

AMENDMENT UNDER S42B(1) OF THE WASTE MANAGEMENT ACTS 1996 TO 2003

This licence was amended on 9 August 2005 under Section 42B(1) of the Waste Management Acts, 1996 to 2003. The details of the amendment must be read in conjunction with this licence. The amendment document is entitled 23-1S42B(1)AmendmentA.

AMENDMENT UNDER SECTION 76(4) OF THE WASTE MANAGEMENT ACTS, 1996 to 2003

This licence was amended on 17/10/2005 under Section 76(4) of the Waste Management Acts, 1996 to 2003. The details of the amendment must be read in conjunction with the licence. The amendment document is titled 23-176(4)Amendment B.doc.

**This licence was amended on 15<sup>th</sup> January 2013 under Section 42B(1)(c) of the Waste Management Acts, 1996 to 2011. The details of Amendment C must be read in conjunction with this licence. The amendment document is entitled “Technical Amendment C”**



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## WASTE LICENCE

<b>Waste Licence Register Number:</b>	23-1
<b>Licensee:</b>	Cork County Council
<b>Location of Facility:</b>	Raffeen Landfill Site, Raffeen, Kerrycurrihy, Co. Cork.

# Introduction

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

This licence is for the continued operation of an existing facility at Raffeen Landfill Site, Raffeen, Kerrycurrihy, Co. Cork.

The facility covers a total area of 7.3ha. The facility also includes a Civic Waste Facility. The waste intake at the landfill is limited to a maximum of 20,000 tonnes of municipal waste and 40,000 tonnes of inert waste for restoration subject to the agreement of the final restoration plans. The licensee must manage and operate the facility to comply with the licence. The licensee has to carry out regular environmental monitoring and submit all monitoring results, and a wide range of reports on the operation and management of the facility, to the Agency. The conditions of this licence set out in detail the legal constraints under which Cork County Council is allowed to operate and manage the facility.

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## Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence any emissions from the activity will comply with and not contravene any of the requirements of Section 40(4) of the Waste Management Act, 1996.

In reaching this decision the Agency has considered the application and supporting documentation received from the applicant, all submissions and objections received and the reports of its inspectors.

### ***Part I Activities Licensed***

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency), under Section 40(1) of the said Act hereby grants this Waste Licence to Cork County Council to carry on the waste activities listed below at Raffeen Landfill Site, Raffeen, Kerrycurrihy, Co Cork, subject to eleven 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*

*Class 1.* Deposit on, in or under land (including landfill):

*This activity is limited to the disposal of waste at the landfill*

*Class 11* Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.

*This activity is limited to mixing of different kinds of waste materials or capping materials with other wastes at the active tipping area.*

*Class 12.* Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.

*This activity is limited to the storage of waste at the Civic Waste Facility*

*Class 13.* Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

*This activity is limited to storage of waste at the Civic Amenity Site prior to transport offsite to an alternative appropriate facility or storage or waste quarantine area.*

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

- Class 2** Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes):  
*This activity is limited to the composting of green waste at the Civic Waste Facility.*
- Class 3:** Recycling or reclamation of metals and metal compounds:  
*This activity is limited to the acceptance and separation of metals for recycling at the Civic Waste Facility.*
- Class 4:** Recycling or reclamation of other inorganic materials.  
*This activity is limited to the recovery and reuse of a maximum of 40,000 tonnes of inert waste for landfill restoration.*
- Class 9:** Use of any waste principally as a fuel or other means to generate energy.  
*This activity is limited to the recovery and transport off site for reuse of waste types authorised by this licence. This activity also includes the use of landfill gas generated on the site for power generation.*
- Class 10:** The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system.  
*This activity is limited to the use of inert material for landfill restoration purposes.*
- Class 11:** Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.  
*This activity is limited to the use of landfill gas to generate energy and the recycling of construction and demolition waste.*
- Class 13:** Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.  
*This activity is limited to the temporary storage of recyclable and reusable waste pending their collection and the temporary storage in the waste quarantine area of suspect waste loads prior to their removal offsite to an alternative appropriate facility.*

# INTERPRETATION

<b>Act</b>	The Waste Management Act, 1996 (No. 10 of 1996).
<b>Adequate lighting</b>	20 lux measured at ground level.
<b>Agreement</b>	Agreement in writing.
<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, including any other material submitted to the Agency in writing by the licensee between the date of the application and the date of grant of this licence.
<b>Appropriate facility</b>	A waste management facility, duly authorised under relevant law and technically suitable.
<b>BATNEEC</b>	Best Available Technology Not Entailing Excessive Cost as defined in section 5 (2) of the Act.
<b>Commercial waste</b>	As defined in Section 5 (1) of the Act.
<b>Condition</b>	A condition of this licence. In any case where this licence refers to a numbered condition, the reference shall be taken to mean the condition and any sub-condition therein which the context of the reference requires that reference is made to
<b>Containment boom</b>	A boom which can contain spillages and prevent these from entering drains or watercourses.
<b>Cover material</b>	Bricks, crushed concrete, tarmac, earth, soil, sub-soil, stone, rock or other similar natural materials; or other cover material the use of which has been agreed with the Agency.
<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>Emission</b>	As defined in Section 5 (1) of the Act.
<b>Emission Limit Value</b>	Those limits, including concentration limits and deposition levels established in Schedule F.
<b>Environmental</b>	As defined in Section 5 (1) of the Act.

