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Ireland

**WASTE LICENCE
LANDFILL FOR NON-HAZARDOUS WASTE**

PROPOSED DECISION

Waste Licence	59-2
Register Number:	
Applicant:	Roscommon County Council
Location of Facility:	Ballaghaderreen Landfill, Aghalustia Townland, Ballaghaderreen, County Roscommon.

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 and development by Roscommon County Council of a landfill facility at Aghalustia Townland, Ballaghaderreen, County Roscommon. This licence provides for the construction of six new lined cells at the facility and an increase in the annual waste intake tonnage to 25,000. The proposed decision also provides for the installation of leachate, landfill gas and surface water management infrastructure at the facility.

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

The licence sets out in detail the conditions under which Roscommon 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 Roscommon County Council to carry on the waste activities listed below at Aughalustia Townland, Ballaghaderreen, Co. Roscommon 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

Class 1	Deposit on, in or under land (including landfill): This activity is limited to the disposal of waste into unlined areas of the facility prior to the provision of lined cells at the facility
Class 4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the collection of leachate in a lagoon at the facility
Class 5	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment: This activity is limited to the disposal of waste in lined cells
Class 13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced: This activity is limited to the storage of waste at the facility prior to disposal

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 collection of household organic/green wastes at the Civic Waste Facility.
Class 3	Recycling or reclamation of metals and metal compounds: This activity is limited to the collection of metals at Civic Waste Facility

Class 4	Recycling or reclamation of other inorganic materials: This activity is limited to the collection of wastes at the Civic Waste Facility and for the recovery of inert waste as cover material and in the restoration of the facility.
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 compost or stabilised biodegradable waste in the restoration of the facility.
Class 13	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced: This activity is limited to the storage of materials prior to its removal off-site for recycling/recovery.

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.

Adequate lighting	20 lux measured at ground level.
Agreement	Agreement in writing.
Annually	At approximately twelve monthly intervals.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of the waste licence application.
Application	The application by the licensee for this waste licence.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
Biodegradable waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
Condition	A condition of this licence.
Construction and Demolition Waste	All wastes which arise from construction, renovation and demolition activities.
Containment boom	A boom which can contain spillages and prevent them from entering drains or watercourses.
Cover material	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.
Daily Cover	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.
Daytime	0800 hrs to 2200 hrs.
Documentation	Any report, record, result, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in <i>Schedule C: Emission Limits</i> , of this licence.

European Waste Catalogue (EWC)	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.
Green waste	Waste wood (excluding timber), plant matter such as grass cuttings, and other vegetation.
Hours of Operation	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.
Hours of Waste Acceptance	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.
Inert waste	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.
Intermediate Cover	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.
Landfill	Refers to the area of the facility where the waste is disposed of by placement on the ground or on other waste.
Landfill Directive	Council Directive 1999/31/EC on the landfill of waste.
Landfill Gas	Gases generated from the landfilled waste.
LEL (Lower Explosive Limit)	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.
Licence	A waste licence issued in accordance with the Act.
Licensee	Roscommon County Council
List I/II Organics	Substances classified pursuant to EC Directives 76/464/EEC and 80/68/EEC.
Liquid Waste	Any waste in liquid form and containing less than 2% dry matter. Any waste tankered to the facility.
Maintain	Keep in a fit state, including such regular inspection, servicing and repair as may be necessary to adequately perform its function.
Mobile Plant	Self-propelled machinery used for the emplacement of wastes or for the construction of specified engineering works.
Monthly	A minimum of twelve times per year, at approximately monthly intervals.

Night-time

2200 hrs to 0800 hrs.

Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc which may be recycled.
Quarterly	At approximately three monthly intervals.
Sample(s)	Unless the context of this licence indicates to the contrary, samples shall include measurements by electronic instruments.
Sludge	The accumulation of solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with between 2% and 14% dry matter.
Specified Emissions	Those emissions listed in <i>Schedule C: Emission Limits</i> , of this licence.
Specified Engineering Works	Those engineering works listed in <i>Schedule B: Specified Engineering Works</i> , of this licence.
Treated Sludge	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.
Treatment	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.
Trigger Level	A parameter value specified in the licence, the achievement or exceedance of which requires certain actions to be taken by the licensee.
White Goods	Refrigerators, cookers, ovens and other similar appliances.
EPA Working Day	Refers to the following hours: 0900 hrs to 1730 hrs Monday to Friday inclusive.
Working Face	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 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.1.1 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, Industrial Waste and Construction and Demolition waste may be 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 Acceptance.
 - 1.5.1. 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. Shredded tyres shall not be disposed of at the facility from 16 July 2006.
 - 1.5.2. No hazardous wastes, liquid wastes or sludges shall be disposed of at the facility.
 - 1.5.3. The licensee shall ensure that inert waste accepted at the facility is subject to treatment where technically feasible.
 - 1.5.4. The licensee shall ensure that all wastes being accepted at the facility after July 16th 2009 are subject to treatment prior to disposal as required by Article 6 of the Landfill Directive (1999/31/EC).
- 1.6. Waste Acceptance Hours and Hours of Operation.
 - 1.6.1. Landfill:-
 - 1.6.1.1. Waste may only be accepted at the facility for disposal at the landfill between the hours of 8.00am – 4.30pm Monday to Friday inclusive and from 10.00am – 12.30pm on Saturdays.
 - 1.6.1.2. The landfill at the facility may only be operated during the hours of 7.30am – 6.00pm Monday to Friday inclusive and from 8.00am – 2.00pm on Saturdays.
 - 1.6.1.3. Waste shall not be accepted at the landfill on Bank Holidays or Sundays unless agreed in advance with the Agency.
 - 1.6.2. Civic Waste Facility:-
 - 1.6.2.1. Waste shall only be accepted at the Civic Waste Facility between the hours of 9.00am – 4.30pm Monday to Friday inclusive and 10.00am – 12.30pm on Saturdays.
- 1.7. 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.
 - d) Any indication that environmental pollution has, or may have, taken place.
- 1.8. 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.
- 1.8.1. 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.
 - 1.8.2. 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.
 - 1.8.3. 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.
- 1.9. 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.
- 1.10 This licence has been granted in substitution for the waste licence granted to the licensee on 10th October 2000 and bearing Register Number 59-1. The previous waste licence (Reg. No. 59-1) is replaced by this revised 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 The licensee shall submit written details to the Agency of any proposed amendments to the management structure. 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.
- 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 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 revision (where appropriate) of the existing 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.

2.3.2 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: -

- a) The items specified to be contained in an Environmental Management Plan in the Landfill Operational Practices Manual published by the Agency.
- b) Methods by which the objectives and targets will be achieved and the identification of those responsible for achieving those objectives and targets.
- c) 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 a Communications Programme to 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 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.
- 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.
- f) Where environmental information relating to the facility can be obtained.

3.4 Facility Security.

- 3.4.1 Security and stockproof fencing and gates shall be installed and maintained around the boundary of the facility. Palisade fencing and gates shall be maintained along the southern boundary of the facility. Subject to the agreement of the Agency temporary security fencing may be used during construction of additional cells at the facility.
- 3.4.2 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.
- 3.4.3 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.
 - 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 Site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.
- 3.5.2 Within six months of the date of grant of this licence, the facility entrance area, the access road to the Civic Waste Facility, the Civic Waste Facility itself, the approach road to the weighbridge and the site road from the vehicle wash to the facility entrance shall be surfaced so as to minimise infiltration.
- 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 leachate collection system.
- 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 at the facility
- 3.10 Tank and Drum Storage Areas.
- 3.10.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein.

3.10.2 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.

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

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

3.10.5 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 following its installation and prior to its use as a storage area. This confirmation shall be repeated at least once every three years thereafter and reported to the Agency on each occasion.

