

# LOUTH COUNTY COUNCIL

## DROGHEDA LANDFILL SITE (W0033-01)

### Operational Report

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## Contents

1	INTRODUCTION.....	1
2	WASTE ACTIVITIES CARRIED OUT AT THE FACILITY .....	2
3	METHODS OF DEPOSITION OF WASTE .....	3
3.1	Landfill .....	3
3.1.1	Landfill Gas Management .....	3
3.2	Civic Waste Facility Site Infrastructure.....	4
3.2.1	Enquires/Administrative Office .....	4
3.2.2	Civic Waste Facility .....	5
3.3	Civic Waste Facility .....	5
4	QUANTITY OF WASTE RECEIVED AND DISPOSED OF .....	7

## Appendices

No table of contents entries found.

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# 1 INTRODUCTION

This Operational Report has been prepared as part of the license review application. Drogheda Landfill Site has been in operation since 1983 and has ceased accepting waste for disposal since the waste licence was granted on 30th December 1999 as required by the Waste Management (Licensing) Regulations, 1997. A Civic Waste Facility is operated at the site.

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## 2 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

The licensed disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996, are restricted to those listed as follows;

- **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

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996, are restricted to those listed as follows;

- **Class 2** Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes).
- **Class 3** Recycling or reclamation of metals and metal compounds.
- **Class 4** Recycling or reclamation of other inorganic materials.
- **Class 10** The treatment of waste on land with a consequential benefit for an agricultural activity or ecological system.
- **Class 11** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.
- **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 collecting, on the premises where such waste is produced.

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## 3 METHODS OF DEPOSITION OF WASTE

### 3.1 Landfill

The site ceased to accept waste for disposal when the waste licence was granted in December 1999. The only materials accepted at the site were inert wastes, which was utilised for capping at the site. Phase 1 capping works were completed in September 2007. This consisted of:

- Installation of 55 No. gas extraction wells;
- Installation and commissioning of an active gas extraction flare (750 m<sup>3</sup>/hr) and methane stripper;
- Installation of capping layers consisting of Gas Drainage Layer, LLDPE capping and Surface Water Drainage Layer (A total area of approximately 101,650m<sup>2</sup>);
- Reinforcement of the capping system using geogric on slopes greater than 1 in 2.5;
- Surface Water Drainage System;
- Construction of a 1.0m high safety bund along cliff edges on the site to improve safety;
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

Approximately 15,000m<sup>2</sup> of capping (Phase 2) in the former CRH lands to the north of the site was completed in December 2016.

Works included;

- Installation of 4 No. gas extraction wells and horizontal gas extraction pipework.
- Installation of capping layers consisting of Gas Drainage Layer, LLDPE capping and
- Surface Water Drainage Layer (A total area of approximately 14,600m<sup>2</sup>).
- Reinforcement of the capping system using geogrid on slopes greater than 1 in 3.
- Surface Water Drainage System.
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

Phase 3 capping works will be undertaken on a further area which has been acquired by Louth County Council. The capping of this area will deal with all areas of waste deposited outside the boundary to the Northern part of the site. This consists of an area encompassing approximately 14000m<sup>2</sup>.

The proposed works to be undertaken as part of this Contract are outlined below:

- Final capping of waste following re-profiling of the site. The capping will consist of a geonet gas collection layer, a Linear Low Density Polyethylene (LLDPE) layer, surface water drainage layer (geonet), 850mm subsoil layer and a 150mm deep topsoil layer as undertaken in restoration works 2005-2007 and 2016.
- Reinforcement of capping layer on slopes greater than 1 in 4.
- Installation of gas wells, horizontal gas extraction pipework and connection to the existing landfill gas extraction system.
- Installation of surface water drainage channel to the edge of the proposed capping area on its Northern and Eastern fringe.

#### 3.1.1 Landfill Gas Management

Landfill gas is produced as a result of biodegradation of the organic fraction within the waste body. An active landfill collection and flaring system was agreed with the Agency in February 2001.

The permanent gas extraction system was installed at the facility during 2006. A network of gas wells have been installed on the site for use in an active gas extraction system. These wells will be extended or shortened where necessary to ensure the top level is above the level of the final cap.

The wells are connected via 63mm diameter pipework to a 250mm diameter main gas collection pipe. The gas wells are connected to this flare through a system of connecting pipework and manifolds (to allow better maintenance and to reduce the number of control points on the landfill site) to be installed after final capping of the site takes place. Self-dewatering well heads are used with wells where the connecting pipework falls towards the well.

A 750m<sup>3</sup> enclosed flare unit located in an enclosed compound adjacent to the site office and Supervisory Control and Data Acquisition (SCADA) system has been installed. The enclosed LFG flare has been commissioned and field balancing is being undertaken. The enclosed flare is designed to operate continuously with landfill gas as the primary fuel source. The landfill gas flare consists of:

- Flame Arrestor
- Slam Shut Valve
- Ignition System and Flame Detection.
- Flare Stack and Flare Lining System.
- Gas Filter
- Gas Blower
- Dewatering System
- Non Return Valves
- Flow meter
- SCADA System

A permanent gas monitoring system has been installed in the site buildings.

Landfill gas production within the landfill waste body has depleted since waste filling ceased in 1999. The 750m<sup>3</sup>/hr flare installed in 2005 is now considered oversized for the volume of landfill gas produced and as a consequence only runs on a daily timed on/off operating cycle. In order to maintain gas extraction and oxidation of same on a continuous basis, it is decided to remove the existing 750m<sup>3</sup>/hr gas flare and replace with a 150m<sup>3</sup>/hr low calorific high temperature flare. This will be installed in 2020.

## 3.2 Civic Waste Facility Site Infrastructure

The main access to the CWF and landfill site is from the Collon Road, the entrances of the CWF consists of 8m wide and 2m high paladin gates which are kept locked when the site is not operational.

An enquiry/administrative office has been provided at the entrance of the facility, which contains CCTV (Static and Pan Tilt and Zoom cameras), telephone, facsimile and SCADA system for the Enclosed Landfill Flare. A fire extinguisher and first aid box are also provided. The office is used to process and store documentation.

### 3.2.1 Enquires/Administrative Office

- Weighbridge (16m wide).
- Parking for employees
- Site identification board
- Security fencing
- Site rules

### 3.2.2 Civic Waste Facility

The CWF consist of

- Recycling building with individual labelled slots of different waste
- Recycling service yard
- Designated storage area for WEEE
- Collection bins for Wood/Greenery/ Scrap Metal
- Collecting bays for glass
- Waste inspection and waste quarantine area

A fire hydrant is located beside the Enquires/Administrative Office. CWF recycles, cardboard, paper, plastic, aluminium cans, steel cans, textiles and footwear, white goods, WEEE, glass, wood, green waste wood, plant matter and other vegetation and scrap metal.

#### 3.2.2.1 SW Drainage. (Recycling Centre)

Surface water is collected on site from access roads and recycling hardstanding areas via drainage infrastructure including road gullies and precast concrete drainage channels. Water is carried in twin wall PE pipes through precast concrete inspection chambers to a full retention interceptor within the car parking area to the south side of the site. Surface water is subsequently stored within a storm water retention tank of capacity 250m<sup>3</sup>. The storm water is in turn pumped from the storm water tank to a storm water discharge chamber 400m to the south of the site.

#### 3.2.2.2 Foul Drainage (Sewage)

Sewage is collected within PE pipes and discharged to a foul water precast concrete pumping station. The sewage is in turn pumped via pumping main to a foul drainage discharge chamber 400m to the south of the site at the junction of the Mell Rd and Cement Rd.

### 3.3 Civic Waste Facility

The Civic Waste Facility is open;

- Monday - Friday 9.30am - 6.00pm
- Saturday 9.00am – 3.00pm

The following are accepted at the Civic Waste Facility;

- cardboard,
- magazines/paper,
- glass (green, brown, clear),
- aluminium cans,
- steel food tins,
- domestic plastics,
- textiles (e.g. clothes) and footwear,
- batteries,
- scrap metal,
- wood,



- electrical and domestic appliances,
- green garden waste,
- miscellaneous.

All waste deposited at the Civic Waste Facility are placed;

- Into a receptacle for recovery, or
- Into a designated inspection area.

The storage containers and storage areas are clearly labelled with yellow backgrounds and black/green writing to indicate their content.

There are samples or signage describing the type of waste which can be deposited into each container.

### 3.3.1.1 Waste Acceptance Procedures

The waste acceptance procedure for the Civic Waste Facility is as follows

- Incoming Recyclables/Waste to be inspected by trained staff member, if suitable directed to designated clearly labelled areas. Information is given to members of the public how best to segregate at source.
- Unsuitable material e.g. Hazard material is not accepted,

If this material was to be found, member of staff would remove, with appropriate PPE and place in quarantine area/bin measuring 2m x 3m has capacity to hold 2 tons. The quarantine area is located at rear of building. This material would then be collected by a suitable licence holder and brought to licence facility

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## 4 QUANTITY OF WASTE RECEIVED AND DISPOSED OF

Table 4.1 shows waste quantities accepted at Drogheda landfill site from 1997-2006. The landfill site is now closed. The site ceased accepting waste for disposal since the waste licence was granted on 30<sup>th</sup> December 1999; however waste were brought on site for restoration and capping following this date.

Table 4.2 provide the quantities of waste accepted for recycling at Drogheda Civic Waste Facility since 2006.

**Table 4.1 Waste Quantities Accepted (Tonnes) at Landfill Site**

Waste Types	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	75,350 <sup>1</sup>	86,000 <sup>1</sup>	40,000 <sup>1</sup>	58,506 <sup>1</sup>	27,085 <sup>1</sup>	21,288 <sup>1</sup>	-	8,744	-	58,584 <sup>2</sup>

**Table 4.2 Waste Quantities (Tonnes) at Civic Waste Facility**

Waste Types	2006	2007	2008	2009	2010	2011	2012
Accepted for recycling	1,405		3,170	3,521	4,020	3,447	3,086
To landfill/ incinerator					52		390

  

Waste Types	2013	2014	2015	2016	2017	2018	2019
Accepted for recycling	2,578	2,622	2,726	2,530	2,521	2,616	
To landfill/ incinerator	387	317	166	67	65	72	

The maximum amount of waste stored on site at any one time is 80 tonne (storage inside building 50 tonne, containers/bins on site store 30 tonne).

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<sup>1</sup> 1997 to 2002 figures based on estimates

<sup>2</sup> Capping material under the Capping and Restoration Contract