## **Pollution**

<b>European Waste Catalogue (EWC)</b>	The EWC is 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>Facility</b>	That area or areas defined under Condition 1.2
<b>Green waste</b>	Waste wood, plant matter and other vegetation.
<b>Hazardous Waste</b>	As defined in Section 4 (2) of the Act.
<b>Household Waste</b>	As defined in Section 5 (1) of the Act.
<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>Incident</b>	Any reference to an incident in this licence means an incident as defined in Condition 3.1.
<b>Industrial waste</b>	As defined in Section 5 (1) of the Act.
<b>Landfill</b>	As defined in Section 5 (1) of the Act.
<b>Landfill Gas</b>	Gases generated from the landfilled waste.
<b>Leachate</b>	Any liquid percolating through the deposited waste and emitted from or contained within a landfill as defined in Section 5 (1) of the Act.
<b>Licence</b>	A Waste Licence issued in accordance with the Act.
<b>Licensee</b>	Cork 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
<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>Monthly</b>	At least 12 times per year, at approximately monthly intervals.
<b>Municipal Waste</b>	Municipal waste as defined in Section 5 (1) of the Act.
<b>Night-time</b>	10.00 p.m. to 8.00 a.m.
<b>Non-hazardous</b>	Non-Hazardous Waste is any waste which is not a hazardous

<b>waste</b>	waste as defined in the Act.
<b>Operational Day</b>	8.00 a.m. to 5.30 p.m. Monday to Saturday.
<b>Quarterly</b>	A period of three calendar months, the first period of which commences on the date of grant of this licence
<b>Recovery</b>	As defined in Section 4 (4) of the Act.
<b>Sludge</b>	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
<b>Specified Emissions</b>	Those emissions listed in Schedule F: Emission Limits of this licence.
<b>Specified Engineering Works</b>	Those engineering works listed in Schedule D: Specified Engineering Works of this licence.
<b>Submit</b>	Unless the context of this licence indicates otherwise, submit in writing to the Agency for its agreement
<b>Trigger Level</b>	A parameter value which when achieved or exceeded requires certain actions to be taken.
<b>Waste</b>	As defined in Section 4(1) of the Act.
<b>Waste disposal activity</b>	Includes the activities referred to in Section 4 of the Act and listed in the Third Schedule thereto.
<b>Waste recovery activity</b>	Includes the activities referred to in Section 4 of the Act and listed in the Fourth Schedule thereto.
<b>Working Day Environmental Protection Agency</b>	9.00am to 5.30pm Monday to Friday
<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 II CONDITIONS**

### **CONDITION 1 SCOPE**

- 1.1. Waste activities at the facility shall be restricted to those listed and described in Part I: Waste Activities and required by the licence.
- 1.2. Waste activities shall be restricted to the area of land outlined in red on Drawing No. B2/2 Rev. A of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red.
- 1.3. 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. Every 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.
- 1.4. Only household waste, commercial waste and construction and demolition waste subject to Schedule G shall be accepted at the facility from the date of grant of this licence unless the prior agreement of the Agency has been obtained.
- 1.5. The quantity of municipal wastes to be accepted at the landfill, shall not exceed 20,000 tonnes. Municipal waste may not be accepted after 1<sup>st</sup> October 2001. A maximum of 40,000 tonnes of inert waste may be accepted for restoration of the landfill. Restoration shall be completed within twenty-four months of the date of grant of this licence.
- 1.6. 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.
- 1.7. Waste shall only be accepted at the facility between the hours of 8.30a.m. and 4.45p.m. Monday to Saturday with the exclusion of Bank Holidays unless otherwise agreed in advance with the Agency.
- 1.8. Where the Agency considers that a non-compliance with the Conditions of this licence has occurred, it may serve a notice on the licensee specifying:
  - a) 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;
  - b) 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; and,
  - c) 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 confirmation is received from the Agency that the notice is withdrawn.

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

## CONDITION 2 MANAGEMENT OF THE ACTIVITY

### 2.1 Environmental Management System

2.1.1 The licensee shall within nine months from the date of grant of this licence, submit to the Agency for its agreement a proposal for a documented Environmental Management System (EMS) for the facility. Following the agreement of the Agency, the licensee shall establish and maintain such a system. The EMS shall be updated on an annual basis with amendments being submitted to the Agency for its agreement.

2.1.2 The EMS shall include as a minimum those elements specified in the Conditions 2.2 to 2.7 below:

### 2.2 Schedule of Environmental Objectives and Targets

2.2.1 The licensee shall, within six months from the date of grant of this licence, submit to the Agency for its agreement a Schedule of Objectives and Targets. The objectives should be specific and the targets measurable.

2.2.2 The Schedule shall address the remaining life span of the landfill and shall be reviewed and submitted annually to the Agency for its agreement.

### 2.3 Environmental Management Programme

2.3.1 The licensee shall, within nine months from the date of grant of this licence, submit to the Agency for its agreement an Environmental Management Programme (EMP). The EMP shall include a time-scale for achieving the Schedule of Objectives and Targets and shall comply with any other guidance issued by the Agency.

2.3.2 The EMP shall include, as a minimum, the information specified in Schedule B: Content of the Environmental Management Programme. The EMP shall be reviewed and submitted to the Agency for its agreement annually.

### 2.4 Corrective Action

2.4.1 Within six months of the date of grant of this licence the licensee shall establish and maintain written Corrective Action Procedures to ensure that corrective action is taken should specified requirements to this licence not be fulfilled.

### 2.5 Awareness and Training

2.5.1 Within six months of the date of grant of this licence the licensee shall establish and maintain Awareness and Training Procedures for identifying training needs and for providing appropriate training, for personnel whose work is related to the licensed facility. Written records of training shall be maintained.

### 2.6 Management Structure

2.6.1 Within three months from the date of grant of this licence, the licensee shall submit written details of the management structure of the facility for the agreement of the Agency. Any proposed changes in the management structure shall be submitted in writing to the Agency for its agreement. 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;

- b) a named contact person for communications with the Sanitary Authority
- c) details of the responsibilities for each individual named under a) above;
- d) details of the relevant experience, competence and qualifications held by each of the persons nominated under a) above; and
- e) contingency arrangements for the absences of the named persons from the facility.

## 2.7 Communications

2.7.1 Within six months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement a Communications Programme to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times.

