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

Waste Licence	W0074-03
Register No:	
Licensee:	South Tipperary County Council
Location of Facility:	Donohill Landfill, Garryshane, Donohill, County Tipperary

INTRODUCTION

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

This waste licence relates to an existing local authority (South Tipperary County Council) owned and operated, landfill accepting municipal, commercial and non-hazardous industrial wastes at Garryshane, Donohill, County Tipperary.

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 wide range of reports on the operation and management of the facility to the Agency.

The licence does not authorise the extension of the landfill into any additional unlined areas.

The licence sets out in detail the conditions under which South Tipperary 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 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 will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2008.

In reaching this decision the Environmental Protection Agency has considered documentation received from the licensee, all submissions and the report of its inspector.

Part I: Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2008, the Environmental Protection Agency (the Agency) proposes, under Section 46(8) of the said Acts to grant this waste licence to South Tipperary County Council, County Hall, Clonmel, County Tipperary to carry on the waste activities listed below at Donohill Landfill, Garryshane, Donohill, County Tipperary subject to conditions, with the reasons therefore and the associated schedules attached thereto set out in the licence. For the purpose of Article 48 of the Waste Management (Licensing) Regulations 2004 (S.I. No. 395) this facility is classed as a non-hazardous waste landfill.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Act, 1996 to 2008

Class 1	Deposit on, in or under land (including landfill): This activity is limited to the disposal of the waste types specified in this licence into the existing landfill and proposed landfill extension.
Class 4	Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons: This activity is limited to the storage of leachate in a lagoon (or tank) prior to disposal off-site at a suitable waste water treatment plant.
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 the waste types specified in this licence.
Class 7	Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule: This activity is limited to leachate treatment activities at the facility.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts, 1996 to 2008

Class 3.	Recycling or reclamation of metals and metal compounds: This activity is limited to the collection of metals in specified containers and areas for recycling off-site.
Class 4.	Recycling or reclamation of other inorganic materials: This activity is limited to the reclamation of materials for recycling and the reuse of inert waste for landfill restoration and construction works.
Class 9	Use of any waste principally as a fuel or other means to generate energy: This activity is limited to the collection of gas and its conversion to electricity.
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 inert waste on site prior to reuse and the temporary storage of recyclable, reusable, fridges and white goods pending their collection.

INTERPRETATION

All terms in this licence should be interpreted in accordance with the definitions in the Waste Management Acts, 1996 to 2008, (the Acts), unless otherwise defined in this section.

Aerosol	A suspension of solid or liquid particles in a gaseous medium.
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.
Appropriate facility	A waste management facility, duly authorised under relevant law and technically suitable.
BAT	Best Available Techniques as defined in Article 2(11) of Council Directive 96/61/EC concerning integrated pollution prevention and control.
Biodegradable waste	Waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste and paper and cardboard.
Biodegradable municipal waste (BMW)	The biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles.
Bio-stabilised residual waste:	Residual biodegradable municipal waste that has been treated to achieve an EPA-approved biodegradability stability standard (as defined in this licence) prior to landfilling or alternative use agreed.
CEN	Comité Européen De Normalisation – European Committee for Standardisation.
Characterisation of waste:	The sampling and analysis of waste to determine, amongst other things, its nature and composition, including the proportions of biodegradable, recyclable and other materials in the waste.
Classification of waste	The classification of waste as inert, non-hazardous or hazardous for the purpose of article 4 of Council Directive (1999/31/EC) on the landfill of waste.
Coding of waste	The allocation of a European Waste Catalogue/Hazardous Waste List code and a concise/standardised description of the waste, including information on the source of the waste, e.g. municipal, industrial, construction and demolition etc.
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 by 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.
Incident	The following shall constitute an incident for the purposes of this licence: <ul style="list-style-type: none"> a) an emergency; b) any emission which does not comply with the requirements of this licence; c) any exceedance of the daily duty capacity of the waste handling equipment; d) any trigger level specified in this licence which is attained or exceeded; and, e) any indication that environmental pollution has, or may have, taken place.
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 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 Acts.
Licensee	South Tipperary 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 12 times per year, at approximately monthly intervals.
Municipal solid waste (MSW)	Household waste as well as commercial and other waste which, because of its nature or composition, is similar to household waste. Excluding municipal sludges and effluents.
Night-time	2200 hrs to 0800 hrs.
Noise Sensitive Location	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Non-hazardous Asbestos Waste	Includes bonded asbestos, such as tiles, which are not classified as hazardous waste and which are authorised for disposal at the facility.
Oil separator	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator systems for light liquids, (e.g. oil and petrol) - Part 2: Selection of nominal size, installation, operation and maintenance).
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc which may be recycled.
Residual waste	The fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.
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.
SCADA system	Supervisory Control and Data Acquisition system.

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.
SOP	Standard Operating Procedure.
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.
TOC	Total Organic Carbon.
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/pre-treatment:	In relation to waste, any manual, thermal, physical, chemical or biological processes that change the characteristics of waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or 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. 2002-024-03-001 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 Acts, 1996 to 2008 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 and Industrial Waste may be recovered and disposed of at the facility subject to the maximum quantities and other constraints listed in *Schedule A: Waste Acceptance* of this licence. No hazardous wastes or liquid wastes shall be disposed of at the facility.
- 1.5. Waste Acceptance Hours and Hours of Operation
 - 1.5.1. Landfill
 - 1.5.1.1. Waste may be accepted at the facility for disposal at the landfill only between the hours of 8.30 a.m. and 7.30 p.m. Monday to Friday inclusive and 9.30 a.m. and 5.00 p.m. on Saturdays.
 - 1.5.1.2. The landfill at the facility may be operated only between the hours of 8.00 a.m. and 8.00 p.m. Monday to Friday inclusive and 9.00 a.m. and 6.00 p.m. on Saturdays, unless otherwise agreed by the Agency.
 - 1.5.1.3. Recyclable materials may be accepted in designated receptacles in accordance with Condition 5.10 between the hours and on the days specified in Condition 1.5.1.1.
 - 1.5.1.4. Waste shall not be accepted at the landfill on Bank Holidays.
- 1.6. 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: 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;
 - 1.6.1 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
 - 1.6.2 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.

- 1.7 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.
- 1.8 This licence is being granted in substitution for the waste licence granted to the licensee on 19th July 2004 and bearing Waste Licence Register W0074-02. The previous waste licence (Register No: W0074-02) is superseded by this licence.

Reason:	<i>To clarify the scope of this licence.</i>
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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 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 by the Agency) and associated on site assessment appraisal within twelve months of appointment.
- 2.1.3 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 Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information:-
- a) The names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;
 - b) Details of the responsibilities for each individual named under a) above; and
 - c) Details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

- 2.3.1 The licensee shall maintain an Environmental Management System (EMS). 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 licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology (including emissions prevention/reduction), and the beneficial recovery/recycling of waste in subsequent landfill engineering operations. The schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

The licensee shall ensure insofar as practicable that environmental objectives and targets are met according to the stated schedule.

