule F of Waste Licence, Register Number W0139-01 and in accordance with the EPA's Guidance Notes on the preparation of AERs. The report covers the period of 1st January 2008 to 31st December 2008.

The AER fulfils the following objectives:

- Brings together all reports required under the Conditions of the Waste Licence.
- Allows an evaluation of those reports, results and programmes prepared to monitor, track and improve environmental performance.
- Provides a summary assessment of performance of the reported year against the previous year's environmental objectives and targets.
- Provides a structured format for the development of an environmental strategy incorporating the resetting of environmental goals and targets for subsequent years.
- Provides environmental information and performance data on the Waste Transfer Station at Haroldstown in clear, non technical language, thus providing a means of communicating environmental information to site neighbours and the general public.

2.0 Facility Description and Waste Activities

2.1 Facility Description and Layout

HWTS is located on the R727 road, approximately 19 kilometres northeast of Carlow town. HWTS is located in a rural setting and is bounded to the north by the R727 road and to the west, south and east by farmland. A gravel pit is located to the north east beyond the R727.

The layout of the waste transfer station is as follows:

- Gates and appropriate signage.
- Administration and toilet portacabins.
- Internal roads.
- Hardstand areas.
- Civic Amenity Centre i.e. bottle bank, textiles, aluminium cans, paper.
- Compactor for municipal waste, including control room.
- Heavy duty loading hopper.
- Closed containers for municipal waste.
- Waste Quarantine Area.
- Bord na Mona Puraflow Treatment Plant.

The layout of the facility is presented in Drawing No.1.

The waste transfer station was historically a gravel quarry. Between the years 1954 – 1993 the site was operated as a municipal solid waste landfill site. In 1993 the landfill was restored by capping with topsoil. In October 1993, within six months of closing the landfill, Carlow County Council opened the waste transfer station on the northern portion of the old landfill site. Drawing No. 2 illustrates the location of the old gravel quarry and the extent of the old landfill.

2.2 Waste Activities at Haroldstown Waste Transfer Station

HWTS was granted a Waste Licence (W0139-01) by the Environmental Protection Agency (EPA) in August 2001. Only non-hazardous municipal wastes are accepted at the waste transfer station. As well as accepting municipal wastes, individual bins and storage containers are provided for the recovery of recyclable and reusable materials. Non-recoverable non-hazardous municipal wastes are disposed of at the Powerstown Landfill Facility (Waste Licence No. W0025-02).

HWTS is licensed to carry out the following activities classed as disposal in accordance with the Third Schedule of the Waste Management Act, 1996:

> *Class 12: Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule. This activity is limited to the compaction of waste deposited in the hopper unit and its transfer from the compactor unit to an enclosed container for storage prior to removal off-site to landfill.*
>
> *Class 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. This activity is limited to the storage of non-recoverable waste received at this facility, prior to disposal at an alternative facility.*

In addition to the above disposal activities, the facility is licenced to carry out the following waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996:

> *Class 2: Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes): This activity is limited to the storage of waste oils at the civic waste facility.*
>
> *Class 3: Recycling or reclamation of metals and metal compounds: This activity is limited to the acceptance of beverage cans, white goods and other metals at the facility.*
>
> *Class 4: Recycling or reclamation of other inorganic materials: This activity covers the acceptance of glass at the facility.*
>
> *Class 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: This activity is limited to the storage of waste types authorised by the licence at the facility prior to recovery at an alternative appropriate facility.*

2.3 Methodology of Waste Acceptance

2.3.1 Disposal of Waste

Haroldstown Waste Transfer Station (HWTS) opens on Mondays, Wednesdays, Fridays and Saturdays between the hours of 8.30 – 16.30.

Vehicles entering the site are directed towards the hopper and compactor. Vehicles reverse toward the hopper, enabling waste to be tipped or manhandled directly into the hopper. The loading hopper is made of heavy-duty steel with a steel plate, safety gate and steel plated door. Stray waste falling outside the hopper is retrieved and deposited into the compactor by the site supervisor. The compactor is a Moovemoor 3500 unit with built-in power pack and heavy-duty rigging screw-type container clamps which are used to compact the waste.

Any non-acceptable waste observed entering the compactor is removed on shutdown of the compactor and taken off-site by the original carrier.

After the waste is compacted, it is stored in a 30.6 m^3 skip attached to the compactor. Once this skip has reached capacity, it is disconnected from the compactor and transported to the Powerstown Landfill Facility by a double-axled hook-lift truck where the waste is finally disposed. The waste is weighed on the weighbridge as it enters the landfill site and the tonnage is recorded.

Individuals are charged by vehicle type for waste accepted at HWTS. A receipt of payment is completed and a copy is retained on site for record purposes.

2.3.2 Recovery of Materials

Recyclable materials are brought directly to the civic amenity area by the general public where the waste is segregated into groups. Each waste recovery stream has its own designated container. When the container is full it is removed to an appropriate recycling facility.

The battery, waste oil and fluorescent tubes are located on an impervious concrete area which drains to a separate concrete sump. This sump is emptied by Enva Ireland and the mixture is treated at the facility.

The public are not charged for bringing material to the civic amenity area for recovery.

2.4 Quantity and Composition of Waste Received for Disposal to Landfill and Recovery

2.4.1 Waste Received for Disposal to Landfill

The waste received for disposal during the 2008 period comprised of municipal waste. The amounts received and transferred to the Powerstown Landfill Facility in 2008 for disposal are contained in Table 2.1 together with the preceding three years.

Table 2.1: Waste Received at the Haroldstown Waste Transfer Station and Disposed to the Powerstown Landfill Facility during 2008

Month	Municipal Waste 2005 (tonnes)	Municipal Waste 2006 (tonnes)	Municipal Waste 2007 (tonnes)	Municipal Waste 2008 (tonnes)
January	161	145	177	120.52
February	158	155	94	91.04
March	138	158	106	84.2
April	186	154	168	107.18
May	152	164	168	96.6
June	163	155	149	78.64
July	167	152	196	54.34
August	150	149	211	61.88
September	126	149	152	59.26
October	132	155	143	61.98
November	138	167	155	51.38
December	142	168	162	52.18
Total (tonnes)	**1,813**	**1,872**	**1,884**	**919.20**

A total of 919.20 tonnes of municipal waste were received at the HWTS during 2008. This figure displays a decrease of 964 tonnes on the 2007 figure.

2.4.2 Material Collected for Recovery

HWTS incorporates a civic amenity, which offers a wide range of recovery facilities, including:

- Glass.
- Aluminium cans.
- Textiles.
- Batteries.
- Fluorescent light bulbs.
- Waste oil.

This waste material is brought by the general public to HWTS for recovery. Quantities of waste received for recovery and recovery destination for 2006 and 2007 and 2008 are presented in Table 2.2.

Table 2.2: Tonnage of Material Received for Recovery at the Haroldstown Waste Transfer Station in 2006, 2007 and 2008

Material Type	2006 (tonnes)	2007 (tonnes)	2008 (tonnes)	Destination
Waste Oil	3.8	2.7	2.9	Enva Ireland Ltd.
Cans	1.1	0.625	1.175	Irohaul
Glass	21	8.71	13.67	Irohaul
Batteries	Primary: 0.16 Lead Acid: 10.45	Primary: 0.145 Lead Acid: 13.026	Primary: 1.2 Lead Acid: 0	KMK Metals Recycling. Tullamore, Co. Offally.
Waste Paper	19.2	24.57	16.91	Raymond Whelan, Ballyharmon, Co. Laois
Lamps (fluorescent)	0.128	0.05	0.2	Irish Lamp Recycling Ltd.
Textiles	3.38	3.49	2.27	Mrs. Quins Charity Shop
Total	**59.2 tonnes**	**53.31 tonnes**	**38.32 tonnes**	

The following increases in the quantities of materials collected for recovery were recorded:

- Fluorescent Lamps – increased by 1.95 tonnes
- Alkaline batteries – increased by 1.05 tonnes.
- Glass – increased by 4.96 tonnes
- Aluminium Cans – increased by 0.55 tonnes
- Waste Oil – increased by 0.2 tonnes.