## 2.8 Annual Environmental Report

2.8.1 The licensee shall submit to the Agency for its agreement, within thirteen months from the date of grant of this licence, and within one month of the end of each year thereafter, an Annual Environmental Report (AER).

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

2.9 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 suitably qualified and experienced deputy, shall be present at all times during the operation of the facility. Both the facility manager and deputy shall successfully complete both the FAS waste management training programme (or equivalent agreed with the Agency) and associated on site assessment appraisal. They shall obtain certification, within twelve months of the date of being appointed, that both have successfully completed the training programme and that both are competent to manage the facility. Furthermore, any replacement site manager or deputy must have a similar qualification.

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

**Reason:** *To make provision for 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 NOTIFICATION AND RECORD KEEPING

3.1 The licensee shall make written records of the following incidents:

- a) any nuisance caused by the activity
- b) any emission which results in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any relevant enactment;
- c) any emission which does not comply with the requirements of this licence;
- d) any trigger level specified in this licence which is attained or exceeded;

- e) any indication that environmental pollution has, or may have, taken place;
  - f) any occurrence with the potential for environmental pollution; and,
  - g) any emergency.
- 3.2 The written record shall include all aspects described in Condition 10.6(a-e).
- 3.3 Unless otherwise instructed in writing by the Agency, the licensee shall:
- a) notify the Agency as soon as practicable and in any case not later than 10.00 am the following working day after the occurrence of any incident;
  - b) submit the written record required by this condition 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 South Western Regional Fisheries Board as soon as practicable and in any case not later than 10:00am on the following working day after such an incident.
- 3.4 Should any further actions be taken after the date of written notification, 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.
- 3.5 Unless otherwise agreed by the Agency, all documentation submitted to the Agency shall:
- (a) be sent to the Agency's headquarters;
  - (b) comprise one original and three copies;
  - (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; and
  - (g) in the case of results of any environmental monitoring, be accompanied by a written interpretation setting out their significance.
- 3.6 Copies of all environmental monitoring data obtained by the licensee which relates to the facility shall be forwarded to the Agency at the frequencies set out in Schedule C: Recording and Reporting to the Agency of this licence.
- 3.7 Unless otherwise agreed with the Agency, all documentation and records required to be made under this licence, shall be retained by the licensee.
- 3.8 The licensee shall provide additional copies of any documentation and records referred to in this licence to the Agency upon written request, within the time specified in writing by the Agency.
- 3.9 The licensee shall keep the following documents at the facility office referred to in Condition 4.5
- 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.
- 3.10 The licensee shall maintain a written record for each load of waste arriving at the facility. The licensee shall record the following:
- a) the name of the carrier;
  - b) the vehicle registration number;
  - c) the name of the producer(s)/collector(s) of the waste as appropriate;
  - d) a description of the waste including the associated EWC codes;
  - e) the quantity of the waste, recorded in tonnes;
  - f) the name of the person checking the load; and,
  - g) 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.
- 3.11 The licensee shall maintain a written record of the type and quantity, recorded in tonnes, of all wastes recovered or disposed of at the facility.
- 3.12 A written record shall be kept of each consignment of leachate removed from the facility. The record shall include the following:
- a) the name of the carrier;
  - b) the date and time of removal of leachate from the facility;
  - c) the volume of leachate, in cubic metres, removed from the facility on each occasion;
  - d) the name and address of the Wastewater Plant to which the leachate was transported;
  - e) any incidents or spillages of leachate during its removal or transportation.
- 3.13 The licensee shall maintain a written record of all complaints relating to the operation of the activity. 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.

**Reason :** *To provide for the notification of incidents, to update information on the activity and to provide for the keeping of records.*

## CONDITION 4 SITE INFRASTRUCTURE

- 4.1 The licensee shall establish all infrastructure referred to in this licence within the timescale specified in this licence unless otherwise agreed in advance with the Agency.
- 4.2 Site Notice Board
- 4.2.1 The licensee shall provide and maintain a Site Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the identification board shall be 1200 mm by 750 mm.
- 4.2.2 The board shall clearly show:
- a) the name and telephone number of the facility;
  - b) the normal hours of opening;
  - c) the name, address and telephone number of the licence holder;
  - d) an emergency out of hours contact telephone number;
  - e) the name, address and telephone number of the operator of the facility;
  - f) the licence reference number;
  - g) where and when environmental monitoring information relating to the facility can be obtained.
- 4.3 Site Security
- 4.3.1 Within six months of the date of grant of this licence, the licensee shall carry out a review of the site security arrangements for the site and submit to the Agency for its agreement a report to include any improvements considered necessary.
- 4.3.2 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 or as otherwise agreed with the Agency.
- 4.3.3 Gates shall be locked shut when the facility is unsupervised.
- 4.4 Site Roads and Hardstanding
- 4.4.1 The site road(s) including the main access road from the entrance gate and the existing and future haul roads shall be provided and maintained as described in Attachment D.1(b).
- 4.4.2 The facility entrance area, any access roads, the Civic Waste Facility and the Waste Inspection/Quarantine Area shall be paved and maintained with an impermeable concrete material as described in Attachment D.1.h.
- 4.5 The licensee shall provide and maintain an office on the facility, at the location shown in Drawing No. 2/Art 12 Rev. A. The office shall be constructed and maintained in a manner suitable for the processing and storing of documentation.
- 4.6 The licensee shall provide and maintain a working telephone and facsimile machine in the office specified in Condition 4.5 above.

#### 4.7 Inspection

4.7.1 A proposal for a suitable Waste Inspection/Quarantine Area shall be submitted to the Agency within 3 months of the date of grant of this licence. Unless otherwise agreed in advance with the Agency it shall be provided and maintained at the location shown in Drawing No. 2/Art 12 Rev A and therein referred to as 'Proposed Quarantine Area'.