3.11 Landfill Lining:

3.11.1 The landfill liner shall comprise:-

- a) A composite liner consisting of a 1m layer of compacted soil with a hydraulic conductivity of less than or equal to 1×10^{-9} m/s, (or equivalent to be agreed with the Agency) overlain by a 2mm thick high density polyethylene (HDPE) layer.
- b) A geotextile protection layer placed over the HDPE layer.
- c) A 500mm thick drainage layer placed over the geotextile layer with a minimum hydraulic conductivity of 1×10^{-3} m/s, of pre-washed, uncrushed, granular, rounded stone (16 - 32mm grain size) incorporating leachate collection drains.
- d) The side walls shall be designed and constructed to achieve an equivalent protection.

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

3.11.3 Unless otherwise agreed with the Agency the layout and formation levels of the cells of any new cells at the facility shall be as shown on Drawing No. 601 of the application.

3.12 Leachate Management Infrastructure

3.12.1 Leachate management infrastructure shall be provided and maintained in all new lined cells as facility as described in Section D.4.a of the application.

3.12.2 Leachate management for unlined areas of the facility shall consist *inter alia* of the following:

- (i) A leachate interception drain along the eastern and northern boundaries of the existing waste body.
- (ii) Collection of leachate by gravity from unlined cells 4 and 5.
- (iii) Within six months of the date of grant of this licence, the licensee shall provide a leachate collection/interception drain along the western boundary of the facility.

3.12.3 All leachate collected at the facility shall be pumped/drained to the leachate storage lagoon prior to removal off-site.

3.12.4 The licensee shall provide and maintain a leachate storage structure at the facility to facilitate the storage of leachate abstracted/collected from the waste.

3.12.5 The licensee shall provide means of removing dissolved methane from the leachate prior to discharge to the sewer. Any such technology employed shall ensure that dissolved methane does not exceed the limit as per *Schedule C: Emission Limits*, of this licence. Any methane removed from the leachate shall be fed to the on-site Landfill Gas Management System.

3.13 Landfill Gas Management.

3.13.1 Within six months of the date of grant of this licence, infrastructure for the active collection of landfill gas shall be installed at the facility. Unless otherwise agreed with the Agency the licensee shall install an enclosed landfill gas flare at the facility. The design details and location of the flare shall be agreed in advance with the Agency. Flare unit efficiency shall be tested once it is installed and once every three years thereafter.

3.13.2 Any landfill gas utilisation plant required as per Condition 11.5 shall be installed at the facility.

3.13.3 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

3.14 Surface Water Management.

3.14.1 Effective surface 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.
- b) The collection/diversion of run off arising from capped and restored areas.

3.15 Groundwater Management.

3.15.1 Effective groundwater management infrastructure shall be provided and maintained at the facility to provide protection of the groundwater resources from pollution by the waste activities.

3.16 Civic Waste Facility

3.16.1 The licensee shall provide and maintain the Civic Waste Facility at the facility.

3.17 Telemetry

3.17.1 Within six months of the date of grant of this licence, a telemetry system shall be installed and maintained at the facility. All facility operations linked to the telemetry system shall also have a manual control which will be reverted to in the event of break in power supply or during maintenance.

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

- a) Recording of leachate levels in the lined cells and lagoon.
- b) Recording groundwater levels in the groundwater sump(s) beneath the lined cell(s).
- c) Permanent gas monitoring system to be installed in the site office and any other enclosed structures at the facility.

3.18 Monitoring Infrastructure.

3.18.1 Landfill Gas:-

- a) Prior to the commencement of the capping works at the facility and subject to the agreement of landowners the licensee shall provide a representative number of monitoring locations for the measurement of the potential off-site migration of landfill gas.

- b) The licensee shall maintain an effective permanent gas monitoring system in the site office and any other enclosed structures at the facility.

3.18.2 Groundwater:-

- a) The licensee shall install provide and maintain one upgradient and two downgradient monitoring points to allow for the sampling and analyses of groundwater from the limestone aquifer.