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; and
- c) Any other items required by written guidance issued by the Agency.

2.3.2.3 LEMP

Notwithstanding the provisions of 2.3.2.2 the licensee shall prepare, operate and maintain a Landfill Environmental Management Plan (LEMP), covering aspects not already covered in the EMP. This Plan shall have regard to the guidance set out in EPA publications. The LEMP shall be regularly reviewed (at least annually) in light of operational experiences at the facility, the stage of development of the facility (active; closure, aftercare), evolving legislative and BAT requirements, as well as any Agency instructions that may issue.

2.3.2.4 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 establish and 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.

2.5 Resource Use and Energy Efficiency

- 2.5.1 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of grant of this amendment. The audit shall:-

- (i) identify all opportunities for energy use reduction and efficiency;
- (ii) be carried out in accordance with the guidance published by the Agency - "Guidance Note on Energy Efficiency Auditing"; and
- (iii) be repeated at intervals as required by the Agency.

The recommendations of the audit will be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2.3.2.1 above.

- 2.5.2 The licensee shall identify opportunities for reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible. Reductions in water usage shall be incorporated into the Schedule of Environmental Objectives and Targets.
- 2.5.3 The licensee shall undertake an assessment of the efficiency of use of raw materials in all processes, having particular regard to the reduction in waste generated. The assessment should take account of best international practice for this type of activity. Where improvements are identified, these shall be incorporated into the Schedule of Environmental Objectives and Targets.

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. To provide for the efficient use of resources and energy in all site operations.

CONDITION 3 FACILITY INFRASTRUCTURE

- 3.1 The licensee shall establish all infrastructure referred to in this licence as required by the conditions of this licence.
- 3.2 Specified Engineering Works
 - 3.2.1 The licensee shall submit proposals for all Specified Engineering Works, as defined in *Schedule B: Specified Engineering Works* of this licence, to the Agency for its agreement at least two months prior to the intended date of commencement of any such works. No such works shall be carried out without the prior agreement of the Agency.
 - 3.2.2 All specified engineering works shall be supervised by a competent person(s) and that person, or persons, shall be present at all times during which relevant works are being undertaken.
 - 3.2.3 Following the completion of all specified engineering works, the licensee shall complete a construction quality assurance validation. The validation report shall be made available to the Agency on request. The report shall include the following information;
 - a) a description of the works;
 - b) as-built drawings of the works;
 - c) records and results of all tests carried out (including failures);
 - d) drawings and sections showing the location of all samples and tests carried out;
 - e) daily record sheets/diary;
 - f) name(s) of contractor(s)/individual(s) responsible for undertaking the specified engineering works;
 - g) name(s) of individual(s) responsible for supervision of works and for quality assurance validation of works;

- h) records of any problems and the remedial works carried out to resolve those problems; and
- i) any other information requested in writing by the Agency.

3.3 Facility Notice Board

3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

3.3.2 The board shall clearly show:-

- a) The name and telephone number of the facility;
- b) The normal hours of opening;
- c) The name of the licence holder;
- d) An emergency out of hours contact telephone number;
- e) The licence reference number; and
- f) Where environmental information relating to the facility can be obtained.

3.4 Facility Security

3.4.1 Security and stockproof fencing and gates shall be installed and maintained as described in Attachment D1(a) with the locations of the fencing as shown on Figure A.16.1 – *Plan of Site Perimeter Fence* received in Article 16(1) response on 4th April 2001. The base of the fencing shall be set in the ground. Similar fencing shall be installed to enclose Areas 2, 3, and 4.

3.4.2 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.

3.5 Facility Roads

3.5.1 Effective site roads shall be provided and maintained to ensure the safe movement of vehicles within the facility.

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 storage lagoon.

- 3.8 Weighbridge
- 3.8.1 The licensee shall provide and maintain a weighbridge at the facility.
- 3.9 Waste Water Treatment Plant
- 3.9.1 The licensee shall provide and maintain a Wastewater Treatment plant at the facility for the treatment of wastewater arising on-site. Any percolation area shall satisfy the criteria set out in the Wastewater Treatment Manual, *Treatment Systems for Single Houses*, published by the Environmental Protection Agency.
- 3.10 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 Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004). 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 their installation and prior to their use as storage areas. 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 Unless otherwise agreed by the Agency, 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 by 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; and
 - 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 The liner system at cell/area No. 4 shall meet the requirements set out in the Agency letter (74-1/GEN11bf) dated 11 February 2004.
- 3.12 Leachate Management Infrastructure
- 3.12.1 Leachate management infrastructure including the leachate interceptor trench shall be provided and maintained at the facility as described in Appendix V of the application and specified in Drawing No. 2001-024-06-001 Rev B.

- 3.12.2 All structures for the storage and/or treatment of leachate shall be fully enclosed except for inlet and outlet piping.
- 3.13 Landfill Gas Management
- 3.13.1 Landfill gas management infrastructure shall be provided and maintained at the facility as described in Appendix V of the application and specified in Drawing No. 2001-024-06-001 Rev B.
- 3.13.2 A landfill gas flare shall be provided and maintained at the facility. The flare shall be of an enclosed type design unless otherwise agreed by the Agency.
- 3.13.3 Flare unit efficiency shall be tested once it is installed and once every three years thereafter.
- 3.13.4 All buildings constructed on the facility shall have regard to the guidance given in the Department of Environment 1994 publication "Protection of New Buildings and Occupants from Landfill Gas" and any subsequent revisions.
- 3.14 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.
- 3.14.2 The existing surface water french cut-off drain at Area 4 shall be as specified in Drawing No. 2002-024-03-002 Rev B, unless otherwise agreed by the Agency.
- 3.15 Groundwater Management
- 3.15.1 Effective groundwater 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 protection of the groundwater resources from pollution by the waste activities.
- 3.16 Construction and Demolition Waste Recovery Area.
- 3.16.1 The licensee shall provide and maintain a construction and demolition waste recovery area. This infrastructure shall at a minimum comprise the following:-
- a) An impermeable concrete slab; and
 - b) Collection and disposal infrastructure for all run-off.
- 3.17 Collection of recyclable materials
- 3.17.1 The licensee shall provide and maintain receptacles near the facility entrance to provide for the collection of any recyclable materials allowed by Condition 5.10.
- 3.18 Monitoring Infrastructure
- 3.18.1 Landfill Gas

- (a) The licensee shall provide and maintain the 15 landfill gas perimeter monitoring points as identified in Map 3 Gas Monitoring and Gas Extraction Well Locations dated 29 April 2004.
- (b) The licensee shall provide and maintain an effective permanent gas monitoring system in the site office any other enclosed structures at the facility.

3.18.2 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.