4.7.2 The licensee shall ensure that this area shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of inert waste accepted for restoration and subsequent quarantine if required.

4.8 The licensee shall provide and maintain a weighbridge at the facility. Unless otherwise agreed with the Agency the location of the weighbridge shall be as shown on Drawing No. D1/1 Rev A.

#### 4.9 Wheelwash

4.9.1 Within six months of the date of grant of this licence the licensee shall establish and maintain a wheelwash at the facility in accordance with a specification to be agreed in advance with the Agency. Unless otherwise agreed with the Agency the location of the wheelwash shall be as shown on *Drawing No. D1/1 Rev. A*.

4.9.2 The wheelwash 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 cleaner and disposed of at the working face.

4.10 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

#### 4.11 Waste Water

4.11.1 Sewage arising on-site shall be collected and disposed of at a suitable Waste Water Treatment Plant or as otherwise agreed with the Agency.

#### 4.12 Storage Areas

4.12.1 The licensee shall provide and maintain a bunded fuel storage area at the facility. Unless otherwise agreed with the Agency the location of the fuel storage area shall be as shown on Drawing No. 2/Art. 12 Rev. A. Fuels shall only be stored at the agreed location.

4.12.2 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, 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.

4.12.3 All drainage from bunded areas shall be diverted for collection and safe disposal.

4.12.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

4.12.5 The integrity and water tightness of all the bunds, tanks and containers and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee and shall be reported to the Agency within six months of the date of grant of this licence. This testing shall be carried out by the licensee at least once in every three operational years thereafter and reported to the Agency on each occasion. The licensee shall also submit to the Agency for its agreement in each case a written report on the storage of fuels at the facility. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

4.12.6 All tanks and containers shall be labelled to clearly indicate their contents.

#### 4.13 Specified Engineering Works

4.13.1 The licensee shall submit written proposals for all Specified Engineering Works, as defined in Schedule D: Specified Engineering Works, 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.

4.13.2 All specified engineering works shall be supervised by a competent person(s) agreed in advance by the Agency and that person, or persons, shall be present at all times during which relevant works are being undertaken.

4.13.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation report. 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) where relevant a drawing and sections showing the location of all samples and tests carried out;
- e) where relevant daily records sheets/diary;
- f) name(s) of contractor(s)/individual(s) responsible for undertaking the 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; and
- i) any other information requested in writing by the Agency.

#### 4.14 Surface Water, Groundwater and Leachate Management

4.14.1 Within six months of the date of grant of this licence, the licensee shall divert the culverted stream from a point upstream of the landfilled area and the diverted stream shall discharge to the tide at the existing stream outlet.

4.14.2 There shall be no recirculation of leachate or other contaminated water at the facility.

4.14.3 Within twelve months of the date of grant of this licence, the licensee shall install leachate management infrastructure at the facility. The infrastructure shall provide for the extraction/collection of leachate from the waste and its treatment either at the facility or a suitable treatment works.

#### 4.15 Landfill Gas Management:

4.15.1 Within twelve months of the date of grant of this licence, a system for the active collection and flaring of landfill gas shall be installed at the facility. The flare shall be of an enclosed type design and shall comply with the emission limits in Schedule F Emission Limits. Details of the system to be installed shall be submitted to the Agency for its agreement within six months of the date of grant of this licence.

4.15.2 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

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



- 4.15.4 Within six months of the date of grant of this licence a proposal for the utilisation of landfill gas as an energy resource shall be submitted to the Agency for its agreement.
- 4.15.5 Within three months of the date of grant of this licence proposals for the installation of five additional perimeter landfill gas monitoring locations shall be forwarded to the Agency for agreement; one at the southern perimeter of the site, two at the western perimeter and two at the eastern perimeter.
- 4.16 Capping
- 4.16.1 The licensee shall submit details of the proposed daily, intermediate and final capping systems to the Agency for its agreement within three months of the date of grant of this licence. Within three months of the date of grant of the licence the licensee shall ensure that all previously deposited waste is covered by an intermediate cover of at least 300mm.
- 4.16.2 Unless otherwise agreed with the Agency final capping shall consist of the following:
- top soil (150 -300mm);
  - subsoils, such that total thickness of top soil and subsoils is at least 1m;
  - drainage layer of 0.5m thickness having a minimum hydraulic conductivity of  $1 \times 10^{-4}$  m/s;
  - 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; and
  - gas collection layer of natural material (minimum 0.3m) or a geosynthetic layer.
- 4.16.3 Filled cells/areas of the landfill shall be permanently capped to the specifications agreed with the Agency in accordance with Condition 4.16.2 within twelve months of the cells having been filled to the required level.
- 4.16.4 The licensee shall provide a six monthly report to the Agency on the quantity of capping materials stockpiled at the facility. In the event that the stockpile fails to contain the requisite volume of capping materials for the next twelve months, the report required by this condition shall contain a proposal for the Agency's agreement for alternative sources of capping materials or for the utilisation of geosynthetic materials.
- 4.17 Within six months of the date of grant of this licence the licensee shall provide a new Civic Waste Facility at the location as shown in Drawing No-2 Art.12 Rev.A. All receptacles shall be clearly labelled to indicate their contents.