3.18.3 Leachate:-

- a) The licensee shall provide and maintain two monitoring points within the existing waste body and one monitoring point per lined cell to allow for the sampling and analysis of leachate.

3.18.4 Replacement of Infrastructure:-

- a) Monitoring infrastructure which is damaged or proves to be unsuitable for its purpose shall be replaced within three months 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. Within three months of the date of grant of this licence the licensee shall submit a restoration plan for the facility for the agreement of the Agency. The restoration of the facility shall be carried out on a phased basis and the restored height of the facility shall not exceed 88.5mOD as per Drawing C7.5 of the application.
- 4.2. All unlined areas of the landfill where waste has been deposited other than the facility entrance, civic waste facility, office/weighbridge/wheelwash areas and the site roads shall be capped within twelve months of the date of grant of this licence.
- 4.3. Final Capping.
 - 4.3.1. The final capping shall consist of the following:-
 - a) Topsoil (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 1×10^{-4} m/s.
 - d) Compacted mineral layer of a minimum 0.6m thickness with a permeability of less than 1×10^{-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.
- 4.4. 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. Soil Storage.

- 4.6.1. All soils shall be stored to preserve the soil structure for future use and in addition shall be stored in such a manner so as to minimise dust emissions.

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. No wastes shall be disposed of into any unlined areas at the facility.
- 5.2 Waste Acceptance and Characterisation Procedures
- 5.2.1 Within six months of the date of grant of this licence the licensee shall submit to the Agency for its agreement written procedures for the acceptance and handling of all wastes. These procedures shall include methods 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 one month.
- 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 40 metres in length 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 one month 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.
- b) Waste on the working face during the operational hours of the facility.
- 5.6 Landscaping.

- 5.6.1 The licensee shall complete a programme of planting along the boundaries of the facility so as to minimise the visual impact of the facility. A plan outlining the proposed programme of planting shall be submitted to the Agency for agreement within three months of the date of grant of this licence.
- 5.7 Operational Controls.
- 5.7.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.7.2 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 and the restoration of the facility.
- 5.7.3 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.
- 5.7.4 Lined cells shall be permanently capped within twelve months of the cells having been filled to the required level.
- 5.7.5 Scavenging shall not be permitted at the facility.
- 5.7.6 Gates shall be locked shut when the facility is unsupervised.
- 5.7.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.7.8 Fuels shall only be stored at appropriately bunded locations on the facility.
- 5.7.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.7.10 No smoking shall be allowed on the facility (other than at an area to be agreed with the Agency).
- 5.8 Off-site Disposal and Recovery.
- 5.8.1 Waste sent off-site for recovery or disposal shall only be conveyed by a waste contractor agreed by the Agency.
- 5.8.2 All waste transferred from the facility shall only be transferred to an appropriate facility agreed by the Agency.
- 5.8.3 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.
- 5.9 Civic Waste Facility.
- 5.9.1 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.
- 5.9.2 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.
 - d) In the case where inspection is required, into a designated inspection area.
- 5.9.3 The licensee shall assign and clearly label each container at the Civic Waste Facility to indicate their contents.
- 5.10 Leachate Management.

- 5.10.1 Leachate levels in lined cells shall not exceed a level of 1.0m over the top of the liner at the base of the landfill.
- 5.10.2 The level of leachate in the pump sumps, the lined cells and the leachate lagoon shall be monitored continuously by a system that shall automatically activate leachate pumps to maintain leachate at the required level. A high level alarm shall also be installed in the pump sumps and the leachate lagoon.
- 5.10.3 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.
- 5.10.4 Leachate stored in the leachate storage lagoon shall be pumped to Ballaghaderreen Wastewater Plant or another wastewater treatment plant to be agreed in advance with the Agency.
- 5.10.5 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.
- 5.11 Wastewater management.
- 5.11.1 Unless otherwise agreed with the Agency, all wastewaters generated at the facility shall be discharged to sewer.
- 5.12 Maintenance.
- 5.12.1 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.
- 5.12.2 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.
- 5.12.3 The licensee shall maintain and clearly label and name all sampling and monitoring locations.
- 5.12.4 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; or
- 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;

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

6.3.3.1. Continuous monitoring:-

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

6.3.3.2. Non-Continuous Monitoring:-

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

6.4. Groundwater.

6.4.1 Within nine 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 leachate (treated or otherwise) or contaminated surface water shall be discharged to the River Lung catchment.