3.19 Metal Recovery Area

- 3.19.1 The licensee shall provide and maintain a clearly segregated metal recovery area/scrap metal compound for the acceptance of white goods and other metal wastes.
- 3.19.2 Appropriate infrastructure shall be provided and maintained at the Metal Recovery Area. The licensee shall carry out works or improvements to the infrastructure as required by the Agency.

3.20 Silt Traps & Oil Interceptors

- 3.20.1 The licensee shall install and maintain silt traps at the facility to ensure that all discharges to surface water from the facility pass through a silt trap in advance of discharge.
- 3.20.2 In addition to condition 3.20.1, the licensee shall install an oil separator on the discharge point SW5, from the storm pond. The separator shall be a Class I full retention separator.
- 3.20.3 The silt traps and separators referred to conditions 3.20.1 & 3.20.2 above shall be in accordance with I.S. EN 858-2:2003 (separator systems for light liquids).

Reason: <i>To provide appropriate infrastructure for the protection of the environment.</i>
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CONDITION 4 RESTORATION AND AFTERCARE

- 4.1. The licensee shall restore the facility on a phased basis. Unless otherwise agreed, filled cells shall be permanently capped within 24 months of the cells having been filled to the required level.
- 4.2. The final profile of the facility shall be as shown in Drawing No. 2002-024-03-004 and shall have a final height not exceeding 115mOD Malin.
- 4.3. Final Capping
 - 4.3.1. Unless otherwise agreed by the Agency, the final capping shall consist of the following:
 - a) top soil (150 -300mm);
 - b) subsoils, such that total thickness of top soil and subsoils is at least 1m;
 - c) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-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; and
 - 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. The restoration of the landfill facility shall be completed within twenty four months of the date of cessation of acceptance of waste for disposal at Area 3 or Area 4, whichever is the latest.
- 4.7. Soil Storage
- 4.7.1. All soils shall be stored to preserve the soil structure for future use.
- 4.8. A final validation report to include a certificate of completion for the Restoration and Aftercare Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason:	<i>To provide for the restoration of the facility</i>
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CONDITION 5 FACILITY OPERATIONS

- 5.1 Wastes shall not be deposited in any cell or part of the landfill without the prior agreement of the Agency. In any case waste (other than inert waste (subsoil and topsoil) necessary for restoration purposes) shall not be deposited in Areas 1 and 2 as shown in Drawing No. 2002-024-03-007 of the application, unless otherwise agreed by the Agency.
- 5.2 Waste Acceptance and Characterisation Procedures
- 5.2.1 Waste shall be accepted at the facility, only from customers who are holders of a waste permit, unless exempted, under the Waste Management (Collection Permit) Regulations 2007 or from other licensed/permitted facilities.
- 5.2.2 Whole used tyres (other than bicycle tyres and tyres with an outside diameter greater than 1400mm) shall not be disposed of at the facility. Shredded tyres shall not be disposed of at the facility.
- 5.2.3 No waste which in the conditions of the landfill, is explosive, corrosive, oxidising, highly flammable or flammable as defined in EU Council Directive 91/689/EEC shall be accepted at the landfill.
- 5.2.4 Landfill Waste Acceptance Procedures
- Within one month of the date of grant of this licence, the licensee shall submit to the Agency for its agreement updated written procedures for the acceptance and handling of all wastes. These procedures shall include details of the treatment of all waste to be carried out in advance of acceptance at the facility and shall also include methods for the characterisation, classification and coding of waste. The procedures shall have regard to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC on the landfill of waste.
- Waste Treatment
- 5.2.5 Only waste that has been subject to treatment shall be accepted for disposal at the landfill facility.
- (i) Treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management*, EPA, 2009.
- (ii) With the agreement of the Agency, this condition shall not apply to:

- inert wastes for which treatment is not technically feasible;
- other waste for which such treatment does not contribute to the objectives of the Landfill Directive as set out in Article 1 of the Directive by reducing the quantity of the waste or the hazards to human health or the environment.

Limit on acceptance of biodegradable municipal waste

5.2.6 The following limits shall apply:

- (i) For the calendar years 2010, 2011 and 2012, a maximum of 40% by weight of municipal solid waste (MSW) accepted for disposal to the body of the landfill shall comprise biodegradable municipal waste (BMW),
- (ii) For the calendar years 2013, 2014 and 2015, a maximum of 24% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW, and
- (iii) For the calendar year 2016 and thereafter, a maximum of 15% by weight of MSW accepted for disposal to the body of the landfill shall comprise BMW,

unless an alternative has been agreed in writing by the Agency in accordance with Condition 5.2.7

5.2.7 Two or more licensed landfills may seek the agreement of the Agency that collectively they will arrange to comply with Condition 5.2.6. Any agreements entered into become part of this licence. In seeking agreement the following factors, as a minimum, shall be addressed in any proposal submitted to the Agency:

- BAT;
- age, intake rate and life expectancy of the facility;
- waste intake characterisation;
- potential for odour generation;
- proximity to sensitive receptors;
- capacity of landfill gas and leachate infrastructure; and
- consideration of any potential environmental impact or change to operational practices.

Determination of biodegradable municipal waste content of municipal waste

- 5.2.8 The licensee shall determine the biodegradable municipal waste content of MSW accepted for disposal to the body of the landfill. Waste that has been bio-stabilised in accordance with Condition 5.2.11 shall not be considered BMW.
- 5.2.9 Bio-stabilised residual wastes meeting the requirements of Condition 5.2.11 received at the landfill facility may be included in the determination of MSW quantities accepted at the facility for the purposes of Condition 5.2.6.
- 5.2.10 In determining BMW content, the licensee shall use approved calculation factors for BMW content of municipal waste streams published by the EPA. With the agreement of the EPA, alternative factors can be used if they have been determined following waste characterisation carried out in accordance with EPA-approved characterisation protocols including, where appropriate, the use of EPA-approved contractors.
- 5.2.11 In the case of bio-stabilised residual wastes, stabilisation means the reduction of the decomposition properties of the waste to such an extent that offensive odours are

minimised and that the respiration activity after four days (AT_4) is $<10\text{mg O}_2/\text{g DM}$ until 1 January 2016 and $<7\text{mg O}_2/\text{g DM}$ thereafter.

