



Headquarters,  
P.O. Box 3000,  
Johnstown Castle Estate  
County Wexford, Ireland

WASTE LICENCE  
LANDFILL FOR NON-HAZARDOUS WASTE

PROPOSED DECISION

**Waste Licence**

**Register Number:**

9-2

**Applicant:**

Fingal County Council

**Location of Facility:**

Balleally Landfill, Lusk, County Dublin

# INTRODUCTION

This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.

This Waste Licence relates to an existing Local Authority owned and operated, landfill accepting municipal, commercial and non-hazardous industrial wastes at Balleally Landfill, Balleally, Lusk, County Dublin. The application for a review of the waste licence is to allow the acceptance of waste into the existing landfill at the Construction and Demolition Waste Recovery Area where there is up to c.100,000m<sup>3</sup> void space and the extension of the landfill by way of installing engineered lined cells adjacent to the existing landfill on the north-western side. The lined landfill will be approximately 10ha in extent consisting of six cells with a leachate collection structure. The waste in the six lined cells will be 'piggy backed' onto the existing landfill in order to achieve one merged profile, rather than two landfill mounds. The existing landfill and new extension shall be connected to a landfill gas collection system; the energy to be used as a source for the production of electricity to the National Grid.

The applicant has applied for a waste intake of 451,500 tonnes per annum including C&D waste (63,000T). (The previous licence specified a maximum waste intake of 463,185 tonnes per annum). The proposed extension shall have a void space of 1.29million m<sup>3</sup> which will provide for filling of 1.04 million tonnes of waste.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee has to carry out regular environmental monitoring and submit all monitoring results and reports on the development, operation and management of the facility, to the Agency.

The licence sets out in detail the conditions under which Fingal County Council will operate and manage this facility.

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# DECISION & REASONS FOR THE DECISION

## *Reasons for the Decision*

The Environmental Protection Agency (the Agency) is satisfied, on the basis of the information available, that the requirements of Section 40(4) of the Waste Management Act, 1996 have been complied with in respect of the application for a waste licence for the activities listed hereunder in Part I.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions received from other parties and the report of its inspector.

## *Part I Activities Licensed*

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Agency proposes, under Section 46(2) of the said Act to grant this Waste Licence to Fingal County Council to carry on the waste activities listed below at Balleally Landfill, Balleally, Lusk, County Dublin subject to twelve conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act 1996

<b>Class 1.</b>	<b>Deposit on, in or under land (including landfill):</b>  This activity is limited to the disposal of the waste types specified in this licence into the existing landfill and proposed landfill extension.
<b>Class 5.</b>	<b>Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.</b>  This activity is limited to the disposal of the waste types specified in this licence.
<b>Class 10.</b>	<b>Release of waste into a water body (including a seabed insertion):</b>  This activity is limited to discharge of treated leachate from the onsite treatment works to the Rogerstown Estuary via the main Lusk sewer outfall at Rogerstown Viaduct.
<b>Class 12.</b>	<b>Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.</b>  This activity is limited to disposal activities in the Civic Waste Facility.
<b>Class 13.</b>	<b>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.</b>  This activity is limited to the storage of waste, prior to disposal at an alternative appropriate facility, of waste not acceptable for disposal at this facility and the temporary storage of waste at the Civic Waste Facility in containers prior to disposal at the landfill while in operation or an alternative appropriate facility.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

<b>Class 2.</b>	<b>Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):</b>  This activity is limited to composting activities at the facility.
<b>Class 3.</b>	<b>Recycling or reclamation of metals and metal compounds:</b>  This activity is limited to the storage of white goods and other recyclable metals deposited at the Civic Waste Facility and to the receipt, holding and collection of metals and wire found in construction and demolition wastes.

<b>Class 4.</b>	<b>Recycling or reclamation of other inorganic materials:</b>  This activity is limited to the collection of glass and the recovery and reuse of construction and demolition waste at the Civic Waste Facility and the construction and demolition waste deposition area, and the reuse of inert waste for landfill restoration and construction works.
<b>Class 9.</b>	<b>Use of any waste principally as a fuel or other means to generate energy:</b>  This activity is limited to the collection of gas and its conversion to electricity.
<b>Class 11.</b>	<b>Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule:</b>  This activity is limited to the reuse of inert waste for landfill restoration purposes.
<b>Class 13.</b>	<b>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:</b>  This activity is limited to activities at the Civic Waste Facility and the temporary storage of recyclable, reusable, and green wastes, fridges and white goods pending their collection.

## ***Part II: Activities Refused***

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) proposes, under Section 40(1) of the said Act to refuse the following classes of activity(ies).

### *Refused waste disposal activities, in accordance with the Third Schedule of the Waste Management Act, 1996*

<b>Class 2.</b>	<b>Land treatment, including biodegradation of liquid or sludge discards in soils:</b>  Reason: The disposal of sludge with soil as daily cover is not acceptable.
<b>Class 4.</b>	<b>Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons:</b>  Reason: The existing landfill no longer has the infrastructure of surface impoundment, pits, ponds or lagoons. Any sludge disposal shall be at the working face of the existing landfill or landfill extension. To avoid stabilisation problems in the new lined cells, the disposal of sludge/filtercake with greater than 25% solids is acceptable under the Third Schedule, Classes 1 and 5.
<b>Class 11</b>	<b>Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule:</b>  Reason: No relevant proposals were included in the licence application for the mixing of sludge with soil to provide daily cover. Furthermore the use of sludge for daily cover is not acceptable.

### *Refused waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Act, 1996*

<b>Class 10.</b>	<b>The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system:</b>  Reason: No relevant proposals were included in the licence application apart from the repetition of the Class 10 words in Attachment B9 of the application.
<b>Class 12.</b>	<b>Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule:</b>  Reason: No relevant proposals were included in the licence application apart from the

repetition of the Class 12 words in Attachment B9 of the application.

# INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Act, (the Act), unless otherwise defined in this section.

<b>Aerosol</b>	A suspension of solid or liquid particles in a gaseous medium.
<b>Adequate lighting</b>	20 lux measured at ground level.
<b>Agreement</b>	Agreement in writing.
<b>Annually</b>	At approximately twelve monthly intervals.
<b>Attachment</b>	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
<b>Application</b>	The application by the licensee for this waste licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>BAT</b>	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
<b>Biodegradable waste</b>	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
<b>Condition</b>	A condition of this licence.
<b>Construction and Demolition Waste</b>	All wastes which arise from construction, renovation and demolition activities.
<b>Containment boom</b>	A boom which can contain spillages and prevent them from entering drains or watercourses.
<b>Cover material</b>	Bricks, crushed concrete, tarmac, earth, soil, subsoil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
<b>Daily Cover</b>	Is the term used to describe material spread (about 150mm if soil cover is used) over deposited waste at the end of each day. Synthetic materials may also be used. Its objective is to minimise odour, the amount of litter generated and to control flies and access to the waste by birds and vermin. Where soils are used for daily cover, it is recommended that they be removed at the start of the day and subsequently reused as much as possible.
<b>Daytime</b>	8.00 a.m. to 10.00 p.m.
<b>Documentation</b>	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
<b>Drawing</b>	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
<b>Emergency</b>	Those occurrences defined in Condition 9.4.
<b>Emission Limits</b>	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.

<b>European Waste Catalogue (EWC)</b>	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 94/3/EC and any subsequent amendment published in the Official Journal of the European Community.
<b>Green waste</b>	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
<b>Hours of Operation</b>	The hours during which the facility is authorised to be operational. The hours of operation of a facility are usually longer than the hours of waste acceptance to facilitate preparatory and completion works, such as the removal and laying of daily cover. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of waste acceptance.
<b>Hours of Waste Acceptance</b>	The hours during which the facility is authorised to accept waste. Different activities within the facility, such as the landfill and the civic waste facility, may have different hours of waste acceptance.
<b>Inert waste</b>	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
<b>Intermediate Cover</b>	Refers to placement of material (minimum 300mm if soil is used) for a period of time prior to restoration or prior to further disposal of waste.
<b>Landfill</b>	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
<b>Landfill Gas</b>	Gases generated from the landfilled waste.
<b>LEL (Lower Explosive Limit)</b>	The lowest percentage concentration by volume of a mixture of flammable gas with air which will propagate a flame at 25°C and atmospheric pressure.
<b>Licence</b>	A Waste Licence issued in accordance with the Act.
<b>Licensee</b>	Fingal County Council.
<b>List I/II Organics</b>	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
<b>Liquid Waste</b>	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
<b>Maintain</b>	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
<b>Mobile Plant</b>	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
<b>Monthly</b>	A minimum of 12 times per year, at approximately monthly intervals.
<b>Night-time</b>	2200hrs to 0800hrs.
<b>Non-hazardous Asbestos Waste</b>	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.



<b>Recyclable Materials</b>	Those waste types, such as cardboard, batteries, gas cylinders, etc, which may be recycled.
<b>Quarterly</b>	At approximately three monthly intervals.
<b>Sample(s)</b>	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with greater than 2% dry matter.
<b>Specified Emissions</b>	Those emissions listed in <i>Schedule C: Emission Limits</i> of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> of this licence.
<b>Treated Sludge</b>	Sludge which has undergone biological, chemical or heat treatment, long-term storage or any other appropriate process so as significantly to reduce its fermentability and the health hazards resulting from its use.
<b>Treatment</b>	Treatment means the physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.
<b>Trigger Level</b>	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
<b>White Goods</b>	Refrigerators, cookers, ovens and other similar appliances.
<b>EPA Working Day</b>	Refers to the following hours; 9.00 a.m. to 5.30 p.m. Monday to Friday inclusive.
<b>Working Face</b>	The area of the site in which waste other than cover material or material for the purposes of the construction of specified engineering works is being deposited.

## ***PART III CONDITIONS***

### **CONDITION 1 SCOPE OF THE LICENCE**

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Activities Licensed and authorised by this licence.
- 1.2. For the purposes of this licence, the facility is the area of land outlined in red on Drawing No. D-01 Rev B (June 2001) of the application. Any reference in this licence to “facility” shall mean the area thus outlined in red.
- 1.3. This licence is for the purposes of waste licensing under the Waste Management Act 1996 only and nothing in this licence shall be construed as negating the licensee’s statutory obligations or requirements under any other enactments or regulations.
- 1.4. Municipal Waste, Commercial Waste, non-hazardous Industrial Waste, and Inert Waste may be recovered and disposed of at the facility subject to the maximum quantities and other constraints listed in *Schedule A: Waste Acceptance*, of this licence.
- 1.5. Waste, other than the Construction and Demolition waste for recovery shall not be accepted at the facility having reached the profile referred to in Condition 4.2.
- 1.6. Waste Acceptance
  - 1.6.1. Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility from 16 July 2003.
  - 1.6.2. No hazardous wastes or liquid wastes shall be disposed of at the facility.
  - 1.6.3. The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
- 1.7. Waste Acceptance Hours and Hours of Operation
  - 1.7.1. Landfill
    - 1.7.1.1. Waste shall only be accepted at the facility for disposal at the landfill between the hours of 8:00 a.m. to 4:30 p.m. Monday to Friday inclusive and 8:00 a.m. to 1:00 p.m. on Saturdays.
    - 1.7.1.2. The hours of operation at the landfill shall be between the hours of 7:00 a.m. and 6:00 p.m. on Monday to Friday inclusive and 7:00 a.m. and 2:00 p.m. on Saturdays.
  - 1.7.2. Civic Waste Facility
    - 1.7.2.1. Waste shall only be accepted at the Civic Waste Facility between the hours of 8:00 a.m. to 4:30 p.m. Monday to Friday inclusive and 8:00 a.m. to 4:00 p.m. on Saturdays and Sundays.
- 1.8. The following shall constitute an incident for the purposes of this licence:
  - a) an emergency;
  - b) any emission which does not comply with the requirements of this licence;
  - c) any trigger level specified in this licence which is attained or exceeded; and

d) any indication that environmental pollution has, or may have, taken place.

1.9 Where the Agency considers that a non-compliance with any condition of this licence has occurred, it may serve a notice on the licensee specifying:

1.9.1. That only those wastes as specified, if any, in the notice are to be accepted at the facility after the date set down in the notice.

1.9.2. That the licensee shall undertake the works stipulated in the notice, and/or otherwise comply with the requirements of the notice as set down therein, within the time-scale contained in the notice.

1.9.3. That the licensee shall carry out any other requirement specified in the notice.

When the notice has been complied with, the licensee shall provide written confirmation that the requirements of the notice have been carried out. No waste, other than that which is stipulated in the notice, shall be accepted at the facility until written permission is received from the Agency.

1.10. Every plan, programme or proposal submitted to the Agency for its agreement pursuant to any Condition of this licence shall include a proposed timescale for its implementation. The Agency may modify or alter any such plan, programme or proposal in so far as it considers such modification or alteration to be necessary and shall notify the licensee in writing of any such modification or alteration. Every such plan, programme or proposal shall be carried out within the timescale fixed by the Agency but shall not be undertaken without the agreement of the Agency. Every such plan, programme or proposal agreed by the Agency shall be covered by the conditions of this licence.

1.11. This licence is being granted in substitution for the waste licence granted to the licensee on 16 February 2000 and bearing Waste Licence Register No: 9-1. The previous waste licence (Register No: 9-1) is superseded by this licence.

*REASON: To clarify the scope of this licence.*

## **CONDITION 2 MANAGEMENT OF THE FACILITY**

### **2.1 Facility Management**

2.1.1 The licensee shall employ a suitably qualified and experienced facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced, deputy shall be present on the facility at all times during its operation.

2.1.2 The Civic Waste Facility shall be supervised by an appropriately qualified and competent person at all times while waste may be accepted.

2.1.3 Both the facility manager and deputy, and any replacement manager or deputy, shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal within twelve months of appointment.

2.1.4 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience, as required and shall be aware of the requirements of this licence.

### **2.2 Management Structure**

2.2.1 Within three months from the date of grant of this licence, the licensee shall submit written updated details of the management structure of the facility to the Agency. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information:

- a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;
- b) details of the responsibilities for each individual named under a) above; and
- c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

## 2.3 Environmental Management System (EMS)

2.3.1 The licensee shall maintain an Environmental Management System (EMS). Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, a proposal for the updating (where appropriate) of the documented EMS for the facility. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

2.3.2 The EMS shall include as a minimum the following elements:

### 2.3.2.1 Schedule of Environmental Objectives and Targets:-

The objectives should be specific and the targets measurable. The Schedule shall address a five-year period as a minimum. The Schedule shall include a time-scale for achieving the objectives and targets and shall comply with any other written guidance issued by the Agency.

### 2.3.2.2 Environmental Management Plan (EMP):-

The EMP shall include, as a minimum, the following:-

- (i) the items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency;
- (ii) methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets;
- (iii) any other items required by written guidance issued by the Agency.

### 2.3.2.3 Corrective Action Procedures

The Corrective Action Procedures shall detail the corrective actions to be taken should any of the procedures detailed in the EMS not be followed.

### 2.3.2.4 Awareness and Training Programme

The Awareness and Training Programme shall identify training needs, for personnel who work in or have responsibility for the licensed facility.

## 2.4 Communications Programme

- 2.4.1 The licensee shall maintain the Communications Programme and the Liaison Committee with local community representatives. The Communications Programme should ensure that members of the public can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility.

*REASON: To make provision for the proper management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

### **CONDITION 3 FACILITY INFRASTRUCTURE**

- 3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.
- 3.2 Specified Engineering Works
- 3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: Specified Engineering Works*, of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
- 3.2.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.
- 3.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;
- a) a description of the works;
  - b) as-built drawings of the works;
  - c) records and results of all tests carried out (including failures);
  - d) drawings and sections showing the location of all samples and tests carried out;
  - e) daily record sheets/diary;
  - f) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
  - g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;
  - h) records of any problems and the remedial works carried out to resolve those problems; and
  - i) any other information requested in writing by the Agency.
- 3.3 Facility Notice Board
- 3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.
- 3.3.2 The board shall clearly show:
- a) the name and telephone number of the facility;
  - b) the normal hours of opening;

- c) the name of the licence holder;
- d) an emergency out of hours contact telephone number;
- e) the licence reference number; and
- f) where environmental information relating to the facility can be obtained.

### 3.4 Facility Security

- 3.4.1 Two metre high security and stockproof fencing and gates shall be installed and maintained as described in Attachment D.1.a of the application around the entire boundary of the facility. All fencing and gates shall be finished as to blend in with the general environment. The base of the fencing shall be set in the ground. Subject to the implementation of the restoration and aftercare plan and to the agreement of the Agency, the requirement for such site security may be removed.
- 3.4.2 Unless otherwise agreed with the Agency, security shall include patrolling by security guard of the perimeter over a twenty-four hour period. The positioning and number of CCTV surveillance system points as described in Attachment D.1.a of the application shall be notified to the Agency within one month of their installation.
- 3.4.3 The licensee shall remedy any defect in the gates and/or fencing as follows:
  - a) a temporary repair shall be made by the end of the working day; and,
  - b) a repair to the standard of the original gates and/or fencing shall be undertaken within three working days.

### 3.5 Facility Roads and Hardstanding

- 3.5.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.5.2 The facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself and the Recycling Area shall be paved and maintained in accordance with Attachment D.1.c. of the application.
- 3.5.3 Any new entrance infrastructure and proposed queuing lanes shall not impinge on the existing road 'Balleally Lane'. New entrance road infrastructure shall be contained within the facility boundary as described in the Article 16(1) reply dated 13 May 2002.

### 3.6 Facility Office

- 3.6.1 The licensee shall provide and maintain an office at the facility. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 3.6.2 The licensee shall provide and maintain a working telephone and a method for electronic transfer of information at the facility.

### 3.7 Waste Inspection and Quarantine Areas

- 3.7.1 A Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.
- 3.7.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection area and the waste quarantine area shall be clearly identified and segregated from each other.

- 3.7.3 Drainage from these areas shall be directed to the 'french' drains of the leachate collection system adjacent to Cell 6 as shown in Drawing No. DG008 (Article 16(1) reply dated 13 May 2002).
- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain a weighbridge at the facility.
- 3.9 Wheel Cleaning
- 3.9.1 The licensee shall establish and maintain a wheelwash/dry wheel shake at the facility as shown in Drawing D-01 Rev B of the application and in accordance with the guidelines provided in the Agency's Landfill Manual, Landfill Site Design.
- 3.10 Waste Water Treatment System
- 3.10.1 The licensee shall provide and maintain a Wastewater Treatment system at the facility for the treatment of wastewater and sewage arising on-site within one month from the date of grant of this licence. The treatment plant and percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses* published by the Environmental Protection Agency.
- 3.10.2 The existing septic tank and link to the sewage discharge pipe at Balleally lane shall be decommissioned and their contents emptied following commissioning of the wastewater treatment system. The septic tank should be filled with concrete or sand and the downgradient outlet be plugged permanently.
- 3.11 Tank and Drum Storage Areas
- 3.11.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.
- 3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:
- (a) 110% of the capacity of the largest tank or drum within the bunded area; or
  - (b) 25% of the total volume of substance which could be stored within the bunded area.
- 3.11.3 All drainage from bunded areas shall be diverted for collection and safe disposal.
- 3.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.
- 3.11.5 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 and shall be reported to the Agency within three months of the date of grant of this licence. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.
- 3.12 Landfill Lining:
- 3.12.1 The landfill liner shall comprise:
- (i) a composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to  $1 \times 10^{-9}$  m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer;
  - (ii) a geotextile protection layer placed over the HDPE layer;

- (iii) a 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of  $1 \times 10^{-3}$  m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains;
- (iv) the side walls shall be designed and constructed to achieve an equivalent protection.

3.12.2 The liner detailed design and its construction shall be in accordance with the guidelines provided in the Agency's Landfill Manual, Landfill Site Design.

3.12.3 Formation levels of the six cells shall be on a built up bank of cohesive fill to 2.6mOD flood level as described in the Article 16(1) reply dated 13 May 2002: Item 4, Drawing Numbers DG005, DG006, CS006 & LS001, and Item 4.0 Document 149502001Rp006.

3.12.4 The lining system over the existing north-western boundary drain and existing waste body for proposed cells No. 1 to 6 shall be as detailed in Drawing No.s DG005, DG014, and Item 7, Article 16(1) reply dated 13 May 2002. The existing landfill side slope shall be infilled by Class 1 Fill to form a 1:2.5 smooth gradient. The slope shall be lined in 5m high increments as filling takes place.

### 3.13 Buffer Zone

3.13.1 A 25m wide buffer zone, in which no waste shall be landfilled, shall be provided and maintained within and along the northern and western sides of the extension and the proposed leachate treatment works. The Buffer Zone and Screening Bund shall be located as shown on Drawing D-01B and specified in Section B1 of Article 13 reply (September 2001), and Drawing No. DG012 & DG013 Rev A01 of the Article 16(1) reply dated 13 May 2002.

### 3.14 Leachate Management Infrastructure

3.14.1 Leachate management infrastructure for Cells 1-6 inclusive shall be provided and maintained at the facility as described in Section 2.2.6 Volume 2 of the EIS and further specified in Items 2, 3 and 7 of the Article 16(1) reply dated 13 May 2002, and Drawing No.s DG004, DG006-008, and DG012-013.

3.14.2 The leachate management plan and vertical barrier infrastructure for the existing landfill shall be provided and maintained as described in:

- (a) Proposal for Leachate Management at Balleally Landfill dated 2 July 2001 as amended by Agency acknowledgement of 25 July 2001 (Scenario 3, Option 5); and
- (b) Proposal for Specified Engineering Works at Balleally Landfill, Construction of Vertical Barrier and Associated Works dated 5 June 2002.

### 3.15 Landfill Gas Management

3.15.1 Landfill gas management infrastructure shall be provided and maintained at the facility as described in Attachment D.5 – "Landfill Gas Management Plan" and specified in Drawing No. D-05 of the Application.

3.15.2 The licensee shall maintain all gas wells, pipework, valves, pumps, flares and other infrastructure that form part of the landfill gas management system in a safe and fully operational manner.

3.15.3 All vents installed and maintained on site to facilitate passive gas venting shall be fitted with an effective activated carbon filter, or alternative agreed with the Agency.



3.15.4 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.

#### 3.15.5 Landfill Gas Combustion/Electricity Generation Plant

3.15.5.1 The licensee shall relocate the existing landfill gas combustion compound and landfill gas flare to the north of the facility as specified in Drawing No. D-01 of the application. The flare shall be of an enclosed type design. Flare unit efficiency shall be tested once it is re-installed.

3.15.5.2 A temporary landfill gas flare which meets the emission limit values in *Schedule C: Emission Limits*, of this licence should be put into operation during the relocation of the existing landfill gas combustion compound.

3.15.5.3 Within one month of the relocation of the landfill gas combustion compound, the licensee shall install continuous carbon monoxide monitors (as a flue gas analyser) on the outlets of the gas engine(s).

#### 3.16 Surface Water Management

3.16.1 Effective surface/storm water management infrastructure shall be provided and maintained at the facility during construction, operation, restoration and aftercare of the facility. As a minimum, the infrastructure shall be capable of the following:

- a) the prevention of contaminated water and leachate discharges into surface water drains and courses; and
- b) the collection/diversion of run off arising from capped and restored areas.

#### 3.17 Groundwater Management

3.17.1 The groundwater management infrastructure consisting of vertical barriers and french drain at the east, south and north-western boundaries of the existing landfill and specified in Drawing No.s DG005, DG014, and Item 7, Article 16(1) reply dated 13 May 2002, Drawing No.s DG003 – DG006 Report 149/507/001 and Drawing No DG005 SEW Fingal Co. Co. letter dated 30 July 2002 shall be provided and maintained at the facility within twelve months of the date of grant of this licence but incorporating the amendments of Agency letters issued on 25 July 2001 and 19 June 2002.

3.17.2 The vertical barrier at the north-western boundary of the existing landfill and specified in Drawing No. DG005, Article 16(1) reply dated 13 May 2002 shall be amended so as to be installed 2m below the base/invert level of the existing boundary drain and keyed into natural soils, to avoid upwelling of leachate into the filled boundary drain.

#### 3.18 Construction and Demolition Waste Recovery Area.

3.18.1 The construction and demolition waste recovery area shall at a minimum comprise the following:

- a) an impermeable concrete slab; and
- b) collection and disposal infrastructure for all storm run-off.

3.18.2 Within one month from the date of grant of this licence, the licensee shall submit proposals concerning the relocation of the construction and demolition waste recovery area to the Agency for its agreement.

#### 3.19 Civic Waste Facility

3.19.1 The licensee shall maintain the existing Civic Waste Facility infrastructure referred to in Attachment D.1.p of the Application.

3.19.2 The licensee shall provide and maintain the receptacles at the Civic Waste Facility in Attachment D.1.p of the Application.

### 3.20 Compost Facility

3.20.1 Within six months of the date of grant of licence, the licensee shall submit to the Agency for its agreement proposals for the composting of waste.

3.20.2 Appropriate infrastructure for the composting of waste shall be established and maintained at the facility prior to any waste being composted.

3.20.3 The quantity of waste composted shall not exceed 1,000 cubic metres at any time unless otherwise agreed with the Agency.

### 3.21 Telemetry

3.21.1 A telemetry system shall be installed and maintained at the facility. This system shall include:-

- a) Recording of leachate levels in the lined cells, leachate storage chamber PC1 as specified in Drawing No. DG007 and DG009 (Article 16(1) reply dated 13 May 2002), and treated leachate discharge point at the Lusk foul sewer at the Rogerstown Viaduct.
- b) Recording of flows to the perimeter streams.
- c) Recording of surface water quality being discharged to the perimeter surface water drain as shown in Drawing No. DG007 (Article 16(1) reply dated 13 May 2002).

### 3.22 Monitoring Infrastructure

#### 3.22.1 Landfill Gas

- (i) Within one month from the date of grant of this licence, the licensee shall install an effective permanent gas monitoring system in the site office and any other enclosed structures at the facility.

#### 3.22.2 Leachate

- (i) The licensee shall install two monitoring points at Pumping Chamber 1 and Valve Chamber V1, Drawing No. DG007 (Article 16(1) reply dated 13 May 2002) to allow for the sampling and analyses of leachate at the landfill extension.
- (ii) The licensee shall install a monitoring point at each of the six extension cells at the individual leachate collection chambers as specified in Attachment D4(L) of the application to allow for the sampling and analyses of leachate.

#### 3.22.3 Replacement of Infrastructure

- (i) Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within one month of it being damaged or recognised as being unsuitable.

*REASON: To provide appropriate infrastructure for the protection of the environment.*

## CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. The licensee shall restore the facility on a phased basis. The Restoration and Aftercare Plans for the facility shall be based on the plans submitted as Volume 3, Appendix C - Figure 6 of the EIS subject to any alterations required to comply with the conditions of this licence and any recommendations from Duchas and the Community Liaison Committee. Within six months of the date of this licence the licensee shall submit to the Agency a revised Restoration and Aftercare Plan to reflect changes due to:
- (i) the requirements of this licence;
  - (ii) the installation of the landfill extension and the 'piggy-backing' of the six cells onto the main existing landfill; and
  - (iii) the restoration of the four nickel hydroxide lined cells.
- 4.2. The final height of the facility shall be as shown in Figure 2 'Landscape Master Plan' (Article 13 reply dated 13 September 2001). The final height of the facility peak shall not exceed 40mOD Malin Head.
- 4.3. Final Capping.
- 4.3.1. The final capping shall consist of the following:
- a) Top soil (150 -300mm).
  - b) Subsoils, such that total thickness of top soil and subsoils is at least 1m.
  - c) Drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s.
  - d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than  $1 \times 10^{-9}$  m/s or a geosynthetic material (e.g. GCL) or similar that provides equivalent protection.
  - e) Gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 4.3.2. Reprocessed Construction and Demolition material and inert waste may be used in the capping system as sub-soil free-draining material in the gas collection layer. The licensee shall submit evidence to the Agency that the reprocessed waste material is fit for the purpose that it is intended. Reference should be made to any specific reference standards (BS, CEN, DETR) or any guidance produced by the Agency. Following agreement with the Agency, this reprocessed waste material may be used in the capping system.
- 4.4. No material or object that is incompatible with the proposed restoration of the facility shall be present within one metre of the final soil surface levels.
- 4.5. Where tree planting is to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Combined topsoil and subsoil depths shall be a minimum of 1m.
- 4.6. The restoration of the existing landfill facility (other than the interface with the new extension) and four nickel hydroxide cells shall be completed within twelve months of the date of grant of this licence unless otherwise agreed with the Agency. The restoration of the proposed extension (Cells 1-6) shall be completed within twelve months of reaching the final profile agreed under Condition 4.2.
- 4.7. Soil Storage
- 4.7.1. All soils shall be stored to preserve the soil structure for future use.

*REASON: To provide for the restoration of the facility*

## **CONDITION 5 FACILITY OPERATION AND WASTE MANAGEMENT**

- 5.1 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.2 Waste Acceptance and Characterisation Procedures
- 5.2.1 Waste Acceptance Procedures shall be carried out in accordance with Attachment E3 “Waste Acceptance Procedures” of the application and Section 5 of the existing Environmental Management Plan.
- 5.2.2 All waste arriving at the facility, excluding waste arriving at the Civic Waste Facility shall be processed through the main site weighbridge operated by the licensee next to the administration building where an electronic written record of each load must be taken by the Licensee as specified in Condition 10.2.
- 5.2.3 Within two months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement revised written procedures for the acceptance and handling of all wastes. These procedures shall include methods, such as treated sludge, eluate and toxicity testing, for the characterisation of waste in order to distinguish between inert, non-hazardous and hazardous wastes.
- 5.3 All wastes shall be checked at the working face. Any wastes not suitable for acceptance shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only. No waste shall be stored in the Waste Quarantine Area for more than three months.
- 5.4 Working Face
- 5.4.1 Unless the prior agreement of the Agency is given, the following shall apply at the landfill:
- a) only one working face shall exist at the landfill at any one time for the deposit of waste other than cover or restoration materials.
  - b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
- 5.4.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.
- 5.4.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.
- 5.5 Daily and Intermediate Cover
- 5.5.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.5.2 Within three months of the date of grant of this licence, appropriate cover material shall be placed across the whole landfill so that no waste, other than the following is exposed:
- a) waste suitable for specified engineering works; and
  - b) waste on the working face during the operational hours of the facility.

## 5.6 Landscaping

- 5.6.1 The landscaping measures identified in Section B1 titled 'Mitigation Measures' of the Article 13 reply dated 13 September 2001, shall be carried out in their entirety and shall commence within three months of the date of grant of this licence.
- 5.6.2 The existing hedgerow network which forms the northern boundary (Balleally Lane) of the proposed extension shall be retained by the licensee as indicated in Volume 3, Appendix C - Figure 3 'Land Use Map' of the EIS.

## 5.7 Operational Controls

- 5.7.1 The licensee shall firstly fill the Construction & Demolition Waste Recovery Area void space in the south-east quadrant of the existing landfill facility as shown in Drawing No D-01 of the application.
- 5.7.2 The landfill extension shall be filled in accordance with the phase sequence specified in Section 2.2.2 of the EIS, Section B1 of Article 13 reply (dated 13 September 2001), and Drawing No. DG002 and DG014 (Article 16(1) reply dated 13 May 2002). The cells will be developed in a phased pattern with Cell 1 and associated screening bunds being constructed first followed by the completion of Cell 2 as Cell 1 begins accepting waste.
- 5.7.3 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.7.4 Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over, with the exception of works associated with the installation of the landfill gas or leachate collection systems only, without the prior agreement from the Agency.
- 5.7.5 Completed areas of the landfill shall be profiled so that no depressions exist in which water may accumulate. Any depressions arising after profiling shall be rectified by the emplacement of suitable capping or restoration materials.
- 5.7.6 Scavenging shall not be permitted at the facility.
- 5.7.7 Gates shall be locked shut when the facility is unsupervised.
- 5.7.8 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.9 Fuels shall only be stored at appropriately bunded locations on the facility.
- 5.7.10 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.11 No smoking shall be allowed on the facility other than in the main canteen facility.

## 5.8 Waste Handling

- 5.8.1 Treated Sewage Sludge and Dewatered Industrial Sludges/Filtercakes
  - 5.8.1.1 Only treated sewage and industrial non-hazardous sludges/filtercakes both with greater than 25% solids shall be disposed of at the landfill extension. Sludge with a lower solids content shall only be disposed of pending construction of the landfill extension within the Construction & Demolition Waste Recovery Area void space.
  - 5.8.1.2 Treated industrial and treated sewage sludge shall only be accepted at the facility between the hours of 0830hrs and 1400hrs Monday to Friday inclusive. All sludges shall be covered immediately with other waste.

5.8.1.3 In addition to the characterisation required under the Waste Acceptance Procedures, the licensee shall carry out analyses to include % solids on a minimum of ten samples per annum for all sludges being accepted at the facility.

5.8.2 Inert Waste:-

5.8.2.1 Inert waste accepted at the facility shall comply with the standards established in *Schedule H: Criteria for the Acceptance of Inert Waste*, of this licence. Analysis of such waste shall be in accordance with the requirements of that Schedule.

5.9 Off-site Disposal and Recovery

5.9.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency;

5.9.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency;

5.9.3 All wastes removed off-site for recovery or disposal shall be transported from the facility to the consignee in a manner which will not adversely affect the environment.

5.10 Civic Waste Facility

5.10.1 The Civic Waste Facility shall only be used by private vehicles. The facility shall not be used as a transfer station for disposal of waste by commercial waste disposal contractors or local authority waste collection vehicles.

5.10.2 All waste deposited in the Civic Waste Facility shall be either:

- a) into a skip;
- b) into the hopper of the compactor for disposal;
- c) into a receptacle for recovery; or
- d) in the case where inspection is required, into a designated inspection area.

5.10.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.

5.10.4 At the end of the working day the floor of the Civic Waste Facility, the hopper and the compactor shall be cleared of waste.

5.10.5 The storage of waste refrigeration equipment at the Civic Waste Facility shall be on impermeable pavement.

5.10.6 Within three months from the date of grant of this licence, the licensee shall submit to the Agency, for its agreement, written procedures for the pre-treatment and storage of fridges.

5.10.7 Within six months from the date of grant of this licence, the licensee shall submit written details to the Agency on actions taken to secure a disposal/recovery facility for stored fridges and the removal of CFCs from the foam insulate.

5.11 Construction and Demolition Waste Recovery Area

5.11.1 Only construction and demolition waste or other inert material shall be accepted at this area (whose location is to be agreed in accordance with Condition 3.18.2). All loads shall be visually checked to ensure that no contamination exists and shall undergo the

Schedule H2 - Level 3: on-site verification test - at a minimum. Materials which are capable of being recovered for reuse or recycling shall be extracted from the waste.

5.11.2 All stockpiles shall be maintained so as to minimise dust generation.

#### 5.12 Leachate Management.

5.12.1 Leachate treatment shall be as specified in Item 3 of the Article 16(1) reply dated 13 May 2002 and the Article 16(1) reply dated 8 August 2002.

5.12.2 Leachate levels in the waste shall not exceed a level of 1.0m over the base of the landfill extension and 0.5m over the base of the nickel hydroxide cells.

5.12.3 The level of leachate in the pump sumps shall be monitored as outlined in Drawing No.s DG009 and DG011 of (Article 16(1) reply dated 13 May 2002), and set out in *Schedule D: Monitoring* of this licence.

5.12.4 The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.

5.12.5 Unless treated on the facility, leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site in fully enclosed road tankers.

5.12.6 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and, in any case, shall only be undertaken within cells which have been lined to the satisfaction of the Agency.

#### 5.13 Maintenance

5.13.1 All treatment/abatement and emission control equipment shall be calibrated and maintained, in accordance with the instructions issued by the manufacturer/supplier or installer. Written records of the calibrations and maintenance shall be made and kept by the licensee.

5.13.2 All lagoon structures on the facility shall be inspected and certified fit for purpose every three years by an independent and appropriately qualified chartered engineer.

5.13.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.

5.13.4 The wheel-wash shall be inspected on a daily basis and drained as required. Silt, stones and other accumulated material shall be removed as required from the wheel-wash and disposed of at the working face.

*REASON: To provide for appropriate operation of the facility to ensure protection of the environment.*

## CONDITION 6 EMISSIONS

6.1. No specified emission from the facility shall exceed the emission limit values set out in *Schedule C: Emission Limits* of this licence. There shall be no other emissions of environmental significance.

6.2. The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.

6.3. Landfill Gas

6.3.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:

- a) Methane, greater than or equal to 1.0% v/v; and
- b) Carbon dioxide, greater than or equal to 1.5% v/v.

6.3.2. The concentration limits for emissions to atmosphere specified in this licence shall be achieved without the introduction of dilution air and shall be based on gas volumes under standard conditions of :-

a ) in the case of landfill gas flare:

Temperature 273 K, pressure 101.3 kPa, dry gas at 3% oxygen; and

b) in the case of landfill gas combustion plant:

Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.

6.3.3. Emission limits for landfill gas emissions to atmosphere in this licence shall be interpreted in the following way:-

6.3.3.1. Continuous monitoring

- (i) No 24 hour mean value shall exceed the emission limit value.
- (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- (iii) No 30 minute mean value shall exceed twice the emission limit value.

6.3.3.2. Non-Continuous Monitoring

- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute samples is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
- (ii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.
- (iii) For flow, no hourly or daily mean value shall exceed the emission limit value.

6.4. Emissions to Groundwater

6.4.1. There shall be no direct emissions to groundwater.

6.4.2. Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC.

6.5. Emissions to Surface Water

6.5.1. No raw leachate or contaminated surface water shall be discharged to the Rogerstown Estuary.

6.5.2. No substance shall be discharged in a manner, or at a concentration which, following initial dilution causes tainting of fish or shellfish.



6.6. Disposal of Leachate

6.6.1. Treated leachate shall only be discharged to the centre of Rogerstown Estuary via the main Lusk sewer outfall at Rogerstown Viaduct as specified in the Article 16(1) reply dated 8 August 2002.

6.6.2. In emergency situations all leachate or contaminated water from the facility shall be transported to a Waste Water Treatment Plant and disposed of there. Within three months of the date of grant of this licence, the licensee shall submit written details of the name and location of the Waste Water Treatment Plant to be used in an emergency.

6.7. Trigger Level for PM<sub>10</sub>.

6.7.1. The trigger level for PM<sub>10</sub> from the facility measured at any location on the boundary of the facility is:-

PM<sub>10</sub> greater than 50µg/m<sup>3</sup> for a daily sample.

*REASON: To control emissions from the facility and provide for the protection of the environment.*

## CONDITION 7 NUISANCE CONTROL

7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.

7.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.

7.3 Litter Control

7.3.1 The measures and infrastructure as described in Attachment F3 of the application shall be applied to control litter at the facility.

7.3.2 Litter fencing shall be installed and maintained around the perimeter of the active tipping area to the specifications described in the Agency's Landfill Manual, Landfill Operational Practices prior to the disposal of any waste in any cell.

7.3.3 All litter control infrastructure shall be inspected on a daily basis. The licensee shall remedy any defect in the litter netting as follows:

- a) a temporary repair shall be made by the end of the working day; and,
- b) a repair to the standard of the original netting shall be undertaken within three working days.

7.3.4 All loose litter or other waste, placed on or in the vicinity of the facility, other than in accordance with the requirements of this licences, shall be removed, subject to the agreement of the landowners, immediately and in any event by 10.00am of the next working day after such waste is discovered.

7.3.5 The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.

7.4 Dust Control

7.4.1 In dry weather, site roads and any other areas used by vehicles shall be sprayed with water as and when required to minimise airborne dust nuisance.

7.5 Prior to exiting the facility, all waste vehicles shall use the wheelwash.

7.6 Bird Control

7.6.1 Birds shall be prevented from gathering on and feeding at the facility by the use of bird scaring techniques. The techniques shall be in place on the facility within three months of the date of grant of the licence.

*REASON: To provide for the control of nuisances*

## **CONDITION 8 MONITORING**

8.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.

8.2. The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.

8.3. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.

8.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.

8.5. Topographical Survey

8.5.1. A topographical survey shall be carried out within six months of the date of grant of this licence. The survey shall include a measurement of the remaining available void space. It shall be repeated annually thereafter. The survey shall be in accordance with any written instructions issued by the Agency.

8.6. Biological Assessment

8.6.1. A biological assessment of the Rogerstown Estuary shall be undertaken within six months of the date of grant of this licence and every two years thereafter. This assessment shall use appropriate biological methods such as the EPA Q-rating system for the assessment of rivers and streams. The location of monitoring points shall be agreed with the Agency.

8.7. Archaeological Assessment

8.7.1. Prior to the development of any undisturbed area, the advice of Dúchas the Heritage Service shall be sought. On completion of such development a report of the results of any archaeological monitoring shall be submitted to Dúchas and to the Agency.

8.8. Stability Assessment

8.8.1. Within six months of the date of grant of this licence, and annually thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.

8.9. Nuisance Monitoring

8.9.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

8.10. The licensee shall, within six months of the date of grant of this licence, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the environmental monitoring data generated as a result of this licence.

*REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions*

## **CONDITION 9 CONTINGENCY ARRANGEMENTS**

9.1. In the event of an incident the licensee shall immediately:

- a) identify the date, time and place of the incident;
- b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- c) isolate the source of any such emission;
- d) evaluate the environmental pollution, if any, caused by the incident;
- e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
- f) provide a proposal to the Agency for its agreement within one month of the incident occurring to:
  - i) identify and put in place measures to avoid reoccurrence of the incident; and
  - ii) identify and put in place any other appropriate remedial action.

9.2. The licensee shall, prior to commencement of any waste activities within six months of the date of grant of this licence, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This shall include a risk assessment to determine the requirements at the facility for fire fighting and fire water retention facilities. The Fire Authority shall be consulted by the licensee during this assessment.

9.3. The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility. Once used the absorbent material shall be disposed of at an appropriate facility.

9.4. Emergencies

9.4.1. All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

9.4.2. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

9.4.3. In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity and/or quality of the water supply this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.

9.4.4. In the event that monitoring of the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.

*REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions*

## **CONDITION 10 RECORDS**

10.1 The licensee shall keep the following documents at the facility office.

- a) the current waste licence relating to the facility;
- b) the current EMS for the facility;
- c) the previous year's AER for the facility;
- d) all written procedures produced by the licensee which relate to the licensed activities.

10.2 The licensee shall maintain an electronic written record for each load of waste arriving at the facility, excluding those arriving at the Civic Waste Facility. The licensee shall record the following:

- a) the date;
- b) the name of the carrier (including if appropriate, the waste carrier registration details);
- c) the vehicle registration number;
- d) the name of the producer(s)/collector(s) of the waste as appropriate;
- e) a description of the waste including the associated EWC codes;
- f) the quantity of the waste, recorded in tonnes
- g) in the case of soils a description of the soils using the Level 3: On-site verification procedure set out in Schedule H2 Acceptance Criteria.
- h) the name of the person checking the load; and,
- i) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.

10.3 Written Records

The following written records shall be maintained by the licensee:

- a) the types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes;
- b) all training undertaken by facility staff;
- c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
- d) details of all nuisance inspections; and

- e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.
- 10.4 The licensee shall maintain a written record of all complaints relating to the operation of the facility. Each such record shall give details of the following:
- a) date and time of the complaint;
  - b) the name of the complainant;
  - c) details of the nature of the complaint;
  - d) actions taken on foot of the complaint and the results of such actions; and,
  - e) the response made to each complainant.
- 10.5 A written record shall be kept for each load of waste departing from the Civic Waste Facility. The following shall be recorded:
- a) the name of the carrier;
  - b) the vehicle registration number;
  - c) the destination of the waste (facility name and waste licence/permit number as appropriate);
  - d) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
  - e) the quantity of waste, recorded in tonnes;
  - f) the name of the person checking the load; and,
  - g) the time and date of departure.
- 10.6 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:
- a) the date and time during which spraying of insecticide is carried out;
  - b) contractor details;
  - c) contractor logs and site inspection reports;
  - d) details of the rodenticide(s) and insecticide(s) used;
  - e) operator training details;
  - f) details of any infestations;
  - g) mode, frequency, location and quantity of application; and,
  - h) measures to contain sprays within the facility boundary.

*REASON: To provide for the keeping of proper records of the operation of the facility*

## **CONDITION 11 REPORTS AND NOTIFICATIONS**

- 11.1 Unless otherwise agreed by the Agency, all reports and notifications submitted to the Agency shall:

- a) be sent to the Agency's headquarters;
- b) comprise one original and three copies unless additional copies are required;
- c) be formatted in accordance with any written instruction or guidance issued by the Agency;
- d) include whatever information as is specified in writing by the Agency;
- e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
- f) be submitted in accordance to the relevant reporting frequencies specified by this licence, such as in *Schedule E: Recording and Reporting to the Agency* of this licence;
- g) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
- h) be transferred electronically to the Agency's computer system if required by the Agency.

11.2 In the event of an incident occurring on the facility, the licensee shall:

- a) notify the Agency as soon as practicable and in any case not later than 1000hrs the following working day after the occurrence of any incident;
- b) submit a written record of the incident, including all aspects described in Condition 9.1(a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident; and
- c) in the event of any incident which relates to discharges to surface water, notify the eastern Regional Fisheries Board and the Department of Marine as soon as practicable and in any case not later than 1000hrs on the following working day after such an incident.
- d) Should any further actions be taken as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

11.3 Waste Recovery Reports

Within ten months of the date of grant of this licence, a report examining waste recovery options shall be submitted to the Agency for its agreement. This report shall address methods to contribute to the achievement of the recovery targets stated in national and European Union waste policies and shall include the following:

- a) proposals for the contribution of the facility to the achievement of targets for the reduction of biodegradable waste to landfill, going to landfills as specified in the Landfill Directive;
- b) the separation of recyclable materials from the waste;
- c) the recovery of Construction and Demolition Waste;
- d) the recovery of metal waste and white goods including written procedures for the de-gassing of CFC's from refrigerators;
- e) the recovery of commercial waste, including cardboard;
- f) inert waste to be used for cover/restoration material at the facility.

11.4 Reports relating to Facility Operations

11.4.1 Leachate Handling Procedures

11.4.1.1 The licensee shall submit to the Agency for its agreement prior to the use of the leachate storage lagoon leachate Handling Procedures for the handling of leachate on the facility and during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.

11.4.2. Operation in Adverse Wind Conditions

11.4.2.1 Within three months of the date of grant of this licence the licensee shall submit to the Agency for its agreement proposals for the operation of the facility in adverse wind conditions.

11.5 Monitoring Locations

11.5.2. Within six months of the date of grant of this licence, the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations that are stipulated in this licence. The drawing(s) shall include the reference code of each monitoring point.

11.6 Annual Environmental Report

11.6.1 The licensee shall submit to the Agency for its agreement an Annual Environmental Report (AER) by 31 January 2003 and within one month of the end of each year thereafter.

11.6.2 The AER shall include as a minimum the information specified in *Schedule H: Content of Annual Environmental Report* of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.

*REASON: To provide for proper reports to and notifications to the Agency.*

## **CONDITION 12 CHARGES AND FINANCIAL PROVISIONS**

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of € 29,489.00 or such sum as the Agency from time to time determines, towards the cost of monitoring the activity or otherwise in performing any functions in relation to the activity, as the Agency considers necessary for the performance of its functions under the Waste Management Act, 1996. The licensee shall in 2003 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Public Sector Average Earnings Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 2002, the licensee shall pay a pro rata amount from the date of this licence to 31<sup>st</sup> December. This amount shall be paid to the Agency within one month of the date of grant of this licence.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased the licensee shall contribute such sums as determined by the Agency to defraying its costs.

12.2 Financial Provision for Closure, Restoration and Aftercare

12.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan

required by Condition 4. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.

12.2.2 Any fund established shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.

12.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund or guarantee must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.

12.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

$$\text{Cost} = (\text{ECOST} \times \text{WPI}) + \text{CiCC}$$

Where:

Cost = Revised restoration and aftercare cost

ECOST = Existing restoration and aftercare cost

WPI = Appropriate Wholesale Price Index [Capital Goods, Building & Construction (i.e. Materials & Wages) Index], as published by the Central Statistics Office, for the year since last closure calculation/revision.

CiCC = Change in compliance costs as a result of change in site conditions, changes in law, regulations, regulatory authority charges, or other significant changes.

12.3 The licensee shall ensure the costs in the setting up, operation of, provision of financial security and closure and after-care for a period of at least 30 years shall be covered by the price to be charged for the disposal of waste at the facility.

*REASON: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.*



## SCHEDULE A : Waste Acceptance

### A.1 Waste Acceptance

*Table A.1 Waste Categories and Quantities*

Waste Type	Maximum <sup>Note 3</sup> (Tonnes Per Annum)
Household	152,500
Commercial	200,000
Sewage Sludge (treated)	30,000 <sup>Note 1</sup>
Construction and Demolition	63,000 <sup>Note 2</sup>
Industrial Sludges	6,000 <sup>Note 1</sup>
<b>TOTAL</b>	<b>451,500</b>

**Note 1:** Only sludges/filtercakes both with greater than 25% solids shall be disposed of at the landfill extension

**Note 2:** Construction and demolition waste may be accepted for recovery for use as daily cover, in site construction works and landfill restoration.

**Note 3:** The categories and quantities referred to in this Table may be amended with the agreement of the Agency provided the total quantity of waste specified is not exceeded.

## SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Development of the facility including preparatory works and lining
Final capping
Installation of Wheel Cleaning
Installation of Landfill Gas Management Infrastructure
Installation of Leachate Management Infrastructure
Installation of Leachate Treatment Infrastructure
Installation of Groundwater Control Infrastructure
Installation of Surface Water Management Infrastructure
Any other works notified in writing by the Agency.

## SCHEDULE C : Emission Limits

**C.1 Noise Emissions:** (Measured at the monitoring points indicated in *Table D1.1*).

Day dB(A) L <sub>Aeq</sub> (30 minutes)	Night dB(A) L <sub>Aeq</sub> (30 minutes)
55	45

**C.2 Landfill Gas Concentration Limits:** (Measured in any building on or adjacent to the facility).

Methane	Carbon Dioxide
20 % LEL (1% v/v)	1.5 % v/v

**C.3 Dust Deposition Limits:** (Measured at the monitoring points indicated in *Table DI.1*).

Level (mg/m <sup>2</sup> /day) <sup>Note 1</sup>
350

**Note 1:** 30 day composite sample with the results expressed as mg/m<sup>2</sup>/day.

**C.4 Surface Water Discharge Limits:** Measured at the outlet to Rogerstown Estuary from the main surface water gravity drain at 'Drain outlet with Flap Valve' as shown in Drawing DG012 Article 16 reply 13 May 2002.

Level (Suspended Solids mg/l)
50

**C.5 Emission Limits Values for Landfill Gas Plant**

Emission Point Reference numbers: To be agreed with Agency in advance.

Volume to be emitted: **4500m<sup>3</sup>/hr**

Minimum discharge height: 5m

Parameter	Flare (enclosed) Emission Limit Value <sup>Note 1</sup>	Utilisation Plant Emission Limit Value <sup>Note 1</sup>
Nitrogen oxides (NO <sub>x</sub> )	150 mg/m <sup>3</sup>	500 mg/m <sup>3</sup>
CO	50 mg/m <sup>3</sup>	650 mg/m <sup>3</sup> (Note 3)
Particulates	Not applicable	130 mg/m <sup>3</sup>
TA Luft Organics Class I <sup>(Note 2)</sup>	Not applicable	20 mg/m <sup>3</sup> (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II <sup>(Note 2)</sup>	Not applicable	100 mg/m <sup>3</sup> (at mass flows > 2 kg/hr)
TA Luft Organics Class III <sup>(Note 2)</sup>	Not applicable	150 mg/m <sup>3</sup> at mass flows > 3kg/hr)
Total organic carbon (TOC)	10 mg/m <sup>3</sup>	Not applicable
Hydrogen Chloride	50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)	50 mg/m <sup>3</sup> (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)	5 mg/m <sup>3</sup> (at mass flows > 0.05 kg/h)

**Note 1:** Dry gas referenced to 5% oxygen by volume for utilisation plants and 3% oxygen by volume for flares.

**Note 2:** In addition to the above individual limits, the sum of the concentrations of Class I, II and III shall not exceed the Class III limits.

**Note 3:** The CO ELV at utilisation plant referred to in this Table may be amended with the agreement of the Agency.

## C.6 Emission Limits for Treated Leachate Discharged to Surface Water;

Emission Point Reference No.: Foul Sewer Outfall 225mm diameter at Rogerstown Viaduct

Grid Reference: N251820, E322893

**Volume to be emitted:** Maximum rate of discharge to foul sewer: 10 l/s  
 Discharge of leachate shall only be 2 hours each side of the high tide  
 Minimum tidal/seawater assimilation must be greater than 50 dilutions of effluent at all times.

Parameter	Limit
(all units in mg/l except pH)	
PH	6-8
BOD	25
COD	125
Suspended Solids	50
Total Oxidised N (as N)	15
Total P (as P)	2
Total Ammonia (as N)	3

## SCHEDULE D : Monitoring

Monitoring to be carried out as specified below.

### D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and Drawing No. J-001 of the application.

Table D.1.1 Monitoring Locations

Dust Stations	Noise Stations	Surface Water Stations	Ground Water & Landfill Gas Stations	Leachate Stations
Note 1 Site 1 Site 2 Site 3 Site 4	Note 2 Location A Location B Location C Location D Location E	Note 3 Drain outlet with Flap Valve	Note 4 MB1A MB1B MB2 MB3 MB4A MB4B	Note 5 PC1 V1
		SW1 S3 S4 S20 S21 S22	MB2 MB3 MB4a MB4b MB7 MB10a MB10b MB11 MB12a MB12b MB20 MB22 MB30 MB31 MB33 MB35 RC4 RC5	
				18 combined leachate/gas wells at 100m intervals alongside vertical barrier south side as per Fingal Co Co. SEW proposal dated 5 June 2002.

**Note 1:** Dust locations as shown in the EIS, Volume 3, Appendix G - Figure 3.

**Note 2:** Noise locations as shown in the EIS, Volume 3, Appendix H - Figure 1.

**Note 3:** Location as shown in Drawing DG012 Article 16 reply 13 May 2002.

**Note 4:** Locations as shown in Fingal Co Co Letter to Agency 14 August 2000, Figure 1.

**Note 5:** Location as shown in Drawing DG007 Article 16 reply 13 May 2002.

## D.2 Landfill Gas

**Table D.2.1** Landfill Gas Monitoring Parameters, Frequency and Technique

Parameter	Monitoring Frequency		Analysis Method <sup>Note1</sup> /Technique <sup>Note2</sup>
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH <sub>4</sub> ) % v/v	Monthly	Weekly	Infrared analyser/flame ionisation detector
Carbon dioxide (CO <sub>2</sub> )% v/v	Monthly	Weekly	Infrared analyser/ flame ionisation detector
Oxygen(O <sub>2</sub> ) % v/v	Monthly	Weekly	Electrochemical cell
Atmospheric Pressure	Monthly <sup>Note3</sup>	Weekly	Standard
Temperature	Monthly <sup>Note3</sup>	Weekly	Standard

**Note 1:** All monitoring equipment used should be intrinsically safe.

**Note 2:** Or other methods agreed in advance with the Agency.

**Note 3:** Ambient pressure and temperature on day of sampling.

## D.3 Dust/Odour

**Table D.3.1** Dust Monitoring Frequency and Technique

Parameter (mg/m <sup>2</sup> /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year <sup>Note 2</sup>	Standard Method <sup>Note 1</sup>
Odour	Quarterly	See <sup>Note 3</sup>

**Note 1:** Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

**Note 2:** Twice during the period May to September.

**Note 3:** To be agreed with Agency.

## D.4 Noise

**Table D.4.1** Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) <sub>EQ</sub> [30 minutes]	Quarterly	Standard <sup>Note 1</sup>
L(A) <sub>10</sub> [30 minutes]	Quarterly	Standard <sup>Note 1</sup>
L(A) <sub>90</sub> [30 minutes]	Quarterly	Standard <sup>Note 1</sup>
Frequency Analysis(1/3 Octave band analysis)	Quarterly	Standard <sup>Note 1</sup>

**Note 1:** "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."

## D.5 Surface Water, Groundwater and Leachate

Table D.5.1 Water and Leachate - Parameters / Frequency

Parameter <sup>Note 1</sup>	SURFACE WATER <sup>Note 2</sup>	GROUNDWATER	LEACHATE <sup>Note 3</sup>
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Monthly	Monthly	Monthly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Monthly
Ammoniacal Nitrogen	Quarterly	Annually	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen <sup>Note 7</sup>	Quarterly	Annually	Not Applicable
Electrical Conductivity <sup>Note 7</sup>	Quarterly	Quarterly	Annually
PH <sup>Note 7</sup>	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature <sup>Note 7</sup>	Quarterly	Quarterly	Quarterly
Metals / non metals <sup>Note 3</sup>	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances <sup>Note 4</sup>	Annually <sup>Note 5</sup>	Bi-annually <sup>Note 5</sup>	Once off <sup>Note 5</sup>
Mercury	Annually	Annually	Annually
Sulphate	Annually	Annually	Annually
Total Alkalinity	Annually	Annually	Not applicable
Total P/orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Annually	Annually
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Biological Assessment	Annually <sup>Note 6</sup>	Not Applicable	Not Applicable

**Note 1:** All the analysis shall be carried out by a competent laboratory using standard and internationally accepted procedures.

**Note 2:** Where there is evident gross contamination of leachate, additional samples should be analysed.

**Note 3:** Metals and elements to be analysed by AA/ICP should include as a minimum: boron, cadmium, calcium, chromium (total), copper, iron, lead, magnesium, manganese, nickel, potassium, sodium and zinc.

**Note 4:** Samples screened for the presence of organic compounds using Gas Chromatography / Mass Spectrometry (GC/MS) or other appropriate techniques and using the list I/II Substances from EU Directive 76/464/EEC and 80/68/EEC as a guideline. Recommended analytical techniques include: volatiles (US Environmental Protection Agency method 524 or equivalent), semi-volatiles (USEPA method 525 or equivalent, and pesticides (USEPA method 608 or equivalent).

**Note 5:** Surface water locations No.s S4 and SW1;  
Groundwater locations No.s MB2, MB3, MB4a, MB4b, MB12a, MB12b, MB22, MB30, and RC4;  
and 6 leachate locations to be agreed with the Agency for these parameters.

**Note 6:** Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

**Note 7:** For groundwater and surfacewater these parameters should be measured on-site with a portable electronic meter.

## D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:

Data to be obtained from the climatological station at Balleally Landfill (Grid Ref: 322763E 252549N).

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	Standard
Temperature (min/max.)	Daily	Standard
Wind Force and Direction	Daily	Standard
Atmospheric Pressure	Daily	Standard

## D.7 Landfill Gas Combustion Plant/Enclosed Flare

Location: Utilisation plant and enclosed flare 'Proposed Gas Extraction Point' Drawing No. D-01

Table D.7.1 Landfill Gas Utilisation Plant/Enclosed Flare Parameters and Monitoring Frequency

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method <sup>Note1</sup> /Technique <sup>Note2</sup>
	Monitoring Frequency	Monitoring Frequency	
<b>Inlet</b>			
Methane (CH <sub>4</sub> ) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO <sub>2</sub> )%v/v	Continuous	Weekly	Infrared analyser/ thermal conductivity
Oxygen (O <sub>2</sub> ) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Total Sulphur	Annually	Annually	Ion chromatography
Total Chlorine	Annually	Annually	Ion chromatography
Total Fluorine	Annually	Annually	Ion Selective Electrode
<b>Process Parameters</b>			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
<b>Outlet</b>			
CO	Continuous <sup>Note 3</sup>	Continuous <sup>Note 3</sup>	Flue gas analyser/datalogger
Nox	Annually	Annually	Flue gas analyser
SO <sub>2</sub>	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
TOC	Annually	Not applicable	Flame ionisation
Hydrochloric acid	Annually	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	Annually	Annually	Impinger / Ion Chromatography

**Note 1:** All monitoring equipment used should be intrinsically safe.

**Note 2:** Or other methods agreed in advance with the Agency.

**Note 3:** To be agreed with Agency

## SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency <sup>Note1</sup>	Report Submission Date
<b>Environmental Management System Updates</b>	Annually	One month after the end of the year reported on.
<b>Annual Environment Report (AER)</b>	Annually	Submit AER by 31 January 2003 and within one month of the end of each year thereafter.
<b>Record of incidents</b>	As they occur	Within five days of the incident.
<b>Bund, tank and container integrity assessment</b>	Every three years	Six months from the date of grant of licence and one month after end of the three year period being reported on.
<b>Specified Engineering Works reports</b>	As they arise	Prior to the works commencing.
<b>Monitoring of landfill gas</b>	Bi-annually	Ten days after end of the quarter being reported on.
<b>Monitoring of Surface Water Quality</b>	Quarterly	Ten days after end of the quarter being reported on.
<b>Monitoring of Groundwater Quality</b>	Bi-annually	Ten days after end of the quarter being reported on.
<b>Monitoring of Leachate</b>	Bi-annually	Ten days after end of the quarter being reported on.
<b>Meteorological Monitoring</b>	Annually	One month after end of the year being reported on.
<b>Dust Monitoring</b>	Three times a year	Ten days after the period being reported on
<b>Noise Monitoring</b>	Annually	One month after end of the year being reported on.
<b>Any other monitoring</b>	As they occur	Within ten days of obtaining results.

**Note 1:** Unless altered at the request of the Agency.

# SCHEDULE F : Content of the Annual Environmental Report

## Annual Environmental Report Content

Reporting Period.

Waste activities carried out at the facility.

Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.

Calculated remaining capacity of the facility and year in which final capacity is expected to be reached.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretation of environmental monitoring.

Resource and energy consumption summary.

Proposed development of the facility and timescale of such development.

Volume of leachate produced and volume of leachate transported / discharged off-site.

Report on development works undertaken during the reporting period, and a timescale for those proposed during the coming year.

Report on restoration of completed cells/ phases.

Site survey showing existing levels of the facility at the end of the reporting period.

Estimated annual and cumulative quantities of landfill gas emitted from the facility.

Estimated annual and cumulative quantities of electricity produced by the facility and sent to National Grid.

Estimated annual and cumulative quantity of indirect emissions to groundwater.

Annual water balance calculation and interpretation.

Report on the progress towards achievement of the Environmental Objectives and Targets contained in previous year's report.

Schedule of Environmental Objectives and Targets for the forthcoming year.

Full title and a written summary of any procedures developed by the licensee in the year which relates to the facility operation.

Tank, pipeline and bund testing and inspection report.

Reported incidents and Complaints summaries.

Review of Nuisance Controls.

Results of analyses of % solids of sludges being accepted at the facility.

Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.

Report on training of staff.

Any other items specified by the Agency.



## SCHEDULE G : Standards for Compost Quality

The following criteria are deemed a quality standard for the use of compost as a soil improver and should not be deemed as criteria for fertiliser. In addition N, P, K, NH<sub>4</sub>-N, NO<sub>3</sub>-N, pH and dry matter content should also be measured.

Compost shall be deemed unsatisfactory if more than 10% of samples fail the criteria below. No sample shall exceed 1.2 times the quality limit values set.

### 1. Maturity

Compost shall be deemed to be mature if:-

It meets two of the following requirements:-

- a) C/N ratio  $\leq$  25;
- b) Oxygen uptake rate  $\leq$  150 mg O<sub>2</sub>/kg volatile solids per hour;
- c) Germination of cress (*Lepidium sativum*) seeds and of radish (*Raphanus sativus*) seeds in compost must be greater than 90 percent of the germination rate of the control sample, and the growth rate of plants grown in a mixture of compost and soil must not differ more than 50 percent in comparison with the control sample; and
- d) Elimination of the following test organisms (used to evaluate composting system efficiency in removing plant pathogens and weed seeds during the composting process): *Plasmodiophora brassicae*, tobacco-mosaic-virus (TMV) and tomato seeds.

Guidance on test may be obtained from the German document LAGA M10 'Quality Criteria and Application Recommendations for Compost'.

### 2. Foreign Matter

Compost must not contain any sharp foreign matter measuring over a 2 mm dimension that may cause damage or injury to humans, animals and plants during or resulting from its intended use.

Foreign matter content as a percentage of oven-dried mass	$\leq$ 1.5
Foreign matter, maximum dimensions, in mm	25

### 3. Trace Elements

Maximum Trace Element Concentration Limits for Compost

Trace Elements	(mg/kg, dry mass)
Arsenic (As) <sup>Note 1</sup>	15
Cadmium (Cd)	1.5
Chromium (Cr)	100
Copper (Cu)	100
Mercury (Hg)	1
Molybdenum (Mo) <sup>Note 1</sup>	5
Nickel (Ni)	50
Lead (Pb)	150
Selenium (Se) <sup>Note 1</sup>	2
Zinc (Zn)	350

**Note 1:** Monitoring of these parameters required if waste from an industrial source.

**Note 2:** The above alone should not be taken as an indication of suitability for addition to soil as the cumulative metal additions to soil should be first calculated.

#### 4. Pathogens

Pathogenic organism content must not exceed the following limits:-

- a) the quantity of faecal coliforms must be < 1,000 Most Probable Number (MPN)/g of total solids calculated on a dry weight basis; and
- b) there can be no salmonellae present (< 3 MPN/4g total solids).

#### 5. Monitoring

The licensee shall submit to the Agency for its agreement, prior to commencement of compost operations, details of monitoring, methods of analyses and sample numbers

## SCHEDULE H : Criteria for the Acceptance of Inert Waste

### H.1 Acceptable Waste

#### DISPOSAL

Only the inert wastes in Table H.1.1 are acceptable for disposal at the facility, unless otherwise agreed with the Agency. In addition the waste in Table H.1.1 below must satisfy the criteria in H.2 Acceptance Criteria and Table H.3 Limit values for pollutant content, of this licence.

Table H.1.1 Waste for Disposal

INERT OR INACTIVE WASTE	
Subsoil	Pottery and China
Clay	Brickwork
Stone, Rock and Slate	Natural Sand

#### RECOVERY

Only the wastes in Table H.1.2 are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

Table H.1.2 Waste for Recovery

WASTE	
Topsoil	Solid Road Planings, Solid Tarmacadam, Solid Asphalt
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay	Concrete
Pottery and China	Timber
Metals	

WASTES IDENTIFIED IN TABLE H.1.1 AND TABLE H.1.2 OF UNKNOWN ORIGIN OR WITH INSUFFICIENT WASTE DESCRIPTION SHALL NOT BE ACCEPTED TO LANDFILL

## H.2 Acceptance Criteria

All waste or recovered loads arriving at the facility, excluding those arriving at the Civic Waste Facility shall be processed through the main site weighbridge owned and operated by the licensee next to the administration building where a written record of each load must be taken by the Licensee as specified in Condition 10.2.

The general characterisation and testing must be based on the following three level hierarchy:

### *Level 1: Basic Characterisation*

This constitutes a through determination, according to standardised analysis and behaviour testing methods, of the short and long-term leaching behaviour and/or characteristic properties of the waste.

The comprehensive assessment must at a minimum include the following:

1. A chemical analysis of a representative sample using *Schedule H.3: Limit values for pollutant content for inert waste landfills* of this licence including observance of limits for total pollutants contents. At least one sample (consisting of a subsoil matrix) per 100 loads or 1,500 tonnes or portion thereof must be taken for chemical analysis.
2. The classification of the waste/recovered material by the completion of the Agency Hazardous Waste Classification Worksheet ('Paper Tool of the Procedure for Identification of the Hazardous Components of Waste').
3. A statement of any pre-treatment requirement (if any).

**Note:** A representative sample for every excavation/demolition/waste removal works where there is greater than 100 loads or 1,500 tonnes must be subjected to a comprehensive assessment which must satisfy Level 1 characterisation.

### *Level 2: Compliance On-Site Testing*

This constitutes periodic testing by mineral oil and BTEX (gasoline range) analyses, using field based testing kits (Draeger or Handby kits) to determine whether a waste complies with this licence and /or specific reference criteria. This testing should be carried out in the waste inspection and quarantine area. The vapour readings shall be recorded in a designated weatherproof log book with a serial number and dates. The trigger values for the rejection of loads shall be as agreed by the Agency. Rejected loads shall be stored in the quarantine area under impermeable cover for a maximum of 5 days before they must be dispatched to a licensed facility.

**Note:** One in every 30 loads of waste/recovered material accepted at the facility shall be tipped onto the concrete floor of the waste inspection and quarantine area. Three representative samples shall be taken from each tipped load and shall be subjected to Level 2 testing. Part of this sample shall be retained at the facility for two months and be available for inspection/analysis by the Agency.

### *Level 3: On-Site Verification*

This constitutes rapid check methods to confirm that a waste is the same as that which has been subjected to compliance testing and that which is described in the accompanying documents. As a minimum the Level 3 characterisation shall consist of a visual inspection and the taking of a vapour reading by FID (Flame Ionisation Detector) before unloading and a minimum of four soil samples per lorry load must be taken and tested with an FID after unloading at the landfill site. The FID readings shall be recorded in a designated weatherproof log book with a serial number and dates. The trigger values for the rejection of loads shall be as agreed by the Agency. Rejected loads shall be stored in the quarantine area under impermeable textile cover for a maximum of 5 days before they must be dispatched to a licensed facility.

All wastes identified in Table H.1.1 and Table H.1.2 accepted for disposal and/or recovery at the landfill shall undergo the Level 3: On-site verification at a minimum.

All waste loads must provide the following information (if available) :

Waste owner	Amount of waste
Source and origin of waste	Existing data on the waste
Description of the waste	Physical form
Waste Type and EWC code	Colour

Type of process producing the waste	Odour
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### H.3 Limit values for pollutant content for inert waste landfills.

The following limit values relate to the average amount of constituent substances in the waste. The mean value of all individual measuring values from one bulk sample must not exceed the limit value concerned.

Parameter	Limit Value ( mg/kg dry mass, not including pH value and Electrical Conductivity)	
	Total Pollutant Contents	Eluate
PH		6 –13
Electrical conductivity		300
Dry residue		25,000
Arsenic (as As)	55.0	0.75
Aluminium (as Al)		20.0
Barium (as Ba)		20.0
Lead (as Pb)	500.0	2.0
Boron (as b)		30.0
Cadmium (as Cd)	10.0	0.5
Chromium, total (as Cr)	500.0	2.0
Chromium, hexavalent (as Cr)		0.5
Cobalt (as Co)	100.0	2.0
Copper (as Cu)	190.0	10.0
Nickel (as Ni)	210.0	2.0
Mercury (as Hg)	3.0	0.05
Zinc (as Zn)	720.0	20.0
Tin (as Sn)		10.0
Ammonium (as N)		40.0
Chloride (as Cl)		5000.0
Cyanide, easily liberatable (as Cn)		1.0
Fluoride (as F)		50.0
Nitrate (as N)		500.0
Nitrite (as N)		10.0
Phosphate (as P)		50.0
Sulphate (as SO <sub>4</sub> )		5000.0
TOC (as C)	30,000.0 <sup>Note 1</sup>	500.0
Mineral Oil	100.0	50.0
Benzene	1.0	
Total PAH <sup>Note 2</sup>	2.0	

**Note 1:** The TOC limit value is complied with as long as the loss on ignition does not exceed 5% per weight.

**Note 2:** For determining the total of PAH, the following 6 compounds must be added to a sum: flouranthene, benzoic(a)pyrene, benzoic(b)flouranthene, benzoic(k)flouranthene, benzoic(g,h,l)perylene, indenoic(1,2,3,-c,d)pyrene.

**Signed on behalf of the said Agency**  
on the 1<sup>st</sup> day of November 2002

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Patrick J. Nolan, Authorised Person