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. Emissions to Sewer

6.6.1. Unless otherwise agreed in advance with the Agency the following shall apply for the discharge of leachate to sewer. There shall be no other discharge or emission to sewer of environmental significance.

6.6.2. No substance shall be present in emissions to sewer in such concentrations as would constitute a danger to sewer maintenance personnel working in the sewerage system, or as

would be damaging to the fabric of the sewer, or as would interfere with the biological functioning of a downstream wastewater treatment works.

- 6.6.3. The licensee shall permit authorised persons of the Agency to inspect, examine and test, at all reasonable times, any works and apparatus installed, in connection with the discharge or emission, and to take samples of the discharge or emission.
- 6.6.4. No discharge or emission to sewer shall take place which might give rise to any reaction within the sewer or to the liberation of by-products which may be of environmental significance.
- 6.6.5. The licensee shall ensure that the discharge shall not contain dissolved methane, petroleum spirits or organic solvents (including chlorinated organic solvents), at concentrations which would give rise to flammable or explosive vapours in the sewer.
- 6.6.6. The licensee shall provide and maintain an inspection chamber in a suitable position in connection with each pipe through which a discharge or emission is being made. Each such inspection chamber or manhole shall be constructed and maintained by the licensee so as to permit the taking of samples of the discharge.
- 6.6.7. Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-
- a) Continuous monitoring.
No flow value shall exceed the specified limit
 - b) Non-Continuous monitoring.
Eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling shall not exceed 1.2 times the emission limit value.
 - c) No grab sample shall exceed 1.2 times the emission limit value.

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 Litter fencing shall be installed and maintained around the perimeter of the active tipping area prior to the disposal of any waste in any cell.
 - 7.3.2 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.

- b) A repair to the standard of the original netting shall be undertaken within three working days.

7.3.3 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.

7.3.4 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 birds of prey and/or other bird scaring techniques.

7.6.2 Every six months the licensee shall assess and report on the effectiveness of bird control measures in place at the facility and where necessary the control measures shall be modified.

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.

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 The licensee shall install and maintain a permanent gas monitoring system in the site office and any other enclosed structures at the facility.

8.6 Within two months of the date of grant of this licence the following information shall be submitted to the Agency for its agreement: the names, qualifications and a summary of the relevant experience of all persons that will 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. Any proposed changes to the above shall be submitted to the Agency for its agreement.

8.7 Within three months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement an updated appropriately scaled drawings showing all the monitoring locations

that are stipulated in this licence. The drawing shall include the twelve figure National Grid Reference for the various monitoring points.

8.8 Groundwater Monitoring.

8.8.1 Subject to the agreement of the well owners, any private wells within 250m of the facility shall be included in the monitoring programme set out in *Schedule D: Monitoring* of this licence.

8.9 Meteorological Monitoring.

8.9.1 The licensee shall provide for the monitoring/collection of meteorological data as referred to in *Schedule D.6 Meteorological Monitoring* of this licence.

8.9.2 The licensee shall, within three months of the date of grant of this licence, install in a prominent location on the site a wind sock, or other wind direction indicator.

8.10 Topographical Survey.

8.10.1 A topographical survey shall be carried out within six months of the date of grant of this licence and on an annual basis thereafter. The survey shall assess the height and profiles of the existing waste body. The survey shall be in accordance with any written instructions issued by the Agency

8.11 Biological Assessment.

8.11.1 A biological assessment of the River Lung shall be undertaken on an annual basis. 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.