- 5.2.12 Bio-stabilised residual wastes shall be monitored in accordance with Schedule D.8.
- 5.2.13 Waste that was accepted to the body of the landfill as stabilised waste, but subsequently is found not to meet the stabilisation standard set out in Condition 5.2.11 shall be notified to the Agency and included in the calculation of BMW accepted to the body of the landfill when assessing compliance with Condition 5.2.6. In the event of failure to meet the stabilisation standard, each and every load of bio-stabilised residual waste accepted from the failed source following receipt of the failed test result shall be tested, notwithstanding the testing frequency set out in Schedule D.8, until otherwise agreed with the Agency.
- 5.2.14 The licensee is required to maintain on-site as part of their waste acceptance procedures and associated documentation, evidence to demonstrate compliance with Condition 5.2.6, which shall be available for inspection by Agency personnel.
- 5.2.15 The waste acceptance procedures established under Condition 5.2.4 shall provide:-
- (i) For the checking of waste documentation on receipt of waste in the waste reception area;
 - (ii) For non pre-cleared customers, the visual inspection and testing of waste in the waste inspection area pending acceptance/rejection;
 - (iii) For the visual inspection of waste when deposited at the working face;
 - (iv) For the keeping for two months of any samples associated with on-site verification sampling of waste accepted at the facility.
- 5.2.16 The dilution or mixture of waste solely in order to fulfil relevant waste acceptance criteria established under Condition 5.2.4 is prohibited.
- 5.2.17 The acceptance of inert waste for recovery shall be as specified in *Schedule F: Acceptance of Inert Waste*, of this licence.

5.3 All wastes shall be checked at the working face. Any waste deemed unsuitable for acceptance at the facility and/or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

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; and
 - b) the working face of the landfill shall be no more than 2.5 metres in height after compaction, no more than 25 metres wide and have a slope no greater than 1 in 3.
- 5.4.2 All waste deposited at the working face shall be compacted, using a steel wheeled compactor, and covered as soon as is practicable and at any rate prior to the end of the working day.
- 5.4.3 The working face, or faces, shall each day at the end of the day, be covered with suitable material.

5.5 Daily and Intermediate Cover

- 5.5.1 Any cover material at any location within the facility which is eroded, washed off or otherwise removed shall be replaced by the end of the working day.
- 5.5.2 Appropriate cover material shall be placed across the whole landfill so that no waste, other than the following is exposed:-
- a) Waste suitable for specified engineering works; and
 - b) Waste on the working face during the operational hours of the facility.
- 5.5.3 Bio-stabilised residual waste shall only be used as landfill cover where it has been stabilised in accordance with Condition 5.2.11 complies with any requirements of the Department of Agriculture, Fisheries and Food relating to the management of animal by-products and has been agreed in advance with the Agency.

5.6 Operational Controls

- 5.6.1 All large hollow objects and other large articles deposited at the facility shall be crushed, broken up, flattened or otherwise treated.
- 5.6.2 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 leachate and landfill gas collection systems unless with prior agreement from the Agency.
- 5.6.3 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.
- 5.6.4 Filled cells shall be permanently capped within twenty four months of the cells having been filled to the required level.
- 5.6.5 Scavenging shall not be permitted at the facility.
- 5.6.6 Gates shall be locked shut when the facility is unsupervised.
- 5.6.7 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.
- 5.6.8 Fuels may be stored only at appropriately bunded locations on the facility subject to the advance agreement of the Agency.
- 5.6.9 All tanks and drums shall be labelled to clearly indicate their contents.
- 5.6.10 No smoking shall be allowed on the facility.

5.7 Waste Handling

5.7.1 Sludges

- 5.7.1.1 Treated industrial and treated sewage sludges shall be accepted at the facility only between the hours of 8:30 a.m. and 2.00 p.m. Monday to Friday inclusive. All sludges shall be covered immediately with other waste.
- 5.7.1.2 In addition to the characterisation required under the Waste Acceptance Procedures, the licensee shall carry out analyses on a minimum of two samples per annum for all industrial sludges being accepted at the facility. The results of these analyses shall be presented in the Annual Environmental Report (AER).

5.8 Off-site Disposal and Recovery

- 5.8.1 Waste sent off-site for recovery or disposal shall be conveyed only by a waste contractor agreed by the Agency;
- 5.8.2 All waste transferred from the facility shall be transferred only 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 Collection of recyclable wastes

- 5.9.1 The following wastes may be deposited into a receptacle for recovery, provided the receptacle is designated and clearly labelled to indicate the specific waste type and where appropriate banded;
 - a) glass
 - b) metal cans
 - c) paper
 - d) waste oil
 - e) batteries
 - f) any other recyclable waste agreed in advance by the Agency.
- 5.9.2 Scrap metal may be accepted for storage on site in a designated area as specified in Condition 3.16 prior to collection for recovery off-site.

5.10 Construction and Demolition Waste Recovery Area

- 5.10.1 Only Construction and Demolition waste shall be accepted at this Area. Wastes which are capable of being recovered shall be separated and shall be stored temporarily in this area prior to being subjected to other recovery activities at the facility or transport off the facility.
- 5.10.2 All stockpiles shall be maintained so as to minimise dust generation.

5.11 Leachate Management

- 5.11.1 Leachate treatment shall be as detailed in Appendix V of the application – ‘Leachate and Landfill Gas Management Proposal’.
- 5.11.2 Leachate levels in the waste at new cells shall not exceed a level of 1.0m over the top of the liner at the base of the landfill. When trigger levels are reached for leachate in existing leachate boreholes at unlined cells leachate shall be removed from the boreholes and directed to the leachate storage lagoon.
- 5.11.3 The level of leachate in the pump sumps shall be monitored as outlined in ‘Pneumatic Leachate Pumps’ detailed in Appendix V of the application.
- 5.11.4 The frequency of leachate removal/discharge from the leachate lagoon shall be such that a minimum freeboard of 0.75m shall be maintained in the leachate lagoon at all times.
- 5.11.5 Unless treated on the facility, leachate stored in the leachate storage lagoon shall be disposed of by tankering off-site to an Agency approved facility in fully enclosed road tankers.
- 5.11.6 Recirculation of leachate or other contaminated water shall not be undertaken without the prior agreement of the Agency and, in any case, shall be undertaken only within cells which have been lined to the satisfaction of the Agency.

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 or to a skip.
- 5.13 Gypsum wastes shall not be placed in any landfill cell accepting biodegradable waste.

Reason:	<i>To provide for appropriate operation of the facility to ensure protection of the environment.</i>
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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; and
 - b) in the case of landfill gas combustion plant:
Temperature 273 K, pressure 101.3 kPa, dry gas; 5% oxygen.
- 6.3.3. Emission limits for landfill gas emissions to atmosphere in this licence shall be interpreted in the following way:-
- 6.3.3.1. Continuous monitoring
- (i) No 24 hour mean value shall exceed the emission limit value.

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

6.3.3.2. Non-Continuous Monitoring

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

6.4. Groundwater

- 6.4.1 There shall be no direct emissions to groundwater.
- 6.4.2 Groundwater monitoring trigger levels in accordance with the requirements of Directive 1999/31/EC shall be agreed by the Agency.
- 6.4.3 The trigger levels as specified in Condition 6.4.2 for groundwater shall be measured at monitoring boreholes GW12d, GW12s, GW 13, GW 14.