**\*Reason:** To provide for the protection of the environment.

## CONDITION 5 WASTE MANAGEMENT

- 5.1. Any wastes deemed to be in contravention of this licence and/or unsuitable for recovery or disposal at this facility shall be removed for recovery or disposal at an appropriate alternative facility. Such waste shall be stored in the Waste Quarantine Area only.
- 5.2. Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency.
- 5.3. Scavenging shall not be permitted at the facility.
- 5.4. 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) all waste deposited at the working face shall be compacted as soon as is practicable and at any rate prior to the end of the operational day.
- 5.5. The working face of the operational cell shall, at the end of each day, be covered with material suitable to minimise any nuisances occurring.
- 5.6. 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 operational day
- 5.7. The Agency shall be informed in writing at least one month prior to the licensee entering into a new filling area on site.
- 5.8. Wastes once deposited and covered shall not be excavated, disturbed or otherwise picked over with the exception of works associated with the construction and installation of the landfill gas collection system or other works agreed by the Agency without the prior agreement from the Agency.
- 5.9. No smoking shall be allowed on the facility.
- 5.10. Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency. The ultimate recovery or disposal facility for all wastes shall be agreed in advance with the Agency. 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.
- 5.11. Civic Waste Facility
  - 5.11.1. 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.
  - 5.11.2. Unless otherwise agreed with the Agency wastes to be accepted at the Civic Waste Facility shall be limited to domestic waste, batteries, textiles, waste oils, household hazardous waste, glass, beverage cans, paper, white goods and green waste for composting subject to facilities for storage being available.
  - 5.11.3. Separate skips or other suitable containers shall be provided for the acceptance of biodegradable waste destined for composting at the Civic Waste Facility and for household waste for disposal.
  - 5.11.4. Subject to Condition 1.5, household waste delivered to the Civic Waste Facility destined for landfilling shall be deposited at the working face prior to the end of the operational day and shall be covered in accordance with Condition 5.5.
  - 5.11.5. Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor(s) agreed in advance with the Agency.
  - 5.11.6. There shall be no casual public access to any part of the site apart from the civic waste facility and the access roads leading to the Civic Waste Facility.
- 5.12. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement detailed written procedures for the acceptance and handling of all wastes at both the Civic Waste Facility and the landfill.
- 5.13. Unless otherwise agreed with the Agency, within six months of the date of grant of this licence, proposals for the following at the Civic Waste Facility shall be submitted to the Agency for its agreement, including timescales for implementation:
  - 5.13.1. The recovery of biodegradable wastes for composting;

- 5.13.2. the separation of recyclable materials from the waste;
- 5.13.3. the recovery of metal waste and white goods including written procedures for degassing of CFCs from refrigerators; and,
- 5.13.4. the recovery of commercial waste, including cardboard.

**Reason:** *To provide for the acceptance and management of wastes authorised under this waste licence.*

## **CONDITION 6 ENVIRONMENTAL NUISANCES**

- 6.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by vermin, birds, flies, mud, dust and odours. Written records shall be made of all inspections and any actions taken as a result of these inspections.
- 6.2. 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.
- 6.3. Litter Control
  - 6.3.1. The measures as described in Attachment F.3 of the application shall be applied to control litter at the facility.
  - 6.3.2. Notwithstanding Condition 6.3.1 prior to the placing of any waste in any cell litter fencing shall be installed and maintained around the perimeter of the active tipping area.
  - 6.3.3. All litter control infrastructure shall be inspected on a daily basis and the licensee shall remedy any defect in the litter netting as follows:
    - a) a temporary repair shall be made by the end of the operational day; and,
    - b) a repair to the standard of the original netting shall be undertaken within three working days or as otherwise agreed with the Agency.
  - 6.3.4. All loose litter accumulated within the facility and its environs, excluding that which is deposited on the working face, shall be removed subject to the agreement of the landowners and appropriately disposed of on a daily basis.
- 6.4. Any waste placed on or in the vicinity of the facility, other than in accordance with the requirements of this licence, shall be removed by the licensee immediately and in any event by 10:00am of the next working day, after such waste is discovered. Such waste shall be disposed of at an appropriate facility.
- 6.5. The licensee shall ensure that all vehicles delivering waste to and removing waste and materials from the facility are appropriately covered.
- 6.6. Dust Control
  - 6.6.1. 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.
  - 6.6.2. The Dust Control Measures outlined in Attachment H1 shall be implemented at the facility.
- 6.7. The licensee shall ensure that vermin, birds, flies, mud, dust and odours do not give rise to nuisance at the facility or the immediate area of the facility. Any method used by the licensee

to control any such nuisance shall not cause environmental pollution or contravene any national statutory protection granted in respect of protected species.

- 6.8. Within three months from the date of grant of this licence the licensee shall submit to the Agency for its agreement, an updated assessment of the requirement for bird control measures at the facility having regard to the conditions of this licence.
- 6.9. Prior to exiting the facility, all waste vehicles shall use the wheelwash, when installed.
- 6.10. The licensee shall apply the vermin and fly control measures outlined in Attachment F.7. Notwithstanding these measures prior to the commencement of waste activities, the licensee shall submit to the Agency for its agreement a programme for the control and eradication of vermin and fly infestations at the facility. These proposals should include as a minimum, details on the rodenticide(s) and insecticide(s) to be used, operator training, mode and frequency of application and measures to contain sprays within the facility boundary.
- 6.11. With regard to the potential impact of the landfill on the agricultural activity of the surrounding area the licensee shall carry out such mitigation measures as are recommended in 8.5 of Volume 1 of the Environmental Impact Statement (dated March 1999).

**Reason:** *To provide for the control of nuisance.*

## **CONDITION 7 EMISSIONS AND ENVIRONMENTAL IMPACTS**

- 7.1. No specified emission from the facility shall exceed the emission limit values set out in Schedule F: Emission Limits of this licence. There shall be no other emissions of environmental significance.
- 7.2. 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.
- 7.3. The licensee shall ensure that the activities shall be carried out in a manner such that air emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.
- 7.4. Landfill Gas
- 7.4.1. The following are the trigger levels for landfill gas emissions from the facility measured in any service 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.
- 7.5. Disposal of Leachate
- Any leachate or other contaminated water removed from the facility shall be discharged to Carrigaline Sewerage Scheme unless otherwise agreed in advance with the Agency.