8.12 Archaeological Assessment.

8.12.1 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.

8.13 Nuisance Monitoring.

8.13.1 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.

<p><i>REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions</i></p>

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:-
 - a) Identify and put in place measures to avoid reoccurrence of the incident.
 - b) Identify and put in place any other appropriate remedial action.
- 9.2. Within six months of the date of grant of this licence, submit a revised 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.

<p><i>REASON: To ensure compliance with the conditions of this licence by provision of a satisfactory system of monitoring of emissions.</i></p>
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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 a 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 collection permit details).
 - c) The vehicle registration number.

- d) The name of the producer(s)/collector(s) of the waste as appropriate.
- e) The name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number.
- f) A description of the waste including the associated EWC codes.
- g) The quantity of the waste, recorded in tonnes.
- 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.
- 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.
- e) The response made to each complainant.

10.5 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 Waste Water Treatment Plant to which the leachate was transported.
- e) Any incidents or spillage's of leachate during its removal or transportation.

10.6 Where leachate is discharged from the facility via a sewer line the volume of leachate discharged each day shall be recorded (m³/day).

10.7 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.
- g) The time and date of departure.

10.8 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.
- 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 four 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.
- 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 1000 hrs 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.
- c) In the event of any incident which relates to discharges to surface water, notify Shannon Regional Fisheries Board as soon as practicable and in any case not later than 1000 hrs 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 nine 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) Composting of biodegradable or green waste at the facility having regard to good practice and sustainability.
- g) Inert waste to be used for cover/restoration material at the facility.

11.4 Reports relating to Facility Operations.

11.4.1. Leachate Management:-

11.4.1.1 Within three months of the date of grant of this licence the licensee shall submit a report to the Agency addressing the following items:

- a) contingency plans for the removal of leachate from the facility by tanker in the case that the sewer line from the facility may not be used.
- b) contingency plans for the use of an additional treatment works in the case that the Ballaghaderreen Treatment Works is unable to accept leachate from the facility, including details of the location and operating capacity of the alternative treatment works.

11.4.1.2 The licensee shall within one month of the date of grant of this licence submit to the Agency for its agreement leachate handling procedures for the handling of leachate at the facility and during removal from the lagoon and subsequent transport/discharge to the Waste Water Treatment Plant.

11.4.2. Achievement of Final Profile:-

11.4.2.1 Within six months of the date of grant of this licence, the licensee shall submit to the Agency for its agreement, proposals for landfilling and restoration to achieve the final profile/height of the facility to the Agency for its agreement.

11.5 Landfill Gas Utilisation

11.5.1 Within nine months of the date of grant of this licence, the licensee shall submit an assessment of whether the utilisation of landfill gas as an energy resource is feasible. If feasible such a system shall be installed within a timeframe agreed with the Agency.

11.6 Vermin and Flies

11.6.1 Within three months of the date of this licence, the licensee shall submit to the Agency for its agreement a proposal for the control and eradication of vermin and fly infestations at the facility. This proposal should include as a minimum, operator training, details on the rodenticide(s) and insecticide(s) to be used, mode and frequency of application and measures to contain sprays within the facility boundary.

11.7 Monitoring Locations.

11.7.1 Where additional monitoring locations are provided at the facility the licensee shall submit to the Agency an appropriately scaled drawing(s) showing all the monitoring locations. The drawing(s) shall include the reference code of each monitoring point.

11.8 Annual Environmental Report.

11.8.1 The licensee shall submit to the Agency for its agreement, within one month of the end of each year, an Annual Environmental Report (AER).