6.5. Emissions to Surface Water

- 6.5.1 No leachate shall be allowed to discharge to surface water.
- 6.5.2 There shall be no emissions to surface water unless there is a flow in the stream greater than 25 litres/second, providing a dilution factor of 10, excluding any emissions that may occur from run-off from restored areas of the landfill.
- 6.5.3 No contaminated surface water shall be allowed to enter the surface water collection system.
- 6.5.4 Prior to any discharge to surface water taking place the following shall be carried out:
 - 6.5.4.1 Silt traps and oil interceptors shall be installed at all points of discharge to the stream, as per Condition 3.20.
 - 6.5.4.2 Any sub-surface drainage pipes beneath the road, with an outlet to the surface water collection pond shall be capped and welded to remove any possible source of contamination.
 - 6.5.4.3 An interceptor drain shall be constructed across the site road to catch any leachate that may seep from the active area of the landfill to the site road. Any waters collected in this drain shall be pumped to the leachate collection pond.
- 6.5.5 With regard to discharges from the surface water collection pond (SW5) the following shall be carried out:
 - 6.5.5.1 Monitoring shall be carried out prior to each discharge event from SW5 for pH, temperature, free ammonia and conductivity;
 - 6.5.5.2 Monitoring for free ammonia and conductivity shall be carried out on a weekly basis at this point, as per the procedures specified in *Schedule D.5*. This

frequency, following demonstration of consistency in discharge quality, may be amended with the written agreement of the Agency..

6.6. Disposal of Leachate

- 6.6.1. All leachate or contaminated water tankered from the facility shall be transported to Tipperary Town Waste Water Treatment Plant, or alternative facility agreed in advance by the Agency, and disposed of there.

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

CONDITION 7 NUISANCE CONTROL

- 7.1 The licensee shall ensure that vermin, birds, flies, mud, dust, litter and odours do not give rise to nuisance at the facility or in the immediate area of the facility. Any method used by the licensee to control any such nuisance shall not cause environmental pollution.
- 7.2 The road network in the vicinity of the facility shall be kept free from any debris caused by vehicles entering or leaving the facility. Any such debris or deposited materials shall be removed without delay.
- 7.3 Litter Control
- 7.3.1 The licensee shall maintain a written litter control procedure, which shall be updated where necessary. The litter control procedure shall be submitted to the Agency for agreement.
- 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; and
 - 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 Bird Control
- 7.5.1 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. The birds of prey and/or other techniques shall be in place and shall be employed every day, from before dawn to after dark, until the waste activities cease and all the waste is capped to the written satisfaction of the Agency.

Reason: *To provide for the control of nuisances*

CONDITION 8 MONITORING

- 8.1. The licensee shall carry out such monitoring and at such locations and frequencies as set out in *Schedule D: Monitoring* of this licence and as specified in this licence. Unless otherwise specified by this licence, all environmental monitoring shall commence no later than two months after the date of grant of this licence.
- 8.2. The licensee shall amend the frequency, locations, methods and scope of monitoring as required by this licence only upon the written instruction of the Agency and shall provide such information concerning such amendments as may be requested in writing by the Agency. Such alterations shall be carried out within any timescale nominated by the Agency.
- 8.3. Monitoring and analysis equipment shall be operated and maintained in accordance with the manufacturers' instructions (if any) so that all monitoring results accurately reflect any emission, discharge or environmental parameter.
- 8.4. The licensee shall provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the Agency.
- 8.5. Landfill Gas
- 8.5.1. All landfill gas monitoring equipment, other than permanent monitoring systems within buildings, shall be certified as being intrinsically safe.
- 8.6. Meteorological Monitoring
- 8.6.1. The licensee shall make arrangements for representative meteorological data to be collated for the facility to fulfil the requirements of *Schedule D.6: Meteorological Monitoring* of this licence.
- 8.7. Topographical Survey
- 8.7.1. A topographical survey shall be carried out annually during landfilling and installation of the final capping. The survey shall include a measurement of the remaining available void space. The survey shall be in accordance with any written instructions issued by the Agency.
- 8.8. Stability Assessment
- 8.8.1. The licensee shall carry out a stability assessment of the side slopes of the facility annually.
- 8.9. Nuisance Monitoring
- 8.9.1. The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.
- 8.10. The licensee shall ensure that any waste acceptance testing and analysis required by this licence shall be carried out by competent laboratories in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards that will ensure the provision of data of an equivalent scientific quality shall apply.
- 8.11. Odour Control and Monitoring
- 8.11.1. Within six months of the date of grant of this licence, the licensee shall submit to the Agency for agreement, an Odour Management Plan (OMP) for the facility.
- 8.11.2. The OMP referred to in 8.11.1 shall include measures to control potential sources of odour nuisance including *inter alia*, provisions regarding:
- (i) Requirements of relevant conditions of this licence;

- (ii) Adequate resources and training on-site to provide for the maintenance, monitoring and operation of the landfill gas extraction system;
 - (iii) Acceptance and management of odorous waste deliveries;
 - (iv) Following completion of waste acceptance in any cell/sub-cell, the licensee shall on a bi-annual basis arrange the carrying out of an independent assessment and report on surface VOC emissions at the facility;
 - (v) Use of sacrificial gas extraction systems; phased capping of the waste body; and an interim capping system at inter-cell boundaries;
 - (vi) Working face/active cell sizing and covering;
 - (vii) Landfill gas collection:- locations of infrastructure including access/haul roads, well design and density, monitoring, condensate management, field balancing, flare/combustion plant operation;
 - (viii) Identification of fugitive sources of landfill gas emissions (e.e. from leachate management infrastructure);
 - (ix) Monitoring:- VOC surface emissions from capped areas, odour checks off- and on-site, receipt and evaluation/verification of odour complaints received.
- 8.11.3 To meet the requirements of the OMP, the licensee shall carry out a monthly review of control measures in place at the facility and maintain findings in a monthly report. This review shall include:
- (i) Consideration of odour complaints received during period (including details and nature of complaints, times and weather conditions, any unusual circumstances, problems, etc.);
 - (ii) Review of any monitoring, including ambient odour monitoring in accordance with Schedule D.9, carried out (including investigation of complaints and actions taken where relevant);
 - (iii) An update on the existing landfill gas control infrastructure (including operational status, number of wells & vents connected and unconnected to the landfill gas collection system, quantity of gas collected and flared/utilised, estimated quantity of landfill gas being produced, details of any problems with equipment during period);
 - (iv) Details of any remedial/corrective actions taken where relevant including actions taken on foot of recommendations from previous report; and
 - (v) Recommendations.
- 8.11.4 The OMP shall be reviewed annually and any updates/amendments submitted to the Agency as part of the Annual Environmental Report.
- 8.11.5 In relation to surface emissions from the waste body and identified features, the following shall constitute a trigger level:
- (i) VOC greater than or equal to 50ppmv average over capped area; or
 - (ii) VOC greater than or equal to 100ppmv instantaneous reading on open surfaces within the landfill footprint; or
 - (iii) VOC greater than or equal to 500ppmv around all identified features.
- 8.11.6 Leachate holding tanks/lagoons shall be covered and head gases vented to treatment as may be required by the Agency.
- 8.11.7 All odorous or odour-forming wastes shall be covered as soon as practicable and in any case at the end of the working day.
- 8.11.8 Where it is proposed to take biological sludges at the facility, these must be subject to appropriate pre-treatment in advance of acceptance at the facility.
- 8.11.9 When siting and operating landfill gas infrastructure, regard shall be had to the potential for, and mitigation of, odour nuisance.

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

CONDITION 9 CONTINGENCY ARRANGEMENTS

- 9.1. In the event of an incident the licensee shall immediately:
- a) identify the date, time and place of the incident;
 - b) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
 - c) isolate the source of any such emission;
 - d) evaluate the environmental pollution, if any, caused by the incident;
 - e) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
 - f) provide a proposal to the Agency for its agreement within one month of the incident occurring to:
 - i) identify and put in place measures to avoid reoccurrence of the incident; and
 - ii) identify and put in place any other appropriate remedial action.
- 9.2. The licensee shall maintain, review annually and update as necessary, an Emergency Response Procedure (ERP).
- 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 the slide slopes of the facility indicate that there may be a risk of slope failure this will be treated as an emergency.
- 9.5. The licensee shall ensure that a documented Accident Prevention Policy is in place, which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

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

CONDITION 10 RECORDS

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

- a) the current waste licence relating to the facility;
 - b) the current EMS for the facility;
 - c) the previous year's AER for the facility; and
 - 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 recyclable wastes brought to the collection receptacles provided on site for recycling. The licensee shall record the following:
- (i) the date and time;
 - (ii) the name of the carrier (including if appropriate, the waste carrier registration details);
 - (iii) the vehicle registration number;
 - (iv) the trailer, skip or other container unique identification number (where relevant);
 - (v) the name of the producer(s)/collector(s) of the waste as appropriate;
 - (vi) the name of the waste facility (if appropriate) from which the load originated including the waste licence or waste permit register number;
 - (vii) a description of the waste including the associated EWC/HWL codes;
 - (viii) the quantity of the waste, recorded in tonnes;
 - (ix) details of the treatment(s) to which the waste has been subjected;
 - (x) the classification and coding of the waste, including whether MSW or otherwise;
 - (xi) whether the waste is for disposal or recovery and if recovery for what purpose;
 - (xii) the name of the person checking the load; and
 - (xiii) where loads or wastes are removed or rejected, details of the date of occurrence, the types of waste and the facility to which they were removed.
- 10.3 Written Records
- The following written records shall be maintained by the licensee:
- a) the types and quantities of waste recovered and disposed of at the facility each year. These records shall include the relevant EWC Codes;
 - b) all training undertaken by facility staff;
 - c) results from all integrity tests of bunds and other structures and any maintenance or remedial work arising from them;
 - d) details of all nuisance inspections; and
 - e) the names and qualifications of all persons who carry out all sampling and monitoring as required by this licence and who carry out the interpretation of the results of such sampling and monitoring.
- 10.4 The licensee shall maintain a written record of all complaints relating to the operation of the 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.
- 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; and

- e) any incidents or spillages of leachate during its removal or transportation.
- 10.6 A written record shall be kept for each load of waste departing from the facility including recyclable wastes collected in receptacles. The following shall be recorded:
- a) the name of the carrier;
 - b) the vehicle registration number;
 - c) the destination of the waste (facility name and waste licence/permit number as appropriate);
 - d) a description of the waste (if recovered or rejected waste, the specific nature of the waste);
 - e) the quantity of waste, recorded in tonnes;
 - f) the name of the person checking the load; and
 - g) the time and date of departure.
- 10.7 A written record shall be kept at the facility of the programme for the control and eradication of vermin and fly infestations at the facility. These records shall include as a minimum the following:
- a) the date and time during which spraying of insecticide is carried out;
 - b) contractor details;
 - c) contractor logs and site inspection reports;
 - d) details of the rodenticide(s) and insecticide(s) used;
 - e) operator training details;
 - f) details of any infestations;
 - g) mode, frequency, location and quantity of application; and
 - h) measures to contain sprays within the facility boundary.
- 10.8 The licensee shall provide a written acknowledgement (to carrier/waste contractor) of receipt of each delivery of waste to the facility (for disposal in the landfill).

Reason:	<i>To provide for the keeping of proper records of the operation of the facility</i>
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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 EPA, Regional Inspectorate, Inniscarra, Co. Cork;
 - b) comprise one original and two copies unless additional copies are required;
 - c) be formatted in accordance with any written instruction or guidance issued by the Agency;
 - d) include whatever information as is specified in writing by the Agency;
 - e) be identified by a unique code, indicate any modification or amendment, and be correctly dated to reflect any such modification or amendment;
 - f) be submitted in accordance to the relevant reporting frequencies specified by this licence, such as in *Schedule E: Recording and Reporting to the Agency* of this licence;
 - g) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and
 - h) be transferred electronically to the Agency's computer system if required by the Agency.

- 11.2 In the event of an incident occurring on the facility, the licensee shall:
- a) notify the Agency as soon as practicable and in any case not later than 10.00 am 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 10:00am on the following working day after such an incident; and
 - 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

The licensee shall as part of the Annual Environmental Report for the site submit a report on the contribution by this facility to the achievement of the waste recovery objectives stated in Condition 2.3.2.1 and as otherwise may be stated in National and European Union waste policies and shall, as a minimum, include tonnages of the following:

- (i) the recovery of Construction and Demolition Waste;
- (ii) the recovery of other waste in landfill operations, including restoration;
- (iii) the recovery of energy through landfill gas combustion.

11.4 Annual Environmental Report

11.4.1. The licensee shall submit to the Agency for its agreement, by 31st March of each year an Annual Environmental Report (AER).

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

11.5 The Licensee shall report to the Agency such data and records, and at such frequency, as may be specified by the Agency in order to demonstrate compliance with the requirements of Condition 5.2.6. From 1 January 2010, and unless otherwise advised by the Agency, the licensee shall submit quarterly summary reports to the Agency within one week of the end of each quarter on the quantity of MSW and BMW accepted at the landfill during the preceding quarter and on a cumulative basis for the calendar year to date. The report shall detail the tonnage of MSW and BMW accepted and the basis (including all calculation factors) on which the figures have been calculated.

11.6 The licensee shall, in writing, notify the Agency without delay of any waste that arrived at the facility that does not meet the waste acceptance criteria.

Reason: <i>To provide for proper report to and notification of the Agency.</i>

CONDITION 12 CHARGES AND FINANCIAL PROVISIONS

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €25,154, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the

Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2008. The first payment shall be a pro-rata amount for the period from the date of grant of this licence to the 31st day of December, and shall be paid to the Agency within one month from the date of grant of the licence. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2008, and all such payments shall be made within one month of the date upon which demanded by the Agency.

- 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 defray its costs in regard to items not covered by the said annual contribution.

12.2 Financial Provision for Closure, Restoration and Aftercare

- 12.2.1 The licensee shall from a date to be set by the Agency establish and maintain a fund, or provide a written guarantee, that is adequate to assure the Agency that the licensee is at all times financially capable of implementing the Restoration and Aftercare Plan required by Condition 4. The type of fund established and means of its release/recovery shall be agreed by the Agency prior to its establishment.
- 12.2.2 Any fund established shall be maintained in an amount always sufficient to underwrite the current Restoration and Aftercare Plan.
- 12.2.3 The licensee shall revise the cost of restoration and aftercare annually and any details of the necessary adjustments to the fund or guarantee must, within two weeks of the revision, be forwarded to the Agency for its agreement. Any adjustment agreed by the Agency shall be effected within four weeks of said written agreement.
- 12.2.4 Unless otherwise agreed any revision to the fund shall be computed using the following formula:

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

Where:

- Cost = Revised restoration and aftercare cost
- ECOST = Existing restoration and aftercare cost
- WPI = Appropriate Wholesale Price Index [Capital Goods, Building & Construction (i.e. Materials & Wages) Index], as published by the Central Statistics Office, for the year since last closure calculation/revision.
- CiCC = Change in compliance costs as a result of change in site conditions, changes in law, regulations, regulatory authority charges, or other significant changes.

12.3 Cost of landfill of waste

In accordance with the provisions of Section 53A of the Waste Management Acts 1996 to 2008, the licensee shall ensure the costs involved in the setting up and operation of the facility, as well as the costs of closure and after-care (including cost of provision of financial security) for a period of at least 30 years (post closure) shall be covered by the price to be charged for the disposal of waste at the facility. The statement required under Section 53A(5) of said Acts is to be included as part of the AER.

12.4 Environmental Liabilities

- 12.4.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and

the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

- 12.4.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. A report on this assessment shall be submitted to the Agency for agreement within twelve months of date of grant of this licence. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.
- 12.4.3 As part of the measures identified in Condition 12.4.1, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities associated with operation including closure and aftercare of the facility not covered under condition 12.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.4.1.

Reason:	<i>To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.</i>
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SCHEDULE A : Waste Acceptance

A.1 Waste Acceptance

Table A.1 Waste Categories and Quantities for Disposal at the landfill

WASTE TYPE ^{Note 1}	MAXIMUM QUANTITY ^{Note 2} (Tonnes per Annum)
Household	30,000
Commercial	4,000
Treated Sewage Sludge	500
Construction & Demolition	1,000
Industrial non-hazardous solids	3,500
Treated industrial non-hazardous sludges	1,000
TOTAL	40,000

Note 1: Only pre-treated wastes are acceptable for disposal as set out in Article 6 (a) of the Landfill Directive.

Note 2: Quantities of waste types may be altered, subject to the agreement of the Agency, provided the total quantity for disposal does not exceed 40,000 tonnes per annum.

Table A.2 Waste Categories for Recovery at the facility up until completion of the restoration of the landfill

WASTE TYPE	LIMITATION
Recyclable wastes	Subject to Condition 5.10.
Inert wastes	For use on site - in road making material, as cover material and in capping and restoration works.

Table A.3 Total Permitted Landfill Capacity

Total quantity of waste permitted to be placed at the landfill facility (over authorised life of facility)	159,836 m ³
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SCHEDULE B :Specified Engineering Works

Specified Engineering Works

Development of the facility including preparatory works and lining.

Lining works and critical quality assurance reports (CQA) at Areas 3 and 4. To include details on formation levels of the cells.

Final capping.

Installation of Landfill Gas Management Infrastructure.

Installation of Landfill Gas Combustion Plant.

Installation of Leachate Management Infrastructure.

Installation of Groundwater Control Infrastructure.

Installation of Surface Water Management Infrastructure.

Any other works notified in writing by the Agency.

SCHEDULE C : Emission Limits

C.1 Noise Emissions: (Measured at the facility boundary monitoring points indicated in *Table D.1.1 Monitoring Locations*), or other locations agreed or instructed by the Agency.

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

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

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

C.3 Dust Deposition Limits: (Measured at the monitoring points indicated in *Table D.1.1 Monitoring Locations*).

Level ($mg/m^2/day$) ^{Note 1}
350

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

C.4 Emission Limits Values for Landfill Gas Plant

Emission Point Reference Nos.: (to be agreed by the Agency)
 Location: Landfill Gas Combustion Plant and Flare Stacks
 Volume to be emitted: (to be agreed by the Agency)
 Minimum discharge height: 5m

Parameter	Flare (enclosed) Emission Limit Value ^{Note 1}	Utilisation Plant Emission Limit Value ^{Note 1}
Nitrogen oxides (NO _x)	150 mg/m ³	500 mg/m ³
CO	50 mg/m ³	650 mg/m ³
Particulates	Not applicable	130 mg/m ³
Total organic carbon (TOC)	10 mg/m ³	Not applicable

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

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

C.5 Emission Limit Values for Surface Waters

Parameter	Emission Limit Value
Ammonia as NH ₃	0.2 mg/L
BOD ₍₅₎	5 mg/L
Suspended Solids	35 mg/L
pH	>5.5 <8.5
Conductivity	900 µS/CM

SCHEDULE D : Monitoring

Monitoring to be carried out as specified below.

D.1 Monitoring Locations

Monitoring locations shall be those as set out in Table D1.1, as shown in Drawing Number 6 of the application unless otherwise indicated or agreed by the Agency.

TABLE D1.1 MONITORING LOCATIONS

Landfill Gas	Dust	Noise	Surface Water	Ground Water	Leachate
Stations Note 1	Stations Note 4	Stations Note 4	Stations Note 2	Stations Note 3	Stations Note 1
GM1	ST1	N1	SW1	GW12d Note 6	LC4
GM3	ST2A	N2	SW2	GW12s Note 6	L1
GM5	ST3	N3	SW3	GW11d	L2
GM7		N4	SW4 Note 5	GW11s	L3
GM8		S1	SW5	GW13 Note 6	L4
GM11		S2	SW7	GW14 Note 6	
GM13			SW8	GW15	
GM15					
G1					
G2					
G3					
G4					

Note 1: As shown in Drawing No: DE07-024-04-002 (Drawing Title: Environmental Monitoring Locations) dated 16th July 2007.

Note 2: As shown in Drawing No: DE07-024-04-010 (Drawing Title: Existing, Proposed & Obsolete Surface Water Monitoring Locations) dated 19th July 2007.

Note 3: As shown in Map 1 Groundwater and Surface Water Monitoring Locations dated 29th April 2004.

Note 4: As shown in Map 2 Dust and Noise Monitoring Locations dated 29 April 2004.

Note 5: SW4 in Ballydonagh Marsh 1.7km southeast. As shown in Map 1 Groundwater and surface water monitoring locations dated 29 April 2004.

Note 6: Monitoring wells for which trigger levels shall be set as specified in Condition 6.4.3.

D.2 Landfill Gas

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

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

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

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

D.3 Dust

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). 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.

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 Monitoring Frequency	GROUNDWATER Monitoring Frequency	LEACHATE ^{Note 6} Monitoring Frequency
Visual Inspection/Odour ^{Note 2}	Weekly	Quarterly	Quarterly
Groundwater Level	Not Applicable	Monthly	Not Applicable
Leachate Level	Not Applicable	Not Applicable	Weekly
Ammoniacal Nitrogen	Quarterly	Quarterly	Quarterly
BOD	Quarterly	Not Applicable	Quarterly
COD	Quarterly	Not Applicable	Quarterly
Chloride	Quarterly	Quarterly	Quarterly
Dissolved Oxygen	Quarterly	Quarterly	Not Applicable
Electrical Conductivity	Weekly	Quarterly	Quarterly
PH	Quarterly	Quarterly	Quarterly
Total Suspended Solids	Quarterly	Not Applicable	Not Applicable
Temperature	Quarterly	Monthly	Quarterly
Cadmium	Annually	Annually	Annually
Calcium	Annually	Annually	Annually
Chromium (Total)	Annually	Annually	Annually
Copper	Annually	Annually	Annually
Cyanide (Total)	Not Applicable	Annually	Annually
Iron	Annually	Quarterly	Annually
Lead	Annually	Annually	Annually
List I/II organic substances ^{Note 3}	Not Applicable	Annually	Not Applicable
Magnesium	Annually	Annually	Annually
Manganese	Annually	Annually	Annually
Mercury	Annually	Annually	Annually
Nickel	Not Applicable	Annually	Annually
Potassium	Annually	Quarterly	Annually
Sulphate	Annually	Annually	Annually
Sodium	Annually	Quarterly	Annually
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
Zinc	Annually	Annually	Annually
Phenols	Not Applicable	Quarterly	Not Applicable
Faecal Coliforms ^{Note 4}	Not Applicable	Quarterly	Annually
Total Coliforms ^{Note 4}	Not Applicable	Quarterly	Annually
Biological Assessment	Bi-Annually ^{Note 5}	Not Applicable	Not Applicable

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

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

Note 3: 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: In the case where groundwater is extracted for drinking water, 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: Appropriate biological methods (such as EPA Q-Rating System) to be used for the assessment of rivers and streams.

Note 6: Visual Inspection and Leachate Levels for all leachate stations referred to in Table D.1.1. Sampling and analysis to be carried out for leachate in leachate storage lagoon/tank and two leachate boreholes in waste.

D.6 Meteorological Monitoring

Table D.6.1 Meteorological Monitoring:

Data to be obtained from Kilkenny Meteorological Station unless otherwise agreed or instructed by 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

D.7 Landfill Gas Combustion Plant/Enclosed Flare

Location: Utilisation plant and enclosed flare (location of flare to be agreed by the Agency in advance).

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

Parameter	Flare (enclosed)	Utilisation Plant	Analysis Method ^{Note1} /Technique ^{Note2}
	Monitoring Frequency	Monitoring Frequency	
Inlet			
Methane (CH ₄) % v/v	Continuous	Weekly	Infrared analyser/flame ionisation detector/thermal conductivity
Carbon dioxide (CO ₂) % v/v	Continuous	Weekly	Infrared analyser/thermal conductivity
Oxygen (O ₂) % v/v	Continuous	Weekly	Electrochemical/thermal conductivity
Process Parameters			
Combustion Temperature	Continuous	Quarterly	Temperature Probe/datalogger
Outlet			
CO	Continuous	Continuous	Flue gas analyser/datalogger
Nox	Annually	Annually	Flue gas analyser
SO ₂	Annually	Annually	Flue gas analyser
Particulates	Not applicable	Annually	Isokinetic/Gravimetric
TOC	Annually	Not applicable	Flame ionisation

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

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

Note 3: Test methods should be capable of detecting acetonitrile, dichloromethane, tetrachlorethylene and vinyl chloride as a minimum.

D.8 Waste Monitoring

Table D.8.1 Waste monitoring

Waste class	Frequency	Parameter	Method
Bio-stabilised residual waste	Every 200 tonnes from each source	As agreed	As agreed

D.9 Ambient Odour Monitoring

Table D.9.1 Waste monitoring

Parameter	Frequency	Analysis Method/Technique
Odour	Monthly	As agreed

SCHEDULE E : Recording and Reporting to the Agency

Report	Reporting Frequency ^{Note 1}	Report Submission Date
Environmental Management System Updates	Annually	Submit as part of the AER.
Annual Environment Report (AER)	Annually	By 31 st March of each year.
Notification of waste loads not meeting waste acceptance criteria	As they occur	As per Condition 11.6
Compliance with waste diversion targets	As required by the Agency	As per Condition 11.5
Bund, tank and container integrity assessment	Every three years	As part of the AER.
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	Submit as part of the AER.
Dust Monitoring	Three times a year	Ten days after the period being reported on
Noise Monitoring	Annually	Submit as part of the AER.
Any other monitoring	As they occur	Within ten days of obtaining results.

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

SCHEDULE F : Acceptance of Inert Waste

F.1 Acceptable Waste for Recovery

Only the wastes listed below are acceptable for recovery at the facility, unless otherwise agreed by the Agency.

WASTE	
Topsoil	Solid Road Planings, Solid Tarmacadam, Solid Asphalt ^{Note 1}
Subsoil	Brickwork
Stone, Rock and Slate	Natural Sand
Clay, Pottery and China	Concrete

Note 1: Acceptance subject to prior agreement by the Agency

SCHEDULE G : Content of the Annual Environmental Report

Annual Environmental Report Content
Reporting Period.
Waste activities carried out at the facility.
Waste recovery report
Quantity and Composition of waste received, disposed of and recovered during the reporting period and each previous year.
Summary report on emissions, results and interpretation of environmental monitoring.
Volume of leachate produced and volume of leachate transported off-site.
Biological assessment of the surface waters every two years using the EPA Q-rating system.
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 and calculated remaining capacity.
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.
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.
Updates/Amendments to Odour Management Plan (OMP)
Updates to Landfill Environmental Management Plan (LEMP)
Review of Environmental Liabilities.
Reports on financial provision made under this licence, management and staffing structure of the facility, and a programme for public information.
Environmental Management System updates.
Report on training of staff.
Statement of compliance of facility with any updates of the relevant Waste Management Plan
Statement on the achievement of the waste acceptance and treatment obligations.
Any other items specified by the Agency.

Scaled by the seal of the Agency on this ... day of September 2009

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

..... Director/Authorised Person