The Waste Licence for HWTS stipulates that the maximum permitted quantity of waste accepted at the HWTS for recovery/recycling is 300 tonnes per annum. A total of approximately 38.32 tonnes of material for was received recovery in 2008, approximately 13% of the quantity permitted by the Waste Licence.

3.0 Environmental Monitoring

Ms. Mary Walsh, Environmental Technician and Mr. Fergus Mulhare Landfill Manager, oversees all matters of an environmental nature including compliance monitoring. While some of the monitoring requirements are completed by Carlow County Council, much of the monitoring and report preparation for 2008 was out-sourced to third parties on behalf of Carlow County Council.

Drawing No. 3 illustrates the locations of the groundwater, noise, dust and landfill gas monitoring points at HWTS. Drawing No. 4 illustrates the surface water monitoring locations. Grid references for monitoring locations are also provided with the drawings.

3.1 Summary of Results of Environmental Monitoring

3.1.1 Dust

Dust monitoring was undertaken at HWTS in 2008 by Malone O'Regan (MOR) personnel, in accordance with the requirements outlined in Schedule D.3 of Waste Licence No. 139-1. The Waste Licence stipulates that dust monitoring must be conducted at three designated locations, three times a year, twice during the period May to September. Dust deposition limits for HWTS are set out in Schedule C of the Waste Licence. The dust monitoring results for 2008are summarised in Table 3.1.

Table 3.1: Dust Monitoring Results, Haroldstown Waste Transfer Station, 2008

Location	Dust Deposition Limit mg/m^2/day	Feb/Mar 2008 Dust mg/m^2/day	May/June 2008 Dust mg/m^2/day	Aug/Sept 2008 Dust mg/m^2/day
DM1	350	97	82	25
DM2		55	114	23
DM3		52	**630**	20

The dust monitoring results reported for 2008 were generally below the dust deposition limit of 350mg/m^2/day with the exception of the results at DM3 during the second monitoring event. A value of 630mg/m^2/day was reported at DM3 between May and June 2008. This represents a 1 in 9 ratio of non-compliance or 89% compliance. This is the same as the compliance rate reported for 2007.
The elevated level of dust recorded at DM3 during the May to June monitoring event may be attributed to debris from nearby trees and shrubbery falling into the dust jars. Road works within the vicinity of HWTS may also have impacted the dust level as there was a large amount of machinery movement within and around the transfer station during that period.

3.1.2 Landfill Gas

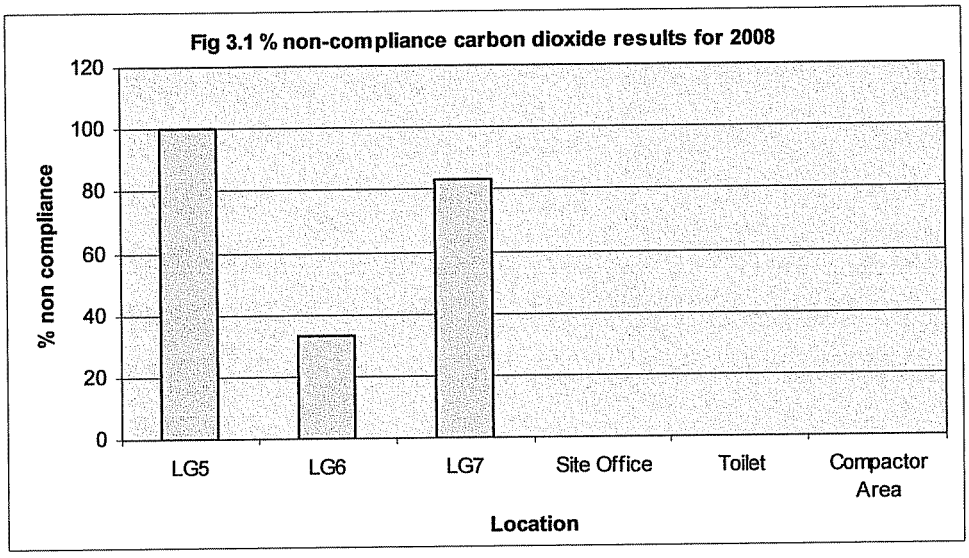
Landfill gas monitoring is carried out at HWTS in accordance with Schedule D.2 of the Waste Licence. Monitoring is conducted at ten locations on a monthly basis by Carlow County Council personnel. Landfill gas concentration limits as set out in Schedule C of the Waste Licence are 20% LEL (1% v/v) for methane, and 1.5% v/v carbon dioxide. These limits apply to landfill gas measured in any building on or adjacent to the HWTS or landfill gas monitoring wells (LG5, LG6, LG7) located outside the waste body of the old landfill. Landfill gas monitoring data for gas monitoring wells (LG1, LG2, LG3 and LG4) located within the old landfill boundary are not required to meet the emission limit values.

Reported landfill gas methane levels were below the emission limit values at all buildings and off-site monitoring locations during 2008. There were no exceedances to report in relation to methane levels during 2008.

Carbon Dioxide (CO_2) levels recorded at LG5 consistently exceeded the ELV of 1.5% throughout 2008. 4 exceedances were recorded at LG6 while 10 exceedances were recorded at LG7. There were no exceedances recorded in relation to CO_2 levels recorded within buildings during 2008. It is considered that landfill gas migration may be occurring form the old landfill area at HWTS. However, as there are no exceedances in relation to elevated methane levels it is considered that the rate of gas migration is minimal.

Fig 3.1 below indicates the % non-compliances recorded during 2008 for CO_2

Figure 3.1 Summary of Carbon Dioxide Non-Compliance (2008)



3.1.3 Surface Water

A chemical water quality assessment of the Dereen River was carried out by MOR personnel, and a biological water quality assessment was undertaken by Conservation Services Ltd. at two sampling locations, SW1 and SW2, in accordance with Schedule D.6 of the Waste Licence. SW1 is situated upstream of the facility and SW2 is situated downstream.

Chemical Assessment

Samples collected from SW1 and SW2 were analysed for the parameters outlined in Table D.6.1 of the Waste Licence; pH, Temperature, Conductivity, Ammoniacal Nitrogen as N, COD(settled), BOD(settled), Total Suspended Solids and Chloride.

Overall, no significant change in surface water composition has occurred since the previous annual surface water monitoring event in September 7 Reported concentrations for all parameters are within the relevant EQS (see Table 3.2 and 3.3).

Table 3.2: Surface Water Monitoring Results for SW1 (2006, 2007 and 2008)

Parameter	EQS	September 2006 (EPA)	September 2007 (EPA)	October 2008 (MOR)
Visual Inspection	NA	Slight Brownish Peaty Colour	Clear, slight green tinge	Clear
pH	>5.5 - <9.0	7.88	7.78	6.75
Temp (oC)	21.5[1]	15.6	14.4	8.6
Conductivity (µS/cm)	1000	157.2	242.2	217
Dissolved Oxygen mg/l	≥6[2]	10.8	10.20	7.20
Ammoniacal Nitrogen as N mg/l	0.0165 – 0.021[3] 0.78*	**1.1**	***<0.2***	0.2
COD (Settled) mg/l	NA	38	15	17
BOD (Unfiltered) mg/l	≤5	2	<2	<2
Total Suspended Solids mg/l	50[4]	<10	<10	<10
Chloride mg/l	250	12	16	13

Method detection limit above EQS value ***Italic***
Above EQS **Bold**
* 0.78 denotes ammoniacal nitrogen value as N. converted for comparison with laboratory results

[1] Salmonid Waters: Temperature downstream of thermal discharge must not exceed 21.5°C; Cyprinid Waters: Temperature downstream must not exceed 28°C.
[2] Salmonid Waters: 50% of samples should be ≥9 mg/l O_2 (min. 6 mg/l O_2); Cyprinid Waters: 50% of samples should be ≥7mg/l O_2 (min. 4 mg/l O_2).
[3] Salmonid Waters: 0.020 mg/l of NH_3 (95% compliance); Cyprinid Waters: 0.025 mg/l of NH_3 (95% compliance)
[4] 50 mg/l is the maximum permissible value; ≤25 mg/l (annual mean)

Table 3.3: Surface Water Monitoring Results for SW2 (2006, 2007 and 2008)

Parameter	EQS	September 2006 (EPA)	September 2007 (EPA)	October 2008 (MOR)
Visual Inspection	NA	Slight Brownish Peaty Colour	Clear, some moss particulates	Clear
pH	>5.5 - <9.0	7.86	7.72	7.82
Temp (oC)	21.5[5]	15.8	14.2	9.1
Conductivity (µS/cm)	1000	154.4	242.4	217.9
Dissolved Oxygen mg/l	≥6[6]	8.2	10.24	7.49
Ammoniacal Nitrogen as N mg/l	0.0165 – 0.021[7] 0.78*	***<0.2***	***<0.2***	0.3
COD (Settled) mg/l	NA	37	18	16
BOD (Unfiltered) mg/l	≤5	<2	4	<2
Total Suspended Solids mg/l	50[8]	<10	<10	<10
Chloride mg/l	250	14	16	14

NA – Not available; Above EQS- **Bold**
Method detection limit above EQS value ***Italic***
* 0.78 denotes ammoniacal nitrogen value as N. converted for comparison with laboratory results

[5] Salmonid Waters: Temperature downstream of thermal discharge must not exceed 21.5°C; Cyprinid Waters: Temperature downstream must not exceed 28°C.
[6] Salmonid Waters: 50% of samples should be ≥9 mg/l O_2 (min. 6 mg/l O_2); Cyprinid Waters: 50% of samples should be ≥7mg/l O_2 (min. 4 mg/l O_2).
[7] Salmonid Waters: 0.020 mg/l of NH_3 (95% compliance); Cyprinid Waters: 0.025 mg/l of NH_3 (95% compliance)
[8] 50 mg/l is the maximum permissible value; ≤25 mg/l (annual mean)

Biological Assessment

Conservation Services Ltd. carried out a biological assessment in accordance with Table D.6.1 of the Waste Licence. The biological assessment contained two facets; habitat assessment and biological water quality assessment.

A habitat assessment was carried out at SW1 and SW2. These monitoring locations were assessed in terms of characteristics of the habitat and rated as a habitat for trout in the adult, nursery and spawning stages. The results of the habitat assessment are shown in Table 3.2

Table 3.4: Habitat Assessment 2008

Habitat	SW1 (upstream)	SW2 (downstream)
Trout Adult Habitat	Very Good	Very Good
Trout Nursery Habitat	Good	Good
Trout Spawning Habitat	Good	Good

A biological water quality assessment was also completed at locations SW1 and SW2. Based on the relative abundance of indicator species, a biotic index (Q-rating) was determined for each location in accordance with the biological assessment procedure used by the EPA (McGarrigle, M.L. *et al; 1998).* The results of the biological water quality assessment are compared to previous annual monitoring events dating back to 2005 in Table 3.3

Table 3.5: Biological Water Quality Assessment

Location	Nov. 2005	Sept 2006	Sept 2007	Sept 2008
SW 1	Q4 Unpolluted	Q3-4 Slightly Polluted	Q3-4 Slightly Polluted	Q3-4 Slightly Polluted
SW2	Q4 Unpolluted	Q3-4 Slightly Polluted	Q3-4 Slightly Polluted	Q3-4 Slightly Polluted

The biological assessment shows a slight deterioration over time when compared to the years preceding 2006. However, there was no significant change between the 2006 and 2008 assessments. Both locations (SW1 and SW2) received a Q-rating of Q3-4 (slightly polluted) for this monitoring period. This deterioration may be as a result of one or a number of factors e.g. sampling technique, location, shading or possible presence of weeds. However the facility is unlikely to be the cause of the deterioration as the assessment shows a similar deterioration both upstream and downstream.

3.3.4 Groundwater

Groundwater monitoring was undertaken by MOR personnel on the 3rd of October 2008 for the parameters required by the Waste Licence, Schedule D, under Table D.6.1. Groundwater monitoring was carried out at five monitoring locations (GW1, GW3, GW4, GW5 and GW6); GW2 was not sampled as the well went dry during purging. GW1, GW 2 and GW3 are located inside the boundary of the facility. Monitoring wells GW4, GW5 and GW6 are located at three private residences to the east of the facility. These wells are not used for domestic supply purposes. The groundwater monitoring locations are shown on Drawing No. 3 and summarised in Table 3.6 below.

Table 3.6: Groundwater Monitoring Locations

Monitoring Point	Location Relative to Site and Waste Body
GW1	Within the waste body
GW2	Within the waste body
GW3	Within the waste body
GW4	Across / Up gradient
GW5	Across / Up gradient
GW6	Down gradient

Groundwater analytical data have been compared the EPA (2003) Interim Guideline Values for Groundwater (IGVs) for the general assessment of groundwater and European Communities (Drinking Water) (No. 2) Regulation 2007 (SI No. 278 of 2007).

Groundwater elevation data indicates that groundwater flow direction is generally towards the south and southwest.

Reported groundwater analytical data for the upgradient wells (GW4 and GW5) for 2008 are generally similar to reported results for 2007. Reported results in excess of the IGVs are reported for total phenols, copper, total coliforms, faecal coliforms, orthophosphate, zinc and methyl parathion for GW4. Monitoring location GW5 indicated that the levels of ammonia, total phenols, total and faecal coliforms and chloroform exceeded the IGVs.

Reported results for Volatile Organic Compounds (VOC) display a continued presence of Chloroform at GW5. Bromodichloromethane and Dibromochloromethane were present at GW5 in 2007 but were not detected during the 2008 monitoring event.

GW1 and GW3 are located within the waste body at Haroldstown Waste Transfer Station. Reported results for GW1 indicate that nine parameters exceeded the Groundwater Standards in samples collected in October 2008. These include; total dissolved solids, ammonical nitrogen, chloride, total phenols, faecal coliforms, total coliforms, ortho-phosphate, potassium and methyl parathion.

In comparison to the September 2007 groundwater assessment, twelve parameters in the sample from GW1 showed increased concentrations: ammonical nitrogen, sulphate, total oxidised nitrogen, residue on evaporation, potassium, sodium, boron, iron, lead, total phosphorus, total phenols and faecal coliforms. Seven parameters showed decreased concentrations when compared to the previous monitoring event in September 2007: chloride, alkalinity, calcium, magnesium, copper, zinc and total coliforms.
The concentrations for all other parameters in the samples from GW1 remained the same as detected in 2007 or remained below the Minimum Detection Level (MDL). There were no concentrations above the MDL for any of the speciated compounds of VOCs or SVOCs.

Reported results for GW3 indicate that Ammonical nitrogen, chloride, total phenols, faecal coliforms and total coliforms exceed the recommended other parameters were below the Groundwater Standards.

The concentrations of fifteen parameters detected in the samples from GW3 showed increases in concentrations when compared to those from the previous monitoring event in 2007. These include: Ammonical nitrogen, chloride, sulphate, alkalinity, total oxidised nitrogen (TON), residue on evaporation, sodium, boron, copper, iron, lead, total phosphorus, total phenols, faecal coliforms and total coliforms. The concentration of seven parameters detected in the sample from GW3 showed decreases when compared to those from the previous monitoring event: fluoride, calcium, magnesium, potassium, manganese, ortho-phosphate and zinc.

The concentrations of all other parameters remained the same as detected in the 2007 or remained below the MDL. There were no VOCs or SVOCs detected in the samples above the MDL.

Five parameters (ammoniacal nitrogen, fluoride, total phenols, total coliforms and chloroform) had a concentration above the groundwater standards during this sampling event for GW6.

Increases were observed in concentrations of 16 parameters in the GW6 sample and these include; ammonical nitrogen, chloride, fluoride, sulphate, TON, potassium, sodium, copper, iron, lead, total phosphorus, ortho-phosphate, zinc, total phenols, total coliforms and chloroform. Decreases were observed in four parameters: alkalinity, residue on evaporation, calcium and magnesium. All other parameters were unchanged from the previous monitoring event or below the relevant MDLs.

It appears that the former landfill is impacting on the groundwater quality of down gradient wells located inside the boundary of the old landfill (GW1 and GW3). However the absence of VOCs and SVOCs in these samples indicate that the site is not likely to be acting as a source of VOC contamination detected at GW5 and GW6.

3.3.5 Noise

Noise monitoring is conducted on an annual basis at HWTS in accordance with Table D.4.1 of the Waste Licence. Noise monitoring was undertaken at four locations by MOR personnel to comprehensively assess the noise sources in the vicinity of HWTS. Table 3.5 details the locations at which the noise monitoring survey was completed. Table 3.6 contains the noise monitoring results for 2008 and historical noise monitoring data dating back to 2005.

Table 3.7 Description of Noise Monitoring Locations

Location	Description
N1	Northern Site Boundary adjacent to the R727
N2	Centre of site beside waste compactor
N3	Eastern Site Boundary
N4	Off-site location in the field to the rear of Kelly Residence

Table 3.8 Noise Monitoring Results 2008

Location	Monitoring Event	$L_{Aeq, 30min}$	$L_{A10, 30min}$	$L_{A90, 30min}$
N1	2004	61	62	36
	2005	69	74	43
	2006	70	72	46
	2007	61	62	42
	2008	54	56	36
N2	2004	59	61	37
	2005	62	62	41
	2006	60	62	44
	2007	60	63	41
	2008	61	65	39
N3	2004	54	58	38
	2005	50	54	38
	2006	55	59	44
	2007	62	59	44
	2008	48	52	33
N4	2004	54	58	38
	2005	57	58	37
	2006	57	60	44
	2007	57	60	47
	2008	54	58	33

Monitoring Location N4 is located at the nearest noise sensitive receptor to HWTS. The L_{Aeq} recorded at N4 was below the licence limit of 55dB(A) for daytime noise levels. Observations recorded at the time of the survey indicate that operations at HWTS were not audible at this location during the 30 minute assessment. The main source of noise was considered to be passing traffic along the R727 roadway.

The L_{Aeq} levels recorded at N1 (54dB(A))and N3 (48dB(A)) are below the levels recorded during the 2007 annual noise survey. The level recorded at N2 (61dB(A) displays a slight increase of 1 decibel in comparison to the level recorded during the 2007 survey.

It is considered that the noise environment at HWTS is dominated by busy passing traffic. Due to the fact that HWTS only operates until 16:30hrs, no adverse impact is expected at nearby sensitive receptors as a result of site operations

4.0 Releases from the Facility (PRTR)

The emissions or pollutant release and transfer from HWTS have been compiled in accordance with the Environmental Protection Agency's (EPA) Guidance Notes and relevant legislation including and Council Directive 96/61/EC and Regulation (EC) No 166/2006. The PRTR information for the HWTS is reported to the EPA in electronic format, a hard copy of the electronic report is presented in Appendix A. Reported releases and off-site transfers are totals of releases and off-site transfers from all deliberate, accidental, routine and non-routine activities at the site of the facility.

The report is based on monitoring data, disposal and recovery records for the facility.

4.1 Releases to Air

Landfill gas monitoring results for the HWTS indicate that landfill gas is being generated within the old landfill to the south of the HWTS. However, this landfill is not within the boundary of the area of land licensed by Waste Licence 139-1. There is no requirement to report releases to air for HWTS.

4.2 Releases to Waters

Surface Water

In general, the water quality in the Dereen River upstream and downstream of the site is similar and generally in compliance with relevant water quality standards. Based on the overall surface water results for 2008, there is no evidence that operations at the HWTS are impacting on the river.

Groundwater

Groundwater quality data for the HWTS suggest that the old landfill is impacting on the quality of groundwater beneath the site to some degree. Groundwater quality data for off-site monitoring wells indicates that no significant impact to off-site water quality.

There were no quantified releases to water reported for the HWTS.

4.3 Releases to Wastewater or Sewer

There are no releases to wastewater or sewer reported for the HWTS.

4.4 Releases Land

There are no releases to land reported for the HWTS.

4.5 Treatment and Transfer of Waste

HWTS is permitted to accept waste for disposal and recyclable and reusable material for recovery under conditions of the Waste Licence. Non-recoverable non-hazardous municipal wastes are transferred off-site and disposed of at the Powerstown Landfill Facility (Waste Licence No. 139-1). Hazardous material including lead acid batteries and waste oil are transferred off-site to appropriately licensed facilities within Ireland. Recoverable materials are transferred off-site for recycling or re-use.

In 2008 a total 1of 957.52 tonnes of waste and recoverable material was transferred from the HWTS off-site

5.0 Resource and Energy Consumption

The following section summarises electricity and water usage in 2008 at HWTS.

The energy and resource consumption for the facility station is minimal due to the fact that this facility only receives and stores waste and recyclable material for a short period prior to disposal and recycling. It does not process the waste or carry out any other energy intensive activities.

5.1 Electricity

Electricity usage at the waste transfer station was obtained from the ESB bills for the site. 7,541 KwH were utilised in 2008. This figure is similar to the 2007 usage which was 7,460 KwH.

5.2 Water

Water usage is estimated at 80-100 litres per week (ca. 4,160 - 5200 litres per annum). This value is estimated as there is no water meter at the facility.

6.0 Site Development Activities & Plans

6.1 Development Works

Facility signage and road marking were improved at HWTS during the summer of 2008.

6.2 Environmental Objectives and Targets for 2008

Nine Environmental Objectives and Targets (EOTs) for 2008 were included in the AER for 2007. These are outlined below in Table 6.1.

Table 6.1 Environmental Objective and Targets for 2008

Item	Targets/Objectives for 2008	Outcome
Recycling	Provide a more extensive recycling facility to include for the following : Paper ,Glass, Cans, Cardboard, Plastic, Timber, Batteries, Oils, Lamps, Clothes	**Partially Completed:** All material included in this list with the exception of timber and plastic may be recycled at HWTS
Compactor	Commission an expert report on compactor safety and efficiency	Guidelines received from HSE in relation to compaction equipment. Carlow County Council are currently in the process of arranging a service and maintenance contract for the compactor.
Pricing	Review schedule of charges to reflect operation costs.	**Completed:** Charges increased in January 2008
Supervision	Overall responsibility in the Environment Section to be as follows: • Site manager • Supervisor for waste facilities (Executive Scientist) • Senior Executive Engineer	**Completed:** Site Manager: Jim Gahan Supervisors: Fergus Mulhare, Mary Walsh SEE: Patrick Connolly
Site facilities	Carry out an accessibility audit to ascertain Universal Access requirements.	**Completed:** Report issued May 2008
Signage	Improve the quality of facility signage	Signage at the site is considered to be sufficient
Markings	Improve the quality of road markings at the facility.	**Completed:** Road Markings were improved during the summer of 2008
Training	Draw up a Training Plan to comply with licence requirements and improve site efficiency.	**Completed:** Site supervisor (Mary Walsh attended FAS Waste Management Course during 2008.
Communications	Ensure that the public are familiar with site activities and establish a Communications Programme	**Partially Completed:** New sign erected at entrance and information on Carlow County Council website was updated during 2008

6.3 Environmental Objectives and Targets for 2009

Three Environmental objectives and targets have been set for 2009. These are outlined below in Table 6.2

Table 6.2 Environmental Objective and Targets for 2009

Item	Targets/Objectives for 2009
Waste Recovery	Ensure that the amount of waste received on site does not exceed the waste acceptance levels set out in the licence for the facility.
Communications	Prepare a newsletter in relation to recent site activities, waste types accepted and relevant charges
Monitoring	Carlow County Council to undertake to carry out all regular compliance monitoring and preparation of reports for the 2009 monitoring period.

7.0 Environmental Nuisance Control

7.1 Litter

Litter is generally not a problem at the HWTS as the waste is contained in an enclosed skip so wind blown litter is greatly reduced. If litter occurs, on-site staff disposes of it as required.

7.2 Noise

Noise does not cause a nuisance at the facility, as detailed in the annual noise monitoring report.

7.3 Dust

Dust is generally not a problem at the HWTS. Some airborne dust may be present on site during dry spells but is generally attributed to passing traffic along the R727 roadway. The compound is surface dressed with tar and chippings to minimise dust production.

7.4 Bird & Pest Control

Birds do not present any problems due to the fact that the waste is contained in an enclosed skip.

Pests do not present any problems at the HWTS. Cannon Pest Control carried out monthly site visits between January – October 2008 with Pestguard Environmental Services continuing this service for November and December 2008. Rodent bait stations are monitored and re-baited on a monthly basis. If necessary spraying to eliminate the presence of flies may be carried out but insects generally do not pose a problem at HWTS.

7.5 Odour Control

There are no odour problems at the facility. The principal potential odour source is waste. Odour control measures in place include containment of waste in an enclosed skip and taken off-site regularly as required.

8.0 Incidents and Complaints for the Reporting Period 2008

8.1 Complaints

A file is maintained at the HWTS which records all complaints either by telephone, letter, e-mail, in person or via the EPA. The file also maintains a record of the responses to these complaints.

During 2008, no complaints were received in relation to the facility.

8.2 Reported Incidents

There were no reported incidents in relation to the facility during 2008.

9.0 Financial Provisions, Staffing and Programme for Public Information

9.1 Financial Provisions

A total of €170,000 was budgeted for HWTS in 2008.

9.2 Staffing and Training

The waste transfer station has 1 full time employee on site with a supervisory structure as outlined below:

- Site Caretaker: Jim Gahan (On-site full time during operational hours)
- Facility Supervisors: Fergus Mulhare / Mary Walsh
- Senior Executive Engineer: Patrick Connolly

9.3 Public Information

Signage at the facility provides information to the public in relation to opening hours, charges etc. Carlow County Council website provides an information package in relation to HWTS that is available to download for members of the public.

9.4 Revised Charges

The cost of entry to the HWTS was increased in January 2008. Previously the cost of entry per vehicle was €20. From the 1st January 2008 the cost of entry is €20 per car. A charge of €60 per car and trailer and €60 per van has been applied. Cash is

not taken on-site as entry is only permitted following presentation of a valid pre-paid ticket.

10.0 References

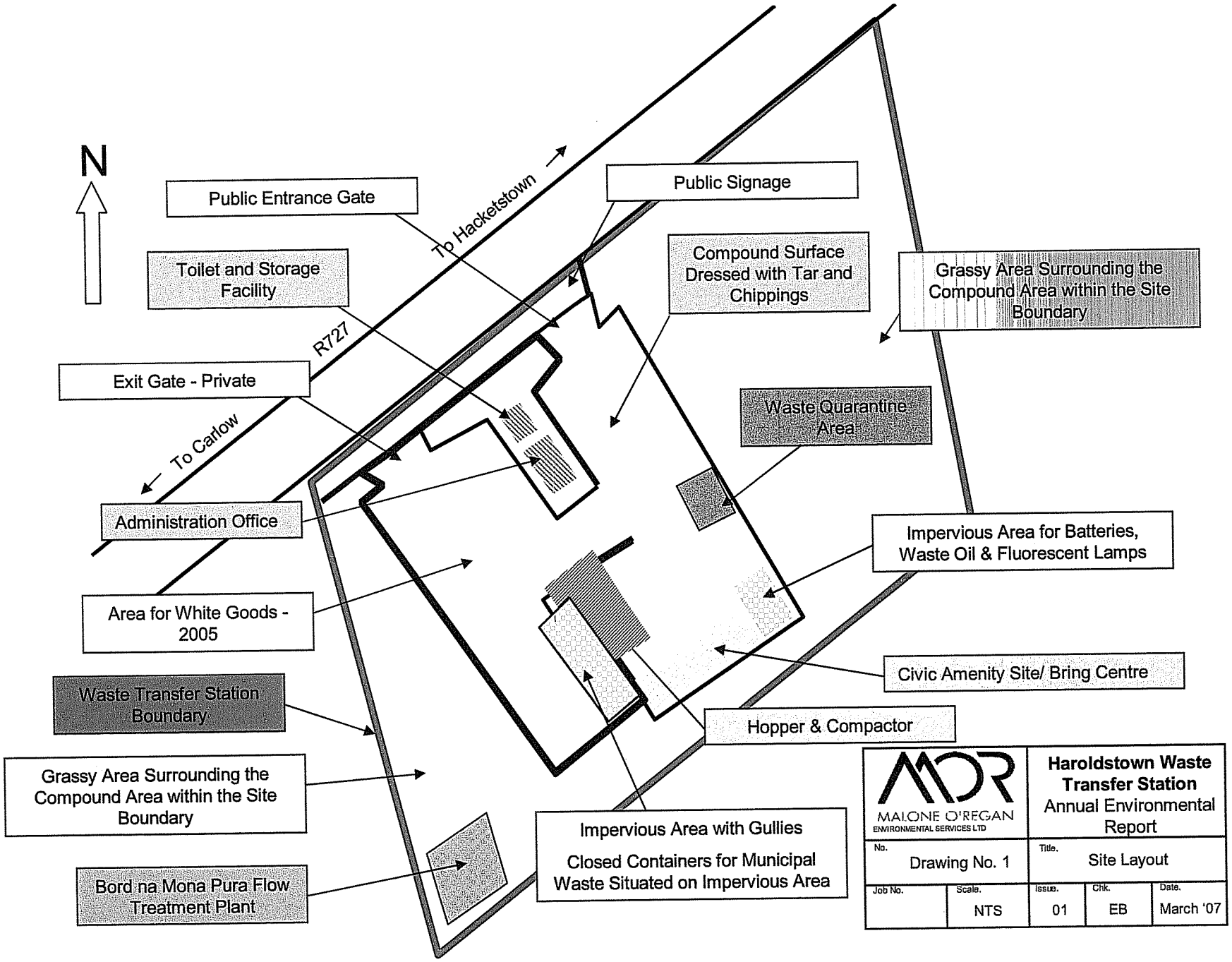
McGarrigle, M.L., Bowman, J.J., Clabby, K.J., Lucey, J., Cunninggham, P., MaaCarthaigh, M., Keegan, M., Cantrell, N., Lehane, M., Clenaghan, and Toner P.F (2000): *Water Quality in Ireland 1998-2002.* Environmental Protection Agency.

Environmental Protection Agency (2003): *Towards Setting Guideline Values for the Protection of Groundwater in Ireland;* Interim Report. Dublin. Environmental Protection Agency.

Environmental Protection Agency (1998): *Water Quality standard; Salmonoid water Quality Standard.* Environmental Protection Agency

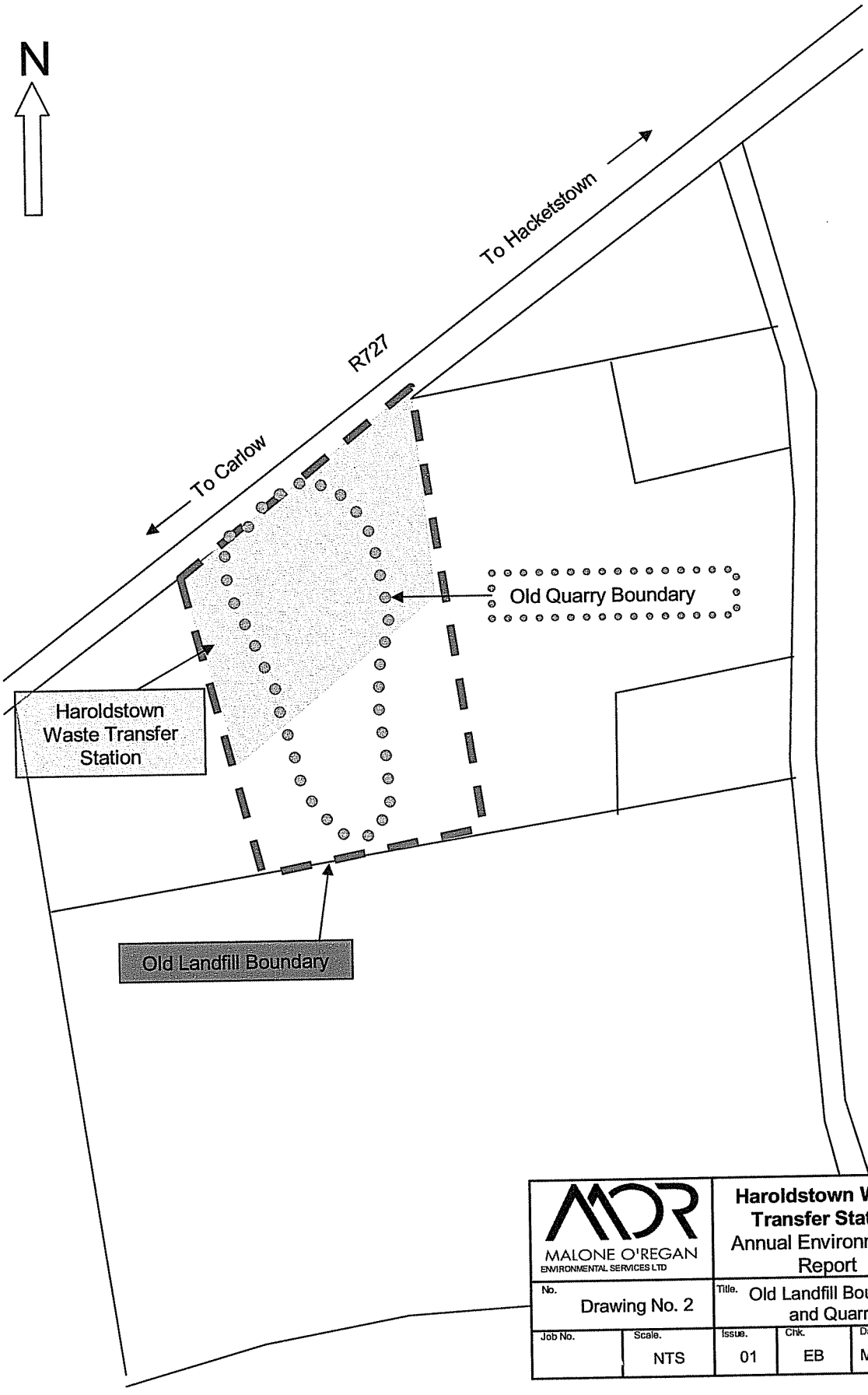
DRAWING 1

SITE LAYOUT


N
Public Entrance Gate
To Hacketstown
Public Signage
Toilet and Storage Facility
Compound Surface Dressed with Tar and Chippings
Grassy Area Surrounding the Compound Area within the Site Boundary
R727
Exit Gate - Private
To Carlow
Waste Quarantine Area
Administration Office
Impervious Area for Batteries, Waste Oil & Fluorescent Lamps
Area for White Goods - 2005
Civic Amenity Site/ Bring Centre
Waste Transfer Station Boundary
Hopper & Compactor
Grassy Area Surrounding the Compound Area within the Site Boundary
Impervious Area with Gullies
Closed Containers for Municipal Waste Situated on Impervious Area
Bord na Mona Pura Flow Treatment Plant
MALONE O'REGAN ENVIRONMENTAL SERVICES LTD
Haroldstown Waste Transfer Station
Annual Environmental Report
No. Drawing No. 1
Title. Site Layout
Job No.
Scale. NTS
Issue. 01
Chk. EB
Date. March '07

DRAWING 2

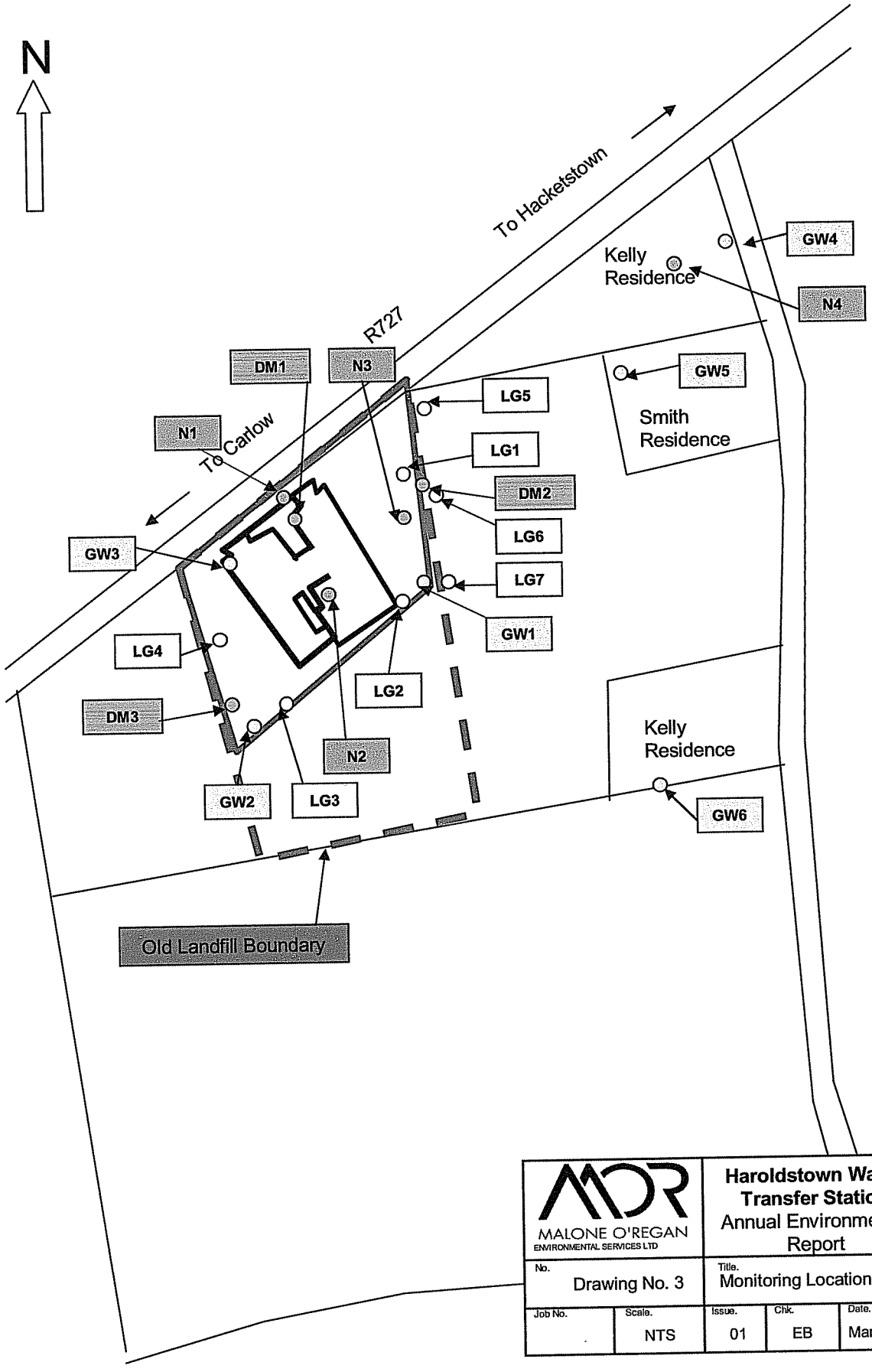
OLD LANDFILL BOUNDARIES AND QUARRY



MALONE O'REGAN ENVIRONMENTAL SERVICES LTD				**Haroldstown Waste Transfer Station** Annual Environmental Report
No. Drawing No. 2				Title. Old Landfill Boundary and Quarry
Job No.	Scale. NTS	Issue. 01	Chk. EB	Date. March '07

DRAWING 3

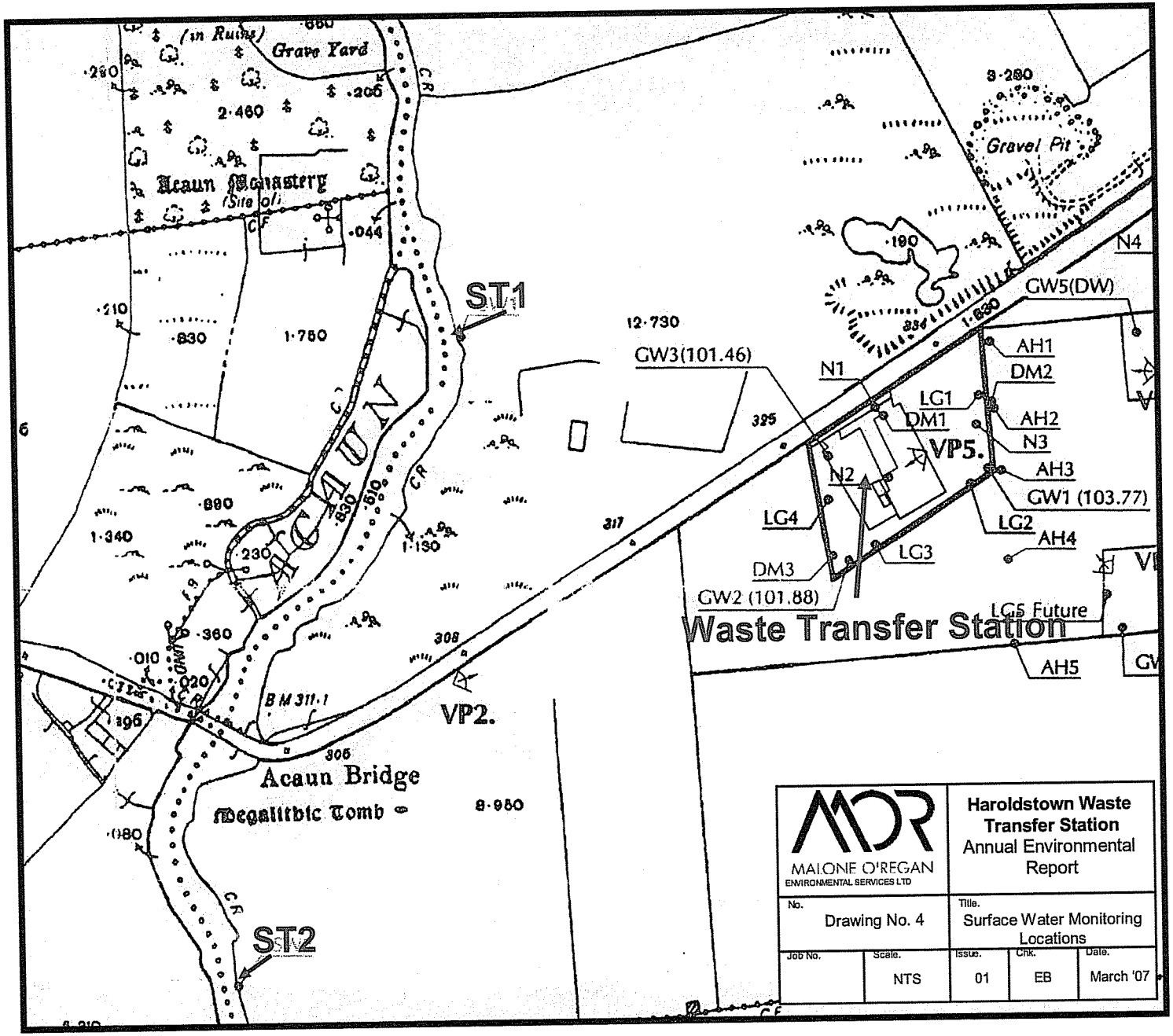
MONITORING LOCATIONS



MALONE O'REGAN ENVIRONMENTAL SERVICES LTD				**Haroldstown Waste Transfer Station** Annual Environmental Report
No. Drawing No. 3				Title. Monitoring Locations
Job No.	Scale. NTS	Issue. 01	Chk. EB	Date. March '07

DRAWING 4

SURFACE WATER MONITORING LOCATIONS


(in Ruins)
Grave Yard
Acaun Monastery
(Site of)
Gravel Pit
ST1
GW3(101.46)
GW5(DW)
N4
N1
N2
N3
AH1
AH2
AH3
AH4
AH5
DM1
DM2
DM3
LG1
LG2
LG3
LG4
LG5 Future
VP5.
GW1 (103.77)
GW2 (101.88)
Waste Transfer Station
ACAUN
VP2.
Acaun Bridge
Megalithic Tomb
ST2
BM 311.1
MALONE O'REGAN
ENVIRONMENTAL SERVICES LTD
Haroldstown Waste Transfer Station
Annual Environmental Report
No.
Drawing No. 4
Title.
Surface Water Monitoring Locations
Job No.
Scale.
NTS
Issue.
01
Chk.
EB
Date.
March '07

Grid References for the Monitoring Locations illustrated on Drawing No. 3.

	Easting	Northing
Landfill Gas Monitoring Locations		
AH1	290340	1781363
AH2	290342	178106
AH3	290345	178078
AH4	290351	177999
LG1	290335	178112
LG2	290331	178072
LG3	290288	178044
LG4	290267	178065
Surface Water Monitoring Locations		
SW1	290102	178139
SW2	289999	177846
Dust Monitoring Locations		
DM1	290292	178103
DM2	290341	178109
DM3	290269	178039
Groundwater Monitoring Locations		
GW1	290339	178079
GW2	290276	178037
GW3	290267	178085
GW4	290445	178184
GW5	290407	178140
GW6	290400	178006
Noise Monitoring Locations		
N1	290288	178106
N2	290294	178075
N3	290334	178099
N4	290420	178184

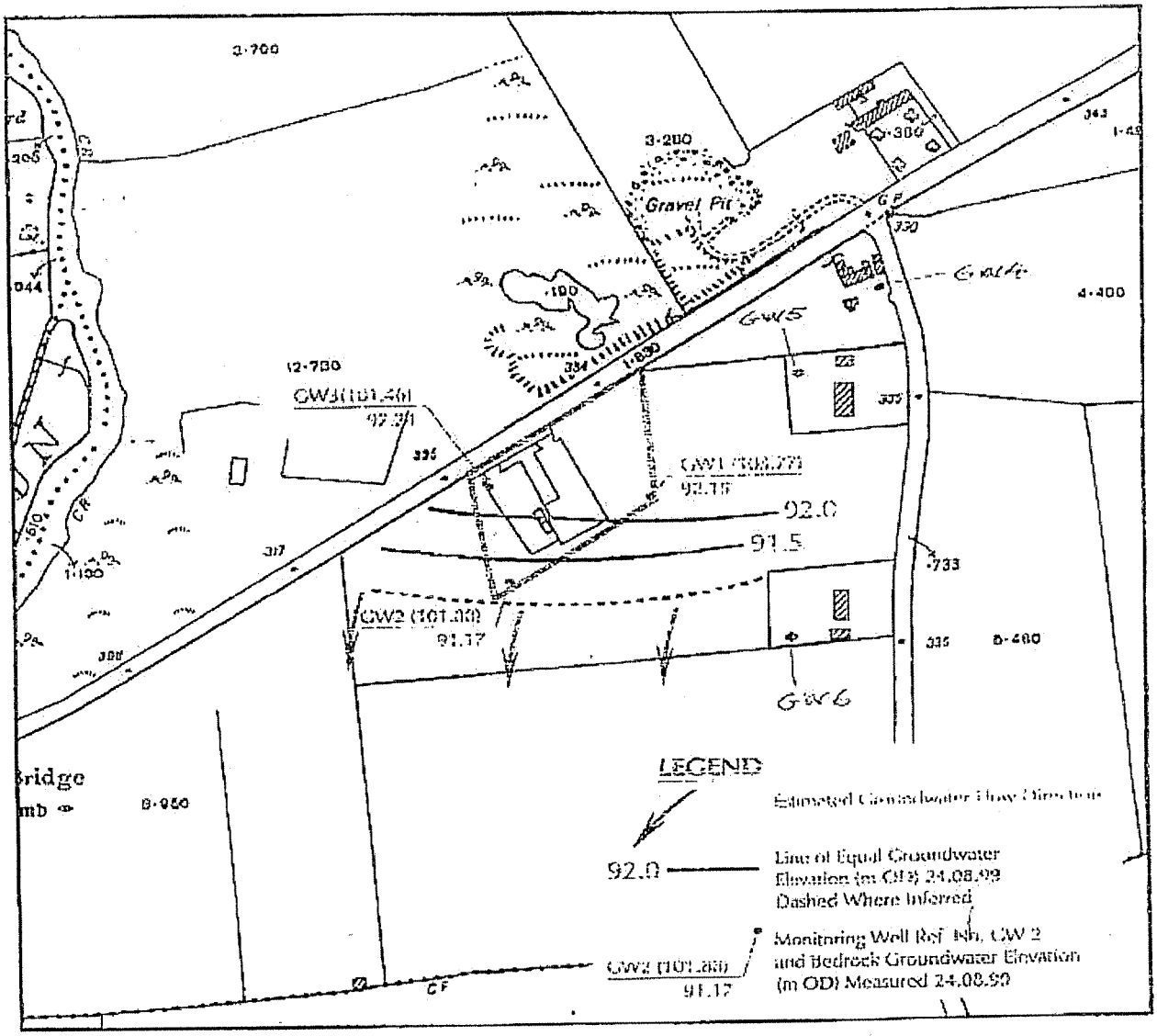
APPENDIX 1

GROUNDWATER CONTOUR MAP

REVISION A — Sept 99

SK/MD — 99/1210/SWMA-HTS_C62

Reproduced from Ordnance Survey with Government Permission - Permit No. 6630/96
1:2500 Carlow Sheets CW004-13+14, CW009-01+02



FEHILY TIMONEY & COMPANY, CENTRE PARK HOUSE, CENTRE PARK ROAD, CORK

1:2500 BEDROCK GROUNDWATER CONTOUR MAP

WASTE LICENCE APPLICATION
For WASTE TRANSFER STATION
At HAROLDSTOWN, Co. CARLOW

Dwg. No. C.6.2

APPENDIX 2

PRTR REPORT

Environmental Protection Agency

AER Returns Worksheet

Version 1.1.03

REFERENCE YEAR	2008

1. FACILITY IDENTIFICATION

Parent Company Name	Carlow County Council
Facility Name	Haroldstown Transfer Station
PRTR Identification Number	W0139
Licence Number	W0139-01

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.
3.13	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.
4.2	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.
4.13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Address 1	Haroldstown
Address 2	Tullow
Address 3	Co Carlow
Address 4	
Country	Ireland

Coordinates of Location	468600.000
River Basin District	IE-South Eastern
NACE Code	382
Main Economic Activity	Waste treatment and disposal
AER Returns Contact Name	Mary Walsh
AER Returns Contact Email Address	mwalsh@carlowcoco.ie
AER Returns Contact Position	Environmental Technician
AER Returns Contact Telephone Number	059-9172402
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	05991 46356
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	1664
Number of Employees	1
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

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

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

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

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

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

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

SECTION B : REMAINING PRTR POLLUTANTS

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

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

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

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

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

Additional Data Requested from Landfill operators

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

Landfill: Haroldstown Transfer Station

Please enter summary data on the quantities of methane flared and / or utilised

	T (Total) kg/Year	M/C/E	Method Used: Method Code	Method Used: Designation or Description	Facility Total Capacity m3 per hour	
Total estimated methane generation (as per site model)	0.0				N/A	
Methane flared	0.0				0.0	(Total Flaring Capacity)
Methane utilised in engine/s	0.0				0.0	(Total Utilising Capacity)
Net methane emission (as reported in Section A above)	0.0				N/A	

4.2 RELEASES TO WATERS

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

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

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

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

SECTION B : REMAINING PRTR POLLUTANTS

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

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

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

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

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

4.3 RELEASES TO WASTEWATER OR SEWER

SECTION A : PRTR POLLUTANTS

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

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

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

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

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

SECTION A : PRTR POLLUTANTS

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

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

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

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

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

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Transfer Destination	European Waste Code	Hazardous	Quantity T/Year	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Name and Licence / Permit No. of Recoverer / Disposer / Broker	Address of Recoverer / Disposer / Broker	Name and Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)	Licence / Permit No. of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	20 03 01	No	919.2	mixed municipal waste	D15	M	Weighed	Onsite in Ireland	W0025-02 Powerstown Landfill	Powerstown, Co. Carlow		
Within the Country	20 01 01	No	16.91	paper and cardboard	D15	M	Weighed	Onsite in Ireland	Raymond Whelan W0158-01	Ballyharmon, Carlow		
Within the Country	20 01 11	No	2.27	textiles	D15	C	Volume Calculation	Onsite in Ireland	Mrs' Quins Charity Shop	Unit T5, Toughers Business Park, Naas, Co. Kildare		
Within the Country	16 06 04	No	1.2	alkaline batteries	D15	C	Volume Calculation	Onsite in Ireland	KMK Metals Recycling Ltd W0113-03	Cappincur Ind. Estate, Tullamore, Co Offaly		
Within the Country	13 02 06	Yes	2.9	waste engine oil	D15	C	Volume Calculation	Onsite in Ireland	Enva Ireland W0181-01	Clonminan Ind. Est. Portlaoise, Co. Laois.	Enva Ireland	Clonminan Ind. Est. Portlaoise, Co. Laois.
Within the Country	20 01 02	No	13.668	glass	D15	C	Volume Calculation	Onsite in Ireland	Irohaul WCP/KK/412/07	Olivers Cross, Mallow, Co. Cork		
Within the Country	20 01 21	Yes	0.2	fluorescent tubes	D15	C	Volume Calculation	Onsite in Ireland	Irish Lamp Recycling W02/2000B	Woodstock Industrial Estate, Athy, Co. Kildare	Irish Lamp Recycling	Woodstock Industrial Estate, Athy, Co. Kildare
Within the Country	15 01 04	No	1.175	aluminium cans	D15	C	Volume Calculation	Onsite in Ireland	Irohaul WCP/KK/412/07	Olivers Cross, Mallow, Co. Cork		

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