11.8.2 The AER shall include as a minimum the information specified in *Schedule F: 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 €20,073 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 31st 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 From a date to be set by the Agency the licensee shall 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.1.1 Waste categories and quantities to be accepted for disposal

Waste Type	Maximum (Tonnes Per Annum) ^{Note 1}
Municipal, Industrial & Commercial Waste	21,000
Non-inert Construction and Demolition Waste	4,000
TOTAL	25,000

Note 1: The tonnage of municipal waste, industrial waste, commercial waste and construction and demolition waste may be altered with the prior agreement of the Agency provided that the total amount of these wastes accepted at the facility for disposal does not exceed the combined tonnage of 25,000 per annum (as specified in the total above).

Table A.2.1 Waste categories and quantities to be accepted for Recovery and Restoration of the facility

Waste Type	Maximum (Tonnes Per Annum)
Inert Waste	20,000

SCHEDULE B : Specified Engineering Works

Specified Engineering Works
Development of the facility including preparatory works and lining.
Final capping.
Installation of Landfill Gas Management Infrastructure.
Installation of Leachate Management 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 nearest noise sensitive locations as per Table D.1.1).

Day dB(A) L_{Aeq} (15 minutes)	Night dB(A) L_{Aeq} (15 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 D.1.1).

Level (mg/m ² /day) ^{Note 1}
350

Note 1: 30 day composite sample with the results expressed as mg/m²/day.

C.4 Emission Limits Values for Enclosed Landfill Gas Flare

Emission Point Reference numbers: **to be agreed with the Agency**

Volume to be emitted: **to be agreed with the Agency**

Minimum discharge height: **to be agreed with the Agency**

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³
CO	50 mg/m ³
Total organic carbon (TOC)	10 mg/m ³
Hydrogen Chloride	50 mg/m ³ (at mass flows > 0.3 kg/h)
Hydrogen Fluoride	5 mg/m ³ (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.

C.5 Emission Limits for Leachate Being Discharged to Sewer

Emission Point Reference No. LS - 1

Grid Reference: **to be agreed with the Agency**

Parameter	Emission Limit Value
	Grab Sample (mg/l)
Methane	0.14

SCHEDULE D : Monitoring

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D.1.1 and Drawing B2.3 of the application.

Table D.1.1 Monitoring Locations

In the case where any of the locations included below are not available for use as monitoring locations the licensee shall provide replacement locations as per Condition 3.18.4

Landfill Gas	Dust Deposition	Noise	Surface Water	Ground Water	Leachate
Stations	Stations	Stations	Stations	Stations	Stations
BHC, BHD, BHM.					
Six additional locations to be provided to detect off-site migration of landfill gas prior to the capping of the existing waste body	D1, D2, D3, D4	Facility Entrance At nearest private residences to the east, west and north of the facility ^{Note 2}	SW1, SW2, SW3, SW4, SW5, 50m upstream (SW6) and downstream (SW7) of the facility on the River Lung	BH101, BH102, BH103 BH10, BH11	LS-1 ^{Note 1} , BH7A, BH6

Note 1: Leachate monitoring point prior to discharge to sewer to be agreed with the Agency

Note 2: To be agreed with the Agency prior to the commencement of monitoring

D.2 Landfill Gas

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

Parameter	Monitoring Frequency		Analysis Method/Technique ^{Note1}
	Gas Boreholes/ Vents/Wells	Site Office	
Methane (CH ₄) % v/v	Monthly	Continuous	Infrared analyser/flame ionisation detector
Carbon dioxide (CO ₂)% v/v	Monthly	Continuous	Infrared analyser/ flame ionisation detector
Oxygen(O ₂) % v/v	Monthly	Continuous	Electrochemical cell
Atmospheric Pressure	Monthly	Continuous	Standard
Temperature	Monthly	Continuous	Standard

Note 1: Or other methods agreed in advance with the Agency.

D.3 Dust Monitoring

Table D.3.1 Dust Monitoring Frequency and Technique

Parameter (mg/m ² /day)	Monitoring Frequency	Analysis Method/Technique
Dust	Three times a year ^{Note 2}	Standard Method ^{Note 1}

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.

D.4 Noise

Table D.4.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring Frequency	Analysis Method/Technique
L(A) _{EQ} [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₁₀ [30 minutes]	Annual	Standard ^{Note 1}
L(A) ₉₀ [30 minutes]	Annual	Standard ^{Note 1}
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard ^{Note 1}

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 ^{Note 1}	SURFACE WATER	GROUNDWATER	LEACHATE ^{Note 3}
	Monitoring Frequency	Monitoring Frequency	Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Continuous ^{Note 7}
Ammoniacal Nitrogen	Quarterly	Quarterly	Annually
BOD	Quarterly	Not Applicable	Annually
COD	Quarterly	Not Applicable	Annually
Chloride	Quarterly	Quarterly	Annually
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Quarterly	Quarterly	Annually
pH	Quarterly	Quarterly	Annually
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Quarterly	Quarterly
Metals / non metals ^{Note 3}	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Fluoride	Not Applicable	Annually	Annually
List I/II organic substances ^{Note 4}	^{Note 5}	Annually ^{Note 5}	^{Note 5}
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
Residue on evaporation	Not Applicable	Annually	Not Applicable
Biological Assessment	Annually ^{Note 6}	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 by 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: 3 groundwater locations agreed with the Agency for these parameters and to be completed for surface water and leachate as may be requested by the Agency.

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

Note 7: Continuous monitoring in the leachate lagoon and in lined cells and quarterly in unlined areas.

D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:

The licensee shall collect the information as required by Table D.6.1 at 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
Atmospheric Pressure	Daily	Standard
Evaporation	Daily	Standard
Evapotranspiration	Daily	Standard
Humidity	Daily	Standard

D.7 Landfill Gas Enclosed Flare

Location: To be agreed with the Agency

Table D.7.1 Enclosed Flare Parameters and Monitoring Frequency

Parameter	Flare (enclosed) Monitoring Frequency	Analysis Method ^{Note1} /Technique ^{Note2}
Inlet		
Methane (CH ₄) % v/v	Continuous	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO ₂)% v/v	Continuous	Infrared analyser/ thermal conductivity
Oxygen (O ₂) % v/v	Continuous	Electrochemical/thermal conductivity
Total Sulphur	Annually	Ion chromatography
Total Chlorine	Annually	Ion chromatography
Total Fluorine	Annually	Ion Selective Electrode
Process Parameters		
Combustion Temperature	Continuous	Temperature Probe/datalogger
Outlet		
Volumetric Flow	Annually	Pitot Tube
CO	Continuous	Flue gas analyser/datalogger
NO _x	Annually	Flue gas analyser
SO ₂	Annually	Flue gas analyser
TOC	Annually	Flame ionisation
Hydrochloric acid	Annually	Impinger / Ion Chromatography
Hydrogen fluoride	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: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

D.8 Monitoring of Emissions to Sewer

Emission Point Reference No.: LS-1 as per Table D.1.1.

Location: to be agreed with the Agency

Table D.8.1 Sewer Monitoring - Parameters /Frequency

Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 1}
Flow	Daily	Flow meter / recorder
Methane	To be agreed ^{Note 1}	To be agreed ^{Note 1}

Note 1: The licensee shall within three months of the date of grant of the licence agree with the Agency a suitable method and frequency for the monitoring of methane in leachate emissions to sewer.

SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency ^{Note1}	Report Submission Date
Environmental Management System Updates	Annually	One month after the end of the year reported on.
Annual Environment Report (AER)	Annually	One month after the end of each year.
Record of Incidents	As they occur	Within five days of the incident.
Bund, tank and container integrity assessment	Every three years	Following installation and every three years thereafter
Specified Engineering Works Reports	As they arise	Prior to the works commencing.
Monitoring of Landfill Gas	Bi-annually	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	Bi-annually	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 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 (including ECW codes).

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.

Details of any lining works

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.

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.

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.

Signed on behalf of the said Agency
on the 22nd day of November 2002

Claire Fahey, Authorised Person