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

## CONDITION 8 RESTORATION AND AFTERCARE

- 8.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement a revised and updated Restoration and Aftercare Plan for the facility to be agreed with the Agency. The revised plan shall take into consideration the cessation of disposal activities at the landfill facility, the type of agricultural end use to which the site will be devoted and the exact portions of the site to be used as a wildlife area. In preparing the Plan the licensee shall have regard to the requirements of the Landfill Directive (1999/31/EC) and the guidance published in the Agency's *Landfill Manual: "Landfill Restoration and Aftercare"*. A schedule detailing the various stages of restoration, including timescales, shall be included in the Plan. The Plan shall include plan view drawings of final restoration and aftercare options for the site so that an option may be agreed with the Agency.
- 8.2. 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.
- 8.3. 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.
- 8.4. Where tree planting is proposed to be carried out above waste-filled areas, a synthetic barrier shall be used to augment the clay cap. Topsoil and subsoil depths shall be a minimum of 1m unless otherwise agreed in advance with the Agency.
- 8.5. Within nine months of the date of grant of this licence a detailed landscaping plan shall be submitted to the Agency for its agreement for the establishment of the nature reserve referred to in section g. 'Restoration and Aftercare' of the response to Article 16 notice dated 30/08/00. It shall include a timetable for the commencement and completion of such works.

**Reason:** *To provide for the restoration and aftercare of the facility.*

## CONDITION 9 ENVIRONMENTAL MONITORING

- 9.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in Schedule F: Monitoring and as specified in the Conditions of this licence.
- 9.2. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement, additional monitoring proposals to detect off-site migration of landfill gas.
- 9.3. Within three months from the date of grant of this licence, the licensee shall submit to the Agency for its agreement details of the permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.
- 9.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and off-site points as required by the Agency.
- 9.5. The licensee shall maintain all sampling and monitoring points, and clearly label and name (including national grid number) all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.
- 9.6. 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 or discharge or environmental parameter.

- 9.7. The licensee shall amend the frequency, locations, methods and scope of monitoring, sampling, analyses and investigations 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.
- 9.8. Unless otherwise agreed with the Agency, a written record shall be kept of the names, qualifications and a summary of relevant experience 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.
- 9.9. Unless otherwise specified by this licence or agreed by the Agency, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 9.10. Within six months of the date of grant of this licence, and quarterly thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility and provide a report on that assessment to the Agency.
- 9.11. Within three months of the date of grant of this licence the licensee shall submit to the Agency for agreement a proposal for the inclusion of the area to the north of the current site boundary in the monitoring programme for surface water, groundwater, leachate and landfill gas. This is the area where landfilling has taken place historically and the monitoring shall be subject to the agreement of the landowner.
- 9.12. Within six months of the date of grant of this licence, the licensee shall submit to the Agency an updated appropriately scaled drawing(s) showing the location of all the monitoring locations that are stipulated in this licence.
- 9.13. All on-site monitoring points as described in Condition 9 shall be tagged in situ with their agreed sampling point codes within ten months of the granting of this licence.

**Reason:** *To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.*

## CONDITION 10 CONTINGENCY ARRANGEMENTS

- 10.1. The licensee shall, 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.
- 10.2. 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.
- 10.3. 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.
- 10.4. No waste shall be burnt within the boundaries of the facility. A fire at the facility shall be treated as an emergency. Immediate action shall be taken to extinguish it and the appropriate authorities notified.
- 10.5. 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 incident. The licensee shall submit to the Agency for its agreement and within a time specified in writing by the Agency, written proposals for the provision of an alternative supply of water to those affected.
- 10.6. Unless otherwise notified in writing by the Agency, in the event that any monitoring, sampling, complaints or observations indicate that an incident has, or may have, taken place, 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;
  - c) isolate the source of the 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 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.
- 10.7. 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 incident and a proposal for remediation action submitted to the Agency for its agreement within one month of the date of the monitoring being carried out.

**Reason:** *To provide for the protection of the environment.*

# CONDITION 11 CHARGES AND FINANCIAL PROVISIONS

## 11.1 Agency Charges

11.1.1 The licensee shall pay to the Agency an annual contribution of £ 10,416 (Euro 13,226) 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 2002 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 2001, the licensee shall pay a pro rata amount from the date of this licence to 31<sup>st</sup> December 2001. This amount shall be paid to the Agency within one month of the date of grant of this licence.

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

## 11.2 Financial Provision for Closure, Restoration and Aftercare

11.2.1 The licensee shall arrange for the completion of a comprehensive and fully costed Environmental Liabilities Risk Assessment for the facility which will address liabilities arising from the carrying on of the activities to which this licence relates. A report on this assessment shall be submitted to the Agency for its agreement within six months of date of grant of this licence.

11.2.2 Within nine months of the date of grant of this licence, the licensee shall make a Proposal for Financial Provision to the Agency for its agreement to cover any liabilities incurred by the licensee in carrying on the activities to which this licence relates. Such provision shall be maintained by the licensee unless otherwise agreed by the Agency.

11.2.3 The amount of financial provision, held under condition 11.2.2 shall be reviewed and revised as necessary, but at least annually. Any proposal for such a revision shall be submitted to the Agency for its agreement.

11.2.4 The licensee shall within two weeks of purchase, renewal or revision of the financial provision required under condition 11.2.2, forward to the Agency written proof of such indemnity.

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



# SCHEDULE A : Content of the Environmental Management Programme

## Environmental Management Programme

Items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency, or otherwise as agreed with the Agency

Timescale for achieving the objectives and targets listed in the Schedule of Objectives and Targets

Designation of Responsibility for Achieving Targets and Objectives

Other items specified by the Agency

# SCHEDULE B :Content of the Annual Environmental Report

## Annual Environmental Report Content <sup>NOTE 1</sup>

Reporting Period.

Waste activities carried out at the facility.

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

Calculated remaining capacity of the facility and date on which final capacity is expected to be reached.

Methods of deposition of waste.

Summary report on emissions.

Summary of results and interpretations of environmental monitoring, including plans and any updates of all monitoring locations including 12 digit grid references.

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 quantity of indirect emissions to groundwater.

Monthly water balance calculation and interpretation.

Schedule of Environmental Objectives and Targets for the forthcoming year.

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

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.

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

Any other items specified by the Agency.

NOTE 1 Content to be revised subject to the agreement of the Agency after cessation of waste acceptance at the facility.

# SCHEDULE C :Recording and Reporting to the Agency

Table C.1 Recurring Reports

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

Note 1: Unless altered at the request of the Agency

## SCHEDULE D : Specified Engineering Works

Specified Engineering Works
Landfill cap installation, including temporary and intermediate capping, installation and all other containment works (including any containment works relating to leachate control).
Fencing and site security works.
Bunding of fuel and oil storage areas.
Installation of landfill gas management and monitoring systems.
Installation of leachate management, detection, storage, treatment, monitoring and control systems.
Installation of alternative drinking water supplies.
Installation of groundwater control and/or monitoring systems.
Surface water management works.
Restoration and Aftercare Works.
Nuisance control measures
Any other works notified in writing by the Agency.

# SCHEDULE E : Monitoring

Monitoring to be carried out as specified below.

## E.1 Landfill Gas

Landfill gas monitoring locations shall be those as set out in Table E.1.1 and as shown in Drawing No. A1/3 Rev.A and as described in section J.4 of the application.

Table E.1.1 Monitoring Locations

STATION	
G+L 1	G 6 <sup>Note 1</sup>
G+L 2	G 7 <sup>Note 1</sup>
G+L 3	G 8 <sup>Note 1</sup>
G+L 4	G 9 <sup>Note 1</sup>
G+L 5	G 10 <sup>Note 1</sup>
	Note 2

Note 1: Additional perimeter landfill gas monitoring locations to be agreed with the Agency (two at easterly boundary. Two at westerly boundary and one at southerly boundary).

Note 2: Further monitoring points in the older landfilled area shall be agreed in advance with the Agency, subject to Condition 9.11.

Note 3: G+L 1-5 are combined landfill gas and leachate monitoring boreholes.

Table E.1.2 Landfill Gas Monitoring Frequency and Technique

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

Note1: All monitoring equipment used should be intrinsically safe.

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

## E.2 Dust

Dust monitoring locations shall be those as set out in Table E.2.1 and Attachment J.1 of the application and as shown in Drawing No. A1/3 Rev.A.

Table E.2.1 Dust Monitoring Locations

STATION
D.1
D.2
D.3

Table E.2.2 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>

Note 1: Standard method VDI2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute). A modification (not included in the standard) which 2 methoxy ethanol may be employed to eliminate interference due to algae growth in the gauge.

Note 2: Twice during the period May to September, or as otherwise specified in writing by the Agency. With the agreement of the Agency monitoring can cease once landfill restoration is complete.

### E.3 Noise

Noise monitoring locations shall be those as set out in Table E.3.1 and Drawing No. A1/3 Rev. A of the application.

Table E.3.1 Noise Monitoring Locations

STATION	
N1	N5
N2	N6
N3	N7
N4	

Table E.3.2 Noise Monitoring Frequency and Technique

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

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

### E.4 Surface Water, Groundwater and Leachate

Surface water monitoring locations shall be those as set out in Table E.4.1 and Drawing No. A1/3 Rev. A of the application and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.1 Surface Water Monitoring Locations

STATION
S1
S2
S3
Note 1

Note 1: Additional monitoring points to be included subject to Condition 9.11.

Groundwater monitoring locations shall be those as set out in Table E.4.2 and Drawing No. A1/3 Rev. A of the application and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.2 Groundwater Monitoring Locations

STATION	
GW1	GW6
GW2	GW7 to be agreed <sup>Note 1</sup>
GW3	GW8 to be agreed <sup>Note 1</sup>
GW4	To be agreed <sup>Note 2</sup>
GW5	

Note 1: Additional downstream groundwater monitoring boreholes shall be installed in accordance with Condition 4.14

Note 2: Additional monitoring points to be included subject to Condition 9.11.

Leachate monitoring locations shall be those as set out in Table E.4.3 and Drawing No. A1/3 Rev. A of the application and of the parameters and frequencies outlined in Table E.4.4.

Table E.4.3 Leachate Monitoring Locations

LEACHATE MONITORING LOCATIONS	
G+L 1	G+L 5
G+L 2	To be agreed <sup>Note 1</sup>
G+L 3	
G+L 4	

Note 1: Further monitoring locations shall be agreed in advance with the Agency subject to Condition 9.11.

**Table E.4.4 Water and Leachate - Parameters /Frequency**

Parameter <sup>Note 1</sup>	SURFACE WATER	GROUNDWATER	LEACHATE
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour <sup>Note 2</sup>	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly	Monthly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Monthly	Quarterly
pH	Quarterly	Monthly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Monthly	Quarterly
Boron	Not Applicable	Annually	Annually
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
Iron	Annually	Annually	Quarterly
Lead	Annually	Annually	Annually
List I/II organic substances <sup>Note 3</sup>	Not applicable	Annually	Note 5
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Potassium	Annually	Quarterly	Quarterly
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Quarterly
Total Alkalinity	Annually	Annually	Not applicable
Total Phosphorus / orthophosphate	Annually	Annually	Annually
Total Oxidised Nitrogen	Annually	Quarterly	Quarterly
Total Organic Carbon	Not Applicable	Quarterly	Not Applicable
Residue on evaporation	Not Applicable	Annually	Not Applicable
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms <sup>Note 4</sup>	Not Applicable	Annually	Annually
Total Coliforms <sup>Note 4</sup>	Not Applicable	Annually	Annually
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. The testing laboratory and the testing procedures shall be agreed with the Agency in advance.

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

- Note 3: 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 (US Environmental Protection Agency method 525 or equivalent), and pesticides (US Environmental Protection Agency method 608 or equivalent)
- Note 4: If there is evidence of bacterial contamination, the analysis at up gradient and downgradient monitoring points should include enumeration of total bacteria at 22°C and 37°C and faecal streptococci.
- Note 5: Once off for List I/II organic substances and thereafter as required by the Agency.
- Note 6: To be undertaken at locations to be agreed in advance with the Agency, at least one upstream and one downstream of the landfill. Appropriate biological methods (such as EPA Q-Rating System to be used for the assessment of rivers and streams).

## E.5 Meteorological Monitoring

Table E.5.1 Meteorological Monitoring:  
Data to be obtained from a location to be agreed with the Agency.

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

## SCHEDULE F :Emission Limits

**F.1 Noise Emissions:** (Measured at the monitoring points indicated in Table E.3.1).

Day dB(A) $L_{Aeq}(30 \text{ minutes})$	Night dB(A) $L_{Aeq}(30 \text{ minutes})$
55	45

**F.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

**F.3 Dust Deposition Limits:** (Measured at the monitoring points indicated in Table E.2.1).

Level ( $\text{mg}/\text{m}^2/\text{day}$ ) <sup>Note 1</sup>
350

Note 1: 30 day composite sample with the results expressed as  $\text{mg}/\text{m}^2/\text{day}$ .

**F.4 Emission Limit Values for Landfill Gas Flares & Utilisation Plant**

Emission Point: reference no's to be agreed in advance with the Agency

Location: Landfill Gas Combustion Plant and flarestacks

Volume to be emitted from each stack: 3,000 m<sup>3</sup>/hour.

Minimum discharge height for each stack: 5m.

Parameter	Emission Limit Value <sup>Note 2</sup>
Nitrogen oxides as (NO <sub>2</sub> )	500 mg/m <sup>3</sup> (150mg/m <sup>3</sup> ) <sup>Note 3</sup>
CO	650 mg/m <sup>3</sup> (50mg/m <sup>3</sup> ) <sup>Note 3</sup>
Particulates	130 mg/m <sup>3</sup>
TA Luft Organics Class I <sup>Note 1</sup>	20 mg/m <sup>3</sup> (at mass flows > 0.1 kg/hr)
TA Luft Organics Class II <sup>Note 1</sup>	100 mg/m <sup>3</sup> (at mass flows > 2 kg/hr)
TA Luft Organics Class III <sup>Note 1</sup>	150 mg/m <sup>3</sup> (at mass flows > 3kg/hr)
Hydrogen Chloride	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)
Hydrocarbons	10mg/m <sup>3</sup>

Note 1: 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 2: Dry gas referenced to 5% oxygen by volume.

Note 3: Emission limit Values in brackets represent limit values for flare units.

## SCHEDULE G : Waste Acceptance

### G.1 Waste Types and Quantities

**Table G.1 Waste Types and Quantities**

WASTE TYPE	MAXIMUM (TONNES)
Municipal	20,000
Inert	40,000

### G.2 Inert Waste

#### G.2.1 Acceptable Waste(s)

Recovery

Only the wastes in Table G.2.1 are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

Table G.2.1 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	

#### G.2.2 Acceptance Criteria



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

**Level 1: Basic Characterisation**

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

**Level 2: Compliance Testing**

This constitutes periodical testing by simpler standard analysis and behaviour-testing methods to determine whether a waste complies with condition and /or specific reference criteria. The tests focus on key variables and behaviour identified by basic characterisation.

**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. It may merely consist of a visual inspection of a load of waste before and after unloading at the landfill site.

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

All wastes accepted for disposal at the landfill shall undergo the Level 3: On-site verification at a minimum.

In addition to the above a representative load from every excavation/demolition/waste removal works is subjected to a comprehensive assessment which must satisfy Level 1 characterisation.

The comprehensive assessment must at a minimum include the following:

1. A chemical analysis of a representative sample. At least one sample per 1,500 tonnes or portion thereof must be taken for chemical analysis for each excavation or demolition works. However, if the comprehensive assessment is undertaken prior to the commencement of excavation or clearance activity, the licensee may reduce the number of samples for chemical analysis to one for each 7,5000 tonnes or portion thereof. The sampling location must be identified on a sampling grid and enclosed in the comprehensive assessment.
2. An evaluation of the acceptability of the recovery of the waste at the landfill including observance of limits for total pollutants contents in Schedule G.4 below.
3. A statement of any pre-treatment requirement (if any).
4. Evidence that the waste displays no hazardous properties upon acceptance at the facility.

If as a result of examinations undertaken in the course of excavation or clearance activity, the suspicion of contamination should arise, the type and concentration of the contamination must be determined, and its extent established through additional sampling.

Wastes of unknown origin or with insufficient waste description must be subjected to a chemical analysis.

In addition to the assessment above representative samples upon delivery of wastes must be taken for compliance testing purposes (Level 2). The tests shall focus on key variables and behaviour identified by the chemical analysis.

A representative sample shall be taken from one in every 100 loads of waste accepted at the facility. This sample shall be subjected to Level 2 testing. Part of this sample shall be retained at the facility for three months and be available for inspection/analysis by the Agency.

### G.2.3 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)	200.0	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)	500.0	10.0
Nickel (as Ni)	500.0	2.0
Mercury (as Hg)	3.0	0.05
Silver (as Ag)		1.0
Zinc (as Zn)	1500.0	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>1</sup>	500.0
Total hydrocarbons	100.0	50.0
EOX		3.0
Total PAH <sup>2</sup>	2.0	

<sup>1</sup> The TOC limit value is complied with as long as the loss on ignition does not exceed 5% per weight.

<sup>2</sup> 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.

**Sealed by the seal of the Agency on this  
24<sup>th</sup> day of May, 2001.**

**PRESENT when the seal of the Agency  
was affixed hereto:**

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**Anne Butler**

**